Pluribus Netvisor ONE

Command Reference Guide

Version 7.0.0

February 2022

Table of contents

Legal Notice 4
EULA 5
Glossary 12
A Commands 13
B Commands 61
C Commands 76
D Commands 146
E Commands 158
F Commands 163
H Commands 211
I Commands 216
K Commands 253
L Commands 281
M Commands 346
N Commands 378
O Commands 389
P Commands 409
Q Commands 519
R Commands 520
S Commands 528
T Commands 699
U Commands 771
V Commands 789
W Commands 1172
Acknowledgments for Open Source Software 1178
About Pluribus Networks 1189

Legal Notice

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY THIS REFERENCE. IF YOU ARE UNABLE TO LOCATE THE SOFTWARE LICENSE OR LIMITED WARRANTY, CONTACT YOUR PLURIBUS NETWORKS REPRESENTATIVE FOR A COPY.

NOTWITHSTANDING ANY OTHER WARRANTY HEREIN, ALL DOCUMENT FILES AND SOFTWARE ARE PROVIDED "AS IS" WITH ALL FAULTS. PLURIBUS NETWORKS DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

IN NO EVENT SHALL PLURIBUS NETWORKS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA, ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF PLURIBUS NETWORKS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Any Internet Protocol (IP) addresses used in this document are not intended to be actual addresses. Any examples, command display output, and figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses in illustrative content is unintentional and coincidental.

©2022 Pluribus Networks, Inc. All rights reserved. Pluribus Networks, the Pluribus Networks logo, nvOS, Netvisor®, vManage. vRender, PluribusCare, FreedomCare, Pluribus Cloud, and iTOR are registered trademarks or trademarks of Pluribus Networks, Inc., in the United States and other countries. All other trademarks, service marks, registered marks, registered service marks are the property of their respective owners. Pluribus Networks assumes no responsibility for any inaccuracies in this document. Pluribus Networks reserves the right to change, modify, transfer, or otherwise revise this publication without notice. © 2022 PLURIBUS NETWORKS. ALL RIGHTS RESERVED.

Version 7.0.0	February 2022
Version 6.1.1	July 2021
Version 6.1.0	April 2021
Version 6.0.1	October 2020
Version 6.0.0	August 2020
Version 5.2.1	June 2020

EULA

End-User License Agreement ("EULA") Pluribus Networks, Inc.

IMPORTANT: PLEASE READ THIS END USER LICENSE AGREEMENT CAREFULLY. IT IS VERY IMPORTANT THAT YOU CONFIRM THAT YOU ARE PURCHASING PLURIBUS SOFTWARE OR EQUIPMENT FROM AN APPROVED SOURCE AND THAT YOU, OR THE ENTITY YOU REPRESENT (COLLECTIVELY, THE "CUSTOMER") HAVE BEEN REGISTERED AS THE END USER FOR THE PURPOSES OF THIS PLURIBUS END USER LICENSE AGREEMENT. IF YOU ARE NOT REGISTERED AS THE END USER YOU HAVE NO LICENSE TO USE THE SOFTWARE AND THE LIMITED WARRANTY IN THIS END USER LICENSE AGREEMENT DOES NOT APPLY TO YOU.

1. **Introduction**
   - 1.1. Your use of the Pluribus Networks software ("SOFTWARE") and related documentation ("DOCUMENTATION") is subject to this legal agreement between you and PLURIBUS. "PLURIBUS" means Pluribus Networks, Inc., whose principal place of business is at 6001 America Center Drive, Suite 450, San Jose, CA 95002. This document explains how the agreement is made up, and sets out the terms of the agreement.
   - 1.2. SOFTWARE means software provided to you by PLURIBUS.
   - 1.3. DOCUMENTATION means written information (whether contained in user or technical manuals, training materials, specifications or other such materials provided to you by PLURIBUS) related to the SOFTWARE.
   - 1.4. Unless otherwise agreed to in writing with PLURIBUS, your agreement with PLURIBUS at it relates to the SOFTWARE and DOCUMENTATION will always include, at a minimum, the terms and conditions set out in this EULA.
   - 1.5. This agreement forms a legally binding agreement between you and PLURIBUS in relation to your use of the SOFTWARE and DOCUMENTATION. It is important that you take the time to read this EULA carefully. Collectively, this legal agreement is referred to below as the "EULA."

2. **Accepting this EULA**
   - 2.1. In order to use the SOFTWARE and DOCUMENTATION, you must first agree to this EULA. You may not use the SOFTWARE and DOCUMENTATION if you do not accept this EULA.
   - 2.2. You can accept this EULA by: (A) clicking to accept or agree to this EULA, where this option is made available to you by PLURIBUS; or (B) by actually downloading, installing or using the SOFTWARE, in which case, you understand and agree that PLURIBUS will treat your use of the SOFTWARE as acceptance of this EULA from that point onward.
   - 2.3. If you are accepting this EULA on behalf of another legal entity, you represent that you have the authority to bind such legal entity.
   - 2.4. You may not use the SOFTWARE and DOCUMENTATION and may not accept this EULA if (A) you are not of legal age to form a binding contract with PLURIBUS, or (B) you are a person barred from receiving the SOFTWARE under the laws of the United States or other countries including the country in which you are resident or from which you use the SOFTWARE.
   - 2.5. PLURIBUS is willing to license this software to you only upon the condition that you purchased the software from an Approved Source and that you accept all of the terms contained in this EULA plus any additional limitations on the license set forth in a supplemental license agreement if any accompanying the product or available at the time of your order (collectively the "agreement"). To the extent of any conflict between the terms of this EULA and any supplemental license agreement, the supplemental license agreement shall apply.
   - 2.6. You may access a copy of this EULA at: www.pluribusnetworks.com/EULA

3. **Provision of the SOFTWARE AND DOCUMENTATION by PLURIBUS**
   - 3.1. You acknowledge and agree that the form and nature of the SOFTWARE which PLURIBUS provides may change from time to time without prior notice to you.
   - 3.2. You acknowledge and agree that PLURIBUS assumes no responsibility for any inaccuracies in the DOCUMENTATION and that PLURIBUS reserves the right to change, modify, or otherwise revise the DOCUMENTATION without notice.
   - 3.3. As part of this continuing innovation, you acknowledge and agree that PLURIBUS may

stop (permanently or temporarily) providing the SOFTWARE (or any features within the SOFTWARE) to you or to customers generally, at PLURIBUS' sole discretion, with 30 (thirty) days prior notice to you.

4. **Use of the SOFTWARE by you:**
   - 4.1. You agree to use the SOFTWARE in accordance with this EULA.
   - 4.2. You agree not to access (or attempt to access) the SOFTWARE by any means other than through the command line interface that is provided by PLURIBUS, unless you have been specifically allowed to do so in a separate agreement with PLURIBUS.
   - 4.3. By downloading, installing, or using the software, you are representing that you purchased the software from an Approved Source and binding yourself to the agreement. If you do not agree to all of the terms of the agreement, then PLURIBUS is unwilling to license the software to you and (a) you may not download, install or use the software, and (b) you may return the software (including any unopened CD package and any written materials) for a full refund, or, if the software and written materials are supplied as part of another product, you may return the entire product for a full refund. Your right to return and refund expires 30 days after receipt of such product from an approved source, and applies only if you are the original and registered end user purchaser. For the purposes of this EULA, an "Approved Source" means (a) PLURIBUS; or (b) a distributor or systems integrator authorized by PLURIBUS to distribute/ sell PLURIBUS equipment, software and services within your territory to end users; or (c) a reseller authorized by any such distributor or systems integrator in accordance with the terms of the distributor's agreement with PLURIBUS to distribute/sell the PLURIBUS equipment, software and services within your territory to end users.
   - 4.4. You agree that you will not engage in any activity that interferes with or disrupts the operation of the SOFTWARE.
   - 4.5. Unless you have been specifically permitted to do so in a separate agreement with PLURIBUS, you agree that you will not reproduce, duplicate, copy, sell, trade or resell the SOFTWARE (or any portion thereof) for any purpose.
   - 4.6. PLURIBUS may from time to time send updates over the Internet to you in order to update the SOFTWARE. You acknowledge and agree that PLURIBUS may make available new version of SOFTWARE without notice to you and that prior version of the SOFTWARE may be temporarily unavailable while PLURIBUS is updating the SOFTWARE. Pursuant to section 11 of this EULA, PLURIBUS is not liable for any disruptions in your use of the SOFTWARE, including while PLURIBUS is updating the SOFTWARE.

5. **Privacy and your Usage Information**
   - 5.1. Should you enable sending product updates to the PluribusCloud, PLURIBUS may collect information ("USAGE INFORMATION") related to how you are using the SOFTWARE in accordance with your Pluribus Networks Purchase Agreement ("PURCHASE AGREEMENT"). The USAGE INFORMATION is collected and maintained in accordance with the PLURIBUS PRIVACY POLICY, as updated, located at: www.pluribusnetworks.com/privacy
   - 5.2. You agree to allow PLURIBUS to collect USAGE INFORMATION and give PLURIBUS a perpetual, irrevocable, worldwide, royalty-free, and non-exclusive license to use (including, but not limited to, the rights to reproduce, adapt, and modify) the USAGE INFORMATION internally.
   - 5.3. You give PLURIBUS a perpetual, irrevocable, worldwide, royalty-free, and non-exclusive license to: (a) generate aggregated, non-personal information, where aggregated, non-personal information is USAGE INFORMATION that is collected into groups so that it no longer reflects or references an individually identifiable person or legal entity, and (b), to the extent necessary, reproduce, adapt, modify, translate, publish, publicly perform, publicly display and distribute any generated aggregated, non-personal information.
   - 5.4. You confirm and warrant to PLURIBUS that you have all the rights, power and authority necessary to grant PLURIBUS permission to collect USAGE INFORMATION and to use the USAGE INFORMATION in the manner specified in this section 5.
   - 5.5. PLURIBUS agrees not to disclose the USAGE INFORMATION to any third party except in accordance with Section 5.3 or the PLURIBUS PRIVACY POLICY. In the event of a conflict between this EULA and the PLURIBUS PRIVACY POLICY, the PLURIBUS PRIVACY POLICY shall govern.

6. **Proprietary Rights**
   - 6.1. You acknowledge and agree that PLURIBUS owns all legal right, title and interest in and to the

SOFTWARE and DOCUMENTATION, including any intellectual property rights which subsist in the SOFTWARE and DOCUMENTATION (whether those rights happen to be registered or not, and wherever in the world those rights may exist). You further acknowledge that the SOFTWARE and DOCUMENTATION may contain information which is designated confidential by PLURIBUS and that you shall not disclose such information without PLURIBUS' prior written consent.

6.2. You may use PLURIBUS' trademarks provided that such use is strictly limited and in accordance with the trademark guidelines located at www.pluribusnetworks.com/legal as adjusted from time to time.

6.3. Unless you have agreed otherwise to in writing with PLURIBUS, nothing in this EULA gives you a right to use any of PLURIBUS' domain names and other distinctive brand features (separate and apart from PLURIBUS' trademarks).

6.4. If you have been given an explicit right to use any of PLURIBUS' domain names and other distinctive brand features in a separate written agreement with PLURIBUS, then you agree that your use of such features shall be in compliance with that agreement, and any applicable provisions of this EULA.

6.5. You agree that you shall not remove, obscure, or alter any proprietary rights or notices (including copyright and trademark notices) which may be affixed to or contained within the SOFTWARE and DOCUMENTATION.

7. License from PLURIBUS

7.1. PLURIBUS gives you a personal, worldwide, non-assignable, non-transferable, and non-exclusive license to use the SOFTWARE and DOCUMENTATION provided to you by PLURIBUS. Conditioned upon compliance with the terms and conditions of the Agreement, PLURIBUS grants to you a nonexclusive and nontransferable license to use for your internal business purposes the Software and the DOCUMENTATION for which you have paid the required license fees to an Approved Source. "DOCUMENTATION" means written information (whether contained in user or technical manuals, training materials, specifications or otherwise) pertaining to the SOFTWARE and made available by an Approved Source with the SOFTWARE in any manner (including on CD-Rom, or on-line). In order to use the SOFTWARE, you may be required to input a registration number or product authorization key and register your copy of the SOFTWARE online at PLURIBUS ' website to obtain the necessary license key or license file.

7.2. Your license to use the SOFTWARE shall be limited to, and you shall not use the SOFTWARE in excess of, a single hardware chassis or card or such other limitations as are set forth in the applicable Supplemental License Agreement or in the applicable Purchase Agreement or purchase order which has been accepted by an Approved Source and for which you have paid to an Approved Source the required license fee (the "Purchase Order").

7.3. Unless otherwise expressly provided in the DOCUMENTATION or any applicable Supplemental License Agreement, you shall use the SOFTWARE solely as embedded in, for execution on, or (where the applicable DOCUMENTATION permits installation on non-Pluribus equipment) for communication with PLURIBUS equipment owned or leased by you from an Approved Source and used for your internal business purposes. No other licenses are granted by implication, estoppel or otherwise.

7.4. You may not (and you may not permit anyone else to) copy, modify, create a derivative work of any DOCUMENTATION, unless this is expressly permitted or required by law, or unless you have been specifically told that you may do so by PLURIBUS, in writing.

7.5. This is a license, not a transfer of title, to the Software and DOCUMENTATION, and PLURIBUS retains ownership of all copies of the SOFTWARE and DOCUMENTATION. Customer acknowledges that the SOFTWARE and DOCUMENTATION contain trade secrets of PLURIBUS or its suppliers or licensors, including but not limited to the specific internal design and structure of individual programs and associated interface information. Except as otherwise expressly provided under this EULA, you shall have no right, and you specifically agree not to:

- i) transfer, assign or sublicense its license rights to any other person or entity (other than in compliance with any PLURIBUS relicensing/transfer policy then in force), or use the SOFTWARE on PLURIBUS equipment not purchased by you from an Approved Source or on secondhand PLURIBUS equipment, and you acknowledge that any attempted transfer, assignment, sublicense or use shall be void;
- ii) make error corrections to or otherwise modify or adapt the SOFTWARE or create derivative works based upon the SOFTWARE, or permit third parties to do the same;
- iii) reverse engineer or decompile, decrypt, disassemble or otherwise reduce the SOFTWARE

to human-readable form, except to the extent otherwise expressly permitted under applicable law notwithstanding this restriction or except to the extent that PLURIBUS is legally required to permit such specific activity pursuant to any applicable open source license;

iv) publish any results of benchmark tests run on the SOFTWARE;

v) use or permit the SOFTWARE to be used on a service bureau or time sharing basis as relates to direct shared use of such SOFTWARE (and not to applications or services running upon or utilizing such SOFTWARE), without the express written authorization of PLURIBUS; or

vi) disclose, provide, or otherwise make available trade secrets contained within the SOFTWARE and DOCUMENTATION in any form to any third party without the prior written consent of PLURIBUS. You shall implement reasonable security measures to protect such trade secrets

7.6. To the extent required by applicable law, and at your written request, PLURIBUS shall provide you with the interface information needed to achieve interoperability between the SOFTWARE and another independently created program, on payment of PLURIBUS' applicable fee, if any. You shall observe strict obligations of confidentiality with respect to such information and shall use such information in compliance with any applicable terms and conditions upon which PLURIBUS makes such information available.

8. Ending your relationship with PLURIBUS

8.1. This EULA will continue to apply and will not come to an end until terminated by either you or PLURIBUS as set out below.

8.2. PLURIBUS shall terminate its legal agreement with you if: (a) you have breached any provision of this EULA (or have acted in manner which clearly shows that you do not intend to, or are unable to comply with the provisions of this EULA), automatically and without requiring any further action by PLURIBUS; or (b) PLURIBUS is required to do so by law (for example, where the provision of the SOFTWARE or DOCUMENTATION to you is, or becomes, unlawful).

8.3. When this EULA comes to an end, all of the legal rights, obligations and liabilities that you and PLURIBUS have benefited from, been subject to (or which have accrued over time whilst this EULA has been in force) or which are expressed to continue perpetually, shall be unaffected by this cessation. Upon termination, you shall destroy all copies of SOFTWARE and DOCUMENTATION in your possession or control.

9. WARRANTY

9.1. Except as specifically warranted in the PURCHASE AGREEMENT, PLURIBUS disclaims all warranties as set forth in Section 10 of this agreement. Subject to the limitations and conditions set forth herein, PLURIBUS warrants that commencing from the date of shipment to you (but in case of resale by an Approved Source other than PLURIBUS, commencing not more than ninety (90) days after original shipment by PLURIBUS), and continuing for a period of the longer of (a) ninety (90) days or (b) the warranty period (if any) expressly set forth as applicable specifically to SOFTWARE in the warranty card accompanying the product of which the SOFTWARE is a part (the "Product") (if any): (a) the media on which the SOFTWARE is furnished will be free of defects in materials and workmanship under normal use; and (b) the SOFTWARE substantially conforms to the DOCUMENTATION.

9.2. The date of shipment of a Product by PLURIBUS is set forth on the packaging material in which the Product is shipped. Except for the foregoing, the SOFTWARE is provided "AS IS". This limited warranty extends only to the SOFTWARE purchased from an Approved Source by a user who is the first registered end user. Your sole and exclusive remedy and the entire liability of PLURIBUS and its suppliers under this limited warranty will be (i) replacement of defective media and/or (ii) at PLURIBUS ' option, repair, replacement, or refund of the purchase price of the SOFTWARE, in both cases subject to the condition that any error or defect constituting a breach of this limited warranty is reported to the Approved Source supplying the Software to you, within the warranty period. PLURIBUS or the Approved Source supplying the SOFTWARE to you may, at its option, require return of the SOFTWARE and/or DOCUMENTATION as a condition to the remedy.

9.3. In no event does PLURIBUS warrant that the SOFTWARE is error free or that you will be able to operate the SOFTWARE without problems or interruptions. In addition, due to the continual

development of new techniques for intruding upon and attacking networks, PLURIBUS does not warrant that the SOFTWARE or any equipment, system or network on which the SOFTWARE is used will be free of vulnerability to intrusion or attack.

9.4. This warranty does NOT apply if the SOFTWARE, Product or any other equipment upon which the SOFTWARE is authorized to be used (a) has been altered, except by PLURIBUS or its authorized representative, (b) has not been installed, operated, repaired, or maintained in accordance with instructions supplied by PLURIBUS, (c) has been subjected to abnormal physical or electrical stress, abnormal environmental conditions, misuse, negligence, or accident; or (d) is licensed for beta, evaluation, testing or demonstration purposes. The SOFTWARE warranty also does not apply to (e) any temporary SOFTWARE modules; (f) any SOFTWARE not posted on the software update or support site on Pluribus' web page: (g) any SOFTWARE that PLURIBUS expressly provides on an "AS IS" basis on PLURIBUS software update or support site on Pluribus' web page: (h) any SOFTWARE for which PLURIBUS or an Approved Source does not receive a license fee; and (i) SOFTWARE supplied by any third party which is not an Approved Source.

10. EXCLUSION OF WARRANTIES

10.1. NOTHING IN EULA, INCLUDING SECTIONS 10 AND 11, SHALL EXCLUDE OR LIMIT PLURIBUS' WARRANTY OR LIABILITY FOR LOSSES WHICH MAY NOT BE LAWFULLY EXCLUDED OR LIMITED BY APPLICABLE LAW. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF CERTAIN WARRANTIES OR CONDITIONS OR THE LIMITATION OR EXCLUSION OF LIABILITY FOR LOSS OR DAMAGE CAUSED BY NEGLIGENCE, BREACH OF CONTRACT OR BREACH OF IMPLIED TERMS, OR INCIDENTAL OR CONSEQUENTIAL DAMAGES. ACCORDINGLY, ONLY THE LIMITATIONS WHICH ARE LAWFUL IN YOUR JURISDICTION WILL APPLY TO YOU AND OUR LIABILITY IS LIMITED IN ALL CASES TO THE MAXIMUM EXTENT PERMITTED BY LAW.

10.2. YOU EXPRESSLY UNDERSTAND AND AGREE THAT YOUR USE OF THE SOFTWARE AND DOCUMENTATION IS AT YOUR SOLE RISK AND THAT THE SOFTWARE AND DOCUMENTATION IS PROVIDED "AS IS" AND "AS AVAILABLE."

10.3. IN PARTICULAR, PLURIBUS DOES NOT REPRESENT OR WARRANT TO YOU THAT:

a) YOUR USE OF THE SOFTWARE AND DOCUMENTATION WILL MEET YOUR REQUIREMENTS,
b) YOUR USE OF THE SOFTWARE OR ACCESS TO THE DOCUMENTATION WILL BE UNINTERRUPTED, TIMELY, SECURE OR FREE FROM ERROR,
c) ANY INFORMATION OBTAINED BY YOU AS A RESULT OF YOUR USE OF THE SOFTWARE AND DOCUMENTATION WILL BE ACCURATE OR RELIABLE, AND
d) THAT DEFECTS IN THE OPERATION OR FUNCTIONALITY OF ANY SOFTWARE PROVIDED TO YOU WILL BE CORRECTED.

10.4. ANY MATERIAL DOWNLOADED OR OTHERWISE OBTAINED THROUGH THE USE OF THE SOFTWARE IS DONE AT YOUR OWN DISCRETION AND RISK AND YOU, AND NOT PLURIBUS, WILL BE RESPONSIBLE FOR ANY DAMAGE TO YOUR COMPUTER SYSTEM OR OTHER DEVICES OR LOSS OF DATA THAT RESULTS FROM THE DOWNLOAD OF ANY SUCH MATERIAL.

10.5. NO ADVICE OR INFORMATION, WHETHER ORAL OR WRITTEN, OBTAINED BY YOU FROM PLURIBUS SHALL CREATE ANY WARRANTY NOT EXPRESSLY STATED IN THIS EULA.

10.6. PLURIBUS FURTHER EXPRESSLY DISCLAIMS ALL WARRANTIES AND CONDITIONS OF ANY KIND, WHETHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO THE IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT.

11. LIMITATION OF LIABILITY

11.1. SUBJECT TO THE OVERALL PROVISION IN PARAGRAPH 10.1 ABOVE, YOU EXPRESSLY UNDERSTAND AND AGREE THAT PLURIBUS, SHALL NOT BE LIABLE TO YOU FOR:

a) ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL CONSEQUENTIAL OR EXEMPLARY DAMAGES WHICH MAY BE INCURRED BY YOU, HOWEVER CAUSED AND UNDER ANY THEORY OF LIABILITY. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, ANY LOSS OF PROFIT (WHETHER INCURRED DIRECTLY OR INDIRECTLY), ANY LOSS OF GOODWILL OR BUSINESS REPUTATION, ANY LOSS OF DATA SUFFERED, COST OF PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES, OR OTHER INTANGIBLE LOSS;
b) ANY LOSS OR DAMAGE WHICH MAY BE INCURRED BY YOU, INCLUDING BUT NOT LIMITED TO LOSS OR DAMAGE AS A RESULT OF:
    1. ANY CHANGES WHICH PLURIBUS MAY MAKE TO THE SOFTWARE OR DOCUMENTATION, OR FOR ANY PERMANENT OR TEMPORARY CESSATION IN THE PROVISION OF THE

SOFTWARE (OR ANY FEATURES WITHIN THE SOFTWARE); OR

2. THE DELETION OF, CORRUPTION OF, OR FAILURE TO STORE, ANY CONTENT AND OTHER COMMUNICATIONS DATA MAINTAINED OR TRANSMITTED BY OR THROUGH YOUR USE OF THE SOFTWARE.

11.2. THE LIMITATIONS ON PLURIBUS'S LIABILITY TO YOU IN PARAGRAPH 11.1 ABOVE SHALL APPLY WHETHER OR NOT PLURIBUS HAS BEEN ADVISED OF OR SHOULD HAVE BEEN AWARE OF THE POSSIBILITY OF ANY SUCH LOSSES ARISING.

11.3. IN NO EVENT SHALL THE AGGREGATE LIABILITY OF PLURIBUS EXCEED $5,000. OR EXCEED THE PRICE PAID BY CUSTOMER TO ANY APPROVED SOURCE FOR THE SOFTWARE THAT GAVE RISE TO THE CLAIM OR IF THE SOFTWARE IS PART OF ANOTHER PRODUCT, THE PRICE PAID FOR SUCH OTHER PRODUCT. THIS LIMITATION OF LIABILITY FOR SOFTWARE IS CUMULATIVE AND NOT PER INCIDENT (I.E. THE EXISTENCE OF TWO OR MORE CLAIMS WILL NOT ENLARGE THIS LIMIT).

11.4. You acknowledge and agree that PLURIBUS has set its prices and entered into this EULA and any Purchase Agreement or Purchase Order with you in reliance upon the disclaimers of warranty and the limitations of liability set forth herein, that the same reflect an allocation of risk between the parties (including the risk that a contract remedy may fail of its essential purpose and cause consequential loss), and that the same form an essential basis of the bargain between the parties.

12. The **Software** may contain or be delivered with one or more components, which may include third-party components, identified by Pluribus in the Documentation, readme.txt file, third-party click-accept or elsewhere (e.g. on www.pluribusnetworks.com) (the "Identified Component(s)") as being subject to different license agreement terms, disclaimers of warranties, limited warranties or other terms and conditions (collectively, "Additional Terms") than those set forth herein. You agree to the applicable Additional Terms for any such Identified Component(s).

12.1. Notwithstanding other statements in this EULA, third party software including free, Copyleft and open source software components (collectively referred to as "Third Party Software") are distributed in compliance with the particular licensing terms and conditions attributable to the Third Party Software. PLURIBUS provides the Third Party Software to You "AS IS" without any warranties or indemnities of any kind.

12.2. Copyright notices and licensing terms and conditions applicable to the Third Party Software will be available for review on the Pluribus' web site, and are included on the media on which you received the SOFTWARE within a "ATTRIBUTIONS" file (e.g., attributions.pdf or attributions.txt) included within the downloaded files, and/or reproduced within the materials or DOCUMENTATION accompanying the SOFTWARE.

13. **Audit**

13.1. PLURIBUS reserves the right to take steps PLURIBUS believes are reasonably necessary or appropriate to enforce and/or verify compliance with any part of this EULA. You agree that PLURIBUS has the right, without liability to you, to disclose any USAGE INFORMATION to law enforcement authorities, government officials, and/or a third party, as PLURIBUS believes is reasonably necessary or appropriate to enforce and/or verify compliance with any part of this EULA (including but not limited to PLURIBUS' right to cooperate with any legal process relating to your use of the SOFTWARE, and/or a third-party claim that your use of the SOFTWARE is unlawful and/or infringes such third party rights).

14. **General legal terms**

14.1. This EULA constitutes the whole legal agreement between you and PLURIBUS and governs your use of the SOFTWARE and DOCUMENTATION and completely replaces any prior agreements between you and PLURIBUS in relation to the SOFTWARE and DOCUMENTATION (but excluding any SOFTWARE and DOCUMENTATION which PLURIBUS may provide to you under a separate written agreement).

14.2. You agree that PLURIBUS may provide you with notices, including those regarding changes to this EULA, by email, regular mail, or via the user interface implemented by the SOFTWARE.

14.3. You agree that if PLURIBUS does not exercise or enforce any legal right or remedy which is contained in this EULA (or which PLURIBUS has the benefit of under any applicable law), this will not be taken to be a formal waiver of PLURIBUS' rights and that those rights or remedies will still be available to PLURIBUS.

14.4. If any court of law or arbitration panel, having the jurisdiction to decide on this matter, rules that any provision of this EULA is invalid, then that provision will be removed from this EULA without affecting the rest of this EULA. The remaining provisions of this EULA will continue to be valid and

enforceable.

14.5. You and PLURIBUS agree that this EULA, and your relationship with PLURIBUS under this EULA, shall be governed by the laws of the State of California without regard to its conflict of laws provisions.

14.6. The SOFTWARE and DOCUMENTATION is deemed to include "commercial computer software" and "commercial computer software documentation," respectively, pursuant to DFAR Section 227.7202 and FAR Section 12.212, as applicable. Any use, modification, reproduction, release, performance, display or disclosure of the SOFTWARE and DOCUMENTATION by the United States Government shall be governed solely by this EULA.

14.7. In the event that the Uniform Computer Information Transaction Act, any version thereof or a substantially similar law (collectively "UCITA") is enacted and/or interpreted as to be applicable to the performance of PLURIBUS under this Agreement, the statute shall not govern any aspect of this Purchase Agreement, any license granted hereunder, nor any of the rights and obligations of the parties pursuant to this EULA.

14.8. You agree that the SOFTWARE and DOCUMENTATION will not be shipped, transferred, or exported into any country or used in any manner prohibited by the United States Export Administration Act or any other exports laws, restrictions, or regulations. All rights to use the SOFTWARE and DOCUMENTATION are granted on condition that such rights are forfeited if you fail to comply with this EULA.

14.9. ANY CLAIM, DISPUTE, OR CONTROVERSY (WHETHER IN CONTRACT, TORT, OR OTHERWISE, WHETHER PREEXISTING, PRESENT OR FUTURE, AND INCLUDING STATUTORY, CONSUMER PROTECTION, COMMON LAW, INTENTIONAL TORT AND EQUITABLE CLAIMS) BETWEEN YOU AND PLURIBUS, its agents, employees, principals, successors, assigns, affiliates (collectively for purposes of this paragraph, "PLURIBUS") arising from or relating to this EULA, its interpretation, or the breach, termination or validity thereof, the relationships which result from this EULA (including, to the full extent permitted by applicable law, relationships with third parties who are not signatories to this Agreement) SHALL BE EXCLUSIVELY AND FINALLY SETTLED BY ARBITRATION. THE ARBITRATION SHALL BE HELD IN SANTA CLARA, CALIFORNIA AND CONDUCTED IN ACCORDANCE WITH THE COMMERCIAL ARBITRATION RULES OF THE AMERICAN ARBITRATION ASSOCIATION. THE ARBITRATION SHALL BE CONDUCTED BEFORE THREE ARBITRATORS, ONE SELECTED BY EACH OF THE PARTIES, AND THE THIRD SELECTED BY THE FIRST TWO ARBITRATORS. JUDGMENT UPON THE AWARD RENDERED MAY BE ENTERED IN ANY COURT HAVING JURISDICTION, OR APPLICATION MAY BE MADE TO SUCH COURT FOR JUDICIAL ACCEPTANCE OF THE AWARD AND IN ORDER OF ENFORCEMENT AS THE CASE MAY BE.

Glossary of Pluribus Networks' Netvisor ONE® and UNUM Terms

To review the Glossary, refer to the online *document*.

A Commands

aaa-tacacs-create

Use this command to configure TACACS+ services on a switch.

Syntax `aaa-tacacs-create`

`name` *`name-string`*	Specify the name for TACACS+ configuration. (up to 60 characters)
`scope fabric|local`	Specify the scope of TACACS+ configuration.
`server` *`server-string`*	Specify the TACACS+ server name. (up to 60 characters)
`port` *`port-number`*	Specify the TCACAS+ communication port. The default port is 49.
`secret` *`secret-string`*	Specify the shared secret (password) for TACACS+.
`timeout` *`timeout-number`*	Specify the number of seconds before communication times out. The default value is 10 seconds.
`priority` *`priority-number`*	Specify the priority for TACACS+. The priority can be 1 (highest) to X (lowest priority).
`authen|no-authen`	Specify to enable or disable the authentication.
`authen-local|no-authen-local`	Specify if the authentication overrides local users. The `no-authen-local` parameter overrides local users and gives them access while `authen-local` prevents local users from logging in.
`authen-method pap|chap|ms-chap`	Specify one among the authentication methods: PAP and CHAP (default). **Note:** Pluribus does not support MS-CHAP authentication method.
`sess-acct|no-sess-acct`	Specify to enable or disable session accounting.
`cmd-acct|no-cmd-acct`	Specify to enable or disable command accounting.
`acct-local|no-acct-local`	Specify to enable or disable accounting for local users.
`sess-author|no-sess-author`	Specify to enable or disable session authorization.
`cmd-author|no-cmd-author`	Specify to enable or disable command authorization.
`author-local|no-author-local`	Specify to enable or disable authorization for local users.
`service` *`service-string`*	Specify the service name used for TACACS+ requests sent from Netvisor ONE to the TACACS+ server for

	commands run at the Netvisor CLI and REST APIs. The default service is `shell`.
`service-shell` *`service-shell-string`*	Specify the TACACS+ service name string for shell commands.
`service-vtysh` *`service-vtysh-string`*	Specify the TACACS+ service name string for vtysh commands.

Defaults None.

Access CLI

History

Version 1.2.1	Command introduced.
Version 2.6.0	The parameters `acct-local`, `author-local`, `service`, `service-shell` and `service-vtysh` added.

Usage Use this command to allow a TACACS+ server authenticate and authorize clients on the network. TACACS+ can also provide accounting for sessions and commands.

Examples To create a TACACS+ account named `tac` having `local` scope with no local authentication privilege, use the command:

```
CLI (network-admin@switch) > aaa-tacacs-create name tac scope local server server1 authen-local
```

aaa-tacacs-delete

This command is used to delete a TACACS+ configuration.

Syntax `aaa-tacacs-delete name` *`name-string`*

`name` *`name-string`*	Specify the name for TACACS+ configuration.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Use this command to delete a TACACS+ configuration.

Examples To delete a TACACS+ configuration, use the following command:

```
CLI (network-admin@switch) > aaa-tacacs-delete name TACserver1
```

aaa-tacacs-modify

This command is used to modify a TACACS+ server configuration on the network.

Syntax `aaa-tacacs-modify`

`name` *`name-string`*	Specify the name for TACACS+ configuration. (up to 60 characters)
Specify one or more of the following options to modify:	
`scope fabric|local`	Specify the scope of TACACS+ configuration.
`server` *`server-string`*	Specify the TACACS+ server name. (up to 60 characters)
`port` *`port-number`*	Specify the TCACAS+ communication port. The default port is 49.
`secret` *`secret-string`*	Specify the shared secret (password) for TACACS+.
`timeout` *`timeout-number`*	Specify the number of seconds before communication times out. The default value is 10 seconds.
`priority` *`priority-number`*	Specify the priority for TACACS+. The priority can be 1 (highest) to X (lowest priority).
`authen|no-authen`	Specify to enable or disable the authentication.
`authen-local|no-authen-local`	Specify if the authentication overrides local users. The `no-authen-local` parameter overrides local users and gives them access while `authen-local` prevents local users from logging in.
`authen-method pap|chap|ms-chap`	Specify one among the authentication methods: PAP and CHAP (default). **Note:** Pluribus does not support MS-CHAP authentication method.
`sess-acct|no-sess-acct`	Specify to enable or disable session accounting.
`cmd-acct|no-cmd-acct`	Specify to enable or disable command accounting.
`acct-local|no-acct-local`	Specify to enable or disable accounting for local users.
`sess-author|no-sess-author`	Specify to enable or disable session authorization.
`cmd-author|no-cmd-author`	Specify to enable or disable command authorization.
`author-local|no-author-local`	Specify to enable or disable authorization for local users.
`service` *`service-string`*	Specify the service name used for TACACS+ requests sent from Netvisor ONE to the TACACS+ server for commands run at the Netvisor CLI and REST APIs.

	The default service is `shell`.
`service-shell` *`service-shell-string`*	Specify the TACACS+ service name string for shell commands.
`service-vtysh` *`service-vtysh-string`*	Specify the TACACS+ service name string for vtysh commands.

Defaults None.

Access CLI

History

Version 1.2.1	Command introduced.
Version 2.6.0	The parameters, `acct-local`, `author-local`, `service`, `service-shell`, and `service-vtysh`, added.

Usage Use this command to modify a TACACS+ server authenticate and authorize clients on the network. The TACACS+ can also provide accounting for sessions and commands.

Examples To modify the TACACS+ configuration, `TACserver1`, and change the secret password, to `m0nk3ys`, use the following command:

```
CLI (network-admin@switch) > aaa-tacacs-modify name TACserver1 secret @m0nk3ys
```

aaa-tacacs-show

Use this command to display the configuration parameters of the TACACS+ server.

Syntax `aaa-tacacs-show`

`name` *`name-string`*	Specifies the name of the TACACS+ service.
`scope fabric|local`	Specifies the scope to apply to the TACACS+ server.
`server` *`server-string`*	Specify the name of the TACACS+ server.
`port` *`port-number`*	Specifies the port that connects to the server.
`secret` *`secret-string`*	Specifies the secret (password) to access the server.
`timeout` *`timeout-number`*	Specifies the number of seconds for the server to time out a request. The default value is 10 seconds.
`priority` *`priority-number`*	Specifies the priority for the server. The priority can be 1 (highest) to X (lowest priority).
`authen|no-authen`	Specifies if the server authenticates clients on the network.
`authen-local|no-authen-local`	Specifies if the server authentication overrides the local users.
`authen-method pap|chap|ms-chap`	Specifies the authentication method for clients. PAP, CHAP, and MS-CHAP are supported methods.
`sess-acct|no-sess-acct`	Specifies if you use session accounting. The TACACS+ server is notified when a user logs in or out of the network.
`cmd-acct|no-cmd-acct`	Specifies if you use command accounting. The TACACS+ server is notified when ever a user, including the network administrator, runs a non-show command.
`acct-local|no-acct-local`	Specify accounting for local users
`sess-author|no-sess-author`	Specifies if you use session authorization. The TACACS+ server configured for session authorization determines if a user can initiate a session on the network after logging in.
`cmd-author|no-cmd-author`	Specifies if you use command authorization. The TACACS+ server determines if a user can run certain commands on the network.
`author-local|no-author-local`	Specify authorization for local users.
`timed-out yes|no`	Specifies if the server has timed out.
`error-start date/time:yyyy-mm-ddTHH:mm:ss`	Specifies the time of first error.

`num-errors num-errors-number`	Specifies the number of errors.
`errors-logged yes|no`	Specifies if the errors are logged or not.
`service` *`service-string`*	Specify the service name used for TACACS+ requests sent from Netvisor to the TACACS+ server for commands run at the Neetvisor CLI, and the Java, C, and REST APIs. The default value is `shell`.
`service-shell` *`service-shell-string`*	Specify the service name used for TACACS+ requests sent from Netvisor to the TACACS+ server for commands run from a UNIX shell.
`service-vtysh` *`service-vtysh-string`*	Specify the service name used for TACACS+ requests sent from Netvisor to the TACACS+ server for commands run from vtysh.

Defaults None.

Access CLI

History

Version 1.2.1	Command introduced.
Version 2.6.0	The parameters, `acct-local`, `author-local`, `service`, `service-shell`, and `service-vtysh`, added.

Usage Use this command to display information about a TACACS+ server

Examples To display the information about a TACACS+ server, use the following command:

```
CLI (network-admin@switch) > aaa-tacacs-show
name scope server   port timeout priority authen authen-local authen-method sess-acct cmd-acct acct-
local sess-author cmd-author author-local service service-shell service-vtysh
---- ----- ------- ---- ------- -------- ------ ------------ ------------- --------- --------
---------- ----------- ---------- ------------ ------- ------------- -------------
tac local server1 49   10      1        on     off          chap          on        off      off
    on          off        on           shell   unix-shell    vtysh-shell
```

aaa-tacacs-status

This command is used to display the status of the TACACS+ service.

Syntax `aaa-tacacs-status name` *`name-string`*

`name` *`name-string`*	Specify the name of the TACACS+ service.

Defaults None.

Access CLI

Usage Use this command to display TACACS+ status.

Examples To display the status of TACACS+ configuration, use the following command:

```
CLI (network-admin@switch) > aaa-tacacs-status name tac
name server  port priority status
---- ------- ---- -------- ------
tac  server1 49   1        up
```

access-list-create

This command creates an access list for the Router Advertisement (RA) Guard feature.

Syntax `access-list-create name` *`name-string`* `scope local|fabric`

`name` *`name-string`*	Specify a name for the access list.
`scope local|fabric`	Specify the scope for the access list.

Defaults None

Access Network Administrator.

History Command introduced in Version 3.0.0.

Usage Use this command to create an access list for RA Guard.

Examples To create an access list with the name, ra-guard-list, and the scope as fabric use the following syntax:

```
CLI (network-admin@switch) > access-list-create name ra-guard-list scope fabric
```

access-list-delete

This command deletes an access list for the Router Advertisement (RA) Guard feature.

Syntax `access-list-create name` *`name-string`*

`name` *`name-string`*	Specify a name for the access list.

Defaults None

Access Network Administrator.

History Command introduced in Version 3.0.0.

Usage Use this command to delete an access list for RA Guard.

Examples To delete an access list with the name, ra-guard-list , use the following syntax:

```
CLI (network-admin@switch) > access-list-delete name ra-guard-list
```

access-list-show

This command displays access lists for the Router Advertisement (RA) Guard feature.

Syntax `access-list-show name` *`name-string`* `scope local|fabric`

`name` *`name-string`*	Specify a name for the access list.
`scope local|fabric`	Specify the scope for the access list.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to display an access list for RA Guard.

Examples To display an access list with the name, ra-guard-list , use the following syntax:

```
CLI (network-admin@switch) > access-list-show name ra-guard-list

  switch   name            scope
  -------  -------------  -----
  Spine-1  ra-guard-list  local
```

access-list-ip-add

This command adds an IPv6 address to the access list for the Router Advertisement (RA) Guard feature.

Syntax `access-list-ip-add name` *`name-string`* `ip` *`ip-address`*

`name` *`name-string`*	Specify a name for the access list.
`ip` *`ip-address`*	Specify the IPv6 address associated with the access list.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to add an IPv6 IP address to an access list for RA Guard. .

Examples To add an IPv6 address to the access list, ra-guard-list, IPv6 address 2001:0db8:85a3:0000:0000:8a2e:0370:7334, use the following syntax:

```
CLI (network-admin@switch) > access-list-ip-add name ra-guard-list ip
2001:0db8:85a3:0000:0000:8a2e:0370:7334
```

access-list-ip-remove

This command removes an IPv6 address from the access list for the Router Advertisement (RA) Guard feature.

Syntax `access-list-ip-remove name` *`name-string`* `ip` *`ip-address`*

`name` *`name-string`*	Specify the name of the access list.
`ip` *`ip-address`*	Specify the IPv6 address to remove from the access list.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to add an IPv6 IP address to an access list for RA Guard

Examples To remove an IPv6 address to an access list with the name, ra-guard-list,IPv6 address 2001:0db8:85a3:0000:0000:8a2e:0370:7334, use the following syntax:

```
CLI (network-admin@switch) > access-list-ip-add name ra-guard-list ip
2001:0db8:85a3:0000:0000:8a2e:0370:7334
```

access-list-ip-show

This command displays access list IP addresses for the Router Advertisement (RA) Guard feature.

Syntax `access-list-ip-show name` *`name-string`* `ip` *`ip-address`*

`name` *`name-string`*	Specify a name for the access list.
`ip` *`ip-address`*	Specify the IPv6 address for the access list.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to display IP addresses assigned to an access list for RA Guard.

Examples To display an access list with the name, ra-guard-list , use the following syntax:

```
CLI (network-admin@switch) > access-list-ip-show  name  ra-guard-list

  switch      name             ip
  ----------  -------------   ----------------------------------------
  Spine-1          ra-guard-list   2001:0db8:85a3:0000:0000:8a2e:0370:7334
```

acl-ip-create

Use this command to create an IP address for an Access Control List (ACL). ACLs are rules that you apply to allow or deny access to hosts or IP addresses.

Syntax `acl-ip-create`

`name` *`name-string`*	Specify the name of the ACL.
`action` `permit | deny`	Specify the permission of the ACL as either permit or deny.
`scope` `local|fabric`	Specify the scope of the ACL.
Specify at least one of the following options:	
`src-ip` *`ip-address`*	Specify the source IP address of the ACL.
`src-ip-mask` *`netmask`*	Specify the source IP mask of the ACL.
`dst-ip` *`ip-address`*	Specify the destination IP address of the ACL.
`dst-ip-mask` *`netmask`*	Specify the destination IP mask of the ACL.
Then any of the following options:	
`proto [tcp|udp|icmp|igmp|ip|icmpv6`	Specify the protocol flag filter of the ACL.
`src-port` *`src-port-number`*	Specify the source port number.
`dst-port` *`dst-port-number`*	Specify the destination port number
`vnet` *`vnet-name`*	Specify the name of the vNET.
`bd` *`bridge-domain name`*	Specify the domain name of the bridge.
`vlan` *`vlan-id`*	Specify the VLAN to apply the ACL. This is a numeric value between 0 and 4095.
`port` *`port-number`*	If the scope is local, Specify the switch port of the ACL.

Defaults None

Access CLI

History

Version 1.2.	Command introduced.
Version 2.4	The option, `igmp`, added to the parameter, `protocol`.
Version 2.4.1	The parameter, `vnet`, added.

Usage IP ACLs can be used to filter network traffic. Use this command to create a new IP ACL.

Informational Note: The source or destination IP address/mask of 0.0.0.0/255.255.255.255 means any address. The source or destination IP address/mask of 208.74.182.229/0.0.0.0 is the same as “host 208.74.182.229”.

Examples This example shows how to create a fabric-wide ACL named MyWebACL allowing HTTP traffic (port 80) from any host to the web server with IP address 208.74.182.229.

```
CLI (network-admin@switch) > ip-acl-create name MyWebACL action permit scope fabric src-ip
0.0.0.0 src-msk 255.255.255.255 dst-ip 208.74.182.229 dst-msk 0.0.0.0 prot tcp src-port 80 dst-
port 80
```

acl-ip-delete

Use this command to delete an ACL from the network configuration.

Syntax `acl-ip-delete name` *`name-string`* `id`

`name` *`name-string`*	Specify the name of the ACL.
`id`	Specify the identifier assigned to the ACL.

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Deletes an ACL from the existing network configuration.

Examples To delete the ACL, `net-traffic`, use the following command:

```
CLI (network-admin@switch) > acl-ip-delete  net-traffic
```

acl-ip-modify

This command allows you to change an existing ACL rule on the switch.

Syntax `acl-ip-modify`

`name` *`name-string`*	Specifies the name of the ACL.
`id` *`id`*	Specifies the ID assigned by ONVL to the ACL.
The following parameter is optional:	
`action permit | deny`	Specifies the permission of the ACL to be either permit or deny.
`src-ip` *`ip-address`*	Specifies the source IP address of the ACL.
`src-ip-mask` *`netmask`*	Specifies the source IP mask of the ACL.
`dst-ip` *`ip-address`*	Specifies the destination IP address of the ACL.
`dst-ip-mask` *`netmask`*	Specifies the destination IP mask of the ACL.
Then any of the following options:	
`proto [tcp|udp|icmp| igmp|ip|icmpv6]`	Specifies the protocol flag filter of the ACL.
`src-port` *`src-port-number`*	Specifies the source port number.
`dst-port` *`dst-port-number`*	Specifies the destination port number
`vnet` *`vnet-name`*	Specify the name of the vNET.
`bd` *`bridge-domain name`*	Specify the domain name of the bridge.
`vlan` *`vlan-id`*	Specifies the VLAN to apply the ACL. This is a numeric value between 0-4095.
`port` *`port-number`*`]`	If the scope is local, specifies the switch port of the ACL.

Defaults None.

Access network-admin

History

Version 1.2	Command introduced.
Version 2.3.0	Added the parameters to modify the ACL.
Version 2.4	The option, `igmp`, added to the parameter, `protocol`.

Version 2.4.1	The parameter, `vnet`, added.

Usage Use this command to modify an existing IP ACL.

Informational Note: The source or destination IP address/mask of 0.0.0.0/255.255.255.255 means any address. The source or destination IP address/mask of 208.74.182.229/0.0.0.0 is the same as "host 208.74.182.229".

Examples To modify the ACL, `net-traffic`, from `deny` to `permit`, use the following command:

```
CLI (network-admin@switch) > acl-ip-modify net-traffic action permit
```

acl-ip-show

Use this command to display information about ACLs configured on the switch.

Syntax `acl-ip-show`

`name` *`name-string`*	Specifies the name of the ACL.
`id`	Species the ID assigned to the ACL.
`action` `permit | deny`	Specifies the permission of the ACL to be either permit or deny.
`scope` `local|fabric`	Specifies the scope of the ACL.
`src-ip` *`ip-address`*	Specifies the source IP address of the ACL.
`src-ip-mask` *`netmask`*	Specifies the source IP mask of the ACL.
`dst-ip` *`ip-address`*	Specifies the destination IP address of the ACL.
`dst-ip-mask` *`netmask`*	Specifies the destination IP mask of the ACL.
`protocol [tcp|udp|icmp|igmp|ip|icmpv6`	Specifies the protocol flag filter of the ACL.
`src-port` *`src-port-number`*`]`	Specifies the source port number.
`dst-port` *`dst-port-number`*	Specifies the destination port number
`vnet` *`vnet-name`*	Specify the name of the vNET.
`bd` *`bridge-domain name`*	Specify the bridge domain name assigned to the ACL.
`vlan` *`vlan-id`*	Specifies the VLAN (0-4095) to apply the ACL.
`port` *`port-number`*	If the scope is local, specifies the switch port of the ACL.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.3.0	Added the parameters to modify the ACL.
Version 2.4	The option, `igmp`, added to the parameter, `protocol`.
Version 2.4.1	The parameter, `vnet`, added.

Usage Displays the list of IP ACLS in the configuration. .

Informational Note: The source or destination IP address/mask of 0.0.0.0/255.255.255.255 means any address. The source or destination IP address/mask of 208.74.182.229/0.0.0.0 is the same as “host 208.74.182.229”.

Examples This example shows how to display all IP ACLs.

```
CLI (network-admin@switch) > acl-ip-show

name  id  action  prot  sip  smsk  sprt  dip  dmsk  dprt  vlan  scope  unit  slot  p
ort

test1 54147812341841995 deny udp 192.192.100.100 0.0.0.0 20 192.168.1.100

0.0.0.0 40 0 local 0 0 0


test2 54147812341841996 deny udp 192.192.100.100 0.255.255.255 20

192.168.1.100 0.0.255.255 40 0 local 0 0 0
```

acl-mac-create

This command is used to create Access Control Lists (ACLs) based on MAC addresses.

Syntax `acl-mac-create`

`name` *`name-string`*	Specifies the name of the ACL.
`action permit|deny`	Specifies the permission of the ACL to be either permit or deny.
`src-mac` *`mac-address`*	Specifies the source MAC address of the ACL. The value can be any to match all MAC addresses
`src-mac-mask` *`mac-address`*	Specifies the source MAC address mask.
`dst-mac` *`mac-address`*	Specifies the destination MAC address of the ACL. The value can be any to match all MAC addresses.
`dst-mac-mask` *`mac-address`*	Specifies the destination MAC address mask.
`ether-type ipv4|arp|wake|rarp|vlan|ipv6|lacp|mpls-uni|mpls-multi|jumbo|dot1X|aoe|lldp|qinq|macsec|ecp|ptp|fcoe|fcoe-init|qinq-old`	Specifies the EtherType value.
`vnet` *`vnet-name`*	Specify the name of the vNET.
`bd bridge-domain name`	Specify the bridge domain name assigned to the ACL.
`vlan` *`vlan-id`*	Specifies the VLAN identifier, a value between 0-4095.
`scope local|fabric`	Specifies the scope of the ACL.
`port` *`port-number`*	Specifies the switch port number.

Defaults None

Access CLI

History

Version 1.2.1	Command introduced.
Version 2.4.1	The parameter, `vnet`, added.

Usage MAC access control lists (ACLs) can be used to filter network traffic. This command creates a new ACL.

Examples This example shows how to create a fabric-wide ACL named `MyMacACL` allowing IPv4 traffic from the host with the MAC address `e0:f8:47:14:3c:2e` to any host.

```
CLI (network-admin@switch) > mac-acl-create name MyMacACL action permit scope fabric src
```

```
e0:f8:47:14:3c:2e dst any type ipv4
```

acl-mac-delete

This command is used to delete an existing MAC ACL from the switch.

Syntax `acl-mac-delete name` *`name-string`* `id` *`acl-id`*

`name` *`string`*	Specify the name of the ACL to delete.
`id` *`acl-id`*	Specify the ACL identifier. This is automatically generated by ONVL.

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage MAC access control lists (ACLs) can be used to filter network traffic. This command deletes an existing MAC ACL.

Examples To delete the MAC ACL named `MyMacACL`, use the following command:

```
CLI (network-admin@switch) > acl-mac-delete name MyMacACL
```

acl-mac-modify

This command is used to modify Access Control Lists (ACLs) based on MAC addresses.

Syntax `acl-mac-modify name` *`name-string`*

Defaults

`name name` *`string`*	Specifies the name of the ACL.
`id`	Specifies the ID associated with the ACL.
Specify one or more of the following options:	
`action permit|deny`	Specifies the permission of the ACL to be either permit or deny.
`src-mac` *`mac-address`*	Specifies the source MAC address of the ACL. The value can be any to match all MAC addresses
`src-mac-mask` *`mac-address`*	Specifies the source MAC address mask.
`dst-mac` *`mac-address`*	Specifies the destination MAC address of the ACL. The value can be any to match all MAC addresses.
`dst-mac-mask` *`mac-address`*	Specifies the destination MAC address mask.
`ether-type ipv4|arp|wake|rarp|vlan|ipv6|mpls-uni|mpls-multi|jumbo|aoe|dot1X|lldp|lacp|ecp|macsec|ptp|fcoe|fcoe-init|qinq-old`	Specifies the EtherType value.
`vnet` *`vnet-name`*	Specify the name of the vNET.
`bd bridge-domain name`	Specifies the bridge domain name assigned to the ACL
`vlan` *`vlan-id`*	Specifies the VLAN identifier.
`scope local|fabric|cluster`	Specifies the scope of the ACL.
`port` *`port-number`*	Specifies the switch port number.

Defaults None

Access CLI

History

Version 1.2.1	Command introduced.
Version 2.4.1	The parameter, `vnet`, added.
Version 2.5.2	The parameter, `scope local|fabric|`

	`cluster`,deprecated.

Usage MAC access control lists (ACLs) can be used to filter network traffic. This command modifies a new ACL.

Examples This example shows how to modify a fabric-wide ACL named `MyMacACL` allowing IPv4 traffic from the host with the MAC address `e0:f8:47:14:3c:2e` to any host.

```
CLI (network-admin@switch) > mac-acl-modify name MyMacACL action permit scope fabric src
e0:f8:47:14:3c:2e dst any type ipv4
```

acl-mac-show

Displays information about the ACLs using MAC addresses as a parameter.

Syntax `acl-mac-show`

`name` *`name-string`*	Specifies the name of the ACL.
`id`	Specifies the ID generated by ONVL.
`action permit|deny`	Specifies the permission of the ACL to be either permit or deny.
`src-mac` *`mac-address`*	Specifies the source MAC address of the ACL. The value can be any to match all MAC addresses
`src-mac-mask` *`mac-address`*	Specifies the source MAC address mask.
`dst-mac` *`mac-address`*	Specifies the destination MAC address of the ACL. The value can be any to match all MAC addresses.
`dst-mac-mask` *`mac-address`*	Specifies the destination MAC address mask.
`ether-type ipv4|arp|wake|rarp|vlan|ipv6|mpls-uni|mpls-multi|jumbo|aoe|dot1X|lldp|lacp|ecp|macsec|ptp|fcoe|fcoe-init||qinq-old`	Specifies the EtherType value.
`vnet` *`vnet-name`*	Specify the name of the vNET.
`bd` *`bridge-domain name`*	Specify the bridge domain name assigned to the ACL.
`vlan` *`vlan-id`*	Specifies the VLAN identifier, a value between 0-4095.
`scope local|fabric`	Specifies the scope of the ACL.
`port` *`port-number`*	Specifies the switch port number.

Defaults None

Access CLI

History

Version 1.2.1	Command introduced.
Version 2.4.1	The parameter, `vnet`, added.
Version 2.5.2	The parameter, `cluster`,deprecated.

Usage MAC access control lists (ACLs) filter network traffic. This command displays a list of MAC ACLs.

Examples This example shows how to list all MAC ACLs.

```
CLI (network-admin@switch) > acl-mac-show

name      id               action  src                dst  type              vlan  scope  port
--------  ---------------  ------  -----------------  ---------------------  -----  -----  ----
MyMacACl 54147812341841957 deny    e0:f8:47:14:3c:2e ff:ff:ff:ff:ff:ffipv4   0     local  0
```

admin-service-modify

This command is used to modify the services on the switch.

Syntax `admin-service-modify`

`if` *`if-string`*	Specify the interface to modify.
Specify one or more of the following options:	
`ssh|no-ssh`	Specify if you want to connect to the switch using Secure Shell (SSH).
`nfs|no-nfs`	Specify if you want to use Network Files System (NFS) for the admin service.
`web|no-web`	Specify if you want to enable Web management.
`web-ssl|` `no-web-ssl`	Specify if you want to use SSL and certificates for Web services.
`web-ssl-port` *`web-ssl-port-number`*	Specify the Web SSL port.
`web-port` *`web-port-number`*	Specify the port for Web management.
`web-log|no-web-log`	Specify if you want to turn on or off Web logging.
`snmp|no-snmp`	Specify if SNMP is allowed as a service.
`net-api|no-net-api`	Specify if APIs are allowed as a service.
`icmp|no-icmp`	Specify if Internet Control Message Protocol (ICMP) is allowed as a service.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 3.0.0	The parameter, `web-log|no-web-log`, added.

Usage Use this command to modify the administrative services on the switch.

Examples To modify the admin service to enable SNMP, use the following command:

```
CLI (network-admin@switch) > admin-service-modify if eth.0 scope fabric snmp
```

admin-service-show

This command is used to display information about admin services configuration.

Syntax `admin-service-show`

`if` *`if-string`*	Specifies the interface.
`ssh|no-ssh`	Specifies if the switch is running Secure Shell (SSH) as a service.
`nfs|no-nfs`	Specifies if the switch is running Network File System (NFS) as a service.
`web|no-web`	Specifies if Web is running as a service.
`web-ssl|no-web-ssl`	Specifies if SSL and certificates are used for Web services.
`web-ssl-port` *`web-ssl-port-number`*	Specifies the Web SSL port.
`web-port` *`web-port-number`*	Specifies the port for Web management.
`web-log|no-web-log`	Specify if you want to turn on or off Web logging.
`snmp|no-snmp`	Specifies if SNMP is running as a service.
`net-api|no-net-api`	Specifies if APIs are running as a service.
`icmp|no-icmp`	Specifies if Internet Control Message Protocol (ICMP) is running as a service.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 3.0.0	The parameter, `web-log|no-web-log`, added.

Usage Use this command to display information about admin services on the switch.

Examples To display admin service information, use the following command:

```
CLI (network-admin@switch) > admin-service-show

switch      if   ssh nfs web web-ssl web-ssl-port web-port web-log snmp net-api icmp
----------- ---- --- --- --- ------- ------------ -------- ------- ---- ------- ----
draco-dev01 mgmt on  on  on  off     443          80       off     off  on      on
draco-dev01 data on  on  on  off     443          80       off     off  on      on
```

admin-session-timeout-modify

Modify administrator timeouts for login sessions.

Syntax `admin-session-timeout-modify timeout duration:#d#h#m#s`

`timeout duration:#d#h#m#s`	Configure the maximum time to wait for user activity before terminating the login session.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to configure administrator session timeouts.

Examples To set the session timeout to five minutes, use the following syntax:

```
CLI (network-admin@switch) > admin-session-timout-modify timeout 5m
```

admin-session-timeout-show

Display the session timeout for administrator sessions.

Syntax `admin-session-timeout-show`

`timeout duration:#d#h#m#s`	Configure the maximum time to wait for user activity before terminating the login session.

Defaults None

Access Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to display administrator sessions timeouts.

Examples To display the session timeout, use the following syntax:

```
CLI (network-admin@switch) > admin-session-timeout-show
```

admin-sftp-modify

This command allows you to modify SFTP functionality for the network administrator.

Syntax `admin-sftp-modify`

`enable|disable`	Specify whether to enable or disable SFTP.
Between 0 and 1 of the following options:	
`minimum-pw-length` *6..65*	Specifies the minimum password length for SFTP account.

Defaults Disabled.

Access CLI

History

Version 1.2	Command introduced.
Version 7.0.0	The parameter `minimum-pw-length` added.

Usage Use this command to enable or disable secure file transport protocol (SFTP).

Examples To enable SFTP, use the following command:

```
CLI (network-admin@switch) > admin-sftp-modify  enable

  sftp  password:
  Enter  a  password  for  the  SFTP  server.
```

admin-sftp-show

This command allows you to display SFTP functionality for the administrator.

Syntax `admin-sftp-show`

Defaults None

Access CLI

History Command introduced in Version 1.2.

Usage Use this command to display SFTP functionality on the switch.

Examples Use the following command to display SFTP,

```
CLI (network-admin@switch) > admin-sftp-show

  switch:            leo-norma2
  sftp-user:         sftp
  enable:            yes
```

admin-syslog-create

This command is used to create the scope and other parameters of syslog event collection.

Syntax `admin-syslog-create`

name *name-string*
scope local|fabric
host *host-string*
port *port-number*
transport tcp-tls|udp
message-format structured|legacy

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.5	The parameter, `transport`, added.

Usage Used to create a syslog file.

Examples To create the syslog file, `engoct12`, with the scope `local` on port `24` and message format `structured`, use the following command:

```
CLI (network-admin@switch) > admin-syslog-create name engoct12 scope local port 24 message-
format structured
```

admin-syslog-delete

This command is used to delete a syslog from the configuration.

Syntax `admin-syslog-delete`

name *name-string*

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.

Usage Used to delete a syslog file.

Examples To delete the syslog file, `eng-local`, use the following command:

```
CLI (network-admin@switch) > admin-syslog-delete  eng-local
```

admin-syslog-modify

This command is used to modify the scope and other parameters of syslog event collection.

Syntax `admin-syslog-modify`

`name` *`name-string`*
Specify one or more of the following options:
`scope local|fabric`
`host` *`host-string`*
`port` *`port-number`*
`transport tcp-tls|udp`
`message-format structured|legacy`

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.5	The parameter, `transport`, added.

Usage Used to modify an existing syslog file.

Examples To modify the port from port 24 to port 83 for syslog file, `engoct12`, use the following command:

```
CLI (network-admin@switch) > admin-syslog-modify name engoct12 port 83
```

admin-syslog-show

This command is used to display parameters about a syslog file.

Syntax `admin-syslog-show`

`name` *`name-string`*	Specifies the name of the syslog file.
`scope local|fabric`	Specifies the scope of the syslog file.
`host` *`host-string`*	Specifies the host for the syslog file.
`port` *`port-number`*	Specifies the port for the syslog file.
`transport tcp-tls|udp`	The type of transport for log events - `tcp/tls` or `udp`
`message-format structured|legacy`	Specifies the message format for the syslog file.
`status` *`status-string`*	Specifies the syslog export status

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.5	The parameter, `transport`, added.

Usage Use this command to display information about a syslog file.

Examples Use this command to display administrative log information.

```
CLI (network-admin@switch) > admin-syslog-show

  switch    name    scope host      port message-format
  -------- ------ ----- -------- ---- --------------
  pubdev01 syslog local pubdev01 25    legacy
```

admin-syslog-match-add

This command is used to add a syslog event match filter for sending selective logs to the syslog server.

Syntax `admin-syslog-match-add`

`syslog-name` *`name-string`*	Specify the name of the syslog file.
Specify the following match arguments:	
`name` *`name-string`*	Specify a name for the matching scheme.
Specify any of the following options:	
`msg-category event|audit|system|perror|container|os-logs|xact-truncate`	Specify one among the options as the category of the message to match.
`msg-program program-string`	Specify the name of the program used to generate the log messages.
`msg-name` *`name-string`*	Specify the name of the message to match.
`msg-code` *`code-number`*	Specify the message code to match.
`msg-level critical|error|warn|note|info`	Specify one among the options as the severity level to match. By default, all messages are forwarded to the syslog server.
`msg-event-type system|port|tcp|stp|igmp|lldp|lacp|vdp|ecp|evb|ptp|storage|tacacs|mld|mroute|vport|lacp-port-event`	Specify the type of event to match.
`msg-vnet` *`vnet-name`*	Specify the vNET name to match.
`msg-remote_switch` *`node-name`*	Specify the remote switch to match.
`msg-user` *`user-name`*	Specify user name to match.
`msg-client-addr ip-address`	Specify the client IP address.
`msg-port` *`port-number`*	Specify the port number to match.
`msg-vlan` *`0..4095`*	Specify the VLAN to match.
`msg-bd` *`bridge-domain-name`*	Specify the bridge domain to match.
`msg-vxlan` *`vxlan-ID`*	Specify the VXLAN to match.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.3.3	The parameter, `vport`, added to message event

	type.
Version 6.0.0	The parameter, info, added to msg-level.

Usage Use this command to create a syslog event match filter.

Examples To create a filter to send the log messages of message-level critical to the syslog server, use the following command:

```
CLI (network-admin@switch) > admin-syslog-match-add syslog-name log1 msg-level critical
```

admin-syslog-match-modify

This command is used to modify a syslog event match filter for sending selective logs to the syslog server.

Syntax `admin-syslog-match-modify`

`syslog-name` *`name-string`*	Specify the name of the syslog file.
Specify the following match arguments:	
`name` *`name-string`*	Specify a name for the matching scheme.
Specify any of the following options:	
`msg-category event|audit|system|perror|container|os-logs|xact-truncate`	Specify one among the options as the category of the message to match.
`msg-program program-string`	Specify the name of the program used to generate the log messages.
`msg-name` *`name-string`*	Specify the name of the message to match.
`msg-code` *`code-number`*	Specify the message code to match.
`msg-level critical|error|warn|note|info`	Specify one among the options as the severity level to match. By default, all messages are forwarded to the syslog server.
`msg-event-type system|port|tcp|stp|igmp|lldp|lacp|vdp|ecp|evb|ptp|storage|tacacs|mld|mroute|vport|lacp-port-event`	Specify the type of event to match.
`msg-vnet` *`vnet-name`*	Specify the vNET name to match.
`msg-remote_switch` *`node-name`*	Specify the remote switch to match.
`msg-user` *`user-name`*	Specify user name to match.
`msg-client-addr ip-address`	Specify the client IP address.
`msg-port` *`port-number`*	Specify the port number to match.
`msg-vlan` *`0..4095`*	Specify the VLAN to match.
`msg-bd` *`bridge-domain-name`*	Specify the bridge domain to match.
`msg-vxlan` *`vxlan-ID`*	Specify the VXLAN to match.

Access CLI

History

Version 1.2	Command introduced.
Version 2.3.3	The parameter, `vport`, added to message event

	type.
Version 6.0.0	The parameter, `info`, added to `msg-level`.

Usage Use this command to modify a syslog match filter

Examples To modify the syslog match filter to capture messages with the level `critical`, use the following command:

```
CLI (network-admin@switch) > admin-syslog-match-modify syslog-name log1 msg-level critical
```

admin-syslog-match-remove

This command is used to remove a syslog match filter.

Syntax `admin-syslog-match-remove`

`syslog-name` *`name-string`*	The name of the syslog match filter.
Specify the following match arguments:	
`name` *`name-string`*	Specify the name of the match filter

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.

Usage Use this command to remove a syslog match filter.

Examples To remove the syslog match filter, june2012, use the following command:

```
CLI (network-admin@switch) > admin-syslog-match-remove  june2012
```

admin-syslog-match-show

This command is used to display sylog match filters.

Syntax `admin-syslog-match-show`

`syslog-name` *`name-string`*	The name of the syslog file.
Specify the following match arguments:	
`msg-category event|audit|session|system|perror|container|os-logs|xact-truncate`	Category of the message.
`msg-program program-string`	Name of the program used to generate the log messages.
`msg-pid pid-number`	The product ID generating log messages.
`msg-name` *`name-string`*	The name of the message.
`msg-code` *`code-number`*	The message code.
`msg-level critical|error|warn|note|info`	The message severity level.
`msg-event-type systm|port|tcp|stp|igmp|lldp|lacp|vdp|ecp|evb|ptp|storage|tacacs|mld|mroute|vport|lacp-port-event`	The type of log event.
`msg-vnet` *`vnet-name`*	The name of the vNET.
`msg-remote_switch` *`node-name`*	The name of the remote switch.
`msg-user` *`user-name`*	Displays the user name.
`msg-client-pid client-pid-number`	The product ID to match.
`msg-client-addr ip-address`	The client IP address to match.
`msg-port` *`port-number`*	The port to match.
`msg-vlan 0..4095`	VLAN to match.
`msg-bd` *`bridge-domain name`*	Bridge Domain to match.
`msg-vxlan vxlan-string`	VXLAN to match.
`msg-start-time date/time:` *`yyyy-mm-`*	The start time of the messages.

ddThh:mm:ss	
msg-end-time date/time: *yyyy-mm-ddThh:mm:ss*	The end time of the messages.
msg-duration duration: *#d#h#m#s*	The duration of the messages.
msg-count *number*	The message count from 1 to 50000.
msg-starting-point *starting-point-number*	Message starting point to match
msg-length *length-number*	Message length to match
msg-reverse|no-msg-reverse	Reverse the order of the messages.
msg-since-last-reset|no-msg-since-last-reset	Messages since the log reset.
name *name-string*	Name of the matching scheme.
set facility kern|user|mail|daemon|auth|syslog|lpr|news|uucp|clock|security|ftp|ntp|audit|alert|cron|local0|local1|local2|local3|local4|local5|local6|local7|0..23	The facility type.
set severity emerg|alert|crit|err|warning|notice|info|debug|0..7	The severity of the event to match or add.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.3.3	The parameter, `vport`, added to message event type.
Version 6.0.0	The parameter, `info`, added to `msg-level`.

Usage Use this command to display syslog match filters.

Examples To display the syslog match configuration, use the following command:

```
CLI (network-admin@Leaf1) > admin-syslog-match-show

syslog-name    msg-category msg-level name
-------------- ------------ --------- -------
to-10.10.10.10 event                  match-1
```

api-install

This command is used to install Netvisor OS on a Linux platform and use the API associated features.

Syntax `api-install linux-host` *`linux-host-string`* `user` *`user-string`*

`linux-host` *`linux-host-string`*	Specify the name of the Linux host.
`user` *`user-string`*	Specify the user login for the Linux host.

Defaults None

Access CLI

History Command introduced in Version 2.2.

Usage Use this command to install the nvOS or ONVL API on a Linux platform.

Examples To install the nvOS or ONVL API on the Linux host, `centos-root`, and the user `root`, use the following syntax:

```
CLI (network-admin@switch) > api-install linux-host centos-server user root
```

alert-show

This command is used to display alerts for system issues.

Syntax `alert-show [level critical]`

`level critical`	Specifies the alert level.

Defaults None

Access CLI

History Command introduced in Version 2.5.4

Usage The following are the possible outputs for the `alert-show` command:

- ```
  CLI (network-admin@switch) > alert-show
  STP bridge ID conflict on ports, change bridge ID to resolve
  ```
- ```
  CLI (network-admin@switch) > alert-show
  There are more vflows than HW resource available. Some vflows have been
  disabled. Remove vflows from config.
  ```
- ```
  CLI (network-admin@switch) > alert-show
  Inconsistent vlag config with peer for port, delete and recreate vlag
  ```
- ```
  CLI (network-admin@switch) > alert-show
  TACACS+ authorization is disabled due to repeated TACACS+ server errors
  ```
- ```
  CLI (network-admin@switch) > alert-show
  Cluster ports are not part of a trunk, create one or disable extra
  port(s)
  ```
  ```

B Commands

bezel-portmap-show

This port is used to display physical to logical port mapping on the Dell platform. All port are 40G ports that can be split into 4 logical 10G ports.

Syntax `bezel-portmap-show port port bezel-intf number`

`port` *`port`*	Specify a logical port.
`bezel-intf` *`number`*	Specify an interface number.

Defaults None

Access network-admin

Usage Use this command to display the physical to logical port mapping on a Dell platform.

Examples To display port mapping on the Dell platform, use the following syntax:

```
CLI (network-admin@switch) > bezel-portmap-show
switch   port  bezel-intf
-------  ----  ----------
s6000-2  1      1
s6000-2  2      1.2
s6000-2  3      1.3
s6000-2  4      1.4
s6000-2  5      2
s6000-2  6      3
s6000-2  7      3.2
s6000-2  8      3.3
s6000-2  9      3.4
s6000-2  10     4
s6000-2  11     5
s6000-2  12     5.2
s6000-2  13     5.3
s6000-2  14     5.4
s6000-2  15     6
s6000-2  16     7
s6000-2  17     7.2
s6000-2  18     7.3
s6000-2  19     7.4
```

From the output above, you can determine that port 1 has no cables connected to it. However port 2, has a 40G cable connected to another switch on the network. This is indicated by a single port number instead of 4 port numbers.

bootenv-activate-and-reboot

This command allows you to activate a boot environment and reboot it.

Syntax `bootenv-activate-and-reboot name` *`name-string`* *g* `apply-current-config|no-apply-current-confi`

`name` *`name-string`*	The name of the boot environment to activate.
`apply-current-config|no-apply-current-config`	Specify if you want to apply the current configuration after rebooting the switch.

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Use this command to activate a boot environment.

Examples To activate an environment called, `backup`, and reboot it, use the following command:

```
CLI (network-admin@switch) > bootenv-activate-and-reboot  name  backup
```

bootenv-delete

This command is used to delete a boot environment from the switch.

Syntax `bootenv-delete name` *`name-string`*

`name` *`name-string`*	The name of the boot environment to delete.

Defaults None

Access CLI.

History Command introduced in nvOS Version 1.2.1.

Usage Use the command to remove stale boot environments from the platform.

Examples To delete the boot environment, **local-boot**, use the following command:

```
CLI (network-admin@switch) > bootenv-delete  local-boot
```

bootenv-show

Display information about the boot environment.

Syntax `bootenv-show`

`name` *`name-string`*	Specifies the name of the boot environment.
`version` *`version-string`*	Specifies the version of the boot environment.
`current yes|no`	Specifies if the named boot environment is the current boot environment.
`reboot yes|no`	Specifies if the boot environment is set to reboot.
`apply-current-config|no-apply-current-config`	Specify if you want to apply the current configuration after rebooting the switch.

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Used to display configured information about the boot environment.

Examples To display the boot environment, local-copy, in the format layout horizontal, use the following command:

```
CLI (network-admin@switch) > bootenv-show name local-copy layout horizontal

  name        version    current reboot space created
  ----------- ---------- ------- ------ ----- --------------
  ONVL-13 -              no      no     17.6M 03-19,13:54:51
  ONVL-14 2.3.0-6795     yes     yes    19.8G 03-23,10:47:53
```

bridge-domain-create

A bridge domain is a set of logical ports that share the same flooding or broadcast characteristics. This command creates a bridge domain.

Syntax `bridge-domain-create`

`name` *`name-string`*	Specify the name for the bridge domain.
`scope` *`local|cluster|fabric`*	Specify the bridge domain scope.
Specify any of the following options:	
`vnet` *`vnet name`*	vNET for this Bridge Domain.
`vxlan` *`0..16777215`*	Specify the VXLAN identifier for the tunnel.
`auto-vxlan|no-auto-vxlan`	Specify the options to automatically assign VXLAN and/or assign to VTEPs.
`description` *`description-string`*	Add a bridge domain description.
`rsvd-vlan` *`1..4093`*	Specify the fabric reserved VLAN for cluster switches for bridge domain.
`local-rsvd-vlan` *`1..4093`*	Specify the local reserved VLAN for cluster switches for bridge domain.
`vxlan-inner-packet auto|remove-tags| transparent`	Preserve original Ethernet header inside the VXLAN tunnel.
`mac-learning|no-mac-learning`	Specify if you want to enable or disable MAC address learning.
`l2-tunneling` `none|lldp|stp|lacp|all`	Enable L2 tunneling on this bridge domain. You can tunnel LLDP, STP, and LACP packets by specifying the corresponding keywords.

Defaults None

History

Version 5.2.0	Command introduced.
Version 6.0.0	The parameter, `mac-learning`, added.
Version 6.1.1	The parameter `l2-tunneling` added.

Usage Use this command to create a bridge domain.

Examples To create a bridge domain with the name bd100 and cluster scope, use the command:

```
CLI (network-admin@switch) > bridge-domain-create name bd100 scope
cluster
```

bridge-domain-modify

A bridge domain is a set of logical ports that share the same flooding or broadcast characteristics. This command modifies a bridge domain.

Syntax `bridge-domain-modify`

`name` *`name-string`*	Specify the name for the bridge domain.
Specify any of the following options:	
`rsvd-vlan` *`1..4093`*	Specify the fabric reserved VLAN for cluster switches for bridge domain.
`local-rsvd-vlan` *`1..4093`*	Specify the local reserved VLAN for cluster switches for bridge domain.
`vnet` *`vnet-name`*	Specify the vNET for this bridge domain.
`description` *`description-string`*	Modify the description for the bridge domain.
`mac-learning|no-mac-learning`	Enable or disable MAC address learning.
`vxlan-inner-packet auto|remove-tags| transparent`	Preserve original Ethernet header inside the VXLAN tunnel
`l2-tunneling` `none|lldp|stp|lacp|all`	Modify L2 tunneling on this bridge domain. You can tunnel LLDP, STP, and LACP packets by specifying the corresponding keywords.

Defaults None

History

Version 5.2.0	Command introduced.
Version 6.0.0	The parameter `mac-learning` added.
Version 6.1.1	The parameter `l2-tunneling` added.

Usage Use this command to modify a bridge domain.

Examples To modify the reserved vlan to 25 and the description to main for the bridge domain bd200, use the command:

```
CLI (network-admin@switch) > bridge-domain-modify name bd200 rsvd-vlan
25 description main
```

bridge-domain-delete

A bridge domain is a set of logical ports that share the same flooding or broadcast characteristics. This command deletes a bridge domain.

Syntax `bridge-domain-delete`

name *name-string*	Specify the name of the bridge domain.

Defaults None

History Command introduced in nvOS version 5.2.0

Usage Use this command to delete a bridge domain.

Examples The command below deletes the bridge domain bd200

```
CLI (network-admin@switch) > bridge-domain-delete name bd200
```

bridge-domain-show

A bridge domain is a set of logical ports that share the same flooding or broadcast characteristics. This command displays the bridge domain details.

Syntax `bridge-domain-show`

`name` *`name-string`*	Specify the name for the bridge domain.
`vnet` *`vnet-name`*	Specify the vNET for the bridge domain.
`scope` *`local|cluster|fabric`*	Specify the bridge domain scope.
`vxlan` *`0..16777215`*	Specify the VXLAN identifier for the tunnel.
`auto-vxlan|no-auto-vxlan`	Specify the options to automatically assign VXLAN and/or assign to VTEPs.
`hw-vpn` *`hw-vpn-number`*	Specify the hardware VPN number.
`hw-mcast-group` *`hw-mcast-group-number`*	Specify the hardware multicast group.
`description` *`description-string`*	Sepcify the bridge domain description.
`rsvd-vlan` *`1..4093`*	Specify the fabric reserved VLAN for cluster switches for bridge domain.
`local-rsvd-vlan` *`1..4093`*	Specify the local reserved VLAN for cluster switches for bridge domain.
`net-id` *`0..12287`*	Specify the bridge domain ID.
`peer-net-id` *`0..12287`*	Specify the peer network ID.
`active yes|no`	Specify the bridge domain active status.
`ports` *`port-list`*	Specify the ports assigned to the bridge domain.
`vxlan-inner-packet auto|remove-tags| transparent`	Preserve original Ethernet header inside the VXLAN tunnel.
`cluster-name` *`cluster-name-string`*	Specify the cluster that needs to use the internal VLANs.
`qinq_rsvd_vlan` *`0..4095`*	Specify the running reserved VLAN for cluster switches for bridge domain.
`mac-learning|no-mac-learning`	Specify if MAC address learning is enabled or disabled.
`l2-tunneling none|lldp|stp|lacp|all`	Specify the status of L2 tunneling on the bridge domain.

Defaults None

History

Version 5.2.0	Command introduced.
Version 6.0.0	The parameter `mac-learning` added.
Version 6.1.1	The parameter `l2-tunneling` added.

Usage

Use this command to display the bridge domain details.

Examples

```
CLI (network-admin@switch) > bridge-domain-show
name scope   ports vxlan-inner-packet mac-learning l2-tunneling
---- ------ ----- ------------------ ------------ ------------
BD1  local        auto               on           none
BD2  local  20    remove-tags        on           none
```

bridge-domain-port-add

A bridge domain is a set of logical ports that share the same flooding or broadcast characteristics. This command adds ports to a bridge domain.

Syntax `bridge-domain-port-add`

`name` *`name-string`*	Specify the name of the bridge domain to which the ports are to be added.
Specify any of the following options:	
`switch` *`switch-name`*	Specify the name of the switch.
`port` *`port-list`*	Specify the ports to be added to the bridge domain.
`outer-vlan` *`1..4093`*	Specify the outer VLANs for Q-in-Q.
`vlan-range` *`vlan-list`*	Specify the access VLANs for Q-in-Q as a range.
`vlans` *`vlan-list`*	Specify the access VLANs for Q-in-Q.
`qinq-untagged-port-vlan` *`1..4093`*	Specify the VLAN for untagged port for Q-in-Q network.
`inner-vlan` *`0..4095`*	Specify the inner VLAN for ports assigned to a network.
`l2-learning none|enable|disable`	Specify if you want to enable or disable MAC address learning. If you specify `none`, the port level the MAC address learning state is directly derived from the one of the encompassing bridge domain.
`outer-cos 0..7`	Specify the CoS value for outer VLAN.
`inner-cos 0..7`	Specify the CoS value for inner VLAN.
`CoS 0..7`	Specify the dot1q CoS priority.

Defaults None

History

Version 5.2.0	Command introduced.
Version 6.0.0	The parameter `mac-learning` added.
Version 6.1.1	The parameters `inner-cos`, `outer-cos` and `cos` added.
Version 7.0.0	The parameter `vlan-range` added.

Usage Use this command to add ports to a bridge domain.

Examples To add the ports 17 and 18 to the bridge domain bd100, use the command:

```
CLI (network-admin@switch) > bridge-domain-port-add name bd100 port 17,1
```

bridge-domain-port-modify

A bridge domain is a set of logical ports that share the same flooding or broadcast characteristics. This command modifies ports of a bridge domain.

Syntax `bridge-domain-port-modify`

`name` *`name-string`*	Specify the name of the bridge domain to which the ports are to be added.
Specify any of the following options:	
`port` *`port-list`*	Specify the ports to be added to the bridge domain.
`vlans` *`vlan-list`*	Specify the access VLANs for Q-in-Q.
`l2-learning none|enable|disable`	Specify if you want to enable or disable MAC address learning. If you specify none, the port level the MAC address learning state is directly derived from the one of the encompassing bridge domain.

Defaults None

History Command introduced in version 6.0.0.

Usage Use this command to add ports to a bridge domain.

Examples To add the ports 17 and 18 to the bridge domain bd100, use the command:

```
CLI (network-admin@switch) > bridge-domain-port-add name bd100 port 17,18
```

bridge-domain-port-remove

A bridge domain is a set of logical ports that share the same flooding or broadcast characteristics. This command removes ports from a bridge domain.

Syntax `bridge-domain-port-remove`

`name` *`name-string`*	Specify the name of the bridge domain from which ports are to be removed.
Specify any of the following options:	
`switch` *`switch-name`*	Specify the name of the switch.
`port` *`port-list`*	Specify the ports to be removed from the bridge domain.

Defaults None

History Command introduced in nvOS version 5.2.0

Usage Use this command to remove ports from a bridge domain.

Examples To remove the ports 22 and 25 from the bridge domain bd400, use the command:

```
CLI (network-admin@switch) > bridge-domain-port-remove name bd400 port 22,25
```

bridge-domain-port-show

A bridge domain is a set of logical ports that share the same flooding or broadcast characteristics. This command displays the port information of a bridge domain.

Syntax `bridge-domain-port-show`

`name` *`name-string`*	Specify the name of the bridge domain.
Specify any of the following port arguments:	
`switch` *`switch-name`*	Specify the name of the switch.
`port` *`port-list`*	Specify the ports to be added to the bridge domain.
`active-ports` *`port-list`*	Specify the active ports.
`outer-vlan` *`1..4093`*	Specify the outer VLANs for Q-in-Q.
`vlan-range` *`vlan-list`*	Specify the access VLANs for Q-in-Q as a range.
`single-bum-domain true|false`	Specifies the Q-in-Q VLANs in range for bum-limit.
`vlans` *`vlan-list`*	Specify the access VLANs for Q-in-Q.
`qinq-untagged-port-vlan` *`1..4093`*	Specify the VLAN for untagged port for Q-in-Q network.
`inner-vlan` *`0..4095`*	Specify the inner VLAN for ports assigned to a network.
`l2-learning none|enable|disable`	Specify the status of MAC address learning.
`outer-cos 0..7`	Specify the CoS value for outer VLAN.
`inner-cos 0..7`	Specify the CoS value for inner VLAN.
`CoS 0..7`	Specify the dot1q CoS priority.

Defaults None

History

Version 5.2.0	Command introduced.
Version 6.0.0	The parameter `mac-learning` added.
Version 6.1.1	The parameters `inner-cos`, `outer-cos`, and `cos` added.
Version 7.0.0	The parameter `vlan-range` added.

Usage Use this command to display the port details of a bridge domain.

Examples To display the details of the bridge domain BD1, use the command:

```
CLI (network-admin@switch) bridge-domain-port-show name BD1
switch name port outer-vlan vlans untagged-port-vlan inner-vlan l2-learning
------ ---- ---- ---------- ----- ----------------- ---------- -----------
switch BD1  9    2000       1000  none
switch BD1  9    2001       1001  none
switch BD1  9    2002       1002  none
```

C Commands

cert-create

This command is used to create a self-signed server certificate

Syntax `cert-create name` *`name-string`* `country` *`country-string`* `state` *`state-string`* `city` *`city-string`* `organization` *`organization-string`* `organizational-unit` *`organizational-unit-string`* `common-name` *`common-name-string`* `container` *`zone|name`*

`name` *`name-string`*	Specify the name of the certificate.
`country` *`country-string`*	Specify the country name (2 letter code).
`state` *`state-string`*	Specify the state or province name.
`city` *`city-string`*	Specify the city name.
`organization` *`organization-string`*	Specify the organization name.
`organizational-unit` *`organizational-unit-string`*	Specify the organizational unit name.
`common-name` *`common-name-string`*	Specify the common name.
`container` *`zone name`*	Specify the certificate zone or name.

Defaults None

Access CLI

History Command introduced in Version 2.5.4.

Usage Use certificates to secure server connections.

Examples To create a self-signed server certificate named cert1, use the following command:

```
CLI (network-admin@switch) > CLI cert-create name cert1 country US state CA city PA
organization ovs organizational-unit ou common-name Pluribus


Successfully generated self-signed certificate.
```

cert-delete

This command is used to delete certificates container *zone|name*

Syntax `cert-delete name name-string`

`name` *`name-string`*	Specify the name of the certificate to delete.
`container` *`zone name`*	Specify the certificate zone or container name.

Defaults None

Access CLI

History Command introduced in Version 2.5.4.

Usage Use this command to delete certificates.

Examples To successfully delete a certificate named cert1, use the following command:

```
CLI (network-admin@switch) > cert-delete name cert1


  Successfully deleted all certificate files.
```

If you try to delete a certificate currently in use by a service, the following message displays:

```
CLI (network-admin@switch) > cert-delete name cert1

  cert-delete: Certificate is being used by ovs service, cannot delete
```

cert-expiration-alert-modify

Netvisor ONE allows you to configure a certificate expiry alarm where the certificate is checked every 24 hours and an alarm is issued if the number of days of expiry is equal to or less than 30 days. Use this command to configure certificate expiry alerts.

Syntax `cert-expiration-alert-modify`

`netvisor|no-netvisor`	Specify whether to enable or disable Netvisor ONE certificate expiry alerts.
`days-before-expiration 7..180`	Modify the number of days before expiration to send alerts (Default 30 days). The value ranges from 7 through 180 days.

Defaults None

Access CLI

History

Usage Use this command to configure certificate expiry alerts.

Examples To configure the certificate expiry alert for Netvisor ONE certificates, use the command:

```
CLI (network-admin@switch) > cert-expiration-alert-modify  netvisor
```

cert-expiration-alert-show

Netvisor ONE allows you to configure a certificate expiry alarm where the certificate is checked every 24 hours and an alarm is issued if the number of days of expiry is equal to or less than 30 days. Use this command to view the alert configuration for certificate expiry.

Syntax `cert-expiration-alert-show`

Defaults None

Access CLI

History

Usage Use this command to display the certificate expiry alert configuration.

Examples To view the certificate expiry alert configuration for Netvisor ONE certificates, use the command:

```
CLI (network-admin@switch) > cert-expiration-alert-show
switch: switch01
days-before-expiration(d): 30
```

cert-import

This command is used to import CA certificate files from a Simple File Transfer Protocol (SFTP) directory

Syntax `cert-import`

`name` *`name-string`*	Specify a certificate name.
`file-ca` *`file-ca-string`*	Specify the name of CA certificate file.
`file-server` *`file-server-string`*	Specify the file server name.
`container` *`zone name`*	Specify a certificate zone name.
`file-inter` *`file-inter-string`*	Specify the name of intermediate CA certificate file.

Defaults None

Access CLI

History Command introduced in Version 2.5.4.

Usage You can create one common certificate for all Netvisor services or create multiple named certificates. Each service can use a different certificate identified by name or container name or zone.The Certificate facility keeps track of certificate use by using various applications. It notifies the applications when a certificate is updated and it also prevents a certificate from deletion if an application is using it.

Examples To import a CA certificate named cert3 from file server server.pem, use the following command:

```
CLI (network-admin@switch) > cert-import name cert3 file-ca ca.pem file-server server.pem


  Successfully imported certificates.
```

cert-request-create

This command is used to create a certificate signing request from an existing server certificate

Syntax `cert-request-create container` *zone|name*

`name name-string`	Specify the certificate name.
`container` *zone name*	Specify the certificate zone or container name.

Defaults None

Access CLI

History Command introduced in Version 2.5.4.

Usage

Examples To generate a certificate signing request where the certificate name is cert3, use the following command:

```
CLI (network-admin@switch) > cert-request-create name cert3


  Certificate signing request successfully generated at /sftp/export/cert3-cert.csr.
```

cert-request-show

This command is used to display certificate signing request information.

Syntax `cert-show name`

`name` *`name-string`*	Specifies the certificate name.
`container zone name`	Specifies the certificate zone/container name.
`cert-request cert-request-string`	Specifies the certificate signing request.

Defaults None

Access CLI

History Command introduced in Version 2.5.4.

Usage You can display certificate signing request information.

Examples To display the certificate request for cert3, use the following command:

```
CLI (network-admin@switch) > cert-request-show name cert3

  ----------------------------------------------------------------
  -----BEGIN CERTIFICATE REQUEST-----
  MIICnDCCAYQCAQEwVzELMAkGA1UEBhMCdXMxCzAJBgNVBAgMAmNhMQswCQYDVQQH
  DAJtcDELMAkGA1UECgwCcGwxDTALBgNVBAsMBGVuZ2cxEjAQBgNVBAMMCXBsdXJp
  YnVzMTCCASIwDQYJKoZIhvcNAQEBBQADggEPADCCAQoCggEBAMrE6Jowg0VKUw2M
  NlL8vp1N8dYE/UL5pvu8FKYWgwG7tC2fjHunZCI0XmssFtZysQul/r9nk+edA5tt
  0zIWRmqTB60wnWmzl6uGymeAsC9OSm0ZHFc9zZfUxKjRM/n1dOri3Pw/rODbCjM9
  qwO5hsvZc/c1o3ajYFrj1yMlKDIiPW1td1VTpc5TL6wCwnDM697Yb9oQ0cbLKTDl
  w5AjQSgJK29rLUl8ptAZXIUkeendpE4MCYrl6Hd+ziOJHXncj65MJyfANTZMrtGD
  IJD3m+JsKZt882vMw3AZ3C9WEuE0OZrbabGBHqVKARik2qFhu2bGjlbuj/M6TOf5
  Jj1WROUCAwEAAaAAMA0GCSqGSIb3DQEBBQUAA4IBAQCh1YhXRNwkwmw3FVH4H0Xi
  rczy0FkyHkdSbIUIf+6n3qroRpBpcEdrx8fREyiw8hLUks9OcUlT+nSshsWIitI7
  R5dcFlyo5HUVjqQQVMlSq3j4fM9XE8y8KRMZ3mfLXRTmuFPxbBuE3ZGjlBSLnBgK
  ODqHF1gVa4u7l9mO3TRXczLQiAPaw38/kxEwkh4erJp4jjXf8K0h9JMGvYONYWeI
  1PbiZpjIWDLNbg6sKqqrPAxEAjzGNMgNPIMXRepmEmnC/BaLVA04noZran8LRLNp
  Id41o3TnlXiAodF/Mc7H5fI1hYf0YzWDSfz3PNufn6Dusu5M2ma7jtWlEdBW8huH
  -----END CERTIFICATE REQUEST----
```

cert-show

This command is used to display certificate information.

Syntax `cert-show`

`name` *`name-string`*	Specifies the certificate name.
`container zone name`	Specifies the certificate zone or container name.
`cert-type ca|intermediate|server`	Specifies the type of certificate: CA, intermediate or server.
`subject` *`subject-string`*	Specifies the certificate subject.
`issuer` *`issuer-string`*	Specifies the issuer of the certificate.
`serial-number` *`serial-number-number`*	Specifies the serial number of the certificate.
`valid-from` *`valid-from-string`*	Specifies the time from which the certificate is valid.
`valid-to` *`valid-to-string`*	Specifies the time at which the certificate expires and is no longer valid.
`country` *`country-string`*	Specifies the country name (2 letter code).
`state` *`state-string`*	Specifies the state or province name.
`city city-string`	Specifies the city name.
`organization` *`organization-strings`*	Specifies the organization name.
`organizational-unit` *`organizational-unit-string`*	Specifies the organization name.
`common-name` *`common-name-string`*	Specifies the common name.
`name` *`name-string`*	Specifies the certificate name.

Defaults None

Access CLI

History Command introduced in Version 2.5.4.

Usage You can display all or specific information for a particular certificate.

Examples To display certificate information, use the following command:

```
CLI (network-admin@switch) > cert-show

switch:                 switch1
name:                   myswitch1
container:              vpod1-mgr
```

```
country:              US
state:                California
city:                 Palo Alto
organization:         Pluribus Networks Inc
organizational-unit: Engineering
common-name:          myswitch1
cert-type:            server
subject:              /C=US/ST=California/L=Palo Alto/O=Pluribus Networks
Inc/OU=Engineering/CN=myswitch1
issuer:               /C=US/ST=California/L=Palo Alto/O=Pluribus Networks
Inc/OU=Engineering/CN=Pluribus Networks Test CA 2k-sha-
256/emailAddress=example@pluribusnetworks.com
serial-number:        2
valid-from:           Apr 20 18:28:45 2017 GMT
valid-to:             Apr 20 18:28:45 2018 GMT
```

cert-switch-show

This command is used to display the validity of Netvisor ONE certificates.

Syntax `cert-switch-show`

`name` *`name-string`*	Specifies the certificate name.
`container zone name`	Specifies the certificate zone or container name.
`cert-type ca|intermediate|server`	Specifies the type of certificate: CA, intermediate or server.
`subject` *`subject-string`*	Specifies the certificate subject.
`issuer` *`issuer-string`*	Specifies the issuer of the certificate.
`serial-number` *`serial-number-number`*	Specifies the serial number of the certificate.
`valid-from` *`valid-from-string`*	Specifies the time from which the certificate is valid.
`valid-to` *`valid-to-string`*	Specifies the time at which the certificate expires and is no longer valid.
`country` *`country-string`*	Specifies the country name (2 letter code).
`state` *`state-string`*	Specifies the state or province name.
`city city-string`	Specifies the city name.
`organization` *`organization-strings`*	Specifies the organization name.
`organizational-unit` *`organizational-unit-string`*	Specifies the organization name.
`common-name` *`common-name-string`*	Specifies the common name.
`file-ca file-ca-string`	Name of CA certificate file.
`file-inter file-inter-string`	Name of intermediate CA certificate file.
`file-server file-server-string`	Name of server certificate file.
`cert-ca cert-ca-string`	CA certificate.
`cert-inter cert-inter-string`	Intermediate CA certificate.
`cert-server cert-server-string`	Server certificate.

Defaults None

Access CLI

History Command introduced in Version 6.1.1.

Usage You can display validity information for Netvisor ONE certificates.

Examples To display certificate validity information, use the following command:

```
CLI (network-admin@switch) > cert-switch-show
switch:              switch1
name:                myswitch1
container:           vpod1-mgr
country:             US
state:               California
city:                Palo Alto
organization:        Pluribus Networks Inc
organizational-unit: Engineering
common-name:         myswitch1
cert-type:           server
subject:             /C=US/ST=California/L=Palo Alto/O=Pluribus Networks
Inc/OU=Engineering/CN=myswitch1
issuer:              /C=US/ST=California/L=Palo Alto/O=Pluribus Networks
Inc/OU=Engineering/CN=Pluribus Networks Test CA 2k-sha-
256/emailAddress=example@pluribusnetworks.com
serial-number:       2
valid-from:          Apr 20 18:28:45 2017 GMT
valid-to:            Apr 20 18:28:45 2018 GMT
CLI (network-admin@switch) > cert-switch-show
name: /usr/nvos/cert/core.pem
cert-type: server
subject: /C=US/ST=California/O=Pluribus
Networks/OU=Core
Encryption/CN=Core Encryption
issuer: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
serial-number: 291
valid-from: Mar 9 10:19:06 2021 GMT
valid-to: Mar 4 10:19:06 2041 GMT
status: Certificate valid for 7174 days
----------------------------------------
name: /usr/nvos/cert/cacert.pem
cert-type: ca
subject: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
issuer: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
serial-number: 17400531076958470354
valid-from: Apr 9 11:00:34 2021 GMT
valid-to: Apr 4 11:00:34 2041 GMT
status: Certificate valid for 7205 days
----------------------------------------
name: /usr/nvos/cert/pkg.pem
cert-type: server
subject: /C=US/ST=California/O=Pluribus
Networks/OU=Package/CN=Package
issuer: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
```

```
serial-number: 31
valid-from: Oct 15 19:24:41 2012 GMT
valid-to: Oct 13 19:24:41 2022 GMT
status: Certificate valid for 458 days
----------------------------------------
name: /usr/nvos/cert/newswitch.pem
Page 86 / 950
cert-type: server
subject: /C=US/ST=California/O=Pluribus
Networks/OU=New
Switch/CN=New Pluribus Switch
issuer: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
serial-number: 290
valid-from: Mar 9 10:18:37 2021 GMT
valid-to: Mar 4 10:18:37 2041 GMT
status: Certificate valid for 7174 days
----------------------------------------
name: /var/nvos/cert/switch.pem
cert-type: server
subject: /C=US/ST=California/O=Pluribus
Networks/OU=Switch/CN=hostid:184560120 serial:2126PN8500255
issuer: /C=US/ST=California/O=Pluribus
Networks/CN=Pluribus Update
Server CA
serial-number: 12343
valid-from: Jun 21 07:00:00 2021 GMT
valid-to: Jun 22 06:59:59 2041 GMT
status: Certificate valid for 7284 days
----------------------------------------
name: /var/nvos/cert/cacerts.pem
cert-type: ca
subject: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
issuer: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
serial-number: 17400531076958470354
valid-from: Apr 9 11:00:34 2021 GMT
valid-to: Apr 4 11:00:34 2041 GMT
status: Certificate valid for 7205 days
----------------------------------------
name: /var/nvos/cert/cacerts.pem
cert-type: ca
subject: /C=US/ST=California/O=Pluribus
Networks/OU=Update
Servers/CN=Pluribus Update DNI CA
issuer: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
serial-number: 295
valid-from: Mar 9 14:34:32 2021 GMT
valid-to: Mar 4 14:34:32 2041 GMT
status: Certificate valid for 7174 days
----------------------------------------
name: /var/nvos/cert/cacerts.pem
cert-type: ca
```

```
subject: /C=US/ST=California/O=Pluribus
Networks/OU=Update
Servers/CN=Pluribus Update Celestica CA
issuer: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
Page 87 / 950
serial-number: 296
valid-from: Mar 9 14:40:07 2021 GMT
valid-to: Mar 4 14:40:07 2041 GMT
status: Certificate valid for 7174 days
----------------------------------------
name: /var/nvos/cert/cacerts.pem
cert-type: ca
subject: /C=US/ST=California/O=Pluribus
Networks/CN=Pluribus Update
Leadman CA
issuer: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
serial-number: 298
valid-from: Mar 9 14:45:58 2021 GMT
valid-to: Mar 4 14:45:58 2041 GMT
status: Certificate valid for 7174 days
----------------------------------------
name: /var/nvos/cert/cacerts.pem
cert-type: ca
subject: /C=US/ST=California/O=Pluribus
Networks/OU=Update
Servers/CN=cb-update.pluribusnetworks.com
issuer: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
serial-number: 297
valid-from: Mar 9 14:43:55 2021 GMT
valid-to: Mar 4 14:43:55 2041 GMT
status: Certificate valid for 7174 days
----------------------------------------
name: /var/nvos/cert/cacerts.pem
cert-type: ca
subject: /C=US/ST=California/O=Pluribus
Networks/OU=Update
Servers/CN=celestica-update2.pluribusnetworks.com
issuer: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
serial-number: 299
valid-from: Mar 9 14:47:48 2021 GMT
valid-to: Mar 4 14:47:48 2041 GMT
status: Certificate valid for 7174 days
----------------------------------------
name: /var/nvos/cert/cacerts.pem
cert-type: ca
subject: /C=US/ST=California/O=Pluribus
Networks/OU=Update
Servers/CN=celestica-update.pluribusnetworks.com
issuer: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
serial-number: 300
```

```
valid-from: Mar 9 14:48:29 2021 GMT
valid-to: Mar 4 14:48:29 2041 GMT
status: Certificate valid for 7174 days
----------------------------------------
Page 88 / 950
name: /var/nvos/cert/cacerts.pem
cert-type: ca
subject: /C=US/ST=California/O=Pluribus
Networks/OU=Update
Servers/CN=ct-update2.pluribusnetworks.com
issuer: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
serial-number: 301
valid-from: Mar 9 14:49:17 2021 GMT
valid-to: Mar 4 14:49:17 2041 GMT
status: Certificate valid for 7174 days
----------------------------------------
name: /var/nvos/cert/cacerts.pem
cert-type: ca
subject: /C=US/ST=California/O=Pluribus
Networks/OU=Update
Servers/CN=ct-update.pluribusnetworks.com
issuer: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
serial-number: 302
valid-from: Mar 9 14:49:56 2021 GMT
valid-to: Mar 4 14:49:56 2041 GMT
status: Certificate valid for 7174 days
----------------------------------------
name: /var/nvos/cert/cacerts.pem
cert-type: ca
subject: /C=US/ST=California/O=Pluribus
Networks/OU=Update
Servers/CN=staging-update.pluribusnetworks.com
issuer: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
serial-number: 303
valid-from: Mar 9 14:50:26 2021 GMT
valid-to: Mar 4 14:50:26 2041 GMT
status: Certificate valid for 7174 days
----------------------------------------
name: /var/nvos/cert/cacerts.pem
cert-type: ca
subject: /C=US/ST=California/O=Pluribus
Networks/OU=Update
Servers/CN=Pluribus Update Manufacturing CA
issuer: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
serial-number: 110
valid-from: Nov 4 01:08:14 2014 GMT
valid-to: Nov 1 01:08:14 2024 GMT
status: Certificate valid for 1207 days
----------------------------------------
name: /var/nvos/cert/cacerts.pem
cert-type: ca
```

```
subject: /C=US/ST=California/O=Pluribus
Networks/CN=Pluribus Update
Server CA
Page 89 / 950
issuer: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
serial-number: 304
valid-from: Mar 9 14:51:10 2021 GMT
valid-to: Mar 4 14:51:10 2041 GMT
status: Certificate valid for 7174 days
----------------------------------------
name: /var/nvos/cert/cacerts.pem
cert-type: ca
subject: /C=US/ST=California/O=Pluribus
Networks/OU=Update
Servers/CN=Pluribus Update Advantech CA
issuer: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
serial-number: 344
valid-from: Apr 21 12:02:10 2021 GMT
valid-to: Apr 16 12:02:10 2041 GMT
status: Certificate valid for 7217 days
----------------------------------------
name: /var/nvos/cert/cacerts.pem
cert-type: ca
subject: /C=US/ST=California/O=Pluribus
Networks/OU=Update
Servers/CN=Pluribus Update staging CA
issuer: /O=Pluribus Networks/L=Palo
Alto/ST=California/C=US/CN=Pluribus Update Root CA
serial-number: 101
valid-from: Jun 2 22:30:14 2014 GMT
valid-to: May 30 22:30:14 2024 GMT
status: Certificate valid for 1053 days
```

client-server-stats-clear

This command is used to clear statistics generated between a client and server on the network.

Syntax `client-server-stats-clear`

Specify any of the following options:	
`time date/time: yyyy-mm-ddThh:mm:ss`	Clear statistics from a specific time period.
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Clear statistics from a specific start time and date.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Clear statistic from a specific end time and date.
`duration: #d#h#m#s`	Clear statistics for a specific duration.
`interval duration: #d#h#m#s`	Clear statistics for a specific interval duration.
`since-start`	Clear statistics from the start of collection.
`older-than duration: #d#h#m#s`	Clear statistics older than a specified date and time.
`within-last duration: #d#h#m#s`	Clear statistics within a specified duration time.
`count count-number`	Clear the number of counters.
`vlan vlan-id`	Clear statistics for a specific VLAN.
`vxlan vxlan-id`	Clear statistics for a specific VXLAN.
`client-switch-port port-number`	Clear statistics for a specific port number on the client switch.
`server-switch-port port-number`	Clear statistics for a specific port number on the server switch.
`client-mac mac-address`	Clear statistics for a specific client MAC address.
`server-mac mac-address`	Clear statistics for a specific server MAC address.
`client-ip ip-address`	Clear statistics for a specific client IP address.
`server-ip ip-address`	Clear statistics for a specific client IP address.
`server-port`	Specifies the type of statistic to clear from the server port. This includes HDFS, Hive, Ganglia, Cassandra, Nutanix and other server types.
`syn syn-number`	Clear the statistics for SYN packets.
`est est-number`	Clear the statistics for established connections.
`fin fin-number`	Clear the statistics for the total number of closed connections.

obytes *obytes-number*	Specifis the number of outgoing bytes to clear statistics.
ibytes *ibytes-number*	Specifies the number of incoming bytes to clear statistics.
total-bytes *total-bytes-number*	Specifies the total bytes to clear statistics.
avg-dur high resolution time: *#ns*	Clear the average duration of high resolution statistics.
avg-lat high resolution time: *#ns*	Clear the average latency statistics.
first-seen date/time: *yyyy-mm-ddThh:mm:ss*	Clear the first-seen statistics only.
last-seen date/time: *yyyy-mm-ddThh:mm*	Clear the last-seen statistics only.

Defaults None

Access CLI

History

Version 2.0	Command introduced.
Version 2.1	The parameters, `timestamp`, `start-time`, `end-time`, `duration`, `interval`, `since-start`, `older-than`, and `within-last` added to the command.
Version 2.2	The parameter, `no-since-start`, deprecated.
Version 2.2.5	The parameters, `HDFS-`, added.
Version 2.2.6	The parameters, `MR`, `HBase`, `Ganglia`, `Cassandra`, and `Nutanix` added to `server-port`.

Usage You can clear all statistics for a client server connection or you can use a filter to clear specific statistics.

Examples To clear statistics for VLAN12, use the following command:

```
CLI (network-admin@switch) > client-server-stats-clear vlan 12
```

client-server-stats-show

This command is used to show statistics generated between a client and server on the network.

Syntax `client-server-stats-show`

`timestamp date/time:`*`yyyy-mm-ddThh:mm:ss`	Clear statistics from a specific timestamp period.
`start-time date/time:`*`yyyy-mm-ddThh:mm:ss`	Clear statistics from a specific start time and date.
`end-time date/time:`*`yyyy-mm-ddThh:mm:ss`	Clear statistic from a specific end time and date.
`duration:` *`#d#h#m#s`*	Clear statistics for a specific duration.
`interval duration:` *`#d#h#m#s`*	Clear statistics for a specific interval duration.
`since-start`	Clear statistics from the start of collection.
`older-than duration: #d#h#m#s`	Clear statistics older than a specified date and time.
`within-last duration: #d#h#m#s`	Clear statistics within a specified duration time.
`count` *`count-number`*	Specifies the number of counters.
`vlan` *`vlan-id`*	Specifies statistics for a specific VLAN.
`vxlan` *`vxlan-id`*	Specifies statistics for a specific VXLAN.
`client-switch-port` *`port-number`*	Specifies statistics for a specific port number on the client switch.
`server-switch-port` *`port-number`*	Specifies statistics for a specific port number on the server switch.
`client-mac` *`mac-address`*	Specifies statistics for a specific client MAC address.
`server-mac` *`mac-address`*	Specifies statistics for a specific server MAC address.
`client-ip` *`ip-address`*	Specifies statistics for a specific client IP address.
`server-ip` *`ip-address`*	Specifies statistics for a specific client IP address.
`server-port`	Specifies the type of protocol on the server port. This includes HDFS, Hive, Ganglia, Cassandra, Nutanix and other server types.
`syn` *`syn-number`*	Specifies the number of SYN packets.
`est` *`est-number`*	Specifies the number established connections.
`fin` *`fin-number`*	Specifies the total number of closed connections statistics.
`syn-resends` *`syn-resends-number`*	Specifies the number of SYN packet resends.

syn-ack-resends *syn-ack-resends-number*	Specifies the number of SYN-ACK packet resends.
obytes *obytes-number*	Specifis the number of outgoing bytes to clear statistics.
ibytes *ibytes-number*	Specifies the number of incoming bytes to clear statistics.
total-bytes *total-bytes-number*	Specifies the total bytes to clear statistics.
avg-dur high resolution time: *#ns*	Specifies the average duration of high resolution statistics.
avg-lat high resolution time: *#ns*	Specifies the average latency statistics.
first-seen date/time: *yyyy-mm-ddThh:mm:ss*	Specifies the first-seen statistics only.
last-seen date/time: *yyyy-mm-ddThh:mm*	Specifies the last-seen statistics only.
last-seen-ago duration: #d#h#m#s	Specifies a duration to clear statistics.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.4.1	The parameters, `syn-resends`, and `syn-ack-resends`, added.

Usage You can display all statistics for a client server connection or you can use a filter to display specific statistics.

Examples To display all statistics on switch pleiedes24, use the following command:

```
CLI (network-admin@switch) > client-server-stats-show  layout  vertical

  switch:              pleiades24
  vlan:                1
  vxlan:               0
  client-ip:            192.171.1.65
  server-ip:            192.171.2.60
  server-port:          ssh
  syn:                  4
  est:                  0
  fin:                  724
  obytes:               1.29M
  ibytes:               2.70M
  total-bytes:          3.99M
  avg-dur:              486ms
  avg-lat:              97.1us
  last-seen-ago:        51m4s
  switch:              pleiedes24
```

```
vlan:                1
vxlan:               0
client-ip:            192.171.1.31
server-ip:            192.171.2.60
server-port:          ssh
syn:                  10
est:                  0
fin:                  1.60K
obytes:               2.92M
ibytes:               6.09M
total-bytes:          9.01M
avg-dur:              490ms
avg-lat:              86.3us
last-seen-ago:        51m4s
```

client-server-stats-clear-history

This command is used to clear the history of client and server statistics.

Syntax `client-server-stats-clear-history`

Defaults None

Access CLI

History Command introduced in Version 2.2.3.

cluster-bringdown-show

This command is used to display cluster bring down settings.

Syntax `cluster-bringdown-show`

Specify any of the following options:

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display cluster bring down settings.

Examples To display cluster bring down settings, use the following command:

```
CLI (network-admin@switch) > cluster-bringdown-show
```

cluster-bringup-modify

This command is used to update cluster bring up settings.

Syntax `cluster-bringup-modify`

Specify any of the following options:	
`l3-port-bringup-mode staggered| simultaneous`	Specifies the L3 port bring up mode during start up.
`l3-port-staggered-interval` *`duration: #d#h#m#s`*	Specifies the interval between L3 ports in L3 staggered mode.
`vlag-port-bringup-mode staggered| simultaneous`	Specifies the vLAG port bring up mode during start up.
`vlag-port-staggered-interval` *`duration: #d#h#m#s`*	Specifies the interval between vLAG ports in vLAG staggered mode.
`cluster-trunk-port-staggered-interval` *`duration: #d#h#m#s`*	Specifies the interval between cluster trunk ports in staggered mode.
`maximum-sync-delay` *`duration: #d#h#m#s`*	Specifies the maximum delay to wait for cluster to sync before starting L3/vLAG port bring up.
`l3-to-vlag-delay` *`duration: #d#h#m#s`*	Specifies delay between last L3 port and first vLAG port bring up.
`l3-to-vlan-interface-delay` *`duration: #d#h#m#s`*	Specifies delay between last L3 port and vRouter VLAN interface bring up
`port-defer-bringup-delay` *`duration: #d#h#m#s`*	Specifies Global timer value used for port delay-bring up.
`port-defer-bringup-mode` *`staggered| simultaneous`*	Specifies the port defer-bring up mode during start up.
`port-defer-bringup-staggered-interval` *`duration: #d#h#m#s`*	Specifies the interval between ports in defer-bring up mode.
`vrouter-if-bringup-mode staggered| simultaneous`	Specifies the vRouter VLAN interface bring up mode.
`vrouter-if-staggered-interval` *`0..60000`*	Specifies the interval (ms) between vRouter VLAN interface bring ups in staggered mode.
`start-port-enable-delay` *`0..240`*	Specifies the time delay (sec) to start enabling ports (incl cluster ports) on slave switch.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage

Use this command to update cluster bring up settings.

Examples

To display the status of the cluster bring up process, use the following command:

```
CLI (network-admin@switch) > cluster-bringup-modify
```

cluster-bringup-show

This command is used to display cluster bring up settings.

Syntax `cluster-bringup-show`

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display cluster bring up settings.

Examples To display the status of the cluster bring up process, use the following command:

```
CLI (network-admin@switch) > cluster-create name cluster_eng cluster-node-1 switch_a cluster-
        node-2 validate
  state:                                      ports-enabled
  l3-port-bringup-mode:                        staggered
  l3-port-staggered-interval:                 3s
  vlag-port-bringup-mode:                      staggered
  vlag-port-staggered-interval:               3s
  maximum-sync-delay:                         1m
  l3-to-vlag-delay:                           15s
  l3-to-vlan-interface-delay:                 0s
  port-defer-bringup-delay:                   30s
  port-defer-bringup-mode:                     staggered
  port-defer-bringup-staggered-interval:      0s
```

cluster-create

To create a new cluster for high availability (HA) in a fabric, use the `cluster-create` command.

Syntax `cluster-create`

`name` *`name-string`*	Specify the name of the cluster.
`cluster-node-1` *`fabric-node name`*	Specify the name of the first switch in the cluster.
`cluster-node-2` *`fabric-node name`*	Specify the name of the second switch in the cluster.
Any of the following options:	
`vxlan` *`0..16777215`*	Specify the VXLAN ID for cluster over L3.
`node1-ip` *`ip-address`*	Specify the IP address of cluster node1.
`node2-ip` *`ip-address`*	Specifies the IP address of cluster node2.
`validate|no-validate`	Validate the inter-switch links and state of the switches in the cluster.
`cluster-sync-timeout` *`500..20000`*	Specify the amount of time before a cluster times out during synchronization. The allowed range is between 500ms and 2000ms.
`cluster-sync-offline-count` *`1..30`*	Specify the number of missed synchronizations before the cluster goes offline.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, `private-link`, added.
Version 2.2	The parameter, `private-link`, deprecated.
Version 3.0.0	The parameters, `cluster-sync-timeout` and `cluster-sync-offline-count` added.
Version 7.0.0	The parameters `vxlan`, `node1-ip`, `node2-ip` added.

Usage A cluster allows two switches to cooperate in high-availability (HA) deployments. The nodes that form the cluster must be members of the same fabric. Clusters are typically used in conjunction with a virtual link aggregation group (VLAG) that allows links physically connected to two separate switches appear as a single trunk to a third device. The third device can be a switch, server, or any Ethernet device.

Clustering switch pairs over Layer 3 requires the creation of VXLAN tunnels between the cluster nodes through the intermediate switch(es). The VXLAN tunnels function as virtual cluster links and carry both

control traffic and data traffic. For further clarification, refer to the Configuration Guide.

Examples To configure the cluster that includes Leaf1 and Leaf2, use the following command:

```
CLI (network-admin@switch) > cluster-create name name cluster1 cluster-node-1 Leaf1 cluster-
node-2 Leaf2 vxlan 40940 node1-ip 192.168.1.1 node2-ip 192.168.1.2
```

cluster-modify

To modify a cluster for high availability (HA) in a fabric, use the `cluster-modify` command.

Syntax `cluster-modify`

`name` *`name-string`*	Specify the name of the cluster.
`cluster-sync-timeout` *`milliseconds`*	Specify the amount of time before a cluster times out during synchronization. Specify a time between 500 and 2000 ms.
`cluster-sync-offline-count` *`number`*	Specify the number of missed synchronizations before the cluster goes offline.
`enable|disable`	Enable or disable the cluster configuration.
`stp-mode rstp|mstp`	Specify the STP mode for the cluster.
`bpdus-bridge-ports|bpdus-all-ports`	Specify sending BPDU packets to a specific bridge port.
`bridge-id` *`mac-address`*	Specify the MAC address as the bridge ID.
`bridge-priority` *`number`*	Specify the bridge priority as a multiple of 4096 with a default value of 32768.
`hello-time` *`seconds`*	Specify the hello-time in seconds with a default time of 2 seconds.
`forwarding-delay` *`seconds`*	Specify the forwarding-delay between 4 and 30 seconds with a default time of 15 seconds.
`max-age` *`seconds`*	Specify the maximum age time between 6 and 40 seconds with a default time of 20 seconds.
`mst-max-hops` *`number`*	Specify the maximum hop count for MSTP BPDU packets. The default value is 20 hops.
`mst-config-name` *`mst-config-name-string`*	Specify the name of the MST configuration instance.
`mst-config-revision` *`mst-config-revision-number`*	Specify the MST configuration revision number. Allowed values are between 0 and 65535.
`root-guard-wait-time` *`seconds`*	Specify the root guard wait time between 0 and 300 seconds with a default value of 20 seconds. If you set the time to 0, you disable the parameter.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, private link, was added.
Version 2.2	Command deprecated.
Version 3.0.0	Command reintroduced with new parameters.
Version 6.0.1	Introduced the `mst-config-revision` parameter.

Usage A cluster allows two switches to cooperate in high-availability (HA) deployments. The nodes that form the cluster must be members of the same fabric. Clusters are typically used in conjunction with a virtual link aggregation group (VLAG) that allows links physically connected to two separate switches appear as a single trunk to a third device. The third device can be a switch, server, or any Ethernet device.

Examples To modify a cluster named, `cluster_eng`, , use the following command:

```
CLI (network-admin@switch) > cluster-modify name cluster_eng cluster-syn-timeout 500ms
```

cluster-show

To display a cluster configuration in a fabric, use the `cluster-show` command.

Syntax `cluster-show`

`name` *`name-string`*	Specifies the name of the cluster.
`cluster-id`	Specifies the ID assigned to the cluster configuration.
`state`	• `offline` • `unavailable` • `online` • `coming-online` • `slave-ready` • `going offline`
`cluster-node-1`	Specifies the name of the first switch in the cluster.
`cluster-node-2`	Specifies the name of the second switch in the cluster.
`tid` *`tid-number`*	Specifies the transaction ID number.
`mode none|master|slave`	Specifies the mode assigned to the cluster.
`ports` *`port-list`*	Specifies the list of ports.
`remote-ports` *`port-list`*	Specifies the list of remote ports.
`validate|no-validate`	Validate the inter-switch links and state of the switches in the cluster.
`cluster-sync-timeout` *`milliseconds`*	Specify the amount of time before a cluster times out during synchronization. Specify a time between 500 and 2000 ms.
`cluster-sync-offline-count` *`number`*	Specify the number of missed synchronizations before the cluster goes offline.
`enable|disable`	Displays if you enabled or disabled STP.
`stp-mode rstp|mstp`	Displays the STP mode.
`bpdus-bridge-ports|bpdus-all-ports`	Displays if the cluster sends BPDU packets to bridge specific ports.
`bridge-id` *`mac-address`*	Displays the MAC address of the bridge.
`bridge-priority` *`bridge-priority-number`*	Displays the bridge priority with a default value of 32768.
`hello-time` *`seconds`*	Displays the hello time in seconds

`forwarding-delay` *`seconds`*	Displays the forwarding time delay in seconds.
`max-age` *`seconds`*	Displays the maximum aging time in seconds.
`mst-max-hops` *`count`*	Displays the number of maximum hops for MSTP BPDUs.
`mst-config-name` *`mst-config-name-string`*	Displays the name of the MST configuration instance.
`mst-config-revision` *`mst-config-revision-number`*	Displays the MST configuration revision number.
`mst-config-digest` *`mst-config-digest-string`*	Displays the MST configuration digest.
`cluster-mode none|master|slave`	Displays the STP cluster mode.
`mst-digest-mismatch-on-ports port-list`	Displays MST digest mismatch.
`mst-digest-mismatch-on-peer-ports port-list`	Displays MST digest mismatch for cluster peer.
`mst-config-id-mismatch-on-ports port-list`	Displays MST Config ID mismatch.
`mst-config-id-mismatch-on-peer-ports port-list`	Displays MST Config ID mismatch for cluster peer.
`mst-revision-mismatch-on-ports port-list`	Displays MST Revision mismatch.
`mst-revision-mismatch-on-peer-ports port-list`	Displays MST Revision mismatch for cluster peer.
`root-guard-wait-time` *`seconds`*	Displays the root guard wait time.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, `private-link`, added.
Version 2.2	The parameter, `private-link`, deprecated.
Version 2.4	The parameters, `mode` and `remote-ports`, added. The option, `synching`, deprecated. The option, `slave-ready`, and `going-offline` added.
Version 2.4.1	The parameters, `online`, and `unavailable`

	added.
Version 3.0.0	The parameters, `cluster-sync-timeout` and `cluster-sync-offline-count` added.
Version 6.0.1	The parameters, `mst-config-revision`, added.

Usage Displays information about cluster configurations on the network.

Examples To show information about a cluster configuration, use the following command:

```
CLI (network-admin@switch) > cluster-show format all layout vertical

  name:            vlag
  id:              a000030:1
  state:           online
  cluster-node-1:  pubdev01
  cluster-node-2:  pubdev02
  tid:             0
  mode:            master
  remote-port:     33,34
  ports:           26,128
```

cluster-delete

To delete a cluster for high availability (HA) in a fabric, use the `cluster-delete` command.

Syntax `cluster-delete name` *`name-string`*

`name` *`name-string`*	Specify the name of the cluster.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, `private-link`, added.
Version 2.2	The parameter, `private-link`, deprecated.

Usage A cluster allows two switches to cooperate in high-availability (HA) deployments. The nodes that form the cluster must be members of the same fabric. Clusters are typically used in conjunction with a virtual link aggregation group (VLAG) that allows links physically connected to two separate switches appear as a single trunk to a third device. The third device can be a switch, server, or any Ethernet device.

Examples To delete a cluster named, `cluster_eng`, use the following command:

```
CLI (network-admin@switch) > cluster-delete name cluster_eng
```

cluster-info

To view information about clusters in a fabric, use the `cluster-info` command.

Informational Note: You may configure multiple clusters of switches within a single fabric. However, a switch can participate in only one cluster configuration. For example, switch-1 and switch-2 can participate in cluster-1, and switch-3 and switch-4 can participate in cluster-2, but switch-1 and switch-2 cannot participate in cluster-2 or any other cluster.

Syntax `cluster-info`

`cluster-name`	Displays the name of the cluster.
`cluster-node-1`	Displays the name of the first switch in the cluster.
`cluster-node-2`	Displays the name of the second switch in the cluster.
`tid`	Displays the transaction ID.
`ports`	Displays the port used to create the cluster configurarion.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, `private-link`, added.
Version 2.2	The parameter, `private-link`, deprecated.

Usage A cluster allows two switches to cooperate in high-availability (HA) deployments. The nodes that form the cluster must be members of the same fabric. Clusters are typically used in conjunction with a virtual link aggregation group (VLAG) that allows links physically connected to two separate switches appear as a single trunk to a third device. The third device can be a switch, server, or any Ethernet device.

Examples To display information a cluster named, `vlag`, use the `cluster-info` command:

```
CLI (network-admin@switch) > cluster-info

  name:            vlag
  state:           online
  cluster-node-1:  167772208
  cluster-node-2:  167772196
  tid:             1
  ports:           26
```

cluster-membership-modify

To modify a cluster membership for high availability (HA) in a fabric, use the `cluster-membership-modify` command.

Syntax `cluster-membership-modify`

`name` *`name-string`*	Specify the name of the cluster membership.
`cluster-node-1 fabric-node` *`name`*	Specify the name of the first fabric node in the cluster.
`cluster-node-2 fabric-node` *`name`*	Specify the name of the second fabric node in the cluster.

Defaults None

Access CLI

History

Version 2.5.0	Command introduced.
Version 3.0.0	The parameter `validate|no-validate` deprecated.

Usage A cluster allows two switches to cooperate in high-availability (HA) deployments. The nodes that form the cluster must be members of the same fabric. Clusters are typically used in conjunction with a virtual link aggregation group (VLAG) that allows links physically connected to two separate switches appear as a single trunk to a third device. The third device can be a switch, server, or any Ethernet device.

Examples To modify a cluster membership, `cluster_eng`, using an interswitch link or trunk between two cluster nodes, `fabric_a` and `fabric_b`, and is available to other network traffic, use the following command:

```
CLI (network-admin@switch) > cluster-create name cluster_eng cluster-node-1 fabric_a cluster-
node-2 fabric_b
```

cluster-membership-show

To display a cluster membership for high availability (HA) in a fabric, use the `cluster-membership-show` command.

Syntax `cluster-membership-show`

switch *fabric-node name*	Displays the switch name.
name *name-string*	Displays the name of the cluster membership.
id	Displays the ID assigned to the cluster.
state offline|online|unavailable| coming-online|slave-ready|going-offline	Displays the state of the cluster.
cluster-node-1 fabric-node *name*	Displays the name of the first fabric node in the cluster.
cluster-node-2 fabric-node *name*	Displays the name of the second fabric node in the cluster.
tid *tid-number*	Displays the transaction ID assigned to the cluster.
mode none|master|slave	Displays the cluster mode.
ports *port-list*	Displays the list of ports.
remote-ports *port-list*	Displays the list of remote ports.
validate|no-validate	Displays if the cluster link validated.
cluster-sync-timeout *mseconds*	Displays the cluster synchronization timeout in ms.
cluster-sync-offline-count *number*	Displays the number of missed timeouts before the cluster goes offline.
enable|disable	Displays if you enabled or disabled STP.
stp-mode rstp|mstp	Displays the STP mode.
bpdus-bridge-ports|bpdus-all-ports	Displays if the cluster sends BPDU packets to bridge specific ports.
bridge-id *mac-address*	Displays the MAC address of the bridge.
bridge-priority *bridge-priority-number*	Displays the bridge priority with a default value of 32768.
hello-time *seconds*	Displays the hello time in seconds
forwarding-delay *seconds*	Displays the forwarding time delay in seconds.
max-age *seconds*	Displays the maximum aging time in seconds.

`mst-max-hops` *`count`*	Displays the number of maximum hops for MSTP BPDUs.
`mst-config-name` *`mst-config-name-string`*	Displays the name of the MST configuration instance.
`mst-config-revision` *`mst-config-revision-number`*	Displays the
`mst-config-digest` *`mst-config-digest-string`*	Displays the MST configuration digest.
`cluster-mode none|master|slave`	Displays the STP cluster mode.
`mst-digest-mismatch-on-ports` *`port-list`*	Displays MST digest mismatch.
`mst-digest-mismatch-on-peer-ports` *`port-list`*	Displays MST digest mismatch for cluster peer.
`mst-config-id-mismatch-on-ports` *`port-list`*	Dsiplays MST Config ID mismatch.
`mst-config-id-mismatch-on-peer-ports` *`port-list`*	Displays MST Config ID mismatch for cluster peer.
`mst-revision-mismatch-on-ports` *`port-list`*	Displays MST Revision mismatch.
`mst-revision-mismatch-on-peer-ports` *`port-list`*	Displays MST Revision mismatch for cluster peer.
`root-guard-wait-time` *`seconds`*	Displays the root guard wait time.

Defaults None

Access CLI

History

Version 2.5.0	Command introduced.
Version 3.0.0	The parameter `validate|no-validate` deprecated.
Version 6.0.1	The parameter `mst-config-revision` added.

Usage A cluster allows two switches to cooperate in high-availability (HA) deployments. The nodes forming the cluster must be members of the same fabric. Clusters are typically used in conjunction with a virtual link aggregation group (VLAG) allowing links physically connected to two separate switches to appear as a single trunk to a third device. The third device can be a switch, server, or any Ethernet device.

Examples To display a cluster membership, use the following command:

```
CLI (network-admin@switch) > cluster-membership-show
```

connection-clear

To clear connection statistics for a switch, use the `connection-clear` command.

Syntax `connection-clear`

Specify any of the following options:	
`time date/time: yyyy-mm-ddThh:mm:ss`	Clear statistics from a specific timestamp period.
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Clear statistics from a specific start time and date.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Clear statistic from a specific end time and date.
`duration: #d#h#m#s`	Clear statistics for a specific duration.
`interval duration: #d#h#m#s`	Clear statistics for a specific interval duration.
`since-start`	Clear statistics from the start of collection.
`older-than duration: #d#h#m#s`	Clear statistics older than a specified date and time.
`within-last duration: #d#h#m#s`	Clear statistics within a specified duration time.
`count count-number`	Clear the count number.
`vlan vlan_id`	Specifies the VLAN identifier.
`egress-vnet vnet-name`	Specifies the egress vNET.
`egress-bd bridge-domain name`	Specifies the bridge domain of the connection information.
`egress-vlan vlan_id`	Specifies the egress VLAN of the connection.
`vxlan vxlan-id`	Specifies the VXLAN identifier.
`vnet vnet-string`	Specifies the name of the virtual network (vNET).
`src-switch-port`	Specifies the physical port number on the switch where a client requested a connection.
`dst-switch-port`	Specifies the physical port number on the switch where a server responded to a connection.
`ether_type`	Specifies the EtherType value or keyword of the connection. The keywords can be `arp`, `dot1X`, `fcoe`, `fcoe-init`, `ipv4`, `ipv6`, `jumbo`, `lldp`, `macsec`, `mpls-multi`, `mpls-uni`, `ptp`, `qing`, `rarp`, `vlan`, and `wake`.
`src-mac-addr`	Specifies the MAC address of the client requesting a

	connection.
dst-mac-addr	Specifies the MAC address of the server responding to a connection.
src-ip	Specifies the IP address of the client requesting a connection.
dst-ip	Specifies the IP address of the server responding to a connection.
src-port	Specifies the type of port used by the client requesting a connection. This includes HDFS, Hive, Ganglia, Cassandra, Nutanix and other server types.
dst-port	Specifies the type of port used by the server responding to a connection. This includes HDFS, Hive, Ganglia, Cassandra, Nutanix and other server types.
dscp	Specifies the 6-bit Differentiated Services Code Point (DSCP).
protocol tcp|udp|icmp|igmp|ip	Specifies the protocol.
tunnel-vnet *vnet-name*	Specifies the tunnel vNET name.
tunnel-bd *bridge-domain name*	Specifies the tunnel bridge domain.
tunnel-vlan *vlan-id*	Specifies the VLAN ID.
tunnel-src-mac *mac-address*	Specifies the tunnel source MAC address.
tunnel-dst-mac *mac-address*	Specifies the tunnel destination MAC address.
tunnel-src-ip *ip-address*	Specifies the tunnel source IP address
tunnel-dst-ip *ip-address*	Specifies the tunnel destination IP address.
tunnel-src-port	Specifies the type of port used by the client requesting a connection. This includes HDFS, Hive, Ganglia, Cassandra, Nutanix and other server types.
tunnel-dst-port	Specifies the type of port used by the client requesting a connection. This includes HDFS, Hive, Ganglia, Cassandra, Nutanix and other server types.
tunnel-proto tcp|udp|icmp|igmp|ip| icmpv6	Specifies the protocol assigned to the tunnel.
cur-state syn|est|fin|rst	Specifies the current state of the connection.
dur high resolution time:*#ns*	Specifies the duration for high resolution time in nano seconds.
latency high resolution time:*#ns*	Specifies the latency for high resolution time in nano seconds

latency(us)	Specifies the network transmit time (latency) experienced by the connection in microseconds.
obytes	Specifies the number of bytes sent from the client side of the connection.
ibytes	Specifies the number of bytes received by the client side of the connection.
total-bytes	Specifies the total number of bytes for the connection.
update-id high resolution time: #ns	Specifies the last update to the connection in elapse time (nanoseconds).
started-time-ns high resolution time: #ns	Specifies the started time of the connection in nanoseconds.
started-time date/time: yyyy-mm-ddThh:mm:ss	Specifies the time and date of the initial connection.
ended-time date/time: yyyy-mm-ddThh:mm:ss	Specifies the time and date when the connection ended.
transition-state any|started-and-ended |started|ended| ongoing	Specifies the transition state of the connection.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 1.2.2	Command changed to connection-clear. bytes-sent and bytes-recvd changed to obytes and ibytes. older-than and within-last parameters added.
Version 2.1	The parameters, `client` and `server`, changed to `src` and `dst`. The parameter, `service`, is deprecated. The parameters, `started-time`, `ended-time`, and `transition-state` added.
Version 2.2	The parameter, no-since-start, deprecated.
Version 2.2.5	The parameters, `HDFS-`, added.
Version 2.4	The parameter, `egress-vlan`, added.
Version 2.4.1	The parameter, `egress-vnet`, added.
Version 2.6.2	The parameters, `tunnel-*`, added.

Version 5.1.1	The parameters, egress-bd, tunnel-bd, update-id `high resolution time`, and `started-time-ns high resolution time` added.

Usage Clears statistical information about the current connections on the switch.

connection-clear-history

This command is used to clear the history of connection statistics.

Syntax `connection-clear-history`

Defaults None

Access CLI

History

Usage You can clear the history of connection statistics by using this command

Examples To clear the history of connection statistics on switch1, use the following command:

```
CLI (network-admin@switch) > connection-clear-history
```

connection-latency-show

This command is used to display latency information for connections on the switch. Comparing latency information for connections at various times can show whether the network performance has changed or stayed the same, and potentially eliminate the network as the cause of the problem

Syntax `connection-latency-show`

`min high resolution time: #ns`	Displays the minimum latency in nanoseconds.
`max high resolution time: #ns`	Displays the maximum latency in nanoseconds.
`num-bins num-bins-number`	Specify the number of bins to divide the latency range. Bins display the number of connections at each latency interval.

Defaults None

Access CLI

History Command introduced in Version 2.0.

Usage You can display all of the latency information about a connection or you can filter by the number of bins to display. Comparing latency information for connections at various times can show whether the network performance has changed or stayed the same, and potentially eliminate the network as the cause of the problem

Examples To display all latency information on pleiades24, use the following command:

```
CLI (network-admin@switch) > connection-latency-show

  switch     min    max    num-conns percent avg-dur obytes ibytes total-bytes
  --------   ------ ------ --------- ------- ------- ------ ------ -----------
  pleiades2  40.00ns 20.0us 13        0%               0      0      0
  pleiades24 20.0us 40.0us 80        3%      1.28us  146K   305K   451K
  pleiades24 40.0us 60.0us 671       28%     14.9us  1.19M  2.50M  3.69M
  pleiades24 60.0us 80.0us 649       27%     19.2us  1.16M  2.42M  3.57M
  pleiades24 80.0us 100us  337       14%     12.9us  615K   1.25M  1.86M
  pleiades24 100us  120us  219       9%      10.2us  400K   835K   1.21M
  pleiades24 120us  140us  114       4%      6.33us  208K   434K   642K
  pleiades24 140us  160us  63        2%      4.01us  115K   241K   356K
  pleiades24 160us  180us  58        2%      4.19us  106K   222K   327K
  pleiades24 180us  200us  35        1%      2.85us  63.9K  134K   198K
  pleiades24 200us         94        4%      13.2us  172K   359K   530K
```

connection-stats-clear

This command clears statistics collected while connected to the host.

Syntax `connection-stats-clear`

`time date/time: yyyy-mm-ddThh:mm:ss`	Specify a time to clear statistics collection.
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Specify the start-time for statistics collection.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Specify the end-time for statistics collection.
`duration: #d#h#m#s`	Specify the duration of statistics collection.
`interval duration: #d#h#m#s`	Specify the interval between statistics collection.
`since-start`	Clears statistics from the start of collection.
`older-than duration: #d#h#m#s`	Clears statistics older than a specified duration.
`within-last duration: #d#h#m#s`	Clears statistics within the last specified duration.
`count count-number`	Specify a count for connection statistics
`mac mac-address`	Specify the MAC address of connections
`vnet vnet-name`	Specify the vNET of connections
`vlan vlan_id`	Specify the VLAN of connections.
`ip ip-address`	Specify the IP address of connections
`port port-number`	Specify the port number of connections.
`iconns iconns-number`	Specify the number of incoming connections.
`oconns oconns-number`	Specify the number outgoing connections.
`obytes`	Specify the number of bytes sent from the client side of the connection.
`ibytes`	Specify the number of bytes received by the client side of the connection.
`total-bytes total-bytes-number`	Specify the total number of bytes for the connection.
`first-seen date/time: yyyy-mm-ddThh:mm:ss`	Specify the time at which an entry was first seen.
`last-seen date/time: yyyy-mm-ddThh:mm:ss`	Specify the time at which an entry was last seen.
`last-seen-ago duration: #d#h#m#s`	Specify the duration since the statistics was last seen.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 1.2.2	Command changed to `connection-stats-show`.
Version 2.2	The parameter, `no-since-start`, deprecated.
Version 2.4.1	The parameters, `vnet` and `total-bytes`, added.

Usage

Used to clear statistics for a connection to a host.

Examples

To clear the statistics from port 23, use the following command:

```
CLI (network-admin@switch) > connection-stats-clear port 23
```

connection-stats-show

This command displays statistics collected when connected to a host.

Syntax `connection-stats-show`

`time date/time: yyyy-mm-ddThh:mm:ss`	Specify a time to display connection statistics.
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies statistics from a specific start time and date.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies statistic from a specific end time and date.
`duration: #d#h#m#s`	Specifies statistics for a specific duration.
`interval duration: #d#h#m#s`	Specifies statistics for a specific interval duration.
`since-start| no-since-start`	Specifies statistics from the start of collection.
`older-than duration: #d#h#m#s`	Specifies statistics older than a specified date and time.
`within-last duration: #d#h#m#s`	Specifies statistics within a specified duration time.
`count count-number`	Clear a specific number of statistics.
`mac mac-address`	Clear statistics for a MAC address.
`vnet vnet-name`	Clears statistics for a specific vNET.
`vlan vlan_id`	Specifies the VLAN identifier.
`ip ip-address`	Specifies the IP address of the connection.
`port port-number`	Specifies the port number of the connection.
`iconns iconns-number`	Specifies the number of incoming connections.
`oconns oconns-number`	Specifies the number outgoing connections.
`obytes`	Specifies the number of bytes sent from the client side of the connection.
`ibytes`	Specifies the number of bytes received by the client side of the connection.
`total-bytes total-bytes-number`	Specifies the total number of bytes for the connection.
`first-seen date/time: yyyy-mm-ddThh:mm:ss`	Clear statistics from the time a connection is first seen.

`last-seen date/time: yyyy-mm-ddThh:mm:ss`	Clear statistics from the time a connection was last seen.

Access CLI

History

Version 1.2	Command introduced.
Version 1.2.2	Command changed to connection-stats-show.
Version 2.2	The parameter, `total-bytes`, added.
Version 2.4	The parameter, `age`, deprecated.
Version 2.4.1	The parameter, `vnet`, added.

Usage Used to clear statistics about a connection to a host.

Examples To display the statistics from port 23, use the following command:

```
CLI (network-admin@switch)1 > connection-stats-show format all layout vertical

  switch:        switch1
  mac:           64:0e:94:28:03:56
  vnet:          vnet-global
  vlan:          1
  ip:            192.168.42.30
  port:          41
  iconns:        184
  oconns:        0
  ibytes:        0
  obytes:        0
  total-bytes:   0
  first-seen:    01-14,10:33:44
  last-seen:     01-14,10:35:22
  last-seen-ago: 5d23h29m53s
  switch:        switch1
  mac:           64:0e:94:28:00:5e
  vlan:          1
  ip:            192.168.42.20
  port:          47
  iconns:        3
  oconns:        0
  ibytes:        1.47K
  obytes:        14.8K
  total-bytes:   16.3K
  first-seen:    01-13,13:59:35
  last-seen:     01-19,22:45:21
  last-seen-ago: 11h19m54s
```

connection-stats-clear-history

This command is used to clear the history of connection statistics.

Syntax `connection-stats-clear-history`

Defaults None

Access CLI

History Command introduced in Version 2.2.3.

connection-stats-settings-modify

This command allows you to modify the settings for collecting statistical data about connections.

Syntax `connection-stats-settings-modify`

Specify one or more of the following options:	
`enable|disable`	Enable or disable collecting connection statistics.
`connection-max-memory` *`connection-max-memory-number`*	Specify the maximum memory allowed for connection statistics.
`connection-backup-enable|connection-backup-disable`	Enable or disable backup for connection statistics collection. This option is disabled by default.
`connection-backup-interval` `duration:` *`#d#h#m#s`*	Specify backup interval for connection statistics collection.
`client-server-stats-max-memory` *`client-server-stats-max-memory-number`*	Specify maximum memory for client server statistics.
`client-server-stats-log-enable|client-server-stats-log-disable`	Enable or disable client server statistics logging. This option is disabled by default.
`client-server-stats-log-interval` `duration:` *`#d#h#m#s`*	Specify the client server statistics logging interval.
`client-server-stats-log-disk-space` *`disk-space-number`*	Specify the disk-space allocated for client server statistics logging.
`connection-stats-max-memory` *`connection-stats-max-memory-number`*	Specify the maximum memory allowed for connection statistics.
`connection-stats-log-enable|connection-stats-log-disable`	Enable or disable connection statistics logging. This option is disabled by default.
`connection-stats-log-interval` `duration:` `#d#h#m#s`	Specify the connection statistics logging interval.
`connection-stats-log-disk-space` *`disk-space-number`*	Specify the disk-space allocated for connection statistics logging.
`service-stat-max-memory` *`service-stat-max-memory-number`*	Specify the maximum memory allowed for service statistics.
`fabric-connection-max-memory` *`fabric-connection-max-memory-number`*	Specify the maximum memory allowed for fabric connection statistics.
`fabric-connection-backup-enable|fabric-connection-backup-disable`	Enable or disable backup for fabric connection statistics collection. This option is disabled by default.
`fabric-connection-backup-interval` `duration:` *`#d#h#m#s`*	Specify the backup interval for fabric connection statistics collection.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to modify connection statistics collection.

Examples To disable statistics collection, use the following syntax:

```
CLI (network-admin@switch)1 > collection-stats-settings-modify   disable
```

connection-stats-settings-show

This command allows you to display the settings for collecting statistical data about connections.

Syntax `connection-stats-settings-show`

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to display connection statistics settings.

Examples To display connection statistics settings, use the following syntax:

CLI (network-admin@switch)1 > `connection-stats-settings-show`

```
switch:                                     switch1
enable:                                     yes
connection-max-memory:                      50M
connection-max-count:                       52012
connection-current-count:                   28482
connection-backup-enable:                   no
connection-backup-interval:                 1m
connection-backup-used-disk-space:          5.54M
client-server-stats-max-memory:             50M
client-server-stats-max-cnt:                71234
client-server-stats-cur-cnt:                132
client-server-stats-log-enable:             no
client-server-stats-log-interval:           1m
client-server-stats-log-disk-space:         50M
connection-stats-max-memory:                50M
connection-stats-max-cnt:                   82956
connection-stats-cur-cnt:                   108
connection-stats-log-enable:                no
connection-stats-log-interval:              1m
connection-stats-log-disk-space:            50M
service-stat-max-memory:                    1M
service-stat-max-cnt:                       4681
service-stat-cur-cnt:                       0
fabric-connection-max-memory:               10M
fabric-connection-max-count:                8090
fabric-connection-current-count:            7234
fabric-connection-backup-enable:            no
fabric-connection-backup-interval:          1m
fabric-connection-backup-used-disk-space:   1.46
```

connection-show

To display connection statistics for a switch, use the `connection-show` command.

Syntax `connection-show`

`start-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies statistics from a specific start time and date.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies statistic from a specific end time and date.
`duration: #d#h#m#s`	Specifies statistics for a specific duration.
`interval duration: #d#h#m#s`	Specifies statistics for a specific interval duration.
`since-start`	Specifies statistics from the start of collection. This is another way to specify the start time for the connection output.
`older-than duration: #d#h#m#s`	Specifies statistics older than a specified date and time. This is another way to specify the end time for the connection output.
`within-last duration: #d#h#m#s`	Specifies statistics within a specified duration time. This is another way to specify the start time for the connection output. Also, only the closed connections are displayed.
`vlan vlan-id`	Specifies the VLAN identifier.
`egress-vnet vnet-name`	Specifies the egress vNET.
`egress-vlan vlan_id`	Specifies the egress VLAN of the connection.
`vnet vnet-name`	Specifies the name of the virtual network (vNET).
`src-switch-port`	Specifies the physical port number on the switch where a client requested a connection.
`dst-switch-port`	Specifies the physical port number on the switch where a server responded to a connection.
`ether_type`	Specifies the EtherType value or keyword of the connection. The keywords can be `arp`, `dot1X`, `fcoe`, `fcoe-init`, `ipv4`, `ipv6`, `jumbo`, `lldp`, `macsec`, `mpls-multi`, `mpls-uni`, `ptp`, `qing`, `rarp`, `vlan`, and `wake`.
`src-mac-addr`	Specifies the MAC address of the client requesting a connection.
`dst-mac-addr`	Specifies the MAC address of the server responding to a connection.
`src-ip`	Specifies the IP address of the client requesting a connection.

dst-ip	Specifies the IP address of the server responding to a connection.
src-port	Specifies the type of data on the source port. HDFS indicates ports connected to Hadoop systems. Also includes HDFS, Hive, Ganglia, Cassandra, Nutanix and other server types.
dst-port	Specifies the type of data on the destination port. This includes HDFS, Hive, Ganglia, Cassandra, Nutanix and other server types.
dscp	Specifies the 6-bit Differentiated Services Code Point (DSCP).
tunnel-vnet *vnet-name*	Specifies the tunnel vNET name.
tunnel-vlan *vlan-id*	Specifies the VLAN ID.
tunnel-src-mac *mac-address*	Specifies the tunnel source MAC address.
tunnel-dst-mac *mac-address*	Specifies the tunnel destination MAC address.
tunnel-src-ip *ip-address*	Specifies the tunnel source IP address
tunnel-dst-ip *ip-address*	Specifies the tunnel destination IP address.
tunnel-src-port	Specifies the type of port used by the client requesting a connection. This includes HDFS, Hive, Ganglia, Cassandra, Nutanix and other server types.
tunnel-dst-port	Specifies the type of port used by the client requesting a connection. This includes HDFS, Hive, Ganglia, Cassandra, Nutanix and other server types.
tunnel-proto tcp|udp|icmp|igmp|ip| icmpv6	Specifies the protocol assigned to the tunnel.
proto [tcp|udp|icmp|igmp|ip	Specifies the protocol.
cur-state syn|est|fin|rst	Specifies the current state of the connection. syn — synchronized est — established fin — finished rst — reset
dur high resolution time: #ns	Specifies the duration of the connection.
latency(us)high resolution time: #ns	Specifies the network transmit time (latency) experienced by the connection in microseconds.
obytes	Specifies the number of bytes sent from the client side of the connection.
ibytes	Specifies the number of bytes received by the client side of the connection.

`active`	Specifies whether the connection is currently active or inactive.
`age duration:#d#h#m#s`	Specifies the duration of the connection in days, hours, minutes and seconds.
`transition-state any|started-and-ended |started| ended|ongoing`	Specifies the transition state of the connection.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 1.2.2	Command changed to connection-clear. bytes-sent and bytes-recvd changed to obytes and ibytes. older-than and within-last parameters added.
Version 2.1	The parameters, `client` and `server`, changed to `src` and `dst`. The parameter, `service`, is deprecated. The parameters, `started-time`, `ended-time`, and `transition-state` added.
Version 2.2	The parameter, no-since-start, deprecated.
Version 2.2.5	The parameters, `HDFS-`, added.
Version 2.4	The parameter, `egress-vlan`, added.
Version 2.4.1	The parameter, `egress-vnet`, added.
Version 2.6.2	The parameters, `tunnel-*`, added.
Version 5.1.1	The parameters, egress-bd, tunnel-bd, update-id `high resolution time, and started-time-ns high resolution time added.`

Usage Each switch maintains a set of standard flow-based statistics that are "always-on", meaning that they are continuously tracked and updated by the switch. This command displays the TCP connections transiting the local switch as identified through the SYN/FIN protocol handshake between the client and the server of the application.

Examples To show the connection statistics for vnet MyVNET, use the following command:

```
CLI (network-admin@switch) > connection-show vnet MyVNET layout vertical

  switch:                                pleiades24
  vlan:                                  51
  vxlan:                                 0
```

```
vnet:
src-ip:                                 10.222.1.1
dst-ip:                                 10.222.1.2
client-switch-port:                     8000
server-switch-port:
client-port:
server-port:
dscp:
proto:
service dur(s:
latency(us):
bytes-sent:
bytes-recv:
active:
```

control-stats-settings-modify

This command is used to modify the settings for collecting statistics about packets sent from the CPU.

Syntax `control-stats-settings-modify`

`enable|disable`	Enable or disable collecting control statistics.
`interval duration: #d#h#m#s`	Specify the interval to collect statistics
`disk-space` *`disk-space-number`*	`disk-space` allocated for statistics (including rotated log files)

Defaults None

Access CLI

History Introduced in Version 2.0.

Usage You can use this command to modify the settings for control statistics collection.

Examples To disable statistics collection, use the following command:

```
CLI (network-admin@switch) > control-stats-settings-modify  disable
```

control-stats-settings-show

This command is used to display the settings for collecting statistics about packets sent from the CPU.

Syntax control-stats-settings-show

Defaults None

Access CLI

History Introduced in Version 2.0.

Usage You can use this command to display how packets statistics are collected.

Examples To disable statistic collection, use the following command:

```
CLI (network-admin@switch) > control-stats-settings-show
switch:        pubdev01
enable:       yes
interval:    1m
disk-space:  50M
switch:        pubdev03
enable:       yes
interval:    1m
disk-space:  50M
switch:        pubdev02
enable:       yes
interval:    1m
disk-space:  50M
```

control-stats-show

This command is used to display the packet counts sent from the CPU.

Syntax control-stats-show

`time` *`date/time: yyyy-mm-ddThh:mm:ss`*	Specify the timestamp of the statistics that you want to display.
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Specify the start time for the statistics that you want to display.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Specify the end time for the statistics that you want to display.
`duration duration: #d#h#m#s`	Specify the duration of the statistics that you want to display.
`interval duration: #d#h#m#s`	Specify the interval between the statistics that you want to display.
`since-start`	Specify a start time for the statistics.
`older-than duration: #d#h#m#s`	Specify a duration that is older than a specified time.
`within-last duration: #d#h#m#s`	Specify a duration window for a specified time.
`caller Unknown|Total|Vxlan|Vle`	Specify the caller for the specific statistics. Total is displayed by default.

Defaults None

Access CLI

History

Version 2.0	Command introduced.
Version 2.1	The options, CPU-RX-TX|VLAG|BCAST|Flood, added to the parameter, caller.
Version 2.2	The parameters, older-than and within-last, added. The parameters, `|ARP|Vxlan-ARP|Vxlan-multicast|Vxlan-TCP|Vxlan-encap|Vxlan|Discovery|Keep-Alive|ECP| ICMP|IGMP|LLDP|LACP|Logical-switch|PTP|STP|PVST|nvOS-control|Local-subnet|Ipv6-mc|TCP-conn|RX-queue|NAT-Dynamic|CPU-RX-TX|VLAG|BCAST|Flood]` deprecated.
Version 2.4.0	The option, `Vxlan`, added to the parameter, `caller`.

Version 2.6.2	The option, `Vle`, added to the parameter, `caller`.

Usage You can use this command to display how many packets the operating system is sending out and how many packets were dropped. This can be helpful when debugging or troubleshooting problems on the network.

Examples To display control stats for a duration of three days and an interval of one day, use the following command:

```
CLI (network-admin@switch) > control-stats-show duration 03:00:00
interval 01:00:00 format all layout vertical
switch: pubdev03
caller: Total
ipkts: 1.80M
ibytes: 458M
idrops: 5
idrop-bytes: 300
idrops-err: 0
opkts: 1.87M
obytes: 395M
odrops: 29.7K
odrop-bytes: 1.51M
switch: pubdev02
caller: Total
ipkts: 978K
ibytes: 434M
idrops: 8
idrop-bytes: 490
idrops-err: 0
opkts: 1.53M
obytes: 399M
odrops: 53.4K
odrop-bytes: 15.2M
switch: pubdev01
caller: Total
ipkts: 1.86M
ibytes: 499M
idrops: 13
idrop-bytes: 780
idrops-err: 0
opkts: 2.33M
obytes: 454M
odrops: 89.0K
odrop-bytes: 15.0M
```

control-traffic-modify

This command is used to modify the control traffic on the switch.

Syntax control-traffic-modify

`type smac-miss|dmac-miss|l3-miss|l3-ttl`	Specify the type of control traffic.
`class` *`vflow-class-name`*	Specify the vFlow class name.
`cpu_class` *`cpu-class name`*	Specify the CPU class name.

Defaults None

Access CLI

History .

Version 2.4.0	Command introduced.
Version 2.6.0	The parameter, `smac-miss`, added.
Version 2.6.2	The parameter, `cpu_class`, added.

Usage You can use this command to update the control traffic configuration.

Examples To modify control traffic, use the following command:

```
CLI (network-admin@switch) > control-traffic-modify  type
```

control-traffic-show

This command is used to display the control traffic configuration on the switch.

Syntax control-traffic-show

`type smac-miss|dmac-miss|l3-miss|l3-ttl`	Specify the type of control traffic.
`class` *`vflow-class-name`*	Specify the start time for the statistics that you want to display.
`cpu_class` *`cpu-class name`*	Specify the CPU class name.

Defaults None

Access CLI

History

Version 2.4.0	Command introduced.
Version 2.6.0	The parameter, `smac-miss`, added.
Version 2.6.2	The parameter, `cpu_class`, added.

Usage You can use this command to display the control traffic configuration.

Examples To display control traffic, use the following command:

```
CLI (network-admin@switch) > control-traffic-show
switch        type      class
------------- --------- ------
aquila-ext-43 smac-miss class1
aquila-ext-43 dmac-miss class0
aquila-ext-43 l3-miss   class0
aquila-ext-43 l3-ttl    class0
```

cpu-class-create

Netvisor's CPU Control Packet Processing Protection feature allows the CPU control packet processing path be protected against misbehaving and malicious hosts or end-points that may flood control protocol packets. This is also called "CPU hog protection".
If a host floods a control protocol packet, it floods the to-cpu queue. This prevents lower-rate packets from valid senders from reaching Netvisor, resulting in traffic loss for those hosts. Typically a traffic loss occurs for other hosts on the network. Netvisor can process large streams of both valid and malformed protocol packets for various protocols.

Syntax `cpu-class-create`

`name` *`name-string`*	Specify a name for the CPU class.
`scope local|fabric`	Specify the scope as local or fabric.
`rate-limit` *`rate-limit-number`*	Specify the cap for the rate limit.
`hog-protect disable|enable|enable-and-drop`	Specify if you want to enable, enable and drop packets, or disable hog protection.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to create CPU protection.

Examples To create a CPU protection class for the local subnet, use the following syntax:

CLI (network-admin@switch) > `cpu-class-create name local-subnet scope local rate-limit 100 hog-protect enable-and-drop`

cpu-class-delete

Netvisor's CPU Control Packet Processing Protection feature allows the CPU control packet processing path be protected against misbehaving and malicious hosts or end-points that may flood control protocol packets. This is also called "CPU hog protection".
If a host floods a control protocol packet, it floods the to-cpu queue. This prevents lower-rate packets from valid senders from reaching Netvisor, resulting in traffic loss for those hosts. Typically a traffic loss occurs for other hosts on the network. Netvisor can process large streams of both valid and malformed protocol packets for various protocols.

Syntax `cpu-class-delete`

`name` *`name-string`*	Specify a name for the CPU class.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to delete CPU protection.

Examples To delete a CPU protection class for the local subnet, use the following syntax:

```
CLI (network-admin@switch) > cpu-class-delete name local-subnet
```

cpu-class-modify

Netvisor's CPU Control Packet Processing Protection feature allows the CPU control packet processing path be protected against misbehaving and malicious hosts or end-points that may flood control protocol packets. This is also called "CPU hog protection".
If a host floods a control protocol packet, it floods the to-cpu queue. This prevents lower-rate packets from valid senders from reaching Netvisor, resulting in traffic loss for those hosts. Typically a traffic loss occurs for other hosts on the network. Netvisor can process large streams of both valid and malformed protocol packets for various protocols.

Syntax `cpu-class-modify`

`name` *`name-string`*	Specify a name for the CPU class.
`scope local|fabric`	Specify the scope as local or fabric.
`rate-limit` *`rate-limit-number`*	Specify the cap for the rate limit.
`hog-protect disable|enable|enable-and-drop`	Specify if you want to enable, enable and drop packets, or disable hog protection.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to modify CPU protection.

Examples To modify a CPU protection class for the local subnet to rate limit 1000, use the following syntax:

```
CLI (network-admin@switch) > cpu-class-modify name local-subnet rate-limit 1000
```

cpu-class-show

Netvisor's CPU Control Packet Processing Protection feature allows the CPU control packet processing path be protected against misbehaving and malicious hosts or end-points that may flood control protocol packets. This is also called "CPU hog protection".
If a host floods a control protocol packet, it floods the to-cpu queue. This prevents lower-rate packets from valid senders from reaching Netvisor, resulting in traffic loss for those hosts. Typically a traffic loss occurs for other hosts on the network. Netvisor can process large streams of both valid and malformed protocol packets for various protocols.

Syntax `cpu-class-show`

`name` *`name-string`*	Displays the name for the CPU class.
`scope local|fabric`	Displays the scope as local or fabric.
`rate-limit` *`rate-limit-number`*	Displays the cap for the rate limit.
`hog-protect disable|enable|enable-and-drop`	Displays if you want to enable, enable and drop packets, or disable hog protection.
`hog-protect-support| no-hog-protect-support`	Displays if hog protection is supported or not.
`queue` *`queue-number`*	Displays the queue number.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to display information about CPU class configurations.

Examples To display CPU class configurations, use the following syntax:

```
CLI (network-admin@switch) > cpu-class-show
switch     name             scope rate-limit hog-protect hog-protect-support queue
---------- ---------------- ----- ---------- ----------- ------------------- -----
aquarius06 dmac-miss        local 1000       disable     none                1
aquarius06 smac-miss        local 1000       disable     none                2
aquarius06 l3-miss          local 1000       disable     none                3
aquarius06 ttl1             local 1000       disable     none                4
aquarius06 stp              local 1000       disable     supported           5
aquarius06 lacp             local 1000       disable     supported           6
aquarius06 system-d         local 1000       disable     none                7
aquarius06 dmac-miss        local 1000       disable     none                8
aquarius06 smac-miss        local 1000       disable     none                9
aquarius06 l3-miss          local 1000       disable     none                10
aquarius06 ttl1             local 1000       disable     none                11
aquarius06 stp              local 1000       disable     supported           12
aquarius06 lacp             local 1000       disable     supported           13
aquarius06 system-d         local 1000       disable     none                14
```

```
aquarius06 igmp              local 1000       disable     none                15
aquarius06 bcast             local 1000       disable     none                16
aquarius06 icmpv6            local 1000       disable     none                17
aquarius06 tcp-analytics     local 1000       disable     none                18
aquarius06 kpalv             local 1000       disable     none                19
aquarius06 ecp               local 1000       disable     none                20
aquarius06 arp               local 1000       disable     supported           21
aquarius06 lldp              local 1000       disable     supported           22
aquarius06 vport-stats       local 1000       disable     none                23
aquarius06 dhcp              local 1000       disable     none                24
aquarius06 pim               local 1000       disable     none                25
aquarius06 local-subnet      local 1000       disable     supported           26
aquarius06 bgp               local 1000       disable     supported           27
aquarius06 ospf              local 1000       disable     supported           28
aquarius06 bfd               local 1000       disable     supported           29
aquarius06 vrrp              local 1000       disable     supported           30
aquarius06 cluster-control   local 5000       disable     none                31
aquarius06 control           local 5000       disable     none                32
aquarius06 hog-arp           local 100        disable     none                33
aquarius06 hog-ospf          local 100        disable     none                34
aquarius06 hog-bgp           local 100        disable     none                35
aquarius06 hog-bfd           local 100        disable     none                36
aquarius06 hog-lacp          local 100        disable     none                37
aquarius06 hog-stp           local 100        disable     none                38
aquarius06 hog-vrrp          local 100        disable     none                39
aquarius06 hog-lldp          local 100        disable     none                40
aquarius06 hog-local-subnet local 100         disable     none                41
aquarius06 dhcp-log-drop     local 1000       disable     none                42
```

cpu-class-settings-modify

Netvisor's CPU Control Packet Processing Protection feature allows the CPU control packet processing path be protected against misbehaving and malicious hosts or end-points that may flood control protocol packets. This is also called "CPU hog protection".
If a host floods a control protocol packet, it floods the to-cpu queue. This prevents lower-rate packets from valid senders from reaching Netvisor, resulting in traffic loss for those hosts. Typically a traffic loss occurs for other hosts on the network. Netvisor can process large streams of both valid and malformed protocol packets for various protocols.

Syntax `cpu-class-settings-modify`

`hog-checker-interval` *`hog-checker-interval-number (ms)`*	Specify the hog checking interval in milliseconds.
`hog-max-hosts-per-class` *`hog-max-hosts-per-class-number`*	Specify the maximum number of active hosts tracked per CPU class.
`hog-max-violators-per-port` *`hog-max-violators-per-port-number`*	Specify the maximum number of hog violators per port.
`hog-max-violators-per-port` *`hog-max-violators-per-port-number`*	Specify the hog warning threshold.
`hog-violator-timeout` *`hog-violator-timeout-number (s)`*	Specify the timeout before restoring the hog violator to normal queue after an idle state.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to modify statistics settings for CPU class.

Examples To modify CPU class settings for hog-checker-interval from 100 to 150, use the following syntax:

```
CLI (network-admin@switch) > cpu-clss-settings-modify  hog-checker-interval 150
```

cpu-class-settings-show

The Netvisor OS CPU Control Packet Processing Protection feature allows the CPU control packet processing path be protected against misbehaving and malicious hosts or end-points that may flood control protocol packets. This is also called "CPU hog protection".

If a host floods a control protocol packet, it floods the to-cpu queue. This prevents lower-rate packets from valid senders from reaching Netvisor, resulting in traffic loss for those hosts. Typically a traffic loss occurs for other hosts on the network. Netvisor can process large streams of both valid and malformed protocol packets for various protocols.

Syntax `cpu-class-settings-show`

`hog-checker-interval` *`hog-checker-interval-number (ms)`*	Specify the hog checking interval in milliseconds.
`hog-max-hosts-per-class` *`hog-max-hosts-per-class-number`*	Specify the maximum number of active hosts tracked per CPU class.
`hog-max-violators-per-port` *`hog-max-violators-per-port-number`*	Specify the maximum number of hog violators per port.
`hog-max-violators-per-port` *`hog-max-violators-per-port-number`*	Specify the hog warning threshold.
`hog-violator-timeout` *`hog-violator-timeout-number (s)`*	Specify the timeout before restoring the hog violator to normal queue after an idle state.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to display statistic settings for CPU hog protection.

Examples To display statistic settings for CPU hog protection, use the following syntax:

```
CLI (network-admin@switch) > cpu-class-settings-show
switch:                     Spine01
hog-checker-interval(ms):   100
hog-max-hosts-per-class:    500
hog-max-violators-per-port: 50
hog-warning-threshold:      5
hog-violator-timeout(s):    20
```

cpu-class-stats-clear

The Netvisor OS CPU Control Packet Processing Protection feature allows the CPU control packet processing path be protected against misbehaving and malicious hosts or end-points that may flood control protocol packets. This is also called "CPU hog protection".

If a host floods a control protocol packet, it floods the to-cpu queue. This prevents lower-rate packets from valid senders from reaching Netvisor, resulting in traffic loss for those hosts. Typically a traffic loss occurs for other hosts on the network. Netvisor can process large streams of both valid and malformed protocol packets for various protocols.

Syntax `cpu-class-stats-clear`

`name` *`name-string`*	Specify the name of the CPU class to clear statistics.
`cos` *`cos-number`*	Clear the CoS value for the CPU class.
`hw-out-pkts` *`hw-out-pkts-number`*	Clear the hardware transmitted packet count.
`hw-drop-pkts` *`hw-drop-pkts-number`*	Clear the number of hardware dropped packets.
`sw-pkts` *`sw-pkts-number`*	Clear the number of packets processed in software.
`sw-drops-pkts` *`sw-drops-pkts-number`*	Clear the number of packets dropped in software because the queue is full.
`hog-violations` *`hog-violations-number`*	Clear the number of hog protection host violations and moved to separate queue.
`hog-warnings` *`hog-warnings-number`*	Clear the number of hog protection delegated bandwidth warnings.
`hog-hosts-in` *`hog-hosts-in-number`*	Clear the number of added hosts for hog protection.
`hog-hosts-out` *`hog-hosts-out-number`*	Clear the number of hosts removed from hog protection.
`hog-max-hosts-drops` *`hog-max-hosts-drops-number`*	Clear the number of dropped hosts with hog protection because the maximum number of hosts is reached.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to clear statistics for CPU hog protection.

Examples To clear statistics for CPU hog protection, use the following syntax:

```
CLI (network-admin@switch) > cpu-class-stats-clear
```

cpu-class-stats-show

The Netvisor OS CPU Control Packet Processing Protection feature allows the CPU control packet processing path be protected against misbehaving and malicious hosts or end-points that may flood control protocol packets. This is also called "CPU hog protection".
If a host floods a control protocol packet, it floods the to-cpu queue. This prevents lower-rate packets from valid senders from reaching Netvisor, resulting in traffic loss for those hosts. Typically a traffic loss occurs for other hosts on the network. Netvisor can process large streams of both valid and malformed protocol packets for various protocols.

Syntax `cpu-class-stats-show`

`name` *`name-string`*	Specify the name of the CPU class to clear statistics.
`cos` *`cos-number`*	Displays the CoS value for the CPU class.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to display statistics for CPU hog protection.

Examples To display statistics for CPU hog protection, use the following syntax:

```
CLI (network-admin@switch) > cpu-class-stats-show
switch: Spine01
hog-checker-interval(ms): 100
hog-max-hosts-per-class: 500
hog-max-violators-per-port: 50
hog-warning-threshold: 5
hog-violator-timeout(s): 20
```

D Commands

dhcp-filter-create

DHCP snooping is a security feature which allows the network to avoid denial-of-service attacks from rogue DHCP servers. Trusted ports are defined to connect to the known DHCP servers. DHCP snooping also maintains a mapping table for current assignments.
In a DHCP packet flow, there are the following packet types:

- DHCPDISCOVER/DHCPREQUEST — Packets from the DHCP client to server (UDP dest-port = 67)
- DHCPOFFER/DHCPACK — Packets from the DHCP Server to client (UDP dest-port = 68)

Netvisor must snoop the DHCP packets in order to implement this feature, and achieves this by installing a copy-to-cpu vFlow with the parameter, `bw-max`, to set packet rate limits.

- DHCP-client-vflow — Packets with UDP dest-port=67, copy-to-cpu
- DHCP-server-vflow — Packets with UDP dest-port=68, copy-to-cpu

A trusted port is a port receiving the DHCP server messages from a trusted DHCP server. Any DHCP server message, such as OFFER/ACKNOWLEDGE, received from trusted ports are valid. Ports not configured as trusted are untrusted ports. Netvisor drops any DHCP server message received from untrusted ports, and ensures that a rogue DHCP server cannot assign IP addresses to devices on your network.
This command is used to create a DHCP filter.

Syntax `dhcp—filter-create`

`name` *`name-string`*	Specify a name for the filter.
`trusted-ports` *`port-list`*	Specify a list of trusted ports.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to create a DHCP filter for trusted ports.

Examples To create a DHCP filter, trust-server-1 and port 13-17 , use the following syntax:

```
CLI (network-admin@switch) > dhcp-filter-create name trust-server-1
ports 13-17
```

dhcp-filter-delete

DHCP snooping is a security feature which allows the network to avoid denial-of-service attacks from rogue DHCP servers. Trusted ports are defined to connect to the known DHCP servers. DHCP snooping also maintains a mapping table for current assignments.
In a DHCP packet flow, there are the following packet types:

- DHCPDISCOVER/DHCPREQUEST — Packets from the DHCP client to server (UDP dest-port = 67)
- DHCPOFFER/DHCPACK — Packets from the DHCP Server to client (UDP dest-port = 68)

This command is used to delete a DHCP filter.

Syntax `dhcp—filter-add name name-string`

`name` *`name-string`*	Specify a name for the filter.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to create a DHCP filter for trusted ports.

Examples To delete a DHCP filter, trust-server-1, use the following syntax:

```
CLI (network-admin@switch) > dhcp-filter-delete name trust-server-1
```

dhcp-filter-modify

DHCP snooping is a security feature which allows the network to avoid denial-of-service attacks from rogue DHCP servers. Trusted ports are defined to connect to the known DHCP servers. DHCP snooping also maintains a mapping table for current assignments.
In a DHCP packet flow, there are the following packet types:

- DHCPDISCOVER/DHCPREQUEST — Packets from the DHCP client to server (UDP dest-port = 67)

- DHCPOFFER/DHCPACK — Packets from the DHCP Server to client (UDP dest-port = 68)

This command is used to modify a DHCP filter.

Syntax `dhcp—filter-modify name name-string trusted-ports port-list`

`name` *`name-string`*	Specify a name for the filter.
`trusted-ports` *`port-list`*	Specify a list of trusted ports.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to create a DHCP filter for trusted ports.

Examples To modify a DHCP filter, trust-server-1 and change the ports to 33-35, use the following syntax:

```
CLI (network-admin@switch) > dhcp-filter-modify name trust-server-1
ports 33-35
```

dhcp-filter-show

DHCP snooping is a security feature which allows the network to avoid denial-of-service attacks from rogue DHCP servers. Trusted ports are defined to connect to the known DHCP servers. DHCP snooping also maintains a mapping table for current assignments.
In a DHCP packet flow, there are the following packet types:

- DHCPDISCOVER/DHCPREQUEST — Packets from the DHCP client to server (UDP dest-port = 67)
- DHCPOFFER/DHCPACK — Packets from the DHCP Server to client (UDP dest-port = 68)

This command is used to display DHCP filter information.

Syntax `dhcp-filter-show`

`name` *`name-string`*	Displays the name of the filter.
`trusted-ports` *`port-list`*	Displays a list of trusted ports.
`vlan` *`vlan-list`*	Displays a list of VLANs.

History Command introduced in Version 2.6.0.

Usage Use this command to display information about a DHCP filter configuration.

Examples To display DHCP filter information, use the following syntax:

```
CLI (network-admin@switch) > dhcp-filter-show
```

dhcp-lease-show

This command is used to display information about DHCP leases on the switch.

Syntax `dhcp-lease-show`

`ip` *`ip-address`*	Specifies the IP address of a DHCP client.
`mac` *`mac-address`*	Specifies the MAC address of a DHCP client.
`port` *`port-list`*	Specifies the port of a DHCP client.
`vlan` *`vlan-id`*	Specifies the VLAN for the DHCP client.
`vnet` *`vnet name`*	Specifies the vNET name.
`bd` *`bridge-domain name`*	Specifies the bridge domain name.
`db-state unknown|free|active| backup|abandoned| expired`	Specifies the state of a DHCP client's lease.
`start-time` *`yyyy-mm-ddThh:mm:ss`*	The beginning of the DHCP lease.
`end-time` *`yyyy-mm-ddThh:mm:ss`*	Specifies the end of the DHCP lease.
`server dhcp` *`name`*	Specifies the name of the DHCP server.
`server-ip` *`ip-address`*	Specifies the IP address of the DHCP server.
`server-port` *`server-port-number`*	Specifies the port number of the DHCP server.
`last-msg |discover|offer| request|decline|ack| nack|release|inform`	Specifies the last message received from the DHCP client.
`last-msg-time date/time:`*`yyyy-mm-ddThh:mm:ss`*	Specifies the time of the last message received from the DHCP client.
`trusted-server|no-trusted-server`	Specifies the trusted DHCP server.

Defaults None

Access CLI

History

Version 1.2.1	Command introduced.
Version 2.6	The parameter, `trusted-server`, added.
Version 5.1.1	The parameters, `vnet` and `bd`, added.

Usage Used to display information about DHCP leases on the switch.

Examples To display information about the DHCP leases on the switch, use the following command:

```
CLI (network-admin@switch) > dhcp-lease-show
switch: pleiades25
ip: 172.16.23.2
mac: 66:0e:94:21:4a:7b
port: none
vlan: 11
db-state: active
start-time: 09:17:59
end-time: 10:17:59
server: red-dhcp
server-ip: 172.16.23.1
switch: pleiades25
ip: 172.16.23.3
mac: 00:25:90:63:8a:84
port: 10
vlan: 11
db-state: active
start-time: 09:20:05
end-time: 10:20:05
server: red-dhcp
server-ip: 172.16.23.1
server-port: 65
last-msg: ack
last-msg-time: 09:20:06
```

dscp-map-create

Netvisor supports creating Quality of Service (QoS) maps to configure hardware based mapping of Differentiated Services Code Point (DSCP) value in a received IP header to a Cost of Service (CoS) priority. This helps with prioritizing traffic based on DSCP markings by using the appropriate egress CoS queues to send packets out.

Syntax `dscp-map-create name name-string`

`name` *`name-string`*	Create a name for the DSCP map.

Defaults

CoS Priority Value	Default DSCP Values
0	None
1	8,10,12,14
2	16,18,20,22
3	24,26,28,30
4	32,34,36,38
5	40
6	48
7	56

Access Network Administrator

History Command introduced in Version 2.5.3.

Usage Use this command to create a DSCP map with default DSCP to priority mappings.

Examples To create a DSCP map with the name DSCP-1, use the following syntax:

```
CLI (network-admin@switch) > dscp-map-create name DSCP-1
```

dscp-map-delete

Netvisor supports creating Quality of Service (QoS) maps that configure hardware based mapping of Differentiated Services Code Point (DSCP) value in a received IP header to a Cost of Service (CoS) priority. This helps in prioritizing traffic based on DSCP markings by using the appropriate egress CoS queues to send packets out.

Syntax `dscp-map-delete name name-string`

`name` *`name-string`*	Specify the name of the DSCP map.

Access Network Administrator

History Command introduced in Version 2.5.3.

Usage Use this command to delete a DSCP map.

Examples To delete a DSCP map with the name DSCP-1, use the following syntax:

```
CLI (network-admin@switch) > dscp-map-delete name DSCP-1
```

dscp-map-show

Netvisor supports creating Quality of Service (QoS) maps that configure hardware based mapping of Differentiated Services Code Point (DSCP) value in a received IP header to a Cost of Service (CoS) priority. This helps in prioritizing traffic based on DSCP markings by using the appropriate egress CoS queues to send packets out.

Syntax `dscp-map-show name name-string`

`name` *`name-string`*	Specify the name of the DSCP map.

Access Network Administrator

History Command introduced in Version 2.5.3.

Usage Use this command to display DSCP maps.

Examples To display a DSCP map with the name DSCP-1, use the following syntax:

```
CLI (network-admin@switch) > dscp-map-show name DSCP-1
```

dscp-map-pri-map-modify

Netvisor supports creating Quality of Service (QoS) maps that configure hardware based mapping of Differentiated Services Code Point (DSCP) value in a received IP header to a Cost of Service (CoS) priority. This helps in prioritizing traffic based on DSCP markings by using the appropriate egress CoS queues to send packets out.

Syntax `dscp-map-pri-map-modify name name-string`

`name` *`name-string`*	Specify the name of the DSCP map.
the following `pri-map` arguments:	
`pri` *`number`*	Specify a CoS priority from 0 to 7.
`dsmap` *`number-list`*	Specify a DSCP value(s)as a single value, comma separated list, or a number range.

Defaults

CoS Priority Value	Default DSCP Values
0	None
1	8,10,12,14
2	16,18,20,22
3	24,26,28,30
4	32,34,36,38
5	40
6	48
7	56

Access Network Administrator

History Command introduced in Version 2.5.3.

Usage Use this command to modify a DSCP map.

Examples To modify a DSCP map with the name DSCP-1, use the following syntax:

```
CLI (network-admin@switch) > dscp-map-pri-map-modify name DSCP-1 pri 5
dsmap 44
```

dscp-map-pri-map-show

Netvisor supports creating Quality of Service (QoS) maps that configure hardware based mapping of Differentiated Services Code Point (DSCP) value in a received IP header to a Cost of Service (CoS) priority. This helps in prioritizing traffic based on DSCP markings by using the appropriate egress CoS queues to send packets out.

Syntax `dscp-map-pri-map-show`

`name` *`name-string`*	Specify the name of the DSCP map.
the following `pri-map` arguments:	
`pri` *`number`*	Specify a CoS priority from 0 to 7.
`dsmap` *`number-list`*	Specify a DSCP value(s)as a single value, comma separated list, or a number range.

Defaults

CoS Priority Value	Default DSCP Values
0	None
1	8,10,12,14
2	16,18,20,22
3	24,26,28,30
4	32,34,36,38
5	40
6	48
7	56

Access Network Administrator

History Command introduced in Version 2.5.3.

Usage Use this command to display a DSCP map and values.

Examples To display a DSCP map with the name DSCP-1, use the following syntax:

Informational Note: The `dscp-map-pri-map-show` displays output only if there are maps configured .

```
CLI (network-admin@switch) > dscp-map-pri-map-show name DSCP-1
switch name pri dsmap
------- ---- --- -----------
Spine1 ds2 0 none
Spine1 ds2 1 8,10,12,14
```

```
Spine1 ds2 2 16,18,20,22
Spine1 ds2 3 24,26,28,30
Spine1 ds2 4 32,34,36,38
Spine1 ds2 5 40
Spine1 ds2 6 48
Spine1 ds2 7 56
```

E Commands

err-disable-clear-counters

Physical ports are automatically disabled by Netvisor due to certain violations. For example, if a port receives BPDU messages from an edge port, Netvisor disables the port because receiving BPDUs on a edge port is a security violation. However, there is no way to indicate that the port is shut down because of a violation and not because of physical link issues.

Syntax `err-disable-clear-counters`

`bpduguard|no-bpduguard`	Specify if you want BPDU guard enabled.
`macsecurity|no-macsecurity`	Specify if you want MAC recovery enabled.
`recovery-timer duration: #d#h#m#s`	Specify the recovery time value.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to reset port error counters.

Examples To clear port error counters, use the following syntax:

```
CLI (network-admin@switch) > err-disable-clear-counters
```

err-disable-modify

Physical ports are automatically disabled by Netvisor due to certain violations. For example, if a port receives BPDU messages from an edge port, Netvisor disables the port because receiving BPDUs on a edge port is a security violation. However, there is no way to indicate that the port is shut down because of a violation and not because of physical link issues.

Syntax `err-disable-modify`

`bpduguard|no-bpduguard`	Specify if you want BPDU guard enabled.
`macsecurity|no-macsecurity`	Specify if you want MAC recovery enabled.
`recovery-timer duration: #d#h#m#s`	Specify the recovery time value.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to modify port error counters.

Examples To clear port error counters, use the following syntax:

```
CLI (network-admin@switch) > err-disable-modify
```

err-disable-counters-clear

Physical ports are automatically disabled by Netvisor due to certain violations. For example, if a port receives BPDU messages from an edge port, Netvisor disables the port because receiving BPDUs on a edge port is a security violation. However, there is no way to indicate that the port is shut down because of a violation and not because of physical link issues.

Syntax `err-disable-counters-clear`

`bpduguard|no-bpduguard`	Specify if you want to clear BPDU guard counters.
`macsecurity|no-macsecurity`	Specify if you want to clear MAC recovery counters.
`recovery-timer` *duration: #d#h#m#s*	Specify the recovery time value.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to reset port error counters.

Examples To clear port error counters, use the following syntax:

```
CLI (network-admin@switch) > err-disable-counters-clear
```

eula-show

This command is used to display the End User License Agreement (EULA).

Syntax `eula-show`

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to display the End User License Agreement (EULA).

Examples To display End User License Agreement (EULA), use the following syntax:

```
CLI (network-admin@switch) > eula-show
```

exit

This command allows you to exit the CLI.

Defaults None

Access CLI.

Usage Use this command to exit the CLI.

F Commands

fabric-anycast-mac-modify

This command is used to modify the fabric anycast MAC address for the fabric.

Syntax `fabric-anycast-mac-modify`

`mac` *`mac-address`*	Modify the anycast MAC address for the fabric.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to modify the fabric anycast MAC address for the fabric.

Examples To modify the fabric anycast MAC address for the fabric, use the following syntax:

```
CLI (network-admin@switch) > fabric-anycast-mac-modify  mac
72:0e:94:40:00:02
```

fabric-anycast-mac-show

This command is used to display the anycast MAC address for the fabric.

Syntax `fabric-anycast-mac-show`

`mac` *`mac-address`*	Displays the anycast MAC address for the fabric. The default value is `64:0e:94:40:00:02`,

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to display the anycast MAC address for Virtual Routing and Forwarding (VRF).

Examples To display the anycast MAC address, use the following syntax:

```
CLI (network-admin@switch) > fabric-anycast-mac-show
mac:        64:0e:94:40:00:02
```

fabric-comm-vrouter-bgp-create

This command is used to create a fabric over a Layer 3 network using a BGP vRouter.

Syntax `fabric-comm-vrouter-bgp-create`

name *name-string*	Specify the name of the fabric communication vRouter.
bgp-as *number*	Specify the BGP Autonomous System number from 1 to 4294967295.
bgp-redistribute static|connected|rip|ospf	Specify the BGP route redistribution type.
bgp-max-paths *integer*	Specify the maximum BGP paths from 1 to 255.
bgp-ibgp-multipath *integer*	Specify the number of IBGP multipath connections from 1 to 255.
router-id *ip-address*	Specify the vRouter ID.
hw-vrrp-id *hw-vrrp-id-number*	Specify the VRRP ID assigned to the hardware router.
bgp-nic-ip *ip-address*	Specify the IP address.
bgp-nic-netmask netmask	Specify the netmask.
bgp-nic-linklocal *ip-address*	Specify the IPv6 link local address.
bgp-nic-vnet *vnet name*	Specify the VLAN interface.
bgp-nic-bd *bridge-domain name*	Specify the bridge domain interface.
bgp-nic-vlan *vlan-id*	Specify the VLAN ID.
bgp-nic-vlan-type public|private	Specify the VLAN type as public or private.
bgp-nic-l3-port *l3port-usable-port name*	Specify the Layer 3 port.
in-band-nic-ip *ip-address*	Specify the IP address of the in-band management interface.
in-band-nic-netmask *netmask*	Specify the netmask of the in-band management interface.
in-band-nic-linklocal *ip-address*	Specify the IPv6 link local address.

in-band-nic-vnet *vnet name*	Specify the VLAN interface.
in-band-nic-bd *bridge-domain name*	Specify the bridge domain interface.
in-band-nic-vlan *vlan-id*	Specify the VLAN interface.
in-band-nic-if-nat-realm internal| external	Specify the NAT interface realm.
neighbor *ip-address*	Specify the IP address of the BGP neighbor.
remote-as *integer*	Specify the BGP remote AS from 1 to 4294967295.
next-hop-self| no-next-hop-self	Specify the next hop as self or not.
password *password-string*	Specify the MD5 password for BGP.
ebgp-multihop *integer*	Specify the value for external BGP from 1 to 255.
update-source-interface *update-source-interface-string*	Specify the interface name of BGP packets. This parameter is required for peering over any interface.
override-capability| no-override-capability	Specify if you want override capability.
soft-reconfig-inbound| no-soft-reconfig-inbound	Specify if you want a soft reset to reconfigure inbound traffic.
max-prefix *max-prefix-number*	Specify the maximum number of prefixes.
max-prefix-warn-only| no-max-prefix-warn-only	Specify you want to receive a warning if the maximum number of prefixes is exceeded.
bfd|no-bfd	Specify if you want BFD protocol support for fault detection.
weight none	Specify the weight value between 0 and 65535 for the neighbor's routes. The default is none.
default-originate| no-default-originate	Specify to announce default routes to the neighbor or not.
neighbor-keepalive-interval *seconds*	Specify the keepalive interval in seconds. This is a value between 0 and 65535 seconds.
neighbor-holdtime *seconds*	Specify the neighbor hold time in seconds. This is a value between 0 and 65535 seconds

`allowas-in|no-allowas-in`	Specify if you want to reject routes with local AS in AS_PATH. Normally, when you do not set this option, nodes reject routes containing their own AS which helps prevent routing loops. However, in some cases nodes that belong to the same AS have no direct connectivity; for example when you form clusters and choose not to use the cluster link for iBGP communication. In this case the only way to direct routes through connected eBGP neighbors is to set this option so routes are not rejected routes from the cluster peer.
`interface vrouter interface` *`nic`*	Specify the interface to reach the neighbor.
`advertisement-interval 0..600`	Specify the minimum interval between sending BGP routing updates.
`no-route-map-in`	Specify if you want to remove an ingress route map.
`no-route-map-out`	Specify if you want to remove an egress route map.
`fabric-network` *`ip-address`*	Specify the in-band network IP address.
`fabric-netmask` *`netmask`*	Specify the in-band network mask.

Defaults None

Access Network administrator

History

Version 2.4.1	Command introduced.
Version 2.5.2	The parameter `allowas-in|no-allowas-in` added.
Version 3.0.0	The parameter, `interface`, added.
Version 3.1.0	The parameters, `advertisement-interval`, `no-route-map-in`, and `no-route-map-out`, added.
Version 6.0.1	The parameter, `update-source-interface`, added.

Usage This command is used to allow fabric communication over a Layer 3 network.

Examples To modify fabric communication ports, use the following syntax:

```
CLI (network-admin@switch) > fabric-comm-vrouter-bgp-create
```

fabric-comm-ports-modify

This command is used to modify communication ports on a fabric.

Syntax `fabric-comm-ports-modify`

`range-start` *`port-number`*	Modify the communications port range. This is a value between 1024 and 65435 .

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to modify fabric communication ports.

Examples To modify fabric communication ports, use the following syntax:

```
CLI (network-admin@switch) > fabric-comm-ports-modify range-start 1050-1060
```

fabric-comm-ports-show

This command is used to display communication ports on a fabric.

Syntax `fabric-comm-ports-show`

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to display fabric communication ports.

Examples To display fabric communication ports, use the following syntax:

```
CLI (network-admin@switch) > fabric-comm-ports-show
switch:                         Leaf-1
range-start:                    23300
fabric-port:                    23399
notify-port:                    23398
proxy-port:                     23397
fabric-keepalive-port:          23394
filesystem-replication-port:    23392
cluster-traffic-forwarding-port: 23391
vport-statistics-port:          23390
l2-encap-port:                  23389
igmp-encap-port:                23388
icmpv6-encap-port:              23387
arp-encap-port:                 23386
cluster-analytics-port:         23385
```

fabric-create

This command is used to create a fabric on the network.

Syntax `fabric-create`

`name` *`name-string`*	Specify the name of the fabric.
Specify any of the following options:	
`repeer-to-cluster-node` *`cluster-repeer-node name`*	Specify if you want to replace a dead cluster node by restoring the switch against the existing cluster node.
`vlan` *`vlan-id`*	Specify VLAN for the fabric.
`password` *`password-string`*	Specify the fabric password.
`fabric-network in-band|mgmt`	Specify the in-band interface or the management interface to send fabric communications over the fabric.
`control-network in-band|mgmt`	Specify the in-band interface or the management interface to send fabric communications over the control plane.
`delete-conflicts|abort-on-conflict`	Specify the action to take when there is a conflict with another fabric.
`fabric-advertisement-network inband-mgmt|inband-vmgmt|inband-only| mgmtonly`	Specify the network for fabric advertisement.

Defaults If the multicast address is not specified, a random IPv6 address in the range from ff95::239:4:10:1 to ff95::239:4:10:ff is used as the default fabric multicast address. Unless you specify a password, the default password for the fabric is blank.

Access CLI

History

Version 1.2	Command introduced.
Version 2.2	The parameter, `mcast-ip`, deprecated. The parameter, `vlan`, added.
Version 2.2.4	The parameter, `network-type`, added.
Version 2.4	The parameter, `network-type`, removed. Two parameters, `fabric-network` and `control-network` added. The parameter, `repeer-to-cluster-node`, added.
Version 2.4.1	The parameters, `fabric-advertisement-network inband-mgmt|inband-only` added.

Usage The fabric consists of one or more switches that share a fabric administrative domain. The fabric presents the abstraction of a big logical switch with a single point of management, hiding the complexity of the underlying collection of switch hardware and inter-switch links. This command creates the fabric abstraction, but not the switch membership.

Examples To create a fabric named `MyFabric` with the password `b0n3s123`

```
CLI (network-admin@switch) > fabric-create name MyFabric password
b0n3s123
```

fabric-evpn-node-show

This command is used to display EVPN node information for the fabric.

Syntax `fabric-evpn-node-show`

`fabric-pod` *`fabric-pod-string`*	The Fabric-Pod Name.
`evpn-node` *`evpn-node-string`*	The EVPN Node Name.
`version` *`version-string`*	The nvOS version.
`vtep-ip` *`ip-address`*	The VTEP IP address.
`evpn-role primary|secondary|stand-alone|none|unknown`	The EVPN role for the node.

Defaults

Access CLI

History

Version 7.0.0	Command introduced.

Usage This command displays EVPN node information for the fabric.

Examples To create a fabric named `MyFabric` with the password `b0n3s123`

```
CLI (network-admin@switch) > fabric-create name MyFabric password
b0n3s123
```

fabric-info

This command is used to display information about a fabric on the switch.

Syntax `fabric-info`

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage The fabric consists of one or more switches that share an administrative domain. The fabric presents the abstraction of a big logical switch with a single point of management, hiding the complexity of the underlying collection of switch hardware and inter-switch links. Use this command to display information about the fabric on a local switch.

Examples To display information about a fabric, use the following command:

```
CLI (network-admin@switch) > fabric-info
name:     pn-fab
ident:    a1634:b
mcastaddr:ff95::239:4:10:2c
tid:      0
```

fabric-join

This command is used to join an existing fabric on the switch.

Syntax `fabric-join`

Specify one of the following options:	
`name` *`name-string`*	Specify the name of the fabric.
`password` *`password-string`*	Specify the fabric password if configured.
`switch-ip` *`ip-address`*	Specify the IP address of the switch joining the fabric.
Specify any of the following options:	
`vlan` *`vlan-id`*	Specify VLAN for the fabric.
`delete-conflicts| abort-on-conflict`	Specify the action to take when there is a conflict with another fabric.
`location-id` *`location-id-number`*	Specify the location ID to use for joining the fabric.
`repeer-to-cluster-node` *`cluster-repeer-node name`*	Replace a dead cluster node by restoring against the existing cluster node.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.2	The parameter `vlan`, added.
Version 2.3	The parameter `repeer-to-cluster-node`, added.
Version 3.0.0	The parameter `repeer-to-cluster-node`, deprecated. The parameter `location-id` added.
Version 5.1.1	The parameter `repeer-to-cluster-node`, re-added.

Usage The fabric consists of one or more switches that share an administrative domain. The fabric presents the abstraction of a big logical switch with a single point of management, hiding the complexity of the underlying collection of switch hardware and inter-switch links. Use this command to join a fabric.

Examples To join the fabric, network-1, with the id, admin, and the password, **`pizzatime`**, use the following command:

```
CLI (network-admin@switch) > fabric-join name network-1 id admin password
```

```
pizzatime
```

fabric-local-modify

This command is used to modify a local fabric on the network.

Syntax `fabric-local-modify`

`vlan` *`vlan-id`*	Specify the VLAN to modify on the local fabric.
`change-password` *`change-passwor-string`*	Use this option to change the fabric password after confirming the current password.
`reset-password` *`reset-password-string`*	Use this option to reset the fabric password forcefully. **Note:** Resetting the password requires assistance from Pluribus support.
`control-network in-band|mgmt`	Specify the in-band interface or the management interface to send fabric communications over the control plane.
`fabric-network in-band|mgmt`	Specify the in-band interface or the management interface for fabric administrative network.
`fabric-advertisement-network inband-mgmt|inband-vmgmt|inband-only|mgmt-only`	Specify if you want to send fabric advertisement packets over the inband management interface or inband only.

Defaults The default VLAN for a fabric is VLAN 0.

Access CLI

History .

Version 2.2	Command introduced.
Version 2.2.4	The parameter, `network-type`, introduced.
Version 2.4	The parameter, `network-type`, removed. Two parameters, `fabric-network` and `control-network` added. The parameter, `repeer-to-cluster-node`, added.
Version 2.4.1	The parameter, `fabric-advertisement-network`, added.
Version 6.0.0	The parameters, change-password and reset-password, introduced.

Usage In some network configurations, you may want to assign a different VLAN to a local fabric.

Examples To modify a local fabric and assign it to VLAN 2, use the following syntax:

```
CLI (network-admin@switch) > fabric-local-modify vlan 2
```

fabric-stats-show

This command is used to display statistical information about the fabric configured on the network.

Syntax `fabric-stats-show`

`id` *`id-number`*	Specifies the ID number automatically assigned to the fabric.
`servers` *`servers-number`*	Specifies the number of servers in the fabric.
`storage` *`storage-number`*	Specifies the storage occupying the fabric.
`VM` *`VM-number`*	Specifies the number of VMs in the fabric.
`vlan` *`vlan-number`*	Specifies the number of VLANs in the fabric.
`vxlan` *`vxlan-number`*	Specifies the number of VXLANs in the fabric.
`tcp-syn` *`tcp-syn-number`*	Specifies the number of TCP packets synchronized by the fabric.
`tcp-est` *`tcp-est-number`*	Specifies the number of TCP packets estimated on the network.
`tcp-completed` *`tcp-completed-number`*	Specifies the number of completed TCP packets.
`tcp-bytes` *`tcp-bytes-number`*	Specifies the number of TCP bytes sent through the fabric.
`udp-bytes` *`udp-bytes-number`*	Specifies the number of UDP bytes sent through the fabric.
`arp` *`arp-number`*	Specifies the number of ARPs on the fabric.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.4	The parameter, `VLAN`, deprecated.
Version 2.4.1	The parameter, `vlan`, added.

Usage Use this command to display statistical information about the fabric configured on the network.

Examples To display the statistics about the fabric, use this command:

```
CLI (network-admin@switch) > fabric-stats-show layout vertical
switch:                 pleiades25
id:                     0
servers:                0
```

```
storage:                0
VM:                     0
vxlan:                  0
tcp-syn:                294
tcp-est:                51
tcp-completed:          67
tcp-bytes:              149
udp-bytes:              0
arp:                    0
vlan:                   0
```

fabric-show

This command is used to display information about a fabric on the switch.

Syntax `fabric-show`

`name` *`name-string`*	Specifies the name of the fabric.
`switch-ip` *`ip-address`*	Specify the IP address of the switch joining the fabric.
`id`	Specifies the identifier for the fabric.
`repeer-to-cluster-node` *`cluster-repeer-node name`*	Specifies if the action is to replace a dead cluster node by restoring against the existing cluster node.
`vlan` *`vlan-id`*	Specifies the VLAN ID for the fabric.
`fabric-network in-band|mgmt`	Specifies the fabric network as in-band or management network.
`control-network in-band|mgmt`	Specifies the control network type as in-band or through the management interface.
`tid` *`tid-number`*	Specifies the transaction identifier.
`fabric-advertisement-network inband-mgmt|inband-vmgmt|inband-only|mgmt-only`	Specify if you want to send fabric advertisement packets over the inband management interface or inband only.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.2	The parameters, `multicast-ip`, and `cid`, deprecated.
Version 2.2.8	The parameter, `network-type`, added.
Version 2.3	The parameter, `repeer-to-cluster-node`, added.
Version 2.4	The parameter, `network-type`, changed to `fabric-network` and `control-network`.

Usage The fabric consists of one or more switches that share an administrative domain. The fabric presents the abstraction of a big logical switch with a single point of management, hiding the complexity of the underlying collection of switch hardware and inter-switch links. Use this command to display information about the fabric.

Examples To display the fabric, network-1, use the following command:

```
CLI (network-admin@switch) > fabric-show name network-1
name:                   network-1
id:                     b0000dd:577a8c70
vlan:                   0
fabric-network:         in-band
control-network:        in-band
tid:                    11
```

fabric-unjoin

This command is used to unjoin an existing fabric on the switch.

Syntax `fabric-unjoin`

`delete-conflicts|abort-on-conflict`	Specify the action to take when there is a conflict with another fabric.

Defaults None.

Access CLI

License SDF

History Command introduced in nvOS Version 1.2.1.

Usage The fabric consists of one or more switches that share an administrative domain. The fabric presents the abstraction of a big logical switch with a single point of management, hiding the complexity of the underlying collection of switch hardware and inter-switch links. Use this command to join a fabric.

Examples To join the fabric, `network-1`, with the id, `admin`, and the password, `pizzatime`, use the following command:

```
CLI (network-admin@switch) > fabric-unjoin name network-1 id admin
password pizzatime
```

fabric-stats-show

This command is used to display statistical information about the fabric configured on the network.

Syntax `fabric-stats-show`

`id` *`id-number`*	Specifies the ID number automatically assigned to the fabric.
`servers` *`servers-number`*	Specifies the number of servers in the fabric.
`storage` *`storage-number`*	Specifies the storage occupying the fabric.
`VM` *`VM-number`*	Specifies the number of VMs in the fabric.
`vlan` *`vlan-number`*	Specifies the number of VLANs in the fabric.
`vxlan` *`vxlan-number`*	Specifies the number of VXLANs in the fabric.
`tcp-syn` *`tcp-syn-number`*	Specifies the number of TCP packets synchronized by the fabric.
`tcp-est` *`tcp-est-number`*	Specifies the number of TCP packets estimated on the network.
`tcp-completed` *`tcp-completed-number`*	Specifies the number of completed TCP packets.
`tcp-bytes` *`tcp-bytes-number`*	Specifies the number of TCP bytes sent through the fabric.
`udp-bytes` *`udp-bytes-number`*	Specifies the number of UDP bytes sent through the fabric.
`arp` *`arp-number`*	Specifies the number of ARPs on the fabric.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.4	The parameter, `VLAN`, deprecated.
Version 2.4.1	The parameter, `vlan`, added.

Usage Use this command to display statistical information about the fabric configured on the network.

Examples To display the statistics about the fabric, use this command:

```
CLI (network-admin@switch) > fabric-stats-show layout vertical
switch:                 pleiades25
id:                     0
servers:                0
```

```
storage:                0
VM:                     0
vxlan:                  0
tcp-syn:                294
tcp-est:                51
tcp-completed:          67
tcp-bytes:              149
udp-bytes:              0
arp:                    0
vlan:                   0
```

fabric-in-band-network-create

This command is used to create an in-band fabric network.

Syntax `fabric-in-band-network-create`

`network` *`ip-address`*	Specify an in-band network IP address.
`netmask` *`netmask`*	Specify the netmask.

Defaults None

Access Network Admin

History Command introduced in Version 2.4.1.

Usage Use this command to create an in-band network for a fabric.

Examples To create an in-band network using the IP address 172.16.21.135, and netmask 255.255.255.0, use the following syntax:

```
CLI (network-admin@switch) > fabric-in-band-network-create network
172.16.21.135 netmask 255.255.255.0
```

fabric-in-band-network-delete

This command is used to delete an in-band fabric network.

Syntax `fabric-in-band-network-delete`

`network` *`ip-address`*	Specify an in-band network IP address.
`netmask` *`netmask`*	Specify the netmask.

Defaults None

Access Network Admin

History Command introduced in Version 2.4.1.

Usage Use this command to delete an in-band network for a fabric.

Examples To delete an in-band network using the IP address 172.16.21.135, and netmask 255.255.255.0, use the following syntax:

```
CLI (network-admin@switch) > fabric-in-band-network-delete network
172.16.21.135 netmask 255.255.255.0
```

fabric-in-band-network-show

This command is used to display an in-band fabric network network.

Syntax `fabric-in-band-network-show`

`network` *`ip-address`*	Specify an in-band network IP address.
`netmask` *`netmask`*	Specify the netmask.

Defaults None

Access Network Admin

History Command introduced in Version 2.4.1.

Usage Use this command to display an in-band network for a fabric.

Examples To display an in-band network, use the following syntax:

```
CLI (network-admin@switch) > fabric-in-band-network-show
```

fabric-node-evict

This command is used to remove a node from a fabric.

Syntax `fabric-node-evict`

`name` *`fabric-node-name`*	Specify the name of the fabric node to remove from the configuration.
`id` *`id-number`*	Specify the identifier of the fabric node.

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage The fabric consists of one or more switches sharing an administrative domain. The fabric presents the abstraction of a big logical switch with a single point of management, hiding the complexity of the underlying collection of switch hardware and inter-switch links. Use this command to remove a node.

Examples To remove the node, `switch123`, use the following command:

```
CLI (network-admin@switch) > fabric-node-evict name switch123
```

fabric-node-location-mappings

Netvisor uses this command to generate location mappings for importing switch configurations.

Syntax `fabric-node-location-mappings`

`id` *`id-number`*	Displays the ID assigned to the node.
`location-id` *`location-id-number`*	Displays the location ID assigned to the fabric.
`serial` *`serial-string`*	Displays the serial number.
`name fabric-node` *`name`*	Displays the node name.
`fab-name` *`fab-name-string`*	Displays the fabric name.
`fab-id`	Displays the ID assigned to the fabric.
`cluster-id`	Displays the ID assigned to the cluster.
`local-mac` *`mac-address`*	Displays the local MAC address.
`fabric-network` *`in-band|mgmt`*	Displays the network fabric.
`control-network` *`in-band|mgmt`*	Displays the control plane network.
`mgmt-ip` *`ip-address`*	Displays the management IP address.
`mgmt-netmask` *`netmask`*	Displays the management netmask.
`mgmt-ip2` *`ip-address`*	Displays the second management IP address.
`mgmt-netmask2` *`netmask`*	Displays the second management netmask
`mgmt-assignment2 none|dhcp|dhcpv6`	Displays the type of IP address assignment.
`mgmt-linklocal` *`ip-address`*	Displays the IPv6 address of the link local.
`mgmt-assignment-linklocal none|dhcp| dhcpv6`	Displays the type of IP address assignment.
`mgmt-mac` *`mac-address`*	Displays the interface MAC address.
`mgmt-vnet vnet` *`name`*	Displays the interface VLAN vNET.
`mgmt-public-vlan` *`vlan-id`*	Displays the public VLAN ID.
`mgmt-secondary-macs` *`secondary-macs-string`*	Displays the secondary MAC addresses.
`mgmt-if-nat-realm internal|external`	Displays the NAT interface realm.
`vmgmt-ip` *`ip-address`*	Displays the IP address.

vmgmt-netmask *netmask*	Displays the netmask.
vmgmt-ip2 *ip-address*	Displays the second IP address.
vmgmt-netmask2 *netmask*	Displays the netmask.
vmgmt-assignment2 none|dhcp|dhcpv6	Displays the type of lPv6 address assignment.
vmgmt-linklocal *ip-address*	Displays the IPv6 linklocal address.
vmgmt-assignment-linklocal none|dhcp| dhcpv6	Displays the type of IPv6 address assignment.
vmgmt-mac *mac-address*	Displays the MAC address.
vmgmt-vnet vnet *name*	Displays the vNET name.
vmgmt-vlan *vlan-id*	Displays the VLAN ID.
vmgmt-public-vlan *vlan-id*	Displays the public VLAN ID.
vmgmt-secondary-macs *secondary-macs-string*	Displays the secondary MAC addresses.
in-band-ip *ip-address*	Displays the IP address.
in-band-netmask *netmask*	Displays the netmask.
in-band-ip2 *ip-address*	Displays the second IP address.
in-band-netmask2 *netmask*	Displays the netmask.
in-band-assignment2 none|dhcp|dhcpv6	Displays the type of lPv6 address assignment.
in-band-linklocal *ip-address*	Displays the IPv6 linklocal address.
in-band-assignment-linklocal none|dhcp| dhcpv6	Displays the type of IPv6 address assignment.
in-band-mac *mac-address*	Displays the MAC address.
in-band-vnet vnet name	Displays the vNET name.
in-band-bd *bridge-domain name*	Displays the interface bridge domain.
in-band-vlan *vlan-id*	Displays the VLAN ID.
in-band-vlan-type public|private	Displays the type of VLAN.
in-band-public-vlan *vlan-id*	Displays the public VLAN ID.
in-band-secondary-macs *secondary-macs-string*	Displays the secondary MAC addresses.
in-band-if-nat-realm internal|external	Displays the interface NAT realm.

fab-tid *fab-tid-number*	Displays the fabric transaction ID.
cluster-tid *cluster-tid-number*	Displays the cluster transaction ID.
out-port *out-port-number*	Displays the fabric outgoing port.
version *version-string*	Displays the Netvisor version.
state offline|online|in-band-only-online|vmgmt-only-online|mgmt-only-online|fabric-joined|eula-required|setup-required|fabric-required|fresh-install	Displays the fabric state.
firmware-upgrade	Displays the firmware upgrade status.
device-state	Displays the device state.
ports *ports-number*	Displays the ports.
keepalive-timeout high resolution time: *#ns*	Displays the keepalive timeout in nanoseconds.

Access Network Administrator

History Command introduced in Version 3.1.0.

Usage Use this command to generate location mappings for a node.

Examples To generate location mappings for a node, use the following syntax:

```
CLI (network-admin@switch) > fabric-node-locations-mapping
```

fabric-node-show

This command is used to display information about a node from a fabric.

Syntax `fabric-node-show`

`id id-number`	Specifies the identifier assigned to the node.
`location-id` *`location-id-number`*	Specifies the location ID assigned to the fabric node.
`serial` *`serial-string`*	Specifies the serial string for the fabric node
`name` *`fabric-node-name`*	Specifies the name of the fabric node to display information.
`fab-name` *`fab-name`*	Specifies the name of the fabric node.
`fab-id`	Specifies the fabric identifier.
`cluster-id`	Specifies the cluster identifier.
`local-mac` *`mac-address`*	Specifies the local MAC address of the fabric.
`fabric-network in-band|mgmt|vmgmt`	Specifies the fabric network type.
`control-network in-band|mgmt||vmgmt`	Specifies the interface to send control plane communications.
`mgmt-ip` *`ip-address`*	Specifies the IP address for the management NIC.
`mgmt-netmask` *`netmask`*	The netmask for the IP address.
`mgmt-ip2` *`ip-address`*	Specifies the second IP address for the management NIC.
`mgmt-netmask2` *`netmask`*	Specifies the netmask for the second IP address.
`mgmt-assignment2 none|static|dhcp| dhcpv6|autov6`	Specifies the type of IP address assignment.
`mgmt-linklocal` *`ip-address`*	Specifies the IPv6 address for the link local address.
`mgmt-ipv6-unnumbered|mgmt-no-ipv6-unnumbered`	Specifies the IPv6 address is LinkLocal only.
`mgmt-assignment-linklocal none|static| dhcp|dhcpv6|autov6`	Specifies the type of link local IP address assignment.
`mgmt-mac` *`mac-address`*	Specifies the MAC address for the management interface.
`mgmt-vnet` *`vnet-name`*	Specifies the management vNET.
`mgmt-public-vlan 0..4095`	Specifies the public VLAN ID.
`mgmt-secondary-macs secondary-macs-string`	Specifies the secondary MAC address of the management interface.

mgmt-if-nat-realm internal|external	Specifies the NAT interface realm.
mgmt-vrf vrf name|default	Name of the VRF.
mgmt-sec-addresses sec-addresses-number	Number of IP and IPv6 addresses configured on this interface.
mgmt-wake-on-lan|mgmt-no-wake-on-lan	Specifies the wake on LAN.
vmgmt-ip *ip-address*	Specifies the IP address for the in-band interface to the switch control plane.
vmgmt-netmask *netmask*	Specifies the netmask for the in-band interface to the switch control plane.
vmgmt-ip2 *ip-address*	Specifies the second IP address for the in-band interface to the switch control plane.
vmgmt-netmask2 *netmask*	Specifies the second netmask for the in-band interface to the switch control plane.
vmgmt-assignment2 none|static|dhcp|dhcpv6|autov6	The type of IP address assignment.
vmgmt-linklocal ip-address	IPv6 Link Local address.
vmgmt-ipv6-unnumbered|vmgmt-no-ipv6-unnumbered	Specifies the IPv6 address is LinkLocal only.
vmgmt-assignment-linklocal none|static|dhcp|dhcpv6|autov6	Specifies the type of IPv6 LinkLocal address assignment.
vmgmt-mac *mac-address*	Specifies the MAC address for the in-band interface to the switch control plane.
vmgmt-vnet *vnet-name*	Specifies the inband vNET name.
vmgmt-vlan 0..4095	Specifies the inband VLAN ID.
vmgmt-secondary-macs secondary-macs-string	The secondary MAC addresses.
vmgmt-vrf vrf name|default	Name of the VRF.
vmgmt-sec-addresses sec-addresses-number	Number of IP and IPv6 addresses configured on this interface.
vmgmt-wake-on-lan|vmgmt-no-wake-on-lan	Specifies the wake on LAN.
in-band-ip *ip-address*	Specifies the IP address for the in-band interface to the switch control plane.
in-band-netmask *netmask*	Specifies the netmask for the in-band interface to the switch control plane.
in-band-ip2 *ip-address*	Specifies the second IP address for the in-band interface to the switch control plane.
in-band-netmask2 *netmask*	Specifies the second netmask for the in-band interface to the switch control plane.

in-band-assignment2 none|static|dhcp|dhcpv6|autov6	The type of IP address assignment.
in-band-linklocal ip-address	The IPv6 LinkLocal address.
in-band-assignment-linklocal none|static|dhcp|dhcpv6|autov6	The type of IPv6 LinkLocal address assignment.
in-band-mac *mac-address*	Specifies the MAC address for the in-band interface to the switch control plane.
in-band-vnet *vnet-name*	Specifies the inband vNET name.
in-band-bd bridge-domain *name*	The interface Bridge Domain.
in-band-vlan *0..4095*	Specifies the inband VLAN ID.
in-band-vlan-type public|private	Specifies the type of inband VLAN as public or private.
in-band-public-vlan *0..4095*	Specifies the inband public VLAN ID.
in-band-secondary-macs *secondary-macs-string*	Specifies the secondary MAC address of the in-band interface
in-band-if-nat-realm internal|external	The NAT interface realm.
in-band-vrf vrf name|default	Name of the inband VRF.
in-band-sec-addresses sec-addresses-number	Number of IP and IPv6 addresses configured on this interface.
in-band-wake-on-lan|in-band-no-wake-on-lan	The inband wake on LAN.
fab-tid *fab-tid-number*	Specifies the fabric identifier.
cluster-tid *cluster-tid-number*	Specifies the cluster identifier.
out-port *out-port-number*	Specifies the port number where the switch multicasts the fabric discovery messages to other Pluribus Networks switch.
version *version-string*	Specifies the current ONVL version.
state offline|online|in-band-only-online|mgmt-only-online|vmgmt-only-online|offline(evicted)|online(joined)|eula-required|setup-required|fabric-required|fresh-install	Specifies the state of the fabric.
firmware_upgrade not-required|required|reboot-required	Specifies if a firmware upgrade is required.
device-state ok|error|simulator	Specifies the state of the switch.
ports *ports-number*	Specifies the port list used by the fabric.
keepalive-timeout *high resolution time: #ns*	Specifies the keepalive timeout in nanoseconds.

`rollforward-failed true|false`	Specifies the roll-forward status of the node.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.3.2	The parameters cluster-id, cluster-tid, `mgmt-assignment`, `mgmt-vm-nic-type`, `mgmt-nic`, `mgmt-vxlan`, `mgmt-if`, `mgmt-alias-on`, `mgmt-vm-nic-type`, `mgmt-exclusive`, `mgmt-nic-enable`, `mgmt-nic-state` and corresponding `in-band` parameters deprecated.
Version 2.4.1	The parameters `mgmt-vnet`, `mgmt-public-vlan`, `in-band-vnet`, `in-band-vlan-type` and `in-band-public-vlan` added.
Version 5.1.1	The parameter `keepalive-timeout` added.
Version 7.0.0	The parameter `rollforward-failed` added.

Usage The fabric consists of one or more switches sharing an administrative domain. The fabric presents the abstraction of a big logical switch with a single point of management, hiding the complexity of the underlying collection of switch hardware and inter-switch links. Use this command to display node information.

Examples To display a list of fabrics visible from the local switch, use the following command:

```
CLI (network-admin@switch) > fabric-node-show format all layout
vertical
id:                          201326960
location-id:                 3
serial:                      1434AT9000331
name:                        leo-ext-33
fab-name:                    leo-ext-31
fab-id:                      c00019c:61f3d676
local-mac:                   66:0e:94:70:f2:7a
fabric-network:              mgmt
control-network:             mgmt
mgmt-ip:                     10.13.44.53/23
mgmt-assignment2:            none
mgmt-ipv6-unnumbered:        no
mgmt-assignment-linklocal:   none
mgmt-mac:                    64:0e:94:c0:03:af
mgmt-if-nat-realm:           internal
mgmt-wake-on-lan:            no
vmgmt-assignment2:           none
```

```
vmgmt-ipv6-unnumbered:          no
vmgmt-assignment-linklocal:     none
vmgmt-wake-on-lan:              no
in-band-ip:                     192.168.25.33/24
in-band-assignment2:            none
in-band-assignment-linklocal:   none
in-band-mac:                     66:0e:94:70:f2:7a
in-band-vlan:                   1
in-band-vlan-type:              public
in-band-if-nat-realm:           internal
in-band-wake-on-lan:            no
fab-tid:                        186
version:                        7.0.0-7000019025
state:                          online
firmware-upgrade:                not-required
device-state:                   ok
ports:                          72
rollforward-failed:             false
```

fabric-upgrade-abort

This command is used to end a fabric-wide upgrade on the fabric.

Syntax `fabric-upgrade-abort`

`force|no-force`	Specify if you want the upgrade to stop immediately or wait for a logical step in the upgrade process.

Defaults None.

Access CLI

History Command introduced in Version 2.2.6.

Usage The fabric consists of one or more switches that share an administrative domain. The fabric presents the abstraction of a big logical switch with a single point of management, hiding the complexity of the underlying collection of switch hardware and inter-switch links. Use this command to stop a fabric-wide upgrade.

Examples To stop the fabric upgrade and end the process immediately, use the following command:

```
CLI (network-admin@switch) > fabric-upgrade-abort  force
```

fabric-upgrade-start

This command is used to start a fabric-wide upgrade.

Syntax `fabric-upgrade-start`

`packages sftp-files` *`name`*	Specify a comma delimited list of the offline packages to use for the upgrade process.
`auto-finish|no-auto-finish`	Specify if you want to automatically reboot the fabric after the upgrade.
`abort-on-failure| no-abort-on-failure`	Specify if you want to stop the upgrade process if the upgrade fails on a node.
`manual-reboot| no-manual-reboot`	Specify if you want to manually reboot the switches so that all switches do not reboot at the same time.
`download-count 1..5`	Specify the number of concurrent downloads, the default count is 5.
`prepare|no-prepare`	Specify if you want to perform setup steps for the actual upgrade.
`upload-server` *`upload-server-string`*	Specify the upload server string.
`server-password` *`server-password-string`*	Specify the server password.

Defaults None.

Access CLI

History

Version 2.2.6	Command introduced.
Version 2.3	The parameters `prepare`, `reboot-parallel`, and `reboot-group` added.
Version 3.1.0	The parameters, `upload-server`, and `server-password`, added.
Version 5.1.1	The parameters, `rolling|no-rolling`, `reboot-parallel|reboot-single`, `reboot-count` got deprecated.
Version 6.1.0	The parameter, `download-count` is added.

Usage The fabric consists of one or more switches that share an administrative domain. The fabric presents the abstraction of a big logical switch with a single point of management, hiding the complexity of the underlying collection of switch hardware and inter-switch links. Use this command to begin a fabric-wide upgrade.

Examples To force the upgrade to end immediately, use the following syntax:

```
CLI (network-admin@switch) > fabric-upgrade-start
```

fabric-upgrade-status-show

This command is used to display the status of a fabric-wide upgrade.

Syntax `fabric-upgrade-status-show`

Defaults None.

Access CLI

History Command introduced in Version 2.2.6.

Usage The fabric consists of one or more switches that share an administrative domain. The fabric presents the abstraction of a big logical switch with a single point of management, hiding the complexity of the underlying collection of switch hardware and inter-switch links. Use this command to display the status of a fabric-wide upgrade.

Examples To force the upgrade to end immediately, use the following snyntax:

```
CLI (network-admin@switch) > fabric-upgrade-status-show
```

fabric-upgrade-prepare-cancel

Use this command to cancel a fabric upgrade prepared earlier.

Syntax `fabric-upgrade-prepare-cancel`

Defaults None

Access Network Administrator

History Command introduced in Version 5.1.1.

Usage If you prepared a switch for an upgrade and want to cancel it, use this command.

Examples To cancel a fabric upgrade, use the following syntax:

```
CLI (network-admin@switch) > fabric-upgrade-prepare-cancel
```

fabric-upgrade-prepare-resume

Use this command to resume a fabric upgrade prepared earlier.

Syntax `fabric-upgrade-prepare-resume`

Defaults None

Access Network Administrator

History Command introduced in Version 5.1.1.

Usage If you prepared a switch for an upgrade and want to resume it, use this command.

Examples To resume a fabric upgrade, use the following syntax:

```
CLI (network-admin@switch) > fabric-upgrade-prepare-resume
```

fabric-upgrade-prepare-show

Use this command to display prepared fabric upgrades.

Syntax `fabric-upgrade-prepare-show`

Defaults None

Access Network Administrator

History Command introduced in Version 5.1.1.

Usage If you prepared a switches for an upgrade and want to display them, use this command.

Examples To display prepared fabric upgrades, use the following syntax:

```
CLI (network-admin@switch) > fabric-upgrade-prepare-show-prepare-show
```

fabric-upgrade-finish

This command is used to reboot the fabric after a fabric-wide upgrade.

Syntax `fabric-upgrade-finish`

Defaults None.

Access CLI

History Command introduced in Version 2.2.6.

Usage The fabric consists of one or more switches that share an administrative domain. The fabric presents the abstraction of a big logical switch with a single point of management, hiding the complexity of the underlying collection of switch hardware and inter-switch links. Use this command to reboot the nodes after a fabric-wide upgrade.

Examples To finish the upgrade, use the following syntax:

```
CLI (network-admin@switch) > fabric-upgrade-finish
```

fabric-vnic-create

Netvisor allows the creation of a management interface on a Virtual Network Interface Card (vNIC) for fabric communication. In the current fabric, Netvisor allows two subnets: one for out-of-band provisioning and fabric, and one for in-band fabric. This feature allows three subnets per fabric:

- An out-of-band provisioning subnet
- An out-of-band fabric subnet
- An in-band fabric subnet

Each subnets uses a separate VLAN for traffic isolation purposes. When a vNIC is created for the management interface, fabric communication automatically switches to this vNIC, without additional configuration.

Syntax `fabric-vnic-create`

`ip` *`ip-address`*	Specify the IP address of the vNIC.
`netmask` *`netmask`*	Specify the netmask for the IP address.
`vlan` *`vlan-id`*	Specify the VLAN ID for the vNIC. This must be unique to the vNIC.

Defaults None

Access Network Administrator

History Command introduced in Version 5.1.1.

Usage Use this command to create a vNIC for fabric management.

Examples To create a vNIC with IP address, 20.1.1.1/24 on VLAN 22, use the following syntax:

```
CLI (network-admin@switch) > fabric-vnic-create ip 20.1.1.1 netmask
255.255.255.0 vlan 22
```

fabric-vnic-delete

Netvisor allows the creation of a management interface on a Virtual Network Interface Card (vNIC) for fabric communication. In the current fabric, Netvisor allows two subnets: one for out-of-band provisioning and fabric, and one for in-band fabric. This feature allows three subnets per fabric:

- An out-of-band provisioning subnet
- An out-of-band fabric subnet
- An in-band fabric subnet

Each subnets uses a separate VLAN for traffic isolation purposes. When a vNIC is created for the management interface, fabric communication automatically switches to this vNIC, without additional configuration.

Syntax `fabric-vnic-delete`

Defaults None

Access Network Administrator

History Command introduced in Version 5.1.0.

Usage Use this command to delete a vNIC for fabric management.

Examples To modify a vNIC with IP address, 20.1.1.1/24 on VLAN 32, use the following syntax:

```
CLI (network-admin@switch) > fabric-vnic-delete
```

fabric-vnic-modify

Netvisor allows the creation of a management interface on a Virtual Network Interface Card (vNIC) for fabric communication. In the current fabric, Netvisor allows two subnets: one for out-of-band provisioning and fabric, and one for in-band fabric. This feature allows three subnets per fabric:

- An out-of-band provisioning subnet
- An out-of-band fabric subnet
- An in-band fabric subnet

Each subnets uses a separate VLAN for traffic isolation purposes. When a vNIC is created for the management interface, fabric communication automatically switches to this vNIC, without additional configuration.

Syntax `fabric-vnic-modify`

`ip` *`ip-address`*	Specify the IP address of the vNIC.
`netmask` *`netmask`*	Specify the netmask for the IP address.
`vlan` *`vlan-id`*	Specify the VLAN ID for the vNIC. This must be unique to the vNIC.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to modify a vNIC for fabric management.

Examples To modify a vNIC with IP address, 20.1.1.1/24 on VLAN 32, use the following syntax:

```
CLI (network-admin@switch) > fabric-vnic-modify ip 20.1.1.1 netmask
255.255.255.0 vlan 32
```

fabric-vnic-show

Netvisor allows the creation of a management interface on a Virtual Network Interface Card (vNIC) for fabric communication. In the current fabric, Netvisor allows two subnets: one for out-of-band provisioning and fabric, and one for in-band fabric. This feature allows three subnets per fabric:

- An out-of-band provisioning subnet
- An out-of-band fabric subnet
- An in-band fabric subnet

Each subnets uses a separate VLAN for traffic isolation purposes. When a vNIC is created for the management interface, fabric communication automatically switches to this vNIC, without additional configuration.

Syntax `fabric-vnic-show`

`ip` *`ip-address`*	Displays the IP address of the vNIC.
`netmask` *`netmask`*	Displays the netmask for the IP address.
`vlan` *`vlan-id`*	Displays the VLAN ID for the vNIC. This must be unique to the vNIC.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to display information about a fabric management vNIC.

Examples To display information about a fabric management vNI, use the following syntax:

```
CLI (network-admin@switch) > fabric-vnic-show
nic:        vmgmt0
ip:         20.1.1.1/24
mac:        66:0e:94:6a:2a:ad
vlan:       20
nic-config: enable
nic-state:  up
```

From the output, you can see the status of the interface as enabled and up as well as the vNIC name, IP address, MAC address, and VLAN.

factory-reset

This command is used to reset the switch to factory default settings.

Syntax `factory-reset`

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	Deprecated.
Version 2.6.2	Command re-introduced.

Usage This command restores all configuration and persistent state, including data on built-in storage devices, to factory default settings.

Examples To reset the switch use the following command:

```
factory-reset
```

flow-table-show

This command is used to display information about traffic flows on the switch.

Syntax `flow-table-show`

name *name-string*	Specifies the name of the traffic flow
id *id-number*	Specifies the identifier of the traffic flow
hw-id *hw-id-number*	Specifies the identifier of the hardware source
flow-name *flow-name-string*	Specifies the name of the traffic flow type
flow-hw-id *flow-hw-id-number*	Specifies the identifier of the hardware flow source

Defaults None

History

Version 1.2	Command introduced.
Version 2.0	The parameter, `flow-id` *flow-id*, deprecated.
Version 5.1.1	The parameter, `tbl-id`, deprecated.

Usage Each switch is built with a datapath ASIC inside and contains a set of hardware flow tables for traffic forwarding. Use this command to display flows as they are currently programmed in each of the hardware flow tables.

Examples To display the flows, use the following command:

```
CLI (network-admin@switch) > flow-table-show layout vertical
switch:     pleaides24
name:       Switch System Table - L2 to L4
id:         2
hw-id:      33
flow-name:  Martian-L2-Check
flow-id:    2
flow-hw-id: 1048578
switch:     pleaides24
name:       Switch System Table - L2 to L4
id:         2
hw-id:      33
flow-name:  Martian-IP4-L3-Check
flow-id:    3
flow-hw-id: 1048579
switch:     pleaides24
name:       Switch System Table - L2 to L4
id:         2
hw-id:      33
flow-name:  Martian-IP6-L3-Check
flow-id:    4
flow-hw-id: 1048580
switch:     pleaides24
name:       Switch System Table - L2 to L4
```

```
id:         2
hw-id:      33
flow-name:  STP-FLOW
flow-id:    5
flow-hw-id: 3145733
switch:     pleaides24
name:       Switch System Table - L2 to L4
id:         2
hw-id:      33
flow-name:  PVST-FLOW
flow-id:    6
flow-hw-id: 1048582
switch:     pleaides24
name:       Switch System Table - L2 to L4
id:         2
hw-id:      33
flow-name:  LLDP-NB-Flow
flow-id:    7
flow-hw-id: 1048583
switch:     pleaides24
name:       Switch System Table - L2 to L4
id:         2
hw-id:      33
flow-name:  LLDP-NONTPMR-Flow
flow-id:    8
flow-hw-id: 1048584
flow-hw-id: 1048585
```

H Commands

help

Displays usage information about commands.

Syntax `help`

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Use this command to display usage information for all ONVL commands.

Examples To display usage information for fabric-create, use the following command:

```
CLI (network-admin@switch) > help fabric-create
name    name-string
any of the following options:
mcast-ip ip-address
password
delete-conflicts|abort-on-conflict
```

hog-violator-show

The CPU Control Packet Processing Protection feature allows the CPU control packet processing path be protected against misbehaving and malicious hosts or end-points that may flood control protocol packets. This is also called "CPU hog protection".
Netvisor provides three types of Control Plane Protection:

- Overall CPU Bandwidth
- Dedicated Queues for Critical Flows
- Protection from offending flows in Critical Queues (DDOS Protection) by using special CPU hog queues

Syntax `hog-violator-show`

`mac` *`mac-address`*	Displays the hog violator MAC address.
`vnet` *`vnet name`*	Displays the vNET name.
`bd` *`bridge-domain name`*	Displays the bridge domain name.
`vlan` *`vlan-id`*	Displays the hog violator VLAN ID.
`vxlan` *`vxlan-id`*	Displays the hog violator VXLAN ID.
`port` *`port-number`*	Displays the hog violator ingress port.
`cpu-class` *`cpu-class-string`*	Displays the hog violator original class.
`hog-cpu-class` *`hog-cpu-class-string`*	Displays the hog violator hog queue CPU class.
`created date/time:` *`yyyy-mm-ddTHH:mm:ss`*	Displays the time and date when hog violator is created.
`vflow` *`vflow-string`*	Displays the redirect vFlow.
`vflow2` *`vflow-string`*	Displays the redirect vFlow 2.
`vflow3` *`vflow-string`*	Displays the redirect vFlow 3.
`vflow4` *`vflow-string`*	Displays the redirect vFlow 4.
`vflow5` *`vflow-string`*	Displays the redirect vFlow 5.
`vflow6` *`vflow-string`*	Displays the redirect vFlow 6.

`idle-count` *`idle-count-number`*	Displays the current idle count.

Defaults None

Access Network Administrator

History

Version 2.6.0.	Command introduced.
Version 3.0.0	The parameter `idle-count` added.

Usage Use this command to display information about CPU hog violators.

Examples To display information about CPU hog violators, use the following syntax:

`CLI (network-admin@switch) >` `hog-violator-show`

```
mac               vlan vxlan  port cpu-class hog-cpu-class created
----------------- ---- ------ ---- --------- ------------- --------
66:0e:94:10:d8:4a 704         15   ospf      hog-ospf      13:13:58
66:0e:94:10:d8:4a 704         15   bfd       hog-bfd       13:14:02
06:c0:00:17:30:0f 16          15   lldp      hog-lldp      13:14:07
06:c0:00:17:30:0f 16          15   lacp      hog-lacp      13:14:10
66:0e:94:1d:09:58      101001 25   arp       hog-arp       13:14:19
00:00:5e:00:01:0b 2001        128  vrrp      hog-vrrp      13:14:22
06:c0:00:17:30:0e 16          15   stp       hog-stp       13:14:31
80:ac:ac:f0:aa:34 16          15   bgp       hog-bgp       13:14:35
00:00:33:33:33:33 2003        15   arp       hog-arp       13:14:46
```

hog-violator-stats-show

The CPU Control Packet Processing Protection feature allows the CPU control packet processing path be protected against misbehaving and malicious hosts or end-points that may flood control protocol packets. This is also called "CPU hog protection".
Netvisor provides three types of Control Plane Protection:

- Overall CPU Bandwidth
- Dedicated Queues for Critical Flows
- Protection from offending flows in Critical Queues (DDOS Protection) by using special CPU hog queues

Syntax `hog-violator-stats-show`

`time date/time: yyyy-mm-ddTHH:mm:ss`	Displays the time and date to start statistics collection.
`start-time date/time: yyyy-mm-ddTHH:mm:ss`	Displays the start time of the statistics collection.
`end-time date/time: yyyy-mm-ddTHH:mm:ss`	Displays the end time of the statistics collection.
`duration duration: #d#h#m#s`	Displays the duration of statistics collection.
`interval duration: #d#h#m#s`	Displays the interval between statistics collection.
`since-start`	Displays the statistics collection since the start time.
`older-than duration: #d#h#m#s`	Displays the statistics collection older than the time.
`within-last duration: #d#h#m#s`	Displays the statistics collection within a specified time period.
`name vflow-name`	Displays the name of the vFlow.
`vnet #d#h#m#s`	Displays the vNET name.
`id`	Displays the ID assigned by Netvisor.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to display settings for CPU hog violator statistics.

Examples To display settings for CPU hog violator statistics, use the following syntax:

```
CLI (network-admin@switch) > hog-violator-stats-show

mac                vlan vxlan  port cpu-class hog-cpu-class created
----------------- ---- ------ ---- --------- ------------- --------
66:0e:94:10:d8:4a 704         15   ospf      hog-ospf      13:13:58
66:0e:94:10:d8:4a 704         15   bfd       hog-bfd       13:14:02
06:c0:00:17:30:0f 16          15   lldp      hog-lldp      13:14:07
06:c0:00:17:30:0f 16          15   lacp      hog-lacp      13:14:10
66:0e:94:1d:09:58      101001 25   arp       hog-arp       13:14:19
00:00:5e:00:01:0b 2001        128  vrrp      hog-vrrp      13:14:22
06:c0:00:17:30:0e 16          15   stp       hog-stp       13:14:31
80:ac:ac:f0:aa:34 16          15   bgp       hog-bgp       13:14:35
00:00:33:33:33:33 2003        15   arp       hog-arp       13:14:46
```

I Commands

id-led-modify

This command is used to locate the switch by blinking the LED on the front panel.

Syntax `id-led-modify`

`enable|disable`	You can enable or disable this feature.

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage When you enable this feature, the LED on the switch blinks allowing you to physically locate it.

Examples To enable this feature, use the following command:

```
CLI (network-admin@switch) > id-led-modify enable
```

id-led-show

This command is used to display LED parameters on the switch.

Syntax `id-led-show`

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Use this command to display LED parameters on the switch.

Examples To display LED parameters, use the following command:

```
CLI (network-admin@switch) > id-led-show layout vertical
switch:    pleiades24
enable:    no
```

igmp-show

To show the Internet Group Management Protocol (IGMP) group membership information for a switch, use this command.

Syntax `igmp-show`

`group-ip` *`ip-address`*	Specifies the multicast group IP address.
`node-ip` *`ip-address`*	Specifies the node IP address
`vnet vnet-nam`	Specifies the name of the vNET.
`vlan` *`vlan-id`*	Specifies the VLAN identifier.
`port` *`port-number`*	Specifies the port number.
`source` *`ip-address`*	Specifies the multicast source traffic.
`node-type host|router|switch`	Specifies if the router is a host, router, or switch.
`expires` *`expires-number(s)`*	Specifies the ageout time on the IGMP router.

Defaults All IGMP group membership information for the local switch is displayed unless a single switch is specified.

Access CLI

History

Version 1.2	Commmand introduced.
Version 2.4	The parameters, `node-type`, and `expires`, added.
Version 2.4.1	The parameter, `host-ip`, changed to `node-ip`. The parameter, `vnet`, added.

Usage Use this command to display information about IGMP on the network.

Examples To display all IGMP group membership information for the local switch, use the following command:

```
CLI (network-admin@switch) > igmp-show
switch   group-ip  host-ip       vlan port source
-------- --------- ------------- ---- ---- -------
pubdev03 239.4.9.3 192.168.42.20 1    128  0.0.0.0
pubdev03 239.4.9.3 192.168.42.10 1    128  0.0.0.0
pubdev03 239.4.9.3 192.168.42.30 1    0    0.0.0.0
pubdev03 239.4.9.4 192.168.42.20 3    128  0.0.0.0
pubdev03 239.4.9.4 192.168.42.10 3    128  0.0.0.0
pubdev03 239.4.9.4 192.168.42.30 3    65   0.0.0.0
pubdev03 239.4.9.7 192.168.42.20 3    128  0.0.0.0
pubdev03 239.4.9.7 192.168.42.10 3    128  0.0.0.0
pubdev03 239.4.9.7 192.168.42.30 3    65   0.0.0.0
pubdev03 239.4.9.3 192.168.42.20 3    128  0.0.0.0
pubdev03 239.4.9.3 192.168.42.10 3    128  0.0.0.0
pubdev03 239.4.9.3 192.168.42.30 3    65   0.0.0.0
```

igmp-querier-ip-modify

You can configure an IGMP querier IP address for a VLAN or as a global IGMP querier. The IGMP querier sends IGMP General Query messages. on the network.

If you do not specify a querier IP address, then Netvisor uses 0.0.0.0 as the default value. There can be an unique querier IP for each VLAN, or you can configure the same Querier IP address for all the VLANs participating in IGMP snooping. The Querier IP address should have a local scope and every switch should have a unique Querier IP address.

With a valid source IP address on IGMP Query packets, the VLAN, where Query is received, is added to an IGMP Snoop switch list, and is now reflected in the `igmp-switches-show` output and the IGMP queries are sent to the peer Switch as well. This is to solicit a report from the hosts listening on the peer switch.

Syntax `igmp-querier-ip-modify`

`querier-ip` *`ip-address`*	Specify the Snooping Querier IP address.
`vlans-on-querier-ip` *`vlan-list`*	Specify the VLAN map for the querier IP address.

Defaults None

Access network-admin

History Command introduced in Version 2.5.

Usage Configure an IGMP querier IP address for a VLAN or as a global IGMP querier.

Examples To configure an IGMP querier IP address with a VLAN list of 12-15, use the following syntax:

```
CLI (network-admin@switch) > igmp-querier-ip-modify  querier-ip  1.1.1.1
vlans-on-querier-ip  12-15
```

igmp-querier-ip-show

You can configure an IGMP querier IP address for a VLAN or as a global IGMP querier. The IGMP querier sends IGMP General Query messages. on the network.

If you do not specify a querier IP address, then Netvisor uses 0.0.0.0 as the default value. There can be an unique querier IP for each VLAN, or you can configure the same Querier IP address for all the VLANs participating in IGMP snooping. The Querier IP address should have a local scope and every switch should have a unique Querier IP address.

With a valid source IP address on IGMP Query packets, the VLAN, where Query is received, is added to an IGMP Snoop switch list, and is now reflected in the igmp-switches-show output and the IGMP queries are sent to the peer Switch as well. This is to solicit a report from the hosts listening on the peer switch.

Syntax `igmp-querier-ip-show`

`querier-ip` *`ip-address`*	Specify the Snooping Querier IP address.
`vlans-on-querier-ip` *`vlan-list`*	Specify the VLAN map for the querier IP address.

Defaults None

Access network-admin

History Command introduced in Version 2.5.

Usage Display an IGMP querier IP address for a VLAN or as a global IGMP querier.

Examples To display an IGMP querier IP address with a VLAN list of 12-15, use the following syntax:

```
CLI (network-admin@switch) > igmp-querier-ip-show  querier-ip  1.1.1.1
vlans-on-querier-ip  12-15
```

igmp-router-show

This command is used to display IGMP routers on the network.

Syntax `igmp-router-show`

`node-ip` *`ip-address`*	Specifies the IP address of the host.
`vnet` *`vnet name`*	Specifies the host vNET.
`bd` *`bridge-domain name`*	Specifies the host bridge domain.
`vlan` *`vlan-id`*	Specifies the ID of the VLAN.
`port` *`port-number`*	Specifies the number of the port.

Defaults None

Access CLI

History

Version 2.2.2	Command introduced.
Version 5.1.1	The parameters, `group-ip`, `source`, `node-type`, and `expires`, deprecated. The parameters, `vnet`, and `bd` added.

Usage Use this command to display information about IGMP routers on the network.

Examples To display information about IGMP routers on the network, use the following command:

```
CLI (network-admin@switch) > igmp-router-show
```

igmp-snooping-modify

This command enables or disables Internet Group Management Protocol (IGMP) snooping on the network.

Informational Note: Netvisor does not support IGMPv1. If you use IGMPv1, you must disable IGMP snooping on the Pluribus Networks switch

Syntax `igmp-snooping-modify`

Specify one or more of the following options:	
`scope local|fabric`	Specify if the scope is local or fabric.
`enable|disable`	Specify if IGMP snooping is enabled or disabled.
`vxlan|no-vxlan`	Specify to enable or disable IGMP snooping on VXLANs.
`enable-vlans` *`vlan-list`*	Specify a list of VLANs to enable for IGMP.
`snoop-linklocal-vlans` *`vlan-list`*	Specify if you allow snooping of link-local groups(224.0.0.0/24) on these VLANs.
`no-snoop-linklocal-vlans` *`vlan-list`*	Specify if you do not allow snooping of link-local groups(224.0.0.0/24) on these VLANs.
`igmpv3-vlans` *`vlan-list`*	Specify IGMP Version 3 VLAN list for sending queries.
`igmpv2-vlans` *`vlan-list`*	Specify IGMP Version 2 VLAN list for sending queries.
`query-interval` *`seconds`*	Specify the interval between queries in seconds.
`query-max-response-time` *`seconds`*	Specify the maximum response time for a query.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, `scope`, added.
Version 2.4	The parameter, `version`, added.
Version 2.4.1	The parameter, `version`, changed to `igmpv2-vlans` and `igmpv3-vlans`. The parameter, `enable-vlans`, added.

Version 3.1.0	The parameters, `query-interval` and `query-max-response-time`, added.
Version 5.1.1	The parameters `vxlan` and `snoop-linklocal` added.

Usage IGMP snooping allows the switch to listen in on IGMP traffic between hosts and routers, thus maintaining a map of the links that need IP multicast streams. Use this command to modify IGMP snooping on the switch.

Examples To enable IGMP snooping, use the following command:

```
CLI (network-admin@switch) > igmp-snooping-modify  enable
```

igmp-snooping-show

This command displays information about Internet Group Management Protocol (IGMP) snooping on the network.

Informational Note: Netvisor does not support IGMPv1. If you use IGMPv1, you must disable IGMP snooping on the Pluribus Networks switch

Syntax `igmp-snooping-show`

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage IGMP snooping allows the switch to listen in on IGMP traffic between hosts and routers, thus maintaining a map of the links that need IP multicast streams. Use this command to display IGMP snooping information on the switch.

Examples To display information about IGMP snooping, use the following command:

```
CLI (network-admin@switch) > igmp-snooping-show
switch:  pubdev03
enable:  yes
switch:  pubdev02
enable:  yes
switch:  pubdev01
enable:  yes
```

igmp-switches-show

This command is used to display switches with IGMP protocol enabled.

Syntax `igmp-switches-show`

`node-ip` *`ip-address`*	Displays the node IP address.
`vnet` *`vnet-name`*	Displays the name of the vNET assigned to the IGMP static source.
`bd` *`bridge-domain name`*	Displays the bridge domain name.
`vlan` *`vlan-id`*	Displays the VLAN identifier.
`port` *`port-number`*	Displays the port number.

Defaults None

Access CLI

History

Version 2.3.3	Command introduced.
Version 2.4.1	The parameters, `group-ip`, `node-type`, `expires`, and `source`, deprecated. The parameters, `vnet` and `vlan`, added.
Version 5.1.1	The parameter, `bd`, added.

Usage Displays information about IGMP switches.

Examples To display IGMP switches, use the following syntax:

```
CLI (network-admin@switch) > igmp-switches-show
switch         node-ip vlan port
-------------- ------- ---- ----
spine-1        0.0.0.0 1    3
spine-1        0.0.0.0 1    57
spine-1        0.0.0.0 2    3
spine-1        0.0.0.0 3    3
```

igmp-static-group-create

This command creates a static IGMP group on the network.

Informational Note: IGMPv1 is not supported in nvOS. If you are using IGMPv1, you must disable IGMP snooping on the Pluribus Networks switch.

Syntax `igmp-static-group-create`

`group-ip` *`ip-address`*	Speicifies the group multicast IP address for IGMP.
`vlan` *`vlan-id`*	Specifies the VLAN identifier.
`ports` *`port-list`*	Specifies the list of ports.

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Netvisor uses IGMP groups to determine the reception state for a specific multicast address. This allows the switch to determine if any switches need messages sent from a multicast group. Use this command to create an IGMP static group.

Examples To configure a static group for 239.4.9.3 on VLAN 202 and ports 55-57, use the following command:

```
CLI (network-admin@switch) > igmp-static-group-create  group-ip
239.4.9.3 vlan 202 ports 55-57
```

igmp-static-group-delete

This command deletes information about IGMP snooping on the network.

Syntax `igmp-static-group-delete`

`group-ip` *`ip-address`*	Specify the group IP address for IGMP.
`vnet` *`vnet name`*	Specify the vNET to delete.
`l2-net` *`l2-net name`*	Specify the group Layer 2 network.
`vlan` *`vlan-id`*	Specify the VLAN identifier.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters, `ports`, is deprecated.
Version 3.0.0	The parameters, `vnet` and `l2-net`, added.

Usage IGMP groups are used to determine the reception state for a specific multicast address. This allows the switch to determine if any switches need messages sent from a multicast group. Use this command to remove an IGMP static group.

Examples To delete a static group for 239.4.9.3 on VLAN 202 and ports 55-57, use the following command:

```
CLI (network-admin@switch) > igmp-static-group-delete  group-ip
239.4.9.3 vlan 202 ports 55-57
```

igmp-static-group-show

This command is used to display information about IGMP static groups configured on the switch.

Informational Note: IGMPv1 is not supported in nvOS. If you are using IGMPv1, you must disable IGMP snooping on the Pluribus Networks switch.

Syntax `igmp-static-group-show`

`group-ip` *`ip-address`*	Specifies the IP address of the IGMP static group.
`vnet` *`vnet-name`*	Specifies the vNET assigned to the IGMP static group.
`l2-net` *`l2-net name`*	Specify the group Layer 2 network.
`vlan` *`vlan-id`*	Specifies the VLAN assigned to the IGMP static group.
`ports` *`port-list`*	Specifies the ports assigned to the IGMP group.

Access CLI

History

Version 2.0	Command introduced.
Version 2.4.1	The parameter, `vnet`, added.
Version 3.0.0	The parameter `l2-net` added.

Usage IGMP groups are used to determine the reception state for a specific multicast address. This allows the switch to determine if any switches need messages sent from a multicast group. Use this command to display an IGMP static group.

Examples To display a static group for 239.4.9.3 on VLAN 202 and ports 55-57, use the following command:

```
CLI (network-admin@switch) > igmp-static-group-show  group-ip  239.4.9.3
vnet global-fab vlan 202 ports 55-57
```

igmp-static-source-create

This command creates a static IP address as the IGMP source on the network.

Informational Note: IGMPv1 is not supported in nvOS. If you are using IGMPv1, you must disable IGMP snooping on the Pluribus Networks switch.

Syntax `igmp-static-source-create`

`source-ip` *`ip-address`*	Specify the source IP address. This is a unicast IP address.
`group-ip` *`ip-address`*	Specify the group IP address for IGMP.
`vlan` *`vlan-id`*	Specify the VLAN identifier.
Specify the following option:	
`vnet` *`vnet-name`*	Specify the name of the vNET assigned to the IGMP static source.
`bd` *`bridge-domain name`*	Specify the bridge domain name.
`ports` *`port-list`*	Specify the list of ports.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.4.1	The parameter, `vnet`, added.
Version 3.0.0	The parameter `l2-net` added.
Version 5.1.1	The parameter `l2-net` deprecated.

Usage IGMP groups are used to determine the reception state for a specific multicast address. This allows the switch to determine if any switches need messages sent from a multicast group. Use this command to create an IGMP static IP address as the source.

Examples To add the static source 12.0.0.1 as the static source, use the following command:

```
CLI (network-admin@switch) > igmp-static-source-create  source-ip
12.0.0.1 group-ip vlan 202 ports 55-57
```

igmp-static-source-delete

This command deletes a static IGMP source on the network.

Informational Note: IGMPv1 is not supported in nvOS. If you are using IGMPv1, you must disable IGMP snooping on the Pluribus Networks switch.

Syntax `igmp-static-source-delete`

`group-ip` *`ip-address`*	Specifies the group IP address for IGMP.
`source-ip` *`ip-address`*	Specifies the source IP address.
`bd` *`bridge-domain name`*	Specify the bridge domain name.
`vlan` *`vlan-id`*	Specifies the VLAN identifier.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.4.1	The parameter, `vnet`, added.
Version 3.0.0	The parameter `l2-net` added.
Version 5.1.1	The parameter `l2-net` deprecated.

Usage IGMP groups are used to determine the reception state for a specific multicast address. This allows the switch to determine if any switches need messages sent from a multicast group. Use this command to remove an IP address as the static source.

Examples To remove the static source 12.0.0.1 as the static source, use the following command:

```
CLI (network-admin@switch) > igmp-static-source-delete  source-ip
12.0.0.1 group-ip vlan 202 ports 55-57
```

igmp-static-source-show

This command displays a static IGMP source on the network.

Informational Note: IGMPv1 is not supported in nvOS. If you are using IGMPv1, you must disable IGMP snooping on the Pluribus Networks switch.

Syntax `igmp-static-source-show`

`group-ip` *`ip-address`*	Specifies the group IP address for IGMP.
`vnet` *`vnet-name`*	Specify the name of the vNET assigned to the IGMP static source.
`source-ip` *`ip-address`*	Specifies the source IP address.
`bd` *`bridge-domain name`*	Specifies the bridge domain name.
`vlan` *`vlan-id`*	Specifies the VLAN identifier.
`ports` *`port-list`*	Specifies the list of ports.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.4.1	The parameter, `vnet`, added.
Version 5.1.1	The parameter, `host`, deprecated, and the parameter, `bd`, added.

Usage IGMP groups are used to determine the reception state for a specific multicast address. This allows the switch to determine if any switches need messages sent from a multicast group. Use this command to remove an IGMP static source.

Examples To display information about all IGMP static source IP addresses, use the following command:

```
CLI (network-admin@switch) > igmp-static-source-show
```

igmp-stats-show

This command displays IGMP statistics for a network on a per-VLAN basis.

Syntax `igmp-stats-show`

`vlan` *`vlan-id`*	Specify the VLAN ID for which IGMP statistics are to be displayed. For multiple VLANs, specify VLAN IDs as a list separated by commas.

Defaults None

Access CLI

History

Usage This command displays IGMP statistics for the network. The displayed information includes VLANs as well as the number of queries and number of member reports for IGMPv2 and IGMPv3, among other details.

Examples To display IGMP statistics for VLAN 1 in a vertical layout, use the command:

```
CLI (network-admin@switch1) > igmp-stats-show vlan 1 layout vertical
switch:            switch1
vlan:              1
v2-queries:        0
v3-queries:        581
v1-member-reports: 0
v2-member-reports: 0
v2-leave-group:    0
v3-member-reports: 2903
queries-sent:      577
drops:             0
ignored:           0
switch:            switch2
vlan:              1
v2-queries:        0
v3-queries:        116
v1-member-reports: 0
v2-member-reports: 0
v2-leave-group:    0
v3-member-reports: 2446
queries-sent:      1871
drops:             0
ignored:           0
```

igmp-stats-clear

Netvisor uses IGMP groups to determine the reception state for a specific multicast address. This allows the switch to determine if any switches need messages sent from a multicast group. Use this command to clear IGMP statistics:

Syntax `igmp-stats-clear`

`vlan` *`vlan-id`*	Specify the VLAN ID for which IGMP statistics are to be cleared. For multiple VLANs, specify VLAN IDs as a list separated by commas.

Defaults None

Access CLI

History

Usage This command clears IGMP statistics for the network. The command can be made specific to VLANs.

Examples To clear IGMP statistics for VLAN 1, use the command:

```
CLI (network-admin@Switch1) > igmp-stats-clear vlan 1
```

inline-service-create

The Inline Service feature manages service chains for Layer 1 Virtual Wire switches. The term, Inline Services, refers to services attached to a Layer 1 Virtual Wire switch such as Next-Generation Firewall (NGFW), Intrusion Detection System (IDS), Intrusion Prevention System (IPS), and Distributed Denial of Service attack (DDoS) Prevention.

When an Inline Service fails, a policy determines if traffic is allowed to bypass the Inline Services or if the traffic is blocked until the Inline Services recovers.

This command creates an Inline Service configuration.

Syntax `inline-service-create`

`name` *`name-string`*	Specify a name for the Inline Service.
`tx-port` *`port-list`*	Specify the ports to send the Inline Service.
`rx-port` *`port-list`*	Specify the ports to receive the Inline Service.
`heartbeat service-heartbeat` *`name`* `| none`	Specify the service heartbeat.

Defaults None

Access Network Administrator

History .

Version 2.6.0	Command introduced.
Version 3.0.0	The parameter, `heartbeat service-heartbeat`, added.

Usage Use this command to create an Inline Service configuration.

Examples To create an Inline Service configuration for IDS on transmit port 1 and receive port 2, use the following syntax:

```
CLI (network-admin@switch) > inline-service-create name IDS tx-port 1
rx-port 2
```

inline-service-delete

The Inline Service feature manages service chains for Layer 1 Virtual Wire switches. The term, Inline Services, refers to services attached to a Layer 1 Virtual Wire switch such as Next-Generation Firewall (NGFW), Intrusion Detection System (IDS), Intrusion Prevention System (IPS), and Distributed Denial of Service attack (DDoS) Prevention.

When an Inline Service fails, a policy determines if traffic is allowed to bypass the Inline Services or if the traffic is blocked until the Inline Services recovers.

This command delete an Inline Service configuration.

Syntax `inline-service-delete`

`name` *`name-string`*	Specify a name for the Inline Service.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to delete an Inline Service configuration.

Examples To remove an Inline Service configuration named IDS, use the following syntax:

```
CLI (network-admin@switch) > inline-service-delete name IDS
```

inline-service-modify

The Inline Service feature manages service chains for Layer 1 Virtual Wire switches. The term, Inline Services, refers to services attached to a Layer 1 Virtual Wire switch such as Next-Generation Firewall (NGFW), Intrusion Detection System (IDS), Intrusion Prevention System (IPS), and Distributed Denial of Service attack (DDoS) Prevention.

When an Inline Service fails, a policy determines if traffic is allowed to bypass the Inline Services or if the traffic is blocked until the Inline Services recovers.

This command delete an Inline Service configuration.

Syntax `inline-service-modify`

`name` *`name-string`*	Specify a name for the Inline Service.
`heartbeat service-heartbeat` *`name`* `| none`	Specify the service heartbeat.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0

Usage Use this command to modify an Inline Service configuration.

Examples To remove an Inline Service configuration named IDS, use the following syntax:

```
CLI (network-admin@switch) > inline-service-modify name IDS
```

inline-service-show

The Inline Service feature manages service chains for Layer 1 Virtual Wire switches. The term, Inline Services, refers to services attached to a Layer 1 Virtual Wire switch such as Next-Generation Firewall (NGFW), Intrusion Detection System (IDS), Intrusion Prevention System (IPS), and Distributed Denial of Service attack (DDoS) Prevention.

When an Inline Service fails, a policy determines if traffic is allowed to bypass the Inline Services or if the traffic is blocked until the Inline Services recovers.

This command displays information about an inline service configuration.

Syntax `inline-service-show`

`name` *`name-string`*	Displays a name for the Inline Service.
`tx-port` *`port-list`*	Displays the ports to send the Inline Service.
`rx-port` *`port-list`*	Displays the ports to receive the Inline Service.
`status down|up`	Displays the status of the inline service.
`heartbeat service-heartbeat` *`name`* `| none`	Specify the service heartbeat.

Defaults None

Access Network Administrator

History

Version 2.6.0	Command introduced.
Version 3.0.0	The parameter, `heartbeat service-heartbeat`, added.

Usage Use this command to display information about an Inline Service configuration.

Examples To display an Inline Service configuration, use the following syntax:

```
CLI (network-admin@switch) > inline-service-show
switch name tx-port rx-port
------ ---- ------- -------
Leaf1  IDS   1      2
Leaf1  FW    10     20
Leaf1  FW    40     40
```

ip-pool-create

This command creates a new IP address pool with a specific IP address range.

Syntax `ip-pool-create`

`name` *`ip-pool-name`*	Specify the name for the IP pool.
`vnet` *`vnet-name`*	Specify the vNET for the IP pool.
`start-ip` *`ip-address`*	Specify the first IP address in the pool. This address is included in the pool.
`end-ip` *`ip-address`*	Specify the end IP address of the pool and is included in the pool.
`netmask` *`netmask`*	Specify the subnet for the IP address pool.
Specify the following option:	
`bd` *`bridge-domain name`*	Specify the name of the bridge domain.
`vlan` *`vlan-id`*	Specify the VLAN identifier for an IP address pool that applies to a specific Layer 2 network segment.

Defaults Unless the netmask parameter is specified, the subnet for the IP address pool is assumed to be the standard IP block for a given IP prefix. For example, if no netmask is specified and the IP address has a prefix of 192.168.0.x, the subnet is assumed as /24, 255.255.255.0.

Access CLI

History

Version 1.2.1	Command introduced.
Version 3.0.0	The parameter, `l2-net`, added.
Version 5.1.1	The parameter, `l2-net` deprecated and the parameter `bd` added.

Usage IP address pools help automate the management of IP addresses for hosts and virtual machines, including the management IP addresses of the switches in a fabric. Use this command to create a new IP pool.

Examples To create a fabric-wide IP address pool named `MyPublicIPv4Pool` to automate the allocation of IP addresses within a fabric for the IP address block `208.74.182.0 to 208.74.182.100/32`, use the following command:

```
CLI (network-admin@switch) > ip-pool-create name MyPublicIPv4Pool
start-ip 208.74.182.0 end-ip 208.74.182.100 netmask 255.255.255.0
```

ip-pool-delete

This command deletes an IP address pool with a specific IP address range.

Syntax `ip-pool-delete`

name *ip-pool-name*	Specify the name of the IP pool to delete.

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage IP address pools help automate the management of IP addresses for hosts and virtual machines, including the management IP addresses of the switches in a fabric. This command deletes an existing IP address pool.

Examples To delete the IP address pool name MyPublicIPv4Pool, use the following command:

```
CLI (network-admin@switch) > ip-pool-delete MyPublicIPv4Pool
```

ip-pool-modify

This command modifies an IP address pool with a specific IP address range.

Syntax `ip-pool-modify`

`name` *`ip-pool-name`*	Specify the name of the IP pool.
Specify one or more of the following options:	
`start-ip` *`ip-address`*	Specify the first IP address in the pool. This address is included in the pool.
`end-ip` *`ip-address`*	Specify the end IP address of the pool and is included in the pool.
`network ip-address`	Specify the network for the IP address pool, for example, 192.168.1.0.
`netmask` *`netmask`*	Specify the subnet for the IP address pool.
`vlan` *`vlan-id`*	Specify the VLAN identifier for an IP address pool that applies to a specific Layer 2 network segment.
`bd` *`bridge-domain name`*	Specify the Bridge Domain assigned to IP pool.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.2	The parameter, `vnet`, deprecated.
Version 3.0.0	The parameter, `l2-net`, added.
Version 5.1.1	The parameter, `l2-net` deprecated and the parameter `bd` added.

Usage IP address pools help automate the management of IP addresses for hosts and virtual machines, including the management IP addresses of the switches in a fabric. Use this command to modify an existing IP pool.

Examples To modify a fabric-wide IP address pool named MyPublicIPv4Pool to automate the allocation of IP addresses within a fabric for the IP address block 208.74.182.0/24 to 208.74.182.201/24, use the following command:

```
CLI (network-admin@switch) > ip-pool-modify name MyPublicIPv4Pool start-ip 208.74.182.0 end-ip
208.74.182.200 netmask 255.255.255.0
```

ip-pool-show

This command displays information about an IP address pool with a specific IP address range.

Syntax `ip-pool-show`

`name` *`ip-pool-name`*	Specifies the name of the IP pool.
`vnet` *`vnet-name`*	Specifies the vNET for the IP pool.
`scope local|fabric`	Specifies the scope of the vNET.
`start-ip` *`ip-address`*	Specifies the first IP address in the pool. This address is included in the pool.
`end-ip` *`ip-address`*	Specifies the end IP address of the pool and is included in the pool.
`network` *`ip-address`*	Specify an IP address group such as 192.168.11.0.
`netmask` *`netmask`*	Specifies the subnet for the IP address pool.
`l2-net` *`l2-net-name`*	Specify the name of the Layer 2 network.
`vlan` *`vlan-id`*	Specifies the VLAN identifier for an IP address pool that applies to a specific Layer 2 network segment.
`bd` *`bridge-domain name`*	Specify the Bridge Domain assigned to IP pool.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.2	The parameter, `vnet`, deprecated.

Version 3.0.0	The parameter, `l2-net`, added.
Version 5.1.1	The parameter `l2-net` deprecated and the parameter `bd` added.

Usage IP address pools help automate the management of IP addresses for hosts and virtual machines, including the management IP addresses of the switches in a fabric.

Examples To display information about a fabric-wide IP address pool named vPool, use the following command:

```
 CLI (network-admin@switch) > ip-pool-show name vPool
Name  Owner Scope Range Start   Range End       Nemask Gateway   DNS
----- ----- ----- ------------- --------------- ------ --------- ---
vPool  None local 192.168.240.1 192.168.240.254 24     10.9.40.1  0
```

ipv6security-raguard-create

Create a Router Advertisement (RA) IPv6 security policy for IPv6 addresses.

Syntax `ipv6security-raguard-create`

`name` *`name-string`*	Specify the RA policy name.
`device host|router`	Specify the type of device as host or router.
`router-priority low|medium|high`	Specify the router priority as low, medium, or high.
`access-list` *`name-string`*	Specify the access list name.
`prefix-list` *`name-string`*	Specify the prefix list name.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to create a RA Guard policy for IPv6 addresses.

Examples To create a RA Guard policy with the name ra-guard-policy, device router, router-priority low, access-list ra-access-1, and prefix-list ra-prefix-1, use the following syntax:

```
CLI (network-admin@switch) > ipv6security-raguard-create name ra-guard-policy device router router-priority low access-list ra-access-1 prefix-list ra-prefix-1
```

ipv6security-raguard-delete

Delete a Router Advertisement (RA) IPv6 security policy for IPv6 addresses.

Syntax `ipv6security-raguard-delete`

`name` *`name-string`*	Specify the RA policy name.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to delete a RA Guard policy for IPv6 addresses.

Examples To delete a RA Guard policy with the name ra-guard-policy, device router, router-priority low, access-list ra-access-1, and prefix-list ra-prefix-1, use the following syntax:

```
CLI (network-admin@switch) > ipv6security-raguard-delete name ra-guard-policy
```

ipv6security-raguard-modify

Modify a Router Advertisement (RA) IPv6 security policy for IPv6 addresses.

Syntax `ipv6security-raguard-modify`

`name` *`name-string`*	Specify the RA policy name.
`device host|router`	Specify the type of device as host or router.
`router-priority low|medium|high`	Specify the router priority as low, medium, or high.
`access-list` *`name-string`*	Specify the access list name.
`prefix-list` *`name-string`*	Specify the prefix list name.
`attached-ports` *`port-list`*	Specify the ports attached to the RA Guard policy.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to modify a RA Guard policy for IPv6 addresses.

Examples To modify a RA Guard policy with the name ra-guard-policy, device router, router-priority low, access-list ra-access-1, and prefix-list ra-prefix-1, and add ports 11-13, use the following syntax:

```
CLI (network-admin@switch) > ipv6security-raguard-modify name ra-guard-policy device router router-priority low access-list ra-access-1 prefix-list ra-prefix-1 attached-ports 11-13
```

ipv6security-raguard-show

Display information about a Router Advertisement (RA) IPv6 security policy configuration.

Syntax `ipv6security-raguard-show`

`name` *`name-string`*	Displays the RA policy name.
`device host|router`	Displays the type of device as host or router.
`router-priority low|medium|high`	Displays the router priority as low, medium, or high.
`access-list` *`name-string`*	Displays the access list name.
`prefix-list` *`name-string`*	Displays the prefix list name.
`attached-ports` *`port-list`*	Displays the ports attached to the policy.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to display information about a RA Guard policy configuration.

Examples To display information about a RA Guard policy configuration, NAT-1, use the following syntax:

CLI (network-admin@switch) > ipv6security-raguard-show

```
switch     name           device router-priority access-list prefix-list attached-ports
---------- -------------- ------ -------------- ----------- ----------- --------------
leo-ext-22 ra-guard-policy router low            ra-access-1 ra-prefix-1 none
```

ipv6security-raguard-port-add

The IPv6 RA Guard feature provides support for allowing the network administrator to block or reject unwanted or rogue RA guard messages arriving at the network device platform. Use this command to add a port to an RA guard policy.

Syntax `ipv6security-raguard-port-add`

`name` *`name-string`*	Specify the name of the RA Guard policy to add ports.
`ports` *`port-list`*	Specify the list of ports to add to the policy.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to add a port to an RA guard policy.

Examples To add a port to an IPv6 RA guard policy, use the following syntax:

```
CLI (network-admin@switch) > ipv6security-raguard-port-add  name  RA1
ports  12,13
```

ipv6security-raguard-port-remove

The IPv6 RA Guard feature provides support for allowing the network administrator to block or reject unwanted or rogue RA guard messages arriving at the network device platform. Use this command to remove a port from an RA guard policy.

Syntax `ipv6security-raguard-port-remove`

`name` *`name-string`*	Specify the name of the RA Guard policy to remove ports from.
`ports` *`port-list`*	Specify the list of ports to remove.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to remove a port from an RA guard policy.

Examples To remove a port from an IPv6 RA guard policy, use the following syntax:

```
CLI (network-admin@switch) > ipv6security-raguard-port-remove name RA1
ports 12,13
```

ipv6security-raguard-port-show

The IPv6 RA Guard feature provides support for allowing the network administrator to block or reject unwanted or rogue RA guard messages arriving at the network device platform. Display information about a Router Advertisement (RA) IPv6 security policy port configuration.

Syntax `ipv6security-raguard-port-show`

`name` *`name-string`*	Displays the RA guard policy name.
`ports` *`port-list`*	Displays the type of device as host or router.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to display information about an RA Guard policy port configuration.

Examples To display information about a RA Guard policy port configuration, NAT-1, use the following syntax:

```
CLI (network-admin@switch) > ipv6security-raguard-port-show name NAT-1
```

ipv6security-raguard-vlan-add

The IPv6 RA Guard feature provides support for allowing the network administrator to block or reject unwanted or rogue RA guard messages arriving at the network device platform.

Syntax `ipv6security-raguard-vlan-add`

`name` *`name-string`*	Specify the name of the RA Guard policy to add VLANs.
`vlans` *`vlan-id`*	Specify the VLANs to add to the policy.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0

Usage Use this command to add a VLAN to an RA Guard policy.

Examples To add VLAN 33 to RA Policy, RA-Guard, use the following syntax:

```
CLI (network-admin@switch) > ipv6security-raguard-vlan-add name RA-Guard vlans 33
```

ipv6security-raguard-vlan-remove

The IPv6 RA Guard feature provides support for allowing the network administrator to block or reject unwanted or rogue RA guard messages that arrive at the network device platform.

Syntax `ipv6security-raguard-vlan-remove`

`name` *`name-string`*	Specify the name of the RA Guard policy to add VLANs.
`vlans` *`vlan-id`*	Specify the VLANs to add to the policy.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0

Usage Use this command to remove a VLAN from an RA Guard policy.

Examples To remove VLAN 33 to RA Policy, RA-Guard, use the following syntax:

```
CLI (network-admin@switch) > ipv6security-raguard-vlan-remove name RA-Guard vlans 33
```

ipv6security-raguard-vlan-show

The IPv6 RA Guard feature provides support for allowing the network administrator to block or reject unwanted or rogue RA guard messages that arrive at the network device platform.

Syntax `ipv6security-raguard-vlan-show`

`name` *`name-string`*	Specify the name of the RA Guard policy to add VLANs.
`vlans` *`vlan-id`*	Specify the VLANs to add to the policy.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0

Usage Use this command to display a VLAN assigned to an RA Guard policy.

Examples To display for the RA Policy, RA-Guard, use the following syntax:

```
CLI (network-admin@switch) > ipv6security-raguard-vlan-show name RA-Guard vlans 33
```

K Commands

k8s-cluster-show

A Kubernetes cluster consists of a control plane node and a set of worker nodes that run containerized applications. Every cluster runs at least one worker node. This command is used to display Kubernetes cluster information.

Syntax `k8s-cluster-show`

`cluster-name` *`cluster-name-string`*	The name of the Kubernetes cluster.
Specify one or more of the following options:	
`start-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The start time of statistics collection.
`end-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The end time of statistics collection.
`duration` *`duration: #d#h#m#s`*	The duration of statistic collection.
`interval` *`duration: #d#h#m#s`*	The interval between statistic collection.
`since-start`	Statistics collected since start time.
`older-than` *`duration: #d#h#m#s`*	Display statistics older than the specified duration.
`within-last` *`duration: #d#h#m#s`*	Display statistics within the last specified duration.
`control-plane-node control-plane-node-string`	The control plane node name.
`control-plane-node-ip control-plane-node-ip-string`	The control plane node name.
`controller-status` *`controller-status-string`*	The status of the Kubernetes controller.
`scheduler-status`	The status of the Kubernetes scheduler.
`action none|add|remove|update`	The last action.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display the Kubernetes cluster information.

Examples To display the Kubernetes cluster information, use this command:

```
CLI (network-admin@switch) > k8s-cluster-show
cluster-name  control-plane-node  control-plane-node-ip  controller-stauts  scheduler-status  lastchanged
------------  ------------------  ---------------------  -----------------  ----------------
-------------
k8s01        server-test-93     192.168.10.10         healthy            healthy
0712,23:25:21
```

k8s-cni-show

The Container Network Interface (CNI) is a proposed standard for configuring network interfaces for Linux application containers. This command is used to display CNI information.

Syntax `k8s-cni-show`

`cluster-name` *`cluster-name-string`*	The name of the Kubernetes cluster.
Specify one or more of the following options:	
`start-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The start time of statistics collection.
`end-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The end time of statistics collection.
`duration` *`duration: #d#h#m#s`*	The duration of statistics collection.
`interval` *`duration: #d#h#m#s`*	The interval between statistic collection.
`since-start`	Statistics collected since start time.
`older-than` *`duration: #d#h#m#s`*	Display statistics older than the specified duration.
`within-last` *`duration: #d#h#m#s`*	Display statistics within the last specified duration.
`cni-plugin` *`cni-plugin-string`*	The CNI plugin.
`backend` *`backend-string`*	The backend used by the CNI plugin.
`udp-port` *`udp-port-number`*	The VXLAN destination port.
`vxlan 0..16777215`	VXLAN ID for the vFlow.
`network-type` *`network-type-string`*	The network type implemented by the CNI plugin.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display the CNI information.

Examples To display the CNI information, use this command:

*CLI (network-admin@switch) > k8s-cni-*show

```
cluster-name  cni-plugin  backend  network-type
------------  ----------  -------  -----------
pluribus      flannel     host-gw  underlay
```

k8s-connection-create

This command is used to create a new connection to the Kubernetes API server.

Syntax `k8s-connection-create`

`cluster-name` *`cluster-name-string`*	Specify a name for the Kubernetes cluster.
`rest-user` *`user name`*	Specify the username for vREST access.
Specify one or more of the following options:	
`kube-config` *`kube-config-string`*	Specify the absolute path to the kubeconfig file. The Default file location is `/root/.kube/config` in case `kube-config` option is not specified.
`password` *`password-string`*	Specify the vREST password.
`enable|disable`	Specifies whether to enable or disable the connection to Kubernetes API server.
`track-history|no-track-history`	Specifies whether enable or disable Kubernetes cluster history tracking.
`disk-space` *`disk-space-number`*	Specify the disk-space allocated for history (including rotated log files).

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to create a new connection to the Kubernetes API server.

Examples Use the following syntax to create a new connection to the Kubernetes API server.

```
CLI (network-admin@switch) > k8s-connection-create  cluster-name
k8s01  kube-config  /root/.kube/config
rest-user  network-admin  enable
rest-user  password  :
confirm  rest-user  password:
```

k8s-connection-delete

This command is used to delete the connection to the Kubernetes API server.

Syntax `k8s-connection-delete`

`cluster-name` *`cluster-name-string`*	Specify a name for the Kubernetes cluster.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to delete the connection to the Kubernetes API server.

Examples Use the following syntax to delete the connection to the Kubernetes API server.

```
CLI (network-admin@switch) > k8s-connection-delete
```

k8s-connection-modify

This command is used to modify the connection to the Kubernetes API server.

Syntax `k8s-connection-modify`

`cluster-name` *`cluster-name-string`*	Specify a name for the Kubernetes cluster.
one or more of the following options:	
`rest-user` *`user name`*	Specify the username for vREST access.
`password` *`password-string`*	Specify the vREST password.
`enable|disable`	Specifies whether to enable or disable the connection to Kubernetes API server.
`track-history|no-track-history`	Specifies whether enable or disable Kubernetes cluster history tracking.
`disk-space` *`disk-space-number`*	Specify the disk-space allocated for history (including rotated log files).
`create-vport|no-create-vport`	Specifies whether to enable or disable vPort creation for Pod traffic.
`overlay-vxlan-analytics|no-overlay-vxlan-analytics`	Specify whether to enable or disable pod traffic analytics.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to modify the connection to the Kubernetes API server.

Examples Use the following syntax to modify the connection to the Kubernetes API server.

```
CLI (network-admin@switch) > k8s-connection-modify
```

k8s-connection-show

This command is used to display the connection to the Kubernetes API server.

Syntax `k8s-connection-show`

`cluster-name` *`cluster-name-string`*	The name of the Kubernetes cluster.
`kube-config` *`kube-config-string`*	The absolute path to the kube config file.
`rest-user` *`user name`*	The username for vRest access on switch.
`enable|disable`	Status of the connection to Kubernetes API server.
`track-history|no-track-history`	Enable or disable Kubernetes cluster history tracking.
`disk-space` *`disk-space-number`*	The disk-space allocated for history (including rotated log files).
`create-vport|no-create-vport`	Enable or disable vPort creation for Pod traffic.
`overlay-vxlan-analytics|no-overlay-vxlan-analytics`	Enable or disable pod traffic analytics.
`location` *`location-number`*	Location where the connection is running.
`connection-error` *`connection-error-string`*	Kubernetes connection error.
`k8s-vlan 0..4095`	VLAN used by k8s for pod vport creation.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display the connection to the Kubernetes API server.

Examples Use the following syntax to display the connection to the Kubernetes API server.

`CLI (network-admin@switch) >` `k8s-connection-show format all layout vertical`

```
cluster-name:            k8s01
kube-config:             /root/.kube/config
rest-user:               network-admin
enable:                  yes
track-history:           yes
disk-space:              50M
create-vport:            yes
overlay-vxlan-analytics: no
location:                1262261009
```

k8s-connectivity-show

The Kubernetes visibility feature enables you to locate where Kubernetes Pods for specific applications are connected to the fabric to resolve any connectivity or performance issues. This command is used to display Kubernetes connectivity information.

Syntax `k8s-connectivity-show`

`cluster-name` *`cluster-name-string`*	The name of the Kubernetes cluster.
Specify one or more of the following options:	
`start-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The start time of statistics collection.
`end-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The end time of statistics collection.
`duration` *`duration: #d#h#m#s`*	The duration of statistics collection.
`interval` *`duration: #d#h#m#s`*	The interval between statistics collection.
`since-start`	Statistics collected since start time.
`older-than` *`duration: #d#h#m#s`*	Display statistics older than the specified duration.
`within-last` *`duration: #d#h#m#s`*	Display statistics within the last specified duration.
`namespace` *`namespace-string`*	The namespace.
`deployment` *`deployment-string`*	The Kubernetes deployment.
`daemonset` *`daemonset-string`*	The Kubernetes daemonset name.
`service` *`service-string`*	The Kubernetes service name.
`pod` *`pod-string`*	Name of the pod.
`node` *`node-string`*	The Kubernetes cluster node name.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display Kubernetes connectivity information.

Examples Use the following syntax to display the Kubernetes connectivity information

```
CLI (network-admin@switch) > k8s-connectivity-show
cluster-name namespace deployment pod                    connections
------------ --------- ---------- ----------------------- ----------------------------------------
```

```
pluribus     default   petstore   petstore-9d499b76f-hhmg4 server-test-94:enp1s0f0  -- 43:aurigacolo-1
pluribus     default   petstore   petstore-9d499b76f-psv8w server-test-103:enp1s0f0 -- 16:aurigacolo-1

                                                            server-test-94:enp1s0f1  -- 44:aurigacolo-1
pluribus     default   petstore   petstore-9d499b76f-qj58s server-test-94:enp1s0f0  -- 43:aurigacolo-1

                                                            server-test-94:enp1s0f1  -- 44:aurigacolo-1
pluribus     default   petstore   petstore-9d499b76f-649g6 server-test-103:enp1s0f0 -- 16:aurigacolo-1
```

k8s-daemonset-show

A DaemonSet manages groups of replicated Pods and ensures that all (or some) nodes run a copy of a Pod. DaemonSets adds Pods to nodes that are added to a cluster and removes the Pods from nodes which are removed from the cluster. Deleting a DaemonSet also deletes the Pods that it created. This command is used to display Kubernetes daemonset information.

Syntax `k8s-daemonset-show`

`cluster-name` *`cluster-name-string`*	The name of the Kubernetes cluster.
Specify one or more of the following options:	
`start-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The start time of statistics collection.
`end-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The end time of statistics collection.
`duration` *`duration: #d#h#m#s`*	The duration of statistics collection.
`interval duration: #d#h#m#s`	The interval between statistics collection.
`since-start`	Statistics collected since start time.
`older-than` *`duration: #d#h#m#s`*	Display statistics older than the specified duration.
`within-last` *`duration: #d#h#m#s`*	Display statistics within the last specified duration.
`name` *`name-string`*	The name of the daemonset.
`namespace` *`namespace-string`*	The name of the namespace.
`desired-cnt` *`desired-cnt-number`*	The desired number of Pods.
`ready-cnt` *`ready-cnt-number`*	The number of Pods which are ready.
`selector` *`selector-string`*	The label selector for the Pods.
`action none|add|remove|update`	The last action performed.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display Kubernetes daemonset information.

Examples Use the following syntax to display Kubernetes daemonset information.

```
CLI (network-admin@switch) > k8s-daemonset-show
cluster-name name                   namespace      desired-cnt ready-cnt last-changed
------------ --------------------- -------------- ----------- --------- ------------
k8s01        speaker                metallb-system 6           6         23:24:49
k8s01        csi-cephfsplugin       rook-ceph      6           6         23:24:50
k8s01        csi-rbdplugin          rook-ceph      6           6         23:24:50
k8s01        calico-node            kube-system    6           6         23:24:50
k8s01        fluentd-elasticsearch kube-system    6           6         23:24:50
k8s01        kube-proxy             kube-system    6           6         23:24:50
k8s01        nodelocaldns           kube-system    6           6         23:24:50
k8s02        fluentd-elasticsearch kube-system    6           6         23:25:22
k8s02        kube-flannel-ds        kube-system    6           6         23:25:22
k8s02        kube-proxy             kube-system    6           6         23:25:22
```

k8s-deployment-show

Deployments represent a set of multiple, identical Pods with no unique identities. A deployment runs multiple replicas of your application and automatically replaces any instances that fail or become unresponsive. In this way, deployments help ensure that one or more instances of your application are available to serve user requests. This command is used to display Kubernetes deployment information.

Syntax `k8s-deployment-show`

`cluster-name` *`cluster-name-string`*	The name of the Kubernetes node.
Specify one or more of the following options:	
`start-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The start time of statistics collection.
`end-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The end time of statistics collection.
`duration` *`duration: #d#h#m#s`*	The duration of statistics collection.
`interval` *`duration: #d#h#m#s`*	The interval between statistics collection.
`since-start`	Statistics collected since start time.
`older-than` *`duration: #d#h#m#s`*	Display statistics older than the specified duration.
`within-last` *`duration: #d#h#m#s`*	Display statistics within the last specified duration.
`name` *`name-string`*	The name of the deployment.
`namespace` *`namespace-string`*	The name of the namespace.
`replicas` *`replicas-number`*	The total replicas of pod.
`ready-replicas` *`ready-replicas-number`*	The ready replicas of pod.
`selector` *`selector-string`*	The pod label in deployment.
`action none|add|remove|update`	The last action performed.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display Kubernetes deployment information.

Examples Use the following syntax to display Kubernetes deployment information.

```
CLI (network-admin@switch) > k8s-deployment-show
cluster-name name                     namespace            replicas ready-replicas selector                          last-changed
------------ ------------------------ -------------------- -------- -------------- --------------------------------- ------------
pluribus     my-app                   default              1        1              app:my-app                        01:07:38
pluribus     pingtest                 default              2        2              app:pingtest                      01:07:38
pluribus     kubernetes-dashboard     kubernetes-dashboard 1        1              k8s-app:kubernetes-dashboard      01:07:38
pluribus     dashboard-metrics-scraper kubernetes-dashboard 1        1              k8s-app:dashboard-metrics-scraper 01:07:39
pluribus     hello-world              default              5        5              run:load-balancer-example         01:07:39
pluribus     petstore                 default              1        1              app:petstore                      01:07:39
pluribus     discovery                gloo-system          1        1              gloo:discovery                    01:07:39
pluribus     gloo                     gloo-system          1        1              gloo:gloo                         01:07:39
pluribus     ingress                  gloo-system          1        1              gloo:ingress                      01:07:39
pluribus     ingress-proxy            gloo-system          1        1              gloo:ingress-proxy                01:07:39
pluribus     coredns                  kube-system          2        2              k8s-app:kube-dns                  01:07:39
```

k8s-endpoint-show

This command is used to display information about Pods targeted by a service (Pod IP addresses) in a Kubernetes cluster.

Syntax `k8s-endpoint-show`

`cluster-name` *`cluster-name-string`*	The name of the Kubernetes cluster.
Specify one or more of the following options:	
`start-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The start time of statistics collection.
`end-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The end time of statistics collection.
`duration` *`duration: #d#h#m#s`*	The duration of statistics collection.
`interval` *`duration: #d#h#m#s`*	The interval between statistics collection.
`since-start`	Statistics collected since start time.
`older-than` *`duration: #d#h#m#s`*	Display statistics older than the specified duration.
`within-last` *`duration: #d#h#m#s`*	Display statistics within the last specified duration.
`name` *`name-string`*	The name of the endpoint.
`namespace` *`namespace-string`*	Specify the namespace.
`selector` *`selector-string`*	Specify the label selector.
`target-ports` *`target-ports-string`*	Ports targeted on ports.
`endpoints` *`endpoints-string`*	The list of pod IP addresses.
`action none|add|remove|update`	The last changed action.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display information about Pods targeted by a service (Pod IP addresses) in a Kubernetes cluster.

Examples Use the following syntax to display Kubernetes endpoint information.

```
CLI (network-admin@switch) > k8s-endpoint-show

cluster-name name                      namespace            endpoints                last-changed
------------ ------------------------- -------------------- ------------------------ -------------
pluribus     gloo                      gloo-system          10.244.1.112             0824,02:01:19
pluribus     ingress-proxy             gloo-system          10.244.1.113             0824,02:01:19
pluribus     kube-dns                  kube-system          10.244.0.11,10.244.0.10 0824,02:01:19
pluribus     dashboard-metrics-scraper kubernetes-dashboard 10.244.0.12              0824,02:01:19
pluribus     kubernetes-dashboard      kubernetes-dashboard 10.244.0.13              0824,02:01:19
pluribus     petstore                  default              10.244.1.114             0826,07:54:22
```

k8s-impact-show

The Kubernetes visibility feature allows you to proactively determine the impact on containerized applications during switch outages or server replacements. Use this command to view the impact on a Kubernetes deployment, Daemonset, service, or Pods in the occasion of a switch or host replacement.

Syntax `k8s-impact-show`

`cluster-name` *`cluster-name-string`*	The name of the Kubernetes cluster.
Specify one or more of the following options:	
`start-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The start time of statistics collection.
`end-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The end time of statistics collection.
`duration` *`duration: #d#h#m#s`*	The duration of statistic collection.
`interval` *`duration: #d#h#m#s`*	The interval between statistic collection.
`since-start`	Statistics collected since start time.
`older-than` *`duration: #d#h#m#s`*	Display statistics older than the specified duration.
`within-last` *`duration: #d#h#m#s`*	Display statistics within the last specified duration.
`host` *`host-string`*	The host or node for which the impact needs to be checked.
`switch` *`fabric-node name`*	The switch for which the impact needs to be checked.
`namespace` *`namespace-string`*	The namespace.
`deployment` *`deployment-string`*	The Kubernetes deployment name.
`daemonset` *`daemonset-string`*	The Kubernetes daemonset name.
`service` *`service-string`*	The Kubernetes service name.
`pod` *`pod-string`*	The Kubernetes pod.
`impact unknown|none|partial|full`	The impact on the pod when node or switch is replaced.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display the impact on a Kubernetes deployment, Daemonset, service, or Pods in the occasion of a switch or host replacement.

Examples Use the following syntax to display the impact on a Kubernetes deployment, Daemonset, service, or Pods in the occasion of a switch or host replacement.

```
CLI (network-admin@switch) > k8s-impact-show host server-test-94
deployment petstore

cluster-name namespace deployment pod                      impact  connections
------------ --------- ---------- ------------------------ ------  -------------------------------------------
pluribus     default   petstore   petstore-9d499b76f-psv8w none    servertest-103:enp1s0f0 -- 16:auriga-colo-1
pluribus     default   petstore   petstore-9d499b76f-hhmg4 full    servertest-94:enp1s0f0  -- 43:auriga-colo-1
                                                                    servertest-94:enp1s0f1  -- 44:auriga-colo-1
pluribus     default   petstore   petstore-9d499b76f-qj58s full    servertest-94:enp1s0f0  -- 43:auriga-colo-1
                                                                    servertest-94:enp1s0f0  -- 43:auriga-colo-1
pluribus     default   petstore   petstore-9d499b76f-649g6 none    servertest-103:enp1s0f0 -- 16:auriga-colo-1
```

k8s-ingress-show

Kubernetes Ingress manages the external access to services within a cluster. Ingress exposes HTTP and HTTPS routes from outside the cluster to services within the cluster. Traffic routing is controlled by rules defined on the Ingress resource. An Ingress can give Services externally reachable URLs, load balance traffic, terminate SSL/TLS, and offer name-based virtual hosting. This command is used to display Kubernetes Ingress information.

Syntax `k8s-ingress-show`

`cluster-name` *`cluster-name-string`*	The name of the Kubernetes cluster.
Specify one or more of the following options:	
`start-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The start time of statistics collection.
`end-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The end time of statistics collection.
`duration` *`duration: #d#h#m#s`*	The duration of statistics collection.
`interval` *`duration: #d#h#m#s`*	The interval between statistics collection.
`since-start`	Statistics collected since start time.
`older-than` *`duration: #d#h#m#s`*	Display statistics older than the specified duration.
`within-last` *`duration: #d#h#m#s`*	Display statistics within the last specified duration.
`name` *`name-string`*	The name of the endpoint.
`namespace` *`namespace-string`*	The namespace.
`host` *`host-string`*	Specify the hostname of the ingress.
`path` *`path-string`*	Path for the ingress rule.
`service-name` *`service-name-string`*	The backend service name.
`service-port` *`service-port-string`*	The backend service port.
`resource-api-group` *`resource-api-group-string`*	The backend resource API group
`resource-kind` *`resource-kind-string`*	The backend resource kind.
`resource-name` *`resource-name-string`*	The backend resource name.
`action none|add|remove|update`	The last action.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display Kubernetes Ingress information.

Examples Use the following syntax to display Kubernetes ingress information.

```
CLI (network-admin@switch) > k8s-ingress-show
cluster-name name                      namespace host             path service-name service-port last-changed
------------ ------------------------- --------- ---------------- ---- ------------ ------------ -------------
pluribus     petstore-ingress          default   gloo.example.com /.*  petstore     8080         07-12,23:25:22
pluribus     name-virtual-host-ingress default   foo.bar.com      /    service1     80           07-12,23:25:22
pluribus     name-virtual-host-ingress default   bar.foo.com      /    service2     80           07-12,23:25:22
```

k8s-network-show

This command is used to display the relation between Kubernetes networking components like ingress, services, and Pods.

Syntax `k8s-network-show`

`cluster-name` *`cluster-name-string`*	The name of the Kubernetes cluster.
Specify one or more of the following options:	
`namespace` *`namespace-string`*	The name of the namespace.
`ingress-name` *`ingress-name-string`*	The IP address of the pod.
`host` *`host-string`*	The state of the pod.
`type` *`type-string`*	The name of the pod.
`external-ip` *`external-ip-string`*	Displays the external IP for services of type load balancer.
`node-port` *`node-port-string`*	The service node port.
`service-name` *`service-name-string`*	The name of the service.
`selector` *`selector-string`*	The service selector to identify pods.
`endpoints` *`endpoints-string`*	The list of pod IP addresses.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display information about the Kubernetes networks.

Examples Use the following syntax to display information about the Kubernetes networks.

`CLI (network-admin@switch) >` `k8s-network-show ingress-name petstore-ingress`

```
cluster-name namespace ingress-name      service     pod
------------ --------- ---------------- ---------- ----------------------
pluribus     default   petstore-ingress petstore   petstore9d499b76f-qj58s
                                                           9d499b76f-649g6
                                                           9d499b76f-hhmg4
                                                           9d499b76f-psv8w
                       petstore         petstore   petstore
```

k8s-node-show

The control plane machine and the worker machines that are part of a Kubernetes cluster are called nodes. Nodes host the Pods that are the components of the application workload. This command is used to display information on Kubernetes control plane and worker nodes.

Syntax `k8s-node-show`

`cluster-name` *`cluster-name-string`*	The name of the Kubernetes cluster.
Specify one or more of the following options:	
`start-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The start time of statistics collection.
`end-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The end time of statistics collection.
`duration` *`duration: #d#h#m#s`*	The duration of statistics collection.
`interval` *`duration: #d#h#m#s`*	The interval between statistics collection.
`since-start`	Statistics collected since start time.
`older-than` *`duration: #d#h#m#s`*	Display statistics older than the specified duration.
`within-last` *`duration: #d#h#m#s`*	Display statistics within the last specified duration.
`node` *`node-string`*	The name of the Kubernetes node.
`role` *`role-string`*	The role assigned to the node.
`status` *`status-string`*	The status of the node.
`ip` *`ip-string`*	The IP address of the node.
`pod-CIDR` *`pod-CIDR-string`*	The Pod CIDR for the node.
`labels` *`labels-string`*	The Pod labels.
`action none|add|remove|update`	The last action performed.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display information on Kubernetes control plane and worker nodes.

Examples Use the following syntax to display information on Kubernetes control plane and worker nodes.

```
CLI (network-admin@switch) > k8s-node-show
cluster-name node            role          status       ip            pod-CIDR      last-changed
------------ --------------- ------------- ------------ ------------- ------------- --------------
k8s01        server-test-103 worker        KubeletReady 192.168.99.22 10.244.2.0/24 11-11,05:59:13
k8s01        server-test-93  control plane KubeletReady 192.168.99.20 10.244.0.0/24 11-11,06:02:21
k8s01        server-test-94  worker        KubeletReady 192.168.99.21 10.244.1.0/24 11-11,05:58:36
```

k8s-pod-show

Pods are the smallest units that you can deploy using Kubernetes. Pods consist of one or more containers that are always scheduled together. Each Kubernetes pod has a unique IP address. This command is used to display Kubernetes pod information.

Syntax `k8s-pod-show`

`cluster-name` *`cluster-name-string`*	The name of the Kubernetes cluster.
Specify one or more of the following options:	
`start-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The start time of statistics collection.
`end-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The end time of statistics collection.
`duration` *`duration: #d#h#m#s`*	The duration of statistics collection.
`interval` *`duration: #d#h#m#s`*	The interval between statistics collection.
`since-start`	Statistics collected since start time.
`older-than` *`duration: #d#h#m#s`*	Statistics older than the specified duration.
`within-last` *`duration: #d#h#m#s`*	Display statistics within the last specified duration.
`name` *`name-string`*	The name of the daemonset.
`namespace` *`namespace-string`*	The namespace.
`ip` *`ip-string`*	The IP address of the pod.
`state` *`state-string`*	The state of the pod.
`container-state container-state-string`	The pod's container high level state.
`node` *`node-string`*	The name of the pod.
`containers` *`containers-string`*	The container images running on the pod.
`labels` *`labels-string`*	The pod labels.
`action none|add|remove|update`	The last action performed.
`connections` *`connections-string`*	The connections to fabric switches.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage

Use this command to display Kubernetes pod information.

Examples

Use the following syntax to display Kubernetes pod information.

```
CLI (network-admin@switch) > k8s-pod-show format
name,namespace,ip,state,node,containers,labels
```

```
name                                          namespace            ip            state   node           containers           labels
---------------------------------------------  --------------------  -------------  -------  --------------  --------------------
--------------------------------
kube-apiserver-server-test-93                 kube-system          192.168.99.20 Running servertest-93  k8s.gcr.io/kube-... component:kube-
apiserver,tier...
kube-proxy-d28w9                              kube-system          192.168.99.22 Running servertest-103 k8s.gcr.io/kube-... controller-revision-
hash:84f9...
kube-flannel-ds-ltctg                         kube-system          192.168.99.22 Running servertest-103 quay.io/coreos/f...
app:flannel,controller-revisi...
dashboard-metrics-scraper-79c5968bdc-hwpcg  kubernetes-dashboard  10.244.1.35     Running  servertest-94   kubernetesui/met...  k8s-app:dashboard-
metrics-scr...
kube-scheduler-server-test-93                 kube-system          192.168.99.20 Running servertest-93  k8s.gcr.io/kube-... component:kube-
scheduler,tier...
kube-controller-manager-server-test-93       kube-system            192.168.99.20 Running servertest-93   k8s.gcr.io/kube-...  component:kube-
controller-man...
gloo-7dc68dd65b-clz98                         gloo-system          10.244.2.36   Running servertest-103 quay.io/solo-io/... pod-template-
hash:7dc68dd65b,...
```

k8s-service-show

Kubernetes services provide a stable virtual IP addresses for a group of Pods. Unlike Pods, which are non-permanent resources that can be created and destroyed dynamically, services remain consistent. Services act as loadbalancers and are based on Linux IPTable or IPVS table. This command is used to display Kubernetes service information.

Syntax `k8s-service-show`

`cluster-name` *`cluster-name-string`*	Name of the Kubernetes cluster.
Specify one or more of the following options:	
`start-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The start time of statistics collection.
`end-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	The end time of statistics collection.
`duration` *`duration: #d#h#m#s`*	The duration of statistics collection.
`interval` *`duration: #d#h#m#s`*	The interval between statistics collection.
`since-start`	Statistics collected since start time.
`older-than` *`duration: #d#h#m#s`*	Display statistics older than the specified duration.
`within-last` *`duration: #d#h#m#s`*	Display statistics within the last specified duration.
`name` *`name-string`*	The name of the daemonset.
`namespace` *`namespace-string`*	The name of the namespace.
`type` *`type-string`*	The service type.
`service-ip` *`service-ip-string`*	The IP address of the service.
`external-ip external-ip-string`	The external IP address for services of type load balancer.
`selector` *`selector-string`*	The label selector for the service.
`ports` *`ports-string`*	The ports for the service.
`target-ports` *`target-ports-string`*	The ports targeted on pods.
`action none|add|remove|update`	The last action performed.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage

Use this command to display Kubernetes service information.

Examples

Use the following syntax to display Kubernetes service information.

```
CLI (network-admin@switch) > k8s-service-show layout vertical
cluster-name:  k8s02
name:          kubernetes
namespace:     default
type:          ClusterIP
service-ip:    10.96.0.1
ports:         443/TCP
last-changed:  01-30,23:25:21
cluster-name:  k8s02
name:          my-service
namespace:     default
type:          ClusterIP
service-ip:    10.98.20.142
ports:         71/TCP
last-changed:  01-30,23:25:21
cluster-name:  k8s02
name:          kube-dns
namespace:     kube-system
type:          ClusterIP
service-ip:    10.96.0.10
ports:         53/UDP,53/TCP,9153/TCP
last-changed:  01-30,23:25:23
```

k8s-show

This command is used to display information about the Kubernetes cluster.

Syntax `k8s-show`

`cluster-name` *`cluster-name-string`*	Name of the Kubernetes cluster.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display Kubernetes cluster information.

Examples Use the following syntax to display Kubernetes cluster information.

```
CLI (network-admin@switch) > k8s-show
cluster-name
------------
k8s02
k8s01
```

k8s-trace-paths

You can inspect all the paths that Kubernetes Pods or Kubernetes nodes use to communicate with each other across the fabric. This command is used to specify the source and destination to view the available paths between them.

Syntax `k8s-trace-paths`

`src-pod` *`src-pod-string`*	The name of the Kubernetes source pod.
`dest-pod` *`dest-pod-string`*	The name of the Kubernetes destination pod.
`src-node` *`src-node-string`*	The name of the Kubernetes source node.
`dest-node` *`dest-node-string`*	The name of the Kubernetes destination node.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display the available paths between two Kubernetes pods or nodes.

Examples Use the following syntax to display the available paths between two Kubernetes pods or nodes.

CLI (network-admin@switch) > `k8s-trace-paths src-pod petstore dst-pod ingress-proxy`

```
server-test-94:enp1s0f0 -- swp1:Leaf1:swp2 -- swp3:spine1:swp4 -- swp5:Leaf3:swp6 -
enp1s0f0:server-test-103
server-test-94:enp1s0f0 -- swp1:Leaf1:swp2 -- swp3:spine2:swp4 -- swp5:Leaf3:swp6 -
enp1s0f0:server-test-103
server-test-94:enp1s0f0 -- swp1:Leaf1:swp2 -- swp3:spine1:swp4 -- swp5:Leaf4:swp6 -
enp1s0f0:server-test-103
server-test-94:enp1s0f0 -- swp1:Leaf1:swp2 -- swp3:spine1:swp4 -- swp5:Leaf3:swp7 -
swp7:Leaf4:swp6--enp1s0f0:server-test-103
```

L Commands

l2-check-fix

It is possible for Layer 2 entries to go out of sync between what is present in the hardware and in software. This command checks the status of Layer 2 entries, logs the errors, and fixes them when possible.

Syntax `l2-check-fix`

`mac` *`mac-address`*	Specifies the virtual router ID from 0 to 15.
`vnet vnet-name`	Specifies the IP address of the entry.
`bd bridge-domain-name`	Specifies the bridge domain.
`vlan` *`vlan-id`*	Specifies the VLAN ID.
`public-vlan` *`vlan-id`*	Specify the public VLAN assigned to the vPort.
`vxlan` *`vxlan-id`*	Specify if you want to check and fix out of synch VXLANs IDs of vPorts.
`sw-port` *`port-number`*	Specify the software port.
`sw-state active|static|vrrp|tunnel|software|needs-peer-status|port-mac|hit|ageout-check|moving|loop-probe|local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only|active-state-mismatch|peer-port-missing|peer-port-not-vlag| peer-port-not-orphaned|peer-port-not-cluster-link|sw-active|hsrp|invalid-vlan|owner-lost|cluster-link-down|vxlan-router|peer-force-resync|excess-mac-move-detected|excess-ip-move-detected|retry|evpn|evpn-wo-bgp|evpn-def-gw|evpn-delete`	Specify the software state to check.
`hw-port` *`port-number`*	Specify the port number of the hardware.
`tunnel-name` *`tunnel-name-string`*	Specify the tunnel name.
`hw-state active|static|vrrp|tunnel|software|needs-peer-status|port-mac|hit|ageout-check|moving|loop-probe|local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only|active-state-mismatch|peer-port-missing|peer-port-not-`	Specify the hardware state to check and fix.

vlag| peer-port-not-orphaned| peer-port-not-cluster-link|sw-active|hsrp|invalid-vlan|owner-lost|cluster-link-down|vxlan-router|peer-force-resync|excess-mac-move-detected|excess-ip-move-detected|retry|evpn|evpn-wo-bgp|evpn-def-gw|evpn-delete	
fix-action none|add-to-hardware| removefrom-hardware|fix-port-in-hardware|fix-tunnel-in-hardware| FAILED-add-to-hardware|FAILED-remove-from-hardware|FAILED-fix-port-in-hardware|FAILED-fix-tunnel-in-hardware|delete-port-mac|mark-port-mac	Specifies the action used to fix the entry.

Defaults None

Access CLI

History

Version 2.4	Command introduced.
Version 2.4.1	The option, `igmp-mac`, `user-flush`, `vxlan-loopback`, `router` added to parameters `sw-state` and `hw-state`. The options, `delete-port-mac` and `mark-port-mac` added to the parameter `fix-action`. The parameter, `public-vlan`, also added.
Version 2.6.2	Additional parameters added to `sw-state` and `hw-state`.
Version 3.0.0	The parameter, `l2-net`, added.
Version 5.1.1	The options, `invalid-vlan|owner-lost| cluster-link-down|vxlan-router`, added to the parameters, `sw-state`, and `hw-state`.

Usage Use this command to verify and fix Layer 2 entries that are out of sync in the Layer 2 table.

Examples Use the following syntax to fix out of sync Layer 2 table entries.

```
CLI (network-admin@switch) > l2-check-fix vlan 25
```

l2-check-show

It is possible for Layer 2 entries to go out of sync between what is present in the hardware and in software. This command displays the status of Layer 2 entries.

Syntax `l2-check-show`

`mac` *`mac-address`*	The virtual router ID from 0 to 15.
`vnet vnet-name`	The IP address of the entry.
`bd bridge-domain-name`	The bridge domain.
`vlan` *`vlan-id`*	The VLAN ID.
`public-vlan` *`vlan-id`*	The public VLAN assigned to the vPort.
`vxlan` *`vxlan-id`*	Specify if you want to check and fix out of sync VXLANs IDs of vPorts.
`sw-port` *`port-number`*	The software port.
`sw-state active|static|vrrp|tunnel|software|needs-peer-status|port-mac|hit|ageout-check|moving|loop-probe|local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only|active-state-mismatch|peer-port-missing|peer-port-not-vlag| peer-port-not-orphaned|peer-port-not-cluster-link|sw-active|hsrp|invalid-vlan|owner-lost|cluster-link-down|vxlan-router|peer-force-resync|excess-mac-move-detected|excess-ip-move-detected|retry|evpn|evpn-wo-bgp|evpn-def-gw|evpn-delete`	The software state to check.
`hw-port` *`port-number`*	The hardware port number.
`tunnel-name` *`tunnel-name-string`*	The tunnel name.
`hw-state active|static|vrrp|tunnel|software|needs-peer-status|port-mac|hit|ageout-check|moving|loop-probe|local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only|active-state-mismatch|peer-port-missing|peer-port-not-vlag| peer-port-not-orphaned|peer-port-not-cluster-link|sw-active|hsrp|invalid-vlan|owner-`	The hardware state to check and fix.

lost|cluster-link-down|vxlan-router|peer-force-resync|excess-mac-move-detected|excess-ip-move-detected|retry|evpn|evpn-wo-bgp|evpn-def-gw|evpn-delete	
fix-action none|add-to-hardware|removefrom-hardware|fix-port-in-hardware|fix-tunnel-in-hardware|FAILED-add-to-hardware|FAILED-remove-from-hardware|FAILED-fix-port-in-hardware|FAILED-fix-tunnel-in-hardware|delete-port-mac|mark-port-mac	The action used to fix the entry.

Defaults None.

Access CLI

History

Version 2.4	Command introduced.
Version 2.4.1	The option, `igmp-mac`, `user-flush`, `vxlan-loopback`, `router` added to parameters `sw-state` and `hw-state`. The options, `delete-port-mac` and `mark-port-mac` added to the parameter `fix-action`. The parameter, `public-vlan`, added.
Version 2.6.2	Additional parameters added to `sw-state` and `hw-state`.
Version 3.0.0	The parameter, `l2-net`, added.
Version 5.1.1	The options, `invalid-vlan|owner-lost|cluster-link-down|vxlan-router` added to the parameters `sw-state` and `hw-state`.

Usage Use this command to display Layer 2 table entries.

Examples To display the Layer 2 entries and states, use the following command:

```
CLI (network-admin@switch) > l2-check-show vlan 25
```

l2-history-show

This command displays historical information about Layer 2 entries on the switch.

Syntax `l2-history-show`

`time date/time: yyyy-mm-ddThh:mm:ss`	Specifies a point in time for displaying historical information.
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies the start time for Layer 2 history collection.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies the end time for Layer 2 history collection.
`duration duration: #d#h#m#s`	Specifies the duration to collect the Layer 2 history.
`interval duration: #d#h#m#s`	Specifies the intervals that data is collected Layer 2 history.
`since-start`	Specifies to display all of the Layer 2 history since collection began on the fabric.
`older than duration: yyyy-mm-ddThh:mm:ss`	Specifies a point in tjme for displaying historical information.
`within-last duration: yyyy-mm-ddThh:mm:ss`	Specifies the start time for Layer 2 history collection.
`log-type l2-save|l3-save|restart|l2-modify|l2-delete|l3-modify|l3-delete`	Filter output by the log type of each entry. The log-type column displays when a vPort is created, modified, saved, or deleted.
`caller init|config|status|switch-cb|cluster|gre|ARP|router|flow-cb|vdp|vlag|port|inject|evict|vxlan|stats|vnm-vnic|adjacency|stp|trunk|intsw|ttl1|flood|flush|retire|loop|dhcp|fabric|table|l3-age-out|vlan|l2-checker|igmp|l2-age-out|port-mirror|mac-move|cluster-status|cluster-status-delete|vxlan-routing|subnet|br-dom|vrf|ND|VSG|excess-move-protection|retire-tunnel-up|evpnsnoop-browse`	Specifies the feature making the change for this entry.
`last-caller init|config|status|switch-cb|cluster|gre|ARP|router|flow-cb|vdp|vlag|port|inject|evict|vxlan|stats|vnm-vnic|adjacency|stp|trunk|intsw|ttl1|flood|flush|retire|loop|dhcp|fabric|table|l3-age-out|vlan|l2-checker|igmp|l2-age-out|port-mirror|mac-move|cluster-status|cluster-status-delete|vxlan-routing|subnet|br-dom|vrf|ND|VSG|excess-move-protection|retire-tunnel-up|evpnsnoop-browse`	Specifies the most recent caller for this entry.
`reason activate|deactivate|port-move|`	Specifies the reason for history entry.

ip-move|ip-remove|batch-move| retire| break-loop|break-loop-timeout|create| modify|delete|policy|owner-status| remove-node|port-flags|check-owner| trunk-port-add|trunk-port-remove|move-router-if|age-out|hw-remove|restart| undo|flush|update-vxlan-vlan|needs-peer-status|owner-lost|owner-change| update-peer-only|user-delete|done|vm-metadata|excess-move-state-change	
last-reason activate|deactivate|port-move|ip-move|ip-remove|batch-move| retire|break-loop|break-loop-timeout| create|modify|delete|policy|owner-status|remove-node|port-flags|check-owner|trunk-port-add|trunk-port-remove| move-router-if|age-out|hw-remove| restart|undo|flush|update-vxlan-vlan| needs-peer-status|owner-lost|owner-change|update-peer-only|user-delete| done|vm-metadata|excess-move-state-change	Specifies the most recent reason for this entry.
changes owner|mac|vnet|bd|inner-vlan|public-vlan|vxlan|num-ips|config-intf|intf|ports| state|local-intf|local-ports|local-state| alt-owner|alt-owner-port|alt-owner-ports| alt-owner-state|svc-name|hostname|entity| power|cpus|os|portgroup|pg-vlans|vswitch|vs-type|vnic-type|config|rem-switch|rem-intf| rem-ports|peer-intf|peer-state|peer-owner-state|status|vtep-ip|tunnel|create-time| last-seen|last-seen-since|vxlan-lru|hit| migrate|drops|hw-index|rt-if|hw-flags|mc-index	Specifies what changed in this entry.
count *count-number*	Filter output by the number of entries summed using the sum-by argument.
owner node *name*	Owner ID
mac *mac-address*	Filter output by the Filter output by MAC address.
vnet *vnet-name*	Filter output by vNET name.
vlan *vlan-id*	Filter output by the VLAN ID.
inner-vlan *0..4095*	Q-in-Q inner VLAN assigned to vPort

public-vlan *vlan-id*	Filter output by public VLAN.
vxlan *vxlan-id*	Filter output by the VXLAN ID.
ip *ip-address*	Filter output by the IP address.
num-ips *num-ips-number*	Specify the number of IP addresses for the Layer 2 entry.
config-intf *config-intf-number*	Filter output by the configured interface of the Layer 2 entry.
intf *intf-number*	Filter output by the interface number. This is the port or trunk number of the Layer 2 entry.
ports *port-list*	Filter output by the list of ports.
state active|static|vrrp|tunnel|software|needs-peer-status|port-mac|hit|ageout-check|moving|loop-probe|local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only|active-state-mismatch|peer-port-missing|peer-port-not-vlag|peer-port-not-orphaned|peer-port-not-cluster-link|sw-active|anycast|hsrp|invalid-vlan|owner-lost|cluster-link-down|vxlan-router|peer-force-resync|excess-mac-move-detected| excess-ip-move-detected|retry|evpn|evpn-wo-bgp|evpn-def-gw|evpn-delete	Filter output by the state of the Layer 2 entry.
svc-name *svc-name-string*	Filter output by service name.
hostname *hostname-string*	Filter output by the host name.
entity *entity-string*	Filter output by the VM or VM Kernel device name.
power none|powered-off|powered-on|standby|suspended|unknown	Filter by the vPort power status.
portgroup *portgroup-string*	Filter by the port group.
pg-vlans *vlan-list*	Filter by port group VLANs.
vswitch *vswitch-string*	Filter output by vSwitch name associated with VM MAC address.
vs-type none|host-vs|distributed-vs|unknown	Filter output by vSwitch type.

vnic-type untagged|tagged|trunked|vm-mgmt|vm-kernel|vMotion|vSAN|FTL| rep|p-NFC|r-NFC|mgmt|unknown	Filter output by VNIC type.
config none|owner|ip|port|hostname|hypervisor|vm-id|vm-name| vm-flavor|memory|cpus|disk|os	The VM configuration.
memory *memory-number*	Filter output by the amount of memory assigned to the VM.
cpus *cpus-number*	Filter output by the number of CPUs assigned to the VM.
disk *disk-number*	Filter output by the disk number where the VM is installed.
os os-string	Filter output by the OS installed on the VM.
rem-switch *node name*	Filter output by the remote switch name.
rem-intf *rem-intf-number*	Filter output by the remote interface number.
rem-ports port-list	Filter output by the remote ports.
peer-intf *peer-intf-number*	Filter output by vPort peer interface.
peer-state active|static|vrrp|tunnel|software|needs-peer-status|port-mac|hit|ageout-check|moving|loop-probe|local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only|active-state-mismatch|peer-port-missing|peer-port-not-vlag|peer-port-not-orphaned|peer-port-not-cluster-link|sw-active|anycast|hsrp|invalid-vlan|owner-lost|cluster-link-down|vxlan-router|peer-force-resync|excess-mac-move-detected|excess-ip-move-detected|retry|evpn|evpn-wo-bgp|evpn-def-gw|evpn-delete	Filter by the vPort peer state.
peer-owner-state active|static|vrrp|tunnel|software|needs-peer-status|port-mac|hit|ageout-check|moving|loop-probe|local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only|active-state-mismatch|peer-port-missing|peer-port-not-vlag|peer-port-not-orphaned|peer-port-not-cluster-link|sw-active|anycast|hsrp|invalid-vlan|owner-lost|cluster-link-down|vxlan-router|peer-force-resync|excess-mac-move-detected|excess-ip-move-detected|retry|evpn|evpn-wo-bgp|evpn-	Filter by the vPort peer owner state.

`def-gw|evpn-delete`	
`status phy-up|up|disabled|hw-nat-loop| mirror-loop|mirror-to|inuse| PN-switch|PN-fabric|PN-other| PN-cluster|PN-internal| PN-hypervisor|PN-guest|snmp-host|host|uplink|drop-pkts|no-pktin|no-fwd|no-flood|STP-BPDUs|LLDP|trunk| l3-port| remote-l3-port|vdp|dhcp|dhcpsvr| blocked|no-BPDU|LACP-PDUs| vlag-active|vlag-blocked|stp-edge-port|LACP-wait|LACP-fallback|adjacency-wait|adjacency-check| vlag-wait|multicast-router|host-disabled| loop|congested|vxlan-loopback|vlan-up|vm-kernel|vm|pnic|vle-wait|phy-down|down| enabled|err-disabled|err-bpdu-guard|mac-violation| stp-bpdu-guard|stp-root-guard| defer-bringup-wait`	Filter output by the status of the Layer 2 entry.
`vtep-ip` *`ip-address`*	Specifies the IP address of the remote VTEP.
`tunnel` *`tunnel-string`*	Filter output by the tunnel name.
`create-time date/time:` *`yyyy-mm-ddTHH:mm:ss`*	Filter output by the time that the vPort was created.
`last-seen date/time:` *`yyyy-mm-ddTHH:mm:ss`*	Filter output by the time that the vPort was last seen on the fabric.
`vxlan-lru date/time:` *`yyyy-mm-ddTHH:mm:ss`*	Filter output by the number of received hits.
`hit` *`hit-number`*	Filter output by the number of times that the vPort migrated on the fabric.
`migrate` *`migrate-number`*	Filter output by the number of drops on the fabric.
`drops` *`drops-number`*	Filter output by the time that the vPort was created.
`hw-index` *`hw-index-number`*	Filter output by the hardware index number.
`rt-if` *`rt-if-string`*	Filter by the router interface.
`hw-flags invalid-vlan|invalid-port`	Filter by hardware flags.
`mc-index` *`mc-index-number`*	Specifies the multicast group index in hardware.

Defaults None

Access CLI

History

Version 2.3.2	Command introduced.
Version 2.4	The parameters, `peer-`, `hw-index`, and `rf-if` added.
Version 2.6.2	New parameters added. Some parameters removed, `vm-id`, `hypervisor`, `vm-name`, `vm-flavor`, and `vm-status`.
Version 3.1.0	The parameters, `ND` and `vtep-ip`, added.

Usage

Use this command to display history of Layer 2 entries.

Examples

To display Layer 2 information, use the following command:

```
CLI (network-admin@switch) > l2-history-show
time     log-type  reason             owner      mac               vlan ports state  hostname  status

-------- --------- ------------------ ---------- ----------------- ---- ----- ------ ---------
-----------
04:13:29 l2-modify deactivate,age-out leo-ext-33 7a:71:4f:00:27:47 1     61,65

04:13:29 l2-modify deactivate,age-out leo-ext-33 7a:1b:3c:b1:87:4c 1     61,65

04:25:17 l2-modify activate,modify     leo-ext-33 64:0e:94:c0:03:b3 1     61,65 active

04:28:29 l2-modify deactivate,age-out leo-ext-33 64:0e:94:c0:03:ab 1     69              switch     PN-
internal
04:31:26 l2-modify activate,modify     leo-ext-33 64:0e:94:c0:04:63 1     61,65 active

04:40:21 l2-modify activate,modify     leo-ext-33 7a:1b:3c:b1:87:4c 1     61,65 active

04:43:29 l2-modify deactivate,age-out leo-ext-33 64:0e:94:c0:03:b3 1     61,65

04:47:16 l2-modify activate,modify     leo-ext-33 7a:71:4f:00:27:47 1     61,65 active

04:49:11 l2-modify activate,modify     leo-ext-33 64:0e:94:c0:03:ab 1     69     active switch     PN-
internal
04:58:29 l2-modify deactivate,age-out leo-ext-33 64:0e:94:c0:04:63 1     61,65
04:58:29 l2-modify deactivate,age-out leo-ext-33 7a:1b:3c:b1:87:4c 1     61,65
```

l2-setting-modify

This command modifies the Layer 2 settings in the configuration.

Syntax `l2-setting-modify`

`aging-time` *`seconds`*	Configures the aging time in Layer 2. You can configure a value from 1 to 2000000. The default value is 300 seconds.
`software-aging|no-software-aging`	Specify if you want to enable software aging or not. This is ON by default. This parameter controls how the aging of the L2 table entries is performed by Netvisor. When OFF, the aging is performed by the Ethernet switch ASIC. It is not recommended to change this setting.
`l2-max-count` *`l2-max-count-number`*	Specify the maximum count for Layer 2 entries.
`l2-checker|no-l2-checker`	Specify if you want to enable Layer 2 checker.
`l2-checker-interval duration:` *`#d#h#m#`*	Specify the interval between Layer 2 checks.
`l3-arp-max-count` *`l3-arp-max-count-number`*	Specify the number of maximum ARPs for Layer 3 entries.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.4	The parameters, `software-aging`, `l2-checker` and `l2-checker-interval` added.
Version 5.1.1	The parameter `l2-max-count` added.

Usage Use this command to modify the Layer 2 aging time in seconds.

Examples To modify the aging time to 360 seconds, use the following command:

```
CLI (network-admin@switch) > l2-setting-modify aging-time 360
```

l2-setting-show

This commands displays the Layer 2 settings in the configuration.

Syntax `l2-setting-show`

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Use this command to display information about Layer 2 settings.

Examples To display the Layer 2 settings, use the following command:

```
CLI (network-admin@switch) > l2-setting-show

switch:                             Pleiades24
aging-time(s):                      300
l2-max-count:                       1300000
l2-cur-count:                       36
l2-active-count:                    13
l2-max-mem:                         1.81G
l2-cur-mem:                         32.6K
l3-arp-max-count:                   1300000
l3-arp-cur-count:                   7
l3-arp-max-mem:                     624M
l3-arp-cur-mem:                     2.13K
```

l2-static-multicast-group-create

This command is used to create a Layer 2 static multicast group. Hosts join multicast groups either by sending an unsolicited IGMP join message or by sending an IGMP join message in response to a general query from a multicast router (the switch forwards general queries from multicast routers to all ports in a VLAN). When you specify group membership for a multicast group address statically, the static setting supersedes any IGMP snooping learning. Multicast group membership lists can consist of both static and IGMP snooping-learned settings.

Syntax `l2-static-multicast-group-create`

`group-mac` *`mac-address`*	Specify a MAC address for the multicast group.
`vlan` *`vlan-id`*	Specify a VLAN ID for the multicast group.
`ports` *`port-list`*	Specify a list of ports for the multicast group.

Defaults None

Access network-admin

History Command introduced in Version 2.3.

Usage Use this command to create a Layer 2 static multicast group.

Examples To create a L2 static multicast group on MAC address, 0050.3e8d.6400, VLAN 25, and ports 10-12, use the following syntax:

```
CLI (network-admin@switch) > l2-static-multicast-group-create group-mac
0050.3e8d.6400 vlan 25 ports 10-12
```

l2-static-multicast-group-delete

This command is used to delete a Layer 2 static multicast group. Hosts join multicast groups either by sending an unsolicited IGMP join message or by sending an IGMP join message in response to a general query from a multicast router (the switch forwards general queries from multicast routers to all ports in a VLAN). When you specify group membership for a multicast group address statically, the static setting supersedes any IGMP snooping learning. Multicast group membership lists can consist of both static and IGMP snooping-learned settings.

Syntax `l2-static-multicast-group-create`

`group-mac` *`mac-address`*	Specify a MAC address for the multicast group.
`vlan` *`vlan-id`*	Specify a VLAN ID for the multicast group.

Defaults None

Access network-admin

History

Version 2.3	Command introduced.
Version 3.0.0	The parameter, `vnet`, added.

Usage Use this command to delete a Layer 2 static multicast group.

Examples To delete a L2 static multicast group on MAC address, 0050.3e8d.6400 and VLAN 25, use the following syntax:

```
CLI (network-admin@switch) > l2-static-multicast-group-delete  group-mac
0050.3e8d.6400 vlan 25 ports 10-12
```

l2-static-multicast-group-show

This command is used to display information about a Layer 2 static multicast group. Hosts join multicast groups either by sending an unsolicited IGMP join message or by sending an IGMP join message in response to a general query from a multicast router (the switch forwards general queries from multicast routers to all ports in a VLAN). When you specify group membership for a multicast group address statically, the static setting supersedes any IGMP snooping learning. Multicast group membership lists can consist of both static and IGMP snooping-learned settings.

Syntax `l2-static-multicast-group-show`

`group-mac` *`mac-address`*	Specify a MAC address for the multicast group.
`vlan` *`vlan-id`*	Specify a VLAN ID for the multicast group.
`ports` *`port-list`*	Specify a list of ports for the multicast group.

Defaults None

Access network-admin

History

Version 2.3	Command introduced.
Version 3.0.0	The parameter, `vnet`, added.

Usage Use this command to display a Layer 2 static multicast group.

Examples To display a L2 static multicast group on MAC address, 0050.3e8d.6400, VLAN 25, and ports 10-12, use the following syntax:

```
CLI (network-admin@switch) > l2-static-multicast-group-show group-mac
0050.3e8d.6400
```

l2-static-multicast-group-port-add

This command is used to add ports to a Layer 2 static multicast group, without causing traffic disruption.

Syntax `l2-static-multicast-group-port-add`

`group-mac` *`mac-address`*	Specify a MAC address for the multicast group.
`vlan` *`vlan-id`*	Specify a VLAN ID for the multicast group.
`switch` *`switch-name`*	Specify the name of the switch
`ports` *`port-list`*	Specify a list of ports for the multicast group.

Defaults None

Access network-admin

History Command introduced in version 6.0.0.

Usage Use this command to add ports to a Layer 2 static multicast group.

Examples To add port 36 to a multicast group, use the command:

```
CLI (network-admin@leaf1) l2-static-multicast-group-port-add group-mac
01:00:5e:7f:00:12 vlan 25 ports 36
```

l2-static-multicast-group-port-remove

This command is used to remove ports from a Layer 2 static multicast group, without causing traffic disruption.

Syntax `l2-static-multicast-group-port-remove`

`group-mac` *`mac-address`*	Specify a MAC address for the multicast group.
`vlan` *`vlan-id`*	Specify a VLAN ID for the multicast group.
`switch` *`switch-name`*	Specify the name of the switch
`ports` *`port-list`*	Specify a list of ports for the multicast group.

Defaults None

Access network-admin

History Command introduced in version 6.0.0.

Usage Use this command to remove ports from a Layer 2 static multicast group.

Examples To remove port 36 from a multicast group, use the command:

```
CLI (network-admin@leaf1) l2-static-multicast-group-port-remove group-mac
01:00:5e:7f:00:12 vlan 25 ports 36
```

l2-table-flush

This command is used to clear information about the Layer 2 settings.

Syntax `l2-table-flush`

Specify either zero or both options:	
`mac` *`mac-address`*	Specifies the MAC address.
`vlan` *`vlan-id`*	Specifies the VLAN identifier.
`ports` *`port-list`*	Specifies the port list.

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Used to flush the Layer 2 information.

Examples To flush the Layer 2 table information from VLAN 25, use the following command:

```
CLI (network-admin@switch) > l2-table-flush vlan 25
```

l2-table-show

To display Layer 2 flows in the forwarding table of the switch datapath, use this command.

Syntax `l2-table-show`

owner node *name*	Specifies the node name for the L2 table.
mac *mac-address*	Specifies the source MAC address for the flow.
ip *ip-address*	Specifies the source IP address for the flow.
vnet *vnet-name*	Specifies the vNET name.
bd *bridge-domain name*	Specify the bridge domain name assigned to vport.
l2-net *l2-net name*	Specifies the Layer 2 network.
vlan *vlan-id*	Specifies the VLAN identifier for the flow.
public-vlan *vlan-id*	Specifies the public VLAN.
vxlan *vxlan-id*	Specifies the ID for the VXLAN.
ip *ip-address*	Specifies the IP address.
num-ips *num-ips-number*	Specifies the number of IP addresses.
config-intf *config-intf-number*	Specifies a configured interface number.
intf intf-number	Specifies the interface number.
ports *port-list*	Specifies the source port number for the flow.
state active|static|vrrp|tunnel|software|needs-peer-status|port-mac|hit|ageout-check|moving|loop-probe|local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only|active-state-mismatch|peer-port-missing|peer-port-not-vlag|peer-port-not-orphaned|peer-port-not-cluster-link|sw-active|anycast|hsrp|invalid-vlan|owner-lost|cluster-link-down|vxlan-router|peer-force-resync|excess-mac-move-detected|excess-ip-move-detected|retry|evpn|evpn-wo-bgp|evpn-def-gw|evpn-delete	Specifies the state of the vPort.
svc-name *svc-name-string*	Specifies the service name.
hostname *hostname-string*	Specifies a hostname.

entity entity-string	Specifies the VM or VM Kernel device name.
power none|powered-off|powered-on| standby|suspended|unknown	Specifies the power status.
cpus *cpus-number*	Specifies the number of CPUs assigned to the VM.
disk *disk-number*	Specifies the number of disks assigned to the VM.
os *os-string*	Specifies the name of the operating system (OS) running on the VM.
portgroup portgroup-string	Specifies the port group associated with the VM MAC Address.
pg-vlans vlan-list	Specifies the VLANs associated with the port group.
vswitch vswitch-string	Specifies the vSwitch associated with the NIC.
vs-type none|host-vs|distributed-vs| unknown	Specifies the vSwitch type.
vnic-type untagged|tagged|trunked|vm-mgmt|vm-kernel|vMotion|vSAN|FTL| rep|p-NFC|r-NFC|mgmt| unknown	Specifies the vNIC type.
config none|switch|ip|port| hostname|hypervisor| vm-id|vm-name|vm-flavor|memory|cpus| disk|os	Displays the configuration on the host.
rem-switch *node-name*]	Specifies a remote switch.
rem-intf *rem-intf-number*	Specifies a remote switch interface.
rem-ports *port-list*	Specifies a remote switch port list.
peer-intf *peer-intf-number*	Filter output by vPort peer interface.
peer-state active|static|vrrp|tunnel| software|needs-peer-status|port-mac| hit|ageout-check|moving|loop-probe| local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only| active-state-mismatch|peer-port-missing|peer-port-not-vlag|peer-port-not-orphaned|peer-port-not-cluster-link|sw-active|anycast|hsrp|invalid-vlan|owner-lost|cluster-link-down| vxlan-router|peer-force-resync|excess-mac-move-detected|excess-ip-move-detected|retry|evpn|evpn-wo-bgp|evpn-def-gw|evpn-delete	Filter by the vPort peer state.

peer-owner-state active|static|vrrp|tunnel|software|needs-peer-status|port-mac|hit|ageout-check|moving|loop-probe|local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only|active-state-mismatch|peer-port-missing|peer-port-not-vlag|peer-port-not-orphaned|peer-port-not-cluster-link|sw-active|anycast|hsrp|invalid-vlan| owner-lost|cluster-link-down|vxlan-router|peer-force-resync|excess-mac-move-detected|excess-ip-move-detected|retry|evpn|evpn-wo-bgp|evpn-def-gw|evpn-delete	Filter by the vPort peer owner state.
status phy-up|up|disabled|hw-nat-loop|mirror-loop|mirror-to|inuse| PN-switch|PN-fabric|PN-other|PN-cluster|PN-internal| PN-hypervisor|PN-guest|snmp-host|host|uplink|drop-pkts|no-pktin|no-fwd|no-flood|STP-BPDUs|LLDP|trunk|l3-port|remote-l3-port|vdp|dhcp|dhcpsvr|blocked|no-BPDU|LACP-PDUs|vlag-active|vlag-blocked|stp-edge-port|LACP-wait|LACP-fallback| adjacency-wait|adjacency-check|vlag-wait|multicast-router|host-disabled|loop| congested|vxlan-loopback|vlan-up|vle|vle-wait|phy-down|down| enabled|err-disabled|err-bpdu-guard|mac-violation| stp-bpdu-guard|stp-root-guard||defer-bringup-wait	Specifies the status of the entry.
vtep-ip *ip-address*	Specifies the IP address of the remote VTEP.
tunnel *tunnel-string*	Specifies a tunnel name if configured.
create-time date/time: yyyy-mm-ddThh:mm:ss	Specifies the date and time that the flow was inserted into the Layer 2 table.
last-time date/time: yyyy-mm-ddThh:mm:ss	Specifies the most recent date and time that a packet matched the flow.
vxlan-lru date/time: yyyy-mm-ddThh:mm:ss	Specifies the last received update time for a VXLAN.
hit *number-of-hits*	Specifies the number of packets that matched the flow.
migrate *number-of-migrates*	Specifies the number of different ports that received packets matching the flow.
drops *number-of-drops*	Specifies the number of packets matching the flow

	that were dropped.
`hw-index` *`hw-index-number`*	Specifies the hardware index number.
`rt-if` *`rt-if-string`*	Specifies the router interface.
`hw-flags invalid-vlan|invalid-port`	Specifies any vPort hardware flags.
`mc-index` *`mc-index-number`*	Specifies the Layer 2 multicast group index in hardware.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter `state` added.
Version 2.2.4	The parameters `config-intf`, `rem-switch`, `rem-intf`, and `rem-ports` added.
Version 2.2.5	The parameters `vlag-active`, `vlag-blocked`, `stp-edge-port`, deprecated. The parameters, `l3-port` and `remote-l3-port` added.
Version 2.3	The parameters `vlag-active`, `vlag-blocked`, `stp-edge-port`, added. The parameters `vm-status`, `tunnel`, and `vxlan-lru` added.
Version 2.4	The parameters `peer-`, `hw-index`, and `rf-if` added.
Version 2.6.2	The parameters `ip`, `num-ip`, `svc-name`, `entity`, `power`, `portgroup`, `pg-vlans`, `vswitch`, `vs-type`, `vnic-type`, and `hw-flags` added. The parameters, `hypervisor`, `vm-id`, `vm-name`, `vm-flavor`, `vm-status`, `memory`, and `blocked-port` deprecated.
Version 3.1.0	The parameters `ND` and `vtep-ip` added.
Version 5.2.0	The parameter `bd` added.
Version 6.1.0	The options `evpn`, `evpn-wo-bgp`, `evpn-def-gw`, `evpn-delete` added to the `state` parameter.

Usage Each switch has automatic safeguards to avoid forwarding loops in Layer 2 multipathing. This feature operates independently of Spanning Tree Protocol (STP) if STP is enabled. This command lists the Layer 2 flows in the forwarding table of the switch datapath. If there are ports in the blocked state may

indicate the presence of loops in Layer 2 multipathing.

Examples To display the Layer 2 table, use the following command:

```
CLI (network-admin@switch) > l2-table-show format all layout vertical
switch:       pubdev02
mac:          02:08:20:38:00:c6
vlan:         4094
hostname:     pubdev02
create-time:  04-22,08:17:16
last-seen:    04-22,08:17:16
hit:          1
switch:       pubdev01
mac:          02:08:20:72:2d:ff
vlan:         4094
intf:         128
ports:        26,47-48
state:        active,static
hostname:     pubdev02
status:       PN-internal
last-seen:    05-19,15:10:12
switch:       pubdev02
mac:          02:08:20:72:2d:ff
vlan:         4094
intf:         65
ports:        65
state:        active
hostname:     pubdev02
status:       PN-internal
create-time:  04-22,08:53:08
last-seen:    05-19,15:03:08
hit:          1
switch:       pubdev03
mac:          02:08:20:72:2d:ff
vlan:         4094
intf:         128
ports:        45-48
state:        active,static
hostname:     pubdev02
status:       PN-internal
last-seen:    05-19,14:32:30
switch:       pubdev02
mac:          06:a0:00:03:00:1a
vlan:         1
intf:         26
ports:        26
state:        active
hostname:     pubdev01
status:       PN-switch,PN-fabric,PN-cluster
create-time:  04-22,08:42:19
last-seen:    11:17:47
hit:          4045
switch:       pubdev03
mac:          06:a0:00:03:00:2d
vlan:         1
```

```
intf:         45
ports:        45
state:        active
hostname:     pubdev01
status:       PN-switch,PN-fabric
create-time:  04-22,07:49:03
last-seen:    05-19,15:10:29
hit:          2
migrate:      10
```

l3-check-fix

Layer 3 entries can become unsynchronized between the software table and the hardware table. When routes are modified while the routes are updating on the network, this can occur. Use this command to fix any unsynchronized Layer 3 table entries.

Syntax `l3-check-fix`

`vrid ID`	Specifies the virtual router ID from 0 to 15.
`ip` *`ip-address`*	Specifies the IP address of the entry.
`prelen` *`length`*	Specifies the prefix length from 0 to 128.
`vnet` *`vnet-name`*	Specify the vNEt name
`bd` *`bridge-domain-name`*	specify the bridge domain name.
`vlan` *`vlan-id`*	Specifies the VLAN ID.
`mac` *`mac-address`*	Specifies the MAC address.
`fix-action none|add-host-to-hardware| remove-host-from-hardware| re-add-host-to-hardware|add-route-to-hardware| remove-route-from-hardware|re-add-route-to-hardware| none-hardware-only-route|none-cached-route| FAILED-add-host-to-hardware|FAILED-remove-host-from-hardware|FAILED-add-route-to-hardware|FAILED-remove-route-from-hardware`	Specifies the action used to fix the entry.

Defaults None

Access CLI

History Command introduced in Version 2.5.

Usage Use this command to fix Layer 3 entries that are out of synch in the Layer 3 table.

Examples Use the following syntax to fix out of synch Layer 3 table entries.

```
CLI (network-admin@switch) > l3-check-fix
```

l3-check-show

Layer 3 entries can become unsynchronized between the software table and the hardware table. This is useful when routes are modified while the routes are updating on the network. Use this command to fix any unsynchronized Layer 3 table entries.

Syntax `l3-check-show`

`vrid ID`	Specifies the virtual router ID from 0 to 15.
`ip` *`ip-address`*	Specifies the IP address of the entry.
`prelen` *`length`*	Specifies the prefix length from 0 to 128.
`vnet` *`vnet-name`*	Specify the vNET.
`bd` *`bridge-domain-name`*	Specify the bridge domain.
`vlan` *`vlan-id`*	Specifies the VLAN ID.
`fix-action none|add-host-to-hardware| remove-host-from-hardware| re-add-host-to-hardware|add-route-to-hardware| remove-route-from-hardware|re-add-route-to-hardware| none-hardware-only-route|none-cached-route| FAILED-add-host-to-hardware|FAILED-remove-host-from-hardware|FAILED-add-route-to-hardware|FAILED-remove-route-from-hardware`	Specifies the action used to fix the entry.

Defaults None

Access CLI

History Command introduced in Version 2.5.

Usage Use this command to displays Layer 3 entries that are out of synch in the Layer 3 table.

Examples Use the following syntax to display out of synch Layer 3 table entries.

```
 CLI (network-admin@switch) > l3-check-show
leo-ext-33:
Matched                    : 0
leo-ext-33: OK: 0
```

l3-history-show

This command displays historical information about Layer 3 entries on the switch.

Syntax `l3-history-show`

`time date/time: yyyy-mm-ddThh:mm:ss`	Specifies a point in tjme for displaying historical information.
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies the start time for Layer 3 history collection.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies the end time for Layer 3 history collection.
`duration duration: #d#h#m#s`	Specifies the duration to collect the Layer 3 history.
`interval duration: #d#h#m#s`	Specifies the intervals that data is collected Layer 3 history.
`since-start`	Specifies to display all of the Layer 3 history since collection began on the fabric.
`time date/time: yyyy-mm-ddThh:mm:ss`	Specifies a point in tjme for displaying historical information.
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies the start time for Layer 3 history collection.
`older-than duration: #d#h#m#s`	Display history older than the specified duration.
`within-last duration: #d#h#m#s`	Specifies the statistic within last specified duration.
`log-type l2-save|l3-save|restart|l2-modify|l2-delete|l3-modify|l3-delete`	Filter output by the log type of each entry. The log-type column displays when a Layer 3 entry is created, modified, saved, or deleted.
`caller init|config|status|switch-cb|cluster|gre|ARP|router|flow-cb| vdp|vlag|port|inject|evict|vxlan|stats|vnm-vnic|adjacency|stp| trunk|intsw|ttl1|flood|flush|retire|loop|dhcp|fabric|table| l3-age-out|vlan|l2-checker|igmp|l2-age-out|port-mirror| mac-move|cluster-status|cluster-status-delete|vxlan-routing|subnet|br-dom|vrf|ND|VSG|excess-move-protection|retire-tunnel-up|evpnsnoop-browse`	Specifies the feature that made the change for this entry.
`last-caller init|config|status|switch-cb|cluster|gre|ARP|router|flow-cb| vdp|vlag|port|inject|evict|vxlan|stats|vnm-vnic|adjacency|stp| trunk|intsw|ttl1|flood|flush|`	Specifies the most recent caller for this entry.

retire|loop|dhcp|fabric|table| l3-age-out| vlan|l2-checker|igmp|l2-age-out|port-mirror| mac-move|cluster-status|cluster-status-delete|vxlan-routing|subnet|br-dom| vrf|ND|VSG|excess-move-protection|retire-tunnel-up|evpnsnoop-browse	
reason activate|deactivate|port-move|ip-move|ip-remove|batch-move|retire|break-loop| break-loop-timeout|create|modify|delete| policy|owner-status|remove-node|port-flags| check-owner| trunk-port-add|trunk-port-remove|move-router-if|age-out|hw-remove| restart|undo|flush|update-vxlan-vlan| needs-peer-status|owner-lost|owner-change|update-peer-only|user-delete|done|vm-metadata| excess-move-state-change	Specifies the reason for history entry.
last-reason activate|deactivate|port-move| ip-move|ip-remove| batch-move|retire|break-loop|break-loop-timeout|create|modify| delete|policy|owner-status|remove-node|port-flags|check-owner| trunk-port-add|trunk-port-remove|move-router-if|age-out| hw-remove|restart|undo|flush|update-vxlan-vlan| needs-peer-status|owner-lost|owner-change|update-peer-only| user-delete|done| vm-metadata	Specifies the most recent reason for this entry.
changes owner|mac|vnet|public-vlan|ip|num-ips|config-intf|intf|ports| state|local-intf|local-ports|local-state|alt-owner|alt-owner-port|alt-owner-ports|alt-owner-state| svc-name| hostname|entity|power|cpus|os| portgroup|pg-vlans|vswitch|vs-type|vnic-type|config|rem-switch|rem-intf|rem-ports| peer-intf|peer-state|peer-owner-state| status|tunnel|create-time|last-seen|vxlan-lru|hit|migrate|drops|hw-index|rt-if|hw-flags	Specifies what changed in this entry.
count *count-number*	Filter output by the number of entries summed using the sum-by argument.
owner node *name*	Filter output by the owner.
mac *mac-address*	Filter output by MAC address.
vnet *vnet-name*	Filter output by the vNET name.
l2-net *l2-net-name*	Filter output by the Layer 2 network name.

vlan *vlan-id*	Filter output by the VLAN ID.
public-vlan *vlan-id*	Filter output by the public VLAN ID.
vxlan *vxlan-id*	Filter output by the VXLAN ID.
ip *ip-address*	Filter output by the IP address.
num-ips *num-ips-number*	Specify the number of IP addresses for the Layer 3 entry.
config-intf *config-intf-number*	Filter output by the configured interface of the Layer 3 entry.
intf *intf-number*	Filter output by the interface number. This is the port or trunk number of the Layer 3 entry.
ports *port-list*	Filter output by the list of ports.
state active|static|vrrp|tunnel|software| needs-peer-status|port-mac|hit|ageout-check| moving|loop-probe|local-tunnel|igmp-mac| user-flush|vxlan-loopback|router|update-peer-only|active-state-mismatch|peer-port-missing|peer-port-not-vlag| peer-port-not-orphaned|peer-port-not-cluster-link|sw-active| hsrp	Filter output by the state of the Layer 3 entry.
svc-name *svc-name-string*	Filter output by service name.
hostname *hostname-string*	Filter output by the host name.
entity *entity-string*	Filter output by the VM or VM Kernel device name.
power none|powered-off|powered-on|standby| suspended|unknown	Filter by the vPort power status.
portgroup *portgroup-string*	Filter by the port group.
pg-vlans *vlan-list*	Filter by port group VLANs.
vswitch *vswitch-string*	Filter output by vSwitch name associated with VM MAC address.
vs-type none|host-vs|distributed-vs|unknown	Filter output by vSwitch type.
vnic-type untagged|tagged|trunked|vm-mgmt| vm-kernel|vMotion|vSAN|FTL| rep|p-NFC|r-NFC|	Filter output by VNIC type.

mgmt|unknown	
memory *memory-number*	Filter output by the amount of memory assigned to the VM.
cpus *cpus-number*	Filter output by the number of CPUs assigned to the VM.
disk *disk-number*	Filter output by the disk number where the VM is installed.
os *os-string*	Filter output by the OS installed on the VM.
config none|owner|ip|port|hostname| hypervisor|vm-id|vm-name| vm-flavor|memory| cpus|disk|os	Filter output by the configuration of the VM.
blocked-port *port-list*	Filter output by a list of ports to block for the VM.
rem-switch *node name*	Filter output by the remote switch name.
rem-intf *rem-intf-number*	Filter output by the remote interface number.
rem-ports port-list	Filter output by the remote ports.
peer-intf *peer-intf-number*	Filter output by the vPort peer interface.
peer-state active|static|vrrp|tunnel| software|needs-peer-status|port-mac|hit| ageout-check|moving|loop-probe|local-tunnel| igmp-mac|user-flush|vxlan-loopback|router| pdate-peer-only|active-state-mismatch|peer-port-missing|peer-port-not-vlag| peer-port-not-orphaned|peer-port-not-cluster-link|sw-active|hsrp	Filter output by the vPort peer state.
peer-owner-state active|static|vrrp|tunnel| software|needs-peer-status|port-mac|hit| ageout-check|moving|loop-probe|local-tunnel| igmp-mac|user-flush|vxlan-loopback|router| pdate-peer-only|active-state-mismatch|peer-port-missing|peer-port-not-vlag| peer-port-not-orphaned|peer-port-not-cluster-link|sw-active| hsrp	Filter output by the vPort peer owner state.
status phy-up|up|disabled|hw-nat-loop| mirror-loop|mirror-to|inuse| PN-switch|PN-fabric|PN-other|PN-cluster|PN-internal| PN-hypervisor|PN-guest|snmp-host|host|uplink| drop-pkts| no-pktin|no-fwd|no-flood|STP-	Filter output by the status of the Layer 3 entry.

BPDUs|LLDP|trunk|l3-port| remote-l3-port| vdp|dhcp|dhcpsvr|blocked|no-BPDU|LACP-PDUs| vlag-active|vlag-blocked|stp-edge-port|LACP-wait|LACP-fallback|adjacency-wait| adjacency-check|vlag-wait|multicast-router| host-disabled|loop|vxlan-loopback|vlan-up| vle|vle-wait|phy-down|down| enabled|err-disabled|err-bpdu-guard|mac-violation| stp-bpdu-guard|stp-root-guard	
vtep-ip *ip-address*	Specifies the IP address of the remote VTEP.
tunnel *tunnel-string*	Filter output by the tunnel name.
create-time date/time: yyyy-mm-ddTHH:mm:ss	Filter output by the time that the Layer 3 entry was created.
last-seen date/time: yyyy-mm-ddTHH:mm:ss	Filter output by the time that the Layer 3 entry was last seen on the fabric.
vxlan-lru date/time: yyyy-mm-ddTHH:mm:ss	Filter output by the number of received hits.
hit *hit-number*	Filter output by the number of times that the Layer 3 entry migrated on the fabric.
migrate *migrate-number*	Filter output by the number of drops on the fabric.
drops *drops-number*	Filter output by the time that the Layer 3 entry was created.
hw-index *hw-index-number*	Filter output by the hardware index number.
rt-if *rt-if-string*	Filter output by the router interface.
hw-flags invalid-vlan|invalid-port	Filter output by hardware flags.

Defaults None

Access CLI

History

Version 2.3.2	Command introduced.
Version 2.4	The parameters, l2-checker|igmp|l2-age-out|port-mirror|mac-move added. The parameters, peer-, hw-index, and rt-if added.
Version 2.4.1	The parameters, vnet, public-vlan, and hw-

	flags added. The options, user-flush|vxlan-loopback|router, added to state, peer-state, and peer-owner-state. The option, cluster-status, added to caller and last-caller. The options, update-vxlan-vlan| needs-peer-status|owner-lost| owner-change added to reason and last-reason.
Version 2.6.2	The parameters, ip, num-ip, svc-name, entity, power, portgroup, pg-vlans, vswitch, vs-type, vnic-type, and hw-flags added. The parameters, hypervisor, vm-id, vm-name, vm-flavor, vm-status, memory, and blocked-port, deprecated.
Version 3.1.0	The parameter, vtep-ip, added.

Usage Use this command to display history of Layer 3 entries.

Examples To display Layer 2 information, use the following command:

```
 CLI (network-admin@switch) > l3-history-show
time:                       09:02:33
log-type:                   l3-modify
caller:                     ARP
reason:                     activate,create
owner:                      pleaides24
mac:                        66:0e:94:f4:ec:6e
vlan:                       1
ip:                         192.168.16.24
state:                      active
```

l3-route-show

This command displays information about Layer 3 route entries on the switch.

Syntax `l3-route-show`

`vrf_name` *`vrf_name-string`*	The VRF name.
`vrf_vnet` *`vrf_vnet-string`*	The VNET for the VRF.
`network` *`ip-address`*	The network address.
`netmask` *`netmask`*	The mask for the network.
`gateway-ip` *`ip-address`*	The gateway IP address.
`router-mac` *`mac-address`*	The router mac address.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display Layer 3 route table information

Examples To display Layer 2 information, use the following command:

`CLI (network-admin@switch) >` `l3-route-show`

l3-setting-modify

This command allows you to modify the Layer 3 settings.

Syntax `l3-setting-modify`

Specify one or more of the following options:	
`aging-time`	Specifies the aging time between 0 to 2000000 seconds. Use 0 (zero) to disable aging time. The default aging time is 600 seconds.
`convergence-time` *`seconds`*	Specifies the unicast convergence time on bootup. This is a value from 0 to 3600 seconds.
`l3-checker|` `no-l3-checker`	Enable or disable Layer 3 checking.
`l3-checker-interval duration: #d#h#m#`	Specify the interval between Layer 3 checks.
`l3-checker-fix|` `no-l3-checker-fix`	Specify if after checking Layer 3 entries to fix the incorrect entries.

Defaults None

Access CLI

Usage Use this command to modify the Layer 3 setting.

Examples To modify the Layer 3 aging-time setting, use the following command:

```
CLI (network-admin@switch) > l3-setting-modify aging-time 1000
```

l3-setting-show

This command allows you to display the Layer 3 settings.

Syntax `l3-setting-show`

Defaults None

Access CLI

Usage Use this command to show the Layer 3 setting.

Examples To display the Layer 3 setting, use the following command:

```
CLI (network-admin@switch) > l3-setting-show format all
switch:        spine-1
aging-time(s:  600
switch:        spine-2
aging-time(s:  600
```

From this output, you can see that the aging time is set to 600 seconds by default.

l3-table-show

This command allows you to display the Layer 3 table settings.

Syntax `l3-table-show`

Specify one or more of the following options:	
mac *mac-address*	Displays the MAC address.
ip *ip-address*	Displays the IP address.
vnet *vnet-name*	Displays the name of the vNET.
bd *bridge-domain name*	Displays the bridge domain.
vlan *0..4095*	Displays the VLAN ID.
public-vlan *0..4095*	Specify the public VLAN assigned to the vPort
vxlan *0..16777215*	Displays the assigned VXLAN.
intf intf-number	Displays the interface.
rt-if *rt-if-string*	Displays the router interface.
hw-intf *hw-intf-number*	Displayss the interface programmed in hardware.
state active|static|vrrp|tunnel|software|needs-peer-status|port-mac|hit|ageout-check|moving|loop-probe|local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only|active-state-mismatch|peer-port-missing|peer-port-not-vlag|peer-port-not-orphaned|peer-port-not-cluster-link|sw-active|anycast|hsrp|invalid-vlan|owner-lost|cluster-link-down|vxlan-router|peer-force-resync|excess-mac-move-detected|excess-ip-move-detected|retry|evpn|evpn-wo-bgp|evpn-def-gw|evpn-delete	Displays the flags.
owner-state active|static|vrrp|tunnel|software|needs-peer-status|port-mac|hit|ageout-check|moving|loop-probe|local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only|active-state-mismatch|peer-port-missing|peer-port-not-vlag|peer-port-not-orphaned|peer-port-not-cluster-link|sw-active|anycast|hsrp|invalid-	Displays the owner-state flags.

`vlan|owner-lost|cluster-link-down| vxlan-router|peer-force-resync|excess-mac-move-detected|excess-ip-move-detected|retry|evpn|evpn-wo-bgp|evpn-def-gw|evpn-delete`	
`peer-state active|static|vrrp|tunnel| software|needs-peer-status|port-mac| hit|ageout-check|moving|loop-probe| local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only| active-state-mismatch|peer-port-missing|peer-port-not-vlag|peer-port-not-orphaned|peer-port-not-cluster-link|sw-active| hsrp`	Displays the peer-state flags.
`egress-id` *`egress-id-number`*	Displays the hardware egress ID.
`create-time date/time: yyyy-mm-ddThh:mm:ss`	Displays the time entry created.
`last-seen date/time: yyyy-mm-ddThh:mm:ss`	Displays the last time seen on network.
`hit` *`hit-number`*	Displays the number of hits.
`tunnel` *`tunnel-string`*	Displays the tunnel name.

Defaults None

Access CLI

History

Version 2.4	Command introduced.
Version 2.4.1	The parameters, `public-vlan`, `owner-state`, `peer-state` and `tunnel` added. The options, `user-flush|vxlan-loopback|router` added to `state`, `owner-state`, and `peer-state`.
Version 2.6.2	The parameters, `hw-intf` and `egress-id` added. The options `update-peer-only| active-state-mismatch| peer-port-missing|peer-port-not-vlag| peer-port-not-orphaned|peer-port-not-cluster-link|sw-active|hsrp` added to `state`, `owner-state`, `peer-state`.
Version 3.0.0	The parameter, `l2-net`, added.

Usage Use this command to show the Layer 3 table setting.

Examples To display the Layer 3 table setting, use the following command:

```
CLI (network-admin@switch) > l3-table-show format all
  switch:                     spine1-1
  mac:                        c6:8f:66:55:fe:30
  ip:                         192.168.1.3
  vlan:                       1
  vxlan:                      0
  intf:                       128
  rt-if:
  state:                      active
  create-time:                10-06,15:58:02
  last-seen:                  09:06:44
  hit:                        1764
```

There is no routing interface (`rt-if`) value because there are no Layer 3 routes configured on the switch.

lacp-modify

This command is used to modify Link Aggregation Control Protocol (LACP) parameters on the switch.

Syntax `lacp-modify`

Specify one or more of the following options:	
`enable|disable`	Specify to enable or disable LACP on the switch.
`system-priority` *`priority`*	Specifies the priority for the configuration. The default value is 32768 with a range of 1 to 65535.

Defaults The default system-priority is 32768.

Access CLI

History Command introduced in Version 1.2.6

Usage Use this command to enable or disable LACP and set the priority.

Examples To enable LACP with a priority of 3567, use the following command:

```
CLI (network-admin@switch)> lacp-modify enable system-priority 3576
```

lacp-show

This command is used to display information about Link Aggregation Control Protocol (LACP) configurations on the switch.

Syntax `lacp-show`

`switch` *`switch-name`*	Specifies the name of the switch in the configuration.
`enable|disable`	Specifies if LACP is enabled or disabled.
`system-priority priority`	Specifies the priority for the configuration. The default value is 32768 with a range of 1 to 65535.
`system-id` *`id-string`*	Specifies the ID of the switch in the configuration. LACP uses the system priority with the MAC address to form the system ID and also during negotiation with other systems.

Defaults None

Access CLI

History Command introduced in Version 1.2

Usage Use this command to display information about the LACP configuration.

Examples To display LACP information, use the following syntax

```
CLI (network-admin@switch) > lacp-show
switch:          pleiades24
enable:          yes
system-priority: 32768
systemid:        800640e942c007a
switch:          pleiades32
enable:          yes
system-priority: 32768
systemid:        800640e942c0143
```

lacp-port-stats-settings-modify

This command is used to modify the settings for LACP port statistics.

Syntax `lacp-port-stats-settings-modify`

`enable|disable`	Specify if you want to enable or disable LACP port statistics.
`interval duration: #d#h#m#s`	Specify the interval between statistics collection.
`disk-space disk-space-number`	Specify the amount of disk space for the statistics.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to display settings for LACP port statistics collection.

Examples To modify settings for LACP port statistics and disable statistics collection, use the following syntax:

```
CLI (network-admin@switch) > lacp-port-stats-settings-modify disable
```

lacp-port-stats-settings-show

Syntax `lacp-port-stats-settings-show`

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to display LACP port statistics settings.

Examples To display settings for LACP port statistics, use the following syntax:

```
 CLI (network-admin@switch) > lacp-port-stats-settings-show
switch:     Leaf-1
enable:     yes
interval:   1m
disk-space: 50M
```

lldp-show

This command is used to display Link Layer Discovery Protocol (LLDP) information on the switch. Link Layer Discovery Protocol (LLDP) allows Ethernet network devices such as switches and routers to receive and transmit device-related information to directly connected devices on the network that are also using the protocols, and to store the information that is learned about other devices.

Syntax `lldp-show`

Specify any of the following options:	
`local-port` *`local-port-number`*	Specifies the local port where the LLDP packet is received.
`bezel-port` *`bezel-port-string`*	Specifies the bezel port.
`chassis-id` *`chassis-id-string`*	Specifies the chassis ID of the switch.
`port-id` *`port-id-string`*	Specifies the port of the switch sending the LLDP packet.
`sys-name` *`sys-name-string`*	Specifies the system name.

Defaults None

Access CLI

History

Version 2.0	Command introduced.
Version 7.0.0	The Parameter `bezel-port` added.

Usage Use this command to display LLDP information on the switch.

Examples To display all LLDP information, use the following command:

CLI (network-admin@switch) > `lldp-show`

```
switch          local-port bezel-port chassis-id        port-id           port-desc          sys-name
--------------- ---------- ---------- ---------------- ----------------- ------------------ ----------------------------
switch          8          8          09000fad         8                 PN Switch Port(8)  spine1
switch          12         12         09000f18         12                PN Switch Port(12) spine2
switch          13         13         00:e0:81:e4:03:6c 00:12:c0:80:1c:04 enp1s0f0          leaf-1c.pluribusnetworks.com
switch          14         13.2       00:e0:81:e4:02:64 90:e2:ba:15:fc:c9 enp1s0f1          leaf-1d.pluribusnetworks.com
switch          15         13.3       00:e0:81:e4:02:64 90:e2:ba:15:fc:c8 enp1s0f0          leaf-1d.pluribusnetworks.com
```

log-admin-audit-modify

This command is used to enable the collection of Netvisor auditing logs.

Syntax `log-admin-audit-modify disable|enable`

Defaults Disabled

Access CLI

History

Version 2.5	Command introduced.
Version 3.1.0	Command deprecated.
Version 5.1.0	Command re-added.

Usage Use this command to enable the collection of Netvisor auditing logs.

Examples To enable the feature, use the following syntax:

```
CLI (network-admin@switch) > log-admin-audit-modify enable
```

log-admin-audit-show

This command is used to display auditing functionality.

Syntax `log-admin-audit-show`

Defaults Disabled

Access CLI

History

Version 2.5	Command introduced.
Version 3.1.0	Command deprecated.

Usage Use this command to display auditing functionality.

Examples To display auditing functionality, use the following syntax:

```
CLI (network-admin@switch) > log-admin-audit-show
```

log-audit-exception-create

This command is used to control which CLI, `shell` and `vtysh` commands are subject to auditing. If a command is subject to auditing, the command is logged in the audit log and sent to the TACACS+ server as authorization and accounting messages.

Syntax `log-audit-exception-create`

`cli|shell|vtysh`	Specify the type of audit exception
`pattern` *`pattern-string`*	Specify a regular expression to match exceptions.
`any|read-only|read-write`	Specify the access type to match exceptions
`scope local|fabric`	Specify the scope of exceptions.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to create a log audit exception for TACACS+.

Examples To create a log audit exception, use the following syntax:

```
CLI (network-admin@switch) > log-audit-exception-create
```

log-audit-exception-delete

This command is used to control which CLI, shell and vtysh commands are subject to auditing. If a command is subject to auditing, the command is logged in the audit log and sent to the TACACS+ server as authorization and accounting messages.

Syntax `log-audit-exception-delete`

`cli|shell|vtysh`	Specify the type of audit exception
`pattern` *`pattern-string`*	Specify a regular expression to match exceptions.
`any|read-only|read-write`	Specify the access type to match exceptions

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to delete a log audit exception.

Examples To delete a log audit exception, use the following syntax:

```
CLI (network-admin@switch) > log-audit-exception-delete
```

log-audit-exception-show

This command is used to control which CLI, `shell` and `vtysh` commands are subject to auditing. If a command is subject to auditing, the command is logged in the audit log and sent to the TACACS+ server as authorization and accounting messages.

Syntax `log-audit-exception-show`

`cli|shell|vtysh`	Specify the type of audit exception
`pattern` *`pattern-string`*	Specify a regular expression to match exceptions.
`any|read-only|read-write`	Specify the access type to match exceptions
`scope local|fabric`	Specify the scope of exceptions.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to display information about log audit exceptions.

Examples To display information about log audit exceptions, use the following syntax:

```
CLI (network-admin@switch) > log-audit-exception-show
```

log-alert-show

This command displays information about the log alerts on the switch.

Syntax `log-alert-show`

`time date/time: yyyy-mm-ddThh:mm:ss]`	Displays the timestamp for the log file.
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Displays the start time for the log file.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Displays the end time for the log file.
`duration duration: #d#h#m#s`	Displays the duration of the log file.
`interval duration: #d#h#m#s`	Displays the intervals that alerts occurred in the duration.
`since-start`	Displays alerts collected from the start.
`older-than duration: #d#h#m#s`	Displays alerts older than the duration.
`within-last duration: #d#h#m#s`	Displays alerts collected within the last duration.
`switch node name`	Displays the name of the switch collecting the alert data.
`code code-number`	Displays the code number of the alert.
`name name-string`	Displays the program name.

Defaults None

Access CLI

History Command introduced in Version 2.0.

Usage Use this command to display information about the alert log.

Examples To view the alert logs, issue the `log-alert-show` command:

```
CLI (network-admin@switch) > log-alert-show
No problems found
```

log-audit-show

This command displays information about the log audit configuration.

Syntax `log-audit-show`

Specify between 0 and 2 of the following options:	
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies the start time for the audit log.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies the end time for the audit log.
`duration duration: #d#h#m#s`	Specifies the duration of the audit log.
Specify any of the following options:	
`program program-string`	Specifies the program type.
`pid pid-number`	Specifies the product indentifiier.
`name name-string`	Specifies the name to match.
`code code-number`	Specifies the code number.
`level critical|error|warn|note|info`	Specifies the severity level.
`vnet vnet-name`	Specifies the name of the virtual network.
`remote_switch node name`	Specifies the name of the remote switch.
`user user-name`	Spcifies the username.
`client-pid client-pid-number`	Specifies the client program identifier.
`client-addr ip-address`	Specifies the client IP address.
`port port-number`	Specifies the port number.
`vlan vlan-id`	Specifies the VLAN identifier.
`vxlan vxlan-id`	Specifies the VXLAN identifier.
`count number`	Displays the count between 1 and 50000.
`starting-point starting-point-number`	Specifies the starting point of the log audit.
`length length-number`	Specifies the length of the log audit.
`reverse|no-reverse`	Specifies if the log is displayed in reverse or not.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.2	The parameters, `starting-point`, `length` and `reverse` added.
Version 2.2.5	The IP address is logged as part of a user login event.
Version 6.0.0	The keyword, `info`, added to the parameter `level`.

Usage Use this command to display information about the audit log.

Examples To display information about log audits, use the following command:

```
CLI (network-admin@switch1) > log-audit-show layout vertical
category:       audit
time:           2015-04-22,07:59:08.947601-07:00
switch:         switch1
program:        nvOSd
pid:            1242
name:           xact_command
code:           11101
level:          info
remote_switch:  switch2
user:           network-admin
client-addr:    10.9.10.24
message:        Transaction command "vlan-create id 25 scope fabric stats" result
success
starting-point: 8324
length:         1628813
category:       audit
time:           2015-04-22,08:08:32.577538-07:00
switch:         switch1
program:        nvOSd
pid:            1242
name:           user_command
code:           11001
level:          info
user:           network-admin
client-pid:     5446
client-addr:    10.9.10.24
message:        Command "vlan-port-add vlan-id 25 ports 55 untagged" result
success
starting-point: 8324
length:         1629091
```

log-event-show

This command displays information about the log event configuration.

Syntax `log-event-show`

Specify between 0 and 2 of the following options:	
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Displays the start time for the log file.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Displays the end time for the log file.
`duration duration: #d#h#m#s`	Displays the duration of the log file.
Specify any of the following options:	
`program program-string`	Specifies the program type.
`pid pid-number`	Specifies the program indentifiier.
`name name-string`	Specifies the program name.
`code code-number`	Specifies the code number.
`level critical|error|warn|note|info`	Specify one among the options as the severity level.
`event-type system|port|tcp|stp|igmp|lldp|lacp|vdp|ecp|evb|ptp|storage|tacacs|mld|mroute|vport|lacp-port-event`	Specifies the type of event.
`vnet vnet-name`	Specifies the associated vNET.
`remote_switch node name`	Specifies the name of the remote switch.
`user user-name`	Specifies the username.
`client-pid client-pid-number`	Specifies the client program identifier.
`client-addr ip-address`	Specifies the client IP address.
`port port-number`	Specifies the port number.
`vlan vlan-id`	Specifies the VLAN identifier.
`vxlan vxlan-name`	Specifies the VXLAN identifier.
`count number`	Displays the count in a range from 1 to 50000.
`starting-point starting-point-number`	Specifies the starting point of the log audit.
`length length-number`	Specifies the length of the log audit.
`reverse|no-reverse`	Specifies if the log is reverse or not reverse.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The event type, TACACS, added.
Version 2.2	The parameters, `starting-point`, `length` and `reverse` added.
Version 2.3.2.1	The options, `mld|mroute|vport`, added to event type.
Version 3.0.0	The options, `lacp-port` and `lacp-port-event`, added.
Version 6.0.0	The parameter, `level`, added.

Usage Use this command to display information about the event log.

Examples To display information about log events, use the following command:

```
 CLI (network-admin@switch)1 > log-event-show
category:      event
time:          2014-06-24,15:01:08.094640-07:00
switch:        switch1
program:       nvOSd
pid:           1384
name:          mac_ip_add
code:          11022
level:         info
event-type:    port
port:          10
vlan:          11
message:       mac/ip address added mac=50:73:9f:e0:7f:fd ip=172.16.23.3
category:      event
time:          2014-06-24,15:03:24.063484-07:00
switch:        switch1
program:       nvOSd
pid:           1384
name:          mac_ip_add
code:          11022
level:         info
event-type:    port
port:          65
vlan:          11
message:       mac/ip address added mac=50:73:9f:e0:7f:fd ip=172.16.23.2
category:      event
time:          2014-06-24,15:26:04.863472-07:00
switch:        switch1
program:       nvOSd
pid:           1384
```

```
name:           mac_ip_add
code:           11022
level:          info
```

log-event-settings-modify

This command allows you to modify the log event settings.

Syntax `log-event-settings-modify`

Specify one or more of the following options:	
`system|no-system`	Specifies system events.
`port|no-port`	Specifies the port event.
`tcp|no-tcp`	Specifies TCP events
`stp|no-stp`	Specifies the STP events.
`igmp|no-igmp`	Specifies IGMP events.
`lldp|no-lldp`	Specifies LLDP events.
`lacp|no-lacp`	Specifies LACP events.
`tacacs|no-tacacs`	Specifies TACACS events.
`mld|no-mld`	Specifies MLD events.
`mroute|no-mroute`	Specifies multicast routing events.
`vport|no-vport`	Specifies vPort events.
`lacp-port-event|no-lacp-port-event`	Specifies to log LACP port events.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, TACACS, added.
Version 2.2.5	The parameter, `LACP`, added.
Version 2.3	The parameters, `mld` and `mroute`, added.
Version 2.3.1	The parameter, `vport`, added.
Version 2.6.2	The parameter, `lacp-port-event`, added.

Usage Use this command to modify log event settings including the type of event.

Examples To modify the log event settings to exclude vPort events, use the following command:

```
CLI (network-admin@switch) > log-event-settings-modify  no-vport
```

log-event-settings-show

This command allows you to display the log event settings.

Syntax `log-event-settings-show`

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Use this command to display log event settings including the type of event.

Examples To display the log event settings, use the following command:

```
CLI (network-admin@switch)1 > log-event-settings-show
switch:          switch1
system:          on
port:            on
tcp:             off
stp:             off
igmp:            off
lldp:            off
lacp:            off
tacacs:          on
mld:             off
mroute:          off
vport:           off
lacp-port-event: off
```

log-session-show

This command displays session log information.

Syntax `log-session-show`

Specify between 0 and 2 of the following options:	
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Displays the start time for the log file.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Displays the end time for the log file.
`duration duration: #d#h#m#s`	Displays the duration of the log file.
Specify any of the following options:	
`program program-string`	Specifies the program type.
`pid pid-number`	Specifies the program indentifiier.
`name name-string`	Specifies the program name.
`code code-number`	Specifies the code number.
`level critical|error|warn|note|info`	Specify one among the options as the severity level.
`event-type system|port|tcp|stp|igmp|lldp|lacp|vdp|ecp|evb|ptp|storage|tacacs|mld|mroute|vport|lacp-port-event`	Specifies the type of event.
`vnet vnet-name`	Specifies the associated vNET.
`remote_switch node name`	Specifies the name of the remote switch.
`user user-name`	Specifies the username.
`client-pid client-pid-number`	Specifies the client program identifier.
`client-addr ip-address`	Specifies the client IP address.
`port port-number`	Specifies the port number.
`vlan vlan-id`	Specifies the VLAN identifier.
`vxlan vxlan-name`	Specifies the VXLAN identifier.
`count number`	Displays the count in a range from 1 to 50000.
`starting-point starting-point-number`	Specifies the starting point of the log audit.
`length length-number`	Specifies the length of the log audit.
`reverse|no-reverse`	Specifies if the log is reverse or not reverse.

Defaults None

Access CLI

History

Version 6.0.0	The parameter, `level`, added.

Usage Use this command to display information about the session log.

Examples To display information about log events, use the following command:

```
CLI (network-admin@switch1) > log-session-show
category time                           name   code  level user          client-addr  message
-------- ------------------------------ ------ ----- ----- ------------- ------------ -------
session  2021-01-16,00:40:23.525410-08:00 login  11099 info  network-admin 10.140.0.243 login
session  2021-01-16,00:40:30.266126-08:00 logout 11100 info  network-admin 10.140.0.243 logout
session  2021-01-16,00:40:31.716202-08:00 login  11099 info  network-admin 10.140.0.243 login
session  2021-01-16,00:46:49.981397-08:00 logout 11100 info  network-admin 10.140.0.243 logout
session  2021-01-16,00:47:10.044128-08:00 login  11099 info  network-admin 10.140.0.243 login
session  2021-01-16,00:47:21.662696-08:00 logout 11100 info  network-admin 10.140.0.243 logout
session  2021-01-16,00:48:01.324399-08:00 login  11099 info  network-admin 10.140.0.243 login
session  2021-01-16,00:48:18.458754-08:00 login  11099 info  network-admin 10.140.0.243 login
session  2021-01-16,00:48:22.865170-08:00 logout 11100 info  network-admin 10.140.0.243 logout
session  2021-01-16,00:49:46.237315-08:00 login  11099 info  network-admin 10.140.0.243 login
session  2021-01-16,00:55:44.239227-08:00 login  11099 info  network-admin 10.140.0.243 login
session  2021-01-16,01:01:01.758368-08:00 logout 11100 info  network-admin 10.140.0.243 logout
session  2021-01-16,02:01:11.991085-08:00 login  11099 info  network-admin 10.13.44.34  login
session  2021-01-16,02:01:37.155399-08:00 logout 11100 info  network-admin 10.13.44.34  logout
session  2021-01-16,02:01:45.877829-08:00 login  11099 info  network-admin 10.13.44.34  login
session  2021-01-16,02:02:01.817602-08:00 logout 11100 info  network-admin 10.13.44.34  logout
session  2021-01-17,22:42:19.380620-08:00 login  11099 info  network-admin 10.140.0.243 login
session  2021-01-17,22:42:21.831851-08:00 logout 11100 info  network-admin 10.140.0.243 logout
session  2021-01-18,06:18:59.680515-08:00 login  11099 info  network-admin 10.140.0.159 login
session  2021-01-18,08:30:39.773671-08:00 logout 11100 info  network-admin 10.140.0.159 logout
session  2021-01-18,18:43:46.545491-08:00 login  11099 info  network-admin 10.140.0.159 login
```

log-system-show

This command displays information about the log system configuration.

Syntax `log-system-show`

Specify between 0 and 2 of the following options:	
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Specify the start time for the log file.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Specify the end time for the log file.
`duration duration: #d#h#m#s`	Specify the duration of the log file.
Specify any of the following options:	
`program program-string`	Specifies the program type.
`pid pid-number`	Specifies the program identifiier.
`name name-string`	Specifies the program name.
`code code-number`	Specifies the code number.
`level critical|error|warn|note|info`	Specifies the severity level of the event.
`vnet vnet-name`	Specifies the vNET name.
`remote_switch node name`	Specifies the name of the remote switch.
`user user-name`	Spcifies the username.
`client-pid client-pid-number`	Specifies the client program identifier.
`client-addr ip-address`	Specifies the client IP address.
`port port-number`	Specifies the port number.
`vlan vlan-id`	Specifies the VLAN identifier.
`vxlan vxlan-name`	Specifies the VXLAN identifier.
`count number`	Displays the count from 1 to 50000.
`starting-point starting-point-number`	Specifies the starting point of the log audit.
`length length-number`	Specifies the length of the log audit.
`reverse| no-reverse`	Specifies if the log is reverse or not reverse.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 6.0.0	The keyword, `info`, added to `level`.

Usage Use this command to display information about the audit log.

Examples To display information about system logging, use the following command:

```
CLI (network-admin@pleiades25) > log-system-show format all layout vertical
category:       system
time:           2014-06-16,10:33:54.425701-07:00
switch:         pleiades25
program:        nvOSd
pid:            1431
name:           fan_initial_status
code:           11303
level:          warn
message:        Fan 4 initial status ok
category:       system
time:           2014-06-16,10:33:54.425839-07:00
switch:         pleiades25
program:        nvOSd
pid:            1431
name:           ps_initial_status
code:           11302
level:          warn
message:        Power supply 1 initial status ok
category:       system
time:           2014-06-16,10:34:51.479611-07:00
switch:         pleiades25
program:        sh
pid:            3873
name:           smf_nvOSd_stop
code:           30108
level:          note
message:        SMF Service stopping nvOSd
category:       system
time:           2014-06-16,10:36:57.144770-07:00
switch:         pleiades25
program:        sh
pid:            871
name:           smf_nvOSd_start
code:           30107
level:          note
message:        SMF Service starting nvOSd
category:       system
time:           2014-06-16,10:36:58.543972-07:00
switch:         pleiades25
program:        nvOSd
```

```
pid:            1014
name:           nvOSd_start
code:           11008
level:          note
message:        ===== nvOSd start: version=2.1.201005777,pn-ONVL-2.0.2-2000212193
changeset=ceb01f7ff168 branch=default
category:       system
time:           2014-06-16,10:37:07.796715-07:00
switch:         pleiades25
program:        perl
pid:            1506
name:           fanmon_fan_status
code:           30100
level:          note
message:        Controller 1 fan 1 speed 7050 RPM
```

log-event-settings-show

This command allows you to display the log event settings.

Syntax log-event-settings-show

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Use this command to display log event settings including the type of event.

Examples To display the log event settings, use the following command:

```
CLI (network-admin@switch)1 > log-event-settings-show
switch:           switch1
system:           on
port:             on
tcp:              off
stp:              off
igmp:             off
lldp:             off
lacp:             off
tacacs:           on
mld:              off
mroute:           off
vport:            off
lacp-port-event:  off
```

log-system-counters-reset

This command resets the log counters on the switch.

Syntax `log-system-counters-reset`

`reset-time` *`reset-time-string`*	Specify the reset time.

Defaults None

Access CLI

History Command introduced in Version 1.2.

Usage Use this command to reset log counters.

Examples To reset log counters, use the following commands:

```
CLI (network-admin@switch) > log-system-counters-reset
```

log-system-counters-show

This command displays the log counters on the switch.

Syntax `log-system-counters-show`

Defaults None

Access CLI

History Command introduced in Version 1.2.

Usage Use this command to display log counters.

Examples To display log counters, use the following command:

```
 CLI (network-admin@switch) > log-system-counters-show
switch     critical error warn note
---------- -------- ----- ---- ----
pleiades24 0        0     390  494
pleiades25 26       0     546  843
```

M Commands

mac-limit-modify

You can now limit the number of MAC addresses per port. You can configure port security only on ports. Details about port security for ports are as follows:

- Access ports—You can configure port security on interfaces that you have configured as Layer 2 access ports. On an access port, port security applies only to the access VLAN.
- Trunk ports—You can configure port security on interfaces that you have configured as Layer 2 trunk ports.

Syntax `mac-limit-modify`

`port` *`port-list`*	Specify the port or port list.
`mac-limit` *`mac-limit-number`*	Specify the number of MAC addresses to limit on the port.
`mac-limit-action log|disable`	Specify the action to take if the MAC address limit is exceeded.

Defaults None

Access Network Administrator

History

Version 2.6.0	Command introduced.
Version 5.1.0	The option, `drop`, removed from `mac-limit-action` parameter.

Usage Use this command to modify the MAC address limits on ports.

Examples To modify the number of MAC addresses on ports, use the following syntax:

```
CLI (network-admin@switch) > mac-limit-modify port 25 mac-limit 3 mac-limit-action disable
```

mac-limit-show

You can now limit the number of MAC addresses per port. You can configure port security only on ports. Details about port security for ports are as follows:

- Access ports—You can configure port security on interfaces that you have configured as Layer 2 access ports. On an access port, port security applies only to the access VLAN.
- Trunk ports—You can configure port security on interfaces that you have configured as Layer 2 trunk ports.

Syntax `mac-limit-show`

`port` *`port-list`*	Displays the port or port list.
`mac-limit` *`mac-limit-number`*	Displays the number of MAC addresses to limit on the port.
`mac-limit-action log|disable`	Displays the action to take if the MAC address limit is exceeded.
`num-macs` *`num-macs-number`*	Displays the number of MAC addresses learned on the port.

Access Network Administrator

History

Version 2.6.0	Command introduced.
Version 5.1.0	The option, `drop`, removed from `mac-limit-action` parameter.

Usage Use this command to display information about MAC address limits on ports.

Examples To display information about MAC address limits on ports, use the following syntax:

```
CLI (network-admin@switch1) > mac-limit-show
switch        port mac-limit mac-limit-action num-macs
------------- ---- --------- ---------------- --------
switch1       1    0         log              0
switch1       5    0         log              0
switch1       9    0         log              0
switch1       13   0         log              0
```

mac-pool-show

This command is used to display mac pool.

Syntax `mac-pool-show`

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display information about MAC address limits on ports.

Examples To display information about MAC address limits on ports, use the following syntax:

```
CLI (network-admin@switch1) > mac-pool-show
switch: leo-ext-33
switch: leo-ext-31
switch: leo-ext-32
```

mcast-show

This command displays multicast group information for a switch.

Syntax `mcast-show`

`group-ip` *`muticast-ip-address`*	Specifies the IP address for the multicast group.
`vnet` *`vnet-name`*	Specifies the vNET name.
`l2-net` *`l2-net-name`*	Specifies the Layer 2 network name.

Defaults Unless otherwise specified, all multicast group membership information for the local switch is displayed.

Access CLI

History

Version 1.2	Command introduced.
Version 3.0.0	The parameter, `l2-net`, added.

Usage Hosts and adjacent switches on IPv4 networks can establish multicast group memberships.

Examples To display all multicast group memberships for the local switch, use the following command:

```
CLI (network-admin@switch) > mcast-show
switch group-ip  vnet bd   vlan  group-id group-ports
------ --------- ---- ---- ----- -------- -----------
switch 239.4.9.3           1     33554434 0,61,65
switch 239.4.9.7           1     33554436 61,65,69
switch 239.4.9.4           1     33554435 61,65,69
```

mgmt-session-show

In earlier versions of Netvisor, Netvisor did not support viewing current user sessions using the CLI. This can be very useful for security and troubleshooting. Netvisor now lists all currently logged-in users along with the IP they are connecting from and the login time when you execute the command, `mgt-session-show`.

Syntax `showmgmt-session-show`

`user` *`user-string`*	Displays the user name.
`cli-user` *`cli-user-string`*	Displays the name used to log into the switch.
`pid` *`pid-number`*	Displays the process ID.
`terminal` *`terminal-string`*	Displays the terminal.
`from-ip` *`ip-address`*	Displays the IP address for the user.
`login-time date/time:` *`yyyy-mm-ddTHH:mm:ss`*	Displays the time and date that the user logged into the switch.
`remote-node` *`remote-node-string`*	Displays the name of the remote node.
`vnet` *`vnet-string`*	Displays the vNET assigned to the user.
`type cli|api|shell`	Displays the type of login session.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0

Usage Use this command to display users logged into the switch.

Examples To display users logged into the switch, NAT-1, use the following syntax:

```
CLI (network-admin@switch) > mgmt-session-show
switch       user  cli-user      pid   terminal from-ip      login-time     type
------------ ----- ------------- ----- -------- ------------ -------------  ----
Spine-ext-41 admin network-admin 13805 pts/3    10.60.1.216  11:20:52       cli
Spine-ext-41 root  network-admin 8589  pts/2    10.14.20.109 11-15,17:16:17 cli
```

mirror-create

This command is used to create mirror ports and flows. Network engineers or administrators use port mirroring to analyze and debug data or diagnose errors on a network. It helps administrators keep a close eye on network performance and alerts them when problems occur. It can be used to mirror either inbound or outbound traffic (or both) on single or multiple interfaces.

Syntax `mirror-create`

`name` *`name-string`*	Specify a name for the mirror configuration.
`direction ingress|egress| bidirection`	Specify a direction for the mirrored traffic.
`out-port` *`port-list`*	Specify the port for outgoing traffic.
`out-trunk` *`trunk name`*	Specify the name of the outgoing trunk configuration.
`in-port` *`port-list`*	Specify the port for incoming traffic. Supported ports are 1-64 on the F64 platform. The parameter, `all`, is not supported.
`filtering port| vflow-and-port|vflow-or-port`	Specify the filter type for the configuration.
`enable|disable`	Enable or disable the configuration.
`other-egress-out allow|prevent`	Specify if other outgoing traffic is allowed or prevented. The default value is `prevent`.
`span-encap none|over-ip|over-vlan`	Specify the mirror span type. The default type is none.
`span-local-ip` *`ip-address`*	Specify the local IPv4 address for the mirror span.
`span-remote-ip` *`ip-address`*	Specify the remote IPv4 address fpr the mirror span.
`span-src-mac` *`mac-address`*	Specify the source MAC address for the mirror span.
`span-dst-mac` *`mac-address`*	Specify the destination MAC address for the mirror span.
`span-tagging-vlan` *`vlan-id`*	Specify the mirror span VLAN tagging ID. The default value is none.
`span-tos` *`integer`*	Specify the mirror span ToS from 0 to 255. The default value is 0.
`nvie-mirror|no-nvie-mirror`	Specify to mark this mirroring as an NVIE mirror and mirror traffic to NVIE VM.

Defaults None

Access CLI

History

Version 2.2	Command introduced.
Version 2.4	The parameter, `span-`, introduced.
Version 2.6.2	The parameter, `nvie-mirror`, added.

Usage

Use this command to create mirrored traffic or ports for analyzing traffic.

Examples

To create a mirror configuration, mirror-port, with the direction egress, port 73, inbound port 33, filtering by port, and allow other egress traffic, use the following syntax:

```
CLI (network-admin@switch) > mirror-create name mirror-port direction
egress out-port 73 in-port 33 enable other-egress-out allow
```

mirror-delete

This command is used to delete a mirror configuration.

Syntax `mirror-delete`

`name` *`name-string`*	Specify a name for the mirror configuration.

Defaults None

Access CLI

History Command introduced in Version 2.2.

Usage Use this command to delete a mirror configuration.

Examples To delete a mirror configuration, mirror-port, use the following syntax:

```
CLI (network-admin@switch) > mirror-delete name mirror-port
```

mirror-modify

This command allows you to modify a port mirror configuration.

Syntax `mirror-modify`

`name` *`name-string`*	Specify the name of the mirror configuration to modify.
Specify any of the following options:	
`direction disabled|ingress|egress|bidirection`	Specify the direction of the traffic that you want to mirror on the port.
`out-port` *`port-list`*	Specify the list of ports for outgoing network traffic.
`out-trunk` *`trunk-name`*	Specify the trunk name for the outgoing trunk.
`in-port` *`port-list`*	Specify the list of ports for incoming network traffic.
`filtering port|vflow-and-port|vflow-or-port`	Specify the type of traffic to filter.
`enable|disable`	Enable or disable port mirroring on the network.
`other-egress-out allow|prevent`	Specify if other outgoing traffic is allowed or prevented.
`span-encap none|over-ip|over-vlan`	Specify the mirror span type. The default type is none.
`span-local-ip` *`ip-address`*	Specify the local IPv4 address for the mirror span.
`span-remote-ip` *`ip-address`*	Specify the remote IPv4 address fpr the mirror span.
`span-src-mac` *`mac-address`*	Specify the source MAC address for the mirror span.
`span-dst-mac` *`mac-address`*	Specify the destination MAC address for the mirror span.
`span-tagging-vlan` *`vlan-id`*	Specify the mirror span VLAN tagging ID. The default value is none.
`span-tos` *`integer`*	Specify the mirror span ToS from 0 to 255. The default value is 0.
`nvie-mirror|no-nvie-mirror`	Specify to mark this mirroring as an NVIE mirror and mirror traffic to NVIE VM.

Defaults None.

Access CLI

History

Version 1.2	`port-mirror-modify` introduced.

Version 2.0	Command changed to `mirror-modify`.
Version 2.1	The parameter, out-trunk, added.
Version 2.2.2	The parameter, `direction`, added.
Version 2.2.3	The parameter, `policy`, changed to `filtering`. The parameter `other-egress-out` added. j
Version 2.4	The parameter, `span-`, introduced.
Version 2.6.2	The parameter, `nvie-mirror`, added.

Usage Port mirroring is used to send copies of network traffic on one port to a network monitoring connection on another port. You can use this command to enable or disable port mirroring as well as designate the ports to use for it.

Examples To enable port mirroring on outbound ports 3-5 and inbound ports 8-9, use the following command:

```
CLI (network-admin@switch) > mirror-modify out-port 3-5 in-port 8-9
mirroring
```

mirror-show

This command is used to display information about port mirroring on the switch.

Syntax `mirror-show`

`name` *`name-string`*	Specifies a name for the mirror configuration.
`id`	Specifies the mirror ID assigned by nvOS.
`direction ingress|egress|bidirection`	Specifies a direction for the mirrored traffic.
`out-port` *`port-list`*	Specifies the port for outgoing traffic.
`out-trunk` *`trunk name`*	Specifies the name of the outgoing trunk configuration.
`loopback-port` *`loopback-port-number`*	Specifies the loopback port for mirrored traffic.
`in-port` *`port-list`*	Specifies the port for incoming traffic.
`filtering port| vflow-and-port|vflow-or-port`	Specifies the filter type for the configuration.
`enable|disable`	Enable or disable the configuration.
`other-egress-out allow|prevent`	Specifies if other outgoing traffic is allowed or prevented.
`span-encap none|over-ip|over-vlan`	Specify the mirror span type. The default type is none.
`span-local-ip` *`ip-address`*	Specify the local IPv4 address for the mirror span.
`span-remote-ip` *`ip-address`*	Specify the remote IPv4 address fpr the mirror span.
`span-src-mac` *`mac-address`*	Specify the source MAC address for the mirror span.
`span-dst-mac` *`mac-address`*	Specify the destination MAC address for the mirror span.
`span-tagging-vlan` *`vlan-id`*	Specify the mirror span VLAN tagging ID. The default value is none.
`span-tos` *`integer`*	Specify the mirror span ToS from 0 to 255. The default value is 0.
`nvie-mirror|no-nvie-mirror`	Specify to mark this mirroring as an NVIE mirror and mirror traffic to NVIE VM.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.0	Command changed to `mirror-show`.
Version 2.4	The parameter, `span-`, introduced.
Version 2.6.2	The parameter, `nvie-mirror`, added.

Usage Use this command to display port mirroring information.

Examples To display information about port mirroring, use the following command:

```
CLI (network-admin@pleiades25) > mirror-show
switch:        pleiades25
mirroring:     disable
```

mld-show

Multicast Listener Discovery (MLD) is a Layer 3 multicast protocol used between IPv6 hosts and routers similar to how IGMP is used for IPv4. MLD snooping allows a switch to examine MLD packets and make forwarding decisions based on their content.

MLD snooping constrains IPv6 multicast traffic at Layer 2 by configuring Layer 2 LAN ports dynamically to forward IPv6 multicast traffic only to those ports that want to receive it.
The default behavior, when MLD Snooping is not configured, multicast traffic will be forwarded to all the switch ports, impacting switch performance.

Syntax `mld-show`

`group-ip` *`ip-address`*	Specifies the name of the IP group for the MLD configuration.
`node-ip` *`ip-address`*	Specifies the name of the IP host for the MLD configuration.
`vnet` *`vnet-name`*	Specifies the name of the vNET assigned to the MLD configuration.
`l2-net` *`l2-net-name`*	Specifies the name of the Layer 2 network.
`vlan` *`vlan-id`*	Specifies the ID of the VLAN for the MLD configuration.
`port` *`port-number`*	Specifies the number of the port for the MLD configuration.
`source-ip` *`ip-address`*	Specifies the IP source name for the MLD configuration.
`node-type host|router|switch`	Specifies the node type as host or router.
`expires` *`expires-number(s)`*	Specifies the ageout time.

Defaults None

Access CLI

History

Version 2.3	Command introduced.
Version 2.4.1	The parameter, `switch`, deprecated. The parameter, `vnet`, added.
Version 3.0.0	The parameter, `l2-net`, added.

Usage Default behavior, when MLD is not configured, forwards multicast traffic to all the switch ports, impacting switch performance.

Examples To display MLD parameters for the local switch, use the following command:

```
CLI (network-admin@switch) > mld-show
```

```
switch:                 spine01
group-ipv6:             ff02::1:ff11:111
                        1
host-ipv6:              fe80::3636:3bff:
                        fece:44f2
vlan:                   100
port:                   8,69
source-ipv6:            2001:db8::2:1
```

mld-router-show

Multicast Listener Discovery (MLD) is a Layer 3 multicast protocol used between IPv6 hosts and routers similar to how IGMP is used for IPv4. MLD snooping allows a switch to examine MLD packets and make forwarding decisions based on their content.
MLD snooping constrains IPv6 multicast traffic at Layer 2 by configuring Layer 2 LAN ports dynamically to forward IPv6 multicast traffic only to those ports that want to receive it.
The default behavior, when MLD Snooping is not configured, multicast traffic is forwarded to all the switch ports, impacting switch performance.

Syntax `mld-router-show`

`node-ip` *`ip-address`*	Specifies the name of the IP node for the MLD configuration.
`vnet` *`vnet-name`*	Specifies the name of the vNET assigned to the MLD configuration.
`l2-net` *`l2-net-name`*	Specifies the name of the Layer 2 network.
`vlan` *`vlan-id`*	Specifies the ID of the VLAN for the MLD configuration.
`port` *`port-number`*	Specifies the number of the port for the MLD configuration.

Defaults None.

Access History

Version 2.3	Command introduced.
Version 2.4.1	The parameters, `group-ip`, `source-ip`, `node-type`, and `expires`, `deprecated`. The parameter, `vnet`, added.
Version 3.0.0	The parameter, `l2-net`, added.

Usage Default behavior, when MLD Snooping is not configured, multicast traffic is forwarded to all the switch ports, impacting switch performance.

Examples To display MLD router parameters for the local switch, use the following command:

```
CLI (network-admin@switch) > mld-router-show
```

mld-snooping-modify

Multicast Listener Discovery (MLD) is a Layer 3 multicast protocol used between IPv6 hosts and routers similar to how IGMP is used for IPv4. MLD snooping allows a switch to examine MLD packets and make forwarding decisions based on their content.
MLD snooping constrains IPv6 multicast traffic at Layer 2 by configuring Layer 2 LAN ports dynamically to forward IPv6 multicast traffic only to those ports that want to receive it.
The default behavior, when you do not configure MLD Snooping, Netvisor forwards multicast traffic to all the switch ports, impacting switch performance.

Syntax `mld-snooping-modify`

`scope local|fabric`	Modify the scope of MLD Snooping to local or fabric.
`enable|disable`	Enable, disable MLD Snooping. Default: disable
`mldv1-vlans` *`vlan-list`*	VLANs on which to enable snooping and use MLDv1 protocol. Default: none
`mldv2-vlans` *`vlan-list`*	VLANs on which to enable snooping and use MLDv2 protocol. Default 1 - 4092
`snoop-linklocal-vlans` *`vlan-list`*	Allow snooping of link-local groups (ff02::/16) on these vlans. Default 1 - 4092
`snoop-nd-vlans` *`vlan-list`*	Allow snooping of ND SN Multicast addresses (ff02::1:ff/104) on these vlans. Default 1 - 4092
`query-interval` *`seconds`*	Specify the interval between queries in seconds.
`query-max-response-time` *`seconds`*	Specify the maximum response time for a query.

Defaults See above description

Access CLI

History

Version 2.3	Command introduced.
Version 2.4	The parameters, `version` and `snoop-link`, introduced.
Version 2.5.2	The parameters, `version`, `snoop-linklocal`, and `snoop-nd` deprecated. The parameters, `mldv1-vlans`, `mldv2-vlans`, `snoop-linklocal-vlans`, and `snoop-nd-vlans` introduced.
Version 3.1.0	The parameters, `query-interval` and `query-max-response-time`, added.

Usage When MLD Snooping is not configured, multicast traffic is forwarded to all the switch ports, impacting switch performance. Use this command to modify the scope of MLD Snooping, enable snooping on specific VLANs, link-local groups, or ND SN multicast addresses, or to disable snooping.

Examples To modify the scope from local to fabric use the following syntax:

```
CLI (network-admin@switch) > mld-snooping-modify scope fabric
```

mld-snooping-show

Multicast Listener Discovery (MLD) is a Layer 3 multicast protocol used between IPv6 hosts and routers similar to how IGMP is used for IPv4. MLD snooping allows a switch to examine MLD packets and make forwarding decisions based on their content.
MLD snooping constrains IPv6 multicast traffic at Layer 2 by configuring Layer 2 LAN ports dynamically to forward IPv6 multicast traffic only to those ports that want to receive it.
When MLD Snooping is not configured multicast traffic, by default, is forwarded to all the switch ports thus impacting switch performance.

Syntax `mld-snooping-show`

Defaults None.

Access CLI

History

Version 2.3	Command introduced.
Version 2.4	The parameters, `version` and `snoop-link`, introduced.
Version 2.5.2	The parameters, `version`, `snoop-linklocal`, and `snoop-nd` deprecated. The parameters, `mldv1-vlans`, `mldv2-vlans`, `snoop-linklocal-vlans`, and `snoop-nd-vlans` introduced.
Version 3.1.0	The parameters, `query-interval` and `query-max-response-time`, added.

Usage The default behavior, when MLD Snooping is not configured, multicast traffic is forwarded to all the switch ports, impacting switch performance.

Examples To display the format for all options for the local switch, use the following command:

```
CLI (network-admin@switch) > mld-snooping-show format all
    switch:              switch name
    enable:              yes
    mlvdv1-vlans:        none
    mldv2-vlans:         1-4092
    snoop-               1-4092
    linklocal-
    vlans:
```

```
snoop-nd-          1-4092
vlans:

nvOS-managed-      100
vlans:

interop-v1-        none
vlans:

vlans:             1-99,101-
                   4092
```

mld-static-group-create

Multicast Listener Discovery (MLD) is a Layer 3 multicast protocol used between IPv6 hosts and routers similar to how IGMP is used for IPv4. MLD snooping allows a switch to examine MLD packets and make forwarding decisions based on their content.
MLD snooping constrains IPv6 multicast traffic at Layer 2 by configuring Layer 2 LAN ports dynamically to forward IPv6 multicast traffic only to those ports that want to receive it.
The default behavior, when MLD Snooping is not configured, multicast traffic is forwarded to all the switch ports, impacting switch performance.

Syntax `mld-static-group-create`

`group-ip` *`ip-address`*	Specifies the name of the IP group for the MLD configuration.
`vlan` *`vlan-id`*	Specifies the ID of the VLAN for the MLD configuration.
`ports` *`port-list`*	Specifies the list of the ports for the MLD configuration

Defaults None.

Access CLI

History Command introduced in Version 2.3.

Usage The default behavior, when MLD Snooping is not configured, multicast traffic is forwarded to all the switch ports, impacting switch performance.

Examples To create a multicast group memberships for the local switch, use the following command:

```
CLI (network-admin@switch) > mld-static-group-create
```

mld-static-group-delete

Multicast Listener Discovery (MLD) is a Layer 3 multicast protocol used between IPv6 hosts and routers similar to how IGMP is used for IPv4. MLD snooping allows a switch to examine MLD packets and make forwarding decisions based on their content.
MLD snooping constrains IPv6 multicast traffic at Layer 2 by configuring Layer 2 LAN ports dynamically to forward IPv6 multicast traffic only to those ports that want to receive it.
The default behavior, when MLD Snooping is not configured, multicast traffic will be forwarded to all the switch ports, impacting switch performance.

Syntax `mld-static-group-delete`

`group-ip` *`ip-address`*	Specifies the name of the IP group for the MLD configuration to be deleted.
`vlan` *`vlan-id`*	Specifies the ID of the VLAN for the MLD configuration to be deleted.

Defaults None.

Access CLI

History Command introduced in Version 2.3.

Usage The default behavior, when MLD Snooping is not configured, multicast traffic will be forwarded to all the switch ports, impacting switch performance.

Examples To display all multicast group memberships for the local switch, use the following command:

```
CLI (network-admin@switch) > mld-static-group-delete
```

mld-static-group-show

Multicast Listener Discovery (MLD) is a Layer 3 multicast protocol used between IPv6 hosts and routers similar to how IGMP is used for IPv4. MLD snooping allows a switch to examine MLD packets and make forwarding decisions based on their content.
MLD snooping constrains IPv6 multicast traffic at Layer 2 by configuring Layer 2 LAN ports dynamically to forward IPv6 multicast traffic only to those ports that want to receive it.
The default behavior, when MLD Snooping is not configured, multicast traffic is forwarded to all the switch ports, impacting switch performance.

Syntax `mld-static-group-show`

`group-ipv6` *`ip-address`*	Specifies the name of the IP group for the MLD configuration.
`vnet` *`vnet-name`*	Specifies the name of the vNET.
`vlan` *`vlan-id`*	Specifies the ID of the VLAN for the MLD configuration.
`ports` *`port-list`*	Specifies the number of the port for the MLD configuration.

Defaults None.

Access CLI

History

Version 2.3	Command introduced.
Version 2.4.1	The parameter, `vnet`, added.

Usage When MLD Snooping is not configured, multicast traffic is forwarded to all the switch ports, impacting switch performance.

Examples To display MLD parameters for the local switch, use the following command:

```
CLI (network-admin@switch) > mld-static-group-show
    switch:          aquila-ext-01
    group-           ff02::1:ff11:1111
    ipv6:
    vlan:            100
    port:            8,69,  129
```

mld-static-source-create

Multicast Listener Discovery (MLD) is a Layer 3 multicast protocol used between IPv6 hosts and routers similar to how IGMP is used for IPv4. MLD snooping allows a switch to examine MLD packets and make forwarding decisions based on their content.
MLD snooping constrains IPv6 multicast traffic at Layer 2 by configuring Layer 2 LAN ports dynamically to forward IPv6 multicast traffic only to those ports that want to receive it.
The default behavior, when MLD Snooping is not configured, multicast traffic is forwarded to all the switch ports, impacting switch performance.

Syntax `mld-static-source-create`

`source-ip` *`ip-address`*	Specifies the source IPv6 address for the MLD configuration.
`group-ip` *`ip-address`*	Specifies the source of the IP group for the MLD configuration.
`vlan` *`vlan-id`*	Specifies the ID of the VLAN for the MLD configuration.
`vnet` *`vnet-name`*	Specifies the name of the vNET.
`l2-net` *`l2-net-name`*	Specifies the name of the Layer 2 network.
`ports` *`port-list`*	Specifies the list of the ports for the MLD configuration.

Defaults None.

Access CLI

History

Version 2.3	Command introduced.
Version 2.4.1	The parameter, `vnet`, added.
Version 3.0.0	The parameter, `l2-net`, added.

Usage The default behavior, when MLD is not configured, multicast traffic is forwarded to all the switch ports, impacting switch performance.

Examples To display all multicast group memberships for the local switch, use the following command:

```
CLI (network-admin@switch) > mld-static-source-create
```

mld-static-source-delete

Multicast Listener Discovery (MLD) is a Layer 3 multicast protocol used between IPv6 hosts and routers similar to how IGMP is used for IPv4. MLD snooping allows a switch to examine MLD packets and make forwarding decisions based on their content.
MLD snooping constrains IPv6 multicast traffic at Layer 2 by configuring Layer 2 LAN ports dynamically to forward IPv6 multicast traffic only to those ports that want to receive it.
The default behavior, when MLD Snooping is not configured, multicast traffic will be forwarded to all the switch ports, impacting switch performance.

Syntax `mld-static-source-delete`

`source-ip` *`ip-address`*	Specifies the source IPv6 address for the MLD configuration to be deleted.
`l2-net` *`l2-net-name`*	Specifies the name of the Layer 2 network.
`group-ip` *`ip-address`*	Specifies the source of the IP group for the MLD configuration to be deleted.
`vlan` *`vlan-id`*	Specifies the ID of the VLAN for the MLD configuration to be deleted.

Defaults None.

Access CLI

History

Version 2.3.0	Command introduced.
Version 3.0.0	The parameter, `l2-net`, added.

Usage The default behavior, when MLD Snooping is not configured, multicast traffic is forwarded to all the switch ports, impacting switch performance. For this CLI, the group has to be seated statically already.

Examples To display all multicast group memberships for the local switch, use the following command:

```
CLI (network-admin@switch) > mld-static-source-delete
```

mld-static-source-show

Multicast Listener Discovery (MLD) is a Layer 3 multicast protocol used between IPv6 hosts and routers similar to how IGMP is used for IPv4. MLD snooping allows a switch to examine MLD packets and make forwarding decisions based on their content.
MLD snooping constrains IPv6 multicast traffic at Layer 2 by configuring Layer 2 LAN ports dynamically to forward IPv6 multicast traffic only to those ports that want to receive it.
The default behavior, when MLD Snooping is not configured, multicast traffic is forwarded to all the switch ports, impacting switch performance.

Syntax `mld-static-source-show`

`group-ip` *`ip-address`*	Specifies the IP address of the group.
`vnet` *`vnet-name`*	Specifies the name of the vNET.
`l2-net` *`l2-net-name`*	Specifies the name of the Layer 2 network.
`vlan` *`vlan-id`*	Specifies the name of the VLAN.
`source-ip` *`ip-address`*	Specifies the IP address of the source.
`host-ip` *`ip-address`*	Specifies the IP address of the host.
`ports` *`port-list`*	Specifies the list of ports.

Defaults None.

Access CLI

History Command introduced in Version 2.3.

Version 2.3	Command introduced.
Version 2.4.1	The parameter, `switch`, deprecated. The parameter, `vnet`, added.
Version 3.0.0	The parameter, `l2-net`, added.

Usage The default behavior, when MLD Snooping is not configured, multicast traffic is forwarded to all the switch ports, impacting switch performance.

Examples To display all multicast group memberships for the local switch, use the following command:

```
CLI (network-admin@switch) > mld-static-source-show
  switch:          aquila-ext-01
  group-ip:        ff02::1:ff11:1111
  vlan:            100
  source-ip:       2001:db8::2:1
  host-ip:         fe80::3636:3bff:fece:44f2
```

```
ports:                    8,69,129
```

mld-stats-show

Multicast Listener Discovery (MLD) is a Layer 3 multicast protocol used between IPv6 hosts and routers similar to how IGMP is used for IPv4. MLD snooping allows a switch to examine MLD packets and make forwarding decisions based on their content.
MLD snooping constrains IPv6 multicast traffic at Layer 2 by configuring Layer 2 LAN ports dynamically to forward IPv6 multicast traffic only to those ports that want to receive it.
The default behavior, when MLD Snooping is not configured, multicast traffic is forwarded to all the switch ports, impacting switch performance.

Syntax `mld-stats-show`

`vlan` *`vlan-id`*	Specifies the name of the VLAN.

Defaults None.

Access

History Command introduced in Version 2.3.0.

Usage The default behavior, when MLD Snooping is not configured, multicast traffic is forwarded to all the switch ports, impacting switch performance.

Examples To display all multicast group memberships for the local switch, use the following command:

```
CLI (network-admin@switch) > mld-stats-show
```

mld-switches-show

This command is used to display switches with MLD protocol enabled.

Syntax `mld-switches-show`

`node-ip` *`ip-address`*	Specifies the node IP address.
`vnet` *`vnet-name`*	Specifies the name of the vNET assigned to the MLD configuration.
`l2-net` *`l2-net-name`*	Specifies the name of the Layer 2 network.
`vlan` *`vlan-id`*	Specifies the ID of the VLAN for the MLD configuration.
`port` *`port-number`*	Specifies the port number.

Defaults None

Access CLI

History

Version 2.3.3	Command introduced.
Version 2.4.1	The parameters, `group-ip`, `source-ip`, `node-type`, and `expires`, deprecated. The parameter, `vnet`,`vlan` added.
Version 3.0.0	The parameter, `l2-net`, added.

Usage Displays information about MLD switches.

Examples To display MLD switches, use the following syntax:

```
CLI (network-admin@switch) > mld-switches-show
switch:     spine-1
node-ip:    ::
vlan:       1
port:       3
switch:     leaf-1
node-ip:    ::
vlan:       2
port:       3
switch:     leaf-2
node-ip:    ::
vlan:       3
port:       3
```

mst-config-create

Multiple Spanning Tree Protocol as defined in IEEE802.1s or IEEE802.1Q-2005 provides the ability to manage multiple VLANs from a single MST instance. MST allows the formation of MST regions that can run multiple MST instances (MSTIs). Multiple regions and other STP bridges are interconnected using one single Common Spanning Tree (CST).

Syntax `mst-config-create`

`instance-id` *`id`*	Specify an ID for the MST configuration.
`vlans` *`vlan-list`*	Specify the list of VLANs associated with the MST configuration.
`bridge-priority` *`bridge-priority-number`*	Specify the bridge priority for the MST configuration. The bridge priority is a value from 0 to 65536, with a default value of 0. The value increments by 4096 each time. So for example, values can be 0, 4096, 8192, up to 65536.

Defaults None

Access CLI

History Command introduced in Version 2.4.

Usage This command is used to create a MST configuration on the switch.

Examples To create a MST configuration with the ID 10, VLANs 12-15, and bridge-priority of 4096, use the following syntax:

```
CLI (network-admin@switch) > mst-config-create instance-id 10 vlans 12-15 bridge-priority 4096
```

mst-config-delete

Multiple Spanning Tree Protocol as defined in IEEE802.1s or IEEE802.1Q-2005 provides the ability to manage multiple VLANs from a single MST instance. MST allows the formation of MST regions that can run multiple MST instances (MSTIs). Multiple regions and other STP bridges are interconnected using one single Common Spanning Tree (CST).

Syntax `mst-config-delete`

`instance-id` *`id`*	Displays an ID for the MST configuration. This is a number between 0 and 63.

Defaults None

Access CLI

History Command introduced in Version 2.4.

Usage This command is used to delete a MST configuration on the switch.

Examples To delete a MST configuration with the ID 10, use the following syntax:

```
CLI (network-admin@switch) > mst-config-delete instance-id 10
```

mst-config-modify

Multiple Spanning Tree Protocol as defined in IEEE802.1s or IEEE802.1Q-2005 provides the ability to manage multiple VLANs from a single MST instance. MST allows the formation of MST regions that can run multiple MST instances (MSTIs). Multiple regions and other STP bridges are interconnected using one single Common Spanning Tree (CST).

Syntax `mst-config-modify`

`instance-id` *`id`*	Specify an ID for the MST configuration. This is a number between 0 and 63.
`vlans` *`vlan-list`*	Specify the list of VLANs associated with the MST configuration.
`bridge-priority` *`bridge-priority-number`*	Specify the bridge priority for the MST configuration. The bridge priority is a value from 0 to 65536, with a default value of 0. The value increments by 4096 each time. So for example, values can be 0, 4096, 8192, up to 65536.

Defaults None

Access CLI

History Command introduced in Version 2.4.

Usage This command is used to modify information about a MST configuration on the switch.

Examples To modify a MST configuration with the ID 10, VLANs 13-16, and bridge-priority of 4096, use the following syntax:

```
CLI (network-admin@switch) > mst-config-modify instance-id 10 vlans 13-16 bridge-priority 4096
```

mst-config-show

Multiple Spanning Tree Protocol as defined in IEEE802.1s or IEEE802.1Q-2005 provides the ability to manage multiple VLANs from a single MST instance. MST allows the formation of MST regions that can run multiple MST instances (MSTIs). Multiple regions and other STP bridges are interconnected using one single Common Spanning Tree (CST).

Syntax `mst-config-show`

`instance-id` *`id`*	Specify an ID for the MST configuration. This is a number between 0 and 63.
`vlans` *`vlan-list`*	Specify the list of VLANs associated with the MST configuration.
`bridge-priority` *`bridge-priority-number`*	Specify the bridge priority for the MST configuration. The bridge priority is a value from 0 to 65536, with a default value of 0. The value increments by 4096 each time. So for example, values can be 0, 4096, 8192, up to 65536.

Defaults None

Access CLI

History Command introduced in Version 2.4.

Usage This command is used to display a MST configuration on the switch.

Examples To display a MST configuration with the ID 10, VLANs 13-16, and bridge-priority of 4096, use the following syntax:

```
CLI (network-admin@switch) > mst-config-show instance-id 10 vlans 13-16
```

N Commands

node-info

This command displays information about the local node switch in the fabric.

Syntax `node-info`

Defaults None.

Access CLI

History Command introduced in Version 1.2.

Usage To show information about a local switch node in the fabric, use this command.

Examples Use the following command to display node information:

```
CLI (network-admin@switch) > node-info

name:                                                   pubdev03
fab-name:                                               TAC
mgmt-ip:                                                10.9.100.50/16
mgmt-vnet:
in-band-ip:                                             192.168.42.30/24
in-band-vnet:
in-band-vlan-type:                                      public
fab-tid:                                                66
cluster-tid:                                            8
out-port:                                               0
version:                                                2.4.204019818,pn-nvOS-2.4.1-2040112371
state:                                                  online
firmware-upgrade:                                       not-required
device-state:                                           ok
```

node-show

This command displays information about all nodes in the fabric. This command can only be invoked at the network-administrator access level.

Syntax `node-show`

`name` *`fabric-node-name`*	Specifies the name of the fabric node to display information.
`id` *`id-string`*	Specifies the identifier for the fabric node
`serial` *`serial-string`*	Specifies the serial string for the fabric node
`fab-name` *`fab-name`*	Specifies the name of the fabric node
`fab-id`	Specifies the fabric identifier
`cluster-id`	Specifies the cluster identifier.
`local-mac` *`mac-address`*	Specifies the local MAC address of the fabric
`fabric-network in-band|mgmt|vmgmt`	Specifies the interface for sending fabric packets.
`mgmt-vnet` *`vnet-name`*	Specifies the management vNET.
`mgmt-public-vlan` *`vlan-id`*	Specifies the management public VLAN ID.
`mgmt-ip` *`ip-address`*	Specifies the IP address for the management NIC
`mgmt-netmask` *`netmask`*]	The netmask for the IP address
`mgmt-mac` *`mac-address`*	Specifies the MAC address for the management interface.
`vmgmt-ip ip-address`	Specifies the IP address of the virtual management interface.
`vmgmt-netmask netmask`	Specifies the netmask of the virtual management interface.
`vmgmt-mac mac-address`	Specifies the MAC address of the virtual management interface.
`vmgmt-vnet vnet name`	Specifies the vNET name for the virtual management interface.
`vmgmt-vlan` *`vlan-id`*	Specifies the VLAN ID of the virtual management interface.
`vmgmt-public-vlan` *`vlan-id`*	Specifies the public VLAN for the virtual management interface.
`vmgmt-secondary-macs secondary-macs-string`	Specifies the secondary MAC address of the virtual management interface.

mgmt-secondary-macs secondary-mac-string	Specifies the secondary MAC address for the management interface.
in-band-ip *ip-address*	Specifies the IP address for the in-band interface to the switch control plane.
in-band-netmask *netmask*	Specifies the netmask for the in-band interface to the switch control plane.
in-band-mac *mac-address*	Specifies the MAC address for the in-band interface to the switch control plane.
in-band-vnet *vnet-name*	Specifies the in-band vNET.
in-band-vlan *vlan-id*	Specifies the VLAN identifier for the in-band interface to the switch control plane can be reached on Layer 2.
in-band-vlan-type public|private	Specifies the in-band VLAN type as public or private.
in-band-public-vlan vlan-id	Specifies the public VLAN ID.
in-band-secondary-macs secondary-mac-string	Specifies the secondary MAC address for the in-band interface.
fab-tid *fab-tid-number*	Specifies the fabric identifier.
cluster-tid *cluster-tid-number*]	Specifies the cluster identifier.
out-port *out-port-number*	Specifies the port number where the switch multicasts the fabric discovery messages to other Pluribus Networks switch.
version *version-string*	Specifies the current OS version.
state offline|online|in-band-only-online|mgmt-only-online|fabric_joined|setup-required| fabric-required| fresh-install]	Specifies the state of the fabric.
firmware_upgrade not-required|required| reboot-required	Specifies if a firmware upgrade is required.
device_state ok|error|simulator	Specifies the state of the switch.
ports *ports-number*	Specifies the port list used by the fabric.
keepalive-timeout high resolution time: #n	Specifies the keepalive timeout.

Defaults None.

Access network-admin

History .

Version 1.2	Command introduced.
Version 2.3	The parameter, `fab-mcast`, deprecated.
Version 2.4.1	The parameters, `mgmt-vnet`, `mgmt-public-vlan`, `in-band-vnet`, `in-band-vlan-type`, and `in-band-public-vlan` added. The options, `in-band-only-online` and `mgmt-only-online`, added to the parameter, `state`.
Version 2.6.2	The parameters, `vmgmt-*` and `keepalive`, added.

Usage

To show information about all switch nodes on the network, use this command. This command is useful if you have a node that hasn't joined a fabric and you want to view all nodes on the network. This command is not available at the vNET manager access level.

Examples

Use the following command to display node information:

```
CLI (network-admin@switch) > node-show
id:                     167772387
name:                   pubdev03
fab-name:               TAC
fab-id:                 a0000e3:57c0c0ea
cluster-id:             a000024:1
local-mac:              64:0e:94:28:03:56
fabric-network:         in-band
control-network:        in-band
mgmt-ip:                10.9.100.50/16
mgmt-mac:               64:0e:94:28:03:58
mgmt-vnet:
mgmt-public-vlan:       0
mgmt-secondary-macs:
in-band-ip:             192.168.42.30/24
in-band-mac:            64:0e:94:28:03:56
in-band-vnet:
in-band-vlan:           0
in-band-vlan-type:      public
in-band-public-vlan:    0
in-band-secondary-macs:
fab-tid:                66
cluster-tid:            8
out-port:               0
version:                2.4.204019818,pn-nvOS-2.4.1-2040112371
state:                  online
firmware-upgrade:       not-required
device-state:           ok
ports:                  72
```

nv-queue-mirror-modify

This command is used to enable/disable queue packet mirroring.

Syntax `nv-queue-mirror-modify`

`name` *`nv-queue-pkt-mirror-list name`*	Specify the name of the queue.
`status disable|enable`	Specify the status of mirroring for the queue.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to enable/disable queue packet mirroring.

Examples To enable/ disable queue packet mirroring, use the following syntax:

CLI (network-admin@switch) > `nv-queue-mirror-modify`

nv-queue-mirror-show

This command is used to display the packet mirroring setting for a queue.

Syntax `nv-queue-mirror-show`

name *nv-queue-pkt-mirror-list name*	The name of the queue.
status disable|enable	The status of mirroring for the queue.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display the packet mirroring setting for a queue .

Examples To display the packet mirroring setting for a queue, use the following syntax:

```
CLI (network-admin@switch) > nv-queue-mirror-show
switch     name                         status
---------- ---------------------------- -------
leo-ext-33 eventq-guaranteed-0          disable
leo-ext-33 eventq-guaranteed-1          disable
leo-ext-33 eventq-guaranteed-2          disable
leo-ext-33 eventq-guaranteed-3          disable
leo-ext-33 eventq-guaranteed-cache      disable
leo-ext-33 util-0                       disable
leo-ext-33 util-1                       disable
leo-ext-33 util-2                       disable
leo-ext-33 util-3                       disable
leo-ext-33 util-cache                   disable
leo-ext-33 eventq-droppable-0           disable
leo-ext-33 eventq-droppable-1           disable
leo-ext-33 eventq-droppable-2           disable
leo-ext-33 eventq-droppable-3           disable
leo-ext-33 eventq-droppable-cache       disable
leo-ext-33 l2-update-droppable-0        disable
leo-ext-33 l2-update-droppable-1        disable
leo-ext-33 l2-update-droppable-2        disable
leo-ext-33 l2-update-droppable-3        disable
leo-ext-33 l2-update-droppable-cache    disable
leo-ext-33 mcast-route-guaranteed-0     disable
leo-ext-33 mcast-route-guaranteed-1     disable
leo-ext-33 mcast-route-guaranteed-2     disable
leo-ext-33 mcast-route-guaranteed-3     disable
leo-ext-33 mcast-route-guaranteed-cache disable
leo-ext-33 ipmc-droppable-0             disable
leo-ext-33 ipmc-droppable-1             disable
leo-ext-33 ipmc-droppable-2             disable
leo-ext-33 ipmc-droppable-3             disable
leo-ext-33 ipmc-droppable-cache         disable
```

nv-queue-stats-clear

This command is used to clear high priority packets such as LACP, LLDP, ARP, and STP. This is useful when you want to see how the packet queues are used and troubleshoot the operating system based on this information.

Syntax `nv-queue-stats-clear`

name *nv-queue-stats-list name*	Specify the name of the queue.

Defaults None

Access CLI

History Command introduced in Version 2.4

Usage Use this command to clear the statistics collection settings for packet queues.

Examples To clear statistics collection for packet queues, use the following syntax:

```
CLI (network-admin@switch) > nv-queue-stats-clear name nv-queue-stats-list name
```

nv-queue-stats-show

This command is used to display ONVL high priority packets such as LACP, LLDP, ARP, and STP. This is useful when you want to see how the packet queues are used and troubleshoot ONVL based on this information.

Syntax `nv-queue-stats-show`

`time date/time: yyyy-mm-ddThh:mm:ss`	Specify the time to start the statistic collection.
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Specify the start time of to statistic collection.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Specify the end time of statistic collection.
`duration duration: #d#h#m#s`	Specify the duration of statistic collection.
`interval duration: #d#h#m#s`	Specify the interval between statistic collection.
`since-start`	Specify the statistics collected since the start time.
`older-than duration: #d#h#m#s`	Specify the statistics older than the initial time.
`within-last duration: #d#h#m#s`	Specify the statistics collected within the last time.
`name` *`nv-queue-stats-list name`*	Specify the name of the queue.
`q-high` *`q-high-number`*	Specify to display the highest count in queue.
`q-low` *`q-low-number`*	Specify to display the lowest count in queue.
`q-max` *`q-max-number`*	Specify to display the maximum queue size.
`q-in` *`q-in-number`*	Specify to display the number of items inserted into queue
`q-out` *`q-out-number`*	Specify to display the number of items removed from queue.
`q-delay-high` *`high resolution time: #ns`*	Specify to display the highest delay from insertion to removal from the queue.
`q-delay-samples` *`q-delay-samples-number`*	Specifies number of delay samples queue.
`q-delay-avg high` *`resolution time: #ns`*	Specifies average sampled delay from insertion to removal.
`q-overflow` *`q-overflow-number`*	Specifies if insertion failed because queue was full.
`q-underflow` *`q-underflow-number`*	Specifies that the allocation failed because queue was empty.

Defaults None

Access CLI

History

Version 2.2.5	Command introduced.
Version 2.3.1	The parameters, `q-delay-avg`, `q-overflow`, and `q-underflow` added.

Usage Use this command to modify the statistics collection settings for packet queues.

Examples To disable statistics collection for ONVL packet queues, use the following syntax:

CLI (network-admin@switch) > nv-queue-stats-show

```
switch     name                        q-high q-in  q-out q-delay-high q-delay-avg q-overflow q-underflow
---------- --------------------------- ------ ----- ----- ------------ ----------- ---------- -----------
switch     eventq-droppable-0          0      0     0     0.00ns       0.00ns      0          0
switch     eventq-droppable-1          1      7648  7648  0.00ns       12.0ns      0          0
switch     eventq-droppable-2          0      31    31    0.00ns       3.44us      0          0
switch     eventq-droppable-3          0      17    17    0.00ns       8.44us      0          0
switch     eventq-droppable-cache      512    7696  7696  0.00ns       0.00ns      0          0
switch     l2-update-droppable-0       0      0     0     0.00ns       0.00ns      0          0
switch     l2-update-droppable-1       0      0     0     0.00ns       0.00ns      0          0
switch     l2-update-droppable-2       0      105   105   0.00ns       2.89us      0          0
switch     l2-update-droppable-3       2      8367  8367  6.02us       9.00ns      0          0
```

nv-queue-stats-settings-modify

This command is used to modify the parameters to collect high priority packets such as LACP, LLDP, ARP, and STP into a receiving queue on the CPU. This is useful when you want to see how the packet queues are used and troubleshoot the operating system based on this information.

Syntax `nv-queue-stats-settings-modify`

`enable|disable`	Enable or disable statistics collection.
`interval duration: #d#h#m#s`	Modify the interval to collect statistics.
`disk-space` *`disk-space-number`*	Modify the disk-space allocated for statistics.

Defaults None

Access CLI

History Command introduced in Version 2.2.5.

Usage Use this command to modify the statistics collection settings for the operating system packet queues.

Examples To disable statistics collection for nvOS packet queues, use the following syntax:

```
CLI (network-admin@switch) > nv-queue-stats-settings-modify  disable
```

nv-queue-stats-settings-show

This command is used to display the parameters used to collect high priority packets such as LACP, LLDP, ARP, and STP into a receiving queue on the CPU. This is useful when you want to see how the packet queues are used and troubleshoot nvOS based on this information.

Syntax `nv-queue-stats-settings-show`

Defaults None

Access CLI

History Command introduced in Version 2.2.5.

Usage Use this command to display the statistics collection settings for nvOS packet queues.

Examples To display statistics collection for nvOS packet queues, use the following syntax:

```
CLI (network-admin@switch) > nv-queue-stats-settings-show
switch:     pubdev01
enable:     yes
interval:   1m
disk-space: 50M
```

O Commands

openvswitch-create

Open vSwitch is a multilayer virtual switch licensed by Apache 2.0. It is designed to enable massive network automation through programmable extensions. This command creates an Open vSwitch instance on the switch.

Syntax `openvswitch-create name`

`name` *`name-string`*	Specify a name for the Open vSwitch instance.
`vnet` *`vnet-name`*	Specify the name of the vNET for Open vSwitch.
`tunnel-ip` *`ip-address`*	Specify the IP address for the tunnel.
`Specify any of the following options:`	
`dedicated-vnet-service|shared-vnet-service`	Specify if Open vSwitch is a dedicated or shared vNET service.
`shared-vnet-mgr` *`vnet-manager name`*	Specify the vNET manager to share with if this is a shared service.
`location fabric-node name`	Specify the location of the service.
`storage-pool` *`storage-pool-name`*	Specify a storage pool to apply to the vNET.
`gateway` *`ip-address`*	Specify gateway IP address for service.
`cert-name` *`cert-name-string`*	Specify the certificate name for SSL connections
`ca-cert-name` *`ca-cert-name-string`*	Specify the CA Certificate name for SSL connections
`cert-location none|global|container`	Specify the Certificate location - global or within container.
`global-vtep|local-vtep`	Specify the hardware VTEP associated with Open vSwitch.
`bfd|no-bfd`	Specify if you want to enable BFD for OVSDB created tunnels.

Defaults None

Access CLI

History

Version 2.4	Command introduced.
Version 2.4.1	The parameters, `tunnel` and `vtep`, added.
Version 2.5	The parameters, `gateway`, `db-conn-type`, `db-port`, `db-socket`, and `db-ip` are deprecated.
Version 2.5.4	The parameter, `shared-vnet-mgr`, `cert-name`, `ca-cert-name`, and

	`cert-location` added.
Version 2.6.2	The parameter, `gateway`, deprecated.
Version 3.0.0	The parameter, `bfd`, added.

Usage Use this command to create an Open vSwitch instance on a vNET.

Examples To create an OpenvSwitch instance, Open-One, on vNET, opvnet, as a dedicated service, with storage pool, vry-lrg-str, use the following command:

```
CLI (network-admin@switch) > openvswitch-create name Open-One vnet
opvnet dedicated-vnet-service storage-pool vry-lrg-str
```

openvswitch-show

Open vSwitch is a multilayer virtual switch licensed by Apache 2.0. It is designed to enable massive network automation through programmable extensions. This command displays an Open vSwitch instance on the switch.

Syntax `openvswitch-show`

`id`	Specify the ID assigned to the service.
`name` *`name-string`*	Specify a name for the Open vSwitch instance.
Specify any of the following options:	
`type vnet-mgr|vrouter|netzone|orphaned|netvm|nat|netvmm|ovs`	Specify the type of vNET.
`scope local|fabric`	Specify the scope for Open vSwitch.
`vnet` *`vnet-name`*	Specify the name of the vNET for Open vSwitch.
`is-global true|false`	Specify if service is global.
`location fabric-node` *`name`*	Specify the location of the Open vSwitch instance.
`cert-name` *`cert-name-string`*	Specify the certificate name for SSL connections.
`ca-cert-name` *`ca-cert-name-string`*	Specify the CA Certificate name for SSL connections.
`cert-location none|global|container`	Specify the Certificate location - global or within contain
`db-conn-type unix-socket|tcp|punix-socket-listen|tcp-listen|ssl|default`	Specify the type of database connection.
`db-ip` *`ip-address`*	Specify the IP address of the database.
`db-port` *`db-port-number`*	Specify the port number to listen on for the database.
`db-socket` *`db-socket-string`*	Specify the socket for the database.
`mode standalone|master|slave`	Specify he current operating mode for openvswitch.
`tunnel-ip` *`ip-address`*	Specify the IP address for the tunnel.
`global-vtep|local-vtep`	Specify the hardware VTEP associated with Open vSwitc
`bfd|no-bfd`	Specify if you want to enable BFD for OVSDB created tunnels.

Defaults None

Access CLI

History .

Version 2.4	Command introduced.

Version 2.4.1	The parameters, `tunnel` and `vtep`, added.
Version 2.5.4	The parameter, `shared-vnet-mgr`, `cert-name`, `ca-cert-name`, and `cert-location` added.
Version 2.6.2	The parameter, `mode`, added.
Version 3.0.0	The parameter, `bfd`, added.

Usage Use this command to display Open vSwitch instance information on a vNET.

Examples To display an Open vSwitch instance, Open-One, use the following command:

```
CLI (network-admin@switch) > openvswitch-show name Open-One
```

openvswitch-delete

Open vSwitch is a multilayer virtual switch licensed by Apache 2.0. It is designed to enable massive network automation through programmable extensions. This command removes an Open vSwitch instance on the switch.

Syntax `openvswitch-delete`

name *name-string*	Specify a name for the Open vSwitch instance.

Defaults None

Access CLI

History Command introduced in Version 2.4.

Usage Use this command to delete an Open vSwitch instance on a vNET.

Examples To delete an Open vSwitch instance, Open-One, on vNET, opvnet, use the following command:

```
CLI (network-admin@switch) > openvswitch-delete name Open-One vnet
opvnet db-ip 10.9.31.141
```

openvswitch-modify

Open vSwitch is a multilayer virtual switch licensed by Apache 2.0. It is designed to enable massive network automation through programmable extensions. This command modifies an Open vSwitch instance on the switch.

Syntax `openvswitch-modify`

`name` *`name-string`*	Specify a name for the Open vSwitch instance.
`Specify between 0 and 7 of the following options:`	
`gateway` *`ip-address`*	Specify the gateway IP address.
`tunnel-ip` *`ip-address`*	Specify the IP address for the tunnel.
`global-vtep|local-vtep`	Specify the hardware VTEP associated with Open vSwitch.
`cert-name` *`cert-name-string`*	Specify the certificate name for SSL connections
`ca-cert-name` *`ca-cert-name-string`*	Specify the CA Certificate name for SSL connections
`cert-location none|global|container`	Specify the Certificate location - global or within container
`location` *`fabric-node name`*	Specify the location of the service.
`storage-pool` *`storage-pool-name`*	Specify a storage pool to apply to the vNET.
`bfd|no-bfd`	Specify if you want to enable BFD for OVSDB created tunnels.

Defaults None

Access CLI

History

Version 2.4	Command introduced.
Version 2.4.1	The parameters `vnet`, `dedicated-vnet-service|shared-vnet-service disable|enable`, `storage-pool`, `gateway db-conn-type`, `db-ip`, `db-port`, `db-socket` deprecated.
Version 2.5.4	The parameters, `cert-name`, `ca-cert-name`, and `cert-location` added.
Version 3.0.0	The parameter, `bfd`, added.

Usage Use this command to modify an Open vSwitch instance on a vNET and to accept TLS certificates.

Examples To modify an Open vSwitch instance, Open-One, on vNET, opvnet, and add the database IP address, 10.9.31.141, use the following command:

```
CLI (network-admin@switch) > openvswitch-modify name Open-One vnet
opvnet db-ip 10.9.31.141
```

object-location-modify

The command displays any objects with a location field, and the current locations. The modify commands allows you to batch move objects from one location to another.

Syntax `object-location-modify`

`location fabric-node` *`name`*	Specify the current location of the object.
`new-location node` *`name`*	Specify the new location of the object.

Defaults None

Access CLI

History

Version 2.5.0	Command introduced.
Version 2.6.2	The parameters, `type` and `name`, deprecated.

Usage Use this command to migrate objects to new locations in the fabric.

Examples To modify a location use the following syntax:

```
CLI (network-admin@switch) > object-location-modify location Spine16
new-location Leaf1
```

object-location-show

The command displays any objects with a location field, and the current locations. The modify commands allows you to batch move objects from one location to another.

Syntax `object-location-show`

`location fabric-node` *`name`*	Specify the current location of the object.
`type` *`type-string`*	Specify the type of object.
`name` *`name-string`*	Specify the name of the object.

Defaults None

Access CLI

History Command introduced in Version 2.5.

Usage Use this command to migrate objects to new locations in the fabric.

Examples To display an object location use the following syntax:

CLI (network-admin@switch) `> object-location-show`

```
type         name        location
------------ ----------- --------
vrouter      vr2         Leaf1
vrouter      vr1         aquila16
vnet-manager pxevnet-mgr Leaf2
nat          global-nat  Spine16
vrouter-hw-if eth0.12    Spine16
```

openvswitch-hwvtep-dump

Open vSwitch is a multilayer virtual switch licensed by Apache 2.0. It is designed to enable massive network automation through programmable extensions. This command creates a dump of OVSDB hardware VTEP tables.

Syntax `openvswitch-hwvtep-dump`

name *name-string*	Specify the name of the service config.

Defaults None

Access CLI

History

Usage Use this command to create a dump of OVSDB hardware VTEP tables.

Examples To generate a dump of OVSDB hardware VTEP tables, use the command:

```
CLI (network-admin@switch) > openvswitch-hwvtep-dump
```

openvswitch-hwvtep-manager-add

Open vSwitch is a multilayer virtual switch licensed by Apache 2.0. It is designed to enable massive network automation through programmable extensions. This command adds an Open vSwitch interface to the switch.

Syntax `openvswitch-hwvtep-manager-add`

`name` *`name-string`*	This parameter is not configurable. It defaults to the name that you used to create the Open vSwitch service.
Specify one or both of the following options:	
`manager-type odl|nsx`	Specify the type of HWVTEP manager.
`connection-method unix-socket|tcp|unix-socket-listen|tcp-listen|ssl|default`	Specify the connection method for the HWVTEP manager interface.
`ip` *`ip-address`*	Specify the IP address of the controller.
`username` *`username-string`*	Specify the username.
`password` *`password-string`*	Specify the password.
`port` *`port-number`*	Specify the port number of the database.
`auto-service-binding|no-auto-service-binding`	Specify if you want a VTEP automatically or manually added as a hardware device to NSX.

Defaults None

Access CLI

History

Version 2.4.0	Command introduced.
Version 2.6.0	The parameters, `manager-type`, `username`, and `password`, added.
Version 3.0.0	The parameter, `auto-service-binding|no-auto-service-binding`, added.

Usage Use this command to add an HWVTEP manager interface.

Examples To add an HWVTEP manager interface, hwvtep-1, use the following command:

```
CLI (network-admin@switch) > openvswitch-hwvtep-manager-add name hwvtep-1
```

openvswitch-hwvtep-manager-remove

Open vSwitch is a multilayer virtual switch licensed by Apache 2.0. It is designed to enable massive network automation through programmable extensions. This command removes a HWVTEP manager interface to the switch.

Syntax `openvswitch-hwvtep-manager-remove`

name *name-string*	This parameter is not configurable. It defaults to the name that you used to create the Open vSwitch service.
ip *ip-address*	Specify the IP address of the database.

Defaults None

Access CLI

History Command introduced in Version 2.4.

Usage Use this command to remove an HWVTEP manager interface.

Examples To remove an Open vSwitch controller, hwvtep-1, use the following command:

```
CLI (network-admin@switch) > openvswitch-hwvtep-manager-remove name
hwvtep-1
```

openvswitch-hwvtep-manager-show

Open vSwitch is a multilayer virtual switch licensed by Apache 2.0. It is designed to enable massive network automation through programmable extensions. This command displays information about a HWVTEP interface to the switch.

Syntax `openvswitch-hwvtep-manager-show`

`name` *`name-string`*	This parameter is not configurable. It defaults to the name that you used to create the Open vSwitch service.
Specify one or both of the following options:	
`manager-type odl|nsx`	Displays the type of HWVTEP manager.
`ip` *`ip-address`*	Displays the IP address of the database.
`controller-ip` *`ip-address`*	Displays the IP address of the controller.
`connection-method unix-socket|tcp|unix-socket-listen| tcp-listen| ssl|default`	Displays the connection method for the HWVTEP manager interface.
`username` *`username-string`*	Displays the username.
`password` *`password-string`*	Specify the password.
`port` *`port-number`*	Displays the port number of the database.
`status` *`status`*	Displays the controller status.
`auto-service-binding|no-auto-service-binding`	Displays if a VTEP is automatically or manually added as a hardware device to NSX.

Defaults None

Access CLI

History

Version 2.4.0	Command introduced.
Version 2.6.0	The parameters, `manager-type`, `username`, and `controller-ip`, added.
Version 3.0.0	The parameter, `auto-service-binding| no-auto-service-binding`, added.

Usage Use this command to display an Open vSwitch interface.

Examples To display a HWVTEP manager, hwvtep-1, use the following command:

```
CLI (network-admin@switch) > openvswitch-hwvtep-manager-show name
hwvtep-1
```

openvswitch-interface-add

Open vSwitch is a multilayer virtual switch licensed by Apache 2.0. It is designed to enable massive network automation through programmable extensions. This command adds an Open vSwitch interface to the switch.

Syntax `openvswitch-interface-add`

`ovs-name` *`name-string`*	This parameter is not configurable. It defaults to the name that you used to create the Open vSwitch service.
Specify one or both of the following options:	
`ip` *`ip-address`*	Specify the IP address for the interface.
`netmask netmask`	Specify the netmask.
`assignment none|static|dhcp|dhcpv6|autov6`	Specify the method of IP address assignment.
`linklocal` *`ip-address`*	Specify the IPv6 Link Local address.
`vnet` *`vnet-name`*	Specify interface VLAN vNET.
`bd` *`bridge-domain name`*	Specify the bridge domain name.
`vlan` *`vlan-id`*	Specify the VLAN assigned to the interface.
`vlan-type public|private`	Specify the type of VLAN for the interface.
`if mgmt|data|span`	Specify the interface type.
`alias-on alias-on-string`	Specify an alias if desired.
`exclusive|no-exclusive`	Specify if the interface is exclusive or not.
`nic-enable|nic-disable`	Specify if the NIC is enabled or disabled.
`vrrp-id` *`id`*	Specify the ID assigned by VRRP.
`vrrp-primary vrrp-primary-string`	Specify the primary interface for VRRP.
`vrrp-priority 0..254`	Specify the VRRP priority for the interface.
`vrrp-adv-int` *`milliseconds`*	Specify the VRRP advertisement interval in milliseconds. The range is 10 to 40950 with a default value of 1000.
`vrrp-preempt-mode disable|enable`	Used to allow/prevent high priority BACKUP from becoming MASTER.
`secondary-macs secondary-macs-string`	Specify a secondary MAC address for the interface.
`if-nat-realm internal|external`	Specify the NAT interface realm.
`priority-tag|no-priority-tag`	Specify the VLAN 0 priority tag on forwarded traffic.

Defaults None

Access CLI

History

Version 2.4	Command introduced.
Version 2.4.1	The parameter, `vxlan`, deprecated. The parameter, `vlan-type`, added.
Version 2.6.2	The parameter, `if-nat-realm`, added.
Version 3.1.0	The parameter, `priority-tag|no-priority-tag`, added.

Usage Use this command to add an Open vSwitch interface.

Examples To add an Open vSwitch interface for OVS **openvswitch-1**, use the following command:

```
CLI (network-admin@switch) > openvswitch-interface-add  ovs-name
openvswitch-1 ip 10.10.10.10 vlan 20
```

openvswitch-interface-modify

Open vSwitch is a multilayer virtual switch licensed by Apache 2.0. It is designed to enable massive network automation through programmable extensions. This command modifies an Open vSwitch interface to the switch.

Syntax `openvswitch-interface-modify`

`ovs-name` *`name-string`*	This parameter is not configurable. It defaults to the name that you used to create the Open vSwitch service.
Specify one or both of the following options:	
`ip` *`ip-address`*	Specify the IP address for the interface.
`netmask netmask`	Specify the netmask.
`assignment none|static|dhcp|dhcpv6|autov6`	Specify the method of IP address assignment.
`linklocal` *`ip-address`*	Specify the IPv6 Link Local address.
`vnet` *`vnet-name`*	Specify interface VLAN vNET.
`bd` *`bridge-domain name`*	Specify the bridge domain name.
`vlan` *`vlan-id`*	Specify the VLAN assigned to the interface.
`vlan-type public|private`	Specify the type of VLAN for the interface.
`if mgmt|data|span`	Specify the interface type.
`alias-on alias-on-string`	Specify an alias if desired.
`exclusive|no-exclusive`	Specify if the interface is exclusive or not.
`nic-enable|nic-disable`	Specify if the NIC is enabled or disabled.
`vrrp-id` *`id`*	Specify the ID assigned by VRRP.
`vrrp-primary vrrp-primary-string`	Specify the primary interface for VRRP.
`vrrp-priority 0..254`	Specify the VRRP priority for the interface.
`vrrp-adv-int` *`milliseconds`*	Specify the VRRP advertisement interval in milliseconds. The range is 10 to 40950 with a default value of 1000.
`vrrp-preempt-mode disable|enable`	Used to allow/prevent high priority BACKUP from becoming MASTER.
`secondary-macs secondary-macs-string`	Specify a secondary MAC address for the interface.
`if-nat-realm internal|external`	Specify the NAT interface realm.
`priority-tag|no-priority-tag`	Specify the VLAN 0 priority tag on forwarded traffic.

Defaults None

Access CLI

History

Version 2.4	Command introduced.
Version 2.4.1	The parameter, `vxlan`, deprecated. The parameter, `vlan-type`, added.
Version 2.6.2	The parameter, `if-nat-realm`, added.
Version 3.1.0	The parameter, `priority-tag|no-priority-tag`, added.

Usage Use this command to modify an Open vSwitch interface.

Examples To modify an Open vSwitch interface and enable the NIC, openvswitch-1, use the following command:

```
CLI (network-admin@switch) > openvswitch-interface-modify  name
openvswitch-1  nic-enable
```

openvswitch-interface-remove

Open vSwitch is a multilayer virtual switch licensed by Apache 2.0. It is designed to enable massive network automation through programmable extensions. This command removes an Open vSwitch interface to the switch.

Syntax `openvswitch-interface-remove`

`ovs-name` *`name-string`*	This parameter is not configurable. It defaults to the name that you used to create the Open vSwitch service.
Specify the following interface option:	
`nic` *`nic-string`*	Specify the NIC to remove from the interface.
`l3-port` *`l3port-usable-port-name`*	Specify the Layer 3 port.

Defaults None

Access CLI

History Command introduced in Version 2.4.

Usage Use this command to remove an Open vSwitch interface.

Examples To remove an Open vSwitch, openvswitch-1, use the following command:

```
CLI (network-admin@switch) > openvswitch-interface-remove  name
openvswitch-1
```

openvswitch-interface-show

Open vSwitch is a multilayer virtual switch licensed by Apache 2.0. It is designed to enable massive network automation through programmable extensions. This command displays information about an Open vSwitch interface to the switch.

Syntax `openvswitch-interface-show`

`ovs-name` *`name-string`*	This parameter is not configurable. It defaults to the name that you used to create the Open vSwitch service.
Specify one or both of the following options:	
`nic` *`nic-string`*	virtual NIC assigned to interface
`ip` *`ip-address`*	Specify the IP address for the interface.
`netmask netmask`	Specify the netmask.
`assignment none|static|dhcp|dhcpv6|autov6`	Specify the method of IP address assignment.
`ip2` *`ip-address`*	Second IP address.
`netmask2 netmask`	Second IP netmask.
`assignment2 none|static|dhcp|dhcpv6|autov6`	Type of IP address assignment.
`linklocal` *`ip-address`*	Specify the IPv6 Link Local address.
`assignment-linklocal none|static|dhcp|dhcpv6|autov6`	Type of IPv6 linklocal address assignment
`mac mac-address`	Interface MAC address.
`vnet` *`vnet-name`*	Specify interface VLAN vNET.
`bd` *`bridge-domain name`*	Specify the bridge domain name.
`vlan` *`vlan-id`*	Specify the VLAN assigned to the interface.
`vlan-type public|private`	Specify the type of VLAN for the interface.
`public-vlan 0..4095`	Interface public VLAN.
`if mgmt|data|span`	Specify the interface type.
`alias-on alias-on-string`	Specify an alias if desired.
`exclusive|no-exclusive`	Specify if the interface is exclusive or not.
`nic-enable|nic-disable`	Specify if the NIC is enabled or disabled.
`nic-state down|up`	The NIC state.
`is-primary true|false`	Primary VRRP interface.
`is-primary2 true|false`	Primary VRRP interface for Second IP.

`vrrp-id` *`id`*	Specify the ID assigned by VRRP.
`vrrp-primary vrrp-primary-string`	Specify the primary interface for VRRP.
`vrrp-priority 0..254`	Specify the VRRP priority for the interface.
`vrrp-adv-int` *`milliseconds`*	Specify the VRRP advertisement interval in milliseconds. The range is 10 to 40950 with a default value of 1000.
`vrrp-state slave|master`	State of VRRP.
`vrrp-preempt-mode disable|enable`	Used to allow/prevent high priority BACKUP from becoming MASTER.
`secondary-macs` *`secondary-macs-string`*	Specify a secondary MAC address for the interface.
`if-nat-realm internal|external`	Specify the NAT interface realm.
`priority-tag|no-priority-tag`	Specify the VLAN 0 priority tag on forwarded traffic.
`vrf` *`vrf-name`*	Name of VRF.
`sec-addresses` *`sec-addresses-number`*	Number of IP and IPv6 addresses configured on this interface.

Defaults None

Access CLI

History

Version 2.4	Command introduced.
Version 2.4.1	The parameter, `vxlan`, deprecated. The parameter, `vlan-type`, added.
Version 2.6.2	The parameter, `if-nat-realm`, added.
Version 3.1.0	The parameter, `priority-tag|no-priority-tag`, added.

Usage Use this command to display interface information about an Open vSwitch interface.

Examples To display information about an Open vSwitch interface, openvswitch-1, use the following command:

```
CLI (network-admin@switch) > openvswitch-interface-show name
openvswitch-1
```

P Commands

pager

Syntax `pager on|off`

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage This command is used to paginate long show output in the CLI.

Examples To set the pagination to on, use the following command:

```
CLI (network-admin@switch) > pager on
```

ping

This command is used to verify connectivity on the network.

Syntax `ping [-s] host`

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1

Usage Ping another device on the network to ensure connectivity on the network.

Examples Ping 192.10.10.1 using the following syntax:

```
CLI (network-admin@switch) > ping 192.10.10.1
192.10.1.1 is alive
```

or

```
CLI (network-admin@switch) > ping 10.9.9.1
PING 10.9.9.1 (10.9.9.1) 56(84) bytes of data.
64 bytes from 10.9.9.1: icmp_seq=1 ttl=255 time=0.229 ms
64 bytes from 10.9.9.1: icmp_seq=2 ttl=255 time=0.224 ms
64 bytes from 10.9.9.1: icmp_seq=3 ttl=255 time=0.248 ms
64 bytes from 10.9.9.1: icmp_seq=4 ttl=255 time=0.164 ms
64 bytes from 10.9.9.1: icmp_seq=5 ttl=255 time=0.123 ms
64 bytes from 10.9.9.1: icmp_seq=6 ttl=255 time=0.180 ms
64 bytes from 10.9.9.1: icmp_seq=7 ttl=255 time=0.121 ms
64 bytes from 10.9.9.1: icmp_seq=8 ttl=255 time=0.160 ms
64 bytes from 10.9.9.1: icmp_seq=9 ttl=255 time=0.149 ms
64 bytes from 10.9.9.1: icmp_seq=10 ttl=255 time=0.164 ms
```

pn-script-run

Netvisor ONE version 5.1.0 provides the ability to run shell commands or scripts using a REST API or through CLI commands. As a network administrator or as an admin user, you can run the scripts from the directories /opt/nvOS/bin/pn-scripts directory for packaged scripts or /usr/bin/pn-scripts directory for custom scripts, as Netvisor delivers all files as part of pn-upgrade agent package.

Syntax `pn-script-run`

`name` *`name-string`*	Specify the name of the script.

Defaults None.

Access CLI

History Command introduced in Version 5.1.0

Usage Run built-in or user scripts on a switch.

Example To run a built-in script, use the following syntax:

```
CLI (network-admin@switch)01> pn-script-run name testscript.sh
```

pn-script-show

Syntax `pn-script-show`

name *name-string*	Specify the name of the script.

Defaults None.

Access CLI

History Command introduced in Version 5.1.0

Usage Displays built-in or user scripts on a switch.

Example To display built-in scripts, use the following syntax:

```
CLI network-admin@switch > pn-script-show
   switch:  pn-lab1
   pn-lab1:  /opt/nvOS/bin/pn-scripts/:
   testscript.sh
   pn-testscript.sh
```

port-association-create

This command is used to create port associations and assign policies to them. Port association groups are used to enable switch failover. It requires a 10G link between two switches.

Caution! Using the virtual-wire parameter places the switch into the Virtual Wire mode and disables other features on the switch. This parameter requires a license. Please contact your sales person or local partner for more information.

Syntax `port-association-create`

`name` *`name-string`*	Specify a name for the port association.
`master-ports` *`port-list`*	Specify a list of ports to act as master ports.
`slave-ports` *`port-list`*	Specify a list of ports to act as slave ports.
`virtual-wire|no-virtual-wire`	Specify if you want the associated ports to form a "virtual wire". Once you put the switch into virtual wire mode, you disable all other features on the switch.
`bidir|no-bidir`	Specify if you want the port state tracking to be bi-directional or not.
`policy all-masters|any-master`	Specify a policy for the port association. The default is `all-masters`.
`monitor-ports` *`port-list`*	Specify a list of ports not used by port association to monitor.
`enable|no-enable`	Specify if you want to enable port association in hardware.

Defaults None

Access CLI

History

Version 2.2.6	Command introduced.
Version 2.4	The parameter, `virtual-wire`, and `bidir` added.
Version 2.5.2	The parameter, `monitor-ports` *`port-list`*, added.
Version 3.0.0	The parameter, `enable`, added.

Usage Use this command to create port associations.

Examples To create a port association, ports-assoc, with a master port list of ports 11-12, and slave port list of 45-46, use the following command:

```
CLI (network-admin@switch) > port-association-create name ports-assoc
master-ports 11-12 slave-ports 45-46
```

port-association-delete

This command is used to delete port associations.

Syntax `port-association-delete name name-string`

Defaults None

Access CLI

History Command added in Version 2.2.6.

Usage Use this command to delete port associations.

Examples To delete a port association, ports-assoc, use the following command:

```
CLI (network-admin@switch) > port-association-delete name ports-assoc
```

port-association-modify

This command is used to modify port associations.

Syntax `port-association-modify`

`name` *`name-string`*	Specify a name for the port association.
Specify one or more of the following options:	
`master-ports` *`port-list`*	Specify a list of ports to act as master ports.
`slave-ports` *`port-list`*	Specify a list of ports to act as slave ports.
`policy all-masters|any-master`	Specify a policy for the port association. The default is `all-masters`.
`virtual-wire|no-virtual-wire`	Specify if you want the associated ports to form a "virtual wire". Once you put the switch into virtual wire mode, you disable all other features on the switch.
`bidir|no-bidir`	Specify if you want the port state tracking to be bi-directional or not.
`monitor-ports` *`port-list`*	Specify a list of ports not used by port association to monitor.
`enable|no-enable`	Specify if you want to enable port association in hardware.

Defaults None

Access CLI

History

Version 2.2.6	Command introduced.
Version 2.4	The parameter, `virtual-wire`, and `bidir` added.
Version 2.5.2	The parameter, `monitor-ports` *`port-list`*, added.
Version 3.0.0	The parameter, `enable`, added.

Usage Use this command to modify port associations.

Examples To modify a port association, ports-assoc, and change the slave port list to 71-72, use the following command:

```
CLI (network-admin@switch) > port-association-modify name ports-assoc
slave-ports 71-72
```

port-association-show

Use this command to display port associations.

Syntax `port-association-show`

`name` *`name-string`*	Specify a name for the port association.
`master-ports` *`port-list`*	Specify a list of ports to act as master ports.
`slave-ports` *`port-list`*	Specify a list of ports to act as slave ports.
`policy all-masters|any-master`	Specify a policy for the port association.
`virtual-wire|no-virtual-wire`	Specify if you want the associated ports to form a "virtual wire". Once you put the switch into virtual wire mode, you disable all other features on the switch.
`bidir|no-bidir`	Specify if you want the port state tracking to be bi-directional or not.
`monitor-ports` *`port-list`*	Specify a list of ports not used by port association to monitor.
`enable|no-enable`	Specify if you want to enable port association in hardware.

Defaults None

Access CLI

History

Version 2.2.6	Command introduced.
Version 2.4	The parameter, `virtual-wire`, and `bidir` added.
Version 2.5.2	The parameter, `monitor-ports` *`port-list`*, added.
Version 3.0.0	The parameter, `enable`, added.

Usage Use this command to display port associations.

Examples To display a port association, ports-assoc, with a master port list of ports 11-12, and slave port list of 45-46, use the following command:

```
CLI (network-admin@switch) > port-association-show name ports-assoc
```

port-association-path-create

The Inline Service feature manages service chains for Layer 1 Virtual Wire switches. The term, Inline Services, refers to services attached to a Layer 1 Virtual Wire switch such as Next-Generation Firewall (NGFW), Intrusion Detection System (IDS), Intrusion Prevention System (IPS), and Distributed Denial of Service attack (DDoS) Prevention.

When an Inline Service fails, a policy determines if traffic is allowed to bypass the Inline Services or if the traffic is blocked until the Inline Services recovers.

This command is used to add a port association path.

Syntax `port-association-path-create`

`name` *`name-string`*	Specify a name for the port association to apply the service.
`topology topology name`	Specify a fabric topology name.
`node1 fabric-node name`	Specify the name of the fabric node.
`node1-port node1-port-number`	Specify the port on the node 1.
`node2 fabric-node name`	Specify the name for link node 2
`node2-port node2-port-number`	Specify the port on the node 2.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to create a port association path.

Examples To create a port association path from switch1 to switch2, use the following syntax:

```
CLI (network-admin@switch) > port-association-path-create name path1
node1 switch1 node1-port 20 node2 switch2 node2-port 30
```

port-association-path-delete

The Inline Service feature manages service chains for Layer 1 Virtual Wire switches. The term, Inline Services, refers to services attached to a Layer 1 Virtual Wire switch such as Next-Generation Firewall (NGFW), Intrusion Detection System (IDS), Intrusion Prevention System (IPS), and Distributed Denial of Service attack (DDoS) Prevention.

When an Inline Service fails, a policy determines if traffic is allowed to bypass the Inline Services or if the traffic is blocked until the Inline Services recovers.

This command is used to delete a port association path.

Syntax `port-association-path-delete`

`name` *`name-string`*	Specify a name for the port association to apply the service.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to create a port association path.

Examples To delete a port association path, use the following syntax:

```
CLI (network-admin@switch) > port-association-path-create name path1
```

port-association-path-show

The Inline Service feature manages service chains for Layer 1 Virtual Wire switches. The term, Inline Services, refers to services attached to a Layer 1 Virtual Wire switch such as Next-Generation Firewall (NGFW), Intrusion Detection System (IDS), Intrusion Prevention System (IPS), and Distributed Denial of Service attack (DDoS) Prevention.

When an Inline Service fails, a policy determines if traffic is allowed to bypass the Inline Services or if the traffic is blocked until the Inline Services recovers.

This command is used to display a port association path configuration.

Syntax `port-association-path-show`

`name` *`name-string`*	Specify a name for the port association to apply the service.
`topology topology name`	Fabric topology name.
`node1 fabric-node name`	The name of the fabric node.
`node1-port node1-port-number`	The port on the node 1.
`node2 fabric-node name`	The name for link node 2
`node2-port node2-port-number`	The port on the node 2.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to display a port association path configuration.

Examples To create a port association path from switch1 to switch2, use the following syntax:

```
CLI (network-admin@switch) > port-association-path-show name path1
```

port-association-service-add

The Inline Service feature manages service chains for Layer 1 Virtual Wire switches. The term, Inline Services, refers to services attached to a Layer 1 Virtual Wire switch such as Next-Generation Firewall (NGFW), Intrusion Detection System (IDS), Intrusion Prevention System (IPS), and Distributed Denial of Service attack (DDoS) Prevention.

When an Inline Service fails, a policy determines if traffic is allowed to bypass the Inline Services or if the traffic is blocked until the Inline Services recovers.

This command is used to add a port association service.

Syntax `port-association-service-add`

`port-association-name` *`name-string`*	Displays the name of the port association to apply the service.
`switch` *`name-string`*	Displays the switch name where the service is located.
`inline-service` *`inline-service-name`*	Displays the name of the Inline Service.
`order` *`number`*	Displays a number to designate the order of the service. This is a value between 1 and 65535
`policy-action fail-open|fail-closed`	Displays a policy action when the service fails on the network.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to add a port association service.

Examples To add a port association service on leaf1, inline-service, NGFW, order 1, and fail-policy fail-open, use the following syntax:

```
CLI (network-admin@switch) > port-association-service-add port-association-name CHAIN switch leaf1 inline-service NGFW order 1 fail-policy fail-open
```

port-association-service-modify

The Inline Service feature manages service chains for Layer 1 Virtual Wire switches. The term, Inline Services, refers to services attached to a Layer 1 Virtual Wire switch such as Next-Generation Firewall (NGFW), Intrusion Detection System (IDS), Intrusion Prevention System (IPS), and Distributed Denial of Service attack (DDoS) Prevention.

When an Inline Service fails, a policy determines if traffic is allowed to bypass the Inline Services or if the traffic is blocked until the Inline Services recovers.

This command is used to modify a port association service.

Syntax `port-association-service-modify`

`port-association-name` *`name-string`*	Displays the name of the port association to apply the service.
`switch` *`name-string`*	Displays the switch name where the service is located.
`inline-service` *`inline-service-name`*	Displays the name of the Inline Service.
`order` *`number`*	Displays a number to designate the order of the service. This is a value between 1 and 65535
`policy-action fail-open|fail-closed`	Displays a policy action when the service fails on the network.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to add a port association service.

Examples To modify a port association service and change the inline-service to IDS, use the following syntax:

```
CLI (network-admin@switch) > port-association-service-modify port-association-name CHAIN inline-service NGFW
```

port-association-service-remove

The Inline Service feature manages service chains for Layer 1 Virtual Wire switches. The term, Inline Services, refers to services attached to a Layer 1 Virtual Wire switch such as Next-Generation Firewall (NGFW), Intrusion Detection System (IDS), Intrusion Prevention System (IPS), and Distributed Denial of Service attack (DDoS) Prevention.

When an Inline Service fails, a policy determines if traffic is allowed to bypass the Inline Services or if the traffic is blocked until the Inline Services recovers.

This command is used to remove a port association service.

Syntax `port-association-service-add`

`port-association-name` *`name-string`*	Displays the name of the port association to apply the service.
`switch` *`name-string`*	Displays the switch name where the service is located.
`inline-service` *`inline-service-name`*	Displays the name of the Inline Service.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to remove a port association service.

Examples To remove a port association service on leaf1, inline-service, NGFW, use the following syntax:

```
CLI (network-admin@switch) > port-association-service-remove port-association-name CHAIN switch leaf1 inline-service NGFW
```

port-association-service-show

The Inline Service feature manages service chains for Layer 1 Virtual Wire switches. The term, Inline Services, refers to services attached to a Layer 1 Virtual Wire switch such as Next-Generation Firewall (NGFW), Intrusion Detection System (IDS), Intrusion Prevention System (IPS), and Distributed Denial of Service attack (DDoS) Prevention.

When an Inline Service fails, a policy determines if traffic is allowed to bypass the Inline Services or if the traffic is blocked until the Inline Services recovers.

This command is used to display information about a port association service.

Syntax `port-association-service-show`

`port-association-name` *`name-string`*	Displays the name of the port association to apply the service.
`switch` *`name-string`*	Displays the switch name where the service is located.
`inline-service` *`inline-service-name`*	Displays the name of the Inline Service.
`order` *`number`*	Displays a number to designate the order of the service. This is a value between 1 and 65535
`policy-action fail-open|fail-closed`	Displays a policy action when the service fails on the network.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to display information about a port association service.

Examples To display information about a port association service, use the following syntax:

```
CLI (network-admin@switch) > port-association-service-show
```

port-buffer-settings-modify

You can modify the buffer utilization settings for ports on a switch.

Syntax `port-buffer-settings-modify`

Specify one or more of the following options:

`enable|disable`	Specify if you want to disable port buffering. Port buffering is enabled by default.
`interval duration: #d#h#m#s`	Specify the interval for buffering on the port.
`disk-space disk-space-number`	Specify the disk space for storing the buffer.

Defaults None

Access CLI

History Command introduced in Version 2.2.1.

Usage In some cases, you may want to buffer packets leaving and entering the ports on the switch.

Examples To modify the interval from the default value of 1 minute to 2 minutes, use the following command:

```
CLI (network-admin@switch) > port-buffer-settings-modify interval 2m
```

port-buffer-settings-show

You can display the buffer utilization settings for ports on a switch.

Syntax `port-buffer-settings-show`

Defaults None

Access CLI

History Command introduced in Version 2.2.1.

Usage In some cases, you may want to buffer packets leaving and entering the ports on the switch.

Examples To display the buffer information, use following command:

```
CLI (network-admin@switch) > port-buffer-settings-show
switch:     Spine-1
enable:     yes
interval:   1m
disk-space: 50M
```

port-buffer-show

You can display the buffer utilization, percentage and size, for ports on a switch.

Syntax `port-buffer-show`

`time date/time: yyyy-mm-ddThh:mm:ss`	Specify a time to display port buffering.
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Specify a start time to display port buffering.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Specify an end time to display port buffering.
`duration duration: #d#h#m#s`	Specify a duration to display port buffering.
`interval duration: #d#h#m#s`	Specify an interval to display port buffering.
`since-start`	Specify a start time to display port buffering.
`older-than duration: #d#h#m#s`	Specify an older-than time period to display port buffering.
`within-last duration: #d#h#m#s`	Specify a within last time period to display port buffering.
`port port-list`	Specify a port list.

Defaults None

Access CLI

History Command introduced in Version 2.2.1.

Usage In some cases, you may want to buffer packets leaving and entering the ports on the switch.

Examples To display the buffer information, use following command:

```
CLI (network-admin@switch) > port-buffer-show format all layout
vertical
switch:               Pleiades24
port:                 65
ingress-used-buf:     0%
ingress-used-buf-val: 0
egress-used-buf:      0%
egress-used-buf-val:  0
switch:               Pleiades24
port:                 66
ingress-used-buf:     0%
ingress-used-buf-val: 0
egress-used-buf:      0%
egress-used-buf-val:  0
```

```
switch:                Pleiades24
port:                  69
ingress-used-buf:      0%
ingress-used-buf-val:  0
egress-used-buf:       0%
egress-used-buf-val:   0
switch:                Pleiades24
port:                  70
ingress-used-buf:      0%
ingress-used-buf-val:  0
egress-used-buf:       0%
egress-used-buf-val:   0
switch:                Pleiades24
port:                  71
ingress-used-buf:      0%
ingress-used-buf-val:  0
egress-used-buf:       0%
egress-used-buf-val:   0
switch:                Pleiades24
port:                  72
ingress-used-buf:      0%
ingress-used-buf-val:  0
egress-used-buf:       0%
egress-used-buf-val:   0
```

port-bw-threshold-alert-modify

This command is used to modify port bandwidth monitoring.

Syntax `port-bw-threshold-alert-modify`

`port` *`port-list`*	Specify the list of ports to be monitored.
`bw-threshold` *`bw-thresholdstring`*	Specify the bandwidth threshold as a percentage of the total bandwidth of the ports. The default value is 0, which means that bandwidth monitoring is disabled by default.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to modify port bandwidth monitoring.

Examples To configure the bandwidth threshold as 25 percent for ports 24 to 26, use the command:

```
CLI (network-admin@switch) > port-bw-threshold-alert-modify port 24-26
bw-threshold 25
```

port-bw-threshold-alert-show

This command is used to display port bandwidth monitoring.

Syntax `port-bw-threshold-alert-show`

`port` *`port-list`*	Specify the list of ports to be monitored.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display port bandwidth monitoring.

Examples To configure the bandwidth threshold as 25 percent for ports 24 to 26, use the command:

```
CLI (network-admin@switch) > port-bw-threshold-alert-show
switch port bw-threshold
------ ---- ------------
switch 24   25%
switch 25   25%
switch 26   25%
```

port-bw-threshold-mon-int-modify

This command is used to modify port bandwidth monitoring interval.

Syntax `port-bw-threshold-mon-int-modify`

`monitor-interval` *`10..300`*	Specify a port bandwidth monitoring interval. The allowed range of values is between 10 and 300 seconds. The default value is 30 seconds.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to modify port bandwidth monitoring interval.

Examples To set a port bandwidth monitoring interval of 45 seconds, use the command:

```
CLI (network-admin@switch) > port-bw-threshold-mon-int-modify monitor-interval 45
```

port-bw-threshold-mon-int-show

This command is used to display port bandwidth monitoring interval.

Syntax `port-bw-threshold-mon-int-show`

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display port bandwidth monitoring interval.

Examples To display the monitoring interval configuration, use the command:

```
CLI (network-admin@switch) > port-bw-threshold-mon-int-show
 monitor-interval: 45
```

Port Configuration Commands

port-config-modify

This command is used to modify port configuration on a switch. You can use this command to configure breakout of ports.

Syntax `port-config-modify`

`port` *`port-list`*	Specify a single port or a list of ports. **Note:** If more than one port is specified, the list must be comma-separated without spaces.
Specify any of the following options:	
`intf` *`intf-number`*	Specify a physical interface for the port.
`speed disable|10m|100m|1g|2.5g|10g|25|40g|50g|100g`	Specify the port speed. Ports configured for speeds of 1G must be equipped with SFP transceivers. Ports configured for 10G or higher must be equipped with SFP+ or QSFP+ transceivers.
`egress-rate-limit unlimited`	Specify an egress rate limit for the port.
`eth-mode [sr4|lr4|cr4|caui4|sr|lr|cr]`	Select one of the ethernet modes from the available options.
`autoneg|no-autoneg`	Specify if the port auto-negotiates the port speed with a peer.
`jumbo|no-jumbo`	Specify if the port forwards jumbo frames. Jumbo frames are Ethernet frames with more than 1500 bytes of payload.
`enable|disable`	Specify if the port is enabled and forwards or drops frames.
`lacp-priority` *`integer`*	Specify the LACP priority for the port. If you specify a low value for the priority, the port has a higher priority. This is a value between 1 and 65535.
`reflect|no-reflect`	Specify if the port reflects frames received for loopback testing.

`edge-switch|no-edge-switch`	Specify if the port connects to another Pluribus Networks device or is an uplink to a third-party switch or host.
`pause|no-pause`	Specify if you want to pause traffic on the port.
`description` *`description-string`*	Specify a description for the port.
`loopback|no-loopback`	Specify to use loopback or no loopback.
`vxlan-termination|no-vxlan-termination`	Specify if a VXLAN terminates on a port.
`mirror-receive-only|no-mirror-receive-only`	Specify if the port receives mirrored traffic only.
`port-mac-address` *`mac-address`*	Specify the MAC address for the physical port.
`loop-vlans` *`vlan-list`*	Specifies VLANs that are looping on the network.
`send-port` *`send-port-number`*	Specify the port to send traffic.
`routing|no-routing`	Specify if the port is participating in routing on the switch.
`defer-bringup|no-defer-bringup`	Specify if you want to delay port activation.
`host-enable|host-disable`	Specify if you want host-facing ports enabled or disabled.
`crc-check-enable|crc-check-disable`	Specify if you want CRC checking performed by the port. This is applicable to a switch in Virtual Wire mode. The default value is `crc-check-disable`.
`dscp-map dscp-map name | none`	Specify a DSCP map name to enable on port.
`local-switching|no-local-switching`	Specify if local switching is allowed on the port.
`allowed-tpid vlan|q-in-q|q-in-q-old`	Specify the allowed TPID in addition to 0x8100 on VLAN header
`fabric-guard|no-fabric-guard`	Specify if you want loop detection enabled on

	the port.
`fec|no-fec|fec-auto`	Specify to enable port forward correction error (FEC) mode.

Defaults The default port speed is 10G per second. Autonegotiation and jumbo frames are disabled by default. The port is enabled by default.

Access CLI

History

Version 1.2	Command introduced.
Version 1.2.6	The optional parameters for LACP added.
Version 2.1	The parameters, `loopback`, `mirror-receive`, `port-mac-address`, `vlag-failover`, and `send-port` added. The parameter, `lacp-mode`, deprecated.
Version 2.2.6	The parameter, `egress-rate-limit`, introduced.
Version 2.3	The parameters, `rem-rswitch-port-mac`, and `routing|no-routing` added.
Version 2.4	The parameter, `host-enable`, and `loop-vlans` added.
Version 2.4.1	The parameter, `rem-port-mac-address`, deprecated. The parameter, `intf`, added.
Version 2.5.2	The parameter, `crc-check-enable|crc-check-disable`, introduced.
Version 2.5.3	The parameters, `reflect|no-reflect`, `vxlan-termination`, `dscp-map`, and `local-switching` added.
Version 2.6.0	The parameter, `fabric-guard`, and `allowed-tpid`, added.
Version 3.0.0	The parameter, `bw-bps`, added.

Version 5.1.0	The following parameter deprecated: • `bw-bps` The following parameters introduced: • additional Ethernet modes • `defer-bringup|no-defer-bringup` • `fec|no-fec|fec-auto`

Usage Server-switches are equipped with network data ports for host or inter-switch communication. This command configures the settings of a specific network data port of all data ports on the local switch.

Examples To configure port 17 on a switch to operate at 1 Gbps without jumbo frames, use the following command:

```
CLI (network-admin@switch) > port-config-modify port 17 speed 1G
autoneg off jumbo off
```

port-config-show

This command is used to display port settings on the switch.

Syntax `port-config-show`

`intf` *`intf-number`*	Displays the interface number.
`name` *`name-string`*	If configured, displays the name of the port. Otherwise, the field is blank.
`port` *`port-list`*	Displays a port or list of ports.
`speed disable|10m|100m|1g|2.5g|10g|25g|40g|50g|100g`	Displays the port speed. Ports configured for speeds of 1G must be equipped with SFP transceivers. Ports configured for 10G or higher must be equipped with SFP+ or QSFP+ transceivers.
`egress-rate-limit unlimited`	Displays the egress rate limit for the port.
`bw-bps` *`bw-bps-number`*	Specify the bandwidth bps for the port.
`eth-mode [sr4|lr4|cr4|caui4|sr|lr|cr]`	Displays the Ethernet mode.
`autoneg|no-autoneg`	Displays if the port auto-negotiates the port speed with a peer.
`jumbo|no-jumbo`	Displays if the port forwards jumbo frames. Jumbo frames are Ethernet frames with more than 1500 bytes of payload.
`enable|disable`	Displays if the port is enabled and forwards or drops frames.
`lacp-priority` *`integer`*	Displays the LACP priority for the port. This is a value between 1 and 65535 with a default value of 32768.
`reflect|no-reflect`	Displays if the port reflects frames received for loopback testing.
`edge-switch|no-edge-switch`	Displays if the port connects to another Pluribus Networks device or is an uplink to a

	third-party switch or host.
`pause|no-pause`	Displays if the port traffic is paused or not.
`description` *`description-string`*	Displays a description for the port.
`loopback|no-loopback`	Displays to use loopback or no loopback.
`vxlan-termination|no-vxlan-termination`	Displays if a VXLAN terminates on a port.
`mirror-receive-only|no-mirror-receive-only`	Displays if you want the port to receive mirrored traffic only.
`vle` *`vle name`*	Displays the vLE on this port.
`trunk-hw-id` *`trunk-hw-id-number`*	DisplaysDisplaysDisplays the trunk hardware ID assigned..
`trunk` *`trunk-name`*	Displays the trunk name for the port.
`vlag` *`vlag-name`*	Displays the VLAG for the port.
`send-port` *`send-port-number`*	Displays the port number to send in packets.
`loop-vlans` *`vlan-list`*	Displays the VLANs that are looping on the network.
`routing|no-routing`	Displays if the port is participating in routing on the switch.
`host-enable|host-disable`	Displays if you want host-facing ports enabled or disabled.
`crc-check-enable|crc-check-disable`	Displays if you want CRC checking performed by the port. This is applicable to a switch in Virtual Wire mode. The default value is `crc-check-disable`.
`defer-bringup|no-defer-bringup`	Specify if you want to delay port activation.
`dscp-map dscp-map name | none`	Displays a DSCP map name to enable on port.
`local-switching|no-local-switching`	Displays if local switching is allowed on the port.

`rhost` *`rhost-string`*	Displays the physical remote host.
`allowed-tpid q-in-q|q-in-q-old`	Specify the allowed TPID in addition to 0x8100 on VLAN header
`fabric-guard|no-fabric-guard`	Displays if you want loop detection enabled on the port.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 1.2.6	The optional parameters for LACP added.
Version 2.1	The parameters, `loopback`, `mirror-receive`, `vlag-failover`, and `send-port` added.
Version 2.2.6	The parameter, `egress-rate-limit`, introduced.
Version 2.3.1	Multiple parameters for LACP added.
Version 2.4	The parameter, `host-enable`, and `loop-vlans` added.
Version 2.4.1	The parameters, `lacp-fallback`, `lacp-fallback-timeout` and `lacp-individual` deprecated.
Version 2.5.2	The parameter, `crc-check-enable|crc-check-disable`, introduced.
Version 2.5.3	The parameters, `reflect|no-reflect`, `vxlan-termination`, `dscp-map`, and `local-switching` added.
Version 2.6.0	The parameter, `fabric-guard`, and `allowed-tpid`, added.
Version 3.0.0	The parameter, `bw-bps`, added.

Version 5.1.0	The following parameter deprecated: • bw-bps The following parameters introduced: • additional Ethernet modes • defer-bringup|no-defer-bringup • fec|no-fec|fec-auto

Usage Server-switches are equipped with network data ports for host or inter-switch communication. This command configures the settings of a specific network data port of all data ports on the local switch.

Examples To display information about all ports on a switch, use the following command :

```
CLI (network-admin@switch) > port-config-show
switch:                          pleiades25
intf:                            10
name:
port:                            10
speed:                           10g
autoneg:                         off
jumbo:                           off
enable:                          on
lacp-priority:                   32768
reflect:                         off
edge-switch:                     no
pause:                           no
description:
loopback:                        default
mirror_only:                     default
rswitch-default-vlan:    0
port-mac-address:                06:b0:00:02:30:0a
```

port-cable-type-modify

The SerDes (serializer/deserializer) link in switch ports have several associated Signal Integrity (SI) parameters that help in shaping the output into a clean and well-defined signal based on the transmission line characteristics of the signal traces. This output shaping is used to cancel-out factors such as reflection and signal attenuation and enables the receiver to get a clean and well-defined signal. Collectively, these SI parameters are also known as pre-emphasis settings.

You can modify the pre-emphasis (Signal Integrity) settings for specified ports, by overriding the default settings.

Syntax `port-cable-type-modify`

`port` *`port-list`*	Specify the list of ports you want to associate with the cable type.
`type optical|dac`	Specify the port cable assembly type from one of the options.
`cable-sub-type` *`default|ca-n|ca-l|ca-s`*	Specify the port cable assembly type from one of the options. Note that this optional parameter is applicable only for DAC cable types. **Note:** The cable sub type (N, L, or S) is a hardware specific parameter based on the material used by the cable manufacturer. Hence, you must consult the vendor specification to identify the cable assembly type before configuring this parameter.

Defaults None

Access Network Administrator

History Command introduced in version 6.0.0.

Usage Use this command to associate a cable type with ports.

Examples To modify the cable type of port 1 to optical, use the command:

```
CLI (network-admin@switch) > port-cable-type-modify port 1 type
optical
```

port-cable-type-show

The SerDes (serializer/deserializer) link in switch ports have several associated Signal Integrity (SI) parameters that help in shaping the output into a clean and well-defined signal based on the transmission line characteristics of the signal traces. This output shaping is used to cancel-out factors such as reflection and signal attenuation and enables the receiver to get a clean and well-defined signal. Collectively, these SI parameters are also known as pre-emphasis settings.

You can display the pre-emphasis (Signal Integrity) settings for specified ports by using this command.

Syntax `port-cable-type-show`

`port` *`port-list`*	Specify the list of ports to be displayed.
`type optical|dac`	Specify the cable type to be displayed.
`cable-sub-type default|ca-n|ca-l|ca-s`	Specify the port cable assembly type from one of the options. Note that this optional parameter is applicable only for DAC cable types. **Note:** The cable sub type (N, L, or S) is a hardware specific parameter based on the material used by the cable manufacturer. Hence, you must consult the vendor specification to identify the cable assembly type before configuring this parameter.

Defaults None

Access Network Administrator

History Command introduced in version 6.0.0.

Usage Use this command to display pre-emphasis settings.

Examples To display the pre-emphasis settings on switch1, use the command:

CLI (network-admin@switch)1 > port-cable-type-show

```
switch  port  type     cable-sub-type
------- ----- -------- --------------
switch1 none  dac      ca-s
switch1 none  dac      ca-l
switch1 none  dac      ca-n
switch1 1-125 dac      default
switch1 none  optical  default
```

port-fec-stats-show

You can display the port FEC statistics by using this command.

Syntax `port-fec-stats-show`

`time date/time: yyyy-mm-ddTHH:mm:ss`	Specify a time of statistics collection.
`start-time date/time: yyyy-mm-ddTHH:mm:ss`	Specify a start time for statistics collection.
`end-time date/time: yyyy-mm-ddTHH:mm:ss`	Specify an end time for statistics collection.
`duration duration: #d#h#m#s`	Specify a duration time for statistics collection.
`interval duration: #d#h#m#s`	Specify an interval between statistics collection.
`since-start`	Specify statistics collection from a start time.
`older-than duration: #d#h#m#s`	Specify to display statistics collection older than the specified time.
`within-last duration: #d#h#m#s`	Specify a within-last time for statistics collection.
`port` *`port-list`*	Specify the port list to display FEC stats.
`BaseR-Fec-Corr` *`BaseR-Fec-Corr-number`*	Specify the number of Base-R FEC packets with correction.
`BaseR-Fec-UnCorr` *`BaseR-Fec-UnCorr-number`*	Specify the number of Base-R FEC packets without correction.
`Rs-Fec-Corr` *`Rs-Fec-Corr-number`*	Specify the number of RS FEC packets with correction.
`Rs-Fec-UnCorr` *`Rs-Fec-UnCorr-number`*	Specify the number of RS FEC packets without correction.

Defaults None

Access Network Administrator

History

Version 6.0.1	Command introduced.

Usage Use this command to display the port FEC stats.

Examples To display port FEC stats, use the following syntax:

```
CLI (network-admin@switch) > port-fec-stats-show
switch   time       port BaseR-Fec-Corr BaseR-Fec-UnCorr Rs-Fec-Corr Rs-Fec-UnCorr
-------- --------   ---- -------------- ---------------- ----------- -------------
sw-test1 12:34:00  5    0              0                0           0
sw-test1 12:34:00  7    0              0                0           0
sw-test1 12:34:00  8    0              0                0           0
sw-test1 12:34:00  9    0              0                0           0
sw-test1 12:34:00  10   0              0                0           0
sw-test1 12:34:00  17   0              0                0           0
```

port-fec-stats-clear

You can clear port FEC statistics by using this command.

Syntax `port-fec-stats-show`

`port` *`port-list`*	Specify the port list to clear FEC statistics.

Defaults None

Access Network Administrator

History

Version 6.0.1	Command introduced.

Usage Use this command to clear port FEC statistics.

Examples To display port FEC stats, use the following syntax:

```
CLI (network-admin@switch) > port-fec-stats-clear
```

port-fec-status-show

You can display the port FEC status by using this command.

Syntax `port-fec-status-show`

port *port-list*	Specify the port list to display FEC stats.
BaseR-Fec-Corr *BaseR-Fec-Corr-number*	Specify the FEC type of port.

Defaults None

Access Network Administrator

History

Version 6.0.1	Command introduced.

Usage Use this command to display the port FEC stats.

Examples To display port FEC status, use the following syntax:

```
CLI (network-admin@switch1) > port-fec-status-show
switch  port type
------- ---- ----
switch1 1    NONE
switch1 2    NONE
switch1 3    NONE
switch1 4    NONE
switch1 5    NONE
switch1 6    NONE
switch1 7    NONE
switch1 8    NONE
switch1 9    NONE
switch1 10   NONE
```

port-fec-stats-settings-modify

You can modify the port FEC statistics settings by using this command.

Syntax `port-fec-stats-settings-modify`

`enable|disable`	Specify if you want to enable or disable port FEC statistics collection.
`interval duration: #d#h#m#s`	Specify the interval for statistic collection.
`disk-space` *`disk-space-number`*	Specify the disk-space allocated for statistics (including rotated log files)

Defaults None

Access Network Administrator

History

Version 6.0.1	Command introduced.

Usage Use this command to modify the port FEC statistics settings.

Examples To enable port FEC statistics, use the following syntax:

```
CLI (network-admin@switch)1 > port-fec-stats-settings-modify  enable
```

port-fec-stats-settings-show

You can display the port FEC statistics settings by using this command.

Syntax `port-fec-stats-settings-show`

`enable|disable`	Specify if you want to enable or disable port FEC statistics collection.
`interval duration: #d#h#m#s`	Specify the interval for statistic collection.
`disk-space` *`disk-space-number`*	Specify the disk-space allocated for statistics (including rotated log files)

Defaults None

Access Network Administrator

History

Version 6.0.1	Command introduced.

Usage Use this command to display the port FEC statistics settings.

Examples To display port FEC statistics settings, use the following syntax:

```
CLI (network-admin@switch)1 > port-fec-stats-settings-show
switch:     switch1
enable:     yes
interval:   30m
disk-space: 50M
```

port-force-linkup-add

This command is used to add port(s) for link-up.

Syntax `port-force-linkup-add`

`port-id port-id-number`	Specify the ports allowed for force link-up.
`mode tx|rx`	Specifies the RX or TX side of the port.

Defaults None

Access Network Administrator

History

Version 7.0.0	Command introduced.

Usage Use this command to add port(s) for linkup.

Examples To add port(s) for linkup, use the following syntax:

```
CLI (network-admin@switch)1 > port-force-linkup-add
```

port-force-linkup-remove

This command is used to disable force link-up from ports.

Syntax `port-force-linkup-remove`

`port-id port-id-number`	Specify the ports allowed for link-up.

Defaults None

Access Network Administrator

History

Version 7.0.0	Command introduced.

Usage Use this command to add port(s) for linkup.

Examples To add port(s) for linkup, use the following syntax:

```
CLI (network-admin@switch)1 > port-force-linkup-remove
```

port-force-linkup-show

This command is used to display the port force link-up configuration.

Syntax `port-force-linkup-show`

`port-id port-id-number`	Specify the ports allowed for link-up.
`mode tx|rx`	Specifies the RX or TX side of the port.

Defaults None

Access Network Administrator

History

Version 7.0.0	Command introduced.

Usage Use this command to display the port force link-up configuration.

Examples To display the port force link-up configuration, use the following syntax:

```
CLI (network-admin@switch)1 > port-force-linkup-show
switch ports mode
------ ----- ---
switch 6     tx
```

port-cos-bw-modify

You can modify bandwidth guarantees on switch ports. Currently, Pluribus Networks switches allow rate limiting only for CPU facing (PCIe, data and span) ports. Using this feature, you can configure bandwidth guarantees at egress CoS (Class of Service) queue level and manage prioritized traffic. The feature is also used for setting SLAs (Service Level Agreements).

Once you modify the bandwidth, using the command, `post-cos-weight-modify`, no longer works to modify the CoS weight.

Syntax `port-cos-bw-modify`

`cos` *`integer`*	Specify the CoS priority between 0 and 9.
`port` *`port-list`*	Specify the physical port(s).
`min-bw-guarantee` *`min-bw-guarantee-string`*	Specify the minimum bandwidth as a percentage.
`max-bw-limit` *`max-bw-limit-string`*	Specify the maximum bandwidth as a percentage greater than 0.
`weight` *`priority`* `|no-priority`	Specify the scheduling weight, from 1 to 127, after the bandwidth guarantee is met.

Defaults None

Access Network Administrator

History

Version 2.6.0	Command introduced.
Version 3.0.0	The parameter, `weight`, added.
Version 6.0.1	Introduced CoS queues 8 and 9.

Usage Use this command to modify CoS bandwidth on a port or range of ports.

Examples To modify the CoS bandwidth to 10 for ports 2-10, use the following syntax:

```
CLI (network-admin@switch) > port-cos-bw-modify port 2-10 cos 5 min-bw
10
```

port-cos-bw-show

You can modify bandwidth guarantees on switch ports. Currently, Pluribus Networks switches allow rate limiting only for CPU facing (PCIe, data and span) ports. Using this feature, you can configure bandwidth guarantees at egress CoS (Class of Service) queue level and manage prioritized traffic. The feature is also used for setting SLAs (Service Level Agreements).

Syntax `port-cos-bw-show`

`cos` *`integer`*	Specify the CoS priority between 0 and 9.
`port` *`port-list`*	Specify the physical port(s).
`min-bw-guarantee` *`min-bw-guarantee-string`*	Specify the minimum bandwidth as a percentage.
`max-bw-limit` *`max-bw-limit-string`*	Specify the maximum bandwidth as a percentage.
`weight` *`priority`*	Specify the scheduling weight after the bandwidth guarantee is met.

Defaults None

Access Network Administrator

History

Version 2.6.0	Command introduced.
Version 3.0.0	The parameter, `weight`, added.
Version 6.0.1	Introduced CoS queues 8 and 9.

Usage Use this command to display CoS bandwidth information for a port or range of ports.

Examples To display the CoS bandwidth, use the following syntax:

```
CLI (network-admin@Spine1) > port-cos-bw-show

switch  cos port  min-bw-guarantee max-bw-limit weight
------- --- ----- ---------------- ------------ ------
Spine1  0   1-104 0%               100%         16
Spine1  1   1-104 0%               100%         32
Spine1  2   1-104 0%               100%         32
Spine1  3   1-104 0%               100%         32
Spine1  4   1-104 0%               100%         32
Spine1  5   1-104 0%               100%         32
Spine1  6   1-104 0%               100%         64
Spine1  7   1-104 0%               100%         127
Spine1  8   1-104 0%               100%         64
Spine1  9   1-104 0%               100%         127
```

port-cos-stats-show

You can display the Class of Service (CoS) rate settings for ports on a switch.

Syntax `port-cos-stats-show port port-list`

`time date/time: yyyy-mm-ddTHH:mm:ss`	Specify a time of statistics collection.
`start-time date/time: yyyy-mm-ddTHH:mm:ss`	Specify a start time for statistics collection.
`end-time date/time: yyyy-mm-ddTHH:mm:ss`	Specify an end time for statistics collection.
`duration duration: #d#h#m#s`	Specify a duration time for statistics collection.
`interval duration: #d#h#m#s`	Specify an interval between statistics collection.
`since-start`	Specify statistics collection from a start time.
`older-than duration: #d#h#m#s`	Specify to display statistics collection older than the specified time.
`within-last duration: #d#h#m#s`	Specify a within-last time for statistics collection.
`port` *`port-list`*	Specify the port list to display CoS stats.

Access CLI

History

Version 2.4.0	Command introduced.
Version 3.0.0	Output changed from bytes to bits.
Version 6.0.1	Introduced CoS queues 8 and 9.

Usage In some cases, you may want to display CoS statistics for ports.

Examples To display port CoS statisticss, use the following command:

```
CLI (network-admin@Spine-1) port-cos-stats-show layout vertical
switch:        Spine-1
time:          21:36:59
port:          21
cos0-obits:    0
cos0-dropbits: 0
cos1-obits:    0
```

```
cos1-dropbits:  0
cos2-obits:     0
cos2-dropbits:  0
cos3-obits:     0
cos3-dropbits:  0
cos4-obits:     0
cos4-dropbits:  0
cos5-obits:     0
cos5-dropbits:  0
cos6-obits:     0
cos6-dropbits:  0
cos7-obits:     0
cos7-dropbits:  0
cos8-obits:     0
cos8-dropbits:  0
cos9-obits:     0
cos9-dropbits:  0
```

port-cos-stats-settings-modify

You can modify the Class of Service (CoS) statistics settings for ports on a switch.

Syntax `port-cos-stats-settings-modify enable|disable interval duration: #d#h#m#s disk-space disk-space-number`

`enable|disable`	Specify if you want to enable or disable statistics collection for CoS.
`interval duration: #d#h#m#s`	Specify the interval for statistic collection.
`disk-space` *`disk-space-number`*	Specify the amount of disk space to store statistics after collection.

Access CLI

History Command introduced in Version 2.4.1

Usage In some cases, you may want to collect statistics on CoS.

Examples To enable statistic collection, use the following command:

```
CLI (network-admin@switch) > port-cos-stats-settings-modify enable
```

port-cos-stats-settings-show

You can display the Class of Service (CoS) statistics collection settings for ports on a switch.

Syntax `port-cos-stats-settings-show`

Access CLI

History Command introduced in Version 2.4.1

Usage In some cases, you may want to display the statistics collection settings for CoS on a port.

Examples To display the settings, use the following command:

```
CLI (network-admin@switch) > port-cos-stats-settings-show
switch:      Spine-1
enable:      yes
interval:    30m
disk-space:  50M
```

port-cos-weight-modify

You can modify the Class of Service (CoS) weight settings for ports on a switch. However, if you have modified the CoS weights using the command, `port-cos-bw-modify`, this command no longer works.

Syntax `port-cos-weight-modify`

`cos0-weight`	`priority`	Specify the weight for CoS 0 as an integer between 0 and 127.
`cos1-weight`	`priority`	Specify the weight for CoS 0 as an integer between 0 and 127.
`cos2-weight`	`priority`	Specify the weight for CoS 0 as an integer between 0 and 127.
`cos3-weight`	`priority`	Specify the weight for CoS 0 as an integer between 0 and 127.
`cos4-weight`	`priority`	Specify the weight for CoS 0 as an integer between 0 and 127.
`cos5-weight`	`priority`	Specify the weight for CoS 0 as an integer between 0 and 127.
`cos6-weight`	`priority`	Specify the weight for CoS 0 as an integer between 0 and 127.
`cos7-weight`	`priority`	Specify the weight for CoS 0 as an integer between 0 and 127.
`cos8-weight`	`priority`	Specify the weight for CoS 0 as an integer between 0 and 127.
`cos9-weight`	`priority`	Specify the weight for CoS 0 as an integer between 0 and 127.

Access CLI

History

Version 2.4	Command introduced.
Version 6.0.1	The parameters, `cos8-weight` and `cos9-weight`, added.

Usage In some cases, you may want to modify the CoS weight for a port.

Examples To modify the weight of CoS 0, use the following command:

```
CLI (network-admin@switch) > port-cos-weight-modify  cos0-weight  100
```

port-cos-weight-show

You can display the Class of Service (CoS) weight settings for ports on a switch.

Syntax `port-cos-weight-show`

Access CLI

History

Version 2.4	Command introduced.
Version 6.0.1	The parameters, `cos8-weight` and `cos9-weight`, added.

Usage In some cases, you may want to display the weight of CoS packets.

Examples To display the weight of CoS packets, use the following command:

```
CLI (network-admin@switch)1 > port-cos-weight-show
switch:           switch1
cos0-weight:  16
cos1-weight:  32
cos2-weight:  32
cos3-weight:  32
cos4-weight:  32
cos5-weight:  32
cos6-weight:  64
cos7-weight:  127
cos8-weight:  64
cos9-weight:  127
cos8-weight:  64
cos9-weight:  127
```

Informational Note: The number of available CoS weight parameters may vary from platform to platform. The CoS queues 8 and 9 are available only on NRU01, NRU02, NRU03, and NRU03-S0301 platforms.

port-cos-rate-setting-modify

You can modify the Class of Service (CoS) rate settings for ports on a switch.

Syntax `port-cos-rate-setting-modify`

`port control-port|data-port|span-ports`	Specify the port to set the CoS rate.
`cos0-rate` *`unlimited|0..10000000`*	Specify the CoS rate for the specified port. On the F64, the default CoS rate is 1,000,000 pps for `pci-e` port and 100,000 pps for `data` port and `span` ports. On E68 and E28Q, the default CoS rate is 100,000 pps for all internal ports.
`cos1-rate` *`unlimited|0..10000000`*	
`cos2-rate` *`unlimited|0..10000000`*	
`cos3-rate` *`unlimited|0..10000000`*	
`cos4-rate` *`unlimited|0..10000000`*	
`cos5-rate` *`unlimited|0..10000000`*	
`cos6-rate` *`unlimited|0..10000000`*	
`cos7-rate` *`unlimited|0..10000000`*	
`cos8-rate` *`unlimited|0..10000000`*	
`cos9-rate` *`unlimited|0..10000000`*	

Access CLI

History Command introduced in Version 2.3.2.

Version 2.3.2	Command introduced.
Version 6.0.1	Introduced CoS queues 8 and 9.

Usage In some cases, you may want to limit the number of packets leaving and entering the ports on the switch.

Examples To set the span ports to a CoS0 rate of 500,00 pps, use the following command:

```
CLI (network-admin@switch) > port-cos-rate-setting-modify port span-ports cos0-rate 500000
```

port-cos-rate-setting-show

You can display the Class of Service (CoS) rate settings for ports on a switch.

Syntax `port-cos-rate-setting-modify`

`port control-port|data-port|span-ports`	Specify the port type to set the CoS rate.
`ports port-list`	Specify the ports to set the CoS rate.
`cos0-rate` *`unlimited|0..10000000`*	Specify the CoS rate for the specified port. On the F64, the default CoS rate is 1,000,000 pps for `pci-e` port and 100,000 pps for `data` port and `span` ports. On E68 and E28Q, the default CoS rate is 100,000 pps for all internal ports.
`cos1-rate` *`unlimited|0..10000000`*	
`cos2-rate` *`unlimited|0..10000000`*	
`cos3-rate` *`unlimited|0..10000000`*	
`cos4-rate` *`unlimited|0..10000000`*	
`cos5-rate` *`unlimited|0..10000000`*	
`cos6-rate` *`unlimited|0..10000000`*	
`cos7-rate` *`unlimited|0..10000000`*	
`cos8-rate` *`unlimited|0..10000000`*	
`cos9-rate` *`unlimited|0..10000000`*	

Access CLI

History Command introduced in Version 2.3.2.

Version 2.3.2	Command introduced.
Version 6.0.1	The parameters, `cos8-rate` and `cos9-rate`, added.

Usage In some cases, you may want to limit the number of packets leaving and entering the ports on the switch.

Examples To display port CoS rate settings modify, use the following command :

```
CLI (network-admin@switch)1 > port-cos-rate-setting-show
switch:                 switch1
port:                      control-port
ports:                 0
cos0-rate(pps):    1000000
cos1-rate(pps):    1000000
cos2-rate(pps):    1000000
cos3-rate(pps):    1000000
cos4-rate(pps):    1000000
cos5-rate(pps):    1000000
cos6-rate(pps):    1000000
cos7-rate(pps):    1000000
cos8-rate(pps):    1000000
cos9-rate(pps):    1000000
switch:                 switch1
```

```
port:                     data-port
ports:                  65
cos0-rate(pps):   100000
cos1-rate(pps):   100000
cos2-rate(pps):   100000
cos3-rate(pps):   100000
cos4-rate(pps):   100000
cos5-rate(pps):   100000
cos6-rate(pps):   100000
cos7-rate(pps):   100000
cos8-rate(pps):   100000
cos9-rate(pps):   100000
switch:                 switch1
port:                     span-ports
ports:                  66-68
cos0-rate(pps):   100000
cos1-rate(pps):   100000
cos2-rate(pps):   100000
cos3-rate(pps):   100000
cos4-rate(pps):   100000
cos5-rate(pps):   100000
cos6-rate(pps):   100000
cos7-rate(pps):   100000
cos8-rate(pps):   100000
cos9-rate(pps):   100000
```

port-cos-stats-clear

You can clear the Class of Service (CoS) rate stats for ports on a switch.

Syntax `port-cos-stats-clear port port-list`

`port` *`port-list`*	Specify the port list to clear CoS stats.

Access CLI

History Command introduced in Version 2.4.

Usage In some cases, you may want to display CoS statistics for ports.

Examples To clear port CoS stats from ports 21-25, use the following command:

```
CLI (network-admin@switch) > port-cos-stats-clear port 21-25
```

port-egress-check

You can use this command to check fabric communications when a connection error occurs while using show commands.

Syntax `port-egress-check`

Defaults None

Access CLI

History Command introduced in Version 2.2.6

Usage Occasionally, the fabric returns a communication error when show commands are executed at the CLI. This command checks for possible communication on fabric ports.

Examples To use this command, use the following syntax :

```
CLI (network-admin@switch) > port-egress-check
pubdev02: Port 1 -> 1-68 but should be 1 -> 1-72
pubdev02: Port 2 -> 1-68 but should be 2 -> 1-72
pubdev02: Port 3 -> 1-68 but should be 3 -> 1-72
pubdev02: Port 4 -> 1-68 but should be 4 -> 1-72
pubdev02: Port 5 -> 1-68 but should be 5 -> 1-72
pubdev02: Port 6 -> 1-68 but should be 6 -> 1-72
pubdev02: Port 7 -> 1-68 but should be 7 -> 1-72
pubdev02: Port 8 -> 1-68 but should be 8 -> 1-72
pubdev02: Port 9 -> 1-68 but should be 9 -> 1-72
pubdev02: Port 10 -> 1-68 but should be 10 -> 1-72
pubdev02: Port 11 -> 1-68 but should be 11 -> 1-72
pubdev02: Port 12 -> 1-68 but should be 12 -> 1-72
pubdev02: Port 13 -> 1-68 but should be 13 -> 1-72
pubdev02: Port 14 -> 1-68 but should be 14 -> 1-72
pubdev02: Port 15 -> 1-68 but should be 15 -> 1-72
pubdev02: Port 16 -> 1-68 but should be 16 -> 1-72
pubdev02: Port 17 -> 1-68 but should be 17 -> 1-72
pubdev02: Port 18 -> 1-68 but should be 18 -> 1-72
pubdev02: Port 19 -> 1-68 but should be 19 -> 1-72
pubdev02: Port 20 -> 1-68 but should be 20 -> 1-72
pubdev02: Port 21 -> 1-68 but should be 21 -> 1-72
```

port-egress-fix

You can use this command to fix fabric communications when a connection error occurs while using show commands.

Syntax `port-egress-fix`

Defaults None

Access CLI

History Command introduced in Version 2.2.6

Usage Occasionally, the fabric returns a communication error when show commands are executed at the CLI. This command fixes communication errors on fabric ports.

Examples To use this command, use the following syntax:

```
CLI (network-admin@switch) > port-egress-fix
pubdev02: Port 1 -> 1-68 but should be 1 -> 1-72
pubdev02: Fixed port 1 -> 1-72
pubdev02: Port 2 -> 1-68 but should be 2 -> 1-72
pubdev02: Fixed port 2 -> 1-72
pubdev02: Port 3 -> 1-68 but should be 3 -> 1-72
pubdev02: Fixed port 3 -> 1-72
pubdev02: Port 4 -> 1-68 but should be 4 -> 1-72
pubdev02: Fixed port 4 -> 1-72
pubdev02: Port 5 -> 1-68 but should be 5 -> 1-72
pubdev02: Fixed port 5 -> 1-72
pubdev02: Port 6 -> 1-68 but should be 6 -> 1-72
pubdev02: Fixed port 6 -> 1-72
pubdev02: Port 7 -> 1-68 but should be 7 -> 1-72
pubdev02: Fixed port 7 -> 1-72
pubdev02: Port 8 -> 1-68 but should be 8 -> 1-72
pubdev02: Fixed port 8 -> 1-72
pubdev02: Port 9 -> 1-68 but should be 9 -> 1-72
pubdev02: Fixed port 9 -> 1-72
pubdev02: Port 10 -> 1-68 but should be 10 -> 1-72
pubdev02: Fixed port 10 -> 1-72
pubdev02: Port 11 -> 1-68 but should be 11 -> 1-72
pubdev02: Fixed port 11 -> 1-72
pubdev02: Port 12 -> 1-68 but should be 12 -> 1-72
pubdev02: Fixed port 12 -> 1-72
pubdev02: Port 13 -> 1-68 but should be 13 -> 1-72
pubdev02: Fixed port 13 -> 1-72
pubdev02: Port 14 -> 1-68 but should be 14 -> 1-72
pubdev02: Fixed port 14 -> 1-72
pubdev02: Port 15 -> 1-68 but should be 15 -> 1-72
```

```
pubdev02: Fixed port 15 -> 1-72
```

port-egress-show

You can use this command to display information about fabric communications when a connection error occurs while using `show` commands.

Syntax `port-egress-show`

`port` *`port-list`*	Displays the physical port list.
`egress` *`port-list`*	Displays allowed egress ports.
`rx-only` *`port-list`*	Displays receive only ports.
`active-active-vlags` *`port-list`*	Displays active-active VLAG ports.
`loopback` *`port-list`*	Displays loopback ports.
`mir_prevent_out` *`port-list`*	Displays ports not participating in mirroring traffic.
`no-local-switching` *`port-list`*	Displays ports that are impacted by the `no-local-switching` command

Defaults None

Access CLI

History

Version 2.3	Command introduced.
Version 2.5.3	The optional parameter, local-switching| no-local-switching, added.
Version 2.6.2	The parameter, local-switching, deprecated.

Usage Occasionally, the fabric returns a communication error when show commands are executed at the CLI. This command displays communication on fabric ports.

Examples To use this command, use the following syntax:

```
CLI (network-admin@switch) > port-egress-show
switch   port egress     rx-only active-active-vlags loopback mir_prevent_out
-------- ---- ---------- ------- ------------------- -------- ---------------
pubdev03 1    1-65,67-72 none    none                none     66
pubdev03 2    1-65,67-72 none    none                none     66
pubdev03 3    1-65,67-72 none    none                none     66
pubdev03 4    1-65,67-72 none    none                none     66
pubdev03 5    1-65,67-72 none    none                none     66
```

```
pubdev03 6    1-65,67-72 none    none                 none     66
pubdev03 7    1-65,67-72 none    none                 none     66
pubdev03 8    1-65,67-72 none    none                 none     66
pubdev03 9    1-65,67-72 none    none                 none     66
pubdev03 10   1-65,67-72 none    none                 none     66
...
```

Informational Note: The port egress values may vary from platform to platform.

port-lacp-modify

This command allows you to run a port configured with LACP in test mode.

Syntax `port-lacp-modify`

`port` *`port-list`*	Specifies the switch network data port number, list of ports, or range of ports. Port numbers must be in the range of 1 to 64.
`test-mode none|no-tx|no-rx|no-rx-or-tx`	Specify the test mode for the port.

Defaults None

Access CLI

History Command introduced in Version 1.2.2.

Usage Use this command to modify a port and run it in test mode .

Examples To modify port 54 and place it in test mode, no-tx, use the following command:

```
CLI (network-admin@switch) > port-lacp-modify port 54 test-mode no-tx
```

port-lacp-show

This command displays information about network LACP port status.

Syntax `port-lacp-show`

`port` *`port-list`*	Specifies the switch network data port number, list of ports, or range of ports. Port numbers must be in the range of 1 to 64.
`neighbor|no-neighbor`	Specify to display neighbors of the LACP port.
`name` *`name-string`*	Specifies the name of the LACP port.
`port-type none|vlag|trunk`	Specifies if the port is a VLAG or a trunk.
`mode off|passive|active`	Specifies the mode as off, passive, or active.
`timeout slow|fast`	Specifies the timeout for LACP connections. Slow timeout sends requests after 30 seconds and fast timeout sends requests after 3 seconds.
`system-id` *`mac-address`*	Specifies the MAC address as the system ID.
`lacp-key` *`lacp-key-number`*	Specifies the LACP key.
`system-priority` *`system-priority-number`*	Specifies the system priority.
`port-priority` *`port-priority-number`*	Specifies the port priority.
`aggregatable yes|no`	Specifies if you can aggregate the port or not.
`sync yes|no`	Specifies if the port is synchronized.
`coll yes|no`	Specifies if the port is collecting packets or not.
`dist yes|no`	Specifies if the port is distributing packets or not.
`defaulted yes|no`	Specifies if the port is defaulted or not.

`expired yes|no`	Specifies if the port is expired or not.
`port-state` *`port-state-number`*	Specifies a single port state instead of all ports.
`test-mode none|no-tx|no-rx|no-rx-or-tx`	Specifies if a port is in test mode.

Defaults None

Access CLI

History

Version 1.2.1	Command introduced.
Version 2.6.2	The parameters, `lacp-key`, `system-priority`, and `port-priority` added.

Usage Use this command to display information about port status on the switch.

Examples To display the port status for port 12, use the following command:

```
CLI (network-admin@switch) > port-lacp-show
switch:                leo-ext-32
port:                  22
name:                  t2
port-type:           trunk
mode:                    active
timeout:              slow
system-id:             06:c0:00:16:f0:00
lacp-key:            32879
system-priority:  32768
port-priority:     32768
aggregatable:      no
sync:                  no
coll:                  no
dist:                  no
defaulted:           no
expired:              yes
```

port-lacp-stats-clear

This command clears stats about network LACP ports.

Syntax `port-lacp-stats-clear`

`port` *`port-list`*	Specifies the switch network data port number, list of ports, or range of ports. Port numbers must be in the range of 1 to 64.

Defaults None

Access CLI

History Command introduced in Version 2.6.2.

Usage Use this command to clear information about LACP port status on the switch.

Examples To clear the port status for port 12, use the following command:

```
CLI (network-admin@switch) > port-lacp-stats-clear
```

port-lacp-stats-show

This command displays information about network LACP port stats.

Syntax `port-lacp-stats-show`

`start-time date/time: yyyy-mm-ddTHH:mm:ss`	Displays the start date and time for statistics collection.
`end-time date/time: yyyy-mm-ddTHH:mm:ss`	Displays the end date and time for statistics collection.
`duration duration: #d#h#m#s`	Displays the duration for statistics collection.
`interval duration: #d#h#m#s`	Displays the interval between statistics collection.
`since-start`	Displays the statistics since the start time.
`older-than duration: #d#h#m#s`	Displays the statistics older than the specified time.
`within-last duration: #d#h#m#s`	Displays the statistics within a specified time.
`port` *`port-list`*	Displays the port list.
`lacp-port-up` *`lacp-port-up-number`*	Displays LACP port up counter.
`lacp-port-down` *`lacp-port-down-number`*	Displays LACP port down counter.
`lacp-pdu-tx` *`lacp-pdu-tx-number`*	Displays LACP PDU TX counter.
`lacp-pdu-rx` *`lacp-pdu-rx-number`*	Displays LACP PDU RX counter.
`lacp-marker-tx` *`lacp-marker-tx-number`*	Displays LACP Marker TX counter.
`lacp-marker-rx lacp-marker-rx-number`	Displays LACP Marker RX counter
`lacp-allocate-failure` *`lacp-allocate-failure-number`*	Displays LACP Allocate tx failure counter.
`lacp-expired` *`lacp-expired-number`*	Displays LACP Port Expired counter.
`lacp-defaulted` *`lacp-defaulted-number`*	Displays LACP Port defaulted counter.

Defaults None

Access CLI

History Command introduced in Version 2.6.2.

Usage Use this command to display information about port status on the switch.

Examples To display the port status for port 12, use the following command:

```
CLI (network-admin@switch) > port-lacp-stats-show port 12 layout
vertical
```

Port LLDP Commands

port-lldp-modify

This command is used to modify LLDP properties for ports.

Syntax `port-lldp-modify`

`port` *`port-list`*	Specify a list of ports to modify.
`lldp|no-lldp`	Specify LLDP or no LLDP.

Defaults None.

Access CLI

History Command introduced in Version 2.5.3.

Usage Use this command to modify LLDP parameters

Examples To disable LLDP on port 35, use the following command:

```
CLI (network-admin@switch) > port-lldp-modify port 35 no-lldp
```

port-lldp-show

This command is used to display LLDP properties for ports.

Syntax `port-lldp-modify`

`port` *`port-list`*	Displays a list of ports.
`lldp|no-lld`	Displays if LLDP is on or off.

Defaults None.

Access CLI

History Command introduced in Version 2.5.3.

Usage Use this command to display LLDP information for a port or list of ports.

Examples To display LLDP information about port 35, use the following syntax:

```
CLI (network-admin@switch) > port-lldp-show port 35
```

port-pfc-create

Priority Flow Control (PFC) is an IEEE standard (802.1qbb) for link level flow control on Ethernet networks. Functionally, this feature is similar to the IEEE standard 802.3 for PAUSE mechanism, except that it operates at the granularity of individual packet priorities or traffic class, instead of port level. When a queue corresponding to traffic with a particular traffic class reaches a predetermined, either auto or statically set, threshold, the switch chip generates a PFC frame and sends it back to the sender. For PFC to work effectively end to end on the network, all switches and hosts in the traffic path are configured to enable PFC, and configured for traffic class to priority mappings.

This command allows you to configure PFC on ports.

Syntax `port-pfc-create`

`priority` *`priority`*	Specify a priority for PFC. This is a number between 0 and 7.
`port-list` *`port-list`*	Specify a port list to apply PFC.

Defaults None

Access Network administrator

History Command introduced in Version 2.5.4.

Usage This command is used to set PFC for link level flow control for traffic on the network.

Examples To create a new PFC configuration on port 2 with a priority group of 2, use the following command:

```
CLI (network-admin@Spine1) > port-pfc-create priority 2 port 1-10
Priority configuration will be effective after restart.
```

port-pfc-delete

Priority Flow Control (PFC) is an IEEE standard (802.1qbb) for link level flow control on Ethernet networks. Functionally, this feature is similar to the IEEE standard 802.3 for PAUSE mechanism, except that it operates at the granularity of individual packet priorities or traffic class, instead of port level. When a queue corresponding to traffic with a particular traffic class reaches a predetermined, either auto or statically set, threshold, the switch chip generates a PFC frame and sends it back to the sender. For PFC to work effectively end to end on the network, all switches and hosts in the traffic path are configured to enable PFC, and configured for traffic class to priority mappings.

This command allows you to delete PFC configurations on ports.

Syntax `port-pfc-delete`

`priority` *`priority`*	Specify a priority for PFC. This is a number between 0 and 7.

Defaults None

Access Network administrator

History Command introduced in Version 2.5.4.

Usage This command is used to delete a PFC priority for link level flow control for traffic on the network.

Examples To delete the PFC priority 2, use the following command:

```
CLI (network-admin@switch) > port-pfc-delete priority 2
```

port-pfc-modify

Priority Flow Control (PFC) is an IEEE standard (802.1qbb) for link level flow control on Ethernet networks. Functionally, this feature is similar to the IEEE standard 802.3 for PAUSE mechanism, except that it operates at the granularity of individual packet priorities or traffic class, instead of port level. When a queue corresponding to traffic with a particular traffic class reaches a predetermined, either auto or statically set, threshold, the switch chip generates a PFC frame and sends it back to the sender. For PFC to work effectively end to end on the network, all switches and hosts in the traffic path are configured to enable PFC, and configured for traffic class to priority mappings.

This command allows you to modify PFC priority on ports.

Syntax `port-pfc-modify`

`priority` *`priority`*	Specify a priority for PFC. This is a number between 0 and 7.
`port-list` *`port-list`*	Specify a port list to apply PFC.

Defaults None

Access Network administrator

History Command introduced in Version 2.5.4.

Usage This command is used to modify PFC for link level flow control for traffic on the network. You can create up to three configurations.

Examples To modify the PFC configuration to port 11-15 with a priority group of 2, use the following command:

```
CLI (network-admin@switch) > port-pfc-modify priority 2 port 11-15
Priority configuration will be effective after restart.
```

port-pfc-show

Priority Flow Control (PFC) is an IEEE standard (802.1qbb) for link level flow control on Ethernet networks. Functionally, this feature is similar to the IEEE standard 802.3 for PAUSE mechanism, except that it operates at the granularity of individual packet priorities or traffic class, instead of port level. When a queue corresponding to traffic with a particular traffic class reaches a predetermined, either auto or statically set, threshold, the switch chip generates a PFC frame and sends it back to the sender. For PFC to work effectively end to end on the network, all switches and hosts in the traffic path are configured to enable PFC, and configured for traffic class to priority mappings.

This command allows you to display PFC on ports.

Syntax `port-pfc-show`

`priority` *`priority`*	Displays the priority for PFC. This is a number between 0 and 7.
`port-list` *`port-list`*	Displays the port list to apply PFC.
`error` *`error-string`*	Displays any errors on the port or ports.

Defaults None

Access Network administrator

History Command introduced in Version 2.5.4.

Usage This command is used to displays PFC information about link level flow control for traffic on the network.

Examples To display a PFC configuration on port 2 with a priority group of 2, use the following command:

```
CLI  (network-admin@Spine1)>  port-pfc-show
switch   priority port   error
------- -------- ----- -----
Spine1    2              11-20
Spine1   3          11-20
```

port-pfc-stats-clear

Priority Flow Control (PFC) is an IEEE standard (802.1qbb) for link level flow control on Ethernet networks. Functionally, this feature is similar to the IEEE standard 802.3 for PAUSE mechanism, except that it operates at the granularity of individual packet priorities or traffic class, instead of port level. When a queue corresponding to traffic with a particular traffic class reaches a predetermined, either auto or statically set, threshold, the switch chip generates a PFC frame and sends it back to the sender. For PFC to work effectively end to end on the network, all switches and hosts in the traffic path are configured to enable PFC, and configured for traffic class to priority mappings.

This command allows you to clear PFC stats on ports.

Syntax `port-pfc-stats-clear`

`port` *`port-list`*	Specify the ports to delete PFC statistics.

Defaults None

Access Network administrator

History Command introduced in Version 2.5.4.

Usage This command is used to clear PFC stats information about link level flow control for traffic on the network.

Examples To clear PFC stats, use the following command:

CLI (network-admin@Spine1)>`port-pfc-stats-clear`

port-pfc-stats-show

Priority Flow Control (PFC) is an IEEE standard (802.1qbb) for link level flow control on Ethernet networks. Functionally, this feature is similar to the IEEE standard 802.3 for PAUSE mechanism, except that it operates at the granularity of individual packet priorities or traffic class, instead of port level. When a queue corresponding to traffic with a particular traffic class reaches a predetermined, either auto or statically set, threshold, the switch chip generates a PFC frame and sends it back to the sender. For PFC to work effectively end to end on the network, all switches and hosts in the traffic path are configured to enable PFC, and configured for traffic class to priority mappings.

This command allows you to display PFC stats on ports.

Syntax `port-pfc-stats-show`

`time date/time: yyyy-mm-ddTHH:mm:ss`	Displays the date and time for statistics collection.
`start-time date/time: yyyy-mm-ddTHH:mm:ss`	Displays the start date and time for statistics collection.
`end-time date/time: yyyy-mm-ddTHH:mm:ss`	Displays the end date and time for statistics collection.
`duration duration: #d#h#m#s`	Displays the duration for statistics collection.
`interval duration: #d#h#m#s`	Displays the interval between statistics collection.
`since-start`	Displays the statistics since the start time.
`older-than duration: #d#h#m#s`	Displays the statistics older than the specified time.
`within-last duration: #d#h#m#s`	Displays the statistics within a specified time.
`port` *`port-list`*	Displays the port list.

Defaults None

Access Network administrator

History Command introduced in Version 2.5.4.

Usage This command is used to displays PFC stats information about link level flow control for traffic on the network.

Examples To display PFC stats, use the following command:

```
CLI (network-admin@Spine1)> port-pfc-stats-show
switch  priority port  error
------- -------- ----- -----
```

```
Spine1    2                11-20
Spine1   3           11-20
```

port-pfc-stats-settings-modify

Priority Flow Control (PFC) is an IEEE standard (802.1qbb) for link level flow control on Ethernet networks. Functionally, this feature is similar to the IEEE standard 802.3 for PAUSE mechanism, except that it operates at the granularity of individual packet priorities or traffic class, instead of port level. When a queue corresponding to traffic with a particular traffic class reaches a predetermined, either auto or statically set, threshold, the switch chip generates a PFC frame and sends it back to the sender. For PFC to work effectively end to end on the network, all switches and hosts in the traffic path are configured to enable PFC, and configured for traffic class to priority mappings.

This command allows you to modify PFC stats settings on ports.

Syntax `port-pfc-stats-settings-modify`

`enable|disable`	Specify if you want to enable or disable PFC statistics collection.
`interval duration: #d#h#m#`	Specify the interval between statistics collection.
`disk-space` *`disk-space-number`*	Specify the amount of disk space for statistics collection.

Defaults None

Access Network administrator

History Command introduced in Version 2.5.4.

Usage This command is used to modify PFC stats settings.

Examples To modify PFC stats, use the following command:

```
CLI (network-admin@Spine1)> port-pfc-stats-settings-modify
```

port-pfc-stats-settings-show

Priority Flow Control (PFC) is an IEEE standard (802.1qbb) for link level flow control on Ethernet networks. Functionally, this feature is similar to the IEEE standard 802.3 for PAUSE mechanism, except that it operates at the granularity of individual packet priorities or traffic class, instead of port level. When a queue corresponding to traffic with a particular traffic class reaches a predetermined, either auto or statically set, threshold, the switch chip generates a PFC frame and sends it back to the sender. For PFC to work effectively end to end on the network, all switches and hosts in the traffic path are configured to enable PFC, and configured for traffic class to priority mappings.

This command allows you to display PFC stats on ports.

Syntax `port-pfc-stats-settings-show`

`enable|disable`	Displays if PFC statistics collection is enabled or disabled.
`interval duration: #d#h#m#`	Displays the interval between statistics collection.
`disk-space disk-space-number`	Displays the amount of disk space for statistics collection.

Defaults None

Access Network administrator

History Command introduced in Version 2.5.4.

Usage This command is used to display PFC stats settings information about link level flow control for traffic on the network.

Examples To display PFC stats, use the following command:

```
CLI (network-admin@switch) > port-pfc-stats-settings-show
```

port-phy-config-modify

This command is used for enabling or disabling unreliable LOS configuration.

Syntax `port-phy-config-modify`

`port` *`port-list`*	Specify the port list.
`phy_config los-unreliable`	Enable unreliable LOS configuration.
`phy_config_state disable|enable`	Enable or disable physical port configuration.

Defaults None

Access Network administrator

History Command introduced in Version 6.1.0

Usage This command is used to enable or disable unreliable LOS configuration.

Examples To enable unreliable LOS configuration, use the following command:

```
CLI (network-admin@switch) > port-phy-config-modify port 49 phy_config
los-unreliable phy_config_state enable
```

Note: This command is available only on the following platforms:

Dell: S4148T-ON, S4148-ON, S4128F-ON, S4128T-ON, S4112F-ON, S4112T-ON, S5232F-ON, S5248F-ON, Z9264, S5224F-ON, S5212F-ON

Ericsson: NRU03, NRU-S0301

Edgecore(Freedom): AS7816-64X (F9664-C), 7726-32X (F9432-C), 7326-56X (F9476-V), 5835-54X (F9460-X)

port-phy-config-show

This command is used for displaying unreliable LOS configuration.

Syntax `port-phy-config-show`

`port` *`port-list`*	Specify the port list.
`phy_config los-unreliable`	Enable unreliable LOS configuration.
`phy_config_state disable|enable`	Enable or disable physical port configuration.

Defaults None

Access Network administrator

History Command introduced in Version 6.1.0

Usage This command is used to display unreliable LOS configuration.

Examples To display unreliable LOS configuration on port 49, use the following command:

```
CLI (network-admin@switch) > port-phy-config-show port 49
switch           port phy_config     phy_config_state
---------------- ---- -------------- ----------------
serpens-ptf-test 49   los-unreliable enable
```

Note: This command is available only on the following platforms:

Dell: S4148T-ON, S4148-ON, S4128F-ON, S4128T-ON, S4112F-ON, S4112T-ON, S5232F-ON, S5248F-ON, Z9264, S5224F-ON, S5212F-ON

Ericsson: NRU03, NRU-S0301

Edgecore(Freedom): AS7816-64X (F9664-C), 7726-32X (F9432-C), 7326-56X (F9476-V), 5835-54X (F9460-X)

port-phy-show

This command is used to display information about the physical Layer 1 status of the local switch.

Syntax `port-phy-show`

`port` *`port-list`*	Specifies the switch data port number, list of ports, or range of ports. Port numbers must be in the range of 1-64.
`bezel-port` *`bezel-port-string`*	Specifies the bezel port.
`state off|admin-down|adminpwrdown| bist|dfe-tuning|down|local-fault| partially-up|remote-fault|up| failed`	Specifies the state of the port PHY.
`mode off|admin-down|adminpwrdown| bist|dfe-tuning|down|local-fault| partially-up|remote-fault|up| failed`	Specifies the mode of the port PHY.
`autoneg` *`autoneg-string`*	Specifies the auto-negotiation setting of the port PHY.
`speed` *`speed-number`*	Specifies the speed of the port PHY.
`eth-mode configured 1000base-x| sgmii|disabled|1000base-kx| 2500base-x|6Gbase-kr|6Gbase-cr| 10Gbase-kr|10Gbase-cr|10Gbase-sr| AN-73|Xaui|10Gbase-kx4|10Gbase-cx4|24Gbase-kr4|24Gbase-cr4| 40Gbase-kr4| XLaui|40Gbase-cr4| 40Gbase-sr4|no-phy-present|MII| GMII|TBI|10G-XGMII|1G-RGMII|sfi| xfi|cx|kr4|sr4|lr4|er4|cr4|cx4| kx4|caui4|kr2|er2|cr2|sr2|lr2| xlaui2|cx2|sr|lr|er|cr|kx|kr|zr| base-x|sys-default|caui|aoc|xlppi| psm4|base_t|base_cx|base_lx| base_sx|10G-SFI|10G-XFI|GMII`	Specify the Ethernet mode as 1000 base or Serial Gigabit Media Independent Interface (SGMII).
`max-frame` *`max-frame-number`*	Specifies the maximum number of frames.
`def-vlan` *`def-vlan-number`*	Specifies the default VLAN identifier of the port PHY.
`fec` *`fec-string`*	Specifies the FEC.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter `eth-mode` added.
Version 2.2	The options, `disabled|1000base-kx|2500base-x|6Gbase-kr|6Gbase-cr|10Gbase-kr|10Gbase-cr|10Gbase-sr|AN-73|Xaui|10Gbase-kx4|10Gbase-cx4|24Gbase-kr4|24Gbase-cr4|40Gbase-kr4|XLaui|40Gbase-cr4|40Gbase-sr4|no-phy-present|MII|GMII|TBI|10G-XGMII|1G-RGMII|10G-SFI|10G-XFI` added.
Version 3.0.0	The parameter `link-quality` deprecated.
Version 3.1.0	The parameters `GII` and `disabled` added.
Version 7.0.0	The parameter `bezel-port` added.

Usage Switches are equipped with network data ports for host or inter-switch communication. Use this command to display the status of network data ports on the local switch.

Examples To display the status of network data ports on the switch, use the following command:

```
CLI (network-admin@switch) > port-phy-show
switch port bezel-port state speed  eth-mode  max-frame def-vlan
------ ---- ---------- ----- ------ --------- --------- --------
switch 1    1          down  100000 sr4       1540      1
switch 2    1.2        down  25000  10G-XGMII 1540      1
switch 3    1.3        down  25000  10G-XGMII 1540      1
switch 4    1.4        down  25000  10G-XGMII 1540      1
switch 5    2          down  100000 caui4     1540      1
switch 6    2.2        down  25000  10G-XGMII 1540      1
switch 7    2.3        down  25000  10G-XGMII 1540      1
switch 8    2.4        down  25000  10G-XGMII 1540      1
```

Port Show Commands

port-show

This command displays information about network data port status.

Syntax `port-show`

`port` *`port-list`*	Specifies the switch network data port number, list of ports, or range of ports. Port numbers must be in the range of 1 to 64.
`bezel-port` *`bezel-port-string`*	Specifies the bezel port.
`ip` *`ip-address`*	Specifies the IP address of a host connected to a switch data port.
`mac` *`mac-address`*	Specifies the MAC address of a host connected to a switch data port.
`vlan` *`vlan-id`*	Specifies the VLAN identifier. This is a value between 0 and 4095.
`vxlan` *`vxlan-id`*	Specifies the VXLAN identifier. This is a value between 0 and 16777215.
`hostname` *`hostname`*	Specifies the name of a host connected to a switch data port.
`status phy-up|up|disabled|hw-nat-loop|mirror-loop|mirror-to|inuse| PN-switch|PN-fabric|PN-other|PN-cluster|PN-internal| PN-hypervisor|PN-guest|snmp-host| host|uplink|drop-pkts|no-pktin|no-fwd|no-flood|STP-BPDUs|LLDP|trunk| l3-port|remote-l3-port|vdp|dhcp| dhcpsvrblocked|no-BPDU|LACP-PDUs| vlag-active|vlag-blocked|stp-edge-port|LACP-wait|adjacency-wait| adjacency-check|vlag-wait| multicast-router| host-disabled| loop|vxlan-loopback|vlan-up|vle| vle-wait|phy-down|down| enabled| err-disabled|err-bpdu-guard|mac-violation|stp-bpdu-guard|stp-root-guard||defer-bringup-wait`	Specifies the status of a switch data port.
`loop-vlans vlan-list`	Specifies VLANs looping on the ports.

`rem-ip` *`ip-address`*	Specifies the IP address of the remote switch.
`lport` *`lport-number`*	Specifies the logical port number on the switch.
`rport` *`rport-number`*	Specifies the port number on the remote switch.
`config fd|hd|10m|100m|1g|2.5g|10g|40g|loopback|mirror-only|autoneg|fiber|copper|qos|jumbo|pause|asymetric-pause|vxlan-termination|no-local-switching|fec`	Specifies the settings of a switch data port.
`description` *`description-string`*	Specifies the description of the port.
`trunk` *`trunk-name`*	Specifies the identifier of the trunk that a switch data port is a member of.
`recover-time duration: #d#h#m#s`	Specifies the time left for recovery from err-disable state.
`err-bpduguard` *`err-bpduguard-number`*	Specifies the total count of err-disables by BPDU guard.
`err-maclimit` *`err-maclimit-number`*	Specifies the total count of err-disables by MAC address limit.
`hide-connections`	Specifies whether the connections on switch data ports should be displayed.
`link-detail`	Specifies the details of the link such as PHY, link, etc.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.2.2	Options for `status` and `config` changed.
Version 2.2.6	The parameters, `LACP-wait|adjacency-wait|adjacency-check|vlag-wait|multicast-router` added.
Version 2.4	The options, `host-disabled|loop|`

	vxlan-loopback|vlan-up, added. The parameter, loop-vlans, added.
Version 2.6.2	The parameters, rem-ip, recover-time, err-bpduguard, err-maclimit, hide-connections, link-detail, added.

Usage Use this command to display information about port status on the switch.

Examples To display the port status for port 12, use the following command:

```
CLI (network-admin@switch) > port-show port 12 layout vertical
switch:                 pubdev03
port:                   45
ip:                          192.168.42.10
mac:                          64:0e:94:28:00:8e
hostname:               pubdev01
status:                      up,PN-fabric,LLDP,trunk
lport:                  45
rport:                  45
config:                  fd,10g
trunk:                     trunk-info
```

port-stats-clear

This command is used to clear statistics from a port.

Syntax `port-stats-clear port port-list`

port *port-list*	Specify a list of ports to clear statistics.

Defaults None

Access CLI

History Command introduced in Version 2.0.

Usage Use this command to clear statistics from a list of ports

Examples To clear statistics from ports 43-47, use the following command:

```
CLI (network-admin@switch) > port-stats-clear port 43-47
```

port-stats-snmp-show

This command displays SNMP statistics for switch data ports.

Syntax `port-stats-show`

Specify any of the following options:	
`port` *`port-list`*	Displays one or more switch network data port numbers. The port number must be in the range of 1 to 64. Multiple ports can be specified as a comma-separated list of numbers or a range (-).
`port-clear-count` *`port-clear-count-number`*	Displays the number of times port-stats-clear or trunk-stats-clear commands were issued on a portor trunk.
`port_clear_time high resolution time: #ns`	Displays the last high resolution time-stamp (in ns) of the last port-stats-clear command.
`port-clear-time duration: #d#h#m#s`	Displays the last port stats clear time. It is initialized with time atnvOS_init by default.
`all-ports`	A flag to specify if you want to view the stats of all ports on the switch. The default view contains only enabled ports.
`counter` *`counter-number`*	Displays the counter number.
`ibytes ibytes-number`	Displays the incoming number of bytes.
`ibits` *`ibits-number`*	Displays the number of bits.
`iUpkts` *`iUpkts-number`*	Displays the number of incoming unicast packets.
`iBpkts` *`iBpkts-number`*	Displays the number of incoming broadcast packets.
`iMpkts` *`iMpkts-number`*	Displays the number of incoming multicast packets.
`iPauseFs` *`iPauseFs-number`*	Displays the number of incoming pause frames.
`iCongDrops` *`iCongDrops-number`*	Displays the number of incoming packets dropped due to congestion.

idiscards *idiscards-number*	Displays the number of incoming packets discarded.
ierrs *ierrs-number*	Displays the number of incoming errors.
obytes *obytes-number*	Displays the number of outgoing bytes.
oUpkts *oUpkts-number*	Displays the number of outgoing unicast packets.
oBpkts *oBpkts-number*	Displays the number of outgoing broadcast packets.
oMpkts *oMpkts-number*	Displays the number of outgoing multicast packets.
oPauseFs *oPauseFs-number*	Displays the number of outgoing pause frames.
oCongDrops *oCongDrops*-number	Displays the number of outgoing packets dropped due to congestion.
odiscards *odiscards-number*	Displays the number of outgoing discarded packets.
oerrs *oerrs-number*	Displays the number of outgoing errors.
mtu-errs *mtu-errs-number*	Displays the number of MTU errors.
HER-packets *HER-pts-number*	Displays the number of Head End Replicated (HER) packets.
HER-bytes *HER-bytes-number*	Displays the number of Head End Replicated (HER) bytes.

Defaults None.

Access CLI

History Command introduced in Version 3.1.0.

Usage Switches are equipped with network data ports for host or inter-switch communication. This command shows the status of a specific network data port or all network data ports on the local switch. To see the output in bits, use the option format all.

Examples To display the SNMP statistics for network data ports on the switch, use the following command:

```
CLI (network-admin@Spine-1) > port-stats-snmp-show format all layout
vertical
switch:                 Spine-1
```

```
port:                   9
port-clear-count:   0
port-clear-time:    27m57s
all-ports:            false
counter:              0
ibytes:               916
ibits:                 7.33K
iUpkts:               0
iBpkts:               6
iMpkts:               6
iPauseFs:             0
CongDrops:           0
idiscards:            0
ierrs:                 0
ibytes:                477K
obits:                 3.91M
oUpkts:               0
oBpkts:               91
oMpkts:                4.87K
oPauseFs:             0
oCongDrops:          0
odiscards:            0
oerrs:                 0
mtu-errs:             0
HER-pkts:             0
ER-bytes:            0
```

port-stats-show

This command displays packet count statistics for switch data ports.

Syntax `port-stats-show`

Specify any of the following options:

`time date/time: yyyy-mm-ddThh:mm:ss`	Specifies a time for the packet count statistics using the timestamp format YYYY-MM-DDTHH:MM:SS, where: • YYYY specifies the 4 digit calendar year; • MM specifies the 2 digit month of the year; • DD specifies the 2 digit day of the month; • HH specifies the 2 digit time of the day (24H notation); • MM specifies the 2 digit minute of the hour; SS specifies the 2 digit second of the minute
`start-time date/time: yyyy-mm-ddTHH:mm:ss`	Specifies a start time for the packet count statistics using the timestamp format YYYY-MM-DDTHH:MM:SS, where: • YYYY specifies the 4 digit calendar year; • MM specifies the 2 digit month of the year; • DD specifies the 2 digit day of the month; • HH specifies the 2 digit time of the day (24H notation); • MM specifies the 2 digit minute of the hour; • SS specifies the 2 digit second of the minute.
`end-time date/time: yyyy-mm-ddTHH:mm:ss`	Specifies an end time for the packet count statistics using the timestamp format YYYY-MM-DDTHH:MM:SS, where: • YYYY specifies the 4 digit calendar year; • MM specifies the 2 digit month of the year; • DD specifies the 2 digit day of the month; • HH specifies the 2 digit time of the day (24H notation); • MM specifies the 2 digit minute of the hour;

	• SS specifies the 2 digit second of the minute.
duration duration: #d#h#m#s	Specifies the duration in seconds.
interval duration: #d#h#m#s	Specifies the interval between statistics collection.
since-start	Specifies if the statistics are collected from the start of collecting statistics.
older-than duration: #d#h#m#s	Specifies if the statistics are older than the duration in days, hours, minutes, and seconds.
within-last duration: #d#h#m#s	Specifies if the statistics are within the duration in days, hours, minutes, and seconds.
port *port-list*	Specifies one or more switch network data port numbers. The port number must be in the range of 1 to 64. Multiple ports can be specified as a comma-separated list of numbers or a range (-).
bezel-port *bezel-port-string*	Specifies the bezel port.
description description-string	Displays the port description.
counter *counter-number*	Displays the counter number.
ibytes ibytes-number	Displays the incoming number of bytes.
obits *obits-number*	Displays the number of outgoing bits.
ibits *ibits-number*	Displays the number of incoming bits.
iUpkts *iUpkts-number*	Displays the number of incoming unicast packets.
iBpkts *iBpkts-number*	Displays the number of incoming broadcast packets.
iMpkts *iMpkts-number*	Displays the number of incoming multicast packets.
iPauseFs *iPauseFs-number*	Displays the number of incoming pause

	frames.
iCongDrops *iCongDrops-number*	Displays the number of incoming packets dropped due to congestion.
idiscards *idiscards-number*	Displays the number of incoming packets discarded.
ierrs *ierrs-number*	Displays the number of incoming errors.
obytes *obytes-number*	Displays the number of outgoing bytes.
oUpkts *oUpkts-number*	Displays the number of outgoing unicast packets.
oBpkts *oBpkts-number*	Displays the number of outgoing broadcast packets.
oMpkts *oMpkts-number*	Displays the number of outgoing multicast packets.
oPauseFs *oPauseFs-number*	Displays the number of outgoing pause frames.
oCongDrops *oCongDrops*-number	DisplaysDisplays the number of outgoing packets dropped due to congestion.
odiscards *odiscards-number*	Displays the number of outgoing discarded packets.
oerrs *oerrs-number*	Displays the number of outgoing errors.
mtu-errs *mtu-errs-number*	Displays the number of MTU errors.
HER-pkts *HER-pkts-number*	Displays the number of Head End Replicated (HER) packets.
HER-bytes *HER-bytes-number*	Displays the number of Head End Replicated (HER) bytes.
HER-bits *HER-bits-number*	Displays the number of Head End Replicated (HER) bits.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.2.3	The parameter `timestamp` removed.
Version 2.4.1	The parameter `mtu-errs` added.
Version 2.6.0	The parameters `HER-pkts` and `HER-bytes` added.
Version 7.0.0	The parameter `bezel-port` added.

Usage

Switches are equipped with network data ports for host or inter-switch communication. This command shows the status of a specific network data port or all network data ports on the local switch. To see the output in bits, use the option format all.

Examples

To display the packet count statistics for network data ports on the switch, use the following command:

```
CLI (network-admin@Spine-1) > port-stats-show
switch     time     port bezel-port description ibits iUpkts iBpkts iMpkts iCongDrops
ierrs obits oUpkts oBpkts oMpkts oCongDrops oerrs mtu-errs
---------- -------- ---- ---------- ----------- ----- ------ ------ ------ ----------
----- ----- ------ ------ ------ ---------- ----- --------
switch     00:19:18 0    0                      1.46M 868    0      0      0          0
   1.13M 1022   0      0      0          0     0
switch     00:19:18 21   9                      214K  0      4      244    0          0
   123K  0      0      72     0          0     0
switch     00:19:18 25   10                     98.7K 0      0      66     0          0
   207K  0      4      223    0          0     0
switch     00:19:18 29   11                     100K  0      0      85     0          0
   216K  0      4      242    0          0     0
switch     00:19:18 33   12                     76.4K 0      0      38     0          0
   233K  0      4      275    0          0     0
switch     00:19:18 95   29                     116K  0      0      108    0          0
   163K  0      0      168    0          0     0
switch     00:19:18 96   30                     89.4K 0      0      64     0          0
   82.1K 0      0      18     0          0     0
switch     00:19:18 100  31                     95.3K 0      0      67     0          0
   68.6K 0      0      15     0          0     0
switch     00:19:18 101  32                     100K  0      4      63     0          0
   69.8K 0      0      17     0          0     0
```

port-stats-settings-modify

This command is used to modify collecting statistics from a port.

Syntax `port-stats-settings-modify`

Specify one or more of the following options:

`enable|disable`	Specify if you want to enable or disable statistics collection.
`duration: #d#h#m#s disk-space`	Specify the duration of the interval between collecting statistics.
`disk-space` *`disk-space-number`*	Specify the amount of disk space to store the port statistics.

Defaults None

Access CLI

History Command introduced in Version 2.0.

Usage Use this command to clear statistics from a list of ports

Examples To clear statistics from ports 43-47, use the following command:

```
CLI (network-admin@switch) > port-stats-settings-modify port 43-47
```

port-stats-settings-show

This command displays the settings for collecting statistics on a port.

Syntax `port-stats-settings-show`

Defaults None

Access CLI

History Command introduced in Version 2.1.

Usage Use this command to display the settings for collecting statistics from ports

Examples To display settings for port statistics collection, use the following command:

```
CLI (network-admin@Spine-1) > port-stats-settings-show
switch:       Spine-1
enable:       yes
interval:    1m
disk-space:  8G
```

port-storm-control-modify

Use this command to modify the storm control configuration on a port.

Storm control prevents traffic on a LAN from disruption by a broadcast, multicast, or unicast storm on a port. A LAN storm occurs when packets flood the LAN, creating excessive traffic and degrading network performance.

Syntax `port-storm-control-modify`

`port` *`port-list`*	Specify the port list that you want to apply storm control.
Specify between one and three of the following options:	
`unknown-ucast-level` *`unknown-ucast-level-string`*	Specify the percentage of total available bandwidth that can be used by unicast traffic. The default value is 30%.
`unknown-mcast-level` *`unknown-mcast-level-string`*	Specify the percentage of total available bandwidth that can be used by multicast traffic. The default value is 30%.
`broadcast-level` *`broadcast-level-string`*	Specify the percentage of total available bandwidth that can be used by broadcast traffic. The default value is 30%.

Defaults None

Access CLI

History Command introduced in Version 2.2.3.

Usage The thresholds can either be expressed as a percentage of the total available bandwidth that can be used by the broadcast, multicast, or unicast traffic

Examples

```
CLI (network-admin@switch) > port-storm-control-modify port 11 unknown-
ucast-leve 1.1
switch intf speed  unknown-ucast-level   unknown-mcast-level  broadcast-level
------ ---   ----     --------------------- -------------------   ----------------
pl-12  11    10g     1.1%                      2.2%                    3.3%
```

port-storm-control-show

This command is used to display information about storm control on a port.

Storm control prevents traffic on a LAN from disruption by a broadcast, multicast, or unicast storm on a port. A LAN storm occurs when packets flood the LAN, creating excessive traffic and degrading network performance.

Syntax `port-storm-control-show`

`port` *`port-list`*	Specify a port or a list of ports.

Defaults None

Access CLI

History Command introduced in Version 2.2.3.

Usage Use this command to display information about ports configured for storm control.

Examples To display information about storm control, use the following syntax:

```
CLI (network-admin@switch) > port-storm-control-show port 11
switch intf speed  unknown-ucast-level   unknown-mcast-level  broadcast-level
------ ---   ----     --------------------- -------------------   ----------------
pl-12  11    10g    1.1%                   2.2%                      3.3%
```

Port VLAN Commands

port-vlan-add

This command is used to add a VLAN to a specific port.

Syntax `port-vlan-add`

`port` *`port-number`*	Specify the port number for the VLAN.
`port-desc` *`port-desc-string`*	Specify the description to add the port with that description to the VLAN.
Specify one or both of the following options:	
`vnet` *`vnet-name`*	Specify the name of the vNET for the port.
`vlans` *`vlans-list`*	Specify the list of VLANs to apply to the port.
`untagged-vlan` *`vlan-id`*	Specify an untagged VLAN to apply to the port. The value can be from 0-4095.

Access CLI

History

Version 1.2	Command introduced.
Version 2.3	The parameters `ports`, `description` and `active-vlans` deprecated.
Version 2.4.1	The parameter `vnet` added.
Version 7.0.0	The parameter `port-desc` added.

Usage Use this command to add a VLAN to a specific port.

Examples To add an untagged VLAN with the identifier 25 to port 11, use the following command:

```
CLI (network-admin@switch) > port-vlan-add port 11 untagged-vlan 25
```

port-vlan-remove

This command is used to remove a VLAN from a specific port.

Syntax `port-vlan-remove`

`vlans` *`vlan-list`*	Specify the VLAN list to remove from the port.
`vnet` *`vnet-name`*	Specify the name of the vNET for the port.
`port` *`port-number`*	Specify the port that you want to remove from the configuration.
`port-desc` *`port-desc-string`*	Specify the port description to remove the port with that description.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.4.1	The parameter `vnet` added.
Version 7.0.0	The parameter `port-desc` added.

Usage Used to remove VLANs from existing ports.

Examples To remove VLAN list, vlan-remote, from port 25, use the following command:

```
CLI (network-admin@switch) > port-vlan-remove port 25 vlans vlan-remote
```

port-vlan-show

This command is used to display information about VLANs assigned to ports.

Syntax `port-vlan-show`

`vnet` *`vnet-name`*	Name of the vNET for the port.
`bezel-port` *`bezel-port-string`*	The bezel port.
`vlans` *`vlans-list`*	The list of VLANs to apply to the port.
`untagged-vlan` *`vlan-id`*	An untagged VLAN to apply to the port. Valid range is between 0 and 4095.
`ports` *`port-list`*	The list of ports.
`description` *`description-string`*	The description for the configuration.
`port-desc` *`port-desc-string`*	The port description.
`active-vlans` *`vlan-list`*	A list of active VLANs.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.4.1	The parameter `vnet` added.
Version 7.0.0	The parameters `bezel-port` and `port-desc` added.

Usage Use this command to display information about a VLAN on a specific port.

Examples To display information about an untagged VLANs, use the following command:

```
CLI (network-admin@switch) > port-vlan-show
switch bezel-port port vlans untagged-vlan description activevlans
------ ---------- ---- ----- ------------- ----------- -----------
switch 25         25   10,12 1                         none
```

port-vnet-show

This command is used to view the ports that are assigned to vNETs.

Syntax `port-vnet-show`

name name-string	The vNET name.
managed-ports *port-list*	The vNET exclusive ports.
num-vlans *1..4094*	Number of global VLANs assigned to vNET.
vlans *vlan-list*	VLANs assigned to public VLAN vNET.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display information about a vNET on a specific port.

Examples To display information about ports with assigned vNETs, use the following command:

```
CLI (network-admin@switch) > port-vnet-show
switch  vnets          port  vlans
------- -------------- ----- -----
switch  switch1-global 1,2,3 3,5
```

port-xcvr-memory-show

Use this command to display information about transceiver memory.

Syntax `port-xcvr-memory-show`

`ports` *`port-list`*	Displays the specified ports.

Defaults None

Access Network Administrator

History Command introduced in Version 3.1.0.

Usage Use this command to display information about transceivers memory.

Examples Use the following syntax to display ports 3-5:

```
CLI (network-admin@switch) > port-xcvr-memory-show
```

port-xcvr-show

This command is used to display information about a transceiver installed in a port on the switch.

Syntax `port-xcvr-show`

port *port-list*	Displays the port list.
bezel-port *bezel-port-string*	Displays the bezel port.
vendor-name *vendor-name-string*	Displays the vendor name for the transceiver.
part-number *part-number-string*	Displays the part number of the transceiver.
serial-number *serial-number-string*	Displays the serial number.
type unknown|sfp|qsfp	Displays the xcvr form factor.
cbl-len *cbl-len-number*	Displays the AOC/DOC cable length.
temp[C] *temp[C]-number*	Displays the port temperature in degrees Centigrade.
vcc33[V] *vcc33[V]-string*	Displays the 3.3V supply voltage.
tx-bias[mA] tx-bias[mA]-string	Displays the transmit bias current (mA).
tx-pwr[dBm] tx-pwr[dBm]-*string*	Displays the transmit power (dBm).
rx-pwr[dBm] rx-pwr[dBm]-*string*	Displays receive power (dBm).

Defaults None.

Access CLI

History

Version 1.2.1	Command introduced.
Version 2.6.0	Transmit and receiver parameters added for lanes.
Version 7.0.0	The Parameter `bezel-port` added.

Usage Used to display information about SFPs installed in ports on the switch.

Examples

```
CLI (network-admin@switch) > port-xcvr-show
switch port bezel-port vendor-name part-number       serial-number
------ ---- ---------- ----------- ---------------- --------------
switch 2    2          Amphenol    610640003        APF164000361AF
switch 3    2.2        Amphenol    610640003        APF164000361AF
switch 4    2.3        Amphenol    610640003        APF164000361AF
switch 5    2.4        Amphenol    610640003        APF164000361AF
switch 21   9          3M Company  9QA0-111-12-3.00 V30B7205
switch 22   9.2        3M Company  9QA0-111-12-3.00 V30B7205
switch 23   9.3        3M Company  9QA0-111-12-3.00 V30B7205
switch 24   9.4        3M Company  9QA0-111-12-3.00 V30B7205
switch 25   10         3M Company  9QA0-111-12-3.00 V30B7648
switch 26   10.2       3M Company  9QA0-111-12-3.00 V30B7648
switch 27   10.3       3M Company  9QA0-111-12-3.00 V30B7648
switch 28   10.4       3M Company  9QA0-111-12-3.00 V30B7648
switch 29   11         3M Company  9QA0-111-12-3.00 V30B7704
switch 30   11.2       3M Company  9QA0-111-12-3.00 V30B7704
```

prefix-list-create

Create a prefix lists used for Router Advertisement (RA) Guard.

Syntax `prefix-list-create`

`name` *`name-string`*	Displays the name of the prefix list.
`scope local|fabric`	Displays the scope for the prefix list.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0

Usage Use this command to create prefix lists.

Examples To create a prefix list, ra-prefix-1, use the following syntax:

```
CLI (network-admin@switch) > prefix-list-create name ra-prefix-1 scope
local
```

prefix-list-delete

Delete a prefix lists used for Router Advertisement (RA) Guard.

Syntax `prefix-list-delete`

name *name-string*	Displays the name of the prefix list.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0

Usage Use this command to delete prefix lists.

Examples To delete a prefix list , ra-prefix-1, use the following syntax:

```
CLI (network-admin@switch) > prefix-list-delete name ra-prefix-1
```

prefix-list-show

Display information about prefix lists used for Router Advertisement (RA) Guard.

Syntax `prefix-list-show`

`name` *`name-string`*	Displays the name of the prefix list.
`scope local|fabric`	Displays the scope for the prefix list.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0

Usage Use this command to display information about prefix lists configuration.

Examples To display information about prefix lists configurations, ra-prefix-1, use the following syntax :

```
CLI (network-admin@switch) > prefix-list-show  name  ra-prefix-1
switch      name          scope
---------- ----------- -----
Spine-1       ra-prefix-1  local
```

prefix-list-network-add

Display network information for a Route Advertisement (RA) Guard configuration.

Syntax `prefix-list-network-add name`

`name` *`name-string`*	Display the name of the prefix list network.
`network` *`ip-address`*	Display the IP address of the prefix list network.
`netmask` *`netmask`*	Display the netmask for the IP address.

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to add network information for a RA Guard configuration.

Examples To add network information for the prefix list network configuration, ra-prefix-1, use the following syntax:

```
CLI (network-admin@switch) > prefix-list-network-add name ra-prefix-1
network 1.1.1.1 netmask 255.255.255.0
switch      name          network
---------- ----------- ----------
Spine-1     ra-prefix-1 1.1.1.1/24
```

prefix-list-network-remove

Remove prefix list network information for a Route Advertisement (RA) Guard from the switch configuration.

Syntax `prefix-list-network-remove`

`name` *`name-string`*	Display the name of the prefix list network.
`network` *`ip-address`*	Display the IP address of the prefix list network.
`netmask` *`netmask`*	Display the netmask for the IP address.

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to remove network information from a RA Guard configuration.

Examples To remove network information for the prefix list network configuration, ra-prefix-1, use the following syntax:

```
CLI (network-admin@switch) > prefix-list-network-remove name ra-prefix-1
```

prefix-list-network-show

Display network information for a Route Advertisement (RA) Guard configuration.

Syntax `prefix-list-network-show`

name *name-string*	Display the name of the prefix list network.
network *ip-address*	Display the IP address of the prefix list network.
netmask *netmask*	Display the netmask for the IP address.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0

Usage Use this command to display network information about a RA Guard configuration.

Examples To display network information for the prefix list network configuration, ra-prefix-1, use the following syntax:

```
CLI (network-admin@switch) > prefix-list-network-show
switch      name          network
---------- ----------- ----------
Spine-1     ra-prefix-1 1.1.1.1/24
```

Q Commands

quit

This command allows you to leave command line interface (CLI).

Syntax `quit`

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1

Usage The quit command is equivalent to the exit command.

Examples To leave the CLI, use the following command:

```
CLI (network-admin@switch) > quit
```

R Commands

role-create

This command creates new user roles and access controls for a switch.

Syntax `role-create`

`name` *`name-string`*	Specify the name of the user role.
`scope local|fabric`	Specify the scope of the user role.
Specify any of the following options:	
`access read-only|read-write`	Specify the type of access. The default is read-write.
`running-config|no-running-config`	Specify to allow or deny displaying of running configuration of switch.
`shell|no-shell`	Specify to allow or deny shell access.
`sudo|no-sudo`	Specify to permit or deny `sudo` command from the shell prompt.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter `vnet` is deprecated. The optional parameters `access` and `running-config` are added.
Version 2.6.0	The parameters `shell` and `sudo` added.

Usage In a multi-tenant environment, a switch or fabric can be divided into smaller logical segments known as virtual networks (vNETs) using role-based access control (RBAC). This command allows you to create roles and access controls for the local switch or fabric.

Examples

- To create the role, `network-admin` with access to the fabric and running configuration, use the following command:

  `CLI (network-admin@switch) >` `role-create name network-admin scope`

```
fabric access read-write running-config
```

- To create a user role named `role1` having local scope with access to the shell prompt, use the command:

  ```
  CLI (network-admin@switch) > role-create name role1 scope local shell
  sudo
  ```

role-delete

This command is used to delete an existing role from the configuration .

Syntax `role-delete`

`name` *`name-string`*	Specify the name of the role to delete.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage You can remove previously created roles from the switch configuration.

Examples To delete the role `network-admin` use the following command:

```
CLI (network-admin@switch) > role-delete name network-admin
```

role-modify

This command modifies roles and access controls for a switch.

Syntax `role-modify`

`name` *`name-string`*	Specify the name of the user role.
Specify any of the following options:	
`access read-only|read-write`	Specify the access type for the role. The default role is read-write.
`running-config|no-running-config`	Specify if a user with this the role can use the `running-config-show` command. You may want to limit which users can use `running-config-show` because the command can expose sensitive password information.
`shell|no-shell`	Specify if the user can access the `shell`.
`sudo|no-sudo`	Specify if the user can execute the `sudo` command from the `shell`.
`delete-from-users`	Delete the role from the user.

Defaults None.

Access CLI

History

Version 2.0	Command introduced.
Version 2.1	The parameter `name` added.
Version 2.6.0	The parameters `shell|no-shell` and `sudo|no-sudo` added.

Usage In a multi-tenant environment, a switch or fabric can be divided into smaller logical segments known as virtual networks (vNETs) using role-based access control (RBAC). This command allows you to modify roles and access controls for the local switch or fabric.

Examples

- To modify a role, from read-write to read-only, use the following command:

```
CLI (network-admin@switch) > role-modify local-admin access read-only
```

- To create a user `user1` with local scope and initial role `role1`, use the command:

```
CLI (network-admin@switch) > user-create name user1 scope localinitial-
role role1
password:
confirm password:
```

role-show

This command is used to display roles in the switch configuration.

Syntax `role-show`

`id`	
`name` *`name-string`*	Specify a name for the role.
`scope [local|fabric]`	Specify the scope for the role.
Specify any of the following options:	
`access read-only|read-write`	Specify the access type for the role. The default role is read-write.
`running-config|no-running-config`	Specify if a user with this the role can use the `running-config-show` command. You may want to limit which users can use `running-config-show` because the command can expose sensitive password information.
`shell|no-shell`	Specify if the user can access the shell.
`sudo|no-sudo`	Specify if the user can execute the `sudo` command from the shell.

Defaults None.

Access CLI

History

Version 2.0	Command introduced.
Version 2.1	The parameter `name` added.
Version 2.6.0	The parameters `shell|no-shell` and `sudo|no-sudo` added.

Usage You can view all configured roles in the switch configuration.

Examples To display all roles, use the following command:

```
CLI (network-admin@switch) > role-show format all layout
id:                 6000021:402
name:               vlb-web-svr-admin
scope:              fabric
```

```
vnet-access:      vlb-web-svr
access:           read-write
running-config:   deny
id:               6000021:405
name:             test-admin
scope:            fabric
vnet-access:      test
access:           read-write
running-config:   deny
```

running-config-show

This command displays information about the current configuration on the switch.

Syntax `running-config-show`

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.5.3	vNET administrator-related information displays when a vNET administrator runs this command.

Usage Displays information about the current configuration on the switch.

Examples To display the configuration, use the following command:

```
CLI (network-admin@switch) > running-config-show
```

The output is lengthy and includes port information, IP addresses, vNETs, and so on.

To view vNET administrator information:

1. Enable running-config for the vNET admin role, **(vnet1-admin)**:
```
CLI (network-admin@switch) > role-modify name vnet1-admin running-
config
```
2. Log into the vNET, as vnet1-admin, and run the `running-config-show` command:
```
CLI vnet1-admin@switch > running-config-show
storage-pool-create name pool-disk2 device1 disk2
storage-pool-create name test
vnet-manager-modify name vnet1-mgr enable
vnet-manager-service-modify vnet-manager-name vnet1-mgr if eth0 web
storage-hapool-create name hapool1 local-pool pool-di hapool-peer-pool
pool-disk4 backup-interval 1m
```

S Commands

service-heartbeat-create

Netvisor generates a packet from the CPU to send to the receive port of an Inline Service and the Netvisor vFlow configured for snooping is not port-specific, as Netvisor accepts the response from either the receive port or the transmit port. You configure the heartbeat as an additional parameter for a specific Inline Service.

Syntax `service-heartbeat-create`

`name` *`name-string`*	Specify the name for the Heartbeat Service.
`interval duration: #d#h#m#s`	Specify the interval between heartbeat packets.
`retry` *`retry-number`*	Specify the number of times to retry sending a packet.
`vlan` *`vlan-id`*5	Specify a VLAN ID.
`src-mac` *`mac-address`*	Specify the source port MAC address.
`dst-mac` *`mac-address`*	Specify the destination MAC address.
`type normal|pass-through`	Specify the type of heartbeat response as normal or passthrough. A normal response indicates that the Inline Service sends the response. A passthrough response indicates that Netvisor sends the response and returns it to the Inline Service.
`payload` *`payload-string`*	Specify the payload for the heartbeat packet.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to create a Heartbeat Service configuration.

Examples To create a Heartbeat Service, use the following syntax:

```
CLI (network-admin@switch) > service-heartbeat-create name FW_probe
interval 5s retry 3 vlan-id 10 src-mac 64:6e:11:1c:11:11 dst-mac
01:1b:11:01:01:01 type normal payload 54 63 82 ff 01 46 12 ce a2 d4 00
00 00 00 00 00 00 00
```

service-heartbeat-delete

Netvisor generates a packet from the CPU to send to the receive port of an Inline Service and the Netvisor vFlow configured for snooping is not port-specific, as Netvisor accepts the response from either the receive port or the transmit port. You configure the heartbeat as an additional parameter for a specific inline service.

Syntax `service-heartbeat-delete`

`name` *`name-string`*	Specify a name for the Heartbeat Service.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to delete a Heartbeat Service configuration.

Examples To delete Heartbeat Service, FW_probe, use the following syntax:

```
CLI (network-admin@switch) > service-heartbeat-delete name FW_probe
```

service-heartbeat-modify

Netvisor generates a packet from the CPU to send to the receive port of an Inline Service and the Netvisor vFlow configured for snooping is not port-specific, as Netvisor accepts the response from either the receive port or the transmit port. You configure the heartbeat as an additional parameter for a specific Inline Service.

Syntax `service-heartbeat-modify`

`name` *`name-string`*	Specify a name for the Heartbeat Service.
`interval duration: #d#h#m#s`	Specify the interval between heartbeat packets.
`retry` *`retry-number`*	Specify the number of times to retry sending a packet.
`payload` *`payload-string`*	Specify the payload for the heartbeat packet.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to modify a Heartbeat Service configuration.

Examples To modify a Heartbeat Service, use the following syntax:

```
CLI (network-admin@switch) > service-heartbeat-modify name FW_probe
retry 5
```

service-heartbeat-show

Netvisor generates a packet from the CPU to send to the receive port of an Inline Service and the Netvisor vFlow configured for snooping is not port-specific, as Netvisor accepts the response from either the receive port or the transmit port. You configure the heartbeat as an additional parameter for a specific Inline Service.

Syntax `service-heartbeat-show`

`name` *`name-string`*	Specify the name for the Heartbeat Service.
`interval duration: #d#h#m#s`	Specify the interval between heartbeat packets.
`retry` *`retry-number`*	Specify the number of times to retry sending a packet.
`vlan` *`vlan-id`*5	Specify a VLAN ID.
`src-mac` *`mac-address`*	Specify the source port MAC address.
`dst-mac` *`mac-address`*	Specify the destination MAC address.
`type normal|pass-through`	Specify the type of heartbeat response as normal or passthrough. A normal response indicates that the Inline Service sends the response. A passthrough response indicates that Netvisor sends the response and returns it to the Inline Service.
`payload` *`payload-string`*	Specify the payload for the heartbeat packet.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to display information about a Hearbeat Service configuration.

Examples To display information about a Hearbeat Service configuration, use the following syntax:

```
CLI (network-admin@switch) > service-heartbeat-show
```

service-stats-clear

This command is used to clear service statistics for a switch.

Syntax `service-stats-clear`

`service ftp-data|ftp-control|ssh| telnet|http|https|rpc|sql|imap| ldap|iSCSI|oracle-db|nfs|cifs| iSCSI-target|lockd|openstack-nova| openstack-keystone|openstack-metering|openstack-neutron| openstack-glance|openstack-cinder| and more`	Specifies the name of the service associated with the well-known UDP or TCP port number. HDFS entries indicate Hadoop services.

Defaults None.

Access CLI

History

Version 2.3	Command introduced.
Version 2.4.1	The parameters, `port` and `bytes`, deprecated.

Usage Unless otherwise specified, aggregate statistics are displayed for all UDP and TCP services on the switch. Each switch maintains a set of standard flow-based statistics that are continuously tracked and updated by the switch. Use this command to clear traffic statistics for all UDP and TCP services on the switch.

Examples To clear service statistics, use the following command:

```
CLI (network-admin@switch) > service-stats-clear
```

service-stats-show

This command is used to display service statistics for a switch.

Syntax `service-stats-show`

`name ftp-data|ftp-control|ssh|telnet|http|https|rpc|sql|imap|ldap|iSCSI|oracle-db|nfs|cifs|iSCSI-target|lockd|openstack-nova|openstack-keystone|openstack-metering|openstack-neutron| openstack-glance|openstack-cinder|...`	Specifies the name of the service associated with the well-known UDP or TCP port number. • HDFS • Nutanix • MR-JobTracker • Hive • Ganglia • MySQL • Cassandra
`bytes byte-number`	The number of bytes associated with the service port.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters for OpenStack added.
Version 2.2.5	The parameters, `HDFS-`, added to support Hadoop.
Version 2.2.6	Parameters added for MR, Hive, HBase, WebHCat, Ganglia, MySQL, Snap, Cassandra, Ganglia, LDAP, and Nutanix.
Version 2.4.1	The parameter, `port`, deprecated.

Usage Unless otherwise specified, aggregate statistics are displayed for all UDP and TCP services on the switch. Each switch maintains a set of standard flow-based statistics that are continuously tracked and updated by the switch. Use this command to display traffic statistics for all UDP and TCP services on the switch.

Examples To display service statistics, use the following command:

```
 CLI (network-admin@switch) > service-stats-show
port     name    bytes
0        other   90983
22       ssh     9709
80       http    7326910
443      https   1755667
2049     nfs     5540
```

sflow-collector-create

sFlow is an industry standard technology that monitors high speed switched networks. An sFlow Collector gathers information from sFlow Agents on the network. You can create as many sFlow Collectors as required. An sFlow Collector can have a scope of local or fabric.

Syntax `sflow-collector-create`

`collector-ip` *`ip-address`*	Specify the IP address of the sFlow Collector.
`collector-port` *`collector-port-number`*	Specify the port number for the sFlow Collector.
`name` *`name-string`*	Specify a name for the sFlow.
`scope [local|fabric]`	Specify a scope, either fabric or local.

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1

Usage This command is used to create an sFlow Collector to gather information from the sFlow Agents on the network. If the scope is fabric, then any new switch that joins the fabric receives the sFlow Collector configuration. If the scope is local, then the sFlow Collector is configured only on the local switch.

Examples To create the sFlow Collector, sflow-local, with the IP address of 192.168.18.37 on port 37, and the scope local, use the following syntax:

```
CLI (network-admin@switch) > sflow-collector-create  collector-ip
192.168.18.37 collector-port 37 name sflow-local scope local
```

sflow-collector-delete

This command is used to delete an sFlow Collector from your sFlow configuration.

Syntax `sflow-collector-delete name name-string`

`name` *`name-string`*	Specify the name of the sFlow collector.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1

Usage Use this command to delete an existing sFlow Collector.

Examples To delete the sflow collector, sflow-local, use the following command:

```
CLI (network-admin@switch) > sflow-collector-delete name sflow-local
```

sflow-collector-modify

This command is used to modify an existing sFlow Collector in your sFlow configuration.

Syntax `sflow-collector-modify`

`name` *`name-string`*	Specify the name of the sFlow you want to modify.
`collector-ip` *`ip-address`*	Modify the IP address of the sFlow collector.
`collector-port` *`collector-port-number`*	Modify the port number for the sFlow collector.
`scope [local|fabric]`	You cannot modify the scope of the sFlow Collector once configured.

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1

Usage This command is used to modify an existing sFlow Collector parameters.

Examples To modify the port number of the sFlow Collector, sFlow-local, with the IP address of 192.168.18.37 to port 44, use the following syntax:

```
CLI (network-admin@switch) > sflow-collector-modify name sflow-local
collector-ip 192.168.18.37 collector-port 44.
```

sflow-collector-show

This command is used to display the sFlow Collector configuration.

Syntax `sflow-collector-show`

`collector-ip` *`ip-address`*	Displays the IP address of the sFlow collector.
`collector-port` *`collector-port-number`*	Displays the port number of the sFlow collector.
`name` *`name-string`*	Displays the name of the sFlow.
`scope [local|fabric]`	Displays the scope, either fabric or local.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1

Usage Use this command to display information about the sFlow Collector.

Examples To display information about sFlow Collector, use the following command:

```
CLI (network-admin@switch) > sflow-collector-show

collector-ip collector-port name            scope
------------ -------------- ------------- ------
10.10.10.12  2055           sf_test       fabric
10.13.26.75  6343           sflow_collect local
```

sflow-create

This command is used to create an sFlow Agent on the network. You can configure an sFlow Agent with a scope local only (on the local switch).

Syntax `sflow-create`

`name` *`name-string`*	Specify a name for the sFlow.
`type ingress|egress`	Specify the type of packet for the sflow Agent. Specify ingress to capture incoming packets and egress for outgoing packets.
`sample-type raw|cooked`	Specify the sample type for the sFlow Agent. Raw indicates that the packet retains the link level header and cooked indicates that link level header is removed.
`ports` *`port-list`*	Specify the list of ports to capture packets.
`sample-rate` *`256-16000`*	Specify the sFlow sample rate. The value ranges from 256-16000 and the default value is 4096. Enter zero (0) if you want to disable sFlow sampling.
`counter-polling-interval 0..120`	Specify the sFlow interface statistics for counter polling interval. This is the periodic sampling or polling counters associated with a data source.
`trunc-length` *`trunc-length-number`*	Specify the truncated length of the captured packet.
`agent-id` *`ip-address`*	Specify the IP address of the sFlow agent.

Note: While creating the sFlow, do not configure both the `sample-rate` and `counter-polling-interval` to zero (0). If you do so, an error message: `sflow-create: Sample-rate/counter-polling-interval both can't be 0` is displayed. However, later, you can change both values to zero (0) using the `sflow-modify` command if desired.

When you configure the `sample-rate` and `counter-polling-interval` to zero (0) using the `sflow-modify` command, then no packets are sent out for sFlow monitoring.

Defaults The `sample-rate` default value is 4096.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, `scope`, is deprecated. The parameter, `agent-id`, added.
Version 2.4.1	The parameter, `vnet`, added.
Version 6.1.0	The parameter, counter-polling-interval, added. The parameter, `vnet`, deprecated.

Usage sFlow Agents capture packets on the network and send them to the sFlow Collector for analysis. Use this command to configure an sFlow Agent.

Examples To configure an sFlow Agent, SF-agent1, with the sample type raw on ports 21-25, use the following command:

```
CLI (network-admin@switch) > sflow-create name SF-agent1 sample-type
raw ports 21-25
```

sflow-delete

This command is used to delete an sFlow Agent from the network configuration.

Syntax `sflow-delete`

name *name-string*	Specify the name of the sFlow agent to delete.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1

Usage Use this command to delete an sFlow Agent.

Examples To delete the sFlow Agent, SF-agent1, use the following command:

```
CLI (network-admin@switch) > sflow-delete name SF-agent1
```

sflow-modify

This command is used to modify an existing sFlow Agent on the network.

Syntax `sflow-modify`

`name` *`name-string`*	Specify the sFlow name you want to modify.
`type ingress|egress`	Modify the type of packet between ingress and egress. Specify ingress to capture incoming packets and egress for outgoing packets.
`sample-type raw|cooked`	Modify the sample type for the sFlow agent. Raw indicates that the packet retains the link level header and cooked indicates that link level header is removed. The default mode is raw.
`ports` *`port-list`*	Modify the list of ports to capture packets.
`sample-rate` *`256-16000`*	Modify the rate of packet sampling by the sflow Agent.
`counter-polling-interval 0..120`	Modify the sFlow counter polling interval. This is the periodic sampling or polling counters associated with a data source.
`trunc-length` *`trunc-length-number`*	Modify the truncated length of the captured packet.
`agent-id` *`ip-address`*	Modify the IP address of the sFlow Agent. This is usually a switch management IP address and indicates the originator or sample frames provider.

Defaults The `sample-type` default mode is raw. The `sample-rate` default value is 4096.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, `scope`, is deprecated. The parameter, `agent-id`, added.
Version 2.4.1	The parameter, `vnet`, added.

Version 6.1.0	The parameter, counter-polling-interval added. The parameters, `sample-interval`, `vnet` are deprecated.

Usage sFlow Agents capture packets on the network and send them to the sFlow Collector for analysis. Use this command to configure an sFlow Agent.

Examples To modify an sFlow Agent, SF-agent1, with sample type raw on ports 21-25, use the following command:

```
CLI (network-admin@switch) > sflow-modify name SF-agent1 sample-type
raw ports 21-25
```

sflow-port-add

This command adds a port to the sflow-Agent.

Syntax `sflow-port-add`

`sflow-name` *`name-string`*	Specify the name of the sFlow to add the port.
`ports` *`port-list`*	Specify the list of ports to add to the sFlow Agent.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Use this command to add specific ports on a switch to the sFlow Agent.

Examples To add ports 31-33 to sFlow agent SF-agent1, use the following command:

```
CLI (network-admin@switch) > sflow-port-add sflow-name SF-agent1 ports
31-33
```

sflow-port-remove

This command removes a port from the sFlow-Agent.

Syntax `sflow-port-remove`

`sflow-name` *`name-string`*	Specify the name of the sFlow on which you want to remove the port (s).
`ports` *`port-list`*	Specify the list of ports to be removed from the sFlow Agent.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Use this command to remove specific ports on a switch associated with the sFlow Agent.

Examples To remove ports 31-33 from sFlow agent SF-agent1, use the following command:

```
CLI (network-admin@switch) > sflow-port-remove sflow-name SF-agent1
ports 31-33
```

sflow-show

This command is used to display information about a sFlow Agent on the network.

Syntax `sflow-show`

`name` *`name-string`*	Displays the sFlow name.
`type ingress|egress`	Displays the sFlow type for the sFlow agent. Specify ingress to capture incoming packets and egress for outgoing packets.
`sample-type raw|cooked`	Displays the sample type for the sFlow agent. Raw indicates that the packet retains the link level header and cooked indicates that link level header is removed.
`ports` *`port-list`*	Displays the sFlow ports.
`sample-rate` *`256-16000`*	Displays the sFlow sample rate.
`counter-polling-interval 0..120`	Displays the sFlow interface stats-counter polling interval.
`trunc-length` *`trunc-length-number`*	Displays the truncated length of the sFlow sample.
`agent-id` *`ip-address`*	Displays the local IP address.
`sample-pkt-cnt` *`sample-pkt-cnt-number`*	Displays the sFlow sample packet count.
`sample-drops` *`sample-drops-number`*	Displays the sFlow sample dropped packets.
`malformed-packet-drops malformed-packet-drops-number`	Displays the sFlow malformed packet drops.
`malformed-vlan-packet-drops malformed-vlan-packet-drops-number`	Displays the sFlow malformed vlan packet drops.
`malformed-ip-packet-drops malformed-ip-packet-drops-number`	Displays the sFlow malformed ip packet drops.
`internal-q-drops internal-q-drops-number`	Displays the sFlow internal Q drops.
`oversize-packet-drops oversize-packet-drops-number`	Displays the sFlow over size packet drops.
`internal-nq-drops internal-nq-drops-number`	Displays the sFlow internal nQ drops

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Version 1.2	Command introduced.
Version 2.1	The parameter, `scope`, is deprecated. The parameters, `sample-pkt-cnt`, and `sample-drops` added.
Version 2.4.1.	The parameter, `vnet`, added.
Version 6.1.0	The parameters, `counter-polling-interval`, `malformed-packet-drops`, `malformed-vlan-packet-drops`, `malformed-ip-packet-drops`, `internal-q-drops`, `oversize-packet-drops`, and `internal-nq-drops` are added. The parameter,`sample-interval` is deprecated.

Usage sFlow Agents capture packets on the network and send them to the sFlow Collector for analysis. Use this command to display information about an sFlow Agent.

Examples To display the sFlow Agent, SF-agent1, and display in a vertical format, use the following command:

```
CLI (network-admin@switch) > sflow-show name SF-agent1 layout vertical
switch:                          switch
name:                            SF-agent1
type:                            ingress
sample-type:                     raw
ports:                           25
sample-rate:                     1
trunc-length:                    160
vnet-id:                         0:0
vlan:                            0
agent-id:                        10.14.22.100
sample-pkt-cnt:                  66798
sample-drops:                    0
invalid-vlan-drops:              0
malformed-packet-drops:          0
malformed-vlan-packet-drops:     0
v6-packet-drops:                 0
malformed-ip-packet-drops:       0
internal-q-drops:                0
oversize-packet-drops:           0
internal-nq-drops:               0
```

sflow-thread-binding-show

This command is used to display the binding information between the sFlows and the nv-queue messages in the network.

Syntax `sflow-thread-binding-show`

`name` *`name-string`*	Displays the sFlow name.
`thread-id thread-id-number`	Displays the unique identifier of the sFlow Agent that binds the sFlows (in groups of 6)
`nv-msg-queue-name nv-msg-queue-name-string`	Displays the associated *nv-sflow-msg* queue name, which is the actual software queue used for sFlow sampling.
`nv-cache-queue-name nv-cache-queue-name-string`	Displays the associated nv sflow cache queue name. This is a pool of buffers. Netvisor ONE allocates one queue from the cache_queue whenever a sample is received from the hardware, which is then queued to the nv_queue. After processing the sampled packet the buffer is released from msg_queue back to cache_queue.

Defaults None.

Access CLI

History Command introduced in nvOS Version 6.1.0.

Version 6.1.0	Command introduced. The parameters, `thread-id, nv-msg-queue-name, and nv-cache-queue-name` added.

Usage Use this command to display information about the binding between the sFlow Agent and the nv-queue messages.

Examples To display the binding details, use the following command:

```
CLI (network-admin@switch) > sflow-thread-binding-show
name thread-id       nv-msg-queue-name nv-cache-queue-name
---- --------------- ----------------- -------------------
s1   140323777259264 sflow-packet-q-9  sflow-cache-q-9
s2   140323777259264 sflow-packet-q-9  sflow-cache-q-9
s3   140323777259264 sflow-packet-q-9  sflow-cache-q-9
s4   140323777259264 sflow-packet-q-9  sflow-cache-q-9
s5   140323777259264 sflow-packet-q-9  sflow-cache-q-9
s6   140323777259264 sflow-packet-q-9  sflow-cache-q-9
s7   140322640197376 sflow-packet-q-10 sflow-cache-q-10
s8   140322640197376 sflow-packet-q-10 sflow-cache-q-10
s9   140322640197376 sflow-packet-q-10 sflow-cache-q-10
```

```
s10  140322640197376 sflow-packet-q-10 sflow-cache-q-10
s11  140322640197376 sflow-packet-q-10 sflow-cache-q-10
s12  140322640197376 sflow-packet-q-10 sflow-cache-q-10
s13  140322665375488 sflow-packet-q-11 sflow-cache-q-11
s14  140322665375488 sflow-packet-q-11 sflow-cache-q-11
s15  140322665375488 sflow-packet-q-11 sflow-cache-q-11
```

scp

This command is used to access Secure, Contain, and Protect (SCP) protocol for Netvisor ONE OS.

Syntax `scp`

Defaults None

Access Network Administrator

History

Usage Use this command to transfer files over scp.

Examples To access scp, use the following syntax:

```
CLI (network-admin@switch) > scp
```

sftp

This command is used to access SSH File Transfer Protocol (SFTP) for Netvisor ONE OS.

Syntax `sftp`

Defaults None

Access Network Administrator

History

Usage Use this command to transfer files over SFTP.

Examples To access SFTP, use the following syntax:

```
CLI (network-admin@switch) > sftp
```

shell

This command is used to access the shell for Netvisor OS.

> **Informational Note**: Before you can use the shell command, you must modify the role to allow access to the shell. Use the role-modify command to allow access to the shell.

Syntax `shell`

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to access the shell for Netvisor ONE.

Examples To access the shell, use the following syntax:

```
CLI (network-admin@switch) > shell
'admin@switch:~$ '
```

snmp-community-create

This command is used to create SNMP communities to support SNMPv1.

Syntax `snmp-community-create`

`community-string` *`community-string-string`*	Specify the name for the community string.
`community-type read-only|read-write`	Specify the access type for the community.

Defaults None

Access CLI

History Command introduced in nvOS Version 2.0.

Usage Communities are used in SNMPv1 as a method of controlling access to information. Use this command to create a community for SNMPv1.

Examples To create a community, snmp-reader, for read-only access, use the following command:

```
CLI (network-admin@switch) > snmp-community-create community-string
snmp-reader community-type read-only
```

snmp-community-delete

This command is used to delete an SNMP community that supports SNMPv1.

Syntax `snmp-community-delete`

`community-string` *`community-string-string`*	Specify the name for the community string to delete.

Defaults None

Access CLI

History Command introduced in nvOS Version 2.0.

Usage Communities are used in SNMPv1 as a method of controlling access to information. Use this command to delete a community for SNMPv1.

Examples To delete a community, snmp-reader, use the following command:

```
CLI (network-admin@switch) > snmp-community-delete community-string
snmp-reader
```

snmp-community-modify

This command is used to modify an SNMP community to support SNMPv1.

Syntax `snmp-community-modify`

`community-string` *`community-string-string`*	Specify the name for the community string.
`community-type read-only|read-write`	Specify the access type for the community.

Defaults None

Access CLI

History Command introduced in nvOS Version 2.0.

Usage Communities are used in SNMPv1 as a method of controlling access to information. Use this command to modify a community for SNMPv1.

Examples To modify a community, snmp-reader, for read-write access, use the following command:

```
CLI (network-admin@switch) > snmp-community-modify community-string
snmp-reader community-type read-write
```

snmp-community-show

This command is used to display SNMP communities that support SNMPv1.

Syntax `snmp-community-show`

`community-string` *`community-string-string`*	Specify the name for the community string.
`community-type read-only|read-write`	Specify the access type for the community.

Defaults None

Access CLI

History Command introduced in nvOS Version 2.0.

Usage Communities are used in SNMPv1 as a method of controlling access to information. Use this command to display communities for SNMPv1.

Examples To display SNMPv1 communities, use the following command:

```
CLI (network-admin@switch) > snmp-community-show
switch     community-string community-type
--------- ---------------- --------------
pleiades1 test                 read-write
pleiades2 test                 read-write
pleiades3 test                   read-write
```

SNMP Engine Commands

snmp-engineid-modify

Netvisor ONE allows you to modify the SNMP Engine ID and retrieve previous SNMP agent information for a switch no longer in use. If you remove a switch from the network, you can modify the SNMP Engine ID to use the old SNMP Engine ID so Netvisor can query and maintain the same history records for the new switch.

Syntax `snmp-engineid-modify`

`engineid` *`string`*	Specify the 28 character unique ID for the SNMP engine.

Defaults None

Access CLI

History Command introduced in Version 3.0.0.

Usage Use this command to modify the engine identification for the switch.

Examples To modify the engine identification, use the following command:

```
CLI (network-admin@switch) > snmp-engineid-modify  engineid
0x80001f8880f2af3c6a2528fc51
Warning: All SNMP users will be erased.
Please confirm y/n (Default: n): y
Modified snmp engineID, Deleted all SNMP users.Please re-create SNMP users.
```

snmp-engineid-show

The SNMP engine ID is a unique string of 28 characters that identifies the device for administrative purposes. This command displays the identification of the local SNMP engine and all remote engines configured on the server-switch.

Syntax `snmp-engineid-show`

Defaults None

Access CLI

History Command introduced in nvOS Version 2.0.

Usage Use this command to display the engine identification for the switch.

Examples To display the engine identification, use the following command:

```
CLI (network-admin@switch) > snmp-engineid-show
switch:   pleiades24
engineid: 0x80001f8880f2af3c6a2528fc51
switch:   pleiades26
engineid: 0x80001f8880f2af3c6a2528fc51
switch:   pleiades28
engineid: 0x80001f8880f2af3c6a2528fc51
```

snmp-show

This command is used to display information about SNMP MIBs on the network.

Syntax `snmp-show`

`community-string` *`community-string-string-show`*	Specify the community string for SNMP.
`name` *`snmp-oid name`*	Specify the Object Identifier (OID) to display.
`show-type walk|get|get-next`	Specify the display method for the SNMP MIBs. Use get to retrieve and display the next SNMP object values. Use get-next to retrieve and display the SNMP object values associated with the requested object identifier.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Use this command to display local SNMP MIB object values.

Examples To display the community, snmp-com, use the following command:

```
CLI (network-admin@switch) > show-snmp community-string snmp-com layout vertical
```

snmp-system-modify

You use this command to modify SNMP system information.

Syntax `snmp-system-modify`

`syscontact` *`syscontact-string`*	Specify the system contact information.
`syslocation syslocation-string`	Specify the system location.

Defaults None

Access Network Administrator

History Command introduced in Version 3.1.0.

Usage Use the command to modify system location information.

Examples To modify SNMP system information, use the following syntax:

```
CLI (network-admin@switch) > snmp-system-modify syscontact johndoe
```

snmp-system-show

You use this command to display SNMP system information.

Syntax `snmp-system-show`

`syscontact` *`syscontact-string`*	Specify the system contact information.
`syslocation syslocation-string`	Specify the system location.

Defaults None

Access Network Administrator

History Command introduced in Version 3.1.0.

Usage Use the command to display system location information.

Examples To display SNMP system information, use the following syntax:

```
CLI (network-admin@switch) > snmp-system-show
```

snmp-system-clear

You use this command to clear SNMP system information.

Syntax `snmp-system-modify`

`syscontact` *`syscontact-string`*	Specify the system contact information.
`syslocation syslocation-string`	Specify the system location.

Defaults None

Access Network Administrator

History Command introduced in Version 3.1.0.

Usage Use the command to clear system location information.

Examples To clear SNMP system information, use the following syntax:

```
CLI (network-admin@switch) > snmp-system-clear syscontact johndoe
```

snmp-trap-enable-modify

This command is used to enable SNMP notifications about link conditions and common system errors.

Syntax `snmp-trap-enable-modify`

Specify one or more of the following options:	
`link-up-down|no-link-up-down`	Specify if you want to send SNMP traps based on port status.
`interface-up-down|no-interface-up-down`	Specify if you want to send SNMP traps for vRouter interface status.
`default-monitors|no-default-monitors`	Specify the monitor to apply to the trap.
`physical-sensors|no-physical-sensors`	Specify to send traps about physical sensors.
`low-disk-space|no-low-disk-space`	Specify to send traps about low disk space.
`low-disk-space-threshold` *`low-disk-space-threshold-string`*	Specify a low disk space threshold as a percentage.
`system-usage|no-system-usage`	Specify to send traps about memory and CPU usage.
`high-system-usage-threshold` *`high-system-usage-threshold-string`*	Specify a high system usage threshold as a percentage.
`login-failure|no-login-failure`	Specify to send traps about login failures.
`cluster-tr-diverge|no-cluster-tr-diverge`	Specify to send traps when cluster transactions lists diverge.
`lacp-status|no-lacp-status`	Specify to send traps about LACP status.
`vport-modified|no-vport-modified`	Specify to send traps about vPort modifications.
`stp-port-modified|no-stp-port-modified`	Specify to send traps about STP port modifications.
`mirror-to-cpu|no-mirror-to-cpu`	Specify to send traps about mirror to CPU status.

stp-port-state-failed|no-stp-port-state-failed	Specify to send traps if the STP port status is failed.
link-congestion-detected|no-link-congestion-detected	Specify to send traps when link congestion is detected.
fabric-node-state-changed|no-fabric-node-state-changed	Specify to send traps when the fabric node state changes.
stp-new-root|no-stp-new-root	Specify to send traps when a new STP root is detected..
stp-topology-changed|no-stp-topology-changed	Specify to send traps when STP changes are detected.
vrrp-new-master|no-vrrp-new-master	Specify to send traps when a new V RRP master is detected.
disable-start-stop	Specify if you want to disable **coldstart** and **notifyshutdown** traps.
cert-expiry|no-cert-expiry	Specifies the certificate expiry.
sysup-alert|no-sysup-alert	Specifies the system up alert.
port-oir-error-state|no-port-oir-error-state	Specifies the port oir error state.
port-bw-threshold-exceed-event|no-port-bw-threshold-exceed-event	Specifies the port bandwidth threshold exceeded alert.

Defaults None

Access CLI

History

Version 2.0	Command introduced.
Version 2.3	The parameters physical-sensors, low-disk-space, system-usage and login-failure, added.
Version 2.4.1	The parameters lacp-status, vport-modified, stp-port-modified, mirror-to-cpu, and stp-port-state-failed, added.

Version 2.5	The parameters `link-congestion-` and `fabric-node-state-` added.
Version 2.6.2	The parameters `stp-new-root`, `stp-err-disabled` and `vrrp-new master` added.
Version 3.0.0	New parameters `disable-start-stop` and `interface-up-down` added. The parameter, `stp-err-disable`, changed to `stp-topology-changed`.
Version 5.1.0	The parameters `cluster-tr-diverge|no-cluster-tr-diverge` added.
Version 7.0.0	The parameter `port-bw-threshold-exceed-event` added.

Usage Use this command to use link status for notifications.

Examples To use link status as the notification, use the following command:

```
CLI (network-admin@switch) > snmp-trap-enable-modify link-up-down
```

snmp-trap-enable-show

This command is used to display information about SNMP traps.

Syntax `snmp-trap-enable-show`

Defaults None

Access CLI

History Command introduced in nvOS Version 2.0.

Usage Use this command to display information about SNMP traps.

Examples To display SNMP trap information, use the following command:

```
CLI (network-admin@switch) > snmp-trap-enable-show
switch:           Spine-1
link-up-down:     no
default-monitors: no
switch:           Spine-2
link-up-down:     no
default-monitors: no
switch:           Spine-3
link-up-down:     no
default-monitors: no
```

snmp-trap-sink-create

This command is used to specify a SNMPv1 trap receiver for SNMP traps.

Syntax `snmp-trap-sink-create`

`community` *`community-string`*	Specify the community name to send traps.
`type TRAP_TYPE_V1_TRAP| TRAP_TYPE_V2C_TRAP| TRAP_TYPE_V2_INFORM`	Specify the type of SNMP trap.
`dest-host` *`dest-host-string`*	Specify the destination host.
`dest-port` *`dest-port-number`*	Specify the destination port. The default port is 162.

Defaults None

Access CLI

History

Version 2.0	Command introduced.
Version 2.4	The options, `TRAP_TYPE_V3_TRAP| TRAP_TYPE_V3_INFORM` deprecated.

Usage Use this command to send SNMP traps to a receiver. You can configure up to two receivers.

Examples To send TRAP_TYPE_V1_TRAP, from community string, snmp-group, to the destination, trap-recvr, on port 43, use the following command:

```
CLI (network-admin@switch) > snmp-trap-sink-create community snmp-group
trap TRAP_TYPE_V1_TRAP dest-host trap-recvr dest-port 43
```

snmp-trap-sink-delete

This command is used to delete a SNMPv1 trap receiver for SNMP traps.

Syntax `snmp-trap-sink-delete`

`community` *`community-string`*	Specify the community name to send traps.
`type TRAP_TYPE_V1_TRAP| TRAP_TYPE_V2C_TRAP| TRAP_TYPE_V2_INFORM`	Specify the type of SNMP trap.
`dest-host` *`dest-host-string`*	Specify the destination host.
`dest-port` *`dest-port-number`*	Specify the destination port. The default port is 162.

Defaults None

Access CLI

History Command introduced in nvOS Version 2.0.

Usage Use this command to delete an SNMP receiver.

Examples To delete community string, snmp-group, and the destination, trap-recvr, on port 43, use the following command:

```
CLI (network-admin@switch) > snmp-trap-sink-delete community snmp-group
dest-host snmp-recvr dest-port 43
```

snmp-trap-sink-show

This command is used to display infomation about a SNMPv1 trap receiver for SNMP traps.

Syntax `snmp-trap-sink-show`

`community` *`community-string`*	Specify the community name to send traps.
`type TRAP_TYPE_V1_TRAP| TRAP_TYPE_V2C_TRAP| TRAP_TYPE_V2_INFORM`	Specify the type of SNMP trap.
`dest-host` *`dest-host-string`*	Specify the destination host.
`dest-port` *`dest-port-number`*	Specify the destination port. The default port is 162.

Defaults None

Access CLI

History

Version 2.0	Command introduced.
Version 2.4	The options, `TRAP_TYPE_V3_TRAP| TRAP_TYPE_V3_INFORM` deprecated.

Usage Use this command to display information about an SNMP receiver.

Examples To modify the destination port to 53 for community string, snmp-group, and the destination host, trap-recvr,, use the following command:

```
CLI (network-admin@switch) > snmp-trap-sink-show community snmp-group
```

snmp-user-create

SNMPv3 creates users as access control mechanisms, and creating users is more complex but also more secure and more flexible. You can also require that users must authenticate and use encryption.

Syntax `snmp-user-create`

`user-name` *`name-string`*	Specify the user name.
`auth-password` *`auth-password-string`*	Specify the authentication password.
`auth|no-auth`	Specify if authentication is required or not.
`auth-hash md5|sha`	Specify the type of authentication hashing algorithm.
`priv-password` *`priv-password-string`*	Specify the password for privileges mode.
`priv|no-priv`	Specifies if privileges are assigned or not.

Defaults None

Access CLI

History

Version 2.0	Command introduced.
Version 2.1	The parameter, `auth-password`, and `priv-password` added.
Version 2.6.0	The parameter, `auth-hash`, added.

Usage Use this command to create users for SNMPv3.

Examples To create SNMPv3 users, use the following command:

```
CLI (network-admin@switch) > snmp-user-create
```

snmp-user-delete

SNMPv3 creates users as access control mechanisms, and creating users is more complex but also more secure and more flexible. You can also require that users must authenticate and use encryption.

Syntax `snmp-user-delete`

`user-name` *`name-string`*	Specifies the user name.

Defaults None

Access CLI

History Command introduced in Netvisor Version 2.0.

Usage Use this command to delete a user configured for SNMPv3.

Examples To display SNMPv3 user information, use the following command:

```
CLI (network-admin@switch) > snmp-user-delete
```

snmp-user-modify

SNMPv3 creates users as access control mechanisms, and creating users is more complex but also more secure and more flexible. You can also require that users must authenticate and use encryption.

Syntax `snmp-user-modify`

`user-name` *`name-string`*	Specify the user name.
`auth-password` *`auth-password-string`*	Specify the authentication password.
`auth|no-auth`	Specify if authentication is required or not.
`auth-hash md5|sha`	Specify the type of authentication hashing algorithm.
`priv-password` *`priv-password-string`*	Specify the password for privileges mode.
`priv|no-priv`	Specifies if privileges are assigned or not.

Default None

Access CLI

History

Version 2.0	Command introduced.
Version 2.1	The parameter, `auth-password`, and `priv-password` added.
Version 2.6.0	The parameter, `auth-hash`, added.

Usage Use this command to modify parameters configured for SNMPv3 users.

Examples To modify SNMPv3 user information, use the following command:

```
CLI (network-admin@switch) > snmp-user-modify
```

snmp-user-show

SNMPv3 creates users as access control mechanisms, and creating users is more complex but also more secure and more flexible. You can also require that users must authenticate and use encryption.

Syntax `snmp-user-show`

`user-name` *`name-string`*	Specify the user name.
`auth-password` *`auth-password-string`*	Specify the authentication password.
`auth|no-auth`	Specify if authentication is required or not.
`auth-hash md5|sha`	Specify the type of authentication hashing algorithm.
`priv-password` *`priv-password-string`*	Specify the password for privileges mode.
`priv|no-priv`	Specifies if privileges are assigned or not.

Defaults None

Access CLI

History

Version 2.0	Command introduced.
Version 2.1	The parameter, `auth-password`, and `priv-password` added.
Version 2.6.0	The parameter, `auth-hash`, added.

Usage Use this command to display information about users configured for SNMPv3.

Examples To display SNMPv3 user information, use the following command:

```
CLI (network-admin@switch) > snmp-user-show
```

snmp-v3-trap-sink-create

This command is used to specify a SNMPv3 trap receiver for SNMP traps.

Syntax `snmp-trap-sink-create`

`user-name` *`user-name-string`*	Specify the user name to send traps.
`type TRAP_TYPE_V3_TRAP| TRAP_TYPE_V3_INFORM`	Specify the type of SNMP trap.
`dest-host` *`dest-host-string`*	Specify the destination host.
`dest-port` *`dest-port-number`*	Specify the destination port.

Defaults None

Access CLI

History

Version 2.0	Command introduced.
Version 2.4	The options, `TRAP_TYPE_V1_TRAP| TRAP_TYPE_V2C_TRAP| TRAP_TYPE_V2_INFORM` deprecated.
Version 2.4.1	The parameters, `engine-id`, `auth-password`, `auth|no-auth`, `priv-password`, and `priv|no-priv` deprecated.

Usage Use this command to send SNMPv3 traps to a receiver.

Examples To send TRAP_TYPE_V3_TRAP, from community string, snmp-group, to the destination, trap-recvr, on port 43, use the following command:

```
CLI (network-admin@switch) > snmp-v3-trap-sink-create snmp-group dest-host snmp-recvr dest-port 43
```

snmp-v3-trap-sink-delete

This command is used to remove an SNMPv3 trap receiver from the configuration.

Syntax `snmp-v3-trap-sink-delete`

`user-name` *`user-name-string`*	Specify the user name to send traps.
`dest-host` *`dest-host-string`*	Specify the destination host.
`dest-port` *`dest-port-number`*	Specify the destination port.

Defaults None

Access CLI

History

Version 2.0	Command introduced.
Version 2.4	The parameter, `engine-id`, deprecated.

Usage Use this command to remove an SNMPv3 trap receiver from the configuration.

Examples To remove the user, snmp-admin, and destination host, snmpv3-receiver, from destination port 67, use the following command:

```
CLI (network-admin@switch) > snmp-v3-trap-sink-delete user-name snmp-admin dest-host snmpv3-receiver dest-port 67
```

snmp-v3-trap-sink-show

This command is used to display information about a SNMPv3 trap receiver for SNMP traps.

Syntax `snmp-trap-sink-show`

`user-name` *`user-name-string`*	Specify the user name to send traps.
`type TRAP_TYPE_V3_TRAP| TRAP_TYPE_V3_INFORM`	Specify the type of SNMP trap.
`dest-host` *`dest-host-string`*	Specify the destination host.
`dest-port` *`dest-port-number`*	Specify the destination port.

Defaults None

Access CLI

History

Version 2.0	Command introduced.
Version 2.4	The options, `TRAP_TYPE_V1_TRAP| TRAP_TYPE_V2C_TRAP| TRAP_TYPE_V2_INFORM` deprecated.

Usage Use this command to display information about an SNMPv3 receiver configuration.

Examples To display information about an SNMPv3 receiver, use the following command:

```
CLI (network-admin@switch) > snmp-v3-trap-sink-show
```

snmp-vacm-create

This command is used to create View Access Control Models (VACM) for SNMPv3.

Syntax `snmp-vacm-create`

`user-type rouser|rwuser`	Specifies the SNMP user type.
`user-name` *`snmp-user user-name`*	Specifies the SNMP administrator name.
`oid-restrict` *`oid-restrict-string`*	Specifies the restrict OID.
`auth|no-auth`	Specifies whether authentication is required or not.
`priv|no-priv`	Specifies if the privileges are assigned or not.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to create View Access Control Models (VACM) for SNMPv3.

Examples To create VACMs for SNMP, use the following command:

```
CLI (network-admin@switch) > snmp-vacm-create
```

snmp-vacm-delete

This command is used to remove View Access Control Models (VACM) for SNMPv3.

Syntax `snmp-vacm-delete`

`user-name` *`snmp-user user-name`*	Specifies the SNMP administrator name.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to delete View Access Control Models (VACM) for SNMPv3.

Examples To delete VACMs for SNMP, use the following command:

```
CLI (network-admin@switch) > snmp-vacm-delete
```

snmp-vacm-modify

This command is used to modify View Access Control Models (VACM) for SNMPv3.

Syntax `snmp-vacm-modify`

`user-name` *`snmp-user user-name`*	Specifies the SNMP administrator name.
one or more of the following options:	
`user-type` *`rouser`*`|`*`rwuser`*	Specifies the SNMP user type.
`oid-restrict` *`oid-restrict-string`*	Specifies the restrict OID.
`auth|no-auth`	Specifies whether authentication is required or not.
`priv|no-priv`	Specifies if the privileges are assigned or not.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to modify View Access Control Models (VACM) for SNMPv3.

Examples To modify VACMs for SNMP, use the following command:

```
CLI (network-admin@switch) > snmp-vacm-modify
```

snmp-vacm-show

This command is used to display View Access Control Models (VACM) for SNMP.

Syntax `snmp-vacm-show`

`user-type` *`rouser|rwuser`*	The SNMP user type.
`user-name` *`snmp-user user-name`*	The SNMP administrator name.
`oid-restrict` *`oid-restrict-string`*	The restrict OID.
`view` *`view-string`*	The view type.
`auth|no-auth`	Specifies whether authentication is required or not.
`priv|no-priv`	Specifies if the privileges are assigned or not.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display View Access Control Models (VACM) for SNMPv3.

Examples To display VACMs for SNMP, use the following command:

```
CLI (network-admin@switch) > snmp-vacmshow
user-type  user-name  oid-restrict  view  auth  priv
---------  ---------  ------------  ----  ----  ----
rouser     snmp-user  sysContact         no    no
```

software-license-import-product-ids

This command is used to import product identification used with software licenses.

Syntax `software-license-import-product-ids`

`pid-file sftp-files` *`name`*	Specify the name of the product ID file to import into the switch.

Defaults None

Access CLI

History Command introduced in Version 2.0.

Usage To license a switch, you must import the product ID file.

Examples To import the product ID file named, nvos-pids, use the following command:

```
CLI (network-admin@switch) > software-license-import-product-ids  pid-file  sftp-files  nvos-pids
```

software-license-install

This command is used to install software licenses on the switches.

Syntax `software-license-install`

`key key-string`	Specify the key string for the license.

Defaults None

Access CLI

History Command introduced in Version 2.0.

Usage Some features in Netvisor require license keys in order to activate them.

Examples To install the license key, 98874377282894729728 97ghg, use the following command:

```
CLI (network-admin@switch) > software-license-install key
98874377282894729728 97ghg
```

software-license-show

This command is used to display information about software licenses installed on the switch.

Syntax `software-license-show`

`license-id` *`license-id-string`*	Specifies the license ID string.
`id` *`id-number`*	Specifies the ID.
`description` *`description-string`*	Specifies the description of the license.
`prompt` *`prompt-string`*	Specifies the prompt string.
`key` *`key-string`*	Specifies the generated keys.
`feature` *`feature-string`*	Specifies the licensed features.
`upgrade yes|no]`	Specifies if the license is upgradeable.
`upgrade-from` *`upgrade-from-string`*	Specifies the software version to upgrade from.
`sysconfig yes|no`	Specifies the system configuration.
`pending yes|no`	Specifies if the verification of the license is pending.
`pid-file` *`sftp-files name`*	Specifies the PID file name.
`expires-on` *`expires-on-string`*	Specifies the expiration date.
`status unknown|VALID|EXPIRING|GRACE|EXPIRED]`	Specifies the license status.

Defaults None

Access CLI

History Command introduced in nvOS Version 2.1.

Usage Use this command to display information about software licenses installed on a switch.

Examples To display the license information, use the following command:

```
CLI (network-admin@pleiades25) > software-license-show
switch:           pleiades25
license-id:     F-ASDF-NVOS2.0
```

```
description:   Freedom   F-Line   Advanced Software Defined Fabric License for Netvisor 2.x
key:                     sung,decrypt,true,airdrop
feature:        all
upgrade-from:
```

software-show

This command is used to display the currently running version of the software on the local switch.

Syntax `software-show`

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage This command displays the currently running version of the software installed on the local switch

Examples To display the software version installed on the local switch, use the following command:

```
CLI (network-admin@switch) > software-show
version:            5.1.2-5010215459
```

software-upgrade

This command is used to upgrade the operating system on the switch.

Syntax `software-upgrade package sftp-files-name upload-server upload-server-string`

`package` *`upgrade-package-name.pkg`*	Specify the file names for the software upgrade.
`upload-server` *`upload-server-string`*	Specify if you want to upload the configuration file a SFTP server.
`auto-reboot|no-auto-reboot`	Automatically reboot after software upgrade or not (default: yes).
`software-upgrade-abort`	Indicate software upgrade to abort upgrade operation when ready.
`software-upgrade-reboot`	Indicate software upgrade to reboot the switch when ready.
`software-upgrade-instant-status-show`	Displays the current status of software upgrade.

Defaults None.

Access CLI

History

Version 1.2.1	Command introduced.
Version 3.1.0	The parameter, `upload-server`, added.
Version 6.1.0	The Parameter, `auto-reboot|no-auto-reboot`, added. The commands, `software-upgrade-abort`, `software-upgrade-instant-status-show`, `software-upgrade-reboot` added.

Usage A switch can contact an upgrade server, either directly or through a proxy, to configure another version of the OS. This command launches the OS upgrade process on the local switch.

Examples To launch the OS upgrade process on the local switch, use the following command:

```
CLI (network-admin@switch) > software-upgrade package release-2.4
```

software-upgrade-abort

This command is used to indicate software upgrade to abort upgrade operation when ready.

Syntax `software-upgrade-abort`

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command is used to indicate software upgrade to abort upgrade operation when ready.

Examples To abort upgrade operation, use the following command:

```
CLI (network-admin@switch) > software-upgrade-abort
```

software-upgrade-instant-status-show

This command is used to display the current status of software upgrade.

Syntax `software-upgrade-instant-status-show`

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command is used to display the current status of software upgrade.

Examples To display the current status of software upgrade, use the following command:

```
CLI (network-admin@switch) > software-upgrade-instant-status-show
```

software-upgrade-reboot

This command is used indicate software upgrade to reboot the switch when ready.

Syntax `software-upgrade-reboot`

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command is used to indicate software upgrade to reboot the switch when ready.

Examples To abort upgrade operation, use the following command:

```
CLI (network-admin@switch) > software-upgrade-reboot
```

software-upgrade-status-show

This command is used to display the status of a software upgrade on a switch.

Syntax `software-upgrade-status-show`

Defaults None

Access CLI

History Command introduced Version 2.2

Usage You can use this command to track the status of a software upgrade on a switch.

Examples To view the status of a software upgrade, use the following syntax:

```
CLI (network-admin@switch) > software-upgrade-status-show
log:                No upgrade in progress.
```

ssh

This command allows you to use the protocol, Secure Shell (SSH) to remotely log into a host from a switch.

Syntax `ssh host -l user`

`host`	Specifies the hostname or IP address of a host.
`user`	Specifies a configured user on the host.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage A switch can remotely log into another host. This command initiates a remote login using a secure, encrypted communication with the SSH protocol.

Examples To remotely log into the switch at 10.1.1.1 as the admin, use the following command:

```
CLI (network-admin@switch) > ssh admin@10.1.1.1
```

ssh-known-hosts-delete

This command allows you to delete outdated SSH fingerprints from the `known_hosts` file on a switch.

Syntax `ssh-known-hosts-delete`

Defaults None.

History Command introduced in nvOS Version 1.2.1.

Usage Allows you to delete SSH fingerprints from previous logins.

Examples To delete the fingerprint from the switch, use the following command:

```
CLI (network-admin@switch) > ssh-known-hosts-delete
```

static-arp-create

This command adds the capability of supporting static ARP in the ARP cache.

Syntax `static-arp-create`

`scope local|cluster|fabric`	Specify the scope of the group. The default scope is local.
`ip ip-address`	Specify the Ip address of the host to bind with the MAC address.
`mac mac-address`	Specify the unicast MAC address to bind with the IP address of the host.

Defaults None

Access Network Administrator

History Command introduced in Version 5.1.1.

Usage Use this command to create a static ARP entry in the ARP cache.

Examples To create an ARP entry between two hosts, use the following syntax:

```
CLI (network-admin@switch) > static-arp-create ip 172.148.0.0 mac
00:12:00:88:0c:00
```

static-arp-delete

This commands deletes the unicast static ARP from the configuration.

Syntax `static-arp-delete`

ip ip-address	Specify the IP address of the host that is binding with the MAC address.

Defaults None

Access Network Administrator

History Command introduced in Version 5.1.1.

Usage Use this command to delete a static ARP entry.

Examples To delete a static ARP entry for IP address, 172.148.0.0, use the following syntax:

```
CLI (network-admin@switch) > static-arp-delete ip 172.148.0.0
```

static-arp-show

This command displays information about the static ARP entry.

Syntax `static-arp-show`

`scope local|cluster|fabric`	Displays the scope of the group. The default scope is local.
`ip ip-address`	Displays the Ip address of the host to bind with the MAC address.
`mac mac-address`	Displays the unicast MAC address to bind with the IP address of the host.

Defaults None

Access Network Administrator

History Command introduced in Version 5.1.1.

Usage Use this command to display the details of a static ARP entry.

Examples To display static ARP entry, use the following syntax:

```
CLI (network-admin@switch) > static-arp-show scope local ip 172.148.0.0
switch scope ip          mac
------ ----- ----------- -----------------
switch local 172.148.0.0 00:12:00:88:0c:00
```

static-ecmp-group-create

This command adds the capability of supporting multiple nexthops for Equal Cost Multipath (ECMP) routing to single destinations as part of Policy-Based Routing (PBR).

Syntax `static-ecmp-group-create`

`group-name` *`group-name-string`*	Specify an ECMP group name.
`scope local|cluster|fabric`	Specify the scope of the group. The default scope is local.
`vrouter-name` *`vrouter name`*	Specify the vRouter name.
`vrf` *`vrf-name`*	Specify the name of the VRF.
`vnet` *`vnet-name`*	Specify the vNET for the static ECMP group. Note: `vnet` is an optional parameter that you can specify along with `vrf`.
`hash-type static-fixed|resilient`	Specify the type of ECMP hash for the group. Resilient hashing helps minimize the flow remapping across ECMP groups and LAGs in a load-balanced.

Defaults None

Access Network Administrator

History Command introduced in Version 5.0.0.

Version 5.0.0	Command introduced.
Version 6.0.0	The parameters, `vrf` and `vnet`, added.

Usage Use this command to create a static ECMP group.

Examples To create an ECMP group named GR1, use the following syntax:

```
CLI (network-admin@switch) > static-ecmp-group-create group-name GR1
```

static-ecmp-group-delete

This commands removes ECMP groups from the configuration.

Syntax `static-ecmp-group-delete`

`group-name` *`group-name-string`*	Specify an ECMP group name.

Defaults None

Access Network Administrator

History Command introduced in Version 5.0.0.

Usage Use this command to delete a static ECMP group.

Examples To delete an ECMP group named GR1, use the following syntax:

```
CLI (network-admin@switch) > static-ecmp-group-delete group-name GR1
```

static-ecmp-group-modify

This commands modifies the ECMP configuration.

Syntax `static-ecmp-group-modify`

`group-name` *`group-name-string`*	Specify an ECMP group name.
`vrouter-name` *`vrouter name`*	Specify the vRouter name.
`vrf` *`vrf-name`*	Specify the name of the VRF.
`vnet` *`vnet-name`*	Specify the name of the vNET. Note: `vnet` is an optional parameter that you can specify along with `vrf`.
`hash-type static-fixed|resilient`	Specify the type of ECMP hash for the group. Resilient hashing helps minimize the flow remapping across ECMP groups and LAGs in a load-balanced system.

Defaults None

Access Network Administrator

History

Version 5.0.0	Command introduced.
Version 6.0.0	The parameters, `vrf` and `vnet`, added.

Usage Use this command to modify a static ECMP group.

Examples To modify an ECMP group named GR1 and add vRouter, VR1, use the following syntax:

```
CLI (network-admin@switch) > static-ecmp-group-modify group-name GR1
vrouter VR1
```

static-ecmp-group-show

This command displays information about Equal Cost Multipath (ECMP) routing groups.

Syntax `static-ecmp-group-show`

`group-name` *`group-name-string`*	Specify an ECMP group name.
`scope local|cluster|fabric`	Specify the scope of the group. The default scope is local.
`vrouter-name` *`vrouter name`*	Specify the vRouter name.
`vrf vrf-name`	Specify the name of the VRF.
`vnet` *`vnet-name`*	Specify the name of the vNET.
`vrid` *`vrid-number`*	Specify the hardware vRouter ID.
`hw-ecmp-id` *`hw-ecmp-id-number`*	Specify the static ECMP group hardware ID.
`hash-type static-fixed|resilient`	Specify the type of ECMP hash for the group.

Defaults None

Access Network Administrator

History

Version 5.0.0	Command introduced.
Version 6.0.0	The parameters, `vrf` and `vnet`, added.

Usage Use this command to display a static ECMP group.

Examples To display ECMP groups, use the following syntax:

```
CLI (network-admin@switch)1 > static-ecmp-group-show gr1
switch       group-name scope vrf  vnet vrid hw-ecmp-id hash-type
------------ ---------- ----- ---- ---- ---- ---------- -------------
switch1      gr1        local vrf1 0:0  1    200256     static-fixed
```

static-ecmp-group-nh-add

Add a nexthop destination to a static ECMP group configuration.

Syntax `static-ecmp-group-nh-add`

`group-name` *`group-name-string`*	Specify the ECMP group name.
`ip` *`ip-address`*	Specify the IP address of the gateway.

Defaults None

Access Netvisor Administrator

History Command introduced in Version 5.0.0.

Usage Use this command to add a nexthop to a static ECMP configuration.

Examples To add a nexthop IP address, 172.21.16.23, to group, GR1, use the following syntax:

```
CLI (network-admin@switch) > static-ecmp-group-nh-add group-name GR1 ip
172.21.16.23
```

static-ecmp-group-nh-remove

Remove a nexthop destination from a static ECMP group configuration.

Syntax `static-ecmp-group-nh-remove`

`group-name` *`group-name-string`*	Specify the ECMP group name.
`ip` *`ip-address`*	Specify the IP address of the gateway.

Defaults None

Access Netvisor Administrator

History Command introduced in Version 5.0.0.

Usage Use this command to remove a nexthop from a static ECMP configuration.

Examples To remove a nexthop IP address, 172.21.16.23, to group, GR1, use the following syntax:

```
CLI (network-admin@switch) > static-ecmp-group-nh-remove group-name GR1
ip 172.21.16.23
```

static-ecmp-group-nh-show

Display a nexthop destination to a static ECMP group configuration.

Syntax `static-ecmp-group-nh-show`

`group-name` *`group-name-string`*	Displays the ECMP group name.
`ip` *`ip-address`*	Displays the IP address of the gateway.
`vlan` *`vlan-id`*	Displays the VLAN of the nexthop.
`egress-id` *`egress-id-number`*	Displays the hardware egress ID.

Defaults None

Access Netvisor Administrator

History Command introduced in Version 5.0.0.

Usage Use this command to display a nexthop information for a static ECMP configuration.

Examples To display the configuration, GR1, use the following syntax:

```
CLI (network-admin@switch) > static-ecmp-group-nh-show  group-name  GR1
group-name ip            vlan egress-id
---------- ------------- ---- ---------
gr1        172.21.16.23  24    -1
```

stp-modify

This command is used to configure Spanning Tree Protocol (STP).

Syntax `stp-modify`

`mst-config-name` *`name-string`*	Specify the name of the Multiple Spanning Tree (MST) configuration.
`enable|disable`	Specify if you want to enable or disable STP.
`stp-mode rstp|mstp`	Specify the STP mode as RSTP or MSTP.
Specify one or more of the following options:	
`bpdus-bridge-ports|bpdus-all-ports`	Specify if you want BPDU packets to bridge specific ports or all ports.
`bridge-priority` *`bridge-priority-number`*	Specify the bridge priority.
`hello-time` *`seconds`*	Specify the hello time in seconds. This is a value between 1 and 10 seconds. The default value is 2 seconds.
`forwarding-delay` *`seconds`*	Specify the forwarding delay in seconds. This is a value between 4 and 30 seconds.
`max-age` *`seconds`*	Specify the maximum age of the bridge. This is a value between 6 and 40 seconds. The default value is 20 seconds.
`mst-max-hops` *`number`*	Specify the maximum hop count for MSTP BPDUs. The default value is 20 with a range of 1 to 32 hops.
`mst-config-name` *`mst-config-name-string`*	Specify the name of the MST configuration instance.
`mst-config-revision` *`mst-config-revision-number`*	Specify an MST revision number from 0 to 65535.
`root-guard-wait-time` *`seconds`*	Specify the time to wait for root guard in seconds. The range is 0 (disable) to 300 seconds with a default value of 20 seconds.

Defaults None.

Access CLI

History .

Version 1.2	Command introduced.
Version 2.4	The parameters, `mst-config`, `stp-mode`, and `mst-max-hops`, added.
Version 3.0.0	The parameter, `root-guard-wait-time`, added.
Version 6.0.1	The parameter, `mst-config-revision`, `mst-config-name`, added.

Usage STP is a standard inter-switch protocol used to ensure that an ad hoc network topology is loop-free at Layer 2, on a per VLAN basis. If your network connections form loops, and STP is disabled, packets recirculate between the switches and cause a decrease in network performance. If you are certain that your network is loop-free, you do not need to enable STP. Use this command to enable or disable STP on the network.

Examples To enable STP, use the following command:

```
CLI (network-admin@switch) > stp-modify enable
```

stp-show

This command is used to display information about Spanning Tree Protocol (STP) state.

Syntax `stp-show`

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.4	The parameters, `mst-config`, and `mst-max-hops`, added.
Version 3.0.0	The parameter, `root-guard-wait-time`, added.
Version 6.0.1	The parameter, `mst-config-revision`, `mst-config-name`,`mst-config-digest`, `mst-digest-mismatch-on-ports`, `mst-digest-mismatch-on-peer-ports`, `mst-config-id-mismatch-on-ports`, `mst-config-id-mismatch-on-peer-ports`, `mst-revision-mismatch-on-ports`, `mst-revision-mismatch-on-peer-ports` added.

Usage STP is a standard inter-switch protocol is used to ensure that an ad hoc network topology is loop-free at Layer 2, on a per VLAN basis. If your network connections form loops, and STP is disabled, packets recirculate between the switches and causes a decrease in network performance. If you are certain that your network is loop-free, you do not need to enable STP. Use this command to enable or disable STP on the network.

Examples To display STP information, use the following command:

```
CLI (network-admin@switch)1 > stp-show
switch:                                switch1
enable:                                yes
stp-mode:                              mstp
bpdus-bridge-ports:                    yes
bridge-id:                             66:0e:94:93:05:f1
hello-time:                            2
forwarding-delay:                      15
max-age:                               20
mst-max-hops:                          20
mst-config-name:                       Pluribus
mst-config-revision:                   0
mst-config-digest:                     9ae933ff602798b5e8b9a9c575f5c642
mst-digest-mismatch-on-ports:          none
mst-digest-mismatch-on-peer-ports:     none
```

```
mst-config-id-mismatch-on-ports:      none
mst-config-id-mismatch-on-peer-ports: none
mst-revision-mismatch-on-ports:       none
mst-revision-mismatch-on-peer-ports:  none
root-guard-wait-time:                 20
```

stp-port-event-show

This command is used to display information about port events on the switch.

Syntax `stp-port-event-show`

`time date/time: yyyy-mm-ddThh:mm:ss`	Specifies a specific time for an event.
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies the time that the event began.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies the time that the event ended.
`duration duration: #d#h#m#s`	Specifies the duration in days, hours, minutes, and seconds.
`interval duration: #d#h#m#s`	Specifies the interval between the events.
`since-start`	Specifies if the event is requested since the start time.
`older-than duration: #d#h#m#s`	Specifies if the event is older than the requested duration.
`within-last duration: #d#h#m#s`	Specifies if the event is within the last requested duration.
`port port-number`	Specifies the port number of the event.
`vlan` *`vlan-list`*	Specifies the VLAN list for the event.
`instance` *`instance-number`*	Specifies the instance for the STP events collection.
`count` *`count-number`*	Specifies the number of events.
`initial-state Disabled|Blocking|Listening|Learning|Forwarding`	Specifies the initial state of the event.
`other-state Disabled|Blocking|Listening|Learning|Forwarding`	Specifies if the event had other states.
`final-state Disabled|Blocking|Listening|Learning|Forwarding`	Specifies the final state of the event.

Defaults None

Access CLI

History

Version 2.0	Command introduced.
Version 2.4.1	The parameter, `instance`, added.

Usage Use this command to display port event information for STP.

Examples To display STP port events, use the following command:

```
CLI (network-admin@switch) > stp-port-event-show
```

stp-port-modify

This command is used to configure Bridge Protocol Data Unit (BPDU) processing by one or more ports on a switch.

Syntax `stp-port-modify`

`port` *`port-list`*	Specify the switch network data port number, list of ports, or a range of ports. The range must be a port number between 1 to 64.
Specify one or more of the following options:	
`block|no-block`	Specify if the port blocks BPDUs.
`filter|no-filter`	Specify if the port filters BPDUs.
`edge|no-edge`	Specify if the port is an Edge port. The port can transition directly to a forwarding state but lose Edge port status as soon as any BPDU packets are received.
`bpdu-guard|no-bpdu-guard`	Specify if BPDU guard is on or off.
`root-guard|no-root-guard`	Specify if root guard is on or off.
`priority` *`integer`*	Specify the STP port priority as a value between 0 and 240. The default value is 128.
`cost` *`number`*	Specify the cost as a number between 1 and 200000000. The default value is 2000.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.2	The parameter `edge|no-edge` added to support RSTP. The parameter, `guard|no-guard`, added.
Version 2.3	The parameter, `cost`, added.

Version 2.4.1	The parameter, `priority`, added.
Version 2.6.0	The parameter, `guard`, changed to `bpdu-guard`, and a new parameter, `root-guard`, added.

Usage STP is a standard inter-switch protocol is used to ensure that an ad hoc network topology is loop-free at Layer 2, on a per VLAN basis. If your network connections form loops, and STP is disabled, packets recirculate between the switches and causes a decrease in network performance. If you are certain that your network is loop-free, you do not need to enable STP. BPDUs are used in the election of the STP root switch and should not be received from an end host port. This command can block one port or multiple ports from processing BPDUs to prevent a malicious end host from masquerading as a switch and participating in the STP root election.If a BPDU is received by a port that is configured to block BPDUs, the port is shut down. Alternatively, you can filter BPDUs on a port. If the port is configured to filter BPDUs, the BPDU packet is dropped but the port is not shut down.

Examples To block BPDUs and shut down port 17, use the following command:

```
CLI (network-admin@switch) > stp-port-modify port 17 block on
```

stp-port-show

This command is used to display the configuration for Bridge Protocol Data Unit (BPDU) processing by one or more ports on a switch.

Syntax `stp-port-show`

`port` *`port-list`*	Specify the switch network data port number, list of ports, or a range of ports. The range must be a port number between 1 to 64.
`block off|on`	Specify if the port blocks BPDUs.
`filter off|on`	Specify if the port filters BPDUs.
`port-fast|` `no-port-fast`	Specify if the port is enabled for PortFast. PortFast allows a port to enter the forwarding state almost immediately by dramatically decreasing the time of the listening and learning states.
`edge|no-edge`	Specify if the port is an Edge port. The port can transition directly to a forwarding state but lose Edge port status as soon as any BPDU packets are received.
`bpdu-guard|no-bpdu-guard`	Specify if BPDU guard is on or off.
`root-guard|no-root-guard`	Specify if root guard is on or off.
`priority` *`integer`*	Specify the STP port priority as a value between 0 and 240. The default value is 128.
`cost` *`number`*	Specify the cost as a number between 1 and 200000000. The default value is 2000.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.2	The parameter `edge|no-edge` added to support RSTP. The parameter, `guard|no-`

	guard, added.
Version 2.3	The parameter, cost, added.
Version 2.4.1	The parameter, priority, added.
Version 2.6.0	The parameter, guard, changed to bpdu-guard, and a new parameter, root-guard, added.

Usage STP is a standard inter-switch protocol is used to ensure that an ad hoc network topology is loop-free at Layer 2, on a per VLAN basis. If your network connections form loops, and STP is disabled, packets recirculate between the switches and causes a decrease in network performance. If you are certain that your network is loop-free, you do not need to enable STP.

Examples To display configuration information, use the following command:

```
 CLI (network-admin@switch) > stp-port-show port 17
switch: pubdev01
port:   55
block:  off
filter: off
edge:   yes
guard:  no
switch: pubdev01
port:   65
block:  off
filter: off
guard:  no
switch: pubdev01
port:   66
block:  off
filter: off
guard:  no
```

stp-port-state-show

This command is used to display information about the state of Spanning Tree Protocol (STP) ports.

Syntax `stp-port-state-show`

vlan *vlan-id*	Displays the VLAN identifier for the STP instance.
ports *port-list*	Displays STP ports.
stp-state *Disabled|Discarding|Learning|Forwarding*	Displays the forwarding state.
role *Disabled|Root|Designated|Alternate|Backup*	Displays the port role.
selected-role *Disabled|Root|Designated|Alternate|Backup*	Displays the selected port role.
state *new-info|proposing|proposed|agreed|agreed|learn|learning|forward|forwarding|reselect|selected|reroot|rcvd-bpdu|rcvd-msg|rcvd-tc|rcvd-tc-ack|send-rstp|tc-prop|tc-ack|update-info|sync|synced|disputed|fdb-flush|online|looping|manual-online|edge|vlag-local-up|vlag-remote-up|requested-online|first-sync|p-is-d|p-is-m|root-guard-active*	Displays the port state machine state.
designated-priority *designated-priority-string*	Displays the designated priority vector.
port-priority *port-priority-string*	Displays the port priority vector.
message-priority *message-priority-string*	Displays the message priority vector.
info-is *disabled|received|mine|aged*	Displays the origin of the port information.
designated-times *designated-times-string*	Displays the designated times: age, max age, hello, forward delay
port-times *port-times-string*	Displays the port times: age, max age, hello, forward delay.
message-times *message-times-string*	Displays the message times: age, max age, hello, forward delay.

hello-timer *hello-timer-number*	Displays the hello time value.
topology-timer *topology-timer-number*	Displays the topology timer value.
forward-timer *forward-timer-number*	Displays the forward timer value.
rcvd-info-timer *rcvd-info-timer-number*	Displays the received info timer value.
recent-root-timer *recent-root-timer-number*	Displays the recent root timer value.
recent-backup-timer *recent-backup-timer-number*	Displays the recent backup timer value.
edge-delay-timer *edge-delay-timer-number*	Displays the edge delay timer value.
migration-timer *migration-timer-number*	Displays the migration timer value.
sm-table-bits *sm-table-bits-number*	Displays the state machine table state.
sm-table *sm-table-string*	Displays the state machine table description
vlag-peer-port *vlag-peer-port-number*	Displays the VLAG peer port if it is an active-active VLAG.
peer|no-peer	Displays the STP peer state.

Defaults None.

Access CLI

History Command introduced in Version 2.4.1.

Usage STP is a standard inter-switch protocol is used to ensure that an ad hoc network topology is loop-free at Layer 2, on a per VLAN basis. If your network connections form loops, and STP is disabled, packets recirculate between the switches and causes a decrease in network performance. If you are certain that your network is loop-free, you do not need to enable STP. One drawback of STP is that it does not allow for Layer 2 multipathing and may result in suboptimal utilization of available network links. Therefore, a fabric of Pluribus Networks switches does not use STP within the boundaries of the fabric. The use of STP is recommended for ad hoc networks that interoperate in a heterogeneous, multi-vendor switch environment. Use this command to enable or disable STP on the network.

Examples To display STP port state information, use the following command:

```
CLI (network-admin@switch) > stp-port-state-show
```

stp-state-show

This command is used to display information about the state of Spanning Tree Protocol (STP).

Syntax `stp-state-show`

`vlan` *`vlan-id`*	Displays the VLAN identifier for the STP instance.
`ports` *`port-list`*	Displays STP ports.
`instance-id` *`instance-id-number`*	Displays the STP instance ID.
`name` *`name-string`*	Specifies the name of the Spanning Tree Group (STG) for the STP instance.
`bridge-id` *`mac-address`*	Specifies the MAC address of the bridge switch.
`bridge-priority` *`bridge-priority-number`*	Specifies the priority for the bridge switch.
`root-id` *`mac-address`*	Specifies the MAC address of the root switch.
`root-priority` *`root-priority-number`*	Specifies the priority for the root switch.
`root-port` *`root-port-number`*	Specifies the root port for STP.
`root-port(peer)` *`root-port(peer)-number`*	Specifies the peer root port for STP.
`hello-time` *`hello-time-number`*	Specifies the interval, in seconds, between the generation of configuration messages by the root switch.
`forwarding-delay` *`forwarding-delay-number`*	Specifies the number of seconds that the interface waits before changing from its spanning-tree learning and listening states to the forwarding state.
`max-age` *`max-age-number`*]	Specifies the amount of time that the switch stores protocol information received on an interface.

`internal|no-internal`	Specifies if it is an internal port.
`[peer|no-peer]`	Specifies if it is a peer port or not.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.2	The parameter, `blocking`, removed, and `edge`, `designated`, `alternate`, `backup`, `vlag-mirror`, `internal`, and `peer` added to support RSTP.
Version 2.2.6	The parameter, `root-port(peer)`, added.
Version 2.3	The following parameters are deprecated: • disabled • learning • forwarding • discarding • edge • designated • alternate • backup • vlag-mirror
Version 2.3.1	The parameter, `ports`, added.
Version 2.4.1	The parameter, `instance-id`, added.

Usage STP is a standard inter-switch protocol is used to ensure that an ad hoc network topology is loop-free at Layer 2, on a per VLAN basis. If your network connections form loops, and STP is disabled, packets recirculate between the switches and causes a decrease in network performance. If you are certain that your network is loop-free, you do not need to enable STP. One drawback of STP is that it does not allow for Layer 2 multipathing and may result in suboptimal utilization of available network links. Therefore, a fabric of Pluribus Networks switches does not use STP within the boundaries of the fabric. The use of STP is recommended for ad hoc networks that interoperate in a heterogeneous, multi-vendor switch environment. Use this command to enable or disable STP on the network.

Examples To display STP information, use the following command:

```
CLI (network-admin@switch) > stp-state-show
switch:           pleiades25
vlan:             1
name:             stg-default-stg
bridge-id:        64:0e:94:18:00:8f
bridge-priority:  32769
root-id:          64:0e:94:18:00:8f
root-priority:    32769
root-port:        0
hello-time:       2
forwarding-delay: 15
max-age:          20
disabled:         none
learning:         none
forwarding:       12,56,65-66,255
discarding:       none
edge:             65-66
designated:       12,56,65-66,255
alternate:        none
backup:           none
vlag-mirror:      none
```

Subnet Commands

subnet-create

To facilitate optimal east-west routing while supporting transparent virtual machine mobility, leaf switches are assigned the same gateway IP and MAC address for each locally defined subnet. Having the same gateway IP and MAC address helps ensure a default gateway presence across all leaf switches. It removes the suboptimal routing inefficiencies associated with separate centralized gateways.

This command allows you to assign subnets to VLANs and VXLANs.

Syntax `subnet-create`

`name` *`name-string`*	Specify the name for the subnet.
`description` *`description-string`*	Specify the subnet description.
`scope local|cluster|fabric`	Specify the scope of the subnet.
`vnet` *`vnet name`*	Specify the vNET name to assign to the subnet.
`vxlan` *`vlan vxlan`*	Specify the VXLAN to assign to the subnet
`vrf` *`vrf name`*	Specify the VRF to assign to the subnet.
`network` *`ip-address`*	Specify the IP address to assign to the subnet.
`netmask` *`netmask`*	Specify the netmask of the IP address.
`anycast-gw-ip` *`ip-address`*	Specify the IP address for the anycast gateway.
`network6` *`ip-address`*	Specify the IPv6 subnet address.
`netmask6 netmask`	Specify the IPv6 netmask.
`anycast-gw-ip6` *`ip-address`*	Specify the IPv6 address for the anycast gateway.
`packet-relay enable|disable| none`	Specify the packet relay as enabled, disabled, or none.
`forward-proto dhcp`	Specify the forwarding packet protocol. The parameter only accepts DHCP as the protocol.

`forward-ip` *`ip-address`*	Specify the IPv4 address for forwarding the packet.
`forward-ip2` *`ip-address`*	Specify the second IPv4 address for forwarding the packet.
`forward-ip6` *`ip-address`*	Specify the IPv6 address for forwarding the packet.
`forward-ip6-2` *`ip-address`*	Specify the second IPv6 address for forwarding the packet.
`flood enable|disable|none`	Specify the flooding state of BUM traffic.
`enable|disable`	Enable or disable the subnet.
`evpn-export-leaked-networks permit|deny`	Specifies the exporting leaked subnets to EVPN overlay.

Defaults None

Access Network Administrator

History

Version 3.0.0	Command introduced.
Version 3.1.0	The parameters, `network6`, `netmask6`, `anycast-gw-ip6`, `packet-relay`, `forward-proto`, `forward-ip`, `forward-ip6`, and `enable|disabled` added.
Version 5.1.0	The following parameters added: • `forward-ip2` • `forward-ip6-2` *`ip-address`*
Version 6.0.0	The parameter `description` added.
Version 7.0.0	The parameter `evpn-export-leaked-networks` added.

Usage Use this command to create a subnet.

Examples To create a subnet, subnet-one, use the following syntax:

```
CLI (network-admin@switch) > subnet-create name subnet-one scope fabric
vnet vnet-1 vlan 35 vxlan 1001 network 172.21.16.0 netmask
```

```
255.255.255.0 vrf vrf-1 anycast-gw-ip 172.21.16.1
```

subnet-delete

To facilitate optimal east-west routing while supporting transparent virtual machine mobility, leaf switches are assigned the same gateway IP and MAC address for each locally defined subnet. Having the same gateway IP and MAC address helps ensure a default gateway presence across all leaf switches. It removes the suboptimal routing inefficiencies associated with separate centralized gateways.

This command allows you to delete a subnet.

Syntax `subnet-delete`

`name` *`name-string`*	Specify the name of the subnet.
`vnet` *`vnet name`*	Specify the vNET name to assign to the subnet.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to remove a subnet.

Examples To remove a subnet, subnet-one, use the following syntax:

```
CLI (network-admin@switch) > subnet-delete name subnet-one vnet vnet-1
vrf vrf-1
```

subnet-modify

To facilitate optimal east-west routing while supporting transparent virtual machine mobility, leaf switches are assigned the same gateway IP and MAC address for each locally defined subnet. Having the same gateway IP and MAC address helps ensure a default gateway presence across all leaf switches, and removes the suboptimal routing inefficiencies associated with separate centralized gateways.

This command allows you to modify a subnet.

Syntax `subnet-modify`

`name` *`name-string`*	Specify the name for the subnet.
`vnet` *`vnet name`*	Specify the vNET name to assign to the subnet.
One or more of the following options:	
`description` *`description-string`*	Specify the subnet description.
`vlan` *`vlan id`*	Specify the VLAN to assign to the subnet.
`network` *`ip-address`*	Specify the IP subnet network.
`netmask` *`netmask`*	Specify the IP subnet netmask.
`vxlan` *`vlan vxlan`*	Specify the VXLAN to assign to the subnet
`network` *`ip-address`*	Specify the IP address to assign to the subnet.
`netmask` *`netmask`*	Specify the netmask of the IP address.
`anycast-gw-ip` *`ip-address`*	Specify the IP address for the anycast gateway.
`network6` *`ip-address`*	Specify the IPv6 subnet address.
`netmask6 netmask`	Specify the IPv6 netmask.
`anycast-gw-ip6` *`ip-address`*	Specify the IPv6 address for the anycast gateway.
`packet-relay enable|disable|none`	Specify the packet relay as enabled, disabled, or none.

`forward-proto dhcp`	Specify the forwarding packet protocol. The parameter only accepts DHCP as the protocol.
`forward-ip` *`ip-address`*	Specify the IPv4 address for forwarding the packet.
`forward-ip2` *`ip-address`*	Specify the second IPv4 address for forwarding the packet.
`forward-ip6` *`ip-address`*	Specify the IPv6 address for forwarding the packet.
`forward-ip6-2` *`ip-address`*	Specify the second IPv6 address for forwarding the packet.
`flood enable|disable|none`	Specify the flooding state of BUM traffic.
`enable|disable`	Enable or disable the subnet.
`evpn-export-leaked-networks permit|deny`	Specify the exporting leaked subnets to EVPN overlay.

Defaults None

Access Network Administrator

History

Version 3.0.0	Command introduced.
Version 3.1.0	The parameters, `network6`, `netmask6`, `anycast-gw-ip6`, `packet-relay`, `forward-proto`, `forward-ip`, `forward-ip6`, and `enable|disabled` added.
Version 5.1.0	The following parameters added: • `forward-ip2` • `forward-ip6-2` *`ip-address`*
Version 6.0.0	The parameter `description` added.
Version 7.0.0	The parameter `evpn-export-leaked-networks` added.

Usage Use this command to modify a subnet configuration.

Examples To modify the subnet, subnet-one, and change the scope to local, use the following syntax:

```
CLI (network-admin@switch) > subnet-modify name subnet-one scope local
```

subnet-show

To facilitate optimal east-west routing while supporting transparent virtual machine mobility, leaf switches are assigned the same gateway IP and MAC address for each locally defined subnet. Having the same gateway IP and MAC address helps ensure a default gateway presence across all leaf switches. It removes the suboptimal routing inefficiencies associated with separate centralized gateways.

This command allows you to display subnet configurations.

Syntax `subnet-show`

`name` *`name-string`*	Specify the name for the subnet.
`description` *`description-string`*	Specify the subnet description.
`scope local|cluster|fabric`	Specify the scope of the subnet.
`vnet` *`vnet name`*	Specify the vNET name to assign to the subnet.
`vlan` *`vlan id`*	Specify the VLAN to assign to the subnet.
`vxlan` *`vlan vxlan`*	Specify the VXLAN to assign to the subnet
`network` *`ip-address`*	Specify the IP address to assign to the subnet.
`netmask` *`netmask`*	Specify the netmask of the IP address.
`anycast-gw-ip` *`ip-addresss`*	Specify the IP address for the anycast gateway.
`network6` *`ip-address`*	Specify the IPv6 subnet address.
`netmask6 netmask`	Specify the IPv6 netmask.
`anycast-gw-ip6` *`ip-address`*	Specify the IPv6 address for the anycast gateway.
`linklocal ip-address`	Specify the IPv6 Link Local address.
`packet-relay enable|disable|none`	Specify the packet relay as enabled, disabled, or none.
`forward-proto dhcp`	Specify the forwarding packet protocol. The parameter only accepts DHCP as the protocol.

`forward-ip` *`ip-address`*	Specify the IPv4 address for forwarding the packet.
`forward-ip2` *`ip-address`*	Specify the second IPv4 address for forwarding the packet.
`forward-ip6` *`ip-address`*	Specify the IPv6 address for forwarding the packet.
`forward-ip6-2` *`ip-address`*	Specify the second IPv6 address for forwarding the packet.
`flood enable|disable|none`	Specifies the flooding state of BUM traffic.
`state init|ok|vxlan not found| vxlan deactivated|not-in-hw| vrouter interface exists`	Specifies the subnet state.
`leaked-on leaked-on-string`	Specifies the leaked VRF list.
`hw-state|no-hw-state`	Specifies the subnet state in rib/fib.
`enable|disable`	Enable or disable the subnet.
`evpn-export-leaked-networks permit|deny`	Specifies the exporting leaked subnets to EVPN overlay.

Defaults None

Access Network Administrator

History

Version 3.0.0	Command introduced.
Version 3.1.0	The parameters, `network6`, `netmask6`, `anycast-gw-ip6`, `packet-relay`, `forward-proto`, `forward-ip`, `forward-ip6`, and `enable|disabled` added.
Version 5.1.0	The following parameters added: • `forward-ip2` • `forward-ip6-2` *`ip-address`*
Version 6.0.0	The parameter `description` added.

Version 7.0.0	The parameter `evpn-export-leaked-networks` added.

Usage Use this command to display a subnet configuration.

Examples To display a subnet configuration, sub1, use the following syntax:

CLI (network-admin@switch)1 > `subnet-show name vlan-235 format name,scope,vlan,vxlan,vrf,network,state,enable,evpn-export-leaked-subnets`

```
name     scope  vlan  vxlan  vrf  network     state enable evpn-export-leaked-subnets
-------- ------ ----- ------ ---- ----------- ----- ------ --------------------------
vlan-235 fabric 235   10235  vrf3 13.1.5.0/24 ok    yes    deny
```

switch

This command is used to login remotely to another switch in the fabric.

Syntax `switch switch-name` *`name-string`* `id` *`switch-id`* `command`

`switch-name` *`name-string`*	Specify the name of the switch in the fabric.
`id` *`switch-id`*	Specify the identifier of the switch.
`command`	Specify the command and arguments to execute on the remote switch.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage The Command Line Interface (CLI) can be used to login remotely from any switch to another switch in the fabric. Use this command to remotely log into another switch and execute commands on it.

Examples To log into **switch-ops** from **switch-eng**, use the following command:

```
CLI (network-admin@switch-eng)> switch name switch-ops
```

To log into switch-ops and execute the command `node-info`, use the following command:

```
CLI (network-admin@switch-eng) > switch name switch-ops node-info
Name:                   switch-ops
fab-name:               pn-fab
mgmt-ip:                10.10.10.7/16
mgmt-vlan:              0
out-port:               0
version:                1.2.2633,pn-nvos-b144a-kvm
state:                  enabled
ports:                  72
```

switch-config-copy-to-import

This command is used to create a configuration file to import onto another switch.

Syntax `switch-config-copy-to-import export-file switch-config name-string`

`export-file switch-config` *`name-string`*	Specify a name for the exported configuration file.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Use this command to copy a configuration and export it to another switch.

Examples To copy the configuration, use the following command:

```
CLI (network-admin@switch) > switch-config-copy-to-import export-file
conf080113
```

switch-config-export

This command is used to create a configuration file to import onto another switch.

Syntax `switch-config-copy-export`

Specify any of the following options:	
`export-file` *`name-string`*	Specify a name for the exported configuration file.
`upload-server` *`upload-server-string`*	Specify if you want to upload the configuration file to a server using Secure Copy Protocol (SCP).

Defaults None.

Access CLI

History .

Version 1.2	Command introduced.
Version 3.0.0	The parameters, `upload-server` and `server-password` added to support SCP.
Version 3.1.0	The parameter, `server-password`, deprecated.
Version 5.2.1	The parameter, `upgrade-location-mappings` is deprecated.

Usage Use this command to export a configuration file.

Examples To export a file, use the following command:

```
CLI (network-admin@switch) > switch-config-copy-export  export-file
config800113
```

switch-config-import

This command is used to import a configuration file.

Syntax `switch-config-import`

`import-file` *`name-string`*	Specify a name for the exported configuration file.
Specify any of the following options:	
`apply-system-config|ignore-system-config`	Specify to apply the imported configuration or ignore the imported file and keep the current configuration.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Use this command to import a configuration file.

Examples To import a copy of the existing configuration, use this command:

```
CLI (network-admin@switch) > switch-config-import import-file switch10
```

switch-config-reset

This command is used to reset the configuration on a switch.

Syntax `switch-config-reset`

Defaults None.

Access CLI

History Command introduced in Version 2.0.1.

Usage Use this command to reset the configuration on the switch.

Examples To reset the configuration, use the following command:

```
CLI (network-admin@switch) > switch-config-reset
```

Caution: Using this command resets the configuration back to default settings.

switch-config-show

This command is used to display configuration information about a switch.

Syntax `switch-config-show`

`import-file` *`switch-config import-file`*	Specifies the name of the imported configuration file.
`export-file` *`switch-config export-file`*	Specifies the name of the exported configuration file.
`apply-system-config|ignore-system-config`	Specify to apply system configuration file to the server switch.
`upload-server` *`upload-server-string`*	Specify if you want to upload the configuration file to a server using Secure Copy Protocol (SCP).

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 3.0.0	The parameters, `upload-server` and `server-password` added to support SCP.
Version 3.1.0	The parameter, `server-password`, deprecated.

Usage Use this command to display information about import and export file settings on the switch .

Examples To display the configuration, use the following command:

```
 CLI (network-admin@switch) > switch-config-show
switch   export-file
-------- -------------------------------------------------------
pubdev01 switch-config-reset-backup.2014-10-22T13.14.53.tar.gz
pubdev01 test.2014-02-24T09.06.51.tar.gz
pubdev01 switch-config-reset-backup.2014-06-30T12.23.10.tar.gz
pubdev01 ext13base.2013-12-11T06.50.40.tar.gz
pubdev02 switch-config-reset-backup.2014-06-30T13.11.43.tar.gz
pubdev02 switch-config-reset-backup.2014-10-22T13.39.18.tar.gz
pubdev02 mantis-switch-config.2013-10-10T10.13.23.tar.gz
pubdev02 switch-config-reset-backup.2015-01-21T10.55.14.tar.gz
pubdev03 switch-config-reset-backup.2014-12-08T16.35.58.tar.gz
pubdev03 switch-config-reset-backup.2014-12-08T17.30.42.tar.gz
```

switch-group-create

This feature allows you to create a switch group, and you can create as many switch groups as needed. You provide a name to a group of switches, and a switch can be a member of more than one group.

Syntax `switch-group-create`

`name` *`name-string`*	Specify a name for the switch group.
`description` *`description-string`*	Specify a description for the switch group.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to create a switch group.

Examples To create a switch group named Rack-1, use the following syntax:

```
CLI (network-admin@switch) > switch-group-create name Rack-1
description rack-1 in small lab
```

switch-group-delete

This feature allows you to delete a switch group.

Syntax `switch-group-delete`

`name` *`name-string`*	Specify a name for the switch group.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to delete a switch group.

Examples To delete a switch group, use the following syntax:

```
CLI (network-admin@switch) > switch-group-delete
```

switch-group-modify

This feature allows you to modify a switch group.

Syntax `switch-group-modify`

`name` *`name-string`*	Specify a name for the switch group.
`description` *`description-string`*	Specify a description for the switch group.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to modify a switch group.

Examples To modify a switch group named Rack-1, use the following syntax:

```
CLI (network-admin@switch) > switch-group-modify name Rack-1
description rack-1 in ECB
```

switch-group-show

This feature allows you to display a switch group.

Syntax `switch-group-show`

`name` *`name-string`*	Specify a name for the switch group.
`description` *`description-string`*	Specify a description for the switch group.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to display a switch group.

Examples To display a switch group named Rack-1, use the following syntax:

```
CLI (network-admin@switch) > switch-group-show name Rack-1
```

switch-group-member-add

This feature allows you to add a member to a switch group. A switch can be a member of more than one group.

Syntax `switch-group-member-add`

`name` *`name-string`*	Specify the name of the switch group to add the member.
`member` *`fabric-node name`*	Specify the name of the switch to add as a member.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to add a switch to a switch group.

Examples To add a switch, lab-spine01, to the switch group, Rack-1, use the following syntax:

```
CLI (network-admin@switch) > switch-group-member-add name Rack-1 member
lab-spine01
```

switch-group-member-remove

This feature allows you to remove a member from a switch group. A switch can be a member of more than one group.

Syntax `switch-group-member-remove`

`name` *`name-string`*	Specify the name of the switch group to remove the member.
`member` *`fabric-node name`*	Specify the name of the switch to remove as a member.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to remove a switch to a switch group.

Examples To remove a switch, lab-spine01, from the switch group, Rack-1, use the following syntax:

```
CLI (network-admin@switch) > switch-group-member-remove name Rack-1
member lab-spine01
```

switch-group-member-show

This feature allows you to remove a member from a switch group. A switch can be a member of more than one group.

Syntax `switch-group-member-show`

`name` *`name-string`*	Specify the name of the switch group to add the member.
`member` *`fabric-node name`*	Specify the name of the switch to add as a member.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to display switches in a switch group.

Examples To display a switch, lab-spine01, from the switch group, Rack-1, use the following syntax:

```
CLI (network-admin@switch) > switch-group-member-show name Rack-1
member lab-spine01
```

switch-info-show

This command displays information about the switch.

Syntax `switch-info-show`

Defaults None.

Access CLI

History

Version 1.2.1	Command introduced.
Version 3.0.0	Parameters for disk information added.

Usage Use this command to display information about the switch.

Examples To display information about the switch, use the following command:

```
CLI (network-admin@switch) > switch-info-show
switch:              draco-dev01
model:               S6000-ON
chassis-serial:      1741PN8500213
cpu1-type:           Intel(R) Atom(TM) CPU S1220   @ 1.60GHz
cpu2-type:           Intel(R) Atom(TM) CPU S1220   @ 1.60GHz
cpu3-type:           Intel(R) Atom(TM) CPU S1220   @ 1.60GHz
cpu4-type:           Intel(R) Atom(TM) CPU S1220   @ 1.60GHz
system-mem:          7.66G
switch-device:       OK
fan1-status:         OK
fan2-status:         OK
fan3-status:         OK
fan4-status:         OK
fan5-status:         OK
fan6-status:         OK
ps1-status:          OK
ps2-status:          FAULT
disk-model:          16GB SATA Flash Drive
disk-firmware:       SFDDA01C
disk-size:           14.9G
disk-type:           Solid State Disk, TRIM Supported
bios-vendor:         American Megatrends Inc.
bios-version:        4.6.5
```

Informational Note: The show output information varies from platform to platform.

switch-local

This command is used to execute CLI commands on the local switch. In some network topologies, complex names may be assigned to switches. switch-local executes commands on a local switch without specifying the switch name.

Syntax `switch-local`

Defaults None.

Access CLI

History Command introduced in nvOS Version 2.2.6.

Usage Use this command to execute commands on a local switch. Once you enter a specific CLI command, you can revert to the scope local.

Examples To execute a command on a local switch, use the following example:

```
CLI (network-admin@switch) > switch-local port-config
```

To execute commands on the fabric, enter a command without `switch-local` specified in the command line.

```
CLI (network-admin@switch) > vlan-modify
```

switch-mode-modify

Netvisor uses this command to change the mode of the switch to store and forward or virtual wire mode.

Syntax `switch-mode-modify`

`switch-mode store-and-forward| virtual-wire`	Specify either store and forward (normal mode) or virtual wire mode. Virtual wire mode accepts only Layer 1 commands.

Access Network administrator

History Command introduced in Version 3.0.0.

Usage Use this command to change the switch mode.

Examples To change the switch mode from virtual wire to store-and-forward, use the following syntax:

CLI (network-admin@switch) > `switch-mode-modify switch-mode store-and-forward`

switch-mode-show

Netvisor uses this command to display the mode of the switch to store and forwardor virtual wire mode.

Syntax `switch-mode-show`

Defaults None

Access Network administrator

History Command introduced in Version 3.0.0.

Usage Use this command to display the switch mode.

Examples To display the switch mode, use the following syntax:

```
CLI (network-admin@switch) > switch-mode-show
switch:      techpub-accton-2
switch-mode: store-and-forward
switch:      techpub-accton-1
switch-mode: store-and-forward
```

switch-poweroff

This command is used to power off the switch.

Syntax `switch-poweroff`

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Use this command to power off the switch.

Examples To power off the switch, use the following command:

```
CLI (network-admin@switch) > switch-poweroff
```

> **Note:** This command is supported only on NSU, NRU01, NRU02, NRU03, and NRU-S0301 platforms.

switch-reboot

This command is used to reboot a local switch.

Syntax `switch-reboot`

Defaults None.

Access `CLI - this is a local switch only command.`

History Command introduced in nvOS Version 1.2.1.

Usage Use this command to reboot the local switch. You cannot execute this command to reboot another switch on the network.

Examples To reboot the switch, use the following command:

```
CLI (network-admin@switch) > switch-reboot
```

switch-nic-info-show

This command displays the NIC information for management and rear-facing interfaces.

Syntax `switch-nic-info-show`

name *switch-nic-stats-list-name*	Specify the name of the interface for which the NIC information has to be displayed.

Defaults None.

Access CLI

History Command introduced in nvOS Version 5.1.2.

Usage Use this command to display the NIC information for management and rear-facing interfaces.

Examples The NIC information for the interface eth0 can be viewed through the command:

```
CLI (network-admin@switch) > switch-nic-info-show name eth0
name driver version firmware         speed rxqnum txqnum rxqsize txqsize autoneg rxpause txpause
---- ------ ------- ---------------- ----- ------ ------ ------- ------- ------- ------- -------
eth0 igb    5.4.0-k 3.25, 0x800005cd 1000  4      4      4096    4096    on      on      off
```

switch-nic-stats-show

This command displays NIC statistics for management and rear-facing interfaces.

Syntax `switch-nic-stats-show`

Specify any of the following options to display the corresponding information.	
`time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	Specify the time to start statistics collection.
`start-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	Specify the start date and time for statistics collection.
`end-time` *`date/time: yyyy-mm-ddTHH:mm:ss`*	Specify the end date and time for statistics collection.
`duration` *`duration: #d#h#m#s`*	Specify the duration for statistics collection.
`interval` *`duration: #d#h#m#s`*	Specify the interval for statistics collection.
`since-start`	Displays statistics from the start.
`older-than` *`duration: #d#h#m#s`*	Displays statistics older than the specified date and time.
`within-last` *`duration: #d#h#m#s`*	Displays statistics within the specified duration.
`name` *`switch-nic-stats-list name`*	Specify the name of the interface for which statistics has to be displayed.

Defaults None.

Access CLI

History Command introduced in nvOS Version 5.1.2.

Version 5.1.2	Command introduced without parameters.
Version 6.0.0	Parameters added.

Usage Use this command to display NIC statistics for management and rear-facing interfaces.

Examples To display the NIC statistics for eth0 interface with a vertical layout, use the command:

```
CLI (network-admin@switch) > switch-nic-stats-show name eth0 layout
vertical
name:       eth0
```

```
ipkts:      2.85M
ibytes:     2.38G
opkts:      492K
obytes:     261M
ierrs:      0
oerrs:      0
idrops:     0
odrops:     0
imcast:     1.76M
omcast:     131K
ibcast:     7.18K
obcast:     25
mcast:      1.76M
bcast:      0
ioverruns:  0
rxnobuf:    0
icrcerrs:   0
iframeerrs: 0
ififoerrs:  0
ofifoerrs:  0
ilongerrs:  0
ishorterrs: 0
ipkts_0:    1.08M
ipkts_1:    495K
ipkts_2:    558K
ipkts_3:    756K
...
opkts_0:    113K
opkts_1:    142K
opkts_2:    115K
opkts_3:    122K
opkts_4:    0
...
idrops_0:   0
idrops_1:   0
...
idrops_22:  0
idrops_23:  0
```

switch-nic-stats-settings-modify

This command modifies NIC statistics settings.

Syntax `switch-nic-stats-settings-modify`

Specify one or more of the following options:

`enable|disable`	Enable or disable statistics colection.
`interval duration : #d#h#m#s`	Specify the time interval to collect NIC statistics.
`disk-space` *`disk-space-number`*	Specify the disk-space allocated for statistics (including rotated log files)

Defaults None.

Access CLI

History Command introduced in nvOS Version 6.0.0

Usage Use this command to modify NIC statistics settings.

Examples To enable the NIC statistics for a switch, use the command:

```
CLI (network-admin@switch) > switch-nic-stats-settings-modify enable
```

switch-nic-stats-settings-show

This command displays NIC statistics settings on a switch.

Syntax `switch-nic-stats-settings-show`

Defaults None.

Access CLI

History Command introduced in nvOS Version 6.0.0.

Usage Use this command to display NIC statistics settings

Examples To display the NIC statistics settings on a switch, use the command:

```
CLI (network-admin@switch1) > switch-nic-stats-settings-show
switch:      switch1
enable:      yes
interval:    1m
disk-space:  50M
```

switch-route-create

This command is used to create routing setups on a switch.

Syntax `switch-route-create`

`network` *`ip-address`*	Specify the destination IPv4 or IPv6 address.
`netmask` *`netmask`*	Specify the destination netmask.
Specify one or more of the following options:	
`gateway-ip` *`ip-address`*	Specify the gateway IPv4 or IPv6 address.
`nic switch-nic` *`nic`*	Specify the NIC.
`metric` *`integer`*	Specify the metric for the route as an integer between 1 and 4294967295.

Defaults None.

Access CLI

History

Version 2.3.0	Command introduced.
Version 3.0	The parameter, `metric`, added.

Usage Use this command to create routes from switch to switch.

Examples

```
CLI (network-admin@switch) > switch-route-create
```

switch-route-delete

This command is used to delete the routing setup of a switch.

Syntax `switch-route-delete`

`network` *`ip-address`*	Specify the destination IPv4 or IPv6 address.
`netmask` *`netmask`*	Specify the destination netmask.
Specify one or more of the following options:	
`gateway-ip` *`ip-address`*	Specify the gateway IPv4 or IPv6 address.
`nic switch-nic` *`nic`*	Specify the NIC.

Defaults None.

Access CLI

History Command introduced in Version 2.3.

Usage Use this command to delete routes from one switch to another switch.

Examples

```
CLI (network-admin@switch) > switch-route-delete
```

switch-route-modify

This command is used to modify the routing setup of a switch.

Syntax `switch-route-modify`

`network` *`ip-address`*	Specify the destination IPv4 or IPv6 address.
`netmask` *`netmask`*	Specify the destination netmask.
Specify one or more of the following options:	
`gateway-ip ip-address`	Specify the gateway IPv4 or IPv6 address.
`nic switch-nic` *`nic`*	Specify the NIC.
`metric` *`integer`*	Specify the metric for the route as an integer between 1 and 4294967295.

Defaults None.

Access CLI

History

Version 2.3.0	Command introduced.
Version 3.0	The parameter, `metric`, added.

Usage Use this command to modify routes from switch to switch.

Examples

```
CLI (network-admin@switch) > switch-route-modify
```

switch-route-show

This command is used to display switch to switch routes.

Syntax `switch-route-show`

`network` *`ip-address`*	Specify the destination IPv4 or IPv6 address.
`netmask` *`netmask`*	Specify the destination netmask.
Specify one or more of the following options:	
`gateway-ip` *`ip-address`*	Specify the gateway IPv4 or IPv6 address.
`nic switch-nic` *`nic`*	Specify the NIC.
`metric` *`integer`*	Specify the metric for the route as an integer between 1 and 4294967295.

Defaults None.

Access CLI

History

Version 2.3.0	Command introduced.
Version 3.0	The parameter, `metric`, added.

Usage Use this command to display routes from switch to switch.

Examples To display switch routes, use the following command:

```
CLI (network-admin@switch) > switch-route-show
```

switch-setup-modify

This command is used to modify the setup of a switch.

Syntax `switch-setup-modify`

Specify one or more of the following options:

`switch-name` *`name-string`*	Specify the name of the switch.
`mgmt-ip` *`ip-address`*	Specify the IP address that allows you to connect to the management interface through the dedicated 1000/100/10 Mbps `mgmt0` or `mgmt1` RJ45 management ports of the switch.
`mgmt-netmask` *`netmask`*	Specify the netmask for the IP address.
`mgmt-ip-assignment none`	Specify the IP assignment type for the management interface.
`mgmt-ip6` *`ip-address`*	Specify the IPv6 IP address.
`mgmt-netmask-ip6` *`netmask`*	Specify the IPv6 netmask.
`mgmt-ip6-assignment none`	Specify the IPv6 assignment type for the management interface.
`in-band-ip` *`ip-address`*	Specify the IP address to connect to the management interface through the network data ports of the switch.
`in-band-netmask` *`netmask`*	Specify the netmask for the IP address.
`in-band-ip6` *`ip-address`*	Specify an IPv6 address for the in-band interface.
`in-band-netmask-ip6` *`netmask`*	Specify the netmask.
`in-band-ip6-assign none|auto|conf`	Specify in-band IPv6 address assignment for the in-band interface.
`gateway` *`ip-address`*	Specify the IP address of the gateway that connects to the outside IP network.
`gateway-ip6` *`ip-address`*	Specify the IPv6 address of the gateway that connects to the outside IP network.

loopback-ip *ip-address*	Specify the loopback IPv4 address.
loopback-ip6 *ip-address*	Specify the loopback IPv6 address.
dns-ip *ip-address*	Specify the IP address of the primary DNS for the switch.
dns-secondary-ip *ip-address*	Specify the IP address of a secondary DNS for the switch.
domain-name *domain-name-string*	Specify the domain name for the switch.
ntp-server *ntp-server-string*	Specify the name or IP address of the NTP server.
ntp-secondary-server *ntp-secondary-server-string*	Specify the name or IP address of the secondary NTP server. You can unset a configured NTP secondary server by using an empty string ("") as parameter. You can use either single-quotes ('') or double-quotes ("") to indicate the empty string.
timezone *timezone-name*	Specify the timezone for the switch.
eula-accepted true|false	Specify if the EULA is accepted or not.
eula_timestamp date/time: yyyy-mm-ddThh:mm:ss	Specify the timestamp for the EULA.
password *password-string*	Specify a password for the switch.
date *yyyy-mm-ddThh:mm:ss*	Specify the date using the designated format.
analytics-store default|optimized	Specify if you want to use the default analytics store or an optimized store. If you select optimized, you must have Fusion IO cards installed for storage.
force|no-force	Force the analytics store to change even if it means removing data.
enable-host-ports| disable-host-ports	Host ports are disabled by default.
motd *motd-string*	Specify a "Message of the Day" string to display on the switch. You may enter up to 511 characters including spaces. This is a temporary or short term message to identify situations such as downtime, etc.

banner *banner-string*	Specify a banner to display on the switch. You may enter up to 511 characters including spaces. This is a static message that can be used to display switch information such as server identity.
enable-disk-mirror|disable-disk-mirror	Specify to enable or disable disk mirroring. This option is available only on NRU03 and NRU-S0301 platforms.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, **delete-mgmt-backup**, is deprecated. The parameters, **e**
Version 2.2	The parameters to support IPv6 added.
Version 2.2.3	The parameters, `motd` and `banner`, added.
Version 2.3	The parameters for LAG on the management interface added.
Version 2.4	The parameters, `force` and `enable-host-ports`, added.
Version 2.6.1	The parameter, `secondary-ntp-server`, added.
Version 2.6.2	The parameter, `mgmt-lacp-mode`, deprecated.
Version 3.0.0	IPv6 parameters added for the in-band and management interfaces.
Version 3.1.0	The parameter, `phone-home`, is deprecated.
Version 6.0.0	Option to unset `ntp-secondary-server` introduced.
Version 6.1.0	The parameters, `enable-disk-mirror|disable-disk-mirror` platforms.

Usage Each switch must be setup when initially installed on the network. Use this command to modify the switch parameters.

Examples To set up the switch with the name, PN-switch-1, IP address 10.9.9.71 on a /16 subnet with the

gateway 10.9.9.1, DNS servers 10.9.9.11 and 10.9.9.1, the domain name pluribusnetworks.com, and NTP server, 0.uspool.ntp.org. The switch is located in the US/Pacific timezone and the administrator is network-admin.

```
CLI (network-admin@switch) > switch-setup-modify name PN-switch-1 mgmt-
ip 10.9.9.71 mgmt-netmask 16 gateway 10.9.9.1 dns 10.9.9.11 dns-
secondary 10.9.9.1 domain-name pluribusnetworks.com ntp-server
0.us.pool.ntp.org username network-admin password adm1n
```

switch-setup-show

This command is used to display basic setup parameters for a switch.

Syntax `switch-setup-show`

Defaults None.

Access

History Command introduced in nvOS Version 1.2.1.

Usage Each switch requires an initial setup before installing on the network. Use this command to display basic parameters for the local switch.

Examples To display basic parameters, use the following command:

```
CLI (network-admin@switch) > switch-setup-show
switch-name:          draco-dev01
mgmt-ip:              10.14.24.76/23
mgmt-ip-assignment:   static
mgmt-ip6:             2222::3/92
mgmt-ip6-assignment:  static
mgmt-link-state:      up
mgmt-link-speed:      1g
in-band-ip:           192.168.103.76/24
in-band-ip6:          5555::3/92
gateway-ip:           10.14.24.1
gateway-ip6:          2222::100
dns-ip:               172.16.1.4
dns-secondary-ip:     10.135.1.13
domain-name:          pluribusnetworks.com
ntp-server:           0.ubuntu.pool.ntp.org
ntp-secondary-server: 1.ubuntu.pool.ntp.org
timezone:             Etc/UTC
date:                 2018-01-10,16:51:44
phone-home:           no
hostid:               184551677
location-id:          2
analytics-store:      default
enable-host-ports:    yes
banner:
```

switch-status-show

This command is used to display the status of the switch.

Syntax `switch-status-show`

`start-time date/time: yyyy-mm-ddThh:mm:ss`	Specify a time to start statistic collection.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Specify a time to end statistic collection.
`duration duration: #d#h#m#s`	Specify the duration of statistic collection.
`interval duration: #d#h#m#s`	Specify an interval between statistic collection.
`since-start| no-since-start`	Display statistics collected since start-time.
`older-than duration: #d#h#m#s`	Display statistics older than the specified time.
`within-last duration: #d#h#m#s`	Display statistics within the last time.
`name` *`name-string`*	Displays the hardware name.
`value value-number`	Displays the hardware value.
`units degrees-C|volts|rpm`	Displays the hardware units.
`state ok|fault|fatal`	Displays the hardware state.

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Use this command to display the status of a switch.

Examples To display the status, use the following command:

```
CLI (network-admin@switch) > switch-status-show
switch     name            value units     state
---------- --------------- ----- --------- -----
pleiades25 Switch Temp     37    degrees-C ok
pleiades25 CPU1 Temp       41    degrees-C ok
pleiades25 CPU2 Temp       45    degrees-C ok
pleiades25 System Temp     39    degrees-C ok
pleiades25 Peripheral Temp 30    degrees-C ok
pleiades25 PCH Temp        45    degrees-C ok
pleiades25 switch-5.0v           volts     ok
```

```
pleiades25 switch-2.5v           volts     ok
pleiades25 switch-0.95v          volts     ok
pleiades25 switch-1.8v           volts     ok
pleiades25 switch-1.2v           volts     ok
pleiades25 fan-1           7050  rpm       ok
pleiades25 fan-2           8057  rpm       ok
pleiades25 fan-3           8057  rpm       ok
pleiades25 fan-4           7050  rpm       ok
Switch:                         netops-1
x86-system-temp[C]:             37
x86-peripheral-temp[C]:         27
x86-pch-temp[C]   :             43
x86-s-vtt:                      ok
x86-1p1v:                       ok
x86-1p5v:                       ok
x86-3p3v:                       ok
x86-3p3vsb:                     ok
x86-5p0v:                       ok
x86-5p0vsb:                     ok
x86-12p0v:                      ok
x86-vbat:                       ok
switch-temp[C]:                 45
switch-0p95v:                   ok
switch-1p8v:                    45
switch-t1p2v:                   fault
fan1-speed[RPM]:                3525
fan2-speed[RPM]:                3525
fan3-speed[RPM]:                3525
fan4-speed[RPM]:                3760
```

switch-status-settings-modify

This command is used to modify the settings for a switch status.

Syntax `switch-status-settings-modify`

Specify one or more of the following options:	
`enable|disable`	Specify if you want to enable or disable collecting information about the switch status.
`interval duration: #d#h#m#s`	Specify an interval duration to collect status information.
`disk-space` *`disk-space-number`*	Specify the disk size for the status information.

Defaults None

Access CLI

History Command introduced in Version 2.1.

Usage Use this command to modify the settings for collecting status information on the switch.

Examples To modify the disk space to 4Gb, use the following command:

```
CLI (network-admin@switch) > switch-status-settings-modify disk-space
4g
```

switch-status-settings-show

This command is used to display the settings for a switch status.

Syntax `switch-status-settings-show`

`enable|disable`	Specify if you want to enable or disable collecting information about the switch status.
`interval duration: #d#h#m#s`	Specify an interval duration to collect status information.
`disk-space` *`disk-space-number`*	Specify the disk size for the status information.

Defaults None

Access CLI

History Command introduced in Version 2.1.

Usage Use this command to display the settings for collecting status information on the switch.

Examples To modify the disk space to 4Gb, use the following command:

```
CLI (network-admin@switch) > switch-status-settings-show

  switch:           pubdev01
  enable:         yes
  interval:      1m
  disk-space:  50M
  switch:           pubdev03
  enable:         yes
  interval:      1m
  disk-space:  50M
  switch:           pubdev02
  enable:         yes
  interval:      1m
  disk-space:  50M
```

switch-vnic-create

This command is used to create a virtual Network Interface Card (vNIC) on the switch.

Syntax `switch-vnic-create`

`ip` *`ip-address`*	Specify the IP address of the vNIC.
`netmask` *`netmask`*	Specify the netmask.
`assignment [none|dhcp|dhcpv6|autov6]`	Specify the method of IP address assignment.
`linklocal` *`ip-address`*	Specify the IPv6 link local IP address.
`vnet` *`vnet name`*	Specify the vNET name.
`l2-net` *`l2-net-name`*	Specify the name of the Layer network.
`vlan` *`vlan-id`*	Specify the VLAN assigned to the vNIC.
`vlan-type public|private`	Optionally, specify the VLAN type assigned to the vNIC.
`if [mgmt|data|span]`	Specify the type of interface for the vNIC.
`alias-on` *`alias-on-string`*	Specify an alias if desired.
`vm-nic-type [e1000|virtio]`	Specify the type of vNIC.
`exclusive|no-exclusive`	Specify if the vNIC is exclusive to a zone. Adding this parameter may improve performance on the vNIC.
`nic-enable|nic-disable`	Specify if the vNIC is enabled or disabled.
`secondary-macs` *`secondary-macs-string`*	Specify a secondary MAC address for the interface.
`sriov-vf|no-sriov-vf`	Specify if the NIC is an SRIOV (single root input/output virtualizatio) interface.
`mirror-traffic true|false`	Specify if you want to mirror traffic to the VNIC.
`if-nat-realm internal|external`	Specify a NAT interface realm.

`priority-tag|no-priority-tag`	Specify to add a VLAN 0 priority tag on forwarded traffic.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters, `exclusive`, and `nic` added.
Version 2.2.5	The parameter, `secondary-macs`, added.
Version 2.4.1	The parameter, `vxlan`, deprecated. The parameter, `vlan-type`, added.
Version 2.6.2	The parameters, `sriov-vf`, `mirror-traffic`, and `if-nat-realm` added.
Version 3.0.0	The following parameters added: `linklocal`, `vnet`, `l2-net`.
Version 3.1.0	The parameter, `priority-tag|no-priority-tag`, added.

Usage Use this command to create vNICs on the switch. This is useful if you want to assign a vNIC to the server-switch without adding virtual services.

Examples To create a vNIC with an IP address of 192.168.1.47/24, on VLAN 101, data, and vNIC type e1000, and exclusive, use the following command:

```
CLI (network-admin@switch) > switch-vnic-create ip 192.168.1.47/24 vlan
101 if data vm-nic-type e1000 exclusive
```

switch-vnic-delete

This command is used to remove a virtual Network Interface Card (vNIC) from the switch.

Syntax `switch-vnic-delete`

`nic` *`nic-string`*	Specify the vNIC to delete from the switch. This is autogenerated when the vNIC is created.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1

Usage Use this command to delete a vNIC from a switch. Use the switch-vnic-show command to display a list of configured vNICs on the switch.

Examples To delete the vNIC, eth0.3, use the following command:

```
CLI (network-admin@switch) >switch-vnic-delete nic eth0.3
```

switch-vnic-modify

This command is used to modify a virtual Network Interface Card (vNIC) on the switch.

Syntax `switch-vnic-modify`

`nic` *`nic-string`*	Specify the vNIC to modify.
Specify one or more of the following options:	
`ip` *`ip-address`*	Specify the IP address of the vNIC.
`netmask` *`netmask`*	Specify the netmask.
`assignment [none|dgcp|dhcpv6]`	Specify the method of IP address assignment.
`linklocal` *`ip-address`*	Specify the IPv6 link local IP address.
`vnet` *`vnet name`*	Specify the vNET name.
`l2-net` *`l2-net-name`*	Specify the name of the Layer network.
`vlan` *`vlan-id`*	Specify the VLAN assigned to the vNIC.
`vlan-type public|private`	Optionally, specify the VLAN type assigned to the vNIC.
`if [mgmt|data|span]`	Specify the type of interface for the vNIC.
`alias-on` *`alias-on-string`*	Specify an alias if desired.
`vm-nic-type [e1000|virtio]`	Specify the type of vNIC.
`exclusive|no-exclusive`	Specify if the vNIC is exclusive to a zone. Adding this parameter may improve performance on the vNIC.
`nic-enable|nic-disable`	Specify if the vNIC is enabled or disabled.
`secondary-macs` *`secondary-macs-string`*	Specify a secondary MAC address for the interface.
`sriov-vf|no-sriov-vf`	Specify if the NIC is an SRIOV (single root input/output virtualizatio) interface.

`mirror-traffic true|false`	Specify if you want to mirror traffic to the VNIC.
`if-nat-realm internal|external`	Specify a NAT interface realm.
`priority-tag|no-priority-tag`	Specify to add a VLAN 0 priority tag on forwarded traffic.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters, **exclusive**, and **nic** added.
Version 2.2.5	The parameter, `secondary-macs`, added.
Version 2.4.1	The parameter, `vxlan`, deprecated. The parameter, `vlan-type`, added.
Version 2.6.2	The parameters, `sriov-vf`, `mirror-traffic`, and `if-nat-realm` added.
Version 3.0.0	The following parameters added: `linklocal`, `vnet`, `l2-net`.
Version 3.1.0	The parameter, `priority-tag|no-priority-tag`, added.

Usage Use this command to modify vNICs on the switch. This is useful if you want to assign a vNIC to the server-switch without adding virtual services.

Examples To modify a vNIC with an IP address of 192.168.1.47/24, on VLAN 101, data, and change the vNIC type e1000, use the following command:

```
CLI (network-admin@switch) > switch-vnic-modify ip 192.168.1.47/24 vlan
101 if data vm-nic-type e1000
```

switch-vnic-show

This command is used to display information about a virtual Network Interface Card (vNIC) on the switch.

Syntax `switch-vnic-show`

`nic` *`nic-string`*	Specify the vNIC to modify.
Specify one or more of the following options:	
`ip` *`ip-address`*	Specify the IP address of the vNIC.
`netmask` *`netmask`*	Specify the netmask.
`assignment [none|dgcp|dhcpv6]`	Specify the method of IP address assignment.
`linklocal` *`ip-address`*	Specify the IPv6 link local IP address.
`vnet` *`vnet name`*	Specify the vNET name.
`l2-net` *`l2-net-name`*	Specify the name of the Layer network.
`vlan` *`vlan-id`*	Specify the VLAN assigned to the vNIC.
`vlan-type public|private`	Optionally, specify the VLAN type assigned to the vNIC.
`if [mgmt|data|span]`	Specify the type of interface for the vNIC.
`alias-on` *`alias-on-string`*	Specify an alias if desired.
`vm-nic-type [e1000|virtio]`	Specify the type of vNIC.
`exclusive|no-exclusive`	Specify if the vNIC is exclusive to a zone. Adding this parameter may improve performance on the vNIC.
`nic-enable|nic-disable`	Specify if the vNIC is enabled or disabled.
`secondary-macs` *`secondary-macs-string`*	Specify a secondary MAC address for the interface.
`sriov-vf|no-sriov-vf`	Specify if the NIC is an SRIOV (single root

	input/output virtualization) interface.
`mirror-traffic true|false`	Specify if you want to mirror traffic to the VNIC.
`if-nat-realm internal|external`	Specify a NAT interface realm.
`priority-tag|no-priority-tag`	Specify to add a VLAN 0 priority tag on forwarded traffic.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters, `exclusive`, and `nic` added.
Version 2.2.5	The parameter, `secondary-macs`, added.
Version 2.4.1	The parameter, `vxlan`, deprecated. The parameter, `vlan-type`, added.
Version 2.6.2	The parameters, `sriov-vf`, `mirror-traffic`, and `if-nat-realm` added.
Version 3.0.0	The following parameters added: `linklocal`, `vnet`, `l2-net`.
Version 3.1.0	The parameter, `priority-tag|no-priority-tag`, added.

Usage Use this command to display information about vNICs on the switch.

Examples To display a vNIC, use the following command:

```
CLI (network-admin@switch) > switch-vnic-show
```

syslog-tls-cert-clear

This command clears a Certificate Signing Request (CSR) for a TLS connection to a syslog server.

Syntax `syslog-tls-cert-clear`

Defaults None

Access CLI

History Command introduced in Version 2.5.

Usage Use this command to delete imported certificates for TLS connections.

Examples To clear imported certificates, use the following syntax:

```
CLI (network-admin@switch) > syslog-tls-cert-clear
```

syslog-tls-cert-import

This command imports certificates from the SFTP/import directory on the switch.

Syntax `syslog-tls-cert-import file-ca file-ca-string file-cert file-cert-string`

`file-ca` *`file-ca-string`*	Specify the name of the CA certificate file.
`file-cert` *`file-cert-string`*	Specify the name of the switch certificate file signed by the CA.

Defaults None

Access CLI

History Command introduced in Version 2.5.

Usage Use this command to import certificates for TLS connections.

Examples To clear imported certificates, use the following syntax:

```
CLI (network-admin@switch) > syslog-tls-cert-import file-ca ca.pem
file-cert my-cert.pem
```

syslog-tls-cert-info-show

This command displays certificates information.

Syntax `syslog-tls-cert-info-show`

`cert-type ca|intermediate|server`	Specify the type of the certificate: CA, intermediate or server.
`subject` *`subject-string`*	Specify the subject of the server.
`issuer` *`issuer-string`*	Specify the issuer of the certificate.
`serial-number` *`serial-number-number`*	Specify the serial number of the certificate.
`valid-from` *`valid-from-string`*	Specify the time from which the certificate is valid.
`valid-to` *`valid-to-string`*	Specify the time at which the certificate expires and is no longer valid.

Defaults None

Access CLI

History Command introduced in Version 2.5.

Usage Use this command view certificate information .

Examples To display certificate information, use the following syntax:

```
CLI (network-admin@switch) > syslog-tls-cert-info-show
```

syslog-tls-cert-request-create

This command creates a certificate request for the TLS connection.

Syntax `syslog-tls-cert-request-create`

`country` `country-string`	Specify the country as a two letter code.
`state` `state-string`	Specify the state or province.
`city` *`city-string`*	Specify the city.
`organization` *`organization-string`*	Specify the organization.
`organizational-unit` *`organizational-unit-string`*	Specify the organizational unit.
`common-name` *`common-name-string`*	Specify the common name.

Defaults None

Access CLI

History Command introduced in Version 2.5.

Usage Use this command to generate a certificate request for TLS connections.

Examples To clear imported certificates, use the following syntax:

```
CLI (network-admin@switch) > syslog-tls-cert-request-create country US
state CA city Palo Alto organization engineering organizational-unit QA
common-name pluribusnetworks.com
```

syslog-tls-cert-request-show

This command displays a certificate request for the TLS connection.

Syntax `syslog-tls-cert-request-show`

`cert-type ca|intermediate|server`	Specify the type of certificate.
`subject` *`subject-string`*	Specify the subject of the certificate.
`issuer` *`issuer-string`*	Specify the issuer of the certificate.
`serial-number` *`serial-number-number`*	Specify the serial number of the certificate.
`valid-from` *`valid-from-string`*	Specify the time from which the certificate is valid.
`valid-to` *`valid-to-string`*	Specify the expiration date of the certificate.

Defaults None

Access CLI

History Command introduced in Version 2.5.

Usage Use this command to display a certificate request for TLS connections.

Examples To display requested certificates, use the following syntax:

```
CLI (network-admin@switch) > syslog-tls-cert-request-show
```

syslog-tls-cert-show

This command displays certificates from the SFTP/import directory on the switch.

Syntax `syslog-tls-cert-import`

`file-ca` *`file-ca-string`*	Displays the name of the CA certificate file.
`file-cert` *`file-cert-string`*	Displays the name of the switch certificate file signed by the CA.
`cert-ca` *`cert-ca-string`*	Displays the CA cert.
`cert-switch` *`cert-switch-string`*	Displays the switch certificate.

Defaults None

Access CLI

History Command introduced in Version 2.5.

Usage Use this command to import certificates for TLS connections.

Examples To display imported certificates, use the following syntax:

```
CLI (network-admin@switch) > syslog-tls-cert-show
```

system-diagnostics-hw-limits-show

This command is used to display information about the ASIC Limits.

Syntax `system-diagnostics-hw-limits-show`

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display information about the ASIC Limits.

Examples To display imported certificates, use the following syntax:

```
CLI (network-admin@switch) > system-diagnostics-hw-limits-show
```

system-diagnostics-show

Netvisor uses this command to displays information about the platform system diagnostics.

Syntax `system-diagnostics-show`

`name bios|system|cpu|memory| asicErrors|all`	Specify the area of the platform to display. The default value is all.

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to display information about platform system areas.

Examples To display system diagnostics, use the following syntax:

```
CLI (network-admin@switch) > system-diagnostics-show
# dmidecode 2.12
SMBIOS 2.8 present.

Handle 0x0000, DMI type 0, 24 bytes
BIOS Information
 Vendor: American Megatrends Inc.
 Version: 5.6.5
 Release Date: 11/20/2014
 Address: 0xF0000
 Runtime Size: 64 kB
 ROM Size: 6144 kB
...
```

system-state-modify

Netvisor ONE version 6.0.1 introduces the Maintenance Mode feature in which the software prevents user traffic from entering or leaving a switch and gracefully steers the traffic to network peers. This mode is useful during hardware or software maintenance of the switch including Return Merchandise Authorization (RMA), correction of out of sync fabric transactions, cluster re-peer, switch power down or reboot, and software upgrade. This functionality is supported on cluster nodes, non-cluster spine nodes, and standalone switches. In a use case where you need to enable maintenance mode on a standalone switch, you must ensure that an alternate path exists if the switch goes down. Use this command to modify system state and enable maintenance mode.

Syntax `system-state-modify`

`maintenance-enable|maintenance-disable`	Enable or disable maintenance mode.

Defaults Maintenance mode is disabled by default.

Access CLI

History

Version 6.1.0	Command introduced.

Usage Use this command to modify system state and enable maintenance mode.

Examples

```
CLI (network-admin@switch) > system-state-modify maintenance-enable
```

system-state-show

Netvisor ONE version 6.0.1 introduces the Maintenance Mode feature in which the software prevents user traffic from entering or leaving a switch and gracefully steers the traffic to network peers. This mode is useful during hardware or software maintenance of the switch including Return Merchandise Authorization (RMA), correction of out of sync fabric transactions, cluster re-peer, switch power down or reboot, and software upgrade. This functionality is supported on cluster nodes, non-cluster spine nodes, and standalone switches. In a use case where you need to enable maintenance mode on a standalone switch, you must ensure that an alternate path exists if the switch goes down. Use this command to display system state.

Syntax `system-state-show`

Defaults None

Access CLI

History

Version 6.1.0	Command introduced.

Usage Use this command to display system state.

Examples

```
CLI (network-admin@switch) > system-state-show
Maintenance mode, Ports disabled
```

system-stats-history-average-show

In releases prior to Netvisor ONE version 6.10, the `system-stats-show` command provided instantaneous values of CPU usage, which was not representative of the average CPU usage over a duration. Netvisor ONE release 6.1.0 improves the infrastructure for collecting and displaying system statistics to provide average usage information. Netvisor ONE currently supports viewing of historical CPU and memory usage over the last 24 hours with a granularity of up to 10s. To view the average system usage statistics over the last 10 to 60 seconds, use the command:

Syntax `system-stats-history-average-show`

`over-last` *`duration:#s`*	Specify a duration for average usage statistics (in multiples of 10s from 10s up to 60s). **Note:** You cannot specify the duration in days, hours, or minutes.

Defaults None

Access CLI

History

Version 6.1.0	Command introduced.

Usage Use this command to view the average system usage statistics.

Examples To view the average system usage statistics over the last 40 seconds, use the command

```
CLI (network-admin@switch) > system-stats-history-average-show over-last 40s
time      mem-used(%) cpu-used(%) over-last
-------- ----------- ----------- ---------
02:00:34 54          3           40s
```

Note: System statistics history must be enabled (`system-stats-history-settings-modify enable`) for you to be able to use the `system-stats-history-average-show` command successfully.

system-stats-history-settings-modify

In releases prior to Netvisor ONE version 6.10, the system-stats-show command provided instantaneous values of CPU usage, which was not representative of the average CPU usage over a duration. Netvisor ONE release 6.1.0 improves the infrastructure for collecting and displaying system statistics to provide average usage information. Netvisor ONE currently supports viewing of historical CPU and memory usage over the last 24 hours with a granularity of up to 10s. You can enable or disable the collection of system statistics history by using the `system-stats-history-settings-modify` command:

Syntax `system-stats-history-settings-modify`

`enable|disable`	Enable or disable system statistics history collection. The default status is `enable`.

Defaults The default status is `enable`.

Access CLI

History

Version 6.1.0	Command introduced.

Usage Use this command to enable or disable system statistics history.

Examples To disable system statistics history, use the following command:

```
CLI (network-admin@switch) > system-stats-history-settings-modify
enable
```

system-stats-history-settings-show

In releases prior to Netvisor ONE version 6.10, the system-stats-show command provided instantaneous values of CPU usage, which was not representative of the average CPU usage over a duration. Netvisor ONE release 6.1.0 improves the infrastructure for collecting and displaying system statistics to provide average usage information. Netvisor ONE currently supports viewing of historical CPU and memory usage over the last 24 hours with a granularity of up to 10s. You can view the of system statistics history settings by using the `system-stats-history-settings-show` command:

Syntax `system-stats-history-settings-show`

Defaults The default status is `enable`.

Access CLI

History

Version 6.1.0	Command introduced.

Usage Use this command to view system statistics history settings.

Examples To view the settings for collection of system statistics history, use the command:

```
CLI (network-admin@switch1) > system-stats-history-settings-show
switch:         switch1
enable:         yes
read-interval:  10s
```

system-stats-history-show

In releases prior to Netvisor ONE version 6.10, the `system-stats-show` command provided instantaneous values of CPU usage, which was not representative of the average CPU usage over a duration. Netvisor ONE release 6.1.0 improves the infrastructure for collecting and displaying system statistics to provide average usage information. Netvisor ONE currently supports viewing of historical CPU and memory usage over the last 24 hours with a granularity of up to 10s.

To display system statistics history over the last one minute (with a granularity of 10s), last 1 hour (with a granularity of 1 minute), and last 24 hours (with a granularity of 1 hour), use the `system-stats-history-show` command.

Syntax `system-stats-history-show`

Defaults None

Access CLI

History

Version 6.1.0	Command introduced.

Usage Use this command to view system statistics history.

Examples To view the system statistics history over up to last 24 hours, use the command:

```
CLI  (network-admin@switch)  >  system-stats-history-show
### Usage over last 1 minute, 60 minutes and last 24 hours ###

time           mem-used(%) cpu-used(%) cpu-peak(%) over-last
-------------- ----------- ----------- ----------- ---------
06:20:55       83          5                       10s
06:20:45       83          6                       10s
06:20:35       83          6                       10s
06:20:25       83          7                       10s
06:20:15       83          7                       10s
06:20:05       83          11                      10s
06:20:05       82          6           11          1m
06:19:05       82          5           6           1m
06:18:05       82          5           6           1m
06:17:05       82          5           6           1m
06:16:05       82          5           6           1m
06:15:05       82          5           6           1m
06:14:05       82          5           6           1m
06:13:05       82          5           6           1m
06:12:05       82          5           6           1m
06:11:05       82          5           6           1m
06:10:05       82          5           6           1m
06:09:05       82          5           6           1m
06:08:05       82          5           6           1m
06:07:05       82          5           6           1m
06:06:05       82          5           6           1m
06:05:05       82          6           6           1m
06:04:05       82          5           6           1m
06:03:05       82          5           6           1m
06:02:05       82          6           6           1m
06:01:05       82          5           6           1m
06:00:05       82          5           6           1m
05:59:05       82          5           6           1m
05:58:05       82          5           6           1m
05:57:05       82          5           6           1m
05:56:05       82          5           6           1m
05:55:05       82          5           6           1m
05:54:05       82          5           6           1m
```

```
05:53:05       82          5           6           1m
05:52:05       82          5           6           1m
05:51:05       82          5           6           1m
05:50:05       82          5           8           1m
05:49:05       82          5           6           1m
05:48:05       82          5           6           1m
05:47:05       82          5           6           1m
05:46:05       82          5           6           1m
05:45:05       82          5           6           1m
05:44:05       82          5           6           1m
05:43:05       82          5           6           1m
05:42:05       82          6           6           1m
05:41:05       82          5           6           1m
05:40:05       82          5           6           1m
05:39:05       82          5           6           1m
05:38:05       82          5           6           1m
05:37:05       82          5           6           1m
05:36:05       82          5           8           1m
05:35:05       82          5           6           1m
05:34:05       82          5           6           1m
05:33:05       82          4           5           1m
05:32:05       82          5           6           1m
05:31:05       82          5           6           1m
05:30:05       82          5           6           1m
05:29:05       82          5           6           1m
05:28:05       82          5           6           1m
05:27:05       82          5           6           1m
05:26:05       82          5           6           1m
05:25:05       82          5           6           1m
05:24:05       82          5           6           1m
05:23:05       82          5           6           1m
05:22:05       82          5           6           1m
05:21:05       82          5           6           1m
05:48:05       82          5           6           1h
04:48:05       82          5           6           1h
03:48:05       83          5           6           1h
02:48:05       82          5           6           1h
01:48:05       82          5           6           1h
00:48:05       83          5           6           1h
03-07,23:48:05 82          6           49          1h
03-07,22:48:05 82          5           6           1h
03-07,21:48:05 82          5           6           1h
03-07,20:48:05 82          5           6           1h
03-07,19:48:05 82          5           6           1h
03-07,18:48:05 82          5           6           1h
03-07,17:48:05 82          5           6           1h
03-07,16:48:05 82          5           6           1h
03-07,15:48:05 82          5           6           1h
03-07,14:48:05 82          5           6           1h
03-07,13:48:05 82          5           6           1h
03-07,12:48:05 82          5           6           1h
03-07,11:48:05 82          5           6           1h
03-07,10:48:05 82          5           6           1h
03-07,09:48:05 82          5           6           1h
03-07,08:48:05 82          5           6           1h
03-07,07:48:05 82          5           6           1h
03-07,06:48:05 82          5           25          1h
```

Note: The system statistics history values are populated with time. For example, ifyou want to view the statistics history for the last 24 hours, nvOSd must have run for the last 24 hours with system statistics history enabled.

system-stats-settings-modify

This command is used to modify the settings for collecting switch stats.

Syntax `switch-stats-settings-modify enable|disable interval duration: #d#h#m#s disk-space disk-space-number`

Specify one or more of the following options:	
`enable|disable`	Specify if you want to enable or disable collecting information about the switch status.
`interval duration: #d#h#m#s`	Specify an interval duration to collect status information.
`disk-space` *`disk-space-number`*	Specify the disk size for the status information.

Defaults None

Access CLI

History Command introduced in nvOS Version 2.1.

Usage Use this command to modify the settings for collecting status information on the switch.

Examples To modify the disk space to 4GB, use the following command:

```
CLI (network-admin@switch) > system-stats-settings-modify disk-space 4g
```

system-stats-settings-show

This command is used to display the settings for collecting switch statistics.

Syntax `system-stats-settings-show`

Defaults None

Access CLI

History Command introduced in nvOS Version 2.1.

Usage Use this command to display the settings for collecting statistics on the switch.

Examples To display system statistics settings, use the following command:

```
CLI (network-admin@switch) > system-stats-settings-show
switch:       pleiades24
enable:       yes
interval:    1m
disk-space:  50M
```

system-stats-show

This command is used to display information about system statistics.

Syntax `system-stats-show`

`time date/time: yyyy-mm-ddThh:mm:ss`	Specifies a specific time and date to display statistics.
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies the start time of the system stats.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies the end time of the system stats.
`duration duration: #d#h#m#s`	Specifies the duration in the format `#d#h#m#s`
`interval` *`duration: #d#h#m#s`*	Specifies the number of seconds to reprint the system stats to the CLI.
`older-than duration: #d#h#m#s`	Specifies stats older than a specific duration.
`within-last duration: #d#h#m#s`	Specifies stats that occurred within the last duration.
`uptime duration: #d#h#m#s`	Specifies the uptime of the switch.
`paging` *`paging-number`*	Specifies the number pages collected.

Defaults None.

Access CLI

History

Version 1.2.1	Command introduced.
Version 3.0.0	The parameter, `cpu-total`, added in the output.
Version 6.1.0	The parameter, `cpu-avg`, added in the output.

Usage Use this command to display system statistics.

Examples To display system statistics, use the following command:

```
CLI (network-admin@switch) > system-stats-show format all layout vertical
switch:        switch1
uptime:        7h5m41s
```

```
used-mem:       54%
used-mem-val:   3.84G
used-swap:      0%
used-swap-val:  0
paging:         0
cpu-user:       4%
cpu-sys:        4%
cpu-total:      9%
cpu-idle:       90%
cpu-avg:        3%
```

The parameters in `system-stats-show` output are:

`switch` - The current switch of which the statistics are being displayed.
`uptime` - The amount of time for which the switch has been online.
`used-mem` - Percentage of memory used by the switch.
`used-mem-val` - The amount of memory used by the switch.
`used-swap` - The percentage of swap memory used by the switch.
`used-swap-val` - The amount of swap memory used by the switch.
`paging` - The swap scan rate.
`cpu-user` - The percentage of CPU usage associated with user processes.
`cpu-sys` - The percentage of CPU usage associated with system processes.
`cpu-total` - The total usage of the CPU in percentage.
`cpu-idle` - The percentage of CPU idle time.
`cpu-avg` - The average CPU usage (`cpu-sys` + `cpu-user`) over last 30 seconds.

system-settings-modify

This command allows you to modify system settings to optimize Netvisor performance.

Syntax `system-settings-modify`

`optimize-arps|no-optimize-arps`	Enable or disable ARP optimization. This feature is ON by default. When ON, the Netvisor sends all ARP requests and Gratuitous ARP requests to the local CPU of the corresponding switch, and responds to ARP requests on behalf of the intended ARP targets. This feature corresponds to an ARP-proxy function on the corresponding switch. It is assumed that ARP requests and Gratuitous ARP requests are used by Netvisor to learn the MAC address to IPv4 address mapping, as well as Unknown Unicast and Broadcast traffic when the parameters, `manage-unknown-unicast` or `manage-broadcast` are ON. When OFF, the Netvisor learns and bridges ARP requests on the switch ASIC instead of relying on the local CPU.
`lldp|no-lldp`	Enable or disable LLDP discovery.
`policy-based-routing|no-policy-based-routing`	Enable or disable policy-based routing.
`optimize-nd|no-optimize-nd`	Enable or disable Neighbor Discovery optimization. This feature is ON by default. When ON, Netvisor sends all Neighbor Solicitations and Unsolicited Neighbor Advertisements to the local CPU of the corresponding switch, responds to Neighbor Solicitation requests on behalf of the intended ND targets themselves. This feature corresponds to an ND-proxy function on the corresponding switch. Neighbor Solicitations and Unsolicited Neighbor Advertisements are used by Netvisor to learn the MAC address to IPv6 address mapping, as well as Unknown Unicast and Broadcast traffic when tthe parameters, `manage-unknown-unicast` or `manage-broadcast` are ON. When OFF, theNetvisor learns and bridges Neighbor Solicitations on the switch ASIC instead of relying on Netvisor.
`reactivate-mac|no-reactivate-mac`	Enable or disable reactivation of aged out MAC entries. This feature is ON by default. When ON, if a vPort entry is looked up and

	found as inactive, the corresponding l2-table entry is re-activated on the switch. When OFF, the traffic is flooded on the corresponding broadcast domain by theNetvisor. Please note that l2-table entries are refreshed on the Ethernet switch ASIC every time it is used, otherwise it is removed after a time of inactivity corresponding to configured aging period. Requires unknown-unicast to be enabled.
`reactivate-vxlan-tunnel-mac|no-reactivate-vxlan-tunnel-mac`	Enable or disable enable reactivation of MAC entries over VXLAN tunnels.
`manage-unknown-unicast|no-manage-unknown-unicast`	Enable or disable unknown unicast management. This feature is ON by default. Netvisor sends all unknown-unicast traffic to the local CPU of the corresponding switch. Netvisor learns the source of unknown-unicast packets and floods the packets on the corresponding unknown-unicast domain. When OFF, all unknown-unicast traffic is flooded on the corresponding unknown-unicast domain by the switch instead of relying on Netvisor.
`manage-broadcast|no-manage-broadcast`	Enable or disable broadcast management. This feature is ON by default. Netvisor sends all broadcast traffic to the local CPU of the corresponding switch. Netvisor learns the source of broadcast packets and floods the packets on the corresponding broadcast domain. When OFF, all unicast traffic is flooded on the corresponding broadcast domain by the switch instead of relying on Netvisor.
`manage-wake-on-lan|no-manage-wake-on-lan`	Enable wake-on-lan management.
`auto-trunk|no-auto-trunk`	Enable or disable auto trunking.
`auto-host-bundle|no-auto-host-bundle`	Enable or disable host auto bundling.
`cluster-active-active-routing|no-cluster-active-active-routing`	Enable or disable active-active cluster routing.
`routing-over-vlags|no-routing-over-vlags`	Enable or disable routing to VLAGs from cluster links.
`source-mac-miss to-cpu|copy-to-cpu`	Control unknown source MAC address learn behavior.

`optimize-datapath disable|cluster-only|all`	Specify the datapath optimization for cluster, fabric and vRouter communication: · `disable`: disables datapath optimization. · `cluster-only`: enables datapath optimization for cluster-only, where cluster traffic is redirected to cluster 4094 vNIC. · `all`: enables datapath optimization for fabric and data traffic. The default value is `all`.
`cpu-class-enable|no-cpu-class-enable`	Enable or disable CPU class.
`usb-port|no-usb-port`	Enable or disable the USB port on the front of the switch. This is only applicable to switches with ONVL.
`use-igmp-snoop-l2|use-igmp-snoop-l3`	Use Layer 2 or Layer 3 tables for IGMP snooping.
`vle-tracking-timeout` *`seconds`*	Specify vLE tracking timeout in seconds from 3 to 30 seconds.
`pfc-buffer-limit` *`pfc-buffer-limit-string`*	Percentage of global system buffer space allowed for PFC.
`cosq-weight-auto|no-cosq-weight-auto`	Specify if you want to adjust queue weights automatically.
`lossless-mode|no-lossless-mode`	Specifies lossless mode.
`stagger-queries|no-stagger-queries`	Specify if you want to stagger sending IGMP queries on the network.
`qsfp28-port-mode none|6x40G|4x100G`	Configure the QSFP28 port mode as 6x40G or 4x100G.
`sfp28-port-mode 48x25G| 36x25G+12x10G/1G|24x25G+24x10G/1G`	Configure the sfp28 port mode using one of the three options. Note: This parameter is available only on AS7326-56X / F9480-V Platforms.
`host-refresh|no-host-refresh`	Specify if you want to enable refreshing host ARP entries to keep L2 entries active.
`proxy-conn-retry|no-proxy-conn-retry`	Enable or disable proxy connection retry.

`proxy-conn-max-retry` *`integer`*	Specify the maximum number of proxy connection retry attempts from 0 to 20.
`proxy-conn-retry-interval` *`mseconds`*	Specify the number of milliseconds, from 100 to 2000, to wait between proxy connection retry attempts.
`nvos-debug-logging|no-nvos-debug-logging`	Specify the logging mode.
`optimize-rxlos|no-optimize-rxlos`	Enable or disable processing of port modules that do not support RXLOS.
`manage-l2-uuc-drop|no-manage-l2-uuc-drop`	Enable or disable L2 Unknown Unicast Drop towards data port.
`xcvr-link-debug|no-xcvr-link-debug`	Enable or disable receiver link debug.
`fastpath-bfd|no-fastpath-bfd`	Enable or disable BFD path optimization.
`linkscan-interval` *`10000..1000000`*	Specify the linkscan interval as a value between 10000µs and 1000000µs. The default value is 150000µs. **Note:** This parameter is not in effect when the link scan mode is hardware.
`linkscan-mode software|hardware`	Specify the link scan mode as hardware or software. Software link scan mode is enabled by default.
`single-pass-l2-known-multicast|no-single-pass-l2-known-multicast`	Specify to enable or disable single-pass L2 forwarding of known multicast traffic.
`single-pass-flood|no-single-pass-flood`	Enable or disable single-pass flood.
`single-pass-riot|no-single-pass-riot`	Specify to enable or disable the switches to perform routing in and out of tunnels (RIOT) in a single pass (that is, without requiring the loopback trunk). **Note**: This option is available only on NRU03 and NRU-S03 platforms and on the Dell S4100 and S5200 Series.
`hybrid-mode|no-hybrid-mode`	Specify to enable switch to working standard and transparent mode.
`batch-move-mac-hw-group-for-vlan-only|no-batch-move-mac-hw-group-for-vlan-only`	Specify to enable or disable the HW batch move for MAC by group for VLAN network only.
`memory-tracker|no-memory-tracker`	Enable memory footprint tracker.

`symmetric-hash|no-symmetric-hash`	Enables or disables symmetric hashing.
`hash-suppress-unidir-fields|no-hash-suppress-unidir-fields`	Enables or disables unidir fields suppression in symmetric hashing.
`prioritize-rx-reasons|no-prioritize-rx-reasons`	Specify to prioritize BCM RX Reasons over TCP Analytics vFlow.
`hash-inner-ip-over-gre|no-hash-inner-ip-over-gre`	Specify to control the fields used in the hash for v4/v6 over v4/v6 GRE.
`multiple-tunnel-next-hops|no-multiple-tunnel-next-hops`	Specify to enable multiple tunnel next hops on same port.
`l3-use-host-table|no-l3-use-host-table`	Specifies L3 Routes (such as EVPN type-5 routes) use host table for /32 and /128 routes.
`offline-notification-new-thread| no-offline-notification-new-thread`	Enables or disables new thread to send offline notifications when switch goes down.
`uplink-oversubscription-action default|warn|error`	Specifies nvOS action towards uplink oversubscription.

Defaults All parameters enabled by default.

Access Network Administrator

History

Version 2.5.2	Command introduced.
Version 2.5.3	The parameters `auto-host-trunk` and `cluster-active-active-routing` added.
Version 2.6.0	The parameters `policy-based-routing`, `auto-vlag-bundle`, `lldp`, `block-loops`, `source-mac-miss`, `cpu-class`, `igmp-snooping` and `usb` added.
Version 3.0.0	The parameters `stagger-queries`, `cosq-weight-auto` and `vle-tracking-timeout` added.
Version 3.1.0	The parameters `host-refresh`, `proxy-conn-retry`, `proxy-conn-max-retry` and `proxy-conn-retry-interval` added.
Version 5.1.0	The parameter `nvos-debug-logging|no-nvos-debug-logging` added.

Version 5.2.0	The parameter `fastpath-bfd|no-fastpath-bfd` added
Version 6.0.0	The parameters `linkscan-mode` and `single-pass-flood` added.
Version 6.0.1	The parameters `cos-8-and-9-queue` and `batch-move-mac-hwgroup-for-vlan-only` added.
Version 6.1.1	The parameter `offline-notification-new-thread` added.
Version 7.0.0	The parameters `sfp28-port-mode` and `l3-use-host-table|no-l3-use-host-table` added.

Usage Use this command to enable or disable system settings. However, it is recommended that you do not modify the settings without consulting Pluribus Networks.

Examples To disable auto-trunking, use the following syntax:

```
CLI (network-admin@switch) > system-settings-modify  no-auto-trunk
```

system-settings-show

This command allows you to display system settings that optimize Netvisor performance.

Syntax `system-settings-show`

Defaults All parameters enabled by default.

Access Network Administrator

History

Version 2.5.2	Command introduced

Usage Use this command to display system settings. However, it is recommended that you do not modify the settings without consulting Pluribus Networks.

Examples To display system settings, use the following syntax:

```
CLI (network-admin@switch) > system-settings-show
optimize-arps:                        off
lldp:                                 on
policy-based-routing:                 off
optimize-nd:                          off
reactivate-mac:                       on
reactivate-vxlan-tunnel-mac:          on
manage-unknown-unicast:               off
manage-broadcast:                     off
block-loops:                          off
auto-trunk:                           on
auto-host-bundle:                     off
cluster-active-active-routing:        on
fast-route-download:                  off
fast-interface-lookup:                on
routing-over-vlags:                   off
source-mac-miss:                      copy-to-cpu
igmp-snoop:                           use-l3
vle-tracking-timeout:                 3
pfc-buffer-limit:                     40%
cosq-weight-auto:                     off
port-cos-drop-stats-interval(s):      disable
lossless-mode:                        off
snoop-query-stagger:                  no-stagger-queries
host-refresh:                         off
proxy-conn-retry:                     on
proxy-conn-max-retry:                 3
proxy-conn-retry-interval:            500
manage-l2-uuc-drop:                   on
optimize-rxlos:                       off
fastpath-bfd:                         off
linkscan-interval:                    150000
linkscan-mode:                        software
single-pass-l2-known-multicast:       off
```

```
single-pass-flood:                      off
single-pass-riot:                       off
xcvr-oir-debug-port:                    none
cos-8-and-9-queue:                      off
batch-move-mac-hw-group-for-vlan-only:  off
```

T Commands

tech-support-show

This command is used to assist Pluribus Networks Technical Assistance Center (TAC) when troubleshooting a switch.

Syntax `tech-support-show`

Defaults None

Access CLI

History Command introduced in Version 2.0

Usage Information in the show output provides Pluribus TAC with logs and statistics to begin the investigation on any technical issues. This command output is not comprehensive and may require additional details. While running the `tech-support-show` command, you should enable logging in your SSH client for capturing the output to be sent to Pluribus TAC.

Examples To display information about a switch, use the following command (the output displayed here is only a sample of the complete output):

```
CLI (network-admin@switch) > tech-support-show
==================== admin-service-show =======================
if:                 mgmt
ssh:              on
nfs:              on
web:              on
web-ssl:         off
web-ssl-port:  443
web-port:       80
snmp:             off
net-api:         on
icmp:             on
if:                 data
ssh:              on
nfs:              on
web:              on
web-ssl:         off
web-ssl-port:  443
web-port:       80
snmp:             off
net-api:         on
icmp:             on
==================== admin-sftp-show ==========================
sftp-user:        sftp
enable:             yes
```

topology-create

This command is used to create a named topology entity.

Syntax `topology-create`

name *name-string*	Specify the name of the fabric topology.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to create a named topology entity.

Examples To create a topology named topo1, use the following syntax:

CLI (network-admin@switch) > `topology-create name topo1`

topology-delete

This command is used to delete a named topology entity.

Syntax `topology-delete`

name *name-string*	Specify the name of the fabric topology.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to delete a named topology entity.

Examples To delete a topology named topo1, use the following syntax:

CLI (network-admin@switch) > `topology-delete name topo1`

topology-import

This command is used to import existing vLEs into a topology and store the endpoints' information (switch name and port).

Syntax `topology-import`

`name` *`name-string`*	Specify the name of the fabric topology.
`type vflow|vle`	Specify the type of connection as vFlow or vLE.
`vflow-name` *`vflow name`*	Specify the vFlow name.
`vle-name` *`vle name`*	Specify the vLE name.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to import existing vLEs into a topology and store the endpoints' information (switch name and port).

Examples To import a topology named topo1, use the following syntax:

CLI *(network-admin@switch)* > `topology-import name topo1`

topology-modify

This command is used to create/delete the vLEs and the associated VLANs configured in a topology.

Syntax `topology-modify`

`name` *`name-string`*	Specify the name of the fabric topology.
`enable|disable`	Specify whether to deploy or clear vFlow configurations.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to update a named topology entity.

Examples To deploy or clear all configuration by topology, use the following syntax:

```
CLI  (network-admin@switch) >  topology-modify
```

topology-node-show

This command is used to display network topology nodes.

Syntax `topology-node-show`

`name` *`name-string`*	Name of the fabric topology.
`node` *`fabric-node name`*	Name for the first link node.
`local-port` *`local-port-number`*	The port on the first fabric node.
`peer-node` *`fabric-node name`*	Name for the second link node.
`remote-port` *`remote-port-number`*	The port on the second fabric node.
`enable|disable`	Specify the topology link state for path calculation.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display network topology nodes.

Examples To display network topology nodes, use the following syntax:

```
CLI (network-admin@switch) > topology-node-show
```

topology-show

This command is used to display a named topology entity.

Syntax `topology-show`

`name` *`name-string`*	Name of the topology.
`enable|disable`	Specify whether to deploy or clear vFlow configurations
`type vflow|vle`	The type of connection as vFlow or vLE.
`vflow-name` *`vflow name`*	The vFlow name.
`vle-name` *`vle name`*	The vLE name.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display a named topology entity.

Examples To display a network topology, use the following syntax:

CLI *(network-admin@switch)* > `topology-show`

topology-vle-add

This command is used to specifiy the vLE name to be added to a topology, the node and the node ports between which the vLE needs to be set up.

Syntax `topology-vle-add`

`name` *`name-string`*	Specify the name of the topology.
`vle-name` *`vle name`*	Specify the vLE name.
`node1` *`fabric-node name`*	Specify the name for the first fabric node.
`node2` *`fabric-node name`*	Specify the name for the second fabric node.
`node-1-port` *`node-1-port-number`*	Specify the port number on first node.
`node-2-port` *`node-2-port-number`*	Specify the port number on second node.
`vlan` *`0..4095`*	Specifies the VLAN for vLE.
`vxlan` *`0..16777215`*	Specifies the VXLAN for vLE.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to add vLEs in a topology.

Examples To add vLEs in a topology, use the following syntax:

CLI *(network-admin@switch)* > `topology-vle-add`

topology-vle-remove

This command is used to remove vLEs from a topology.

Syntax `topology-vle-remove`

name *name-string*	Specify the name of the topology.
vle-name *vle name*	Specify the vLE name.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to remove vLEs from a topology.

Examples To remove vLEs from a topology, use the following syntax:

```
CLI    (network-admin@switch) > topology-vle-remove
```

topology-vle-modify

This command is used to update the vLE, the node and the node ports between which the vLE needs to be set up.

Syntax `topology-vle-modify`

`name` *`name-string`*	Specify the name of the topology.
`vle-name` *`vle name`*	Specify the vLE name.
`node-1-port` *`node-1-port-number`*	Specify the port number on first node.
`node-2-port` *`node-2-port-number`*	Specify the port number on second node.
`vlan` *`0..4095`*	Specifies the VLAN for vLE.
`vxlan` *`0..16777215`*	Specifies the VXLAN for vLE.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to update vLEs in a topology.

Examples To update vLEs in a topology, use the following syntax:

CLI *(network-admin@switch)* > `topology-vle-modify`

topology-vle-show

This command is used to display the vLE, the node and the node ports between which the vLE needs to be set up.

Syntax `topology-vle-show`

`name` *`name-string`*	The name of the topology.
`vle-name` *`vle-name-string`*	The vLE name.
`node1` *`fabric-node name`*	Name for the first fabric node.
`node2` *`fabric-node name`*	Name for the second fabric node.
`node-1-port` *`node-1-port-number`*	The port number on first node.
`node-2-port` *`node-2-port-number`*	The port number on second node.
`vlan` *`0..4095`*	The VLAN for vLE.
`vxlan` *`0..16777215`*	The VXLAN for vLE.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display vLEs in a topology.

Examples To display vLEs in a topology, use the following syntax:

CLI *(network-admin@switch)* > `topology-vle-show`

topology-vlink-add

In a topology, you can store the endpoint information for a Network Packet Broker (NPB) vFlow in the form of a Virtual Link (vLink). A vLink stores both the bidirectional vPG endpoints of a vFlow, and when you enable the topology, Netvisor ONE automatically creates a vFlow between the two vPGs with protocol transparency enabled. This command is used to add vLinks to a network topology.

Syntax `topology-vlink-add`

`name` *`name-string`*	Specify the name of the topology.
`vlink-name` *`vlink-name-string`*	Specify the vLink name.
`endpoint1` *`vpg name`*	Specifies vLink for first the endpoint.
`endpoint2` *`vpg name`*	Specifies vLink for the second endpoint.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to add vLinks to a network topology.

Examples To add vLinks to an NPB topology, use the following syntax:

CLI *(network-admin@switch)* > `topology-vlink-add`

topology-vlink-modify

In a topology, you can store the endpoint information for a Network Packet Broker (NPB) vFlow in the form of a Virtual Link (vLink). A vLink stores both the bidirectional vPG endpoints of a vFlow, and when you enable the topology, Netvisor ONE automatically creates a vFlow between the two vPGs with protocol transparency enabled. This command is used to to modify vLink configuration in a topology.

Syntax `topology-vlink-modify`

`name` *`name-string`*	Specify the name of the topology.
`vlink-name` *`vlink-name-string`*	Specify the vLink name.
Between any of the two options:	
`endpoint1` *`vpg name`*	Specifies vLink for first the endpoint.
`endpoint2` *`vpg name`*	Specifies vLink for the second endpoint.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to modify vLink configuration in a topology.

Examples To update vLinks to a topology, use the following syntax:

CLI *(network-admin@switch)* > `topology-vlink-modify`

topology-vlink-remove

In a topology, you can store the endpoint information for a Network Packet Broker (NPB) vFlow in the form of a Virtual Link (vLink). A vLink stores both the bidirectional vPG endpoints of a vFlow, and when you enable the topology, Netvisor ONE automatically creates a vFlow between the two vPGs with protocol transparency enabled. This command is used to remove vLinks from a topology.

Syntax `topology-vlink-remove`

`name` *`name-string`*	Specify the name of the topology.
`vlink-name` *`vlink-name-string`*	Specify the vLink name.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to remove vLinks from a topology.

Examples To remove vLinks from a topology, use the following syntax:

CLI *(network-admin@switch)* > `topology-vlink-remove`

topology-vlink-show

n a topology, you can store the endpoint information for a Network Packet Broker (NPB) vFlow in the form of a Virtual Link (vLink). A vLink stores both the bidirectional vPG endpoints of a vFlow, and when you enable the topology, Netvisor ONE automatically creates a vFlow between the two vPGs with protocol transparency enabled. This command is used to display vLinks on a topology.

Syntax `topology-vlink-show`

`name` *`name-string`*	Specify the name of the topology.
`vlink-name` *`vlink-name-string`*	Specify the vLink name.
`endpoint1` *`vpg name`*	Specifies vLink for first the endpoint.
`endpoint2` *`vpg name`*	Specifies vLink for the second endpoint.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display vLinks In a topology.

Examples To display vLinks In a topology, use the following syntax:

CLI *(network-admin@switch)* > `topology-vlink-show`

```
name   vlink-name endpoint1 endpoint2
----- ---------- --------- --------
topo1 flow1      vpg1      vpg2
```

traceroute

This command is used to identify routes between hosts.

Syntax `traceroute options host`

Defaults None

Access CLI

History Command introduced in Version 2.2.4.

Usage Use this command to identify hops between hosts on the network.

Examples To see the routes between a switch and yodel.com, use the following command:

```
CLI (network-admin@switch) > traceroute yodel.com
traceroute: Warning: yodel.com has multiple addresses; using
98.138.253.109
traceroute: Warning: Multiple interfaces found; using 10.9.100.100 @
igb0
traceroute to yodel.com (98.138.253.109), 30 hops max, 40 byte packets
 1  router.pluribusnetworks.com (10.11.11.1)  0.712 ms  0.636 ms  0.659
ms
2  10.23.5.2 (10.23.5.2)  0.704 ms  0.654 ms  0.613 ms
  3    xe-8-0-0-3465-sur01.santaclara.ca.sfba.comcast.net  (50.203.11.17)
 1.117 ms  1.102 ms  1.093 ms
  4   te-0-10-0-2-ar01.sfsutro.ca.sfba.comcast.net  (68.85.86.17)   3.343
ms  3.859 ms  3.959 ms
  5    he-0-9-0-0-ar01.santaclara.ca.sfba.comcast.net  (69.139.198.138)
 4.360 ms  4.464 ms  4.379 ms
6  * * *
 7   be-10910-cr01.sanjose.ca.ibone.comcast.net  (68.86.86.102)   6.956 ms
 7.639 ms  9.245 ms
8  50.242.148.34 (50.242.148.34)  6.606 ms  6.567 ms  6.728 ms
9  * * *
10  * * *
11  4.34.50.38 (4.34.50.38)  30.548 ms  135.574 ms  53.269 ms
12  ae-0.pat1.nez.yodel.com (216.115.100.8)  55.840 ms ae-
6.pat2.nez.yodel.com (216.115.104.116)  55.689 ms  55.324 ms
13  ae-1.msr2.ne1.yodel.com (216.115.100.7)  54.939 ms ae-
1.msr1.ne1.yodel.com (216.115.100.5)  58.989 ms ae-0.msr1.ne1.yodel.com
(216.115.100.1)  40.204 ms
14  ae-1.clr2-a-gdc.ne1.yodel.com (98.138.0.19)  55.725 ms unknown-98-
138-97-x.yodel.com (98.138.97.3)  55.829 ms ae-0.clr1-a-
gdc.ne1.yodel.com (98.138.144.21)  55.886 ms
15  et-18-25.fab3-1-gdc.ne1.yodel.com (98.138.0.89)  55.507 ms et-17-
1.fab1-1-gdc.ne1.yodel.com (98.138.0.79)  40.852 ms et-18-25.fab3-1-
gdc.ne1.yodel.com (98.138.0.89)  55.513 ms
16  po-17.bas1-7-prd.ne1.yodel.com (98.138.240.20)  41.726 ms po-
11.bas1-7-prd.ne1.yodel.com (98.138.240.8)  63.368 ms po-16.bas2-7-
prd.ne1.yodel.com (98.138.240.34)  56.676 ms
17  * * *
```

```
18  * * *
19  * * *
20  * * *
21  * * *
22  * * *
23  * * *
24  * * *
25  * * *
26  * * *
27  * * *
28  * * *
29  * * *
30  * * *
```

transaction-cluster-divergence-fix

This command is used to fix the cluster transaction divergence that may occur in one of the nodes of a cluster when the configurations go out-of-synch between the nodes of a cluster.

Syntax `transaction-cluster-divergence-fix`

Defaults None

Access CLI

History Command introduced in Version 5.1.2

Usage Use this command to fix the cluster transaction divergence between the nodes of a cluster and roll back the configuration to a common transaction ID number.

transaction-log-file-truncate-to

This command is used to truncate the local xact log file to given tid (latest tid entries are retained)

Syntax `transaction-log-file-truncate-to`

`trunc_tid` *`trunc_tid-number`*	Specify the transaction ID.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to truncate the local xact log file.

Examples To display vLinks on a topology, use the following syntax:

CLI *(network-admin@switch)* > `transaction-log-file-truncate-to`

transaction-node-show

This command is used to display fabric transaction numbers. If a failure occurs on the fabric, transactions on nodes in the fabric can become out of synch. Once transactions are out of synch, no further transactions can be executed across the scope of local, fabric, or cluster. Unjoining and rejoining the fabric causes the node to lose configuration.

As part of a single node transaction recovery, you can roll back the transaction number to a previous one.

Syntax `transaction-node-show`

`id` *`id-number`*	Displays the ID assigned to the node.
`name` *`name-string`*	Displays the node name.
`local-tid` *`local-tid-number`*	Displays the local transaction ID.
`fabric-tid` *`fabric-tid-number`*	Displays the fabric transaction ID.
`cluster-tid` *`cluster-tid-number`*	Displays the cluster transaction ID.
`fabric-changeid` *`fabric-changeid-string`*	Displays the fabric unique change ID.
`cluster-changeid` *`cluster-changeid-string`*	Displays the cluster unique change ID.

Defaults None

Access CLI

History Command introduced in Version 2.3

Usage Use this command to roll back the fabric to a specific transaction ID number. This may be necessary to resynchronize the fabric without forcing nodes to unjoin and rejoin the fabric. If multiple nodes are out of synch, you must recover each node separately.

Examples To display transaction node information, use the following syntax:

```
CLI (network-admin@switch) > transaction-node-show
switch:           ursa-colo-2
id:               150996198
name:             ursa-colo-2
local-tid:        15
fabric-tid:       2
cluster-tid:      0
fabric-changeid:  32d986727bc3cbe0826b43d6f71918d68dc6cce4df0c0f6c3f28d78edad55db1
```

transaction-rollback-to

This command is used to roll back the fabric to a specific fabric transaction number. If a failure occurs on the fabric, transactions on nodes in the fabric can become out of synch. Once transactions are out of synch, no further transactions can be executed across the scope of local, fabric, or cluster. Unjoining and rejoining the fabric causes the node to lose configuration.

As part of a single node transaction recovery, you can roll back the transaction number to a previous one.

Syntax `transaction-rollback-to transaction-scope local|cluster|fabric tid tid-number`

`scope local|cluster|fabric`	Specify if you want to rollback the transaction number on a local, cluster, or fabric scope.
`tid` *`tid-number`*	Specify the transaction number to rollback the transaction.
`ignore-error|no-ignore-error`	Specify if you want ignore errors when this command is executed. Use with **CAUTION**.

Defaults None

Access CLI

History

Version 2.2.3	Command introduced.
Version 3.0.0	The parameter, `ignore-error`, added.

Usage Use this command to roll back the fabric to a specific transaction ID number. This may be necessary to resynchronize the fabric without forcing nodes to unjoin and rejoin the fabric. If multiple nodes are out of synch, you must recover each node separately.

Examples To roll back to the fabric transaction ID to 14, use the following syntax:

```
CLI (network-admin@switch) > transaction-rollback-to transaction-scope
fabric tid 14
```

This command produces output only if an error has occurred during the transaction.

```
CLI (network-admin@switch) > transaction-rollback-to transaction-scope
fabric tid 5
Warning: rolled back transactions are unrecoverable unless another
fabric node has them. Proceed? [y/n] y
```

transaction-rollforward-to

This command is used to roll forward the fabric to a specific fabric transaction number.

Syntax `transaction-rollforward-to transaction-scope local|cluster|fabric tid tid-number remote-node fabric-node-name`

`transaction-scope local|cluster|fabric`	Specify if you want to roll forward the transaction number on a local, cluster, or fabric scope.
`tid` *`tid-number`*	Specify the transaction number to roll forward the transaction.
`remote-node` *`fabric-node-name`*	Specify the node to rollforward the transaction ID.
`ignore-error|no-ignore-error`	Specify if you want ignore errors when this command is executed. Use with **CAUTION**.

Defaults None

Access CLI

History

Version 2.2.3	Command introduced.
Version 2.4	The parameter, `remote-node`, added.
Version 3.0.0	The parameter, `ignore-error`, added.

Usage Use this command to roll forward the fabric to a specific transaction ID number. This may be necessary to resynchronize the fabric without forcing nodes to unjoin and rejoin the fabric. If multiple nodes are out of synch, you must recover each node separately.

Examples To roll forward to the fabric transaction ID to 14, use the following syntax:

```
CLI (network-admin@switch) > transaction-forward-to scope fabric tid 14
```

This command produces output only if an error has occurred during the transaction.

transaction-settings-modify

You can modify transaction settings to automatically recover missed transactions.

Syntax `transaction-settings-modify`

Specify one or more of the following options:

`allow-offline-cluster-nodes|no-allow-offline-cluster-nodes`	Specify if you want to allow transaction to proceed even if a cluster is offline.
`auto-recover|no-auto-recover`	Specify if you want to automatically recover missed transactions.
`auto-recovery-retry-time duration:#d#h#m#s`	Specify the retry time for transaction auto-recover.
`reserve-retry-maximum` *`reserve-retry-maximum-number`*	Maximum number of retires for transaction reservation; 0 for infinite.
`reserve-retry-interval-maximum` *`reserve-retry-interval-maximum-number`* `(s)`	Maximum number of seconds to wait between transaction reservation retries.
`max-local-xact-log-entries max-local-xact-log-entries-number`	Max no. of entries in xact_log file (addtional 100 are saved before truncation). The default is 0, that is, the feature is disabled.

Defaults None

Access CLI

History

Version 2.3	Command introduced.
Version 2.4	The parameter, `allow-offline-cluster-nodes`, added.
Version 6.1.0	The parameter, `max-local-xact-log-entries`, added.

Usage Use this command to automatically recover transactions on the fabric.

Examples To set the recovery to automatic, use the following syntax:

```
CLI (network-admin@switch) > transaction-settings-modify auto-recover
```

transaction-settings-show

You can display transaction settings that automatically recover missed transactions.

Syntax `transaction-settings-show`

`allow-offline-cluster-nodes|no-allow-offline-cluster-nodes`	Specify if you want to allow transaction to proceed even if a cluster is offline.
`auto-recover|no-auto-recover`	Specify if you want to automatically recover missed transactions.
`auto-recovery-retry-time duration:#d#h#m#s`	Specify the retry time for transaction auto-recover.

Defaults None

Access CLI

History

Version 2.3	Command introduced.
Version 2.4	The parameter, `allow-offline-cluster-nodes`, added.

Usage Use this command to display transaction settings.

Examples To display the transaction settings, use the following syntax:

```
CLI (network-admin@switch) > transaction-settings-show
```

transaction-show

This command is used to display the transaction information.

Syntax `transaction-show`

`start-time` *`high resolution time: #ns`*	The start time of transaction.
`end-time` *`high resolution time: #ns`*	The end time of transaction.
`transaction-scope local|cluster|fabric`	The scope of transaction to roll: local, cluster, or fabric.
`tid` *`tid-number`*	The transaction ID (TID).
`trunc_tid` *`trunc_tid-number`*	The transaction ID (TID).
`changeid` *`changeid-string`*	Transaction unique change ID.
`remote-node` *`fabric-node name`*	Specifies which node to roll forward from.
`start-tid` *`start-tid-number`*	The starting transaction ID (TID).
`end-tid` *`end-tid-number`*	The ending transaction ID (TID).
`state start|local-cmd|commit-request|commit-prep|commit|commit-done| abort-start|abort-done|remote-start|remote-commit-request|remote-commit-prep|remote-commit|remote-abort-start|remote-abort-done|undo-info|changeid|reserve|reserve-abort|remote-reserve|remote-reserve-abort|checkpoint-start|checkpoint-done|roll-forward|roll-back|roll-forward-result|roll-back-result|change-no-xact|failure`	The transaction state.
`command` *`command-string`*	Command issued.
`local-command` *`local-command-string`*	Command issued with local-scoped fields.
`undo-command` *`undo-command-string`*	Undo command (more than one not shown).
`failure` *`failure-string`*	Failure message if error ignored.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display the transaction settings.

Examples To display the transaction settings, use the following syntax:

```
CLI (network-admin@switch) > transaction-show
```

topology-link-add

This command is used to add link to a topology.

Syntax `topology-link-add`

`name name-string`	Specify the name of the fabric technology.
`node1 fabric-node name`	Specify the name of the first fabric node.
`node1-port node1-port-number`	Specify the name of the port on first fabric node.
`node2 fabric-node name`	Specify the name of the second fabric node.
`node2-port node2-port-number`	Specify the name of the port on second fabric node.
`enable|disable`	Specify the topology link state for path calculation.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to add link to a topology.

Examples To add links to a topology, use the following syntax:

```
CLI (network-admin@switch) > topology-link-add
```

topology-link-remove

This command is used to remove link from a topology.

Syntax `topology-link-remove`

`name` *`name-string`*	Specify the name of the fabric topology.
`node1` *`fabric-node name`*	Specify the name for the first link node.
`node1-port` *`node1-port-number`*	Specify the name of the port on first fabric node.
`node2` *`fabric-node name`*	Specify the name for the second link node.
`node2-port` *`node2-port-number`*	Specify the name of the port on second fabric node.
`enable|disable`	Specify the topology link state for path calculation.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to remove link from a topology.

Examples To remove a link from a topology, use the following syntax:

```
CLI (network-admin@switch) > topology-link-remove
```

topology-link-modify

This command is used to modify a topology link state.

Syntax `topology-link-modify`

`name` *`name-string`*	Specify the name of the fabric topology.
`node1` *`fabric-node name`*	Specify the name for the first link node.
`node2` *`fabric-node name`*	Specify the name for the second link node.
`node1-port` *`node1-port-number`*	Specify the name of the port on first fabric node.
`node2-port` *`node2-port-number`*	Specify the name of the port on second fabric node.
`enable|disable`	Specify the topology link state for path calculation.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to modify a topology link state.

Examples To modify a topology link state, use the following syntax:

```
CLI (network-admin@switch) > topology-link-modify
```

topology-link-show

This command is used to display network topology links.

Syntax `topology-link-show`

`name` *`name-string`*	The name of the fabric topology.
`node1` *`fabric-node name`*	The name for the first link node.
`node1-port` *`node1-port-number`*	The name of the port on first fabric node.
`node2` *`fabric-node name`*	The name for the second link node.
`node2-port` *`node2-port-number`*	The name of the port on second fabric node.
`in-use yes|no`	Specify whether the topology link is in use or not.
`in-path` *`in-path-string`*	The topology link used by this path.
`enable|disable`	The topology link state for path calculation.
`id` *`id-number`*	The link identifier.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display link to a network topology.

Examples To display a network topology link, use the following syntax:

```
CLI  (network-admin@switch) > topology-link-show
```

trunk-create

This command creates a new trunk for link aggregation on a switch.

Syntax `trunk-create`

`name` *`name-string`*	Specify the name for the trunk configuration.
`ports` *`port-list`*	Specify the port number(s) for the link(s) to aggregate into the trunk.
Specify any of the following options:	
`speed disable|100m|1g|10g|40g|50g|100g`	Specify the port speed or disable the port.
`egress-rate-limit unlimited`	Specify an egress rate limit for the configuration.
`autoneg|no-autoneg`	Specify if you want the physical port to autonegotiate port speed.
`jumbo|no-jumbo`	Specify if the port can receive jumbo frames.
`lacp-mode off|passive|active`	Specify the Link Aggregation Control Protocol (LACP) mode for the configuration.
`lacp-priority` *`number`*	Specify the LACP priority. This is a number between 1 and 65535 with a default value of 32768.
`lacp-timeout slow|fast`	Specify the LACP time out as slow (30 seconds) or fast (4 seconds). The default value is slow.
`lacp-fallback bundle|individual`	Specify the LACP fallback mode as individual or bundled.
`lacp-fallback-timeout seconds`	Specify the LACP fallback timeout in seconds. The range is between 30 and 60 seconds with a default value of 50 seconds.
`reflect|noreflect`	Specify physical port reflection
`edge-switch|no-edge-switch`	Specify if the switch is an edge switch.
`pause|no-pause`	Specify if pause frames are sent.

description *description-string*	Specify a description for the trunk configuration. This trunk description applies to all the member ports.
loopback|no-loopback	Specify loopback if you want to use loopback.
vxlan-termination| no-vxlan-termination	Specify if a VXLAN can terminate on the trunk.
unknown-ucast-level *unknown-ucast-level-string*	Specify an unknown unicast level in percent. The default value is 100%.
unknown-mcast-level *unknown-mcast-level-string*	Specify an unknown multicast level in percent. The default value is 100%.
broadcast-level *broadcast-level-string*	Specify a broadcast level in percent. The default value is 100%.
port-mac-address *mac-address*	Specify the MAC address of the port.
loop-vlans *vlan-list*	Specify a list of VLANS for looping.
routing|no-routing	Specify if the port participates in routing on the network.
host-enable|host-disable	Enable or disable host facing ports.
defer-bringup|no-defer-bringup	Specify to delay bringing up the host.
dscp-map dscp-map name|none	Specify the DSCP map name to enable on a port
local-switching|no-local-switching	Specify local-switching or no-local-switching. A no-local-switching port cannot bridge traffic to another no-local-switching port
allowed-tpid q-in-q|q-in-q-old	Specify an allowed TPID in addition to 0x8100 for VLAN headers.
fabric-guard|no-fabric-guard	Specify if fabric guard is enabled.
fec|no-fec	Specify Port Forwarding Error Correction (FEC) mode.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 1.2.6	The optional parameter `lacp-mode` added.
Version 2.1	The parameter id is deprecated. The parameters `enable` **|** `disable`, `lacp-priority`, `lacp-timeout`, `reflect`, `edge-switch`, `pause`, `description`, `loopback`, `mirror-receive`, `port-mac` and `send-port` added.
Version 2.2.5	The parameters `unknown-ucast-level`, `unknown-mcast-level` and `broadcast-level` added.
Version 2.2.6	The parameter `egress-rate-limit` added.
Version 2.3	The parameters `auto-neg`, `eth-mode` and `reflect` deprecated. The parameter `rem-rswitch-port` and `routing` added.
Version 2.4	The parameter `enable|disable` deprecated. The parameters `loop-vlans` and `host-enable` added.
Version 2.5.3	The parameters `reflect|noreflect`, `dscp-map` `dscp-map` `name|none` and `local-switching|no-local-switching` added.
Version 2.6.2	The parameter `vxlan-termination`, `allowed-tpid` and `fabric-guard` added. The parameter `mirror-receive-only` deprecated.
Version 3.0.0	The parameter `autoneg|no-autoneg` added.
Version 3.1.0	The parameter `fec|no-fec` added.
Version 5.1.0	The parameters `bw-bps` and `rem-rswitch-port-mac` deprecated. The parameter `defer-bringup|no-defer-bringup` added.
Version 7.0.0	The parameter `description` added.

Usage Trunks can be used to aggregate network links at Layer 2 on the local switch. Use this command to

create a new trunk.

Examples To create a trunk with the name, trunk-12, and aggregate the links connected to ports 1, 2, and 3:

```
CLI (network-admin@switch) > trunk-create name trunk-12 port 1,2,3
```

trunk-delete

This command is used to delete an existing trunk from the configuration.

Syntax `trunk-delete`

`name` *`name-string`*	Specify the trunk name.
`trunk-id` *`trunk-id-number`*	Specify the ID of the physical interface.
`description` *`description-string`*	Specify the trunk description to delete the trunk configuration. When you delete a trunk configuration, the trunk description is removed from the member ports.

Defaults None.

Access CLI

History

Version 1.2.1	Command introduced.
Version 2.6.2	The parameter trunk-id added.
Version 7.0.0	The parameter `description` added.

Usage Trunks can be used to aggregate network links at Layer 2 on the local switch. Use this command to delete an existing trunk.

Examples To delete an existing trunk, 476, use the following command:

```
CLI (network-admin@switch) > trunk-delete name trunk-476
```

trunk-modify

This command modifies a trunk for link aggregation on a switch.

Syntax `trunk-modify`

`name` *`name-string`*	Specify the name for the trunk configuration.
`ports` *`port-list`*	Specify the port number(s) for the link(s) to aggregate into the trunk.
Specify any of the following options:	
`speed disable|100m|1g|10g|40g|50g|100g`	Specify the port speed or disable the port.
`egress-rate-limit unlimited`	Specify an egress rate limit for the configuration.
`autoneg|no-autoneg`	Specify if you want the physical port to autonegotiate port speed.
`jumbo|no-jumbo`	Specify if the port can receive jumbo frames.
`lacp-mode off|passive|active`	Specify the Link Aggregation Control Protocol (LACP) mode for the configuration.
`lacp-priority` *`number`*	Specify the LACP priority. This is a number between 1 and 65535 with a default value of 32768.
`lacp-timeout slow|fast`	Specify the LACP time out as slow (30 seconds) or fast (4 seconds). The default value is slow.
`lacp-fallback bundle|individual`	Specify the LACP fallback mode as individual or bundled.
`lacp-fallback-timeout seconds`	Specify the LACP fallback timeout in seconds. The range is between 30 and 60 seconds with a default value of 50 seconds.
`reflect|noreflect`	Specify physical port reflection
`edge-switch|no-edge-switch`	Specify if the switch is an edge switch.
`pause|no-pause`	Specify if pause frames are sent.

`description` *`description-string`*	Specify the trunk description. Note: If you add ports to the trunk, the trunk description applies to the new ports. If you remove ports from the trunk, the description is removed from the ports.
`loopback|no-loopback`	Specify loopback if you want to use loopback.
`vxlan-termination|` `no-vxlan-termination`	Specify if a VXLAN can terminate on the trunk.
`unknown-ucast-level` *`unknown-ucast-level-string`*	Specify an unknown unicast level in percent. The default value is 100%.
`unknown-mcast-level` *`unknown-mcast-level-string`*	Specify an unknown multicast level in percent. The default value is 100%.
`broadcast-level` *`broadcast-level-string`*	Specify a broadcast level in percent. The default value is 100%.
`port-mac-address` *`mac-address`*	Specify the MAC address of the port.
`loop-vlans` *`vlan-list`*	Specify a list of VLANS for looping.
`routing|no-routing`	Specify if the port participates in routing on the network.
`host-enable|host-disable`	Enable or disable host facing ports.
`defer-bringup|no-defer-bringup`	Specify to delay bringing up the host.
`dscp-map dscp-map name|none`	Specify the DSCP map name to enable on a port
`local-switching|no-local-switching`	Specify local-switching or no-local-switching. A no-local-switching port cannot bridge traffic to another no-local-switching port
`allowed-tpid q-in-q|q-in-q-old`	Specify an allowed TPID in addition to 0x8100 for VLAN headers.
`fabric-guard|no-fabric-guard`	Specify if fabric guard is enabled.
`fec|no-fec`	Specify Port Forwarding Error Correction (FEC) mode.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 1.2.6	The optional parameter `lacp-mode` added.
Version 2.1	The parameter `id` is deprecated. The parameters `enable` **|** `disable`, `lacp-priority`, `lacp-timeout`, `reflect`, `edge-switch`, `pause`, `description`, `loopback`, `mirror-receive`, `port-mac` and `send-port` added.
Version 2.2.5	The parameters, `unknown-ucast-level`, `unknown-mcast-level` and `broadcast-level` added.
Version 2.2.6	The parameter `egress-rate-limit` added.
Version 2.3	The parameters `auto-neg`, `eth-mode` and `reflect` deprecated.The parameters `rem-rswitch-port` and `routing` added.
Version 2.4	The parameter `enable|disable` deprecated. The parameters `loop-vlans` and `host-enable` added.
Version 2.5.3	The parameters `reflect|noreflect`, `dscp-map` `dscp-map` `name|none`, and `local-switching|no-local-switching` added.
Version 2.6.2	The parameter `vxlan-termination`, `allowed-tpid`, and `fabric-guard` added. The parameter `mirror-receive-only` deprecated.
Version 3.0.0	The parameter `autoneg|no-autoneg` added.
Version 3.1.0	The parameter `fec|no-fec` added.
Version 5.1.0	The parameters `bw-bps` and `rem-rswitch-port-mac` deprecated. The parameter `defer-bringup|no-defer-bringup` added.

Version 7.0.0	The parameter `description` added.

Usage Trunks can be used to aggregate network links at Layer 2 on the local switch. Use this command to modify the links for a trunk.

Examples To modify a trunk with the name trunk-476, and to aggregate the links connected to ports 11, 21, and 31.

```
CLI (network-admin@switch) > trunk-modify name trunk-476 port 11,21,31
```

trunk-show

This command displays the list of links aggregated into a trunk.

Syntax `trunk-show`

`name` *`name-string`*	The name for the trunk configuration.
`ports` *`port-list`*	The port number(s) for the link(s) to aggregate into the trunk.
Specify any of the following options:	
`speed disable|100m|1g|10g|40g|50g|100g`	Specify the port speed or disable the port.
`egress-rate-limit unlimited`	Specify an egress rate limit for the configuration.
`autoneg|no-autoneg`	Specify if you want the physical port to autonegotiate port speed.
`jumbo|no-jumbo`	Specify if the port can receive jumbo frames.
`lacp-mode off|passive|active`	Specify the Link Aggregation Control Protocol (LACP) mode for the configuration.
`lacp-priority` *`number`*	Specify the LACP priority. This is a number between 1 and 65535 with a default value of 32768.
`lacp-timeout slow|fast`	Specify the LACP time out as slow (30 seconds) or fast (4 seconds). The default value is slow.
`lacp-fallback bundle|individual`	Specify the LACP fallback mode as individual or bundled.
`lacp-fallback-timeout seconds`	Specify the LACP fallback timeout in seconds. The range is between 30 and 60 seconds with a default value of 50 seconds.
`reflect|noreflect`	Specify physical port reflection
`edge-switch|no-edge-switch`	Specify if the switch is an edge switch.

pause|no-pause	Specify if pause frames are sent.
description *description-string*	Specify the physical port description.
loopback|no-loopback	Specify loopback if you want to use loopback.
vxlan-termination| no-vxlan-termination	Specify if a VXLAN can terminate on the trunk.
unknown-ucast-level *unknown-ucast-level-string*	Specify an unknown unicast level in percent. The default value is 100%.
unknown-mcast-level *unknown-mcast-level-string*	Specify an unknown multicast level in percent. The default value is 100%.
broadcast-level *broadcast-level-string*	Specify a broadcast level in percent. The default value is 100%.
port-mac-address *mac-address*	Specify the MAC address of the port.
loop-vlans *vlan-list*	Specify a list of VLANS for looping.
routing|no-routing	Specify if the port participates in routing on the network.
host-enable|host-disable	Enable or disable host facing ports.
defer-bringup|no-defer-bringup	Specify to delay bringing up the host.
dscp-map dscp-map name|none	Specify the DSCP map name to enable on a port
local-switching|no-local-switching	Specify local-switching or no-local-switching. A no-local-switching port cannot bridge traffic to another no-local-switching port
allowed-tpid q-in-q|q-in-q-old	Specify an allowed TPID in addition to 0x8100 for VLAN headers.
fabric-guard|no-fabric-guard	Specify if fabric guard is enabled.
fec|no-fec	Specify Port Forwarding Error Correction (FEC) mode.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 1.2.6	The optional parameter, lacp-mode, was added.
Version 2.1	The parameter id is deprecated. The parameters, `enable` | `disable`, `lacp-priority`, `lacp-timeout`, `reflect`, `edge-switch`, `pause`, `description`, `loopback`, `mirror-receive`, `port-mac`, and `send-port` added.
Version 2.2.5	The parameters, `unknown-ucast-level`, `unknown-mcast-level`, and `broadcast-level` added.
Version 2.2.6	The parameter, `egress-rate-limit`, added.
Version 2.3	The parameters, `auto-neg`, `eth-mode`, and `reflect` deprecated.The parameter, `rem-rswitch-port` and `routing`, added.
Version 2.4	The parameter, `enable|disable`, deprecated. The parameters, `loop-vlans` and `host-enable`, added.
Version 2.5.3	The parameters, `reflect|noreflect`, `dscp-map` `dscp-map` `name|none`, and `local-switching|no-local-switching`, added.
Version 2.6.2	The parameter, `vxlan-termination`, `allowed-tpid`, and `fabric-guard`, added. The parameter, `mirror-receive-only`, deprecated.
Version 3.0.0	The parameter, `autoneg|no-autoneg`, added.
Version 3.1.0	The parameter, `fec|no-fec`, added.
Version 5.1.0	The parameters, `bw-bps`, `rem-rswitch-port-mac`, deprecated. The parameter, `defer-bringup|no-defer-bringup`, added.

Version 7.0.0	The parameter `description` added.

Usage Trunks can be used to aggregate network links at Layer 2 on the local switch. Use this command to modify the links for a trunk.

Examples To display a list of all trunks and the aggregated links, use the following command:

```
CLI (network-admin@switch) > trunk-show
name    port speed autoneg jumbo
------- ---- ----- ------- ----
trunk-1 1,3  10g   off     off
```

trunk-stats-clear

This command is used to clear information about trunk statistics.

Syntax `trunk-stats-clear`

Specify any of the following options:

`time date/time: yyyy-mm-ddThh:mm:ss`	Specifies a time for the packet count statistics using the timestamp format YYYY-MM-DDTHH:MM:SS, where: • YYYY specifies the 4 digit calendar year; • MM specifies the 2 digit month of the year; • DD specifies the 2 digit day of the month; • HH specifies the 2 digit time of the day (24H notation); • MM specifies the 2 digit minute of the hour; • SS specifies the 2 digit second of the minute.
`start-time` *`start-time`*	Specifies a start time for the packet count statistics using the timestamp format YYYY-MM-DDTHH:MM:SS, where: • YYYY specifies the 4 digit calendar year; • MM specifies the 2 digit month of the year; • DD specifies the 2 digit day of the month; • HH specifies the 2 digit time of the day (24H notation); • MM specifies the 2 digit minute of the hour; • SS specifies the 2 digit second of the minute.
`end-time` *`end-time`*	Specifies an end time for the packet count statistics using the timestamp format YYYY-MM-DDTHH:MM:SS, where: • YYYY specifies the 4 digit calendar year; • MM specifies the 2 digit month of the year; • DD specifies the 2 digit day of the month; • HH specifies the 2 digit time of the day (24H notation); • MM specifies the 2 digit minute of the hour;

	• SS specifies the 2 digit second of the minute.
duration *duration*	Specifies the duration in seconds.
interval duration: #d#h#m#s	Specifies the interval between statistics collection.
since-start| no-since-start	Specifies if the statistics are collected from the start of collecting statistics.
older-than duration: #d#h#m#s	Specifies if the statistics are older than the duration in days, hours, minutes, and seconds.
within-last duration: #d#h#m#s	Specifies if the statistics are within the duration in days, hours, minutes, and seconds.
port *port-list*	Specifies one or more switch network data port numbers. The port number must be in the range of 1 to 64. Multiple ports can be specified as a comma-separated list of numbers or a range (-).
name name-string	Specifies the name of the trunk.
description *description-string*	Specifies the physical port description.
counter *counter-number*	Specifies the counter number.
ibytes ibytes-number	Specifies the incoming number of bytes.
ibits *ibits-number*	Specifies the number of incoming bits.
iUpkts *iUpkts-number*	Specifies the number of incoming unicast packets.
iBpkts *iBpkts-number*	Specifies the number of incoming broadcast packets.
iMpkts *iMpkts-number*	Specifies the number of incoming multicast packets.
iPauseFs *iPauseFs-number*	Specifies the number of incoming pause frames.

iCongDrops *iCongDrops-number*	Specifies the number of incoming packets dropped due to congestion.
idiscards *idiscards-number*	Specifies the number of incoming packets discarded.
ierrs *ierrs-number*	Specifies the number of incoming errors.
obytes *obytes-number*	Specifies the number of outgoing bytes.
obits *obits-number*	Specifies the number of outgoing bits.
oUpkts *oUpkts-number*	Specifies the number of outgoing unicast packets.
oBpkts *oBpkts-number*	Specifies the number of outgoing broadcast packets.
oMpkts *oMpkts-number*	Specifies the number of outgoing multicast packets.
oPauseFs *oPauseFs-number*	Specifies the number of outgoing pause frames.
oCongDrops *oCongDrops*-number	Specifies the number of outgoing packets dropped due to congestion.
odiscards *odiscards-number*	Specifies the number of outgoing discarded packets.
oerrs *oerrs-number*	Specifies the number of outgoing errors.
mtu-errs *mtu-errs-number*	Specifies the number of MTU errors.
HER-packets *HER-pts-number*	Specifies the number of Head End Replicated (HER) packets.
HER-bytes *HER-bytes-number*	Specifies the number of Head End Replicated (HER) bytes.
HER-bits *HER-bits-number*	Specifies the number of Head End Replicated (HER) bits.
port-speed disable|10m|100m|1g|2.5g|10g|25g|40g|50g|100g	Specifies the port speed.

`Rx-bw-th-exceed-count` *`Rx-bw-th-exceed-count-number`*	Specifies the count of RX bandwidth threshold exceed events.
`Tx-bw-th-exceed-count` *`Tx-bw-th-exceed-count-number`*	Specifies the count of TX bandwidth threshold exceed events.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to clear information about trunk statistics.

Examples To clear information about trunk statistics, use the following syntax:

```
CLI (network-admin@switch) > trunk-stats-clear
```

trunk-stats-show

This command is used to display information about trunk statistics.

Syntax `trunk-stats-show`

Specify any of the following options:

`time date/time: yyyy-mm-ddThh:mm:ss`	Specifies a time for the packet count statistics using the timestamp format YYYY-MM-DDTHH:MM:SS, where: • YYYY specifies the 4 digit calendar year; • MM specifies the 2 digit month of the year; • DD specifies the 2 digit day of the month; • HH specifies the 2 digit time of the day (24H notation); • MM specifies the 2 digit minute of the hour; SS specifies the 2 digit second of the minute
`start-time` *`start-time`*	Specifies a start time for the packet count statistics using the timestamp format YYYY-MM-DDTHH:MM:SS, where: • YYYY specifies the 4 digit calendar year; • MM specifies the 2 digit month of the year; • DD specifies the 2 digit day of the month; • HH specifies the 2 digit time of the day (24H notation); • MM specifies the 2 digit minute of the hour; • SS specifies the 2 digit second of the minute.
`end-time` *`end-time`*	Specifies an end time for the packet count statistics using the timestamp format YYYY-MM-DDTHH:MM:SS, where: • YYYY specifies the 4 digit calendar year; • MM specifies the 2 digit month of the year; • DD specifies the 2 digit day of the month; • HH specifies the 2 digit time of the day (24H notation); • MM specifies the 2 digit minute of the hour;

	• SS specifies the 2 digit second of the minute.
duration *duration*	Specifies the duration in seconds.
interval duration: #d#h#m#s	Specifies the interval between statistics collection.
since-start| no-since-start	Specifies if the statistics are collected from the start of collecting statistics.
older-than duration: #d#h#m#s	Specifies if the statistics are older than the duration in days, hours, minutes, and seconds.
within-last duration: #d#h#m#s	Specifies if the statistics are within the duration in days, hours, minutes, and seconds.
port *port-list*	Specifies one or more switch network data port numbers. The port number must be in the range of 1 to 64. Multiple ports can be specified as a comma-separated list of numbers or a range (-).
counter *counter-number*	Specifies the counter number.
ibytes ibytes-number	Specifies the incoming number of bytes.
ibits *ibits-number*	Specifies the number of incoming bits.
iUpkts *iUpkts-number*	Specifies the number of incoming unicast packets.
iBpkts *iBpkts-number*	Specifies the number of incoming broadcast packets.
iMpkts *iMpkts-number*	Specifies the number of incoming multicast packets.
iPauseFs *iPauseFs-number*	Specifies the number of incoming pause frames.
iCongDrops *iCongDrops-number*	Specifies the number of incoming packets dropped due to congestion.
idiscards *idiscards-number*	Specifies the number of incoming packets discarded.

ierrs *ierrs-number*	Specifies the number of incoming errors.
obytes *obytes-number*	Specifies the number of outgoing bytes.
obits *obits-number*	Specifies the number of outgoing bits.
oUpkts *oUpkts-number*	Specifies the number of outgoing unicast packets.
oBpkts *oBpkts-number*	Specifies the number of outgoing broadcast packets.
oMpkts *oMpkts-number*	Specifies the number of outgoing multicast packets.
oPauseFs *oPauseFs-number*	Specifies the number of outgoing pause frames.
oCongDrops *oCongDrops*-number	Specifies the number of outgoing packets dropped due to congestion.
odiscards *odiscards-number*	Specifies the number of outgoing discarded packets.
oerrs *oerrs-number*	Specifies the number of outgoing errors.
mtu-errs *mtu-errs-number*	Specifies the number of MTU errors.
HER-packets *HER-pts-number*	Specifies the number of Head End Replicated (HER) packets.
HER-bytes *HER-bytes-number*	Specifies the number of Head End Replicated (HER) bytes.

Defaults None

Access Network Administrator

History

Version 2.6.0	Command introduced.

Usage Use this command to display statistics about a trunk configuration.

Examples To display statistics for a trunk configuration, use the following syntax:

```
CLI (network-admin@switch) > trunk-stats-show
```

tunnel-create

This command is used to create a tunnel on the switch.

Syntax `tunnel-create`

`name` *`name-string`*	Specify the name of the tunnel.
`scope local|cluster`	Specify the scope for the tunnel. Local and cluster scopes are supported.
`local-ip` *`ip-address`*	Specify the local IP address.
`remote-ip` *`ip-address`*	Specify the remote IP address.
`vnet` *`vnet-name`*	Specify the name of the vNET.
`vrouter-name` *`vrouter-name`*	Specify the name of the vRouter service.
`peer-vrouter-name` *`vrouter- name`*	Specify the name of the vRouter service on the cluster peer.
`next-hop` *`ip-address`*	Specify the next hop IP address.
`next-hop-mac` *`mac-address`*	Specify the next hop MAC address.
`bfd|no-bfd`	Specify BFD for the tunnel.
`flood-nh-ip` *`ip-address`*	Flood next hop IP.
`flood-nh-mac mac-address`	Flood next hop MAc address.
`mac-learning|no-mac-learning`	Specify if you want to enable or disable MAC address learning.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters, `type` and `remote-switch`, deprecated.

Version 2.2.3	The parameter `router-if` replaced *`name-string`* with `vrouter-hw-if` name option.
Version 2.4	The option, `cluster`, added to `scope`. The parameters, `vrouter-name` and `peer-vrouter-name`, added.
Version 2.5	The parameter, `vnet`, added.
Version 3.0.0	The parameter, `vrouter-if`, deprecated. The parameter, `bfd`, added.
Version 6.0.0	The option, `mac-learning|no-mac-learning`, added.

Usage Tunnels are used to encapsulate unsupported protocols on a network. Use this command to create tunnels on a fabric.

Examples To create a tunnel with a local scope called tunnel1010 with local IP address, 192.168.13.11 and remote IP address of 209.134.65.27, use the following command:

```
CLI (network-admin@switch) > tunnel-create scope local name tunnel010
local-ip 192.168.13.11 remote-ip 209.134.65.27
```

tunnel-delete

This command is used to delete an existing tunnel from the configuration.

Syntax `tunnel-delete name name-string`

name *name-string*	Specify the name of the tunnel to delete from the configuration.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Tunnels are used to encapsulate unsupported protocols on a network. Use this command to delete an existing tunnel on a fabric.

Examples To delete the tunnel ip-23, use the following command:

```
CLI (network-admin@switch) > tunnel-delete name ip-23
```

tunnel-modify

This command is used to modify an existing tunnel on the switch.

Syntax `tunnel-modify`

`name name-string`	specify a tunnel name.
`bfd|no-bfd`	Specify BFD for the tunnel.
`mac-learning|no-mac-learning`	Specify if you want to enable or disable MAC address learning.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters, `type` and `remote-switch`, deprecated.
Version 2.2.3	The parameter `router-if` replaced *`name-string`* with `vrouter-hw-if` name option.
Version 3.0.0	The parameter, `vrouter-if`, deprecated. The parameter, `bfd`, added.
Version 6.0.0	The parameter, `mac-learning`, added.

Usage Tunnels are used to encapsulate unsupported protocols on a network. Use this command to modify tunnels on a fabric.

Examples To enable mac-learning for a tunnel, use the following command:

```
CLI (network-admin@switch) > tunnel-modify name tunnel010 mac-learning
```

tunnel-show

This command is used to display the list of tunnels on the switch.

Syntax `tunnel-show`

`id`	Displays the ID assigned to the tunnel.
`scope local`	Displays the scope for the tunnel. Only local scopes are supported.
`name` *`name-string`*	Displays the name of the tunnel.
`type ip-in-ip|vxlan|nvgre`	Displays the type of tunnel.
`vnet` *`vnet-name`*	Displays the name of the vNET.
`vrouter-name` *`vrouter-name`*	Displays the name of the vRouter service.
`peer-vrouter-name` *`vrouter- name`*	Displays the name of the vRouter service on the cluster peer.
`local-ip` *`ip-address`*	Displays the local IP address.
`remote-ip` *`ip-address`*	Displays the remote IP address.
`router-if` *`vrouter-hw-if-name`*	Displays the router interface.
`tunnel-if-name` *`tunnel-if-name-string`*	Displays the router interface VNIC name.
`next-hop` *`ip-address`*	Displays the next hop IP address.
`next-hop-mac` *`mac-address`*	Displays the next hop MAC address.
`next_hop_vnet` *`vlan-id`*	Displays the next hop VLAN ID.
`nexthop-bd` *`bridge-domain`*	Next hop bridge domain.
`nexthop-vlan 0..4095`	Next hop VLAN.
`remote-switch` *`fabric-node-name`*	Displays the remote switch for the tunnel.

vrid *vrid-number*	Displays the vRouter hardware ID.
tunnelID *tunnelID-number*	Displays the tunnel ID.
interface-mac *mac-address*	Displays the MAC address of the tunnel interface.
interface-vnet *vnet name*	Displays the vNET name.
bd *bridge-domain*	Displays the bridge domain name.
interface-vlan *vlan-id*	Displays the interface VLAN.
active yes|no	Displays the status of the tunnel.
state init|ok|error	Displays the state of the tunnel.
bfd|no-bfd	Displays if BFD is configured.
bfd-state unknown|admin-down|down|init|up|no-session|not-replicator-vtep	Displays the state of the BFD session.D
peer-bfd-state unknown|admin-down|down|init|up|no-session|not-replicator-vtep	Displays the peer BFD session state.
error *error-string*	Displays tunnel errors.
route-info *route-info-string*	Displays route information.
ecmp-group *ecmp-group-number*	Displays ECMP group information.
using-vxlan-loopback yes|no	Displays using VXLAN loopback.
ports *port-list*	Displays the port list.
nh-egress-id *nh-egress-id-number*	Displays the nexthop port egress ID.
flood-nh-ip ip-address	Flood next hop IP address.
flood-nh-vlan 0..4095	Flood next hop VLAN ID.
flood-nh-port flood-nh-port-number	Flood next hop port number.

`flood-nh-mac mac-address`	Flood next hop MAC address.
`flood-nh-egress-id flood-nh-egress-id-number`	Flood next hop hardware egress ID.
`auto-tunnel auto|static`	Displays if the tunnel is automatic or static.
`ecmp-nexthops|no-ecmp-nexthops`	Filter single or multiple route entries per nexthops.
`flood-nexthop|no-flood-nexthop`	Displays tunnels with either `flood-nexthop` or with `no-flood-nexthop` configured.
`mac-learning|no-mac-learning`	Displays tunnels with either MAC learning enabled or MAC learning disabled.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.2.2	The parameter, `type`, added.
Version 2.2.3	The parameter `router-if` replaced *`name-string`* with `vrouter-hw-if` *name* option.
Version 2.3.1	The parameter, `active`, added.
Version 2.4	The option, `cluster`, added to `scope`. The parameters, `vrouter-name` and `peer-vrouter-name`, `state`, `error`, `route-info`, and `ecmp-group` added.
Version 2.5	The parameter, `vnet`, added.
Version 3.0.0	The parameter, `vrouter-if`, deprecated. The parameter, `bfd`, added.
Version 6.0.0	The parameter, `mac-learning`, added.

Usage Tunnels are used to encapsulate unsupported protocols on a network. Use this command to display a list of tunnels on a fabric.

Examples To display a list of all tunnels on a switch, use the following command:

```
CLI (network-admin@switch) > tunnel-show
```

tunnel-history-settings-modify

This command is used to update tunnel history settings

Syntax `tunnel-history-settings-modify enable|disable disk-space disk-space-number log-file-count 1..20`

`enable|disable`	Specify whether to enable or disable change logging.
`disk-space disk-space-number`	Specify the total disk-space allocated for all log files.
`log-file-count 1..20`	Specify the number of log files for log rotation.

Defaults None.

Access CLI

History Command introduced in Version 2.5.4.

Usage Use this command to update tunnel history settings.

Examples To enable tunnel history settings with a disk space allocated to 50M for all log files with 10 log files for log rotation, use the following command:

```
CLI (network-admin@switch) > tunnel-history-settings-modify enable
disk-space 50M log-file-count 10
```

tunnel-history-settings-show

This command is used to display tunnel history settings

```
CLI (network-admin@switch) > tunnel-history-settings-show
```

Defaults None.

Access CLI

History Command introduced in Version 2.5.4.

Usage Use this command to view tunnel history settings such as enable/disable status, disk-space, and log-file-count.

Examples To display tunnel history settings, use this command:

```
CLI (network-admin@switch) > tunnel-history-settings-show
enable:         yes
disk-space:     50M
log-file-count: 10
```

tunnel-history-show

This command is used to display historical tunnel state information.

Syntax `tunnel-history-show`

`time date/time: yyyy-mm-ddTHH:mm:ss`	Displays the time to start statistic collection.
`start-time date/time: yyyy-mm-ddTHH:mm:ss`	Displays the start-time of statistic collection.
`end-time date/time: yyyy-mm-ddTHH:mm:ss`	Displays the end time of statistic collection.
`duration duration: #d#h#m#s`	Displays the duration of statistic collection.
`interval duration: #d#h#m#`	Displays the interval between statistic collection.
`since-start`	Displays the statistics collected since the start time.
`older-than duration: #d#h#m#s`	Displays statistics older than a specific time duration.
`within-last duration: #d#h#m#s`	Displays statistics within a last time period.
`caller vxlan|logger`	Displays the feature that made the change for this entry.
`last-caller vxlan|logger`	Displays the most recent caller for this entry.
`reason save|restart|add|modify|remove|remove-all|add-nh|remove-nh`	Displays the reason for history entry.
`last-reason save|restart|add|modify|remove|remove-all|add-nh|remove-nh ]`	Displays the most recent reason for this entry.
`changes id|scope|name|type|vnet|vrouter-name|peer-vrouter-name| local-ip|remote-ip|router-if|tunnel-if-name|next-hop| next-hop-mac|nexthop-vlan|remote-switch|vrid|active|state| error|route-info|ecmp-group|using-vxlan-loopback|ports| nh-egress-id|auto-`	Displays what changed in this entry.

tunne| ecmp-nexthops	
count *count-number*	Displays the count for tunnel history.
id	Displays the tunnel ID.
scope local	Displays the scope as local or cluster.
name *name-string*	Displays the tunnel name.
type ip-in-ip|vxlan|nvgr	Displays the type of the tunnel.
vnet *vnet-name*	Displays the tunnel network vNET.
vrouter-name *vrouter name*	Displays the name of the vRouter service.
peer-vrouter-name *vrouter name*	Displays the name of the vRouter service on cluster peer.
local-ip *ip-address*	Displays the local IP address.
remote-ip *ip-address*	Displays the remote IP address.
router-if vrouter-hw-if	Router interface.
tunnel-if-name tunnel-if-name-string	Router interface vNIC name.
next-hop *ip-address*	Displays the nexthop IP address.
next-hop-mac *mac-address*	Displays the nexthop MAC address.
next_hop_vnet 0..4095	Displays nexthop VLAN.
nexthop-bd *bridge-domain*	Next hop bridge domain.
nexthop-vlan 0..4095	Next hop VLAN.
remote-switch *fabric-node name*	Displays the remote switch name.
vrid *vrid-number*	Displays the vrouter hardware ID.
interface-mac *mac-address*	Displays the MAC address of the tunnel interface.

`interface-vlan` *`vlan-id`*	Displays the VLAN for the tunnel interface.
`active yes|no`	Displays if the tunnel is active.
`state init|ok|error|update`	Displays the tunnel state.
`bfd|no-bfd`	Displays if BFD is configured for the tunnel.
`bfd-state unknown|admin-down|down|init|up|no-session`	Displays the BFD state.
`error` *`error-string`*	Displays tunnel errors.
`route-info` *`route-info-string`*	Displays the route information for the tunnel.
`ecmp-group` *`ecmp-group-number`*	Displays the ECMP group number.
`using-vxlan-loopback yes|no`	Displays if vxlan loopback is used.
`ports` *`port-list`*	Displays the nexthop port map.
`flood-nh-ip ip-address`	Flood next hop IP address.
`flood-nh-vlan 0..4095`	Flood next hop VLAN ID.
`flood-nh-port flood-nh-port-number`	Flood next hop port number.
`flood-nh-mac mac-address`	Flood next hop MAC address.
`nh-egress-id` *`nh-egress-id-number`*	Displays the hardware Egress ID.
`auto-tunnel auto|static`	Displays if the tunnel is auto or static.
`ecmp-nexthops|no-ecmp-nexthops`	Use to filter and display single or mutiple route entries (per nexthop).
`flood-nexthop|no-flood-nexthop`	Displays tunnels with either `flood-nexthop` or with `no-flood-nexthop` configured.
`mac-learning|no-mac-learning`	Displays tunnels with either MAC learning enabled or MAC learning disabled.

Defaults None.

Access CLI

History Command introduced in Version 2.5.4.

Usage Use this command to display historical tunnel state information.

Examples To display historical tunnel information, use the following command:

```
CLI (network-admin@switch) > tunnel-history-show
```

tunnel-stats-clear

This command is used to clear statistics for a tunnel.

Syntax `tunnel-stats-clear`

`tunnel-name` *`tunnel-name`*	Specify a tunnel to clear statistics.

Defaults None

Access CLI

History Command introduced in Version 2.4.0.

Usage Use this command to clear statistics from a tunnel.

Examples To clear statistics from a tunnel, use the following command:

```
CLI (network-admin@switch) > tunnel-stats-clear tunnel-name tunnel-
vxlan1
```

tunnel-stats-show

This command is used to display the tunnel statistics on the switch.

Syntax `tunnel-stats-show`

Use any of the following options to display tunnel statistics:

`time date/time:yyyy-mm-ddTHH:mm:ss`	Display by date and time.
`start-time date/time: yyyy-mm-ddTHH:mm:s`	Display by start date and time.
`end-time date/time: yyyy-mm-ddTHH:mm:ss`	Display by end date and time.
`duration duration: #d#h#m#s`	Display by duration.
`interval duration: #d#h#m#s`	Display by interval.
`since-start`	Specify a start time for the statistics.
`older-than duration: #d#h#m#s`	Display statistics older than a specific date.
`within-last duration: #d#h#m#s`	Display statistics within a specific duration.
`tunnel-name` *`tunnel-name`*	Display by tunnel name.
`counter` *`counter-number`*	Displays the number of counters.
`ibytes` *`ibytes-number`*	Displays the number of incoming bytes.
`ibits` *`ibits-number`*	Displays the number of incoming bits.
`iUpkts` *`iUpkts-number`*	Displays the number of incoming Unicast packets.
`iBpkts` *`iBpkts-number`*	Displays the number of incoming Broadcast packets.
`iMpkts` *`iMpkts-number`*	Displays the number of incoming Multicast packets.
`iPauseFs` *`iPauseFs-number`*	Displays the number of incoming Pause frames.
`iCongDrops iCongDrops-number`	Displays the number of incoming packets

	dropped due to congestion.
ierrs *errs-number*	Displays the number of incoming packets with errors.
obytes *obytes-number*	Displays the number of outgoing bytes.
obits *obits-number*	Displays the number of outgoing bits.
oUpkts *oUpkts-number*	Displays the number of outgoing Unicast packets.
oBpkts *oBpkts-number*	Displays the number of outgoing Broadcast packets.
oMpkts *oMpkts-number*	Displays the number of outgoing Multicast packets.
oPauseFs *oPauseFs-number*	Displays the number of outgoing Pause frames.
oCongDrops oCongDrops-number	Displays the number of outgoing packets dropped due to congestion.
oerrs *oerrs-number*	Displays the number of outgoing packets with errors.
mtu-errs *mtu-errs-number*	Displays the number of MTU errors.
HER-pkts HER-pkts-number	Displays the number of head-end replicated packets.
HER-bytes *HER-bytes-number*	Displays the number of head-end replicated bytes.
HER-bits HER-bits-number	Displays the number of head-end replicated bits.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.2.2	The parameter, type, added.

Version 2.2.3	The parameter `router-if` replaced *`name-string`* with `vrouter-hw-if` *name* option.
Version 2.3.1	The parameter, `active`, added.
Version 2.6.0	The parameters, `HER-pkts` and `HER-bytes`, added.
Version 3.0.0	The following parameters added: `ibits` and `obits`.
Version 6.1.0	The parameter `HER-bits` added.

Usage Tunnels are used to encapsulate unsupported protocols on a network. Use this command to display a list of tunnels on a fabric.

Examples To display a list of all tunnels on a switch, use the following command:

```
CLI (network-admin@switch) > tunnel-stats-show
```

tunnel-stats-settings-modify

This command is used to modify tunnel settings for collecting statistics

Syntax `tunnel-history-settings-modify`

`enable|disable`	Specify whether to enable or disable change logging.
`interval duration: #d#h#m#s`	Specify the interval to collect statistics. Day hour, minute, second.
`disk-space disk-space-number`	Specify the disk-space allocated for statistics.

Defaults None

Access CLI

History Command introduced in Version 2.5.

Usage Use this command to modify tunnel settings for collecting statistics.

tunnel-stats-settings-show

This command is used to display the tunnel settings for collecting statistics

Syntax `tunnel-stats-settings-show`

Defaults None

Access CLI

History Command introduced in Version 2.5.0.

Usage Tunnels are used to encapsulate unsupported protocols on a network. Use this command to display the tunnel settings for statistics collections.

Examples To display a list of all tunnels settings for stats collection, use the following command:

```
CLI (network-admin@switch) > tunnel-stats-settings-show
```

tunnel-vxlan-add

This command is used to add tunnels to VXLANs on the switch.

Syntax `tunnel-vxlan-add name` *`name-string`* `vxlan` *`vxlan-id`*

`name` *`name-string`*	Specify a name for the tunnel.
`vxlan` *`vxlan-id`*	Specify the ID of the VXLAN.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.0.1	Changed from `tunnel-vxlan` to `vxlan-tunnel`.
Version 2.1	The parameter, `switch`, added.
Version 2.4	The parameter, `vxlan-vnid`, added.
Version 2.4.1	Changed from `vxlan-tunnel` to `tunnel-vxlan`.

Usage Use this command to add tunnels to VXLANs.

Examples To add tunnel, ip-23, to VXLAN, MyVXLAN, use the following command:

```
CLI (network-admin@switch) > tunnel-vxlan-add tunnel-name ip-23 vxlan-name MyVXLAN
```

tunnel-vxlan-remove

This command is used to remove tunnels to VXLANs on the switch.

Syntax `tunnel-vxlan-remove name` *`name-string`* `vxlan` *`vxlan-id`*

`name` *`name-string`*	Specify a name for the tunnel.
`vxlan` *`vxlan-id`*	Specify the ID of the VXLAN.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.0.1	Changed from `tunnel-vxlan` to `vxlan-tunnel`.
Version 2.1	The parameter, `switch`, added.
Version 2.4	The parameter, `vxlan-vnid`, added.
Version 2.4.1	Changed from `vxlan-tunnel` to `tunnel-vxlan`.

Usage Use this command to remove tunnels from VXLANs.

Examples To add tunnel, ip-23, to VXLAN, MyVXLAN, use the following command:

```
CLI (network-admin@switch) > tunnel-remove name ip-23 vxlan-name
MyVXLAN
```

tunnel-vxlan-show

This command is used to display information about tunnels added to VXLANs on the switch.

Syntax `tunnel-vxlan-show`

`tunnel-name` *`name-string`*	Displays the name for the tunnel.
`vxlan` *`vxlan-id`*	Displays the ID of the VXLAN.
`hw_update_pending yes|no`	Displays if a hardware update for VXLAN is pending.
`bd_deactivated yes|no`	Specify if the static tunnel is deactivated in hardware for this bridge domain.

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.0.1	Changed from `tunnel-vxlan` to `vxlan-tunnel`.
Version 2.4	The parameter, `vxlan-vnid`, added.
Version 2.4.1	Changed from `vxlan-tunnel` to `tunnel-vxlan`.
Version 5.0.0	The parameter, `hw_update_pending`, added.

Usage Use this command to display a list of tunnels added to VXLANs.

Examples To display a list of tunnels on VXLANs, use the following command:

```
CLI (network-admin@switch) > tunnel-vxlan-show
```

U Commands

udf-create

A User Defined Field (UDF) can match up to 128 bytes of a packet starting from the first byte of the packet. The relative offset can be given to the match location. The length of the match can be from 1 to 4 bytes. Hardware with a Trident chip supports the creation of 8 UDF IDs. Each ID can match a 2 byte portion of a packet. Creating a UDF with a length of 3 or 4 bytes requires 2 UDF IDs whereas a UDF with a length of 1 or 2 bytes requires 1 UDF ID. The length specified for each UDF determines the total number of UDFs supported by Netvisor. If you specify a length of 3 or 4 bytes, a maximum of 4 UDFs can be created. If you specify a length of 1 or 2 bytes, a maximum of 8 UDFs can be created.

Syntax `udf-create name`

`name` *`name-string`*	Create the UDF name
`scope local|fabric`	Scope for the UDF
`offset` *`number-bytes`*	The offset in bytes. This is a value between 1 and 128.
`length` *`number-bytes`*	The length in bytes. This is a value between 1 and 4 bytes.
`header packet-start|l3-outer|l3-inner|l4-outer|l4-inner`	The header used to calculate the offset.

Defaults None

Access CLI

History Command introduced in Version 2.5.3.

Usage Use this command to create customized fields for vFlow configurations.

Examples To create a UDF with scope local, offset 10, length 2, and header packet-start, use the following syntax:

```
CLI (network-admin@switch) > udf-create name u1 scope local offset 10
length 2 header packet-start
```

udf-modify

A User Defined Field (UDF) can match up to 128 bytes of a packet starting from the first byte of the packet. The relative offset can be given to the match location. The length of the match can be from 1 to 4 bytes. Hardware with a Trident chip supports the creation of 8 UDF IDs. Each ID can match a 2 byte portion of a packet. Creating a UDF with a length of 3 or 4 bytes requires 2 UDF IDs whereas a UDF

with length of 1 or 2 bytes required 1 UDF id. The length specified for each UDF determines the total number of UDFs supported by Netvisor. If you specify a length of 3 or 4 bytes, a maximum of 4 UDFs can be created. If you specify a length of 1 or 2 bytes, a maximum of 8 UDFs can be created.

Syntax `udf-modify name`

`name` *`name-string`*	Create the UDF name
`scope local|fabric`	Scope for the UDF
`offset` *`number-bytes`*	The offset in bytes. This is a value between 1 and 128.
`length` *`number-bytes`*	The length in bytes. This is a value between 1 and 4 bytes.
`header packet-start|l3-outer|l3-inner|l4-outer|l4-inner`	The header used to calculate the offset.

Defaults None

Access CLI

History Command introduced in Version 2.5.3.

Usage Use this command to modify customized fields for vFlow configurations.

Examples To modify a UDF, u1, offset 10, length 4, and header packet-start, use the following syntax:

```
CLI (network-admin@switch) > udf-modify name u1 offset 10 length 4
header packet-start
```

udf-delete

A User Defined Field (UDF) can match up to 128 bytes of a packet starting from the first byte of the packet. The relative offset can be given to the match location. The length of the match can be from 1 to 4 bytes. Hardware with a Trident chip supports the creation of 8 UDF IDs. Each ID can match a 2 byte portion of a packet. Creating a UDF with a length of 3 or 4 bytes requires 2 UDF IDs whereas a UDF

with length of 1 or 2 bytes required 1 UDF id. The length specified for each UDF determines the total number of UDFs supported by Netvisor. If you specify a length of 3 or 4 bytes, a maximum of 4 UDFs can be created. If you specify a length of 1 or 2 bytes, a maximum of 8 UDFs can be created.

Syntax `udf-delete name name-string`

Defaults None

Access CLI

History Command introduced in Version 2.5.3.

Usage Use this command to delete customized fields for vFlow configurations.

Examples To delete the UDF, ud1, use the following syntax:

```
CLI (network-admin@switch) > udf-delete name ud1
```

udf-show

A User Defined Field (UDF) can match up to 128 bytes of a packet starting from the first byte of the packet. The relative offset can be given to the match location. The length of the match can be from 1 to 4 bytes. Hardware with a Trident chip supports the creation of 8 UDF IDs. Each ID can match a 2 byte portion of a packet. Creating a UDF with a length of 3 or 4 bytes requires 2 UDF IDs whereas a UDF with length of 1 or 2 bytes required 1 UDF id. The length specified for each UDF determines the total number of UDFs supported by Netvisor. If you specify a length of 3 or 4 bytes, a maximum of 4 UDFs can be created. If you specify a length of 1 or 2 bytes, a maximum of 8 UDFs can be created.

Syntax `udf-show name name-string scope local|fabric offset number-bytes length number-bytes header packet-start|l3-outer|l3-inner|l4-outer|l4-inner`

`name` *`name-string`*	Create the UDF name
`scope local|fabric`	Scope for the UDF
`offset` *`number-bytes`*	The offset in bytes. This is a value between 1 and 128.
`length` *`number-bytes`*	The length in bytes. This is a value between 1 and 4 bytes.
`header packet-start|l3-outer|l3-inner|l4-outer|l4-inner`	The header used to calculate the offset.

Defaults None

Access CLI

History Command introduced in Version 2.5.3.

Usage Use this command to display information about customized fields for vFlow configurations.

Examples To display a UDF with scope local, offset 10, length 2, and header packet-start, use the following syntax:

```
CLI (network-admin@switch) > udf-show name u1 scope local offset 10
length 2 header packet-start
```

uplink-group-port-add

This command is used to add ports to uplink group.

Syntax `uplink-group-port-add`

`ports` *`port-list`*	Specifies the ports acting as uplinks.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to add ports to uplink group.

Examples To add ports to uplink group, use the following syntax:

```
CLI (network-admin@switch) > uplink-group-port-add
```

uplink-group-port-oversubscription-state-show

This command is used to display uplink oversubscription state.

Syntax `uplink-group-port-oversubscription-state-show`

Any of the following options:	
`uplink-bw` *`uplink-bw-number`*	The aggregated uplink port threshold (in mbps).
`downlink-bw` *`downlink-bw-number`*	The aggregated downlink port threshold (in mbps).
`uplink-oversubscription` *`yes|no`*	The state of uplink oversubscription.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display uplink oversubscription state.

Examples To display uplink oversubscription state, use the following syntax:

```
CLI (network-admin@switch) > uplink-group-port-oversubscription-state-show
```

uplink-group-port-remove

This command is used to remove ports from uplink group.

Syntax `uplink-group-port-remove`

`ports` *`port-list`*	Specifies the ports acting as uplinks.

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to remove ports from uplink group.

Examples To remove ports from uplink group, use the following syntax:

```
CLI (network-admin@switch) > uplink-group-port-remove
```

uplink-group-port-show

This command is used to remove ports to uplink group.

Syntax `uplink-group-port-show`

Defaults None

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to display ports to uplink group.

Examples To add ports to uplink group, use the following syntax:

```
CLI (network-admin@switch) > uplink-group-port-show
```

user-create

This command is used to create users on the local switch or fabric.

Syntax `user-create`

`name` *`name-string`*	Specify a name for the user.
`scope local|fabric`	Specify the scope of the user.
`initial-role` *`role name`*	Specify the initial role for the user.
`login-fail-count` *`login-fail-count-number`*	Specify the number of allowed authentication failures before locking the user.
`lock-account|no-lock-account`	Specify if you want to lock the user after the stipulated number of authentication failures.
`minimum-pw-length` *`6..65`*	Specify the minimum password length for user account. The default value is 6.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters `password` and `initial-role` added.
Version 7.0.0	The parameters `login-fail-count`, `lock-account|no-lock-account` and `minimum-pw-length` added.

Usage Use this command to create users on the local switch or fabric. When you specify a role, it is a role defined using the role- commands.

Examples To create the user, **net-access**, password, **sw0rdf1ght**, on the fabric, use the following command:

```
CLI (network-admin@switch) > user-create name netaccess scope fabric
password:
Confirm password:
```

user-delete

This command is used to delete users on the local switch or fabric.

Syntax `user-delete`

name *name-string*	Specify a name for the user.
Between 0 and 1 of the following options:	
forcefully|no-forcefully	Delete an user forcefully.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use this command to delete users on the local switch or fabric.

Examples To delete the user on the fabric, use the following command:

```
CLI (network-admin@switch) > user-delete
```

user-role-show

This command is used to display a list of users and the assigned roles.

Syntax `user-role-show user-name name-string role role-name`

`user-name` *`name-string`*	Specify a name for the user.
Specify the following role arguments:	
`role` *`role-name`*	Specify a role for the user.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Users must hold the proper credentials to manage a switch, cluster, or fabric. Use this command to display roles assigned to users.

Examples To display a list of users and their roles, use the following command:

```
CLI (network-admin@switch) > user-role-show
switch   user-name     role
-------- ------------- -------------
         network-admin network-admin
pubdev02 lab-admin     lab-admin
```

user-modify

This command is used to modify users on the local switch or fabric.

Syntax `user-modify`

`name` *`name-string`*	Specify the name of the user.
`password` *`password-string`*	Specify a plain text password.
`login-fail-count` *`login-fail-count-number`*	Specify the numbers of allowed authentication failures before locking the user.
`lock-account|no-lock-account`	Specify if you want to lock the user after the stipulated number of authentication failures.
`minimum-pw-length` *`6..65`*	Specify the minimum password length for user account.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters `password` and `initial-role` added. The parameter `scope` deprecated.
Version 2.2	The parameter `initial-role` deprecated.
Version 7.0.0	The parameters `login-fail-count`, `lock-account|no-lock-account` and `minimum-pw-length` added.

Usage Use this command to modify users on the local switch or fabric.

Examples To change the password of the user, net-access user, use the following command:

```
CLI (network-admin@switch) > user-modify name netaccess
```

user-show

This command is used to display a list of users on the local switch or fabric.

Syntax `user-show`

`name` *`name-string`*	Name of the user.
`scope local|fabric`	The scope of the user.
`uid` *`uid-number`*	The user identifier.
`type netvisor|unix|tacacs|web-token|mfg`	The user type
`server` *`aaa-tacacs name`*	The AAA TACACS+ server name.
`login-fail-count` *`login-fail-count-number`*	The numbers of allowed authentication failures before locking the user.
`lock-account|no-lock-account`	Displays if locking of the user after the stipulated number of authentication failures is enabled or disabled.
`minimum-pw-length` *`6..65`*	The minimum password length for user account.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters password, server, and initial-role added.
Version 7.0.0	The parameters `login-fail-count`, `lock-account|no-lock-account` and `minimum-pw-length` added.

Usage Use this command to display users on the local switch or fabric.

Examples To display the list of users, use the following command:

```
CLI (network-admin@switch) > user-show
switch        name  scope   uid    type    login-fail-count lock-account
------------- ----- ------ ------ -------- ---------------- ------------
network-admin      fabric 39999 netvisor  3                  false
```

```
some                fabric 40000 netvisor  4              false
leo-norma2    page  local     20000 netvisor  3               true
```

user-password-set

This command is used to set a password for a user on the switch.

Syntax `user-password-set name name-string scope local|fabric uid uid-number server aaa-tacacs-name initial-role role-name`

`name` *`name-string`*	Specify the name of the user to set the password.
Specify any of the following options:	
`scope local|fabric`	Specify if the scope is local or fabric.
`uid` *`uid-number`*	Specify the user ID.
`type netvisor|unix|tacacs|web-token|mfg`	Specify the user type.
`server` *`aaa-tacacs-name`*	Specify the name of the TACACS+ server.
`initial-role` *`role-name`*	Specify the initial role of the user.
`login-fail-count` *`login-failcount-number`*	Specify the numbers of allowed authentication failures before locking the user.
`lock-account|no-lock-account`	Specify if you want to lock the user after the stipulated number of authentication failures.
`minimum-pw-length` *`6..65`*	Specify the minimum password length for user account.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	Command changed to `user-password-set`.
Version 2.6.2	The parameter `type` added.
Version 7.0.0	The parameters `login-fail-count`, `lock-account|no-lock-account` and `minimum-pw-length` added.

Usage You can set a password for the user.

Examples To set the password for user, admin-net, on the TACACS+ server, aaa-tacacs, with the user ID 23,

with the initial role, admin, use the following command:

```
CLI (network-admin@switch) > user-password-set name admin-net scope
local uid 23 server aaa-tacacs initial-role admin
```

To change the current password for user1 and to change the minimum password length, use the command:

```
CLI (network-admin@switch) > user-password-set name user1 scope local
minimum-pw-length 7
password:
confirm password:
CLI (network-admin@switch) >
```

user-role-add

This command is used to create a user role on the switch.

Syntax `user-role-add user-name name-string scope role role-name`

`user-name` *`name-string`*	Specify a name for the user.
Specify the following role arguments:	
`role` *`role-name`*	Specify a role for the user.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Use this command to create user roles on the switch.

Examples To create the user, net-access, with the role, net-admin, use the following command:

```
CLI (network-admin@switch) > user-role-add user-name net-access role
net-admin
```

user-role-remove

This command is used to remove a user role from the switch.

Syntax `user-role-remove user-name name-string scope role role-name`

`user-name` *`name-string`*	Specify a name for the user.
Specify the following role arguments:	
`role` *`role-name`*	Specify a role for the user.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Use this command to remove user roles on the switch.

Examples To remove the user, net-access, with the role, net-admin, use the following command:

```
CLI (network-admin@switch) > user-role-remove user-name net-access role
net-admin
```

V Commands

vflow-system-modify

This command is used to modify the precedence of a system flow.

Syntax `vflow-system-modify`

`name` *`name-string`*	Name for the vFlow.
Between 0 and 7 of the following options:	
`enable|no-enable`	Specifies the enable or disable flows in hardware
`precedence default|0..15`	Specifies the traffic priority value between 2 and 15.
`flow-class` *`vflow-class name`*	Specifies the vFlow class name.
`src-mac` *`mac-address`*	Specifies the source MAC address for the vFlow.
`src-mac-mask` *`mac-address`*	Specifies the source MAC address to use as a wildcard mask.
`dst-mac` *`mac-address`*	Specifies the destination MAC address for the vFlow.
`dst-mac-mask` *`mac-address`*	Specifies the destination MAC address to use as a wildcard mask.

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage Use the command to modify the precedence of a system flow.

Examples To clear a vFlow, use the following command: `vflow-system-modify`

vflow-system-show

This command is used to display system flow details for vFlow.

Syntax `vflow-system-show`

Specify any of the following options:	
name *name-string*	Specify name for the vFlow.
id	ID assigned to the vFlow
bd bridge-domain name	Specify the bridge domain for the vFlow.
vlan *0..4095*	Specify the VLAN identifier for the flow. The value ranges between 0-4095.
inner-vlan *0..4095*	Specify the inner VLAN ID of the QinQ frame.
in-port *port-list*	Specify the ingress (input) port for the flow.
out-port *port-list*	Specify the egress (output) port for the flow.
ether-type ipv4|arp|wake|rarp|vlan| ipv6|lacp|mpls-uni|mpls-multi| jumbo| dot1X|aoe|qinq|lldp|macsec|ecp| ptp|fcoe|fcoe-init|qinq-old	Specify the EtherType for the flow.
src-mac *mac-address*	Specify the source MAC address for the flow .
src-mac-mask *mac-address*	Specify the source MAC address wildcard mask for the flow.
dst-mac *mac-address*	Specify the destination MAC address for the flow.
dst-mac-mask *mac-address*	Specify the destination MAC address wildcard mask for the flow.
src-ip *ip-address*	Specify the source IP address for the flow.
src-ip-mask *ip-address*	Specify the source IP address wildcard mask for the flow.
dst-ip *ip-address*	Specify the destination IP address for the flow.
dst-ip-mask *ip-address*	Specify the destination IP address wildcard mask for the flow.
src-port *src-port-number*	Specify the Layer 3 protocol source port for the flow.
src-port-end *src-port-end-number*	Specify the ending port for a range of source ports.
src-port-mask *src-port-mask-number*	Specify the source port mask.
dst-port *dst-port-number*	Specify the Layer 3 protocol destination port for the flow.

dst-port-end *dst-port-end-number*	Specify the ending port for a range of destination ports.
dst-port-mask *dst-port-mask-number*	Specify the destination port mask.
dscp-start *number*	Specify the starting DSCP number. This is a value between 0 and 63.
dscp-end *number*	Specify the ending DSCP number. This is a value between 0 and 63.
dscp *dscp-number*	Specify the 6-bit Differentiated Services Code Point (DSCP) of the flow.
dscp-map dscp-map name|none	Specify the DSCP map to apply on the flow. Please reapply if map priorities are updated.
tos-start *tos-start-number*	Specify the starting ToS number.
tos-end *tos-end-number*	Specify the ending ToS number.
tos *tos-number*	Specify the Type of Service (ToS) number for the flow.
dropped|no-dropped	Specify if the vFlow matches a dropped packet or forwards the packet.
vlan-pri *number*	Specify the priority for the VLAN. This is a value between 0 (lowest) and 7 (highest).
inner-vlan-pri *number*	Specify the priority for the inner VLAN. This is a value between 0 (lowest) and 7 (highest).
internal-pri *0..7*	Specify the internal priority as a value between 0 and 7.
vrf *vrf-name*	Specify the name of the VRF.
ttl *ttl-number*	Specify the time to live in seconds.
proto tcp|udp|icmp|igmp|ip|icmpv6	Specify the Layer 3 protocol for the flow.
tcp-flags fin|syn|rst|push|ack|urg|ece|cwr	Specify the TCP flags to filter a vFlow.
flow-class *vflow-class name*	Specify the vflow class.
ingress-tunnel *tunnel-name*	Specify the name of the ingress tunnel.
egress-tunnel tunnel name	Specify the name of the egress tunnel.
bw-min *bw-min-number*	Specify the minimum bandwidth in Gbps for the vflow. This is a range from 0 to 40Gbps.
bw-max *bw-max-number*	Specify the maximum bandwidth in Gbps for the vflow. This is a range from 0 to 40Gbps.
burst-size auto	Specify the burst size. This parameter auto-calculates the burst size based on the maximum bandwidth settings for the vFlow. You can also configure a burst-size number between 256B through 128MB.

vrouter-name *vrouter name*	Specify the vRouter name if you are configuring Policy-based Routing (PBR). You should not use this parameter unless you are configuring PBR.
precedence default|0..15	Specify the traffic priority for the flow (between 0 and 15)
action none|drop|to-port|to-cpu|trap|copy-to-cpu|copy-to-port|check|setvlan|add-outer-vlan|set-tpid|to-port-set-vlan|tunnel-pkt|set-tunnel-id|to-span|cpu-rx|cpu-rx-tx|set-metadata|set-dscp|decap|set-dmac|to-next-hop-ip|set-dmac-to-port|to-ports-and-cpu|set-vlan-pri|tcp-seq-offset|tcp-ack-offset|l3-to-cpu-switch|set-smac|drop-cancel-trap|to-ecmp-group|redirect-to-vrouter|to-vp|set-svp|strip-outer-vlan|cancel-switch-to-cpu	Specify the forwarding action to apply to the flow.
action-value *number*	Specify an optional value argument for the forwarding action above (for example, a switch port number to forward the packet to). This is a value between 1 and 64.
action-set-mac-value *mac-address*	Specify a MAC address to apply the action.
action-set-svp-value *svp-value*	Specify the SVP value.
action-to-next-hop-ip-value ip-address	Specify the next-hop IP address for packet redirection.
action-to-ecmp-group-value static-ecmp-group group-name	Specify the ECMP group for packet redirection.
action-to-ports-value *port-list*	Specify a port list to apply the action.
mirror *mirror-name*	Specify the name of the mirror configuration.
process-mirror|no-process-mirror	Specify to process mirrored traffic for the vflow.
packet-log-max *packet-log-max-number*	Specify the maximum packet count for log rotation in the flow.
log-stats|no-log-stats	Specify if you want to log statistics or not.
stats-interval *seconds*	Specify the interval to update packet statistics for the log (in seconds). This is a value between 1 and 604800.
dur *dur-number*	Specify the minimum duration required for the flow to be captured (in seconds).
metadata *metadata-number*	Specify a metadata number for the flow.
transient|no-transient	Specify whether to capture transient flows.
vxlan *vxlan-name*	Specify the name of the VXLAN.

vxlan-ether-type ipv4|arp|wake|rarp|vlan|ipv6|lacp|mpls-uni|mpls-multi| jumbo|dot1X|aoe|qinq|lldp|macsec|ecp|ptp|fcoe|fcoe-init|qinq-old	Specify the type of VXLAN.
from-tunnel-decap|no-from-tunnel-decap	Specify if you want to include tunnel terminated VXLAN packets.
vxlan-proto tcp|udp|icmp|igmp|ip|icmpv6	Specify the protocol type for the VXLAN.
stp-state Disabled|Discarding|Learning|Forwarding packet-res l2-unicast|l2-unknown-unicast|l2-multicast|l2-unknown-multicast|l2-broadcast	Specify the STP state.
packet-res l2-unicast|l2-unknown-unicast|l2-multicast|l2-unknown-multicast|l2-broadcast	Specify the packet resolution in ASIC.
fwding-type vlan|vxlan|vle	Specify the ASIC forwarding type.
set-src *ip-address*	Specify the source IP address of IPv4 packets.
set-dst *ip-address*	Specify the destination IP address of IPv4 packets.
set-src-port *set-src-port-number*	Specify the source port of IPv4 packets.
set-dst-port *set-dst-port-number*	Specify the destination port of IPv4 packets.
src-vpg vpg-name	Specify the source vPG name for Network Packet Broker (NPB) configuration.
dst-vpg vpg-name	Specify the destination vPG name for Network Packet Broker (NPB) configuration.
bidir-vpg-1 vpg name	Specify the name of the first bidirectional vPG for NPB configuration.
bidir-vpg-2 vpg name	Specify the name of the second bidirectional vPG for NPB configuration.
transparency enable|disable	Specify if you want to enable or disable protocol transparency.
udf-name1 udf name	Specify the User-Defined Field name.
udf-data1 udf-data1-number	Specify the User-Defined Field data.
udf-data1-mask udf-data1-mask-number	Specify the mask for the User-Defined Field data.
udf-name2 udf name	Specify the User-Defined Field name.
udf-data2 udf-data2-number	Specify the User-Defined Field data.
udf-data2-mask udf-data2-mask-number	Specify the mask for the User-Defined Field data.
udf-name3 udf name	Specify the User-Defined Field name.

`udf-data3 udf-data3-number`	Specify the User-Defined Field data.
`udf-data3-mask udf-data3-mask-number`	Specify the mask for the User-Defined Field data.
`enable|no-enable`	Specify if you want to enable or disable flows in hardware.
`table-name` *`vflow-table name`*	Specify a table name from the following list: • Egress-Table-1-0 • System-L1-L4-Tun-1-0 • System-VCAP-table-1-0 • VCAP-IPv6-table-1-0 The following actions are supported for this parameter: • InnerVlan • OuterVlan • Dscp • Vxlan • Drop • VlanPri
`flow-cb default-cb|arp-cb|bcast-cb|igmp-cb|pim-cb|dhcp-cb|dhcpv6-cb|dmac-miss-cb|l2-miss-cb|no-cb`	CPU to process, vFlow callback function.
`cpu-class` *`cpu-class name`*	Specify the CPU class name.
`description description-string`	Specify a vFlow description.
`if mgmt|data`	Specify the administrative service interface.
`phy-dst-port` *`phy-dst-port-number`*	Specify the packet destination port for the vFlow.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, **type**, is deprecated. The option, **cluster**, for **scope** is deprecated. The option, **meter**, for **action** is deprecated. The parameters, **mirror|no mirror**, and **process-mirror|no-process-mirror** added.
Version 2.2.3	The parameters, `dscp-start`, `dscp-end`, `tos-start`, `tos-end`, `vlan-pri` and `ttl` added.

Version 2.2.5	The parameters, set-dscp|to-ports-and-cpu|set-vlan-pri| set-dmac|set-dmac-to-port, action-set-mac-value, and action-to-ports-value, added. The parameter, mirror, added. The parameter, mirror|no-mirror changed to process-mirror|no-process-mirror.
Version 2.3	The parameters, set-src, set-dst, set-src-port, and set-dst-port, added.
Version 2.3.1	The parameter, table, added.
Version 2.4	The parameter, type and stats, deprecated. The parameters, src-port-mask and dst-port-mask, added. The action, to-port-set-nat|, is deprecated. The parameter, log-stats added.
Version 2.5.3	The parameter, tcp-flags, added. The fields, UDF- and enable|disable hardware flows also added.
Version 2.5.4	The parameter, burst-size auto, has added functionality. You can configure a burst-size number between 256B through 128MB.
Version 2.6.0	The parameter table-name added.
Version 2.6.2	The parameter dscp-map and cpu-class added.
Version 3.0.0	The parameter dropped|no-dropped added.
Version 5.0.0	The parameter if mgmt|data added.
Version 5.1.0	The parameter packet-res added.
Version 5.2.0	The parameters src-port-end and dst-port-end added
Version 6.0.0	The parameter vrf added.
Version 6.0.1	The parameters src-vpg, dst-vpg added.
Version 6.1.0	The parameters bd, inner-vlan, inner-

	vlan-pri, internal-pri, dst-vpg-1, dst-vpg-2, transparency, flow-cb, phy-dst-port added.
Version 7.0.0	The option strip-outer-vlan added to parameter action.

Usage Each fabric, cluster, standalone switch, or virtual network can track application flow statistics. This command initiates flow statistics capture for Layer 2 Ethernet or Layer 3 Internet Protocol (IP) packet traffic that matches defined characteristics.

Examples

- This example shows how to initiate statistcs for a flow named flow1 defined as the Internet Protocol (IP) traffic on VLAN 4091 within the local switch.

  ```
  CLI (network-admin@switch) > vflow-create name flow1 scope local vlan 4091
  ```

- This example shows how to initiate statistics for a flow, flow2, defined as the fabric-wide Internet Protocol (IP) traffic sourced by the host with IP address 172.168.18.2 classified as dropless.

  ```
  CLI (network-admin@switch) > vflow-create name flow2 scope fabric src-ip 172.168.18.2 class dropless stats enable
  ```

- This example shows how to initiate statistics for a flow flow3 defined as the Internet Protocol (IP)

  traffic on VLAN 99 destined for the host with IP address 172.168.24.1 within the local switch. An action is specified to drop all traffic matching these flow attributes.

  ```
  CLI (network-admin@switch) > vflow-create name flow3 scope local vlan 99 dst-ip 172.168.24.1 action drop stats enable
  ```

- This example, shows how to create a vFlow with a burst size of 12MB. This is useful because different burst-sizes can be used for different types of metered traffic. For example, if a metered application produces bursty traffic patterns, such as clicking on a Web page link redirecting you to a media-rich page, you can now configure higher burst levels than the pre-calculated default burst levels.

  ```
  CLI (network-admin@switch) > vflow-create name flow1 scope local in-port 12 bw-max 5G burst-size 12M
  ```

vFlow Commands

vflow-class-create

This command is used to add a traffic class to a vFlow.

Syntax `vflow-class-create`

name *name-string*	Specify a name for the vflow class.
scope local|fabric	Specify the scope to apply the class.

priority *priority-number*	Specify the traffic priority for the vflow. Select a value between 2 (lowest) and 8 (highest).

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, `max-egress-bw`, deprecated.

Usage Netvisor provides a full set of traffic class features, including the ability to view and modify traffic classes, and assign traffic classes to flows that manage the quality of service (QoS) of the flow traffic and shape the traffic passing through a Pluribus Networks fabric. Use the command to assign bandwidth and priority for the traffic flow.

Examples To create a vflow named voip-phone with priority of 9, use the following command:

```
vflow-class-create name voip-phone scope fabric priority 9
```

vflow-class-delete

This command is used to remove an existing vFlow class from the configuration.

Syntax `vflow-class-delete`

name *name-string*	Specify a name for the vflow class.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Netvisor provides a full set of traffic class features, including the ability to view and modify traffic classes, as well as assigning traffic classes to flows that manage the quality of service (QoS) of the flow traffic and shape the traffic passing through a Pluribus Networks fabric. Use the command to remove the class assigned to a traffic flow.

Examples To remove a vflow named voip-phone, use the following command:

```
CLI (network-admin@switch) > vflow-class-delete name voip-phone
```

vflow-class-show

This command is used to display information about a traffic class applied to a vFlow.

Syntax `vflow-class-show`

`name` *`name-string`*	Displays the name for the vFlow class.
`scope local|fabric`	Displays the scope to apply the class.
`type system|user`	Displays the type of flow class.
`priority` *`priority-number`*	Displays the traffic priority for the vflow. This is a value between 2 (lowest) and 8 (highest).
`cos` *`cos-number`*	Displays the Class of Service (CoS) value for the vFlow class.

Defaults None.

Access CLI

History .

Version 1.2	Command introduced.
Version 2.1	The option, `reserved`, is deprecated from `type`. The parameter, `max-egress-bw`, is deprecated.
Version 2.4	The parameter, `cos`, added.

Usage Netvisor provides a full set of traffic class features, including the ability to view and modify traffic classes, as well as assigning traffic classes to flows that manage the quality of service (QoS) of the flow traffic and shape the traffic passing through a Pluribus Networks fabric. Use the command to display traffic classes assigned to a traffic flow.

Examples To display all traffic classes, use the following command:

```
CLI (network-admin@switch) > vflow-class-show
name          scope  type   priority cos
------------- ------ ------ -------- ---
meter         fabric system 0        0
class0        fabric system 0        0
class1        fabric system 1        1
class2        fabric system 2        2
class3        fabric system 3        3
class4        fabric system 4        3
class5        fabric system 5        4
class6        fabric system 6        4
class7        fabric system 7        5
guaranteed_bw fabric system 9        6
class8        fabric system 10       6
lossless      fabric system 10       6
```

```
control       fabric system 11       7
control2      fabric system 12       8
control3      fabric system 13       9
```

vflow-create

This command is used to create a flow definition for Layer 2 Ethernet or Layer 3 Internet Protocol (IP) packet traffic.

Syntax `vflow-create`

`name` *`name-string`*	Specify the flow name.
`scope local|fabric`	Specify the scope for the flow.
Specify any of the following options:	
`vnet` *`vnet-name`*	Specify the virtual network (vNET) for the flow
`bd bridge-domain name`	Specify the bridge domain for the vFlow.
`vlan` *`0..4095`*	Specify the VLAN identifier for the flow. The value ranges between 0-4095.
`inner-vlan` *`0..4095`*	Specify the inner VLAN ID of the QinQ frame.
`in-port` *`port-list`*	Specify the ingress (input) port for the flow.
`out-port` *`port-list`*	Specify the egress (output) port for the flow.
`ether-type ipv4|arp|wake|rarp|vlan| ipv6|lacp|mpls-uni|mpls-multi| jumbo| dot1X|aoe|qinq|lldp|macsec|ecp| ptp|fcoe|fcoe-init|qinq-old`	Specify the EtherType for the flow.
`src-mac` *`mac-address`*	Specify the source MAC address for the flow .
`src-mac-mask` *`mac-address`*	Specify the source MAC address wildcard mask for the flow.
`dst-mac` *`mac-address`*	Specify the destination MAC address for the flow.
`dst-mac-mask` *`mac-address`*	Specify the destination MAC address wildcard mask for the flow.
`src-ip` *`ip-address`*	Specify the source IP address for the flow.
`src-ip-mask` *`ip-address`*	Specify the source IP address wildcard mask for the flow.
`dst-ip` *`ip-address`*	Specify the destination IP address for the flow.
`dst-ip-mask` *`ip-address`*	Specify the destination IP address wildcard mask for the flow.
`src-port` *`src-port-number`*	Specify the Layer 3 protocol source port for the flow.
`src-port-end` *`src-port-end-number`*	Specify the ending port for a range of source ports.
`src-port-mask` *`src-port-mask-number`*	Specify the source port mask.
`dst-port` *`dst-port-number`*	Specify the Layer 3 protocol destination port for the

	flow.
dst-port-end *dst-port-end-number*	Specify the ending port for a range of destination ports.
dst-port-mask *dst-port-mask-number*	Specify the destination port mask.
dscp-start *number*	Specify the starting DSCP number. This is a value between 0 and 63.
dscp-end *number*	Specify the ending DSCP number. This is a value between 0 and 63.
dscp *dscp-number*	Specify the 6-bit Differentiated Services Code Point (DSCP) of the flow.
dscp-map dscp-map name|none	Specify the DSCP map to apply on the flow. Please reapply if map priorities are updated.
tos-start *tos-start-number*	Specify the starting ToS number.
tos-end *tos-end-number*	Specify the ending ToS number.
tos *tos-number*	Specify the Type of Service (ToS) number for the flow.
dropped|no-dropped	Specify if the vFlow matches a dropped packet or forwards the packet.
vlan-pri *number*	Specify the priority for the VLAN. This is a value between 0 (lowest) and 7 (highest).
inner-vlan-pri *number*	Specify the priority for the inner VLAN. This is a value between 0 (lowest) and 7 (highest).
internal-pri *0..7*	Specify the internal priority as a value between 0 and 7.
vrf *vrf-name*	Specify the name of the VRF.
ttl *ttl-number*	Specify the time to live in seconds.
proto tcp|udp|icmp|igmp|ip|icmpv6	Specify the Layer 3 protocol for the flow.
tcp-flags fin|syn|rst|push|ack|urg|ece|cwr	Specify the TCP flags to filter a vFlow.
flow-class *vflow-class name*	Specify the vflow class.
ingress-tunnel *tunnel-name*	Specify the name of the ingress tunnel.
egress-tunnel tunnel name	Specify the name of the egress tunnel.
bw-min *bw-min-number*	Specify the minimum bandwidth in Gbps for the vflow. This is a range from 0 to 40Gbps.
bw-max *bw-max-number*	Specify the maximum bandwidth in Gbps for the vflow. This is a range from 0 to 40Gbps.
burst-size auto	Specify the burst size. This parameter auto-calculates the burst size based on the maximum bandwidth

	settings for the vFlow. You can also configure a burst-size number between 256B through 128MB.
vrouter-name *vrouter name*	Specify the vRouter name if you are configuring Policy-based Routing (PBR). You should not use this parameter unless you are configuring PBR.
precedence default|0..15	Specify the traffic priority for the flow (between 0 and 15)
action none|drop|to-port|to-cpu|trap|copy-to-cpu|copy-to-port|check|setvlan|add-outer-vlan|set-tpid|to-port-set-vlan|tunnel-pkt|set-tunnel-id|to-span|cpu-rx|cpu-rx-tx|set-metadata|set-dscp|decap|set-dmac|to-next-hop-ip|set-dmac-to-port|to-ports-and-cpu|set-vlan-pri|tcp-seq-offset|tcp-ack-offset|l3-to-cpu-switch|set-smac|drop-cancel-trap|to-ecmp-group|redirect-to-vrouter|to-vp|set-svp|strip-outer-vlan|cancel-switch-to-cpu	Specify the forwarding action to apply to the flow.
action-value *number*	Specify an optional value argument for the forwarding action above (for example, a switch port number to forward the packet to). This is a value between 1 and 64.
action-set-mac-value *mac-address*	Specify a MAC address to apply the action.
action-set-svp-value *svp-value*	Specify the SVP value.
action-to-next-hop-ip-value ip-address	Specify the next-hop IP address for packet redirection.
action-to-ecmp-group-value static-ecmp-group group-name	Specify the ECMP group for packet redirection.
action-to-ports-value *port-list*	Specify a port list to apply the action.
mirror *mirror-name*	Specify the name of the mirror configuration.
process-mirror|no-process-mirror	Specify to process mirrored traffic for the vflow.
packet-log-max *packet-log-max-number*	Specify the maximum packet count for log rotation in the flow.
log-stats|no-log-stats	Specify if you want to log statistics or not.
stats-interval *seconds*	Specify the interval to update packet statistics for the log (in seconds). This is a value between 1 and 604800.
dur *dur-number*	Specify the minimum duration required for the flow to be captured (in seconds).
metadata *metadata-number*	Specify a metadata number for the flow.
transient|no-transient	Specify whether to capture transient flows.

vxlan *vxlan-name*	Specify the name of the VXLAN.
vxlan-ether-type ipv4|arp|wake|rarp|vlan|ipv6|lacp|mpls-uni|mpls-multi| jumbo|dot1X|aoe|qinq|lldp|macsec|ecp|ptp|fcoe|fcoe-init|qinq-old	Specify the type of VXLAN.
from-tunnel-decap|no-from-tunnel-decap	Specify if you want to include tunnel terminated VXLAN packets.
vxlan-proto tcp|udp|icmp|igmp|ip|icmpv6	Specify the protocol type for the VXLAN.
stp-state Disabled|Discarding|Learning|Forwarding packet-res l2-unicast|l2-unknown-unicast|l2-multicast|l2-unknown-multicast|l2-broadcast	Specify the STP state.
packet-res l2-unicast|l2-unknown-unicast|l2-multicast|l2-unknown-multicast|l2-broadcast	Specify the packet resolution in ASIC.
fwding-type vlan|vxlan|vle	Specify the ASIC forwarding type.
set-src *ip-address*	Specify the source IP address of IPv4 packets.
set-dst *ip-address*	Specify the destination IP address of IPv4 packets.
set-src-port *set-src-port-number*	Specify the source port of IPv4 packets.
set-dst-port *set-dst-port-number*	Specify the destination port of IPv4 packets.
src-vpg vpg-name	Specify the source vPG name for Network Packet Broker (NPB) configuration.
dst-vpg vpg-name	Specify the destination vPG name for Network Packet Broker (NPB) configuration.
bidir-vpg-1 vpg name	Specify the name of the first bidirectional vPG for NPB configuration.
bidir-vpg-2 vpg name	Specify the name of the second bidirectional vPG for NPB configuration.
transparency enable|disable	Specify if you want to enable or disable protocol transparency.
udf-name1 udf name	Specify the User-Defined Field name.
udf-data1 udf-data1-number	Specify the User-Defined Field data.
udf-data1-mask udf-data1-mask-number	Specify the mask for the User-Defined Field data.
udf-name2 udf name	Specify the User-Defined Field name.
udf-data2 udf-data2-number	Specify the User-Defined Field data.
udf-data2-mask udf-data2-mask-number	Specify the mask for the User-Defined Field data.

`udf-name3 udf name`	Specify the User-Defined Field name.
`udf-data3 udf-data3-number`	Specify the User-Defined Field data.
`udf-data3-mask udf-data3-mask-number`	Specify the mask for the User-Defined Field data.
`enable|no-enable`	Specify if you want to enable or disable flows in hardware.
`table-name` *`vflow-table name`*	Specify a table name from the following list: • Egress-Table-1-0 • System-L1-L4-Tun-1-0 • System-VCAP-table-1-0 • VCAP-IPv6-table-1-0 The following actions are supported for this parameter: • InnerVlan • OuterVlan • Dscp • Vxlan • Drop • VlanPri
`flow-cb default-cb|arp-cb|bcast-cb|igmp-cb|pim-cb|dhcp-cb|dhcpv6-cb|dmac-miss-cb|l2-miss-cb|no-cb`	CPU to process, vFlow callback function.
`cpu-class` *`cpu-class name`*	Specify the CPU class name.
`description description-string`	Specify a vFlow description.
`if mgmt|data`	Specify the administrative service interface.
`phy-dst-port` *`phy-dst-port-number`*	Specify the packet destination port for the vFlow.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter `type` is deprecated. The option `cluster` for `scope` is deprecated. The option `meter`, for `action` is deprecated. The parameters `mirror|no mirror` and `process-mirror|no-process-mirror` added.
Version 2.2.3	The parameters, `dscp-start`, `dscp-end`, `tos-start`, `tos-end`, `vlan-pri` and `ttl` added.

Version 2.2.5	The parameters, `set-dscp|to-ports-and-cpu|set-vlan-pri| set-dmac|set-dmac-to-port, action-set-mac-value`, and `action-to-ports-value`, added. The parameter, `mirror`, added. The parameter, `mirror|no-mirror` changed to `process-mirror|no-process-mirror`.
Version 2.3	The parameters, `set-src`, `set-dst`, `set-src-port`, and `set-dst-port`, added.
Version 2.3.1	The parameter, `table`, added.
Version 2.4	The parameter, type and stats, deprecated. The parameters, src-port-mask and dst-port-mask, added. The action, `to-port-set-nat|`, is deprecated. The parameter, `log-stats` added.
Version 2.5.3	The parameter, `tcp-flags`, added. The fields, UDF- and enable|disable hardware flows also added.
Version 2.5.4	The parameter, burst-size `auto`, has added functionality. You can configure a burst-size number between 256B through 128MB.
Version 2.6.0	The parameter `table-name` added.
Version 2.6.2	The parameter `dscp-map` and `cpu-class` added.
Version 3.0.0	The parameter `dropped|no-dropped` added.
Version 5.0.0	The parameter `if mgmt|data` added.
Version 5.1.0	The parameter `packet-res` added.
Version 5.2.0	The parameters `src-port-end` and `dst-port-end` added
Version 6.0.0	The parameter `vrf` added.
Version 6.0.1	The parameters `src-vpg, dst-vpg` added.
Version 6.1.0	The parameters `bd, inner-vlan, inner-`

	vlan-pri, internal-pri, dst-vpg-1, dst-vpg-2, transparency, flow-cb, phy-dst-port added.
Version 7.0.0	The option strip-outer-vlan added to parameter action.

Usage Each fabric, cluster, standalone switch, or virtual network can track application flow statistics. This command initiates flow statistics capture for Layer 2 Ethernet or Layer 3 Internet Protocol (IP) packet traffic that matches defined characteristics.

Examples

- This example shows how to initiate statistcs for a flow named flow1 defined as the Internet Protocol (IP) traffic on VLAN 4091 within the local switch.

  ```
  CLI (network-admin@switch) > vflow-create name flow1 scope local vlan 4091
  ```

- This example shows how to initiate statistics for a flow, flow2, defined as the fabric-wide Internet Protocol (IP) traffic sourced by the host with IP address 172.168.18.2 classified as dropless.

  ```
  CLI (network-admin@switch) > vflow-create name flow2 scope fabric src-ip 172.168.18.2 class dropless stats enable
  ```

- This example shows how to initiate statistics for a flow flow3 defined as the Internet Protocol (IP)

  traffic on VLAN 99 destined for the host with IP address 172.168.24.1 within the local switch. An action is specified to drop all traffic matching these flow attributes.

  ```
  CLI (network-admin@switch) > vflow-create name flow3 scope local vlan 99 dst-ip 172.168.24.1 action drop stats enable
  ```

- This example, shows how to create a vFlow with a burst size of 12MB. This is useful because different burst-sizes can be used for different types of metered traffic. For example, if a metered application produces bursty traffic patterns, such as clicking on a Web page link redirecting you to a media-rich page, you can now configure higher burst levels than the pre-calculated default burst levels.

  ```
  CLI (network-admin@switch) > vflow-create name flow1 scope local in-port 12 bw-max 5G burst-size 12M
  ```

vflow-delete

This command allows you to delete an existing definition for Layer 2 Ethernet or Layer 3 Internet Protocol (IP) packet traffic.

Syntax `vflow-delete name`

`name` *`name-string`*	Specify the flow name.
`id` *`flow-id`*	Specify the flow identifier.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Each fabric, cluster, standalone switch, or virtual network can track application flow statistics. This command initiates flow statistics capture for Layer 2 Ethernet or Layer 3 Internet Protocol (IP) packet traffic that matches defined characteristics.

Examples To delete the vflow definition called flow1, use the following command:

```
CLI (network-admin@switch) > vflow-delete name flow1
```

vflow-modify

This command is used to modify an existing vflow configuration.

Syntax `vflow-modify`

`name` *`name-string`*	Specify the flow name.
`scope local|fabric`	Specify the scope for the flow.
Specify any of the following options:	
`vnet` *`vnet-name`*	Specify the virtual network (vNET) for the flow
`bd bridge-domain name`	Specify the bridge domain for the vFlow.
`vlan` *`0..4095`*	Specify the VLAN identifier for the flow. The value ranges between 0-4095.
`inner-vlan` *`0..4095`*	Specify the inner VLAN ID of the QinQ frame.
`in-port` *`port-list`*	Specify the ingress (input) port for the flow.
`out-port` *`port-list`*	Specify the egress (output) port for the flow.
`ether-type ipv4|arp|wake|rarp|vlan| ipv6|lacp|mpls-uni|mpls-multi| jumbo| dot1X|aoe|qinq|lldp|macsec|ecp| ptp|fcoe|fcoe-init|qinq-old`	Specify the EtherType for the flow.
`src-mac` *`mac-address`*	Specify the source MAC address for the flow .
`src-mac-mask` *`mac-address`*	Specify the source MAC address wildcard mask for the flow.
`dst-mac` *`mac-address`*	Specify the destination MAC address for the flow.
`dst-mac-mask` *`mac-address`*	Specify the destination MAC address wildcard mask for the flow.
`src-ip` *`ip-address`*	Specify the source IP address for the flow.
`src-ip-mask` *`ip-address`*	Specify the source IP address wildcard mask for the flow.
`dst-ip` *`ip-address`*	Specify the destination IP address for the flow.
`dst-ip-mask` *`ip-address`*	Specify the destination IP address wildcard mask for the flow.
`src-port` *`src-port-number`*	Specify the Layer 3 protocol source port for the flow.
`src-port-end` *`src-port-end-number`*	Specify the ending port for a range of source ports.
`src-port-mask` *`src-port-mask-number`*	Specify the source port mask.
`dst-port` *`dst-port-number`*	Specify the Layer 3 protocol destination port for the flow.

dst-port-end *dst-port-end-number*	Specify the ending port for a range of destination ports.
dst-port-mask *dst-port-mask-number*	Specify the destination port mask.
dscp-start *number*	Specify the starting DSCP number. This is a value between 0 and 63.
dscp-end *number*	Specify the ending DSCP number. This is a value between 0 and 63.
dscp *dscp-number*	Specify the 6-bit Differentiated Services Code Point (DSCP) of the flow.
dscp-map dscp-map name|none	Specify the DSCP map to apply on the flow. Please reapply if map priorities are updated.
tos-start *tos-start-number*	Specify the starting ToS number.
tos-end *tos-end-number*	Specify the ending ToS number.
tos *tos-number*	Specify the Type of Service (ToS) number for the flow.
dropped|no-dropped	Specify if the vFlow matches a dropped packet or forwards the packet.
vlan-pri *number*	Specify the priority for the VLAN. This is a value between 0 (lowest) and 7 (highest).
inner-vlan-pri *number*	Specify the priority for the inner VLAN. This is a value between 0 (lowest) and 7 (highest).
internal-pri *0..7*	Specify the internal priority as a value between 0 and 7.
vrf *vrf-name*	Specify the name of the VRF.
ttl *ttl-number*	Specify the time to live in seconds.
proto tcp|udp|icmp|igmp|ip|icmpv6	Specify the Layer 3 protocol for the flow.
tcp-flags fin|syn|rst|push|ack|urg|ece|cwr	Specify the TCP flags to filter a vFlow.
flow-class *vflow-class name*	Specify the vFlow class.
ingress-tunnel *tunnel-name*	Specify the name of the ingress tunnel.
egress-tunnel tunnel name	Specify the name of the egress tunnel.
bw-min *bw-min-number*	Specify the minimum bandwidth in Gbps for the vFlow. This is a range from 0 to 40Gbps.
bw-max *bw-max-number*	Specify the maximum bandwidth in Gbps for the vFlow. This is a range from 0 to 40Gbps.
burst-size auto	Specify the burst size. This parameter auto-calculates the burst size based on the maximum bandwidth settings for the vFlow. You can also configure a burst-size number between 256B through 128MB.

vrouter-name *vrouter name*	Specify the vRouter name if you are configuring Policy-based Routing (PBR). You should not use this parameter unless you are configuring PBR.
precedence default|0..15	Specify the traffic priority for the flow (between 0 and 15)
action none|drop|to-port|to-cpu|trap|copy-to-cpu|copy-to-port|check|setvlan|add-outer-vlan|set-tpid|to-port-set-vlan|tunnel-pkt|set-tunnel-id|to-span|cpu-rx|cpu-rx-tx|set-metadata|set-dscp|decap|set-dmac|to-next-hop-ip|set-dmac-to-port|to-ports-and-cpu|set-vlan-pri|tcp-seq-offset|tcp-ack-offset|l3-to-cpu-switch|set-smac|drop-cancel-trap|to-ecmp-group|redirect-to-vrouter|to-vp|set-svp|strip-outer-vlan|cancel-switch-to-cpu	Specify the forwarding action to apply to the flow.
action-value *number*	Specify an optional value argument for the forwarding action above (for example, a switch port number to forward the packet to). This is a value between 1 and 64.
action-set-mac-value *mac-address*	Specify a MAC address to apply the action.
action-set-svp-value *svp-value*	Specify the SVP value.
action-to-next-hop-ip-value ip-address	Specify the next-hop IP address for packet redirection.
action-to-ecmp-group-value static-ecmp-group group-name	Specify the ECMP group for packet redirection.
action-to-ports-value *port-list*	Specify a port list to apply the action.
mirror *mirror-name*	Specify the name of the mirror configuration.
process-mirror|no-process-mirror	Specify to process mirrored traffic for the vflow.
packet-log-max *packet-log-max-number*	Specify the maximum packet count for log rotation in the flow.
log-stats|no-log-stats	Specify if you want to log statistics or not.
stats-interval *seconds*	Specify the interval to update packet statistics for the log (in seconds). This is a value between 1 and 604800.
dur *dur-number*	Specify the minimum duration required for the flow to be captured (in seconds).
metadata *metadata-number*	Specify a metadata number for the flow.
transient|no-transient	Specify whether to capture transient flows.
vxlan *vxlan-name*	Specify the name of the VXLAN.

vxlan-ether-type ipv4|arp|wake|rarp|vlan|ipv6|lacp|mpls-uni|mpls-multi| jumbo|dot1X|aoe|qinq|lldp|macsec|ecp|ptp|fcoe|fcoe-init|qinq-old	Specify the type of VXLAN.
from-tunnel-decap|no-from-tunnel-decap	Specify if you want to include tunnel terminated VXLAN packets.
vxlan-proto tcp|udp|icmp|igmp|ip|icmpv6	Specify the protocol type for the VXLAN.
stp-state Disabled|Discarding|Learning|Forwarding packet-res l2-unicast|l2-unknown-unicast|l2-multicast|l2-unknown-multicast|l2-broadcast	Specify the STP state.
packet-res l2-unicast|l2-unknown-unicast|l2-multicast|l2-unknown-multicast|l2-broadcast	Specify the packet resolution in ASIC.
fwding-type vlan|vxlan|vle	Specify the ASIC forwarding type.
set-src *ip-address*	Specify the source IP address of IPv4 packets.
set-dst *ip-address*	Specify the destination IP address of IPv4 packets.
set-src-port *set-src-port-number*	Specify the source port of IPv4 packets.
set-dst-port *set-dst-port-number*	Specify the destination port of IPv4 packets.
src-vpg vpg-name	Specify the source vPG name for Network Packet Broker (NPB) configuration.
dst-vpg vpg-name	Specify the destination vPG name for Network Packet Broker (NPB) configuration.
bidir-vpg-1 vpg name	Specify the name of the first bidirectional vPG for NPB configuration.
bidir-vpg-2 vpg name	Specify the name of the second bidirectional vPG for NPB configuration.
transparency enable|disable	Specify if you want to enable or disable protocol transparency.
udf-name1 udf name	Specify the User-Defined Field name.
udf-data1 udf-data1-number	Specify the User-Defined Field data.
udf-data1-mask udf-data1-mask-number	Specify the mask for the User-Defined Field data.
udf-name2 udf name	Specify the User-Defined Field name.
udf-data2 udf-data2-number	Specify the User-Defined Field data.
udf-data2-mask udf-data2-mask-number	Specify the mask for the User-Defined Field data.
udf-name3 udf name	Specify the User-Defined Field name.

`udf-data3 udf-data3-number`	Specify the User-Defined Field data.
`udf-data3-mask udf-data3-mask-number`	Specify the mask for the User-Defined Field data.
`enable|no-enable`	Specify if you want to enable or disable flows in hardware.
`table-name` *`vflow-table name`*	Specify a table name from the following list: • Egress-Table-1-0 • System-L1-L4-Tun-1-0 • System-VCAP-table-1-0 • VCAP-IPv6-table-1-0 The following actions are supported for this parameter: • InnerVlan • OuterVlan • Dscp • Vxlan • Drop • VlanPri
`flow-cb default-cb|arp-cb|bcast-cb|igmp-cb|pim-cb|dhcp-cb|dhcpv6-cb|dmac-miss-cb|l2-miss-cb|no-cb`	CPU to process, vFlow callback function.
`cpu-class` *`cpu-class name`*	Specify the CPU class name.
`description description-string`	Specify a vFlow description.
`if mgmt|data`	Specify the administrative service interface.
`phy-dst-port` *`phy-dst-port-number`*	Specify the packet destination port for the vFlow.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter `type` is deprecated. The option `cluster` for `scope` is deprecated. The option `meter`, for `action` is deprecated. The parameters `mirror|no mirror` and `process-mirror|no-process-mirror` added.
Version 2.2.3	The parameters `dscp-start`, `dscp-end`, `tos-start`, `tos-end`, `vlan-pri` and `ttl` added.

Version 2.2.5	The parameters `set-dscp|to-ports-and-cpu|set-vlan-pri| set-dmac|set-dmac-to-port, action-set-mac-value`, and `action-to-ports-value`, added. The parameter `mirror` added. The parameter `mirror|no-mirror` changed to `process-mirror|no-process-mirror`.
Version 2.3	The parameters `set-src`, `set-dst`, `set-src-port`, and `set-dst-port` added.
Version 2.3.1	The parameter `table` added.
Version 2.4	The parameters type and stats, deprecated. The parameters, src-port-mask and dst-port-mask, added. The action, `to-port-set-nat|`, is deprecated. The parameter `log-stats` added.
Version 2.5.3	The parameter `tcp-flags` added. The fields, UDF- and enable|disable hardware flows also added.
Version 2.5.4	The parameter burst-size `auto` has added functionality. You can configure a burst-size number between 256B through 128MB.
Version 2.6.0	The parameter `table-name` added.
Version 2.6.2	The parameter `dscp-map` and `cpu-class` added.
Version 3.0.0	The parameter `dropped|no-dropped` added.
Version 5.0.0	The parameter `if mgmt|data`, added.
Version 5.1.0	The parameter `packet-res` added.
Version 5.2.0	The parameters `src-port-end` and `dst-port-end` added
Version 6.0.0	The parameter `vrf` added.
Version 6.0.1	The parameters `src-vpg and dst-vpg` added.

Version 6.1.0	The parameters `bd`, `inner-vlan`, `inner-vlan-pri`, `internal-pri`, `dst-vpg-1`, `dst-vpg-2`, `transparency`, `flow-cb` added.
Version 7.0.0	The option `strip-outer-vlan` added to parameter `action`.

Usage Each fabric, cluster, standalone switch, or virtual network can track application flow statistics. This command initiates flow statistics capture for Layer 2 Ethernet or Layer 3 Internet Protocol (IP) packet traffic that matches defined characteristics.

Examples

- This example shows how to modify the flow statistics capture for a flow named flow3 to specify that a duplicate of all matching traffic be forwarded to the switch controller for further analysis.

```
CLI (network-admin@switch) > vflow-modify name flow3 action copy-to-cpu
```

- This example, shows how to create a vFlow with a burst size of 12MB. This is useful because different burst-sizes can be used for different types of metered traffic. For example, if a metered application produces bursty traffic patterns, such as clicking on a Web page link redirecting you to a media-rich page, you can now configure higher burst levels than the pre-calculated default burst levels.

```
CLI (network-admin@switch) > vflow-modify name flow1 scope local in-port 12 bw-max 5G burst-size 12M
```

vflow-show

This command is used to display information about configured vFlows.

Syntax `vflow-show`

`name` *`name-string`*	The flow name.
`scope local|fabric`	The scope for the flow.
Specify any of the following options:	
`vnet` *`vnet-name`*	The virtual network (vNET) for the flow.
`bd bridge-domain name`	The bridge domain for the vFlow.
`vlan` *`0..4095`*	The VLAN identifier for the flow. The value ranges between 0-4095.
`inner-vlan` *`0..4095`*	The inner VLAN ID of the QinQ frame.
`in-port` *`port-list`*	The ingress (input) port for the flow.
`out-port` *`port-list`*	The egress (output) port for the flow.
`ether-type ipv4|arp|wake|rarp|vlan| ipv6|lacp|mpls-uni|mpls-multi| jumbo| dot1X|aoe|qinq|lldp|macsec|ecp| ptp|fcoe|fcoe-init|qinq-old`	The EtherType for the flow.
`src-mac` *`mac-address`*	The source MAC address for the flow .
`src-mac-mask` *`mac-address`*	The source MAC address wildcard mask for the flow.
`dst-mac` *`mac-address`*	The destination MAC address for the flow.
`dst-mac-mask` *`mac-address`*	The destination MAC address wildcard mask for the flow.
`src-ip` *`ip-address`*	The source IP address for the flow.
`src-ip-mask` *`ip-address`*	The source IP address wildcard mask for the flow.
`dst-ip` *`ip-address`*	The destination IP address for the flow.
`dst-ip-mask` *`ip-address`*	The destination IP address wildcard mask for the flow.
`src-port` *`src-port-number`*	The Layer 3 protocol source port for the flow.
`src-port-end` *`src-port-end-number`*	The ending port for a range of source ports.
`src-port-mask` *`src-port-mask-number`*	The source port mask.
`dst-port` *`dst-port-number`*	The Layer 3 protocol destination port for the flow.

dst-port-end *dst-port-end-number*	The ending port for a range of destination ports.
dst-port-mask *dst-port-mask-number*	The destination port mask.
dscp-start *number*	The starting DSCP number. This is a value between 0 and 63.
dscp-end *number*	The ending DSCP number. This is a value between 0 and 63.
dscp *dscp-number*	The 6-bit Differentiated Services Code Point (DSCP) of the flow.
dscp-map dscp-map name|none	The DSCP map to apply on the flow. Please reapply if map priorities are updated.
tos-start *tos-start-number*	The starting ToS number.
tos-end *tos-end-number*	The ending ToS number.
tos *tos-number*	The Type of Service (ToS) number for the flow.
dropped|no-dropped	Specify if the vFlow matches a dropped packet or forwards the packet.
vlan-pri *number*	The priority for the VLAN. This is a value between 0 (lowest) and 7 (highest).
inner-vlan-pri *number*	The priority for the inner VLAN. This is a value between 0 (lowest) and 7 (highest).
internal-pri *0..7*	The internal priority as a value between 0 and 7.
vrf *vrf-name*	The name of the VRF.
ttl *ttl-number*	The time to live in seconds.
proto tcp|udp|icmp|igmp|ip|icmpv6	The Layer 3 protocol for the flow.
tcp-flags fin|syn|rst|push|ack|urg|ece|cwr	The TCP flags to filter a vFlow.
flow-class *vflow-class name*	The vflow class.
ingress-tunnel *tunnel-name*	The name of the ingress tunnel.
egress-tunnel tunnel name	The name of the egress tunnel.
bw-min *bw-min-number*	The minimum bandwidth in Gbps for the vflow. This is a range from 0 to 40Gbps.
bw-max *bw-max-number*	The maximum bandwidth in Gbps for the vflow. This is a range from 0 to 40Gbps.
burst-size auto	The burst size. This parameter auto-calculates the burst size based on the maximum bandwidth settings for the vFlow. You can also configure a burst-size number between 256B through 128MB.
vrouter-name *vrouter name*	The vRouter name if you are configuring Policy-based

	Routing (PBR). You should not use this parameter unless you are configuring PBR.
`precedence default|0..15`	The traffic priority for the flow (between 0 and 15)
`action none|drop|to-port|to-cpu|trap| copy-to-cpu|copy-to-port|check| setvlan|add-outer-vlan|set-tpid|to-port-set-vlan|tunnel-pkt|set-tunnel-id|to-span|cpu-rx|cpu-rx-tx|set-metadata|set-dscp|decap|set-dmac|to-next-hop-ip|set-dmac-to-port|to-ports-and-cpu|set-vlan-pri|tcp-seq-offset| tcp-ack-offset|l3-to-cpu-switch|set-smac|drop-cancel-trap|to-ecmp-group| redirect-to-vrouter|to-vp|set-svp| strip-outer-vlan|cancel-switch-to-cpu`	The forwarding action to apply to the flow.
`action-value` *`number`*	An optional value argument for the forwarding action above (for example, a switch port number to forward the packet to). This is a value between 1 and 64.
`action-set-mac-value` *`mac-address`*	MAC address to apply the action.
`action-set-svp-value` *`svp-value`*	The SVP value.
`action-to-next-hop-ip-value ip-address`	The next-hop IP address for packet redirection.
`action-to-ecmp-group-value static-ecmp-group group-name`	The ECMP group for packet redirection.
`action-to-ports-value` *`port-list`*	Port list to apply the action.
`mirror` *`mirror-name`*	The name of the mirror configuration.
`process-mirror|no-process-mirror`	Process mirrored traffic for the vFlow.
`packet-log-max` *`packet-log-max-number`*	The maximum packet count for log rotation in the flow.
`stats-interval` *`seconds`*	The interval to update packet statistics for the log (in seconds). This is a value between 1 and 604800.
`dur` *`dur-number`*	The minimum duration required for the flow to be captured (in seconds).
`metadata` *`metadata-number`*	Metadata number for the flow.
`transient|no-transient`	Capture transient flows.
`vxlan` *`vxlan-name`*	The name of the VXLAN.
`vxlan-ether-type ipv4|arp|wake|rarp| vlan|ipv6|lacp|mpls-uni|mpls-multi| jumbo|dot1X|aoe|qinq|lldp| macsec|ecp|ptp|fcoe|fcoe-init|qinq-old`	The type of VXLAN.
`from-tunnel-decap|no-from-tunnel-decap`	Include tunnel terminated VXLAN packets.

`vxlan-proto tcp|udp|icmp|igmp|ip|icmpv6`	The protocol type for the VXLAN.
`stp-state Disabled|Discarding|Learning|Forwarding packet-res l2-unicast|l2-unknown-unicast|l2-multicast|l2-unknown-multicast|l2-broadcast`	The STP state.
`packet-res l2-unicast|l2-unknown-unicast|l2-multicast|l2-unknown-multicast|l2-broadcast`	The packet resolution in ASIC.
`fwding-type vlan|vxlan|vle`	The ASIC forwarding type.
`set-src` *`ip-address`*	The source IP address of IPv4 packets.
`set-dst` *`ip-address`*	The destination IP address of IPv4 packets.
`set-src-port` *`set-src-port-number`*	The source port of IPv4 packets.
`set-dst-port` *`set-dst-port-number`*	The destination port of IPv4 packets.
`src-vpg vpg-name`	The source vPG name for Network Packet Broker (NPB) configuration.
`dst-vpg vpg-name`	The destination vPG name for Network Packet Broker (NPB) configuration.
`bidir-vpg-1 vpg name`	The name of the first bidirectional vPG for NPB configuration.
`bidir-vpg-2 vpg name`	The name of the second bidirectional vPG for NPB configuration.
`transparency enable|disable`	Transparency for protocol packets
`udf-name1 udf name`	The User-Defined Field name.
`udf-data1 udf-data1-number`	The User-Defined Field data.
`udf-data1-mask udf-data1-mask-number`	The mask for the User-Defined Field data.
`udf-name2 udf name`	The User-Defined Field name.
`udf-data2 udf-data2-number`	The User-Defined Field data.
`udf-data2-mask udf-data2-mask-number`	The mask for the User-Defined Field data.
`udf-name3 udf name`	The User-Defined Field name.
`udf-data3 udf-data3-number`	The User-Defined Field data.
`udf-data3-mask udf-data3-mask-number`	The mask for the User-Defined Field data.
`enable|no-enable`	Enable or disable flows in hardware.
`table-name` *`vflow-table name`*	Table name from the following list: • Egress-Table-1-0

	• System-L1-L4-Tun-1-0 • System-VCAP-table-1-0 • VCAP-IPv6-table-1-0 The following actions are supported for this parameter: • InnerVlan • OuterVlan • Dscp • Vxlan • Drop • VlanPri
`flow-cb default-cb|arp-cb|bcast-cb|igmp-cb|pim-cb|dhcp-cb|dhcpv6-cb|dmac-miss-cb|l2-miss-cb|no-cb`	CPU to process, vFlow callback function
`cpu-class` *`cpu-class name`*	The CPU class name.
`description description-string`	The vFlow description.
`if mgmt|data`	The administrative service interface.
`phy-dst-port` *`phy-dst-port-number`*	Specify the packet destination port for the vFlow.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter `type` is deprecated. The option `cluster` for `scope` is deprecated. The option `meter`, for `action` is deprecated. The parameters `mirror|no mirror` and `process-mirror|no-process-mirror` added.
Version 2.2.3	The parameters, `dscp-start`, `dscp-end`, `tos-start`, `tos-end`, `vlan-pri` and `ttl` added.
Version 2.2.5	The parameters, `set-dscp|to-ports-and-cpu|set-vlan-pri| set-dmac|set-dmac-to-port, action-set-mac-value`, and `action-to-ports-value`, added. The parameter, `mirror`, added. The parameter, `mirror|no-mirror` changed to `process-mirror|no-process-mirror`.

Version 2.3	The parameters, `set-src`, `set-dst`, `set-src-port`, and `set-dst-port`, added.
Version 2.3.1	The parameter, `table`, added.
Version 2.4	The parameter, type and stats, deprecated. The parameters, src-port-mask and dst-port-mask, added. The action, `to-port-set-nat|`, is deprecated. The parameter, `log-stats` added.
Version 2.5.3	The parameter, `tcp-flags`, added. The fields, UDF- and enable|disable hardware flows also added.
Version 2.5.4	The parameter, burst-size `auto`, has added functionality. You can configure a burst-size number between 256B through 128MB.
Version 2.6.0	The parameter `table-name` added.
Version 2.6.2	The parameter `dscp-map` and `cpu-class` added.
Version 3.0.0	The parameter `dropped|no-dropped` added.
Version 5.0.0	The parameter `if mgmt|data` added.
Version 5.1.0	The parameter `packet-res` added.
Version 5.2.0	The parameters `src-port-end` and `dst-port-end` added
Version 6.0.0	The parameter `vrf` added.
Version 6.0.1	The parameters `src-vpg`, `dst-vpg` added.
Version 6.1.0	The parameters `bd`, `inner-vlan`, `inner-vlan-pri`, `internal-pri`, `dst-vpg-1`, `dst-vpg-2`, `transparency`, `flow-cb`, `phy-dst-port` added.
Version 7.0.0	The option `strip-outer-vlan` added to parameter `action`.

Usage Each fabric, cluster, standalone switch, or virtual network can track application flow statistics. This

command displays information about vflows configured on the switch.

Examples To display vFlow information, use the following command:

```
CLI (network-admin@switch) > vflow-show layout vertical
switch:                        spine1
name:                          test_pbr
scope:                         local
type:                          pbr
in-port:                       10
src-ip:                        192.168.1.1/255.255.255.0
burst-size:                    auto
vrouter-name:                  vr1
precedence:                    default
action:                        to-next-hop-ip
action-to-next-hop-ip-value:    192.168.10.10
enable:                        enable
table-name:                     System-L3-L4-PBR-1-0
```

vflow-snoop

This command is used to display the packet headers of flows directed to the switch CPU.

Syntax `vflow-snoop`

`name` *`name-string`*	Specify the flow name.
`scope local|fabric`	Specify the scope for the flow.
Specify any of the following options:	
`vnet` *`vnet-name`*	Specify the virtual network (vNET) for the flow
`bd bridge-domain name`	Specify the bridge domain for the vFlow.
`vlan` *`0..4095`*	Specify the VLAN identifier for the flow. The value ranges between 0-4095.
`inner-vlan` *`0..4095`*	Specify the inner VLAN ID of the QinQ frame.
`in-port` *`port-list`*	Specify the ingress (input) port for the flow.
`out-port` *`port-list`*	Specify the egress (output) port for the flow.
`ether-type ipv4|arp|wake|rarp|vlan| ipv6|lacp|mpls-uni|mpls-multi| jumbo| dot1X|aoe|qinq|lldp|macsec|ecp| ptp|fcoe|fcoe-init|qinq-old`	Specify the EtherType for the flow.
`src-mac` *`mac-address`*	Specify the source MAC address for the flow .
`src-mac-mask` *`mac-address`*	Specify the source MAC address wildcard mask for the flow.
`dst-mac` *`mac-address`*	Specify the destination MAC address for the flow.
`dst-mac-mask` *`mac-address`*	Specify the destination MAC address wildcard mask for the flow.
`src-ip` *`ip-address`*	Specify the source IP address for the flow.
`src-ip-mask` *`ip-address`*	Specify the source IP address wildcard mask for the flow.
`dst-ip` *`ip-address`*	Specify the destination IP address for the flow.
`dst-ip-mask` *`ip-address`*	Specify the destination IP address wildcard mask for the flow.
`src-port` *`src-port-number`*	Specify the Layer 3 protocol source port for the flow.
`src-port-end` *`src-port-end-number`*	Specify the ending port for a range of source ports.
`src-port-mask` *`src-port-mask-number`*	Specify the source port mask.
`dst-port` *`dst-port-number`*	Specify the Layer 3 protocol destination port for the flow.

dst-port-end *dst-port-end-number*	Specify the ending port for a range of destination ports.
dst-port-mask *dst-port-mask-number*	Specify the destination port mask.
dscp-start *number*	Specify the starting DSCP number. This is a value between 0 and 63.
dscp-end *number*	Specify the ending DSCP number. This is a value between 0 and 63.
dscp *dscp-number*	Specify the 6-bit Differentiated Services Code Point (DSCP) of the flow.
dscp-map dscp-map name|none	Specify the DSCP map to apply on the flow. Please reapply if map priorities are updated.
tos-start *tos-start-number*	Specify the starting ToS number.
tos-end *tos-end-number*	Specify the ending ToS number.
tos *tos-number*	Specify the Type of Service (ToS) number for the flow.
dropped|no-dropped	Specify if the vFlow matches a dropped packet or forwards the packet.
vlan-pri *number*	Specify the priority for the VLAN. This is a value between 0 (lowest) and 7 (highest).
inner-vlan-pri *number*	Specify the priority for the inner VLAN. This is a value between 0 (lowest) and 7 (highest).
internal-pri *0..7*	Specify the internal priority as a value between 0 and 7.
vrf *vrf-name*	Specify the name of the VRF.
ttl *ttl-number*	Specify the time to live in seconds.
proto tcp|udp|icmp|igmp|ip|icmpv6	Specify the Layer 3 protocol for the flow.
tcp-flags fin|syn|rst|push|ack|urg|ece|cwr	Specify the TCP flags to filter a vFlow.
flow-class *vflow-class name*	Specify the vflow class.
ingress-tunnel *tunnel-name*	Specify the name of the ingress tunnel.
egress-tunnel tunnel name	Specify the name of the egress tunnel.
bw-min *bw-min-number*	Specify the minimum bandwidth in Gbps for the vflow. This is a range from 0 to 40Gbps.
bw-max *bw-max-number*	Specify the maximum bandwidth in Gbps for the vflow. This is a range from 0 to 40Gbps.
burst-size auto	Specify the burst size. This parameter auto-calculates the burst size based on the maximum bandwidth settings for the vFlow. You can also configure a burst-size number between 256B through 128MB.

vrouter-name *vrouter name*	Specify the vRouter name if you are configuring Policy-based Routing (PBR). You should not use this parameter unless you are configuring PBR.
precedence default|0..15	Specify the traffic priority for the flow (between 0 and 15)
action none|drop|to-port|to-cpu|trap|copy-to-cpu|copy-to-port|check|setvlan|add-outer-vlan|set-tpid|to-port-set-vlan|tunnel-pkt|set-tunnel-id|to-span|cpu-rx|cpu-rx-tx|set-metadata|set-dscp|decap|set-dmac|to-next-hop-ip|set-dmac-to-port|to-ports-and-cpu|set-vlan-pri|tcp-seq-offset|tcp-ack-offset|l3-to-cpu-switch|set-smac|drop-cancel-trap|to-ecmp-group|redirect-to-vrouter|to-vp|set-svp|strip-outer-vlan|cancel-switch-to-cpu	Specify the forwarding action to apply to the flow.
action-value *number*	Specify an optional value argument for the forwarding action above (for example, a switch port number to forward the packet to). This is a value between 1 and 64.
action-set-mac-value *mac-address*	Specify a MAC address to apply the action.
action-set-svp-value *svp-value*	Specify the SVP value.
action-to-next-hop-ip-value ip-address	Specify the next-hop IP address for packet redirection.
action-to-ecmp-group-value static-ecmp-group group-name	Specify the ECMP group for packet redirection.
action-to-ports-value *port-list*	Specify a port list to apply the action.
mirror *mirror-name*	Specify the name of the mirror configuration.
process-mirror|no-process-mirror	Specify to process mirrored traffic for the vflow.
packet-log-max *packet-log-max-number*	Specify the maximum packet count for log rotation in the flow.
log-stats|no-log-stats	Specify if you want to log statistics or not.
stats-interval *seconds*	Specify the interval to update packet statistics for the log (in seconds). This is a value between 1 and 604800.
dur *dur-number*	Specify the minimum duration required for the flow to be captured (in seconds).
metadata *metadata-number*	Specify a metadata number for the flow.
transient|no-transient	Specify whether to capture transient flows.
vxlan *vxlan-name*	Specify the name of the VXLAN.

vxlan-ether-type ipv4|arp|wake|rarp|vlan|ipv6|lacp|mpls-uni|mpls-multi| jumbo|dot1X|aoe|qinq|lldp|macsec|ecp|ptp|fcoe|fcoe-init|qinq-old	Specify the type of VXLAN.
from-tunnel-decap|no-from-tunnel-decap	Specify if you want to include tunnel terminated VXLAN packets.
vxlan-proto tcp|udp|icmp|igmp|ip|icmpv6	Specify the protocol type for the VXLAN.
stp-state Disabled|Discarding|Learning|Forwarding packet-res l2-unicast|l2-unknown-unicast|l2-multicast|l2-unknown-multicast|l2-broadcast	Specify the STP state.
packet-res l2-unicast|l2-unknown-unicast|l2-multicast|l2-unknown-multicast|l2-broadcast	Specify the packet resolution in ASIC.
fwding-type vlan|vxlan|vle	Specify the ASIC forwarding type.
set-src *ip-address*	Specify the source IP address of IPv4 packets.
set-dst *ip-address*	Specify the destination IP address of IPv4 packets.
set-src-port *set-src-port-number*	Specify the source port of IPv4 packets.
set-dst-port *set-dst-port-number*	Specify the destination port of IPv4 packets.
src-vpg vpg-name	Specify the source vPG name for Network Packet Broker (NPB) configuration.
dst-vpg vpg-name	Specify the destination vPG name for Network Packet Broker (NPB) configuration.
bidir-vpg-1 vpg name	Specify the name of the first bidirectional vPG for NPB configuration.
bidir-vpg-2 vpg name	Specify the name of the second bidirectional vPG for NPB configuration.
transparency enable|disable	Specify if you want to enable or disable protocol transparency.
udf-name1 udf name	Specify the User-Defined Field name.
udf-data1 udf-data1-number	Specify the User-Defined Field data.
udf-data1-mask udf-data1-mask-number	Specify the mask for the User-Defined Field data.
udf-name2 udf name	Specify the User-Defined Field name.
udf-data2 udf-data2-number	Specify the User-Defined Field data.
udf-data2-mask udf-data2-mask-number	Specify the mask for the User-Defined Field data.
udf-name3 udf name	Specify the User-Defined Field name.

`udf-data3 udf-data3-number`	Specify the User-Defined Field data.
`udf-data3-mask udf-data3-mask-number`	Specify the mask for the User-Defined Field data.
`enable|no-enable`	Specify if you want to enable or disable flows in hardware.
`table-name` *`vflow-table name`*	Specify a table name from the following list: • Egress-Table-1-0 • System-L1-L4-Tun-1-0 • System-VCAP-table-1-0 • VCAP-IPv6-table-1-0 The following actions are supported for this parameter: • InnerVlan • OuterVlan • Dscp • Vxlan • Drop • VlanPri
`flow-cb default-cb|arp-cb|bcast-cb|igmp-cb|pim-cb|dhcp-cb|dhcpv6-cb|dmac-miss-cb|l2-miss-cb|no-cb`	CPU to process, vFlow callback function
`cpu-class` *`cpu-class name`*	Specify the CPU class name.
`description description-string`	Specify a vFlow description.
`if mgmt|data`	Specify the administrative service interface.
`phy-dst-port` *`phy-dst-port-number`*	Packet destination port for the vFlow.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, **type**, is deprecated. The option, **cluster**, for **scope** is deprecated. The option, **meter**, for **action** is deprecated. The parameters, **mirror|no mirror**, and **process-mirror|no-process-mirror** added.
Version 2.2.3	The parameters, `dscp-start`, `dscp-end`, `tos-start`, `tos-end`, `vlan-pri` and `ttl` added.

Version 2.2.5	The parameters, set-dscp|to-ports-and-cpu|set-vlan-pri| set-dmac|set-dmac-to-port, action-set-mac-value, and action-to-ports-value, added. The parameter, mirror, added. The parameter, mirror|no-mirror changed to process-mirror|no-process-mirror.
Version 2.3	The parameters, set-src, set-dst, set-src-port, and set-dst-port, added.
Version 2.3.1	The parameter, table, added.
Version 2.4	The parameter, type and stats, deprecated. The parameters, src-port-mask and dst-port-mask, added. The action, to-port-set-nat|, is deprecated. The parameter, log-stats added.
Version 2.5.3	The parameter, tcp-flags, added. The fields, UDF- and enable|disable hardware flows also added.
Version 2.5.4	The parameter, burst-size auto, has added functionality. You can configure a burst-size number between 256B through 128MB.
Version 2.6.0	The parameter table-name added.
Version 2.6.2	The parameter dscp-map and cpu-class added.
Version 3.0.0	The parameter dropped|no-dropped added.
Version 5.0.0	The parameter if mgmt|data added.
Version 5.1.0	The parameter packet-res added.
Version 5.2.0	The parameters src-port-end and dst-port-end added
Version 6.0.0	The parameter vrf added.
Version 6.0.1	The parameters src-vpg, dst-vpg added.
Version 6.1.0	The parameters bd, inner-vlan, inner-

	vlan-pri, internal-pri, dst-vpg-1, dst-vpg-2, transparency, flow-cb, phy-dst-port added.
Version 7.0.0	The option strip-outer-vlan added to parameter action.

Usage Each fabric, cluster, standalone switch, or virtual network can track application flow statistics. This command displays a running output of headers as they are directed to the switch CPU based on flow definitions specified for Layer 2 Ethernet or Layer 3 Internet Protocol (IP) packet traffic. The display output is stopped by pressing Control-C in the CLI.

Examples This example displays the packet headers as they are directed to the switch CPU based on one or several flow definitions created with the command vflow-create and the action set to copy-to-cpu:

```
CLI (network-admin@switch) > vflow-snoop

switch: 471aac, flow: 40, port: 25, size: 64
smac: 02:08:20:17:26:77, dmac: 1e:1e:1e:ac:f3:62, vlan: 55, etype: arp
switch: 471aac, flow: 40, port: 13, size: 68
smac: 00:0c:fc:00:b9:6e, dmac: ff:ff:ff:ff:ff:ff, vlan: 1, etype: arp
switch: 471aac, flow: 40, port: 15, size: 68
smac: 00:0c:fc:00:b6:71, dmac: ff:ff:ff:ff:ff:ff, vlan: 1, etype: arp
```

vflow-mgmt-show

This command is used to display the management flow details for the configured vFlows.

Syntax `vflow-mgmt-show`

`name` *`name-string`*	The flow name.
`scope local|fabric`	The scope for the flow.
Specify any of the following options:	
`vnet` *`vnet-name`*	The virtual network (vNET) for the flow.
`bd bridge-domain name`	The bridge domain for the vFlow.
`vlan` *`0..4095`*	The VLAN identifier for the flow. The value ranges between 0-4095.
`inner-vlan` *`0..4095`*	The inner VLAN ID of the QinQ frame.
`in-port` *`port-list`*	The ingress (input) port for the flow.
`out-port` *`port-list`*	The egress (output) port for the flow.
`ether-type ipv4|arp|wake|rarp|vlan| ipv6|lacp|mpls-uni|mpls-multi| jumbo| dot1X|aoe|qinq|lldp|macsec|ecp| ptp|fcoe|fcoe-init|qinq-old`	The EtherType for the flow.
`src-mac` *`mac-address`*	The source MAC address for the flow .
`src-mac-mask` *`mac-address`*	The source MAC address wildcard mask for the flow.
`dst-mac` *`mac-address`*	The destination MAC address for the flow.
`dst-mac-mask` *`mac-address`*	The destination MAC address wildcard mask for the flow.
`src-ip` *`ip-address`*	The source IP address for the flow.
`src-ip-mask` *`ip-address`*	The source IP address wildcard mask for the flow.
`dst-ip` *`ip-address`*	The destination IP address for the flow.
`dst-ip-mask` *`ip-address`*	The destination IP address wildcard mask for the flow.
`src-port` *`src-port-number`*	The Layer 3 protocol source port for the flow.
`src-port-end` *`src-port-end-number`*	The ending port for a range of source ports.
`src-port-mask` *`src-port-mask-number`*	The source port mask.
`dst-port` *`dst-port-number`*	The Layer 3 protocol destination port for the flow.
`dst-port-end` *`dst-port-end-number`*	The ending port for a range of destination ports.
`dst-port-mask` *`dst-port-mask-number`*	The destination port mask.

dscp-start *number*	The starting DSCP number. This is a value between 0 and 63.
dscp-end *number*	The ending DSCP number. This is a value between 0 and 63.
dscp *dscp-number*	The 6-bit Differentiated Services Code Point (DSCP) of the flow.
dscp-map dscp-map name|none	The DSCP map to apply on the flow. Please reapply if map priorities are updated.
tos-start *tos-start-number*	The starting ToS number.
tos-end *tos-end-number*	The ending ToS number.
tos *tos-number*	The Type of Service (ToS) number for the flow.
dropped|no-dropped	Specify if the vFlow matches a dropped packet or forwards the packet.
vlan-pri *number*	The priority for the VLAN. This is a value between 0 (lowest) and 7 (highest).
inner-vlan-pri *number*	The priority for the inner VLAN. This is a value between 0 (lowest) and 7 (highest).
internal-pri *0..7*	The internal priority as a value between 0 and 7.
vrf *vrf-name*	The name of the VRF.
ttl *ttl-number*	The time to live in seconds.
proto tcp|udp|icmp|igmp|ip|icmpv6	The Layer 3 protocol for the flow.
tcp-flags fin|syn|rst|push|ack|urg|ece|cwr	The TCP flags to filter a vFlow.
flow-class *vflow-class name*	The vflow class.
ingress-tunnel *tunnel-name*	The name of the ingress tunnel.
egress-tunnel tunnel name	The name of the egress tunnel.
bw-min *bw-min-number*	The minimum bandwidth in Gbps for the vflow. This is a range from 0 to 40Gbps.
bw-max *bw-max-number*	The maximum bandwidth in Gbps for the vflow. This is a range from 0 to 40Gbps.
burst-size auto	The burst size. This parameter auto-calculates the burst size based on the maximum bandwidth settings for the vFlow. You can also configure a burst-size number between 256B through 128MB.
vrouter-name *vrouter name*	The vRouter name if you are configuring Policy-based Routing (PBR). You should not use this parameter unless you are configuring PBR.
precedence default|0..15	The traffic priority for the flow (between 0 and 15)

`action none|drop|to-port|to-cpu|trap|copy-to-cpu|copy-to-port|check|setvlan|add-outer-vlan|set-tpid|to-port-set-vlan|tunnel-pkt|set-tunnel-id|to-span|cpu-rx|cpu-rx-tx|set-metadata|set-dscp|decap|set-dmac|to-next-hop-ip|set-dmac-to-port|to-ports-and-cpu|set-vlan-pri|tcp-seq-offset|tcp-ack-offset|l3-to-cpu-switch|set-smac|drop-cancel-trap|to-ecmp-group|redirect-to-vrouter|to-vp|set-svp|strip-outer-vlan|cancel-switch-to-cpu`	The forwarding action to apply to the flow.
`action-value` *`number`*	An optional value argument for the forwarding action above (for example, a switch port number to forward the packet to). This is a value between 1 and 64.
`action-set-mac-value` *`mac-address`*	MAC address to apply the action.
`action-set-svp-value` *`svp-value`*	The SVP value.
`action-to-next-hop-ip-value ip-address`	The next-hop IP address for packet redirection.
`action-to-ecmp-group-value static-ecmp-group group-name`	The ECMP group for packet redirection.
`action-to-ports-value` *`port-list`*	Port list to apply the action.
`mirror` *`mirror-name`*	The name of the mirror configuration.
`process-mirror|no-process-mirror`	Process mirrored traffic for the vFlow.
`packet-log-max` *`packet-log-max-number`*	The maximum packet count for log rotation in the flow.
`log-stats|no-log-stats`	Log packet statistics for the flow
`stats-interval` *`seconds`*	The interval to update packet statistics for the log (in seconds). This is a value between 1 and 604800.
`dur` *`dur-number`*	The minimum duration required for the flow to be captured (in seconds).
`metadata` *`metadata-number`*	Metadata number for the flow.
`transient|no-transient`	Capture transient flows.
`vxlan` *`vxlan-name`*	The name of the VXLAN.
`vxlan-ether-type ipv4|arp|wake|rarp|vlan|ipv6|lacp|mpls-uni|mpls-multi| jumbo|dot1X|aoe|qinq|lldp|macsec|ecp|ptp|fcoe|fcoe-init|qinq-old`	The type of VXLAN.
`from-tunnel-decap|no-from-tunnel-decap`	Include tunnel terminated VXLAN packets.
`vxlan-proto tcp|udp|icmp|igmp|ip|icmpv6`	The protocol type for the VXLAN.

stp-state Disabled|Discarding|Learning|Forwarding packet-res l2-unicast|l2-unknown-unicast|l2-multicast|l2-unknown-multicast|l2-broadcast	The STP state.
packet-res l2-unicast|l2-unknown-unicast|l2-multicast|l2-unknown-multicast|l2-broadcast	The packet resolution in ASIC.
fwding-type vlan|vxlan|vle	The ASIC forwarding type.
set-src *ip-address*	The source IP address of IPv4 packets.
set-dst *ip-address*	The destination IP address of IPv4 packets.
set-src-port *set-src-port-number*	The source port of IPv4 packets.
set-dst-port *set-dst-port-number*	The destination port of IPv4 packets.
src-vpg vpg-name	The source vPG name for Network Packet Broker (NPB) configuration.
dst-vpg vpg-name	The destination vPG name for Network Packet Broker (NPB) configuration.
bidir-vpg-1 vpg name	The name of the first bidirectional vPG for NPB configuration.
bidir-vpg-2 vpg name	The name of the second bidirectional vPG for NPB configuration.
transparency enable|disable	Transparency for protocol packets
udf-name1 udf name	The User-Defined Field name.
udf-data1 udf-data1-number	The User-Defined Field data.
udf-data1-mask udf-data1-mask-number	The mask for the User-Defined Field data.
udf-name2 udf name	The User-Defined Field name.
udf-data2 udf-data2-number	The User-Defined Field data.
udf-data2-mask udf-data2-mask-number	The mask for the User-Defined Field data.
udf-name3 udf name	The User-Defined Field name.
udf-data3 udf-data3-number	The User-Defined Field data.
udf-data3-mask udf-data3-mask-number	The mask for the User-Defined Field data.
enable|no-enable	Enable or disable flows in hardware.
table-name *vflow-table name*	Table name from the following list: • Egress-Table-1-0 • System-L1-L4-Tun-1-0 • System-VCAP-table-1-0

	• VCAP-IPv6-table-1-0 The following actions are supported for this parameter: • InnerVlan • OuterVlan • Dscp • Vxlan • Drop • VlanPri
`flow-cb default-cb|arp-cb|bcast-cb|igmp-cb|pim-cb|dhcp-cb|dhcpv6-cb|dmac-miss-cb|l2-miss-cb|no-cb`	CPU to process, vFlow callback function.
`cpu-class` *`cpu-class name`*	The CPU class name.
`description description-string`	The vFlow description.
`if mgmt|data`	The administrative service interface.
`phy-dst-port` *`phy-dst-port-number`*	The packet destination port for the vFlow.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter `type` is deprecated. The option `cluster` for `scope` is deprecated. The option `meter` for `action` is deprecated. The parameters `mirror|no mirror` and `process-mirror|no-process-mirror` added.
Version 2.2.3	The parameters, `dscp-start`, `dscp-end`, `tos-start`, `tos-end`, `vlan-pri` and `ttl` added.
Version 2.2.5	The parameters, `set-dscp|to-ports-and-cpu|set-vlan-pri| set-dmac|set-dmac-to-port, action-set-mac-value`, and `action-to-ports-value`, added. The parameter, `mirror`, added. The parameter, `mirror|no-mirror` changed to `process-mirror|no-process-mirror`.
Version 2.3	The parameters, `set-src`, `set-dst`, `set-src-`

	port, and set-dst-port, added.
Version 2.3.1	The parameter, table, added.
Version 2.4	The parameter, type and stats, deprecated. The parameters, src-port-mask and dst-port-mask, added. The action, to-port-set-nat|, is deprecated. The parameter, log-stats added.
Version 2.5.3	The parameter, tcp-flags, added. The fields, UDF- and enable|disable hardware flows also added.
Version 2.5.4	The parameter, burst-size auto, has added functionality. You can configure a burst-size number between 256B through 128MB.
Version 2.6.0	The parameter table-name added.
Version 2.6.2	The parameter dscp-map and cpu-class added.
Version 3.0.0	The parameter dropped|no-dropped added.
Version 5.0.0	The parameter if mgmt|data added.
Version 5.1.0	The parameter packet-res added.
Version 5.2.0	The parameters src-port-end and dst-port-end added
Version 6.0.0	The parameter vrf added.
Version 6.0.1	The parameters src-vpg and dst-vpg added.
Version 6.1.0	The parameters inner-vlan, inner-vlan-pri, dst-vpg-1, dst-vpg-2, transparency, flow-cb, phy-dst-port added.
Version 7.0.0	The option strip-outer-vlan added to parameter action.

Usage Each fabric, cluster, standalone switch, or virtual network can track application flow statistics. This

command displays information about vFlow configured on the switch.

Examples To display the configured vflow rules from the IPTables, use the command:

```
CLI (network-admin@spine1) > vflow-mgmt-show
```

name	scope	type	src-ip	dst-port	precedence
data1	local	iptable	153.1.1.120/255.255.255.255	22	15
implicitv4_drop_tcp_22_vmgmt0	local	iptable		22	15
mgmt_ipv4	local	iptable	2.1.1.1		default
implicitv4_drop_icmp_vmgmt0	local	iptable		0	15
mgmt1_ipv6	local	iptable	2000::2/ffff:ffff:ffff:ffff::		default
mgmt_ipv6	local	iptable	2000::1/ffff:ffff:ffff:ffff::		default
implicitv6_drop_ipv6-icmp_vmgmt0	local	iptable		0	15

vflow-mgmt-stats-clear

This command displays management flow statistics for Layer 2 Ethernet or Layer 3 Internet Protocol (IP) traffic.

Syntax `vflow-mgmt-stats-show`

Specify any of the following options:	
`start-time` *`yyyy-mm-ddThh:mm:ss`*	Specify the start time of the flow using the notation yyyymm- ddThh:mm:ss.
`end-time` *`yyyy-mm-ddThh:mm:ss`*	Specify the start time of the flow using the notation yyyymm- ddThh:mm:ss
`dur` *`duration-number`*	Specify the duration of the flow (in seconds).
`interval duration: #d#h#m#s`	Specify the length of time between collection intervals.
`since-start|no-since-start`	Specify if the statistics are collected from the start of the vflow.
`older-than duration: #d#h#m#s`	Specify if the statistics are older than the stated duration.
`within-last duration: #d#h#m#s`	Specify the statistics collected within the last duration.
`name vflow` *`name`*	Specify the name of the vflow.
`Specifyvnet` *`vnet name`*	Specify the vNET.
`id`	Specify the ID assigned.
`pkts` *`pkts-number`*	Specify the total number of packets.
`bytes` *`bytes-number`*	Specify the total number of bytes.
`cpu-pkts` *`cpu-pkts-number`*	Specify the total number of CPU packets.
`cpu-bytes` *`cpu-bytes-number`*	Specify the total number of CPU bytes.

mismatches *mismatches-number*	Specify the number of mismatched packets.
drops *drops-number*	Specify the number of dropped packets.
drops-bytes *drops-bytes-number*	Specify the number of dropped bytes.
policer-drops *policer-drops-number*	Specify the number of policer dropped packets.
policer-drop-bytes *policer-drop-bytes-number*	Specify the number of policer dropped bytes.
cpu-tx-pkts *cpu-tx-pkts-number*	Specify the number of packets sent from the CPU.
cpu-tx-bytes *cpu-tx-bytes-number*	Specify the number of bytes sent from the CPU.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.4.1	The parameter, vnet, added.

Usage Each fabric, cluster, standalone switch, or virtual network can track application flow statistics. This command clears vflow statistics.

Examples This example shows how to clear vFlow management statistics:

```
CLI (network-admin@switch) > vflow-stats-clear
```

vflow-mgmt-stats-show

This command displays flow statistics for Layer 2 Ethernet or Layer 3 Internet Protocol (IP) traffic.

Syntax `vflow-mgmt-stats-show`

Specify any of the following options:

`start-time` *`yyyy-mm-ddThh:mm:ss`*	Specifies the start time of the statistic collection using the notation yyyymm-ddThh:mm:ss.
`end-time` *`yyyy-mm-ddThh:mm:ss`*	Specifies the end time of the statistic collection using the notation yyyymm-ddThh:mm:ss
`duration` *`duration-number`*	Specifies the duration of the statistic collection (in seconds).
`interval duration: #d#h#m#s`	Specifies the length of time between collection intervals.
`since-start|no-since-start`	Specifies if the statistics are collected from the start of the vflow.
`older-than duration: #d#h#m#s`	Specifies if the statistics are older than the stated duration.
`within-last duration: #d#h#m#s`	Specifies the statistics collected within the last duration.
`name vflow` *`name`*	Specifies the name of the vflow.
`vnet vnet-name`	Specifies the name of the vNET.
`id`	Specifies the ID assigned.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.

Version 2.4.1	The parameter `vnet` added.

Usage Each fabric, cluster, standalone switch, or virtual network can track application flow statistics. This command displays flow statistics.

Examples This example shows how to display flow statistics.

```
CLI (network-admin@switch) > vflow-stats-show
switch       name                 packets bytes cpu-packets cpu-bytes
pleiades24   IGMP-Flow            1.98M   130M  1.99M       123M
pleiades24   LLDP-Flow            218K    24.2M 218K        23.4M
pleiades24   Host-Agent-Discover  3.92K   251K  0           0
pleiades24   ECP                  0       0     0           0
pleiades24   Fabric-Discovery    282K     159M  273K        157M
pleiades24   SYSTEM-S            777K     60.2M 763K        56.0M
pleiades24   SYSTEM-F            719K     67.3M 711K        63.5M
pleiades24   SYSTEM-R            288K     18.0M 285K        16.7M
pleiades24   System-A            36.5M    2.28G 36.5M       2.14G
pleiades24   DHCP-client         83.6K    40.7M 37.9K       19.3M
pleiades24   DHCP-server         53.2K    23.0M 31.4K       10.5M
```

vflow-settings-modify

You modify the settings for vFlows to enable User Defined flows and VXLAN analytics.

Syntax `vflow-settings-modify`

`enable-user-defined-flow|no-enable-user-defined-flow`	Enable or disable User defined vflows.
`vxlan-analytics|no-vxlan-analytics`	Enable or disable collecting VXLAN statistics.
`inflight-vxlan-analytics|no-inflight-vxlan-analytics`	Enable or disable inflight VXLAN analytics.
`longlived-tcp-conn-stats|no-longlived-tcp-conn-stats`	Enable or disable long lived TCP connection stats.

Defaults Both settings are disabled by default.

Access Network Administrator

History

Version 2.5.3	Command introduced.
Version 2.6.2	The parameter, `inflight-vxlan-analytics`, added.
Version 5.1.0	The parameter, `long-lived-tcp-conn-stats`, added.

Usage Use this command to enable or disable user defined vFlows or VXLAN analytics.

Examples To enable VXLAN analytics, use the following syntax:

```
CLI (network-admin@switch) > vflow-settings-modify  vxlan-analytics
```

vflow-settings-show

You can display the settings for vFlows.

Syntax `vflow-settings-show`

`enable-user-defined-flow|no-enable-user-defined-flow`	Enable or disable User defined vflows.
`vxlan-analytics|no-vxlan-analytics`	Enable or disable collecting VXLAN statistics.
`inflight-vxlan-analytics|no-inflight-vxlan-analytics`	Enable or disable inflight VXLAN analytics.
`longlived-tcp-conn-stats|no-longlived-tcp-conn-stats`	Enable or disable long lived TCP connection stats.

Defaults Both settings are disabled by default.

Access Network Administrator

History

Version 2.5.3	Command introduced.
Version 2.6.2	The parameter, `inflight-vxlan-analytics`, added.
Version 5.1.0	The parameter, `long-lived-tcp-conn-stats`, added.

Usage Use this command to display information about user defined vFlows or VXLAN analytics.

Examples To display vFlow settings, use the following syntax:

```
CLI (network-admin@switch) > vflow-settings-show
```

vflow-stats-clear

This command displays flow statistics for Layer 2 Ethernet or Layer 3 Internet Protocol (IP) traffic.

Syntax `vflow-stats-show`

Specify any of the following options:	
`start-time` *`yyyy-mm-ddThh:mm:ss`*	Specify the start time of the flow using the notation yyyymm- ddThh:mm:ss.
`end-time` *`yyyy-mm-ddThh:mm:ss`*	Specify the start time of the flow using the notation yyyymm- ddThh:mm:ss
`dur` *`duration-number`*	Specify the duration of the flow (in seconds).
`interval duration: #d#h#m#s`	Specify the length of time between collection intervals.
`since-start|no-since-start`	Specify if the statistics are collected from the start of the vflow.
`older-than duration: #d#h#m#s`	Specify if the statistics are older than the stated duration.
`within-last duration: #d#h#m#s`	Specify the statistics collected within the last duration.
`name vflow` *`name`*	Specify the name of the vflow.
`Specifyvnet` *`vnet name`*	Specify the vNET.
`id`	Specify the ID assigned.
`pkts` *`pkts-number`*	Specify the total number of packets.
`bytes` *`bytes-number`*	Specify the total number of bytes.
`cpu-pkts` *`cpu-pkts-number`*	Specify the total number of CPU packets.
`cpu-bytes` *`cpu-bytes-number`*	Specify the total number of CPU bytes.

`mismatches` *`mismatches-number`*	Specify the number of mismatched packets.
`drops` *`drops-number`*	Specify the number of dropped packets.
`drops-bytes` *`drops-bytes-number`*	Specify the number of dropped bytes.
`policer-drops` *`policer-drops-number`*	Specify the number of policer dropped packets.
`policer-drop-bytes` *`policer-drop-bytes-number`*	Specify the number of policer dropped bytes.
`cpu-tx-pkts` *`cpu-tx-pkts-number`*	Specify the number of packets sent from the CPU.
`cpu-tx-bytes` *`cpu-tx-bytes-number`*	Specify the number of bytes sent from the CPU.

Defaults None.

Access CLI

History

Version 2.4.0	Command introduced.
Version 2.6.2	The parameters, `policer-drops`, `policer-drop-bytes`, `cpu-tx-pkts`, and `cpu-tx-bytes`, added.

Usage Each fabric, cluster, standalone switch, or virtual network can track application flow statistics. This command clears vflow statistics.

Examples This example shows how to clear vflow statistics:

```
CLI (network-admin@switch) > vflow-stats-clear
```

vflow-stats-show

This command displays flow statistics for Layer 2 Ethernet or Layer 3 Internet Protocol (IP) traffic.

Syntax `vflow-stats-show`

Specify any of the following options:	
`start-time` *`yyyy-mm-ddThh:mm:ss`*	Specifies the start time of the flow using the notation yyyymm- ddThh:mm:ss.
`end-time` *`yyyy-mm-ddThh:mm:ss`*	Specifies the start time of the flow using the notation yyyymm- ddThh:mm:ss
`dur` *`duration-number`*	Specifies the duration of the flow (in seconds).
`interval duration: #d#h#m#s`	Specifies the length of time between collection intervals.
`since-start|no-since-start`	Specifies if the statistics are collected from the start of the vflow.
`older-than duration: #d#h#m#s`	Specifies if the statistics are older than the stated duration.
`within-last duration: #d#h#m#s`	Specifies the statistics collected within the last duration.
`name vflow` *`name`*	Specifies the name of the vflow.
`vnet vnet-name`	Specifies the name of the vNET.
`id`	Specifies the ID assigned.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.

Version 2.4.1	The parameter `vnet` added.

Usage Each fabric, cluster, standalone switch, or virtual network can track application flow statistics. This command displays flow statistics.

Examples This example shows how to display flow statistics.

```
 CLI (network-admin@switch) > vflow-stats-show
switch       name                 packets bytes cpu-packets cpu-bytes
------       -----------          ------- ----- ----------- --------
pleiades24   IGMP-Flow            1.98M   130M  1.99M       123M
pleiades24   LLDP-Flow            218K    24.2M 218K        23.4M
pleiades24   Host-Agent-Discover  3.92K   251K  0           0
pleiades24   ECP                  0       0     0           0
pleiades24   Fabric-Discovery    282K     159M  273K        157M
pleiades24   SYSTEM-S            777K     60.2M 763K        56.0M
pleiades24   SYSTEM-F            719K     67.3M 711K        63.5M
pleiades24   SYSTEM-R            288K     18.0M 285K        16.7M
pleiades24   System-A            36.5M    2.28G 36.5M       2.14G
pleiades24   DHCP-client         83.6K    40.7M 37.9K       19.3M
pleiades24   DHCP-server         53.2K    23.0M 31.4K       10.5M
```

vflow-stats-settings-modify

This command allows you to modify the settings for collection vFlow statistics.

Syntax `vflow-stats-settings-modify`

`enable|disable`	Specify to enable or disable statistics collection.
`interval duration:`*`#d#h#m#s*	Specify the interval between statistics collection.
`disk-space` *`disk-space-number*	Specify the amount of disk space to reserve for the statistics.

Defaults None

Access CLI

History Command introduced in Version 2.1.

Usage Use this command to modify the setting for statistics collection.

Examples To modify the vFlow statistics disk size to 8G, use the following command:

```
CLI (network-admin@switch) > vflow-stats-settings-modify disk-space 8g
```

vflow-table-show

This command displays table vFlow statistics for all vFlows.

Syntax `vflow-table-show`

Specify any of the following options:

`name` *`Flow_Name`*	Displays the flow name.
`id` *`Flow_ID`*	Displays the flow identifier.
`flow-max` *`flow-max-number`*	Displays the maximum number of entries.
`flow-used` *`flow-used-number`*	Displays the number of vFlows used.
`flow-tbl-slices` *`flow-tbl-slices-number`*	Displays the total number of tables for slicing.
`capability none|set-metadata| match-metadata`	Displays the vFlow table capability.
`flow-tbl-bank` *`flow-tbl-bank-string`*	Displays the vFlow table bank.
`flow-profile system|application| ipv6|qos|pbr|egress-v6|ipv6-vcap| MAX`	Displays the vFlow profile type.

Defaults None.

Access CLI

History Command introduced in Version 2.3.1.

Usage Each fabric, cluster, standalone switch, or virtual network can track application flow statistics. This command displays flow tables.

Examples This example shows how to display flow tables.

```
CLI (network-admin@switch) > vflow-table-show
name                  flow-max-per-group flow-used flow-tbl-slices capability     flow-
profile
--------------------- ------------------ --------- --------------- --------------
------------
Egress-Table-1-0      512                0         3               match-metadata system

System-L1-L4-Tun-1-0  4096               67        4               set-metadata   system

System-VCAP-table-1-0 256                1         3               none           system

VCAP-IPv6-table-1-0   256                0         1               none           ipv6-vcap
```

vflow-table-profile-modify

This command allows you to modify vFlow IPv6 table profiles.

Syntax `vflow-table-profile-modify`

Specify any of the following options:	
`profile application|ipv6|qos|ipv6-vcap`	Specify the profile to modify.
`hw-tbl switch-main|switch-hash|npu-main|npu-hash h`	Specify the hardware table used by the vFlow.
`enable|no-enable`	Specify if you want to enable or disable the vFlow profile table.

Defaults None.

Access CLI

History

Version 2.6.0	Command introduced.
Version 3.0.0	The parameters `percentage` and `min-percentage` removed.
Version 6.1.0	The option `ipv6-vcap` added to the parameter `profile`.

Usage This command allows you to modify IPv6 vFlow table profiles.

Examples This example shows how to enable the IPv6-VCAP hardware table:

```
CLI (network-admin@switch) > vflow-table-profile-modify profile ipv6-vcap hw-tbl switch-main enable
```

vflow-table-profile-show

Display vFlow table profiles.

Syntax `vflow-table-profile-show`

`profile system|application|ipv6|qos|pbr|egress-v6|ipv6-vcap|MAX`	Displays the type of vFlow profile.
`hw-tbl switch-main|switch-hash|npu-main|npu-hash|max`	Displays the hardware table used by the vFlow profile.
`capability none|set-metadata|match-metadata`	Displays the capability assigned to the vFlow profile.
`flow-capacity` *`flow-capacity-number`*	Displays the total capacity assigned to the vFlow profile.
`flow-slices-needed` *`flow-slices-needed-number`*	Displays the number of vFlow slices needed for minimum tables.
`flow-slices-used` *`flow-slices-used-number`*	Displays the number of vFlow slices used in the table.
`actual-percent-used` *`actual-percent-used-number`*	Displays the actual percentage used by the vFlow profile.

Defaults None.

Access CLI

History

Version 2.6.0	Command introduced.
Version 3.0.0	The parameters, `percentage`, `min-percentage`, removed.
Version 6.1.0	The option `ipv6-vcap` added to the parameter `profile`.

Usage Use this command to display information about vFlow tables.

Examples To display vFlow table profiles, use the following syntax:

```
CLI (network-admin@switch) > vflow-table-profile-show
profile     hw-tbl      enable  flow-capacity flow-slices-needed flow-slices-used comment

----------- ----------- ------- ------------- ------------------ ----------------
------------------
system      switch-main enable  768           4                  7                System-L1-
```

```
L4-flows
npu-app     npu-main    disable 0            0                  0               L1-L4-flows

application switch-main disable 0            1                  0               User-
Application
qos         switch-main disable 0            1                  0               QoS

ipv6        switch-main disable 0            2                  0               IPv6

pbr         switch-main disable 0            0                  0               PBR

egress-v6   switch-main disable 0            1                  0               Egress-IPv6

ipv6-vcap   switch-main enable  256          1                  1               VCAP-IPv6
```

vflow-stats-settings-show

This command allows to display the settings for collection vFlow statistics.

Syntax `vflow-stats-settings-show`

Defaults None

Access CLI

History Command introduced in Version 2.1.

Usage Use this command to display the settings for statistics collection.

Examples To display the vFlow statistics, use the following command:

```
 CLI (network-admin@switch) > vflow-stats-settings-show
switch:     pleiades25
enable:     yes
interval:   1m
disk-space: 50M
```

VLAG Commands

vlag-create

To create a new virtual link aggregation group (VLAG), use this command.

Informational Note: Before you configure VLAGs, you must have two switches in a cluster configuration. One switch is the local switch used to specify the local port and the other is a peer switch used to specify the peer port.

A switch can only participate in one cluster.

Syntax `vlag-create`

`name` *`name-string`*	Specify the name of the VLAG.
`port` *`vlag-usable-port`*	Specify the local VLAG port.
`peer-port vlag-usable-port`	Specify the VLAG peer-port.
`mode active-standby| active-active`	Specify the mode for the VLAG. Active-standby indicates one side is active and the other is in standby mode. (Not Supported) Active-Active indicates that both sides of the VLAG are up by default.
`peer-switch` *`fabric-node-name`*	Specify the fabric name of the peer switch.
`failover-move-L2| failover-ignore-L2`	Specify the failover action as move or ignore.
`lacp-mode off|passive|active`	Specify the LACP mode.
`lacp-timeout slow|fast`	Specify the LACP timeout as slow (30 seconds) or fast (4 seconds).
`lacp-fallback bundle|individual`	Specify the LACP fallback mode as bundle or individual.
`lacp-fallback-timeout` *`seconds`*	Specify the LACP fallback timeout between 30 and 60 seconds. The default value is 50 seconds.
`lacp-port-priority` *`number`*	Specify the LACP port priority as a value between 1 and 65535.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters for `failover` and `LACP` added.
Version 2.2	The parameters for mode `lacp-mode`, `active-standby` and `active-active` added. `Local-port` changed to `port`.
Version 2.2.6	The parameter, port, deprecated. The parameters, `port vlag-usable-port name`, and `peer-port vlag-usable-port name` added.
Version 2.4.0	The parameters, `lacp-fallback` and `lacp-fallback-timeout`, added.
Version 2.5.0	The parameter, `lacp-port-priority`, added.

Usage A virtual link aggregation group (VLAG) allows links that are physically connected to two different Pluribus Networks devices to appear as a single trunk to a third device. The third device can be a switch, server, or any Ethernet device. A VLAG can provide Layer 2 multipathing, which allows you to create redundancy by increasing bandwidth, enabling multiple parallel paths between nodes and loadbalancing traffic where alternative paths exist. This command creates a new VLAG.

Examples This example shows how to create a VLAG with identifier 1 to aggregate the links connected to port 1 of both the local and peer switch.

```
CLI (network-admin@switch) > vlag-create id 1 port 1 peer-switch
a1634:b peer-port 1
```

vlag-delete

This command deletes an existing VLAG from the configuration.

Syntax `vlag-delete`

`name` *`name-string`*	Specify the VLAG name.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage A virtual link aggregation group (VLAG) allows links that are physically connected to two different Pluribus Networks devices to appear as a single trunk to a third device. The third device can be a switch, server, or any Ethernet device. A VLAG can provide Layer 2 multipathing, which allows you to create redundancy by increasing bandwidth, enabling multiple parallel paths between nodes and loadbalancing traffic where alternative paths exist. This command deletes a VLAG.

Examples To delete a VLAG with the identifier, 34, use the following command:

```
CLI (network-admin@switch) > vlag-delete 34
```

vlag-modify

To modify an existing virtual link aggregation group (VLAG), use this command.

Syntax `vlag-modify`

`name` *`name-string`*	Specify the name of the VLAG.
`port` *`vlag-usable-port`*	Specify the local VLAG port.
`peer-port vlag-usable-port`	Specify the peer VLAG port.
`mode active-standby| active-active`	Specify the mode for the VLAG. Active-standby indicates one side is active and the other is in standby mode. (Not Supported) Active-Active indicates that both sides of the VLAG are up by default.
`peer-switch` *`fabric-node-name`*	Specify the fabric name of the peer switch.
`peer-port` *`port-number`*	Specify the port number on the peer switch.
`failover-move-L2| failover-ignore-L2`	Specify the failover action as move or ignore.
`lacp-mode off|passive|active`	Specify the LACP mode.
`lacp-timeout slow|fast`	Specify the LACP timeout as slow (30 seconds) or fast (4 seconds).
`lacp-fallback bundle|individual`	Specify the LACP fallback mode as bundle or individual.
`lacp-fallback-timeout` *`seconds`*	Specify the LACP fallback timeout between 30 and 60 seconds. The default value is 50 seconds.
`lacp-port-priority` *`number`*	Specify the LACP port priority as a value between 1 and 65535.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.

Version 2.1	The parameters for `failover` and `LACP` added.
Version 2.2	The parameters for mode `lacp-mode`, `active-standby` and `active-active` added. `Local-port` changed to `port`.
Version 2.2.6	The parameter, port, deprecated. The parameters, `port vlag-usable-port name`, and `peer-port vlag-usable-port name` added.
Version 2.4.0	The parameters, `lacp-fallback` and `lacp-fallback-timeout`, added.
Version 2.5.0	The parameter, `lacp-port-priority`, added.

Usage A virtual link aggregation group (VLAG) allows links that are physically connected to two different Pluribus Networks devices to appear as a single trunk to a third device. The third device can be a switch, server, or any Ethernet device. A VLAG can provide Layer 2 multipathing, which allows you to create redundancy by increasing bandwidth, enabling multiple parallel paths between nodes and loadbalancing traffic where alternative paths exist. This command modifies an existing VLAG configuration.

Examples This example shows how to modify a VLAG named spine1-vlag to lacp-timeout fast.

```
CLI (network-admin@switch) > vlag-modify name spine1-vlag lacp-timeout
fast
```

vlag-show

This command displays current VLAG configurations on the fabric.

Syntax `vlag-show`

`id` *`vlag-id`*	Specifies the VLAG identifier.
`name` *`name-string`*	Specifies the name of the VLAG.
`cluster` *`cluster-name`*	Specifies the name of the cluster.
`mode active-standby| active-active`	Specifies the mode for the VLAG. Active-standby indicates one side is active and the other is in standby mode. Active-Active indicates that both sides of the VLAG are up by default.
`failover-move-L2|failover-ignore-L2`	Specifies the behavior in the event of a failover.
`status peer-down|normal`	Specifies the status of the VLAG.
`local-state enabled|up|coming-up`	Specifies the local state of the VLAG.
`peer-state enabled|up|coming-up`	Specifies the peer state of the VLAG.
`lacp-mode off|passive|active`	Specifies the LACP mode.
`lacp-timeout slow|fast`	Specifies the LACP timeout.
`lacp-key` *`lacp-key-number`*	Specifies the generated LACP key.
`lacp-system-id` *`lacp-system-id-number`*	Specifies the LACP system ID.
`lacp-fallback bundle|individual`	Specifies the LACP fallback mode as bundle or individual.
`lacp-fallback-timeout` *`seconds`*	Specifies the LACP fallback timeout between 30 and 60 seconds. The default value is 50 seconds.

`lacp-individual` *`port-list`*	Specifies the LACP ports operating individually.
`lacp-port-priority` *`number`*	Specify the LACP port priority as a value between 1 and 65535.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters for `failover` and `LACP` added.
Version 2.2	The parameters for mode `lacp-mode`, `active-standby` and `active-active` added. `Local-port` changed to `port`.
Version 2.2.6	The parameter, port, deprecated. The parameters, `port vlag-usable-port name`, and `peer-port vlag-usable-port name` added.
Version 2.4.0	The parameters, `lacp-fallback` and `lacp-fallback-timeout`, added.
Version 2.5.0	The parameter, `lacp-port-priority`, added.

Usage A virtual link aggregation group (VLAG) allows links that are physically connected to two different Pluribus Networks devices to appear as a single trunk to a third device. The third device can be a switch, server, or any Ethernet device. A VLAG can provide Layer 2 multi-pathing, which allows you to create redundancy by increasing bandwidth, enabling multiple parallel paths between nodes and load-balancing traffic where alternative paths exist.

Examples To display all VLAGs, use the following command:

```
CLI (network-admin@switch) > vlag-show format all layout vertical
id:               a000030:0
name:             fh2
cluster:          pubdev
mode:             active-active
switch:           pubdev01
port:             55
peer-switch:      pubdev02
peer-port:        55
failover-move-L2: no
status:           normal
local-state:      enabled
```

```
lacp-mode:         off
lacp-timeout:      slow
lacp-key:          13811
lacp-system-id:    110013777969294
```

vlag-stats-show

This command is used to display information about VLAG statistics.

Syntax `vlag-stats-show`

Specify any of the following options:	
`time date/time: yyyy-mm-ddThh:mm:ss`	Specifies a time for the packet count statistics using the timestamp format YYYY-MM-DDTHH:MM:SS, where: • YYYY specifies the 4 digit calendar year; • MM specifies the 2 digit month of the year; • DD specifies the 2 digit day of the month; • HH specifies the 2 digit time of the day (24H notation); • MM specifies the 2 digit minute of the hour; SS specifies the 2 digit second of the minute
`start-time` *`start-time`*	Specifies a start time for the packet count statistics using the timestamp format YYYY-MM-DDTHH:MM:SS, where: • YYYY specifies the 4 digit calendar year; • MM specifies the 2 digit month of the year; • DD specifies the 2 digit day of the month; • HH specifies the 2 digit time of the day (24H notation); • MM specifies the 2 digit minute of the hour; • SS specifies the 2 digit second of the minute.
`end-time` *`end-time`*	Specifies an end time for the packet count statistics using the timestamp format YYYY-MM-DDTHH:MM:SS, where: • YYYY specifies the 4 digit calendar year; • MM specifies the 2 digit month of the year; • DD specifies the 2 digit day of the month; • HH specifies the 2 digit time of the day (24H notation);

	• MM specifies the 2 digit minute of the hour; • SS specifies the 2 digit second of the minute.
duration *duration*	Specifies the duration in seconds.
interval duration: #d#h#m#s	Specifies the interval between statistics collection.
since-start| no-since-start	Specifies if the statistics are collected from the start of collecting statistics.
older-than duration: #d#h#m#s	Specifies if the statistics are older than the duration in days, hours, minutes, and seconds.
within-last duration: #d#h#m#s	Specifies if the statistics are within the duration in days, hours, minutes, and seconds.
vlag_name *name-string*	Specifies the name of the VLAG.
port *port-list*	Specifies one or more switch network data port numbers. The port number must be in the range of 1 to 64. Multiple ports can be specified as a comma-separated list of numbers or a range (-).
counter *counter-number*	Specifies the counter number.
ibytes ibytes-number	Specifies the incoming number of bytes.
ibits *ibits-number*	Displays the number of incoming bits.
iUpkts *iUpkts-number*	Specifies the number of incoming unicast packets.
iBpkts *iBpkts-number*	Specifies the number of incoming broadcast packets.
iMpkts *iMpkts-number*	Specifies the number of incoming multicast packets.
iPauseFs *iPauseFs-number*	Specifies the number of incoming pause frames.
iCongDrops *iCongDrops-number*	Specifies the number of incoming packets

	dropped due to congestion.
idiscards *idiscards-number*	Specifies the number of incoming packets discarded.
ierrs *ierrs-number*	Specifies the number of incoming errors.
obytes *obytes-number*	Specifies the number of outgoing bytes.
obits *obits-number*	Displays the number of outgoing bits.
oUpkts *oUpkts-number*	Specifies the number of outgoing unicast packets.
oBpkts *oBpkts-number*	Specifies the number of outgoing broadcast packets.
oMpkts *oMpkts-number*	Specifies the number of outgoing multicast packets.
oPauseFs *oPauseFs-number*	Specifies the number of outgoing pause frames.
oCongDrops *oCongDrops*-number	Specifies the number of outgoing packets dropped due to congestion.
odiscards *odiscards-number*	Specifies the number of outgoing discarded packets.
oerrs *oerrs-number*	Specifies the number of outgoing errors.
mtu-errs *mtu-errs-number*	Specifies the number of MTU errors.
HER-packets *HER-pts-number*	Specifies the number of Head End Replicated (HER) packets.
HER-bytes *HER-bytes-number*	Specifies the number of Head End Replicated (HER) bytes.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to display statistics about a VLAG configuration.

Examples To display statistics for a VLAG configuration, use the following syntax:

```
CLI (network-admin@switch) > vlag-stats-show
```

vlag-stats-clear

This command is used to clear collected statistics from a VLAG configuration.

Syntax `vlag-stats-clear`

`time date/time: yyyy-mm-ddTHH:mm:ss`	Display by date and time.
`start-time date/time: yyyy-mm-ddTHH:mm:s`	Display by start date and time.
`end-time date/time: yyyy-mm-ddTHH:mm:ss`	Display by end date and time.
`duration duration: #d#h#m#s`	Display by duration.
`interval duration: #d#h#m#s`	Display by interval.
`since-start`	Specify a start time for the statistics.
`older-than duration: #d#h#m#s`	Display statistics older than a specific date.
`within-last duration: #d#h#m#s`	Display statistics within a specific duration.
`tunnel-name` *`tunnel-name`*	Display by tunnel name.
`counter` *`counter-number`*	Displays the number of counters.
`ibytes` *`ibytes-number`*	Displays the number of incoming bytes.
`ibits` *`ibits-number`*	Displays the number of incoming bits.
`iUpkts` *`iUpkts-number`*	Displays the number of incoming Unicast packets.
`iBpkts` *`iBpkts-number`*	Displays the number of incoming Broadcast packets.
`iMpkts` *`iMpkts-number`*	Displays the number of incoming Multicast packets.
`iPauseFs` *`iPauseFs-number`*	Displays the number of incoming Pause frames.
`iCongDrops iCongDrops-number`	Displays the number of incoming packets dropped due to congestion.
`ierrs` *`errs-number`*	Displays the number of incoming packets with errors.
`obytes` *`obytes-number`*	Displays the number of outgoing bytes.
`obits` *`obits-number`*	Displays the number of outgoing bits.
`oUpkts` *`oUpkts-number`*	Displays the number of outgoing Unicast packets.
`oBpkts` *`oBpkts-number`*	Displays the number of outgoing Broadcast packets.
`oMpkts` *`oMpkts-number`*	Displays the number of outgoing Multicast packets.
`oPauseFs` *`oPauseFs-number`*	Displays the number of outgoing Pause frames.
`oCongDrops oCongDrops-number`	Displays the number of outgoing packets dropped due

	to congestion.
`oerrs` *`oerrs-number`*	Displays the number of outgoing packets with errors.
`mtu-errs` *`mtu-errs-number`*	Displays the number of MTU errors.
`HER-pkts HER-pkts-number`	Displays the number of head-end replicated packets.
`HER-bytes` *`HER-bytes-number`*	Displays the number of head-end replicated bytes.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to clear statistics about a VLAG configuration.

Examples To clear statistics for a VLAG configuration, use the following syntax:

```
CLI (network-admin@switch) > vlag-stats-clear
```

VLAN Commands

vlan-create

This command is used to create a new VLAN on the network.

Syntax `vlan-create`

`id` *`vlan-id`*	Specify a VLAN identifier for the VLAN. This is a value between 2 and 4092.
`range` *`vlan-list`*	Specify a range of VLAN IDs.
`vnet` *`vnet-name`*	Specify the vNET assigned to this VLAN.
`vxlan` *`vxlan-id`*	Specify the VXLAN mapped to the VLAN for the tunnel.
`auto-vxlan|no-auto-vxlan`	Specify if you want to enable or disable `auto-vxlan.` Enabling this option automatically assigns a user-defined VLAN/VNI mapping to all VTEP connections in the fabric. If the `vxlan` option is not specified, the software assigns a VNI automatically.
`vxlan-mode standard|transparent`	Specify the VXLAN mode as standard or transparent.
`replicators vtep-group name|none`	Specify the replicator group.
`public-vlan` *`vlan-id`*	Specify the ID of the public VLAN.
`scope local|cluster|fabric`	Specify a scope for the VLAN.
Specify any of the following options:	
`description` *`description-string`*	Specify a description for the VLAN.
`stats|no-stats`	Specify if you want to collect statistics for a VLAN. Statistic collection is enabled by default.
`ports` *`port-list`*	Specifies the switch network data port number, list of ports, or range of ports. Port numbers must be in the range of 1 to 64.
`port-desc` *`port-desc-string`*	Specify a port description to be assigned to the VLAN.
`untagged-ports` *`untagged-port-list`*	Specifies the ports that should have untagged packets mapped to the VLAN. Untagged packets are packets that do not contain IEEE 802.1Q VLAN tags.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.2	The parameter `stats` added. The scope option `cluster` deprecated.
Version 2.3	The parameter `name` changed to `description`.
Version 2.4.1	The parameters `vxlan`, `vxlan-mode` and `public-vlan` added. The option `cluster` added.
Version 2.5.2	The parameter `vxlan-mode standard| transparent` added.
Version 2.6.2	The parameter `range` added.
Version 3.0.0	The parameter `range` deprecated. The parameter `replicators` added.
Version 6.0.0	The parameter `auto-vxlan` added.
Version 7.0.0	The parameter `port-desc` added.

Usage VLANs are used to isolate network traffic at Layer 2. Use this command to create a new VLAN.

Informational Note:

The VLAN identifiers 0 and 4095 are reserved and cannot be used per the IEEE 802.1Q standard.

The range of configurable VLAN identifiers is 2 through 4092.

Examples To create a new fabric-wide VLAN with the description, finance VLAN, and an identifier of 7, use the following command:

```
CLI (network-admin@switch) > vlan-create id 7 description finance-VLAN
scope fabric
```

vlan-delete

This command deletes an existing VLAN.

Syntax `vlan-delete`

`id` *`vlan-id`*	Specify the VLAN identifier. This is a value between 2 and 4092.
`range` *`vlan-list`*	Specify a range of VLAN IDs.
`vnet` *`vnet-name`*	Specify the vNET assigned to this VLAN.

Defaults None.

Access CLI

History .

Version 1.2	Command introduced.
Version 2.4.1	The parameter, `vnet`, added.
Version 2.6.2	The parameter, `range`, added.

Usage VLANs can be used to isolate network traffic at Layer 2. Use this command to delete an existing VLAN.

Examples To delete a VLAN with the identifier 7, use the following command:

```
CLI (network-admin@switch) > vlan-delete id 7
```

vlan-modify

This command is used to modify a VLAN or VXLAN on the network.

Syntax `vlan-modify`

`id` *`vlan-id`*	Specify a VLAN identifier for the VLAN. This is a value between 2 and 4092.
`range` *`vlan-list`*	Specify a range of VLAN IDs.
Specify any of the following options:	
`description` *`description-string`*	Specify a description for the VLAN.
`vxlan` *`vxlan-id`*	Specify the VXLAN mapped to the VLAN for the tunnel.
`replicators vtep-group name|none`	Specify the replicator group.
`vnet` *`vnet-name`*	Specify the vNET assigned to this VLAN.
`public-vlan` *`vlan-id`*	Specify the public VLAN for the vNET VLAN.

Defaults None.

Access CLI

History

Version 2.2.4	Command introduced.
Version 2.4.1	The parameter `vxlan` and `vnet` added.
Version 2.6.2	The parameter `range` added.
Version 3.0.0	The parameter `range` deprecated. The parameter `replicators` added.

Usage VLANs are used to isolate network traffic at Layer 2. Use this command to modify a VLAN.

Examples To create a modify a VLAN named finance to the name finance-2, use the following command:

```
CLI (network-admin@switch) > vlan-modify id 7 name finance-2
```

vlan-show

This command displays a list of existing VLANs or VXLANs on the switch.

Syntax `vlan-show`

`id` *`vlan-id`*	Displays the VLAN ID as a value from 2 to 4092.
`vnet` *`vnet-name`*	Displays the vNET assigned to this VLAN.
`type public|private`	Displays the VLAN type
`vxlan` *`vxlan-id`*	Displays the VXLAN ID.
`auto-vxlan|no-auto-vxlan`	Displays if `auto-vxlan` is enabled or disabled.
`vxlan-mode standard|transparent`	Displays the VXLAN mode as standard or transparent.
`hw-vpn` *`hw-vpn-number`*	Displays the hardware VPN.
`hw-mcast-group` *`hw-mcast-group-number`*	Displays the hardware multicast group.
`replicators vtep-group name|none`	Displays the replicator group.
`repl-vtep` *`ip-address`*	Displays the replicator VTEP.
`public-vlan` *`vlan-id`*	Displays the ID of the public VLAN.
`scope local|fabric`	Displays the scope of the VLAN.
`description` *`description-string`*	Displays a description for the VLAN.
`active yes|no`	Displays if the VLAN is active on the network.
`stats|no-stats`	Displays if stats collection is enabled.
`vrg` *`vrg-name`*	Displays the name of the VRG assigned to the VLAN.

ports *port-list*	Displays the list of ports assigned to the VLAN.
port-desc *port-desc-string*	Specify the port description.
untagged-ports *port-list*	Displays the list of untagged ports assigned to the VLAN.
active-edge-ports *port-list*	Displays any active edge ports for the VLAN.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.4.1	The parameters `vnet`, `type`, `vxlan`, `vxlan-mode` and `public-vlan` added. The option `cluster` added.
Version 2.6.2	The parameter `range` added.
Version 3.0.0	The parameter `range` deprecated.
Version 6.0.0	The parameter `auto-vxlan` added.
Version 7.0.0	The parameter `port-desc` added.

Usage VLANs are used to isolate network traffic at Layer 2. Use this command to modify a VLAN.

Examples To display a list of VLANs, use the following command:

```
CLI (network-admin@switch) > vlan-show layout vertical
switch:             leaf1
id:                 1
type:               public
auto-vxlan:         no
replicators:        none
scope:              local
description:        default-1
active:             yes
stats:              yes
ports:              2-72
untagged-ports:     2-69
active-edge-ports:  69-70
```

vlan-port-add

This command is used to add a port to an existing VLAN.

Syntax `vlan-port-add`

`vlan-id` *`vlan-id`*	Specifies the identifier of the VLAN in the range from 2 to 4092.
`vlan-range` *`vlan-list`*	Specify the range of VLAN IDs.
`vlan-vnet` *`vnet-name`*	Specify the name of the vNET assigned to the VLAN.
Specify the following port arguments:	
`switch` *`switch-name`*	Specify the name of the switch with the port.
`ports` *`port-list`*	Specifies the switch network data port number, list of ports, or range of ports. Port numbers must be in the range of 1 to 64.
`port-desc` *`port-desc-string`*	Specify the port description of the port that you want to add to the VLAN.
`untagged yes|no`	Specifies if the ports tag packets with the IEEE 802.1Q VLAN header or untagged packets should automatically be mapped to the VLAN. This means that both ingress and egress packets do not contain the 802.1Q VLAN header.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.4.1	The parameter `vnet` added.
Version 3.0.0	The parameter `vlan-range` added.
Version 7.0.0	The parameter `port-desc` added.

Usage VLANs can be used to isolate network traffic at Layer 2. This command adds a new port to a VLAN.

Examples To add ports 17 and 18 and set them to transmit and receive untagged Ethernet packets on VLAN 7 on vNET finance-1, use the following command:

```
CLI (network-admin@switch) > vlan-port-add vlan-id 7 vlan-vnet finance-
1 ports 17,18 untagged yes
```

vlan-port-remove

This command removes an existing port from a VLAN.

Syntax `vlan-port-remove`

`vlan-id` *`vlan-id`*	Specifies the identifier of the VLAN in the range from 2 to 4092.
`vlan-range` *`vlan-list`*	Specify the range of VLAN IDs.
`vlan-vnet` *`vnet-name`*	Specify the name of the vNET assigned to the VLAN.
Specify the following port arguments:	
`switch` *`switch-name`*	Specify the name of the switch with the port.
`ports` *`port-list`*	Specifies the switch network data port number, list of ports, or range of ports. Port numbers must be in the range of 1 to 64.
`port-desc` *`port-desc-string`*	Specify the port description of the port that you want to remove from the VLAN.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.4.1	The parameter `vnet` added.
Version 3.0.0	The parameter `vlan-range` added.
Version 7.0.0	The parameter `port-desc` added.

Usage VLANs can be used to isolate network traffic at Layer 2. This command removes a VLAN port.

Examples To remove ports 17 and 18 from VLAN 7 and vNET, finance-1, use the following command:

```
CLI (network-admin@switch) > vlan-port-remove vlan-id 7 vnet finance-1
ports 17,18
```

vlan-stats-show

This command displays traffic statistics per VLAN.

Syntax `vlan-stats-show`

`time date/time: yyyy-mm-ddThh:mm:ss`	Specifies the time for the statistics.
`start-time` *`start-time`*	Specifies the start time for the statistics display using the notation *yyyy-mm-ddThh:mm:ss*.
`end-time` *`end-time`*	Specifies the end time for the statistics display using the notation *yyyy-mm-ddThh:mm:ss.*
`duration duration: #d#h#m#s`	Specify the duration for the traffic statistics.
`interval duration: #d#h#m#s`	Specifies the time interval for the statistics display.
`since-start|no-since-start`	Specifies if the statistics are collected from the start of the VLAN.
`older-than duration: #d#h#m#s`	Specifies if the statistics are older than the stated duration.
`within-last duration: #d#h#m#s`	Specifies the statistics collected within the last duration.
`vlan` *`vlan-id`*	Specify a specific VLAN to display statistics.
`vnet` *`vnet-name`*	Specify a vNET name.
`public-vlan` *`vlan-id`*	Specify a public VLAN ID.
`vxlan` *`vxlan-id`*	Specify a VXLAN ID.
`ibits` *`ibits-number`*	Displays the number of incoming bits for the VLAN.
`obits` *`obits-number`*	Displays the number of outgoing bits for the VLAN.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.2.3	The parameter `id` and `name` deprecated. The parameters `duration` and `interval` added.
Version 2.4.1	The parameters `vnet`, `public-vlan` and `VXLAN` added.
Version 3.0.0	The parameters `ibits` and `obits` added.

Usage VLANs can be used to isolate network traffic at Layer 2. This command displays traffic statistics per VLAN.

Examples This example shows how to display traffic statistics logs between the times of 8:00 am and 8:01 am on January 31, 2019.

```
CLI (network-admin@switch) > vlan-stats-show format all layout
vertical
switch:        Leaf2
time:          10:51:02
vlan:          1
vnet:
ibytes:        36.2T
ipkts:         89.0G
idrops-bytes:  119M
idrops-pkts:   313K
obytes:        0
opkts:         0
odrops-bytes:  0
odrops-pkts:   0
switch:        Leaf2
time:          10:51:02
vlan:          35
vnet:
ibytes:        10.8K
ipkts:         154
idrops-bytes:  0
idrops-pkts:   0
obytes:        0
opkts:         0
odrops-bytes:  0
odrops-pkts:  0
switch:        Leaf1
time:          10:51:02
vlan:          1
vnet:
```

```
ibytes:        34.9T
ipkts:         84.6G
idrops-bytes:  3.03M
idrops-pkts:   5.69K
obytes:        0
opkts:         0
odrops-bytes:  0
odrops-pkts:   0
```

vlan-stats-settings-modify

This command allows you to modify the settings for collection of VLAN statistics.

Syntax `vlan-stats-settings-modify`

Specify one or more of the following options:

`enable|disable`	Specify to enable or disable statistics collection.
`interval duration:`*`#d#h#m#s`*	Specify the interval between statistics collection.
`disk-space` *`disk-space-number`*	Specify the amount of disk space to reserve for the statistics.

Defaults None.

Access CLI

History Command introduced in Version 2.1.

Usage Use this command to modify the setting for statistics collection.

Examples To modify the VLAN statistics disk size to 8G, use the following command:

```
CLI (network-admin@switch) > vlan-stats-settings-modify disk-space 8g
```

vlan-stats-settings-show

This command allows to display the settings for collecting VLAN statistics.

Syntax `vlan-stats-settings-show`

Defaults None.

Access CLI

History Command introduced in Version 2.1..

Usage Use this command to display the settings for statistics collection.

Examples To display the VLAN statistics settings, use the following command:

```
CLI (network-admin@switch) > vlan-stats-settings-show
switch:     pleiades25
enable:     yes
interval:   1m
disk-space: 50M
```

Virtual Link Extension Commands

vle-create

This command creates virtual link extension tracking. You can execute this command from any fabric node to create a virtual link extension between any two switches in the fabric and ports on the same switch.

Syntax `vle-create`

`name` *`name-string`*	Specify the name of the vLE.
`vnet` *`vnet-name`*	Specify the name of the vNET.
`node-1` *`fabric-node name`*	Specify the name of vLE node-1.
`node-2` *`fabric-node name`*	Specify the name of vLE node-2.
`node-1-port` *`node-1-port-number`*	Specify the name of the node-1 port that is part of vLE.
`node-2-port` *`node-2-port-number`*	Specify the name of the node-2 port that is part of vLE.
`node-1-port-desc` *`node-1-port-desc-string`*	Specify a description for the vLE node-1 port.
`node-2-port-desc` *`node-2-port-desc-string`*	Specify a description for the vLE node-2 port.
`[tracking|no-tracking]`	Enable or disable tracking between vLE ports.
`ports-state override|enable|disable`	Specify the port state. Use this option to enable or disable vLE ports at the same time. `override` is the default setting which means that each individual port state configuration takes precedence. `disable` means that both vLE ports get disabled together and this option takes precedence over each individual port state. `enable` means that both vLE ports get enabled and this option takes precedence over each individual port state.

Defaults None.

Access CLI

History Command introduced in Version 2.5.4.

Version 2.5.4	Command introduced.
Version 6.0.0	The parameter `ports-state` added.
Version 6.1.0	The parameter `vnet` added.
Version 7.0.0	The parameters `node-1-port-desc` and `node-2-port-desc` added.

Usage Provides a mechanism for link state tracking between two ports of two switches in the same fabric for Virtual Link Extension (vLE). When a vLE is created between two physical ports of two switches, the vLE remains up as long as both physical ports are in the state link up.

When vLE tracking is created on a trunk port, the vLE stays up as long as at least one port in the trunk is link up and the remote port is also up. When the last trunk member goes link down, the vLE is brought down. When you configure vLE tracking on a trunk port, you cannot configure tracking on individual trunk members.

vLE tracking helps achieve vLE high availability on Netvisor nodes and avoid the need on the client side to run LACP for link up/down detection.

Examples This example shows how create virtual link extension tracking between two ports of two switches with tracking enabled.

```
CLI (network-admin@switch) > vle-create name myvle node-1 myfabric
node-1-port 56 node-2 yourfabric node-2-port 66 tracking
```

vle-delete

This command deletes virtual link extension tracking. You can execute this command from any fabric node to delete a virtual link extension between any two switches in the fabric.

Syntax `vle-delete`

`name` *`name-string`*	Specify the name of the vLE to delete.

Defaults None.

Access CLI

History Command introduced in Version 2.5.4.

Usage

Provides a mechanism for link state tracking between two ports of two switches in the same fabric for Virtual Link Extension (vLE). When a vLE is created between two physical ports of two switches, the vLE remains up as long as both physical ports are in the state link up.

When vLE tracking is created on a trunk port, the vLE stays up as long as at least one port in the trunk is link up and the remote port is also up. When the last trunk member goes link down, the vLE is brought down. When you configure vLE tracking on a trunk port, you cannot configure tracking on individual trunk members.

vLE tracking helps achieve vLE high availability on Netvisor nodes and avoid the need on the client side to run LACP for link up/down detection.

Examples This example shows how to delete the vLE named myvle.

```
CLI (network-admin@switch) > vle-delete name myvle
```

vle-modify

This command enables or disables tracking between existing vLE ports.

Syntax `vle-modify`

`name` *`name-string`*	Specify the name of the vLE you want to modify.
`vnet` *`vnet-name`*	Specify the vNET name.
`tracking|no-tracking`	Enable or disable tracking between vLE ports.
`ports-state override|enable|disable`	Specify the port state. Use this option to enable or disable vLE ports at the same time. `override` is the default setting which means that each individual port state configuration takes precedence. `disable` means that both vLE ports get disabled together and this option takes precedence over each individual port state. `enable` means that both vLE ports get enabled and this option takes precedence over each individual port state.

Defaults None.

Access CLI

History

Version 2.5.4	Command introduced.
Version 6.0.0	The parameter, `ports-state`, added.
Version 6.1.0	the parameter, `vnet`, added.

Usage

Provides a mechanism for link state tracking between two ports of two switches in the same fabric for Virtual Link Extension (vLE). When a vLE is created between two physical ports of two switches, the vLE remains up as long as both physical ports are in the state link up.

When vLE tracking is created on a trunk port, the vLE stays up as long as at least one port in the trunk is link up and the remote port is also up. When the last trunk member goes link down, the vLE is brought down. When you configure vLE tracking on a trunk port, you cannot configure tracking on individual trunk

members.

vLE tracking helps achieve vLE high availability on Netvisor nodes and avoid the need on the client side to run LACP for link up/down detection.

Examples This example shows how enable tracking on an existing vLE port myvle.

```
CLI (network-admin@switch) > vle-modify name myvle tracking
```

vle-show

This command displays a virtual link extension status.

Syntax `vle-show`

`vle-name` *`name-string`*	Displays the virtual link extension
`id`	Displays the ID assigned to the vLE.
`vnet` *`vnet-name`*	Specify the vNET name.
`node-1` *`fabric-node name`*	Displays the name of vLE node 1.
`node-2` *`fabric-node name`*	Displays the name of vLE node 2.
`node-1-port` *`node-1-port-number`*	Displays the node-1 port that is part of vLE.
`node-2-port` *`node-2-port-number`*	Displays the node-2 port that is part of vLE.
`node-1-port-desc` *`node-1-port-desc-string`*	Specify a description for the vLE node 1 port.
`node-2-port-desc` *`node-2-port-desc-string`*	Specify a description for the vLE node 2 port.
`status unknown|remote-down|local-down|up|down`	Displays the vLE status.
`tracking|no-tracking`	Displays tracking status as enabled or disabled.
`ports-state enable|disable`	Displays the ports-state. `override` is the default setting which means that each individual port state configuration takes precedence. `disable` means that both vLE ports get disabled together and this option takes precedence over each individual port state. `enable` means that both vLE ports get enabled and this option takes precedence over each individual port state.
`create-time date/time:` *`yyyy-mm-ddTHH:mm:ss`*	The time at which the vLE is created.
`elapsed-time duration:` *`#d#h#m#s`*	The time elapsed since the vLE was created.

up-time duration: *#d#h#m#s*	Time since the last instance at which the vLE came online.

Defaults None.

Access CLI

History

Version 2.5.4	Command introduced.
Version 6.0.0	The parameter `ports-state` added.
Version 6.1.0	The parameters `vnet`, `create-time`, `elapsed-time` and `up-time` added.
Version 7.0.0	The parameters `node-1-port-desc` and `node-2-port-desc` added.

Usage

Provides a mechanism for link state tracking between two ports of two switches in the same fabric for Virtual Link Extension (vLE). When a vLE is created between two physical ports of two switches, the vLE remains up as long as both physical ports are in the state link up.

When vLE tracking is created on a trunk port, the vLE stays up as long as at least one port in the trunk is link up and the remote port is also up. When the last trunk member goes link down, the vLE is brought down. When you configure vLE tracking on a trunk port, you cannot configure tracking on individual trunk members.

vLE tracking helps achieve vLE high availability on Netvisor nodes and avoid the need on the client side to run LACP for link up/down detection.

Examples To display virtual link extension status, use this command:

```
CLI (network-admin@leaf-1) > vle-show format all layout vertical
 name:             vle1
 id:               900ad7:0
 vnet:             vnet1
 node-1:           leaf-1
 node-2:           leaf-2
 node-1-port:      10
 node-2-port:      17
 node-1-port-desc:
 node-2-port-desc:
 status:           up
 tracking:         enabled
 ports-state:      override
 create-time:      09:44:56
 elapsed-time:     11m37s
 up-time:          0s
```

vle-stats-show

This command is used to display vLE statistics.

Syntax `vle-stats-show`

`vle-stats-show`	Displays port statistics.
`time date/time: yyyy-mm-ddThh:mm:ss`	Specify a time for the packet count statistics using the timestamp format yyyy-mm-ddThh:mm:ss.
`start-time` *`start-time`*	Specify a start time for the packet count statistics using the timestamp format yyyy-mm-ddThh:mm:ss.
`end-time` *`end-time`*	Specify an end time for the packet count statistics using the timestamp format YYYY-MM-DDTHH:MM:SS
`duration` *`duration`*	Specify the duration in seconds.
`interval duration: #d#h#m#s`	Specify the interval between statistics collection.
`since-start|no-since-start`	Specify if the statistics are collected from the start of collecting statistics.
`older-than duration: #d#h#m#s`	Specify if the statistics are older than the duration in days, hours, minutes, and seconds.
`within-last duration: #d#h#m#s`	Specify if the statistics are within the duration in days, hours, minutes, and seconds.
`vle-name` *`vle-name-string`*	Specify the vLE name.
`description` *`description`*	Displays the vLE description.
`counter` *`counter-number`*	Displays the counter number.
`ibytes ibytes-number`	Displays the incoming number of bytes.
`ibits` *`ibits-number`*	Displays the number of incoming bits.
`iUpkts` *`iUpkts-number`*	Displays the number of incoming unicast packets.
`iBpkts` *`iBpkts-number`*	Displays the number of incoming broadcast packets.
`iMpkts` *`iMpkts-number`*	Displays the number of incoming multicast packets.
`iPauseFs` *`iPauseFs-number`*	Displays the number of incoming pause frames.
`iCongDrops` *`iCongDrops-number`*	Displays the number of incoming packets dropped due to congestion.
`idiscards` *`idiscards-number`*	Displays the number of incoming packets discarded.
`ierrs` *`ierrs-number`*	Displays the number of incoming packets with errors.

obytes *obytes-number*	Displays the number of outgoing bytes.
oUpkts *oUpkts-number*	Displays the number of outgoing unicast packets.
oBpkts *oBpkts-number*	Displays the number of outgoing broadcast packets.
oMpkts *oMpkts-number*	Displays the number of outgoing multicast packets.
oPauseFs *oPauseFs-number*	Displays the number of outgoing pause frames.
oCongDrops *oCongDrops*-number	Displays the number of outgoing packets dropped due to congestion.
odiscards *odiscards-number*	Displays the number of outgoing discarded packets.
oerrs *oerrs-number*	Displays the number of outgoing packets with errors.
mtu-errs *mtu-errs-number*	Displays the number of MTU errors.
HER-packets *HER-pts-number*	Displays the number of Head End Replicated (HER) packets.
HER-bytes *HER-bytes-number*	Displays the number of Head End Replicated (HER) bytes.

Defaults None

Access Network Administrator

History Command introduced in Version 6.1.0.

Usage Use this command to display vLE statistics.

Examples To display statistics for a vLE configuration, use the following syntax:

```
CLI (network-admin@switch1) > vle-stats-show layout vertical
switch:       switch1
time:         06:14:49
vle-name:     vle1
port:         12
description:
ibits:        349M
iUpkts:       184K
iBpkts:       0
iMpkts:       0
iCongDrops:   0
ierrs:        0
obits:        63.3M
oUpkts:       56.2K
oBpkts:       0
oMpkts:       0
oCongDrops:   0
oerrs:        0
mtu-errs:     0
```

```
switch:       switch2
time:         06:14:49
vle-name:     vle1
port:         23
description:
ibits:        108M
iUpkts:       0
iBpkts:       0
iMpkts:       141K
iCongDrops:   0
ierrs:        0
obits:        63.3M
oUpkts:       0
oBpkts:       0
oMpkts:       56.3K
oCongDrops:   0
oerrs:        0
mtu-errs:     0
```

vle-stats-clear

This command is used to clear collected statistics from a vLE configuration.

Syntax `vle-stats-clear`

Defaults None

Access Network Administrator

History Command introduced in Version 6.1.0.

Usage Use this command to clear statistics about a vLE configuration.

Examples To clear statistics for a vLE configuration, use the following syntax:

```
CLI (network-admin@switch) > vle-stats-clear
```

vle-transparent-modify

This command modifies the vLE error transparent mode.

Syntax `vle-transparent-modify`

`mode enable|disable`	Enable or disable vLE error transparent mode across the fabric.

Defaults None.

Access CLI

History Command introduced in Version 5.2.0.

Usage

Enabling error transparency allows the vLE tunnel to transparently pass frames with CRC errors and runt traffic with size of 50 bytes.

Examples This example shows how to enable vLE error transparent mode on the fabric.

```
CLI (network-admin@switch) > vle-transparent-modify  enable
```

vle-transparent-show

This command displays the fabric vLE error transparent mode.

Syntax `vle-transparent-show`

Defaults None.

Access CLI

History Command introduced in Version 5.2.0.

Usage

Enabling error transparency allows the vLE tunnel to transparently pass frames with CRC errors and runt traffic with size of 50 bytes. This command displays the mode of the vLE tunnel transparent mode, i.e., it show if the functionality is enabled or disabled.

Examples This example command shows that the vLE error transparent mode is currently enabled on the fabric.

```
CLI (network-admin@switch) > vle-transparent-show
fabric: Transparent vLE mode is enabled
```

vle-transparent-port-add

This command adds local ports to vLE error transparent mode.

Syntax `vle-transparent-port-add`

`port` *`port-list`*	Specify the ports to be added to vLE error transparent mode.

Defaults None.

Access CLI

History Command introduced in Version 5.2.0.

Usage

Enabling error transparency allows the vLE tunnel to transparently pass frames with CRC errors and runt traffic with size of 50 bytes. This command adds local ports to the vLE error transparent mode.

Examples This example adds local ports 17 and 18 vLE error transparent mode.

```
CLI (network-admin@switch) > vle-transparent-port-add port 17,18
```

vle-transparent-port-remove

This command remove local ports from vLE error transparent mode.

Syntax `vle-transparent-port-remove`

`port` *`port-list`*	Specify the ports to be removed from vLE error transparent mode.

Defaults None.

Access CLI

History Command introduced in Version 5.2.0.

Usage Enabling error transparency allows the vLE tunnel to transparently pass frames with CRC errors and runt traffic with size of 50 bytes. This command removes local ports from vLE error transparent mode.

Examples This command removes local ports 20 and 21 from vLE error transparent mode.

```
CLI (network-admin@switch) > vle-transparent-port-remove  port  20,21
```

vle-transparent-port-show

This command is used to display local ports removed from transparent vLE mode.

Syntax `vle-transparent-port-show`

Defaults None.

Access CLI

History

Version 7.0.0	Command introduced.

Usage This command displays local ports removed from transparent vLE mode.

Examples This example displays local ports 18 and 45 removed from transparent vLE mode.

```
CLI (network-admin@switch) > vle-transparent-port-show switch: leaf-1
leaf-1: ports removed from VLE transparent mode: 18,45
```

Virtual Network (vNET) Commands

vnet-cli-alias-add

You use this command to add an alias for a group of commands.

Syntax `vnet-cli-alias-add`

`vnet-name` *`name-string`*	Specify the vNET name.
`name name-string`	Specify a name for the alias.
`command` *`command-string`*	Specify command to add to the alias.
`description` *`description-string`*	Specify a description of the alias.

Defaults None

Access Network Administrator

History Command introduced in Version 3.1.0.

Usage Use the command to add an alias in the CLI.

Examples To display an alias, use the following syntax:

```
CLI (network-admin@switch) > vnet-cli-alias-add
```

vnet-cli-alias-remove

You use this command to remove an alias for a group of commands.

Syntax `vnet-cli-alias-remove`

`vnet-name` *`name-string`*	Specify the vNET name.
`name name-string`	Specify a name for the alias.
`command` *`command-string`*	Specify command to add to the alias.
`description` *`description-string`*	Specify a description of the alias.

Defaults None

Access Network Administrator

History Command introduced in Version 3.1.0.

Usage Use the command to remove an alias from the CLI.

Examples To remove an alias, use the following syntax:

```
CLI (network-admin@switch) > vnet-cli-alias-remove
```

vnet-cli-alias-modify

You use this command to add an alias for a group of commands.

Syntax `vnet-cli-alias-modify`

`vnet-name` *`name-string`*	Specify the vNET name.
`name name-string`	Specify a name for the alias.
`command` *`command-string`*	Specify command to add to the alias.
`description` *`description-string`*	Specify a description of the alias.

Defaults None

Access Network Administrator

History Command introduced in Version 3.1.0.

Usage Use the command to modify an alias in the CLI.

Examples To modify an alias, use the following syntax:

```
CLI (network-admin@switch) > vnet-cli-alias-modify
```

vnet-cli-alias-show

You use this command to display an alias for a group of commands.

Syntax `vnet-cli-alias-show`

`vnet-name` *`name-string`*	Specify the vNET name.
`name name-string`	Specify a name for the alias.
`command` *`command-string`*	Specify command to add to the alias.
`description` *`description-string`*	Specify a description of the alias.

Defaults None

Access Network Administrator

History Command introduced in Version 3.1.0.

Usage Use the command to display an alias in the CLI.

Examples To display an alias, use the following syntax:

```
CLI (network-admin@switch) > vnet-cli-alias-show
```

vnet-create

This command creates a new virtual network (vNET) for a fabric, cluster, or standalone switch.

Syntax `vnet-create`

`name` *`name-string`*	Specify the name of the virtual network (vNET).
`scope local|fabric`	Specify the scope of the virtual network (vNET)
Specify one or more of the following options:	
`vrg` *`vrg-name`*	Specify the name of the virtual resource group (VRG).
`vlan-type public|private`	Specify the type of VLAN used by the vNET.
`num-vlans` *`number`*	Specify the number of VLANs to assign to the vNET. Using this parameter allows you to assign a group of VLANs rather than specific VLANs.
`vlans` *`vlan-list`*	Specify the list of VLANs to assign to the vNET. You can specify a list or range of VLANs that the vNET assigns to vNET interfaces.
`public-vlans` *`vlan-list`*	Specify the public VLANs assigned to private VLAN vNET.
`num-private-vlans` *`number`*	Specify the number of private VLANs that the vNET administrator can create for the vNET. This is a number between 1 and 4094.
`num-bridge-domains` *`number`*	Specify the number of bridge domains that the vNET administrator can create for the vNET. This is a number between 0 and 4094.
`vxlans` *`vxlan-id`*	Specify the VXLAN ID assigned to the vNET.
`vxlan-end` *`vxlan-id`*	Specify the last VXLAN ID assigned to the vNET.
`managed-ports` *`port-list`*	Specify the list of managed ports on the vNET.
`shared-ports` *`port-list`*	Specify the shared ports for the vNET.
`shared-port-vlans` *`vlan-list`*	Specify the shared port VLANs.
`config-admin|no-config-admin`	Specify an administrator for the vNET. This is optional.
`admin` *`user-name`*	Specify the user name for the admin role.
`create-vnet-mgr|no-create-vnet-mgr`	Specify if you want to create or not create a vNET manager.
`vnet-mgr-name` *`name-string`*	Specify the name of the vNET manager. If you don't specify a name, one is automatically configured.
`vnet-mgr-storage-pool` *`storage-pool-name`*	Specify the storage pool for the vNET.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, `config-admin`, added.
Version 2.4.1	The parameters, `num-private-vlans`, `vxlans`, and `vxlan-end` added.
Version 2.5.4	The parameter, `create-vnet-mgr| no-create-vnet-mgr` was added.
Version 3.1.0	The parameter, `shared-port-vlans`, added.
Version 6.1.0	The parameter, `num-bridge-domains`, added.

Usage A fabric, cluster, or standalone switch can be virtualized into tenant networks called virtual networks (vNETs). This command creates a new vNET.

Examples This example shows how to create a fabric-wide virtual network (vNET) named MyVMotionvNET.

```
CLI (network-admin@switch) > vnet-create name MyVMotionvNET scope
fabric vlan 777 ports 35-37
```

vnet-delete

This command is used to delete an existing vNET from the configuration on the switch.

Syntax `vnet-delete`

`name` *`name-string`*	Specify the name of the vNET to delete.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage A fabric, cluster, or standalone switch can be virtualized into tenant networks called virtual networks (vNETs). This command deletes a vNET.

Examples To delete a fabric-wide virtual network (vNET) named `MyVMotionvNET`, use the following command:

```
CLI (network-admin@switch) > vnet-delete name MyVMotionvNET
```

vnet-modify

This command is used to modify an existing vNET on the configuration on the switch.

Syntax `vnet-modify`

`name` *`name-string`*	Specify the name of the virtual network (vNET).
Specify one or more of the following options:	
`vlans` *`vlan-list`*	Specify the list of VLANs to assign to the vNET. You can specify a list or range of VLANs that the vNET assigns to vNET interfaces.
`managed-ports` *`port-list`*	Specify the list of managed ports on the vNET.
`num-private-vlans` *`number`*	Specify the number of private VLANs that the vNET administrator can create for the vNET. This is a number between 1 and 4094.
`public-vlans` *`vlan-list`*	Specify the public VLANs assigned to private VLAN vNET.
`shared-ports` *`port-list`*	Specify the shared ports for the vNET.
`vxlans` *`vxlan-id`*	Specify the VLXN ID assigned to the vNET.
`vxlan-end` *`vxlan-id`*	Specify the last VXLAN ID assigned to the vNET.
`shared-port-vlans` *`vlan-list`*	Displays VLANs on the shared ports.
`num-bridge-domains` *`number`*	Specify the number of bridge domains that the vNET administrator can create for the vNET. This is a number between 0 and 4094.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, `vrg`, is deprecated.
Version 2.4.1	The parameters, `num-private-vlans`, `vxlans`, and `vxlan-end` added.
Version 2.5	The parameter, `public-vlans`, added.
Version 3.1.0	The parameter, `shared-port-vlans`, added.
Version 6.1.0	The parameter, `num-bridge-domains`, added.

Usage A fabric, cluster, or standalone switch can be virtualized into tenant networks called virtual networks (vNETs). This command deletes a vNET.

Examples To modify a fabric-wide virtual network (vNET) named `MyVMotionvNET`, and modify the VLANs to the

range, 11-15, use the following command:

```
CLI (network-admin@switch) > vnet-modify name MyVMotionvNET vlans 11-15
```

vnet-show

This command is used to display information about vNETs configured on the switch.

Syntax `vnet-show`

`id` *`id-num`*	Displays the identifier of the vNET.
`name` *`name-string`*	Displays the name of the virtual network (vNET).
`scope local|fabric`	Displays the scope of the virtual network (vNET)
`vrg` *`vrg-name`*	Displays the name of the virtual resource group (VRG).
`vlan-type public|private`	Displays the type of VLAN for the vNET.
`num-vlans` *`number`*	Displays the number of VLANs assigned to the vNET.
`vlans` *`vlan-list`*	Displays the list of VLANs assigned to the vNET.
`num-private-vlans` *`number`*	Displays the number of private VLANs that the vNET administrator can create for the vNET. This is a number between 1 and 4094.
`num-bridge-domains` *`0..4094`*	Displays the number of Bridge-Domains allowed to create in the vNET.
`public-vlans` *`vlan-list`*	Displays the public VLANs assigned to the private VLAN vNET.
`vxlans` *`vxlan-id`*	Displays the VLXN ID assigned to the vNET.
`vxlan-end` *`vxlan-id`*	Displays the last VXLAN ID assigned to the vNET.
`managed-ports` *`port-list`*	Displays the list of managed ports on the vNET.
`shared-ports` *`port-list`*	Displays the shared ports for the vNET.
`shared-port-vlans` *`vlan-list`*	Displays VLANs on the shared ports.
`admin` *`user-name`*	Displays the user name for the admin role.
`vrg-created-by-vnet true|false`	Displays if the VRG was created by the vNET.
`global true|false`	Displays if the vNET is global or not.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, `global`, added.
Version 2.5	The parameter, `public-vlans`, `vlan-type`, and `shared-ports`, added.

Version 3.1.0	The parameter, `shared-port-vlans`, added.

Usage A fabric, cluster, or standalone switch can be virtualized into tenant networks called virtual networks (vNETs). This command displays information about a vNET.

Examples To display information about all vNETs, use the following command:

```
CLI (network-admin@switch) > vnet-show layout vertical format all
switch:                 switch
id:                     9000c25:0
name:                   btfab-global
scope:                  fabric
vlan-type:              public
vlans:                  none
public-vlans:           none
num-private-vlans:      0
num-bridge-domains:     0
vxlans:                 0
managed-ports:          none
shared-ports:           none
shared-port-vlans:      none
global:                 true
```

vnet-manager-create

This command creates additional vNET manager zones.

Syntax `vnet-manager-create`

`name` *`name-string`*	Specify the name of service configuration.
`vnet` *`vnet name`*	Specify the vNET assigned to the service.
Specify one or more of the following options:	
`disable|enable`	Specify the state of the service.
`location` *`fabric-node name`*	Specify the location of the service.
`storage-pool storage-pool name`	Specify the storage pool assigned to the service.

Defaults None.

Access CLI

History Command introduced in Version 2.5.4.

Usage vNET HA provides high availability for switch access through a vNET manager. The vNET manager is a zone, typically with one IP interface, allows a vNET administrator to log into and administer a vNET using the CLI or a REST API. HA functionality is provided by allowing you to create multiple vNET managers. Access to the vNET managers is enabled when you add either standard or VRRP VIP interfaces to the vNET managers.

`CLI (network-admin@switch) >` `vnet-manager-create`

vnet-manager-delete

This command deletes a vNET Manager zone.

Syntax `vnet-manager-delete`

name *name-string*	Specify the name of vNET you want to delete.

Defaults None.

Access CLI

History Command introduced in Version 2.5.4

Usage vNET HA provides high availability for switch access through a vNET manager. The vNET manager is a zone, typically with one IP interface, allows a vNET administrator to log into and administer a vNET using the CLI or a REST API. HA functionality is provided by allowing you to create multiple vNET managers. Access to the vNET managers is enabled when you add either standard or VRRP VIP interfaces to the vNET managers.

vnet-manager-migrate

This command is used to migrate a vitrual network (vNET) manager from one location to another.

Syntax `vnet-manager-migrate`

`name` *`name-string`*	Specify the name of the vNET manager.
Specify one or both of the following options:	
`location` *`fabric-node-name`*	Specify the location name.
`storage-pool` *`storage-pool-name`*	Specify the storage pool name.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage A virtual network manager (vNET manager) can administer a virtual network (vNET) but the same management abstraction can also be used to administer a fabric, cluster, or standalone switch. This command migrates a vNET managers in a fabric to a storage pool.

Examples To migrate the vNET manager, MyvNET, to storage pool, keep-all, use the following command:

```
CLI (network-admin@switch) > vnet-manager-migrate MyvNET location net-fabric storage-pool keep-all
```

vnet-manager-modify

This command is used to modify an existing virtual network (vNET) manager configuration.

Syntax `vnet-manager-modify`

`name` *`name-string`*	Specify the name of the vNET manager.
Specify one or more of the following options:	
`disable|enable`	Specify if you want to disable or enable the vNET manager.
`location` *`fabric-node name`*	Specify the location of the service.
`storage-pool storage-pool name`	Specify the storage pool assigned to the service.
`gateway` *`ip-address`*	Specify the gateway IP address.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage A virtual network manager (vNET manager) can administer a virtual network (vNET) but the same management abstraction can also be used to administer a fabric, cluster, or standalone switch. This command modifies a vNET manager configuration.

Examples To disable the vNET manager, MyvNET, use the following option:

```
CLI (network-admin@switch) > vnet-manager-modify MyvNET disable
```

vnet-manager-show

This command is used to display information about an existing virtual network (vNET) manager configuration.

Syntax `vnet-manager-show`

`name` *`name-string`*	Specifies the name of the vNET manager.
`type vnet-mgr|vrouter|netzone|orphaned|netvm|nat|ovs`	Specifies the type of vNET manager service.
`scope loca|fabric`	Specifies the scope of the vNET manager.
`vnet` *`vnet-name`*	Specifies the name of the vNET.
`is-global true|false`	Specifies if the service is global or not.
`location fabric-node` *`name`*	Specifies the location of the vNET manager.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The options, `openstack` and `netvmm`, added to the parameter type. The parameter, `location`, added.
Version 6.0.0	The options, `vlb`, `dhcp`,`dns`, `openstack` removed from the parameter `type`.

Usage A virtual network manager (vNET manager) can administer a virtual network (vNET) but the same management abstraction can also be used to administer a fabric, cluster, or standalone switch. This command displays information about a vNET manager configuration.

Examples To display the vNET manager, MyvNET, with the `layout` option `vertical`, use the following option:

```
CLI (network-admin@switch) > vnet-manager-show MyvNET layout vertical
name:                   myvNET
type:                   vnet-mgr
scope:                  fabric
vnet:                   ops-mgmt
vnet-service:           shared
state:                  enabled
gateway:                10.1.1.1
switch:                 pleiades34
```

vnet-manager-interface-add

To create a new virtual network manager interface (vNET manager) for a fabric, cluster, standalone switch, or virtual network, use the `vnet-manager-create` command.

Syntax `vnet-manager-interface-add`

`vnet-manager-name` *`name-string`*	Specify the name for the vNET manager interface.
Specify the following parameter:	
`vlan` *`vlan-id`*	Specify the VLAN identifier. This is a value between 1 and 4094.
Specify any of the following options:	
`ip` *`ip-address`*	Specify the IP address of the interface.
`netmask` *`netmask`*	Specify the netmask.
`assignment none|dhcp|dhcpv6`	Specify the DHCP method to assign the IP address.
`vnet` *`vnet-name`*	Specify the vNET for the interface.
`vlan-type public|private`	Specify the VLAN type as public or private.
`vxlan` *`vxlan-id`*	Specify the VXLAN identifier. This is a value between 0 and 16777215.
`if mgmt|data|span`	Specify if the interface is a management, data or span interface.
`alias-on` *`alias-on-string`*	Specify an alias for the interface.
`exclusive|no-exclusive`	Specify if the interface is exclusive to the configuration. Exclusive means that other configurations cannot use the interface.
`nic-enable|nic-disable`	Specify if the NIC is enabled or disabled.
`vrrp-primary` *`vrrp-primary-string`*	Specify the VRRP primary interface.
`vrrp-priority` *`number`*	Specify the VRRP priority for the interface. Range is 0 - 254.
`vrrp-adv-int` *`ms`*	Specify the VRRP Advertisement Interval. In ms, min 10, max 40950, default 1000.
`vrrp-primary` *`vrrp-primary-string`*	Specify the VRRP primary interface.
`secondary-macs` *`secondary-macs-string`*	Specify a secondary MAC address.
`sriov-vf|no-sriov-vf`	Specify a VNIC.
`mirror-traffic true|false`	Specify to mirror a physical NIC traffic to VNIC.
`if-nat-realm internal|external`	Specify a NAT realm interface as internal or external.
`priority-tag|`	Specify if you want to add a VLAN 0 priority tag on

no-priority-tag	forwarded traffic.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters, exclusive and nic, added.
Version 2.2.5	The parameters, l3-port, and secondary-macs, added.
Version 2.3.1	The option, autov6, added.
Version 2.4	The parameter, l3-port, deprecated.
Version 2.4.1	The parameter, vlan-type, added.
Version 2.5	The parameters, vnet and sriov-vf, added.
Version 2.5.4	The parameters, vrrp-id, vrrp primary, vrrp priority, and vrrp-adv-int added.
Version 2.6.2	The parameter, if-nat-realm, added.
Version 3.1.0	The parameter, priority-tag, added.

Usage A virtual network manager interface (vNET manager) can administer a virtual network (vNET) but the same management abstraction can also be used to administer a fabric, cluster, or standalone switch. This command creates a new vNET manager interface.

Examples To add a vNET manager interface named, MyvNETmgr, with the IP address, 192.168.11.21 netmask 32, use this command:

```
CLI (network-admin@switch) > vnet-manager-interface MyvNETmgr ip
192.168.11.21 netmask 32
```

To create VRRP interfaces on vNET manager zones, use this command:

```
CLI (network-admin@switch) > vnet-manager-interface-add vnet-manager-
name name-string [vrrp-id 0,,255][vrrp-primary vrrp-primary-string]
[vrrp-priorty 0..254][vrrp-ad-int 10..40950]
```

vnet-manager-interface-modify

To modify a virtual network manager interface (vNET manager) for a fabric, cluster, standalone switch, or virtual network, use the `vnet-manager-create` command.

Syntax `vnet-manager-interface-modify`

`vnet-manager-name` *`name-string`*	Specify the name for the vNET manager interface.
Specify the following interface arguments:	
`nic` *`nic-string`*	Specify the NIC to modify.
Specify any of the following options:	
`ip` *`ip-address`*	Specify the IP address of the interface.
`netmask` *`netmask`*	Specify the netmask.
`assignment none|dhcp|dhcpv6|autov6`	Specify the DHCP method.
`vnet` *`vnet-name`*	Specify the vNET for the interface.
`vlan-type public|private`	Specify the VLAN type as public or private.
`vlan` *`vlan-id`*	Specify the VLAN identifier. This is a value between 1 and 4094.
`vxlan` *`vxlan-id`*	Specify the VXLAN identifier. This is a value between 0 and 16777215.
`if mgmt|data|span`	Specify if the interface is a management, data or span interface.
`alias-on` *`alias-on-string`*	Specify an alias for the interface.
`exclusive|` `no-exclusive`	Specify if the interface is exclusive to the configuration. Exclusive means that other configurations cannot use the interface.
`nic-enable|` `nic-disable`	Specify if the NIC is enabled or disabled.
`vrrp-primary` *`vrrp-primary-string`*	Specify the VRRP primary interface.
`vrrp-priority` *`number`*	Specify the VRRP priority for the interface. Range is 0 - 254.
`vrrp-adv-int` *`ms`*	Specify the VRRP Advertisement Interval. In ms, min 10, max 40950, default 1000.
`vrrp-primary` *`vrrp-primary-string`*	Specify the VRRP primary interface.
`secondary-macs` *`secondary-macs-string`*	Specify a secondary MAC address.
`sriov-vf|no-sriov-vf`	Specify a VNIC.
`mirror-traffic true|false`	Specify to mirror a physical NIC traffic to VNIC.

`if-nat-realm internal|external`	Specify a NAT realm interface as internal or external.
`priority-tag| no-priority-tag`	Specify if you want to add a VLAN 0 priority tag on forwarded traffic.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters, `exclusive` and `nic`, added.
Version 2.2.5	The parameters, `l3-port`, and `secondary-macs`, added.
Version 2.3.1	The option, `autov6`, added.
Version 2.4	The parameter, `l3-port`, deprecated.
Version 2.4.1	The parameter, `vlan-type`, added.
Version 2.5	The parameters, `vnet` and `sriov-vf`, added.
Version 2.5.4	The parameters, `vrrp-id`, `vrrp primary`, `vrrp priority`, and `vrrp-adv-int` added.
Version 2.6.2	The parameter, `if-nat-realm`, added.
Version 3.1.0	The parameter, `priority-tag`, added.

Usage A virtual network manager interface (vNET manager) can administer a virtual network (vNET) but the same management abstraction can also be used to administer a fabric, cluster, or standalone switch. This command modifies a vNET manager interface.

Examples To modify a vNET manager interface named, MyvNETmgr, with the IP address, 192.168.11.21 netmask 32 to VLAN 16, use the following command:

```
CLI (network-admin@switch) > vnet-manager-interface MyvNETmgr ip
192.168.11.21 netmask 32 vlan 16
```

To create VRRP interfaces on vNET manager zones, use this command:

```
CLI (network-admin@switch) > vnet-manager-interface-add vnet-manager-name
name-string [vrrp-id 0,,255][vrrp-primary vrrp-primary-string][vrrp-priorty
0..254][vrrp-ad-int 10..40950]
```

vnet-manager-interface-show

This command is used to display information about configured virtual network (vNET) manager interfaces.

Syntax `vnet-manager-interface-show`

`vnet-manager-name` *`name-string`*	Specifies the name for the vNET manager interface.
Specify the following interface arguments:	
`nic` *`nic-string`*	Specifies the NIC of the interface.
`ip` *`ip-address`*	Specifies the IP address of the interface.
`netmask` *`netmask`*	Specifies the netmask.
`assignment none|dhcp|dhcpv6|autov6`	Specifies the DHCP method.
`mac` *`mac-address`*	Specifies the MAC address of the interface.
`vnet` *`vnet-name`*	Specifies the name of the vNET.
`vlan` *`vlan-id`*	Specifies the VLAN identifier. This is a value between 1 and 4094.
`vlan-type public|private`	Specifies the VLAN type as public or private.
`if mgmt|data|span`	Specifies if the interface is a management, data or span interface.
`alias-on` *`alias-on-string`*	Specifies an alias for the interface.
`vm-nic-type e1000|virtio`	Specifies the type of virtual NIC.
`exclusive|` `no-exclusive`	Specifies if the interface is exclusive to the configuration. Exclusive means that other configurations cannot use the interface.
`nic-enable|` `nic-disable`	Specifies if the NIC is enabled or disabled.
`nic-state down|up`	Specifies if the NIC state is up or down. If the NIC is disabled, then the state is down.
`vrrp-id` *`id`*	Specify the ID assigned to VRRP. Range is 0 - 255.
`vrrp-primary` *`vrrp-primary-string`*	Specify the VRRP primary interface.
`vrrp-priority` *`number`*	Specify the VRRP priority for the interface. Range is 0 - 254.
`vrrp-adv-int` *`ms`*	Specify the VRRP Advertisement Interval. In ms, min 10, max 40950, default 1000.
`secondary-macs` *`secondary-macs-string`*	Specifies a secondary MAC address.
`if-nat-realm internal|external`	Specify a NAT realm interface as internal or external.

`priority-tag|no-priority-tag`	Specify if you want to add a VLAN 0 priority tag on forwarded traffic.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters, `exclusive`, `nic`, and `nic-state`, added.
Version 2.2.5	The parameters, `l3-port`, and `secondary-macs`, added.
Version 2.3.1	The option, `autov6`, added.
Version 2.4	The parameter, `l3-port`, deprecated.
Version 2.4.1	The parameter, `vlan-type`, `vnet`, and `public-vlan`, added.
Version 2.5	The parameters, `vnet` and `sriov-vf`, added.
Version 2.5.4	The parameters, `vrrp-id`, `vrrp primary`, `vrrp priority`, and `vrrp-adv-int` added.
Version 2.6.2	The parameter, `if-nat-realm`, added.
Version 3.1.0	The parameter, `priority-tag`, added.

Usage A virtual network manager interface (vNET manager) can administer a virtual network (vNET) but the same management abstraction can also be used to administer a fabric, cluster, or standalone switch. This command removes a vNET manager interface.

Examples To display information about all vNET manager interfaces, use the following command:

```
CLI (network-admin@switch) > vnet-manager-interface-show
```

vnet-manager-service-modify

This command is used to modify virtual network (vNET) manager services.

Syntax `vnet-manager-service-modify`

`vnet-manager-name` *`name-string`*	Specify the name of the vNET manager.
Specify the following service arguments:	
`if` *`if-string`*	Specify the interface to modify.
Specify any of the following options:	
`ssh|no-ssh`	Specify if you want to use SSH or not.
`web|no-web`	Specify if you want to configure Web services or not.
`web-ssl|no-web-ssl`	Specify if SSL is used.
`web-ssl-port` *`web-ssl-port-number`*	If you specify `web-ssl`, configure the port number.
`web-port` *`web-port-number`*	Specify the port number for Web services.
`net-api|no-net-api`	Specify if the Netvisor APIs are enabled or disabled.
`icmp|no-icmp`	Specify if you want to use Internet Control Message Protocol (ICMP) for diagnostic purposes.
`ntp|no-ntp`	Specify if you want to enable Network Time Protocol (NTP).

Defaults None

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters, `web-ssl` and `web-ssl-port`, added.
Version 2.2.6	The parameter, `ntp`, added.
Version 2.4	The parameter, `net-api`, added.

Usage Use the command to allow specific services on the vNET manager interface. In some use cases, you may want to allow Web services or use SSL.

Examples Modify the vNET manager, MyvNET, to use ICMP using the following command:

```
CLI (network-admin@switch) > vnet-manager-service-modify name MyvNET
icmp
```

vnet-manager-service-show

This command is used to display the available services on a vNET manager.

Syntax `vnet-manager-service-show`

`vnet-manager-name` *`name-string`*	Specifies the name of the vNET manager.
Specify the following service arguments:	
`ssh|no-ssh`	Specifies if you want to use SSH or not.
`web|no-web`	Specifies if you want to configure Web services or not.
`web-ssl|no-web-ssl`	Specify if SSL is used.
`web-ssl-port` *`web-ssl-port-number`*	If you specify `web-ssl`,displays the port number.
`web-port` *`web-port-number`*	Specifies the port number for Web services.
`net-api|no-net-api`	Specify if the Netvisor APIs are enabled or disabled.
`icmp|no-icmp`	Specifies if you want to use Internet Control Message Protocol (ICMP) for diagnostic purposes.
`ntp|no-ntp`	Specify if you want to enable Network Time Protocol (NTP).

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters, `web-ssl`, `web-ssl-port`, `snmp`, and `net-api`, added.
Version 2.2.6	The parameter, `ntp`, added.
Version 2.4	The parameter, `net-api`, added.

Usage Use this command to display services on the vNET manager interface.

Examples To display services on all vNET managers, use the following command:

```
CLI (network-admin@switch) > vnet-manager-service-show
switch   vnet-manager-name if     ssh web web-ssl web-ssl-port web-port icmp
-------- ---------------- ------ --- --- ------- ------------ -------- ----
pubdev02 joedoe-mgr       eth1.5 on  on  off     443          80       on   off
```

vnet-manager-ssh-host-key-show

This command is used to display the vNET Manager host keys in order to copy-and-paste to ~/.ssh/

Syntax `vnet-manager-ssh-host-key-show`

Specify between 0 and 2 of the following options:	
`vnet` *`vnet name`*	Specifies the vNET assigned service.
`scope local|cluster|fabric`	Specifies the scope of service: fabric or local.

Defaults None.

Access CLI

History Command introduced in Version 2.5.4.

Usage Use this command to copy and paste vNET Manager host keys to ~/.ssh/known_hosts.

vnet-manager-interface-remove

This command is used to remove a virtual network (vNET) manager interface from the configuration.

Syntax `vnet-manager-interface-remove`

`vnet-manager-name` *`name-string`*	Specify the name of the vNET manager interface to remove.
Specify the following interface arguments:	
`nic` *`nic-string`*	Specify the NIC to remove.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage

A virtual network manager interface (vNET manager) can administer a virtual network (vNET) but the same management abstraction can also be used to administer a fabric, cluster, or standalone switch. This command removes a vNET manager interface.

Examples

To remove the vNET manager interface, MyvNETmgr, use the following command:

```
CLI (network-admin@switch) > vnet-manager-interface-remove  name
MyvNETmgr nic eth0.3
```

vnet-tunnel-network-add

vNET managers can add, modify, and delete VXLAN tunnels from a vNET. A software VTEP server is connected to a port not part of the vNET. The port for the software VTEP server is configured (tagged or untagged) for a VLAN configured by the fabric administrator that routes into the Layer 3 network used by the hardware VTEPs. The vNET administrator accesses the VTEP server using either an out of band management port or a dedicated in-band VLAN.

Syntax `vnet-tunnel-network-add`

`name` *`name-string`*	Specify the name for the vNET tunnel.
`network` *`ip-address`*	Specify the IP address for the tunnel.
`netmask` *`netmask`*	Specify the netmask of the IP address.
`description` *`description-string`*	Specify a description for the vNET tunnel.

Defaults None

Access vNET Administrator

History Command introduced in Version 2.5.0

Usage The fabric administrator enables the vNET administrator to create tunnels from software VTEPs to hardware VTEPs by provisioning a route on each switch from a VLAN or subnet associated with the vNET to the Layer 3 network where hardware VTEP tunnels are configured. In addition, ACLs are configured to constrain software VTEPs to only exchange packets with software VTEPs in the same vNET and hardware VTEPs.

Examples To add a vNET tunnel, **t1**, with IP address, 10.100.100.224, and netmask 155.255.255.248

```
CLI (network-admin@switch) > vnet-tunnel-network-add vnet-name t1
network 10.100.100.224 netmask 255.255.255.248
```

vnet-tunnel-network-modify

vNET managers can add, modify, and delete VXLAN tunnels from a vNET. A software VTEP server is connected to a port that is not part of the vNET. The port for the software VTEP server is configured (tagged or untagged) for a VLAN configured by the fabric administrator that routes into the Layer 3 network used by the hardware VTEPs. The vNET administrator accesses the VTEP server using either an out of band management port or a dedicated in-band VLAN.

Syntax `vnet-tunnel-network-modify`

`name` *`name-string`*	Specify the name for the vNET tunnel.
`network` *`ip-address`*	Specify the IP address for the tunnel.
`netmask` *`netmask`*	Specify the netmask of the IP address.
`description` *`description-string`*	Specify a description for the vNET tunnel.

Defaults None

Access vNET Administrator

History Command introduced in Version 2.5.0

Usage The fabric administrator enables the vNET administrator to create tunnels from software VTEPs to hardware VTEPs by provisioning a route on each switch from a VLAN or subnet associated with the vNET to the Layer 3 network where hardware VTEP tunnels are configured. In addition, ACLs are configured to constrain software VTEPs to only exchange packets with software VTEPs in the same vNET and hardware VTEPs.

Examples To modify vNET tunnel, t1, to IP address, 172.16.21.131, and netmask 255.255.255.0, use the following syntax

```
CLI (network-admin@switch) > vnet-tunnel-network-modify vnet-name t1
network 172.16.21.131 netmask 255.255.255.248
```

vnet-tunnel-network-remove

vNET managers can add, modify, and delete VXLAN tunnels from a vNET. A software VTEP server is connected to a port that is not part of the vNET. The port for the software VTEP server is configured (tagged or untagged) for a VLAN configured by the fabric administrator that routes into the Layer 3 network used by the hardware VTEPs. The vNET administrator accesses the VTEP server using either an out of band management port or a dedicated in-band vlan.

Syntax `vnet-tunnel-network-remove`

`name` *`name-string`*	Specify the name for the vNET tunnel.
`network` *`ip-address`*	Specify the IP address for the tunnel.
`netmask` *`netmask`*	Specify the netmask of the IP address.

Defaults None

Access vNET Administrator

History Command introduced in Version 2.5.

Usage The fabric administrator enables the vnet administrator to create tunnels from software VTEPs to hardware VTEPs by provisioning a route on each switch from a VLAN or subnet associated with the vNET to the Layer 3 network where hardware VTEP tunnels are configured. In addition, ACLs are configured to constrain software VTEPs to only exchange packets with software VTEPs in the same vNET and hardware VTEPs.

Examples To remove vNET tunnel, t1, use the following syntax:

```
CLI (network-admin@switch) > vnet-tunnel-network-remove  vnet-name  t1
```

vnet-tunnel-network-show

vNET managers can add, modify, and delete VXLAN tunnels from a vNET. A software VTEP server is connected to a port that is not part of the vNET. The port for the software VTEP server is configured (tagged or untagged) for a VLAN configured by the fabric administrator that routes into the Layer 3 network used by the hardware VTEPs. The vNET administrator accesses the VTEP server using either an out of band management port or a dedicated in-band vlan.

Syntax `vnet-tunnel-network-show`

`name` *`name-string`*	Specify the name for the vNET tunnel.
`network` *`ip-address`*	Specify the IP address for the tunnel.
`netmask` *`netmask`*	Specify the netmask of the IP address.
`description` *`description-string`*	Specify a description for the vNET tunnel.

Defaults None

Access vNET Administrator

History Command introduced in Version 2.5.

Usage The fabric administrator enables the vnet administrator to create tunnels from software VTEPs to hardware VTEPs by provisioning a route on each switch from a VLAN or subnet associated with the vNET to the Layer 3 network where hardware VTEP tunnels are configured. In addition, ACLs are configured to constrain software VTEPs to only exchange packets with software VTEPs in the same vNET and hardware VTEPs.

Examples To display a vNET tunnel, t1, with IP address, 10.100.100.224, and netmask 255.255.255.248, use the following syntax:

```
CLI (network-admin@switch) > vnet-tunnel-network-add vnet-name t1
network 10.100.100.224 netmask 255.255.255.248
```

vnet-port-add

This command is used to add a port to an existing virtual network (vNET).

Syntax `vnet-port-add`

`vnet-name` *`name-string`*	Specify the name of the vNET.
Specify the following port arguments:	
`switch` *`switch-name`*	Specify the switch name.
`ports` *`port-list`*	Specify the ports to add to the vNET.
`vlans` *`vlan-list`*	Specify the VLANS for the ports.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.2.6	The parameter, `VLANs`, added.

Usage A fabric, cluster, or standalone switch can be virtualized into tenant networks called virtual networks (vNETs). This command adds a port to a vNET.

Examples To add port `4` to switch, `aquila24`, and vNET, `v-network`, use the following command:

```
CLI (network-admin@switch) > vnet-port-add vnet-name v-network switch
aquila24 ports 4
```

vnet-port-remove

This command is used to remove a port from an existing virtual network (vNET).

Syntax `vnet-port-remove`

`vnet-name` *`name-string`*	Specify the name of the vNET.
`switch switch-name`	Specify the switch name.
`ports` *`port-list`*	Specify the ports to add to the vNET.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage A fabric, cluster, or standalone switch can be virtualized into tenant networks called virtual networks (vNETs). This command removes a port from a vNET.

Examples To remove port `26` from switch, `aquila24`, and vNET, `v-network`, use the following command:

```
CLI (network-admin@switch) > vnet-port-remove vnet-name v-network
switch aquila24 ports 26
```

vnet-public-vlans-modify

This command modifies public VLANs assigned to a vNET.

Syntax `vnet-public-vlans-modify`

`vlans` *`vlan-list`*	Specify the list of public VLANs to modify.

Defaults None.

Access CLI

History Command introduced in Version 2.5.1

Usage A fabric, cluster, or standalone switch can be virtualized into tenant networks called virtual networks (vNETs). This command modifies the list of public VLANs assigned to a vNET.

Examples This example shows how to modify the VLAN list to

```
CLI (network-admin@switch) > vnet-public-vlans-modify vlans 33-35
```

vnet-public-vlans-show

This command displays public VLANs assigned to a vNET.

Syntax `vnet-public-vlans-show`

`vlans` *`vlan-list`*	Specify the list of public VLANs to modify.

Defaults None.

Access CLI

History Command introduced in Version 2.5.1

Usage A fabric, cluster, or standalone switch can be virtualized into tenant networks called virtual networks (vNETs). This command displays the list of public VLANs assigned to a vNET.

Examples This example shows how to display the VLAN list 3-35:

```
CLI (network-admin@switch) > vnet-public-vlans-show vlans 33-35
```

vpg-create

Netvisor ONE allows you to club the ingress or source ports and the destination ports into Virtual Port Groups (vPGs). The vPG construct permits you to flood the traffic that arrives at select source ports to multiple desired destination ports. You must create vPGs to configure the Pluribus Network Packet Broker solution. This command creates vPGs.

Syntax `vpg-create`

`vnet` *`vnet-name`*	Specify the vNET for this vPG.
`name` *`name-string`*	Specify the name of the vPG.
`type source|destination|bidirectional`	Specify the type of the vPG as source, destination or bidirectional.
`ports` *`port-list`*	Specify the ports assigned to the vPG.
`port-desc` *`port-desc-string`*	Specify a previously configured port description to add the port with that description to the vPG.
`monitor-ports` *`port-list`*	Specify the monitoring ports assigned to the vPG.

Defaults None

Access Network Administrator

History

Version 6.0.0	Command introduced.
Version 6.1.0	Parameter `vnet` added.
Version 7.0.0	The parameters `monitor-ports` and `port-desc` added.

Usage Use this command to configure a vPG.

Examples To configure the vPG, TAP-GROUP-1 with source type, use the following syntax:

```
CLI (network-admin@Leaf1) > vpg-create name TAP-GROUP-1 type source
```

vpg-delete

Netvisor ONE allows you to club the ingress or source ports and the destination ports into Virtual Port Groups (vPGs). The vPG construct permits you to flood the traffic that arrives at select source ports to multiple desired destination ports. You must create vPGs to configure the Pluribus Network Packet Broker solution. This command deletes configured vPGs.

Syntax `vpg-create`

name *name-string*	Specify the name of the vPG.

Defaults None

Access Network Administrator

History Command introduced in version 6.0.0

Usage Use this command to delete a vPG.

Examples To delete the vPG, TAP-GROUP-1 use the following syntax:

```
CLI (network-admin@Leaf1) > vpg-delete name TAP-GROUP-1
```

vpg-show

Netvisor ONE allows you to club the ingress or source ports and the destination ports into Virtual Port Groups (vPGs). The vPG construct permits you to flood the traffic that arrives at select source ports to multiple desired destination ports. You must create vPGs to configure the Pluribus Network Packet Broker solution. This command displays the vPG configuration.

Syntax `vpg-show`

`scope fabric`	The scope of the vPG.
`vnet` *`vnet-name`*	The vNET for this vPG.
`name` *`name-string`*	Name of the vPG.
`type source|destination|bidirectional`	The type of the vPG as source, destination or bidirectional.
`ports` *`port-list`*	The ports assigned to the vPG.
`port-desc` *`port-desc-string`*	The port description.
`vni` *`0..16777215`*	The VNI for VXLAN.
`vlan` *`0..4095`*	The VLAN ID.
`monitor-ports` *`port-list`*	The monitor ports assigned to the vPG.

Defaults None

Access Network Administrator

History

Version 6.0.0	Command introduced.
Version 6.1.0	The parameter `vnet` added.
Version 7.0.0	The parameters `monitor-ports` and `port-desc` added.

Usage Use this command to display a vPG configuration.

Examples To display the vPGs of type `source`, use the following syntax:

```
CLI (network-admin@leaf1) > vpg-show
switch scope  vnet  name        type   ports vni vlan
------ ------ ----- ----------- ------ ----- --- ---
Leaf1  fabric vnet1 TAP-GROUP-3 source none  0   0
Leaf2  fabric vnet1 TAP-GROUP-3 source 25    0   0
Leaf3  fabric vnet1 TAP-GROUP-3 source 275   0   0
```

```
Leaf4  fabric vnet1 TAP-GROUP-3 source none  0   0
Leaf5  fabric vnet1 TAP-GROUP-3 source none  0   0
Leaf6  fabric vnet1 TAP-GROUP-3 source none  0   0
Spine1 fabric vnet1 TAP-GROUP-3 source none  0   0
Spine2 fabric vnet1 TAP-GROUP-3 source none  0   0
Leaf1  fabric vnet1 TAP-GROUP-2 source none  0   0
Leaf2  fabric vnet1 TAP-GROUP-2 source 274   0   0
Leaf3  fabric vnet1 TAP-GROUP-2 source 22    0   0
Leaf4  fabric vnet1 TAP-GROUP-2 source none  0   0
Leaf5  fabric vnet1 TAP-GROUP-2 source none  0   0
Leaf6  fabric vnet1 TAP-GROUP-2 source none  0   0
Spine1 fabric vnet1 TAP-GROUP-2 source none  0   0
Spine2 fabric vnet1 TAP-GROUP-2 source none  0   0
Leaf1  fabric vnet1 TAP-GROUP-1 source 273   0   0
Leaf2  fabric vnet1 TAP-GROUP-1 source none  0   0
Leaf3  fabric vnet1 TAP-GROUP-1 source none  0   0
Leaf4  fabric vnet1 TAP-GROUP-1 source none  0   0
Leaf5  fabric vnet1 TAP-GROUP-1 source none  0   0
Leaf6  fabric vnet1 TAP-GROUP-1 source none  0   0
Spine1 fabric vnet1 TAP-GROUP-1 source none  0   0
Spine2 fabric vnet1 TAP-GROUP-1 source none  0   0
```

vpg-monitor-port-add

Netvisor ONE allows you to club the ingress or source ports and the destination ports into Virtual Port Groups (vPGs). The vPG construct permits you to flood the traffic that arrives at select source ports to multiple desired destination ports. You must create vPGs to configure the Pluribus Network Packet Broker solution. From Netvisor ONE version 7.0.0 onward, you can configure monitoring ports to analyze the traffic that hits a destination VPG or bidirectional VPG. This command adds a new monitoring port to a pre-configured vPG.

Syntax `vpg-monitor-port-add`

`vpg-name` *`name-string`*	Specify the name of the vPG.
`switch` *`switch-name`*	Specify the name of the switch.
`monitor-ports` *`port-list`*	Specify the monitoring ports assigned to the vPG.

Defaults None

Access Network Administrator

History

Version 7.0.0	Command introduced.

Usage Use this command to add monitoring ports to a vPG.

Examples To add monitoring ports to a vPG, use the following syntax:

```
CLI (network-admin@Leaf1) > vpg-monitor-port-add vpg-name VPG1 monitor-ports
     30
```

vpg-monitor-port-remove

Netvisor ONE allows you to club the ingress or source ports and the destination ports into Virtual Port Groups (vPGs). The vPG construct permits you to flood the traffic that arrives at select source ports to multiple desired destination ports. You must create vPGs to configure the Pluribus Network Packet Broker solution. From Netvisor ONE version 7.0.0 onward, you can configure monitoring ports to analyze the traffic that hits a destination VPG or bidirectional VPG. This command removes monitoring ports from a vPG.

Syntax `vpg-monitor-port-remove`

`vpg-name` *`name-string`*	Specify the name of the vPG.
`switch` *`switch-name`*	Specify the name of the switch.
`monitor-ports` *`port-list`*	Specify the monitoring ports to be removed from the vPG.

Defaults None

Access Network Administrator

History

Version 7.0.0	Command introduced.

Usage Use this command to remove monitoring ports from a vPG.

Examples To remove monitoring ports from a vPG, use the following syntax:

```
CLI (network-admin@Leaf1) > vpg-monitor-port-remove vpg-name VPG1 monitor-
    ports 30
```

vpg-port-add

Netvisor ONE allows you to club the ingress or source ports and the destination ports into Virtual Port Groups (vPGs). The vPG construct permits you to flood the traffic that arrives at select source ports to multiple desired destination ports. You must create vPGs to configure the Pluribus Network Packet Broker solution. This command adds ports to vPGs.

Syntax `vpg-create`

`name` *`name-string`*	Specify the name of the vPG.
`switch` *`switch-name`*	Specify the name of the switch.
`ports` *`port-list`*	Specify the ports assigned to the vPG.
`port-desc` *`port-desc-string`*	Specify a previously configured port description to add the port with that description to the vPG.

Defaults None

Access Network Administrator

History

Version 6.0.0	Command introduced.
Version 7.0.0	The parameter `port-desc` added.

Usage Use this command to add ports to a vPG.

Examples To add ports to a vPG, use the following syntax:

```
CLI (network-admin@Leaf1) > vpg-port-add name TAP-GROUP-1 switch Leaf1 ports
     12, 13
```

vpg-port-remove

Netvisor ONE allows you to club the ingress or source ports and the destination ports into Virtual Port Groups (vPGs). The vPG construct permits you to flood the traffic that arrives at select source ports to multiple desired destination ports. You must create vPGs to configure the Pluribus Network Packet Broker solution. This command removes ports from vPGs.

Syntax `vpg-port-remove`

name *name-string*	Specify the name of the vPG.
ports *port-list*	Specify the ports assigned to the vPG.
port-desc *port-desc-string*	Specify the port description to remove the port with that description from the vPG.

Defaults None

Access Network Administrator

History Command introduced in version 6.0.0

Version 6.0.0	Command introduced.
Version 7.0.0	The parameter `port-desc` added.

Usage Use this command to remove ports from a vPG.

Examples To remove ports from a vPG, use the following syntax:

```
CLI (network-admin@Leaf1) > vpg-port-remove name TAP-GROUP-1 ports 12, 13
```

vport-create

This command is used to create a virtual port on a switch. Virtual ports track information across nodes on the fabric.

Syntax `vport-create`

mac *mac-address*	Specify the MAC address of the vPort.
Specify up to two of the following options:	
vlan *vlan-id*	Specify a VLAN from 0 to 4095.
vxlan *vxlan-id*	Specify a VXLAN from 0 to 16777215.
vnet *vnet-name*	Specify a vNET assigned to the vPort.
Specify at least one of the following options:	
ip *ip-address*	Specify an IP address.
owner *node-name*	Specify the switch ID.
intf *intf-number*	Specify the interface number.
Specify any of the following options:	
bd *bridge-domain-name*	Specify the Bridge Domain assigned to vPort.
inner-vlan *0..4095*	Specify the Q-in-Q inner VLAN assigned to vPort.
public-vlan *vlan-id*	Specify the ID of the public VLAN.
num-ips *num-ips-number*	Specify the number of IP addresses for the vPort.
config-intf *config-intf-number*	Specify the configuration interface number.
svc-name *svc-name-string*	Specify the vCenter connection service name.
hostname *hostname-string*	Specify the host name of the switch.
entity *entity-string*	Specify the VM or VM Kernel device name.
power none|powered-off|powered-on|standby|suspended|unknown	Specify the vPort entry power status.
cpus *cpus-number*	Specify the number of CPUs assigned to the VM.
os *os-string*	Specify an operating system, such as CentOS or Ubuntu, on the VM.
portgroup *portgroup-string*	Specify the Port Group name associated with VM MAC address.
pg-vlans *vlan-list*	Specify the valid VLANs for the port group.
vswitch *vswitch-string*	Specify the vitual switch name associated with the NIC.

`vs-type none|host-vs|distributed-vs|unknown`	Specify the virtual switch type.
`vnic-type untagged|tagged|trunked|vm-mgmt|vm-kernel|vMotion|vSAN|FTL|rep|p-NFC|r-NFC|mgmt|unknown`	Specify the type of vNIC attached to the VM or VM Kernel.
`rem-switch` *`node-name`*	Specify the remote switch for the vPort.
`hw-index` *`hw-index-number`*	Specify the hardware index number.
`rt-if` *`rt-if-string`*	Specify the router interface.
`hw-flags invalid-vlan|invalid-port`	Specify the vPort hardware flags.

Defaults None

Access CLI

History

Version 2.2	Command introduced.
Version 2.3	The parameters, `num-ips` and `vm-status`, added.
Version 2.3.1	The parameter, `switch-id`, changed to `owner`.
Version 2.4	The parameters, `hw-index` and `rt-if`, added.
Version 2.4.1	The parameters, `vnet`, `hw-flags`, and `public-vlan`, added. The parameter, `blocked-ports`, deprecated.
Version 2.6.2	The parameter, `svc-name`, `power`, `entity`, `portgroup`, `pg-vlans`, `vswitch`, `vs-type`, and `vnic-type`, added. The parameters, `hypervisor`, `vm-id`, `vm-name`, `vm-flavor`, `vm-status`, `memory`, deprecated.

Usage Use this command to create a vPort on the switch. vPorts are mirrored across the fabric so that every switch knows about all the L2 entries on the fabric. This is useful for troubleshooting connections across the fabric.

Examples To configure a vPort with the MAC address of 06:60:00:02:10:38, IP address of 192.168.11.11, on VLAN 107, use the following syntax:

```
CLI (network-admin@switch) > vport-create mac 06:60:00:02:10:38 vlan
107 ip 192.168.11.11
```

vport-delete

This command is used to delete a virtual port on a switch. Virtual ports track information across nodes on the fabric.

Syntax `vport-delete`

`mac` *`mac-address`*	Specify the MAC address of the vPort to delete from the configuration.
`vnet` *`vnet-name`*	Specify a vNET assigned to the vPort.
`bd` *`bridge-domain-name`*	Specify the Bridge Domain assigned to vPort
`vlan` *`vlan-id`*	Specify the VLAN ID of the vPort to delete from the configuration.
`vxlan` *`vxlan-id`*	Specify the VXLAN ID of the vPort to delete from the configuration.
`ip` *`ip-address`*	Specify the IP address of the vPort to delete from the configuration.

Defaults None

Access CLI

History

Version 2.2	Command introduced.
Version 2.4.1	The parameter `vnet` added.

Usage Use this command to remove a vPort from the configuration.

Examples To remove the vPort with the IP address, 192.168.11.9, use the following command:

```
CLI (network-admin@switch) > vport-delete ip 192.168.11.9
```

vport-modify

This command is used to modify a virtual port on a switch. Virtual ports track information across nodes on the fabric.

Syntax `vport-modify`

`mac` *`mac-address`*	Specify the MAC address of the vPort.
Specify the following options:	
`vnet` *`vnet-name`*	Specify a vNET assigned to the vPort.
`bd` *`bridge-domain-name`*	Specify the Bridge Domain assigned to vPort.
`vlan` *`vlan-id`*	Specify a VLAN from 0 to 4095.
`vxlan` *`0..16777215`*	VXLAN assigned to vPort.
`ip` *`ip-address`*	Specify an IP address.
`owner` *`node-name`*	Specify the switch ID.
`intf` *`intf-number`*	Specify the interface number.
`inner-vlan` *`0..4095`*	Specify the Q-in-Q inner VLAN assigned to vPort.
`public-vlan` *`vlan-id`*	Specify the ID of the public VLAN.
`num-ips` *`num-ips-number`*	Specify the number of IP addresses for the vPort.
`config-intf` *`config-intf-number`*	Specify the configuration interface number.
`svc-name` *`svc-name-string`*	Specify the vCenter connection service name.
`hostname` *`hostname-string`*	Specify the host name of the switch.
`entity` *`entity-string`*	Specify the VM or VM Kernel device name.
`power none|powered-off|powered-on| standby|suspended|unknown`	Specify the vPort entry power status.
`cpus` *`cpus-number`*	Specify the number of CPUs assigned to the VM.
`os` *`os-string`*	Specify an operating system, such as CentOS or Ubuntu, on the VM.
`portgroup` *`portgroup-string`*	Specify the Port Group name associated with VM MAC address.
`pg-vlans` *`vlan-list`*	Specify the valid VLANs for the port group.
`vswitch` *`vswitch-strin`*`g`	Specify the vitual switch name associated with the NIC.
`vs-type none|host-vs|distributed-vs|`	Specify the virtual switch type.

unknown	
vnic-type untagged|tagged|trunked|vm-mgmt|vm-kernel|vMotion|vSAN|FTL|rep|p-NFC|r-NFC|mgmt|unknown	Specify the type of vNIC attached to the VM or VM Kernel.
config none|owner|ip|port|hostname|entity|cpus|os	VM configuration.
rem-switch *node-name*	Specify the remote switch for the vPort.
hw-index *hw-index-number*	Specify the hardware index number.
rt-if *rt-if-string*	Specify the router interface.
hw-flags invalid-vlan|invalid-port	Specify the vPort hardware flags.

Defaults None

Access CLI

History

Version 2.2	Command introduced.
Version 2.3	The parameters, `num-ips` and `vm-status`, added.
Version 2.4	The parameters, `hw-index` and `rt-if`, added.
Version 2.4.1	The parameters, `vnet`, `hw-flags`, and `public-vlan`, added. The parameter, `blocked-ports`, deprecated.
Version 2.6.2	The parameter, `svc-name`, `power`, `entity`, `portgroup`, `pg-vlans`, `vswitch`, `vs-type`, and `vnic-type`, added. The parameters, `hypervisor`, `vm-id`, `vm-name`, `vm-flavor`, `vm-status`, `memory`, deprecated.

Usage Use this command to modify a vPort configuration on the switch. vPorts are mirrored across the fabric so that every switch knows about all the L2 entries on the fabric. This is useful for troubleshooting connections across the fabric.

Examples To modify a vPort with the MAC address of 06:60:00:02:10:38, IP address of 192.168.11.11, and change the VLAN to 107, use the following syntax:

```
CLI (network-admin@switch) > vport-modify mac 06:60:00:02:10:38 vlan
107 ip 192.168.11.11
```

vport-show

This command is used to display information about virtual ports on a fabric. Virtual ports track switch information across nodes on the fabric.

> **Informational Note**: Netvisor does not automatically populate the output fields for hypervisor and VM. In future releases, Netvisor gathers this information using a multicast communication across the fabric.

Syntax `vport-show`

`owner node` *`name`*	Displays the owner name.
`mac` *`mac-address`*	Displays the MAC address of the vPort.
`vnet vnet-name`	Displays the vNET name.
`bd bridge-domain name`	Bridge Domain assigned to vPort.
`vlan` *`vlan-id`*	Displays a VLAN from 0 to 4095.
`inner-vlan` *`0..4095`*	Q-in-Q inner VLAN assigned to vPort.
`public-vlan` *`0..4095`*	Displays the ID of the public VLAN.
`vxlan` *`vxlan-id`*	Displays a VXLAN from 0 to 16777215.
`ip` *`ip-address`*	DisplaysDisplays an IP address.
`num-ips` *`num-ips-number`*	Displays the number of IP addresses for the vPort.
`config-intf` *`config-intf-number`*	Displays the configuration interface number.
`intf intf-number`	Port that owns the vPort
`ports` *`port-list`*	Displays the list of ports.
`state active|static|vrrp|tunnel|software|needs-peer-status|port-mac|hit|ageout-check|moving|loop-probe|local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only|active-state-mismatch|peer-port-missing|peer-port-not-vlag|peer-port-not-orphaned|peer-port-not-cluster-link|sw-active|anycast|hsrp|invalid-vlan|owner-lost|cluster-link-down|vxlan-router|peer-force-resync|excess-mac-move-detected|excess-ip-move-detected|retry|evpn|evpn-wo-bgp|evpn-def-gw|evpn-delete`	Displays the vPort state.
`svc-name` *`svc-name-string`*	Displays the name of the vCenter connection service.
`hostname` *`hostname-string`*	Displays the hypervisor or switch host name.

entity *entity-string*	Displays the VM or KVM device name.
power none|powered-off|powered-on| standby|suspended|unknown	Displays the vPort entry status.
cpus *cpus-number*	Displays the number of CPUs assigned to the VM.
os *os-string*	Displays an operating system, such as CentOS or Ubuntu, on the VM.
portgroup *portgroup-string*	Displays the port group name associated with the VM MAC address.
pg-vlans *vlan-list*	Displays the VLANs assigned to a port group.
vswitch vswitch-string	Displays the name of the virtual switch associated with a NIC.
vs-type none|host-vs|distributed-vs| unknown	Displays the type of virtual switch.
vnic-type untagged|tagged|trunked|vm-mgmt|vm-kernel|vMotion|vSAN|FTL| rep|p-NFC|r-NFC|mgmt|unknown	Displays the type of vNIC associated with the VM or VM-Kernel.
config none|owner|ip|port|hostname| entity|cpus|os	Displays the configuration type for the virtual switch.
rem-switch node *name*	Displays the name of the remote switch.
rem-intf *rem-intf-number*	Displays the remote interface number.
rem-ports *port-list*	Displays the remote switch ports.
peer-intf *peer-intf-number*	Displays the peer interface number.
peer-state active|static|vrrp|tunnel| software|needs-peer-status|port-mac| hit|ageout-check|moving|loop-probe| local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only| active-state-mismatch|peer-port-missing|peer-port-not-vlag|peer-port-not-orphaned|peer-port-not-cluster-link|sw-active|anycast|hsrp|invalid-vlan|owner-lost|cluster-link-down| vxlan-router|peer-force-resync|excess-mac-move-detected|excess-ip-move-detected|retry|evpn|evpn-wo-bgp|evpn-def-gw| evpn-delete	Displays the state of the peer vPorts.
peer-owner-state active|static|vrrp| tunnel|software|needs-peer-status|port-mac|hit|ageout-check|moving|loop-probe| local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only| active-state-mismatch|peer-port-	Displays the state of the peer owner vPorts.

missing|peer-port-not-vlag|peer-port-not-orphaned| peer-port-not-cluster-link|sw-active|anycast|hsrp|invalid-vlan|owner-lost|cluster-link-down|vxlan-router|peer-force-resync|excess-mac-move-detected|excess-ip-move-detected|retry|evpn| evpn-wo-bgp|evpn-def-gw|evpn-delete	
status phy-up|up|disabled|hw-nat-loop|mirror-loop|mirror-to|PN-switch|PN-fabric|PN-other|PN-cluster|PN-internal|host|uplink|STP-BPDUs|LLDP|trunk|l3-port|remote-l3-port|dhcp| dhcpsvr|blocked|no-BPDU|LACP-PDUs|vlag-active|vlag-blocked|stp-edge-port|LACP-wait|LACP-fallback|adjacency-wait|adjacency-check|vlag-wait|multicast-router|host-disabled|loop|congested|vxlan-loopback|vlan-up|vle|vle-wait|phy-down|down|enabled|err-disabled|err-bpdu-guard|mac-violation|stp-bpdu-guard|stp-root-guard|defer-bringup-wait	Displays the vPort status.
vtep-ip *ip-address*	Displays the VTEP IP address.
tunnel *tunnel-string*	Displays the vPort tunnel.
create-time date/time: yyyy-mm-ddTHH:mm:ss	Displays the vPort create time.
last-seen date/time: yyyy-mm-ddTHH:mm:ss	Displays the last time the vPorts was seen.
vxlan-lru date/time: yyyy-mm-ddTHH:mm:ss	Displays the time and date of the VXLAN LRU.
hit *hit-number*	Displays the number of hits.
migrate *migrate-number*	Displays the number of times the entry migrated.
drops *drops-number*	Displays the number of dropped packets.
hw-index *hw-index-number*	Displays the hardware index number.
rt-if *rt-if-string*	Displays the router interface.
hw-flags invalid-vlan|invalid-port	Displays hardware flags.
mc-index *mc-index-number*	L2 multicast group index in hardware.

Defaults None

Access CLI

History

Version 2.2	Command introduced.
Version 2.2.6	The parameters, `stp-edge-port|LACP-wait|adjacency-wait|adjacency-check|vlag-wait|multicast-router`, added.
Version 2.3	The parameters, `num-ips` and `vm-status`, added.
Version 2.4.1	The parameter, `public-vlan`, added.
Version 2.6.2	The parameter, `svc-name`, `power`, `entity`, `portgroup`, `pg-vlans`, `vswitch`, `vs-type`, and `vnic-type`, added. The parameters, `hypervisor`, `vm-id`, `vm-name`, `vm-flavor`, `vm-status`, `memory`, deprecated.
Version 3.0.0	The options, `anycast`, `invalid-vlan`, and `owner-lost`, added to `state`, `peer-state`, and `peer-owner-state`.
Version 3.1.0	The parameters `vtep-ip` and `ND` added.
Version 6.1.0	The options `evpn`, `evpn-wo-bgp`, `evpn-def-gw`, `evpn-delete` added to `state`, `peer-state`, and `peer-owner-state`.

Usage Use this command to display vPort information on the switch. Netvisor mirrors vPorts across the fabric so every switch knows about all the L2 entries on the fabric. You may find this useful for troubleshooting connections across the fabric.

Examples To display vPorts, use the following syntax:

```
CLI (network-admin@switch) > vport-show format all layout vertical
mac:          66:0e:94:21:64:74
vlan:         103
config-intf:  70
config:       port
switch-id:    pleiades24
mac:          00:00:5e:00:01:0a
vlan:         107
config:       switch
rem-switch:   pleiades25
switch-id:    pleiades25
mac:          66:0e:94:21:a9:6c
vlan:         100
ip:           192.168.11.4
intf:         65
ports:        65
state:        active
hostname:     pleiades25
status:       PN-internal
create-time:  09-10,15:17:47
last-seen:    09-15,10:55:22
hit:          2
migrate:      1
switch-id:    pleiades24
```

```
mac:           66:0e:94:21:64:74
vlan:          100
ip:            192.168.100.12
intf:          65
ports:         65
hostname:      pleiades24
status:        PN-internal
create-time:   09-10,15:17:48
last-seen:     09-10,15:17:48
hit:           1
switch-id:     pleiades24
```

vport-settings-modify

vPort information is collected and stored on a disk on the switch at specific intervals. This command is used to modify the vPort settings.

Syntax `vport-settings-modify`

Specify one or more of the following options:	
`vport-disk-space` *`vport-disk-space-number`*	Specify the amount of disk space for vPorts. The default is 500M.
`stats-max-memory` *`stats-max-memory-number`*	Specify the maximum memory for collecting vPort information. The default memory is 50M.
`stats-log-enable|stats-log-disable`	Specify if you want to enable or disable logs for vPort statistics. Enabled by default.
`stats-log-interval duration:` *`#d#h#m#s`*	Specify the interval between logging events. The default is one minute.
`stats-log-disk-space` *`disk-space-number`*	Specify the amount of disk space for vPort logs. The default is 50M.
`system-stats-max-memory` *`system-stats-max-memory-number`*	Specify the maximum memory for system statistics
`system-stats-log-enable|system-stats-log-disable`	Specify if you want to enable or disable logging for the system. Enabled by default.
`system-stats-log-interval duration:` *`#d#h#m#s`*	Specify the interval between logging events. The default is one minute.
`system-stats-log-disk-space` *`disk-space-number`*	Specify the disk space for system statistics. The default is 50M.
`loop-prevent|no-loop-prevent`	Enable or disable loop prevent.
`retry-interval` *`15..3600`*	Specify the number of seconds before next update for entries with error.
`excess-mac-move-protection-enable|no-excess-mac-move-protection-enable`	Enable or disable excess MAC move protection.
`excess-mac-move-queue-protect|no-excess-mac-move-queue-protect`	Enable or disable excess MAC move queue protection.
`excess-ip-move-protection-enable|no-excess-ip-move-protection-enable`	Enable or disable excess IP move protection.
`excess-ip-move-queue-protect|no-excess-ip-move-queue-protect`	Enable or disable excess IP move queue protection.

Defaults See individual parameters.

Access CLI

History Command introduced in nvOS Version 2.2.

Version 2.2	Command introduced.
Version 6.0.0	The parameters `excess-mac-move-protection-enable|no-excess-mac-move-protection-enable`, `excess-mac-move-queue-protect|no-excess-mac-move-queue-protect`,`excess-ip-move-protection-enable|no-excess-ip-move-protection-enable`, and `excess-ip-move-queue-protect|no-excess-ip-move-queue-protect` added.

Usage Use the command to modify vPort settings to collect vPort information.

Examples To modify the vPort disk space from 500M to 1G, use the following syntax:

```
CLI (network-admin@switch) > vport-settings-modify vport-disk-space 1G
```

vport-settings-show

Netvisor collects and stores vPort information on a disk on the switch at specific intervals. This command is used to display the vPort settings.

Syntax `vport-settings-show`

Defaults See individual parameters.

Access CLI

History

Version 2.2	Command introduced.
Version 6.0.0	The parameters, excess-mac-move-protection-enable, excess-mac-move-queue-protect,excess-mac-move-queue-state, excess-ip-move-protection-enable, excess-ip-move-queue-protect, and excess-ip-move-queue-state added.

Usage Use the command to display vPort settings for collecting vPort information.

Examples To display vPort settings, use the following syntax:

```
CLI (network-admin@switch1) > vport-settings-show format all
switch:                              switch1
vport-disk-space:                    500M
stats-max-memory:                    50M
stats-log-enable:                    yes
stats-log-interval:                  1m
stats-log-disk-space:                50M
system-stats-max-memory:             50M
system-stats-log-enable:             yes
system-stats-log-interval:           1m
system-stats-log-disk-space:         50M
loop-prevent:                        enabled
excess-mac-move-protection-enable:   yes
excess-mac-move-queue-protect:       yes
excess-mac-move-queue-state:         active
excess-ip-move-protection-enable:    yes
excess-ip-move-queue-protect:        yes
excess-ip-move-queue-state:          active
```

vport-stats-show

This command is used to display vPort statistics including the number of incoming and outgoing packets.

Syntax `vport-stats-show`

`time date/time: yyyy-mm-ddThh:mm:ss`	Specifies a point in tjme for displaying historical information.
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies the start time for vPort history collection.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies the end time for vPort history collection.
`duration duration: #d#h#m#s`	Specifies the duration to collect the vPort history.
`interval duration: #d#h#m#s`	Specifies the intervals to collect vPort history.
`since-start`	Specifies to display all of the vPort history since collection began on the fabric.
`older-than duration: #d#h#m#s`	Specifies to display vPort information older than a specific duration.
`within-last duration: #d#h#m#s`	Specifies to display vPort information with a specific duration.
`switch-id node name`	Specifies the switch ID for collecting vPort statistics.
`hostname hostname-string`	Specifies the host name statistics.
`ip ip-address`	Specifies IP address statistics.
`mac mac-address`	Specifies the MAC address assigned to the vPort.
`vnet vnet name`	Specifies vNET statistics.
`bd bridge-domain-name`	Bridge Domain connections.
`vlan vlan-id`	Specifies VLAN statistics. Range is 0..4095.
`vxlan vxlan-id`	Specifies VXLAN statistics. Range is 0..16777215.
`entity entity-string`	Specifies the VM or VM Kernel device name.
`vnic-type untagged|tagged|trunked|vm-mgmt|vm-kernel|vMotion|vSAN|FTL| rep|p-NFC|r-NFC|mgmt|unknown`	Specifies the vNic attached to VM traffic type.
`vs-type none|host-vs|distributed-vs| unknow`	Specifies the Virtual Switch type
`ibytes ibytes-number`	Specifies number of incoming bytes.
`ipkts ipkts-number`	Specifies number of incoming packets.

idiscards *idiscards-number*	Specifies number of incoming packets discarded.
ierrs *ierrs-number*	Specifies number of incoming packets with errors..
obytes *obytes-number*	Specifies number of outoing bytes.
opkts *opkts-number*	Specifies number of outoing packets.
odiscards *odiscards-number*	Specifies number of outgoing packets discarded.
oerrs *oerrs-number*	Specifies number of outgoing packets with errors.
count *count-number*	Specifies the statistics count.

Defaults None

Access CLI

History

Version 2.3	Command introduced.
Version 2.4.1	The parameter, `count`, added.
Version 2.5.4	The parameters, `entity`, `vnic-type`, and `vs-type` added.

Usage Use this command to display vPort statistics.

Examples To generate a report, use the following syntax:

```
CLI (network-admin@switch) > vport-stats-show
```

vport-history-show

This command is used to display historical information about virtual ports on a fabric. Virtual ports track information about servers, virtual machines, and switches in a fabric.

> **Informational Note**: Netvisor does not automatically populate the output fields for hypervisor and VM. In future releases, Netvisor gathers this information using a multicast communication across the fabric.

Syntax `vport-history-show`

`time date/time: yyyy-mm-ddThh:mm:ss`	Specifies a point in tjme for displaying historical information.
`start-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies the start time for vPort history collection.
`end-time date/time: yyyy-mm-ddThh:mm:ss`	Specifies the end time for vPort history collection.
`duration duration: #d#h#m#s`	Specifies the duration to collect the vPort history.
`interval duration: #d#h#m#s`	Specifies the intervals to collects vPort history.
`since-start`	Specifies to display all of the vPort history since collection began on the fabric.
`older-than duration: #d#h#m#s`	Specifies to display vPort information older than a specific duration.
`within-last duration: #d#h#m#s`	Specifies to display vPort information with a specific duration.
`log-type l2-save|l3-save|restart|l2-modify|l2-delete|l3-modify|l3-delete`	Filter output by the log type of each entry. The log-type column displays when a vPort is created, modified, saved, or deleted.
`caller init|config|status|switch-cb|cluster|gre|ARP|router|flow-cb|vdp|vlag|port|inject|evict|vxlan|stats|vnm-vnic|adjacency|stp|trunk|intsw|ttl1|flood|flush|retire|loop|dhcp|fabric|table|l3-age-out|vlan|l2-checker|igmp|l2-age-out|port-mirror|mac-move|cluster-status|cluster-status-delete|vxlan-routing|subnet|br-dom|vrf|ND|VSG|excess-move-protection|retire-tunnel-up|evpnsnoop-browse`	Specifies the feature that made the change for this entry.
`last-caller init|config|status|switch-cb|cluster|gre|ARP|router|flow-cb|vdp|vlag|port|inject|evict|vxlan|stats|vnm-vnic|adjacency|stp|trunk|intsw|ttl1|flood|flush|retire|loop|dhcp|fabric|table|l3-age-out|vlan|l2-checker|igmp|l2-age-out|port-mirror|mac-move|cluster-status|cluster-status-delete|vxlan-routing|subnet|br-dom|vrf|ND|VSG|`	Specifies the most recent caller for this entry.

excess-move-protection|retire-tunnel-up|evpnsnoop-browse	
reason activate|deactivate|port-move|ip-move|ip-remove|batch-move|retire|break-loop|break-loop-timeout|create|modify|delete|policy|owner-status|remove-node|port-flags|check-owner|trunk-port-add|trunk-port-remove|move-router-if|age-out|hw-remove|restart|undo|flush|update-vxlan-vlan|needs-peer-status|owner-lost|owner-change|update-peer-only| user-delete|done|vm-metadata|excess-move-state-change	Specifies the reason for history entry.
last-reason activate|deactivate|port-move|ip-move|ip-remove|batch-move|retire|break-loop|break-loop-timeout|create|modify|delete|policy|owner-status|remove-node|port-flags|check-owner|trunk-port-add|trunk-port-remove|move-router-if|age-out|hw-remove|restart|undo|flush|update-vxlan-vlan|needs-peer-status|owner-lost|owner-change|update-peer-only|user-delete|done|vm-metadata|excess-move-state-change	Specifies most recent reason for this entry.
changes owner|mac|vnet|bd|inner-vlan|public-vlan|vxlan|num-ips|config-intf|intf|ports|state|local-intf|local-ports|local-state|alt-owner|alt-owner-port|alt-owner-ports|alt-owner-state|svc-name|hostname|entity|power|cpus|os|portgroup|pg-vlans|vswitch|vs-type|vnic-type|config|rem-switch|rem-intf|rem-ports|peer-intf|peer-state|peer-owner-state|status|vtep-ip|tunnel|create-time|last-seen|last-seen-since|vxlan-lru|hit|migrate|drops|hw-index|rt-if|hw-flags|mc-index	Specifies what changed in this entry.
count *count-number*	Filter output by the number of entries summed using the sum-by argument.
owner *node-name*	the switch-id of the vPort.
mac *mac-address*	Filter output by the Filter output by MAC address.
vnet *vnet-name*	vNET assigned to the vPort.
bd *bridge-domain-name*	Bridge Domain assigned to vPort.
vlan *vlan-id*	Filter output by the VLAN ID.
inner-vlan 0..4095	Q-in-Q inner VLAN assigned to vPort.

vxlan *vxlan-id*	Filter output by the VXLAN ID.
public-vlan *vlan-id*	Specify the ID of the public VLAN.
ip *ip-address*	Filter output by the IP address.
num-ips *num-ips-number*	Specify the number of IP addresses for the vPort.
intf *intf-number*	Filter output by the interface number. This is the port or trunk number of the vPort.
config-intf *config-intf-number*	Filter output by the configured interface of the vPort.
ports port-list	Filter output by the list of ports.
state active|static|vrrp|tunnel|software|needs-peer-status|port-mac|hit|ageout-check|moving|loop-probe|local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only|active-state-mismatch|peer-port-missing|peer-port-not-vlag|peer-port-not-orphaned|peer-port-not-cluster-link|sw-active|anycast|hsrp|invalid-vlan|owner-lost|cluster-link-down|vxlan-router|peer-force-resync|excess-mac-move-detected|excess-ip-move-detected|retry|evpn|evpn-wo-bgp|evpn-def-gw|evpn-delete	Filter output by the state of the vPort.
svc-name *svc-name-string*	Specify the vCenter connection service name.
hostname *hostname-string*	Specify the host name of the switch.
entity *entity-string*	Specify the VM or VM Kernel device name.
power none|powered-off|powered-on|standby|suspended|unknown	Specify the vPort entry power status.
cpus *cpus-number*	Filter output by the number of CPUs assigned to the VM.
os *os-string*	Filter output by the OS installed on the VM.
portgroup *portgroup-string*	Specify the Port Group name associated with VM MAC address.
pg-vlans *vlan-list*	Specify the valid VLANs for the port group.
vswitch *vswitch-string*	Specify the vitual switch name associated with the NIC.
vs-type none|host-vs|distributed-vs|unknown	Specify the virtual switch type.
vnic-type untagged|tagged|trunked|vm-mgmt|vm-kernel|vMotion|vSAN|FTL|rep|p-NFC|r-NFC|mgmt|unknown	Specify the type of vNIC attached to the VM or VM Kernel.

config none|owner|ip|port|hostname|entity|cpus|os	The VM configuration.
rem-switch *node-name*	Filter output by the remote switch name.
rem-intf *rem-intf-number*	Filter output by the remote interface number.
rem-ports *port-list*	Filter output by the remote ports.
peer-intf *peer-intf-number*	Filter output by the peer interface.
peer-state active|static|vrrp|tunnel|software|needs-peer-status|port-mac|hit|ageout-check|moving|loop-probe|local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only|active-state-mismatch|peer-port-missing|peer-port-not-vlag|peer-port-not-orphaned|peer-port-not-cluster-link|sw-active|anycast|hsrp|invalid-vlan|owner-lost|cluster-link-down|vxlan-router|peer-force-resync|excess-mac-move-detected|excess-ip-move-detected|retry|evpn|evpn-wo-bgp|evpn-def-gw|evpn-delete	Filter output by peer-state.
peer-owner-state active|static|vrrp|tunnel|software|needs-peer-status|port-mac|hit|ageout-check|moving|loop-probe|local-tunnel|igmp-mac|user-flush|vxlan-loopback|router|update-peer-only|active-state-mismatch|peer-port-missing|peer-port-not-vlag|peer-port-not-orphaned| peer-port-not-cluster-link|sw-active|anycast|hsrp|invalid-vlan|owner-lost|cluster-link-down|vxlan-router|peer-force-resync|excess-mac-move-detected|excess-ip-move-detected|retry|evpn| evpn-wo-bgp|evpn-def-gw|evpn-delete	Filter output by owner state.
status phy-up|up|disabled|hw-nat-loop|mirror-loop|mirror-to|PN-switch|PN-fabric|PN-other|PN-cluster|PN-internal|host|uplink|STP-BPDUs|LLDP|trunk|l3-port|remote-l3-port|dhcp| dhcpsvr|blocked|no-BPDU|LACP-PDUs|vlag-active|vlag-blocked|stp-edge-port|LACP-wait|LACP-fallback|adjacency-wait|adjacency-check|vlag-wait|multicast-router|host-disabled|loop|congested|vxlan-loopback|vlan-up|vle|vle-wait|phy-down|down|enabled|err-disabled|err-bpdu-guard|mac-violation|stp-bpdu-guard|stp-root-guard|defer-bringup-wait	Filter output by the status of the vPort.

vtep-ip *ip-address*	Displays the VTEP IP address.
tunnel *tunnel-string*	Specifies the vPort tunnel.
create-time date/time: yyyy-mm-ddThh:mm:ss	Filter output by the time that the vPort was created.
last-seen date/time: yyyy-mm-ddThh:mm:s	Filter output by the time that the vPort was last seen on the fabric.
vxlan-lru date/time: yyyy-mm-ddTHH:mm:ss	Filter output by the VXLAN LRU.
hit *hit-number*	Filter output by the number of received hits.
migrate *migrate-number*	Filter output by the number of times that the vPort migrated on the fabric.
drops *drops-number*	Filter output by the number of drops on the fabric.
hw-index *hw-index-number*	Filter by the hardware index.
rt-if *rt-if-string*	Filter by the router interface.
hw-flags invalid-vlan|invalid-port	Filter by hardware flags.
mc-index mc-index-number	L2 multicast group index in hardware.

Defaults None

Access CLI

History

Version 2.2	Command introduced.
Version 2.2.6	The parameters, stp-edge-port|LACP-wait|adjacency-wait|adjacency-check|vlag-wait|multicast-router, added.
Version 2.3	The parameters, num-ips and vm-status, added.
Version 2.3.1	The parameters, caller, last-call, reason, last-reason, and changes added.
Version 2.4	The options, l3-modify, l3-save, and l3-delete, added to log-type. The parameters, peer-intf, peer-state, and peer-owner-state added.
Version 2.4.1	The parameters, vnet and public-vlan, added. The options, retire|break-loop|break-loop-timeout, added to the parameter reason. The options vxlan-loopback|router, added to the parameter, state. The parameters, hw-index, rt-if, and hw-flags, added.
Version 2.6.2	The parameter, svc-name, power, entity,

	portgroup, pg-vlans, vswitch, vs-type, and vnic-type, added. The parameters, hypervisor, vm-id, vm-name, vm-flavor, vm-status, memory, deprecated.
Version 3.1.0	The parameters vtep-ip and ND added.

Usage Use this command to display vPort history on the switch. vPorts are mirrored across the fabric so that every switch knows about all the L2 entries on the fabric. This is useful for troubleshooting connections across the fabric.

Examples To display vPort history, with the parameter since-start, use the following syntax:

```
CLI (network-admin@switch) > vport-history-show since-start format all layout vertical

  time:         09-10,15:17:03
  log-type:     l2-modify
  switch-id:    pleaides24
  mac:          64:0e:94:28:03:3e
  vlan:         1
  intf:         65
  ports:        65
  local-intf:   65
  local-ports:  65
  create-time:  09-10,15:17:06
  time:         09-10,15:17:06
  log-type:     l2-modify
  switch-id:    pleaides24
  mac:          64:0e:94:28:03:3e
  vlan:         1
  intf:         65
  ports:        65
  state:        active
  local-intf:   65
  local-ports:  65
  local-state:  active
  create-time:  09-10,15:17:06
  last-seen:    09-10,15:17:06
  hit:          1
  time:         09-10,15:17:07
  log-type:     l2-modify
```

vrf-create

Virtual Routing and Forwarding (VRF) is a technology that virtualizes the hardware routing capabilities of a vRouter or a Layer 3 switch and offers per logical instance dedicated control and data planes. This command creates a VRF.

Syntax `vrf-create name`

`name` *`name-string`*	Specify a name for the VRF.
`vnet` *`name-string`*	Specify the name of the vNET.
`scope local|cluster|fabric`	Specify the scope of the VRF.
`vrf-gw` *`ip-address`*	Specify an IPv4 address for the gateway.
`vrf-gw2` *`ip-address`*	Specify a second IPv4 address for the gateway.
`vrf-gw-ip6` *`ip-address`*	Specify an IPv6 address for the gateway.
`vrf-gw2-ip6` *`ip-address`*	Specify a second IPv6 address for the gateway.
`l3-vni` *`0..16777215`*	Specify the L3 VNI.
`enable|disable`	Enable or disable VRF.
`description` *`description-string`*	Specify a VRF description.

Defaults None

Access Network Administrator

History

Version 3.1.0	Command introduced.
Version 6.0.0	The parameter, `description`, added.
Version 6.1.0	The parameter, `l3-vni`, added.

Usage Use this command to configure VRF.

Examples To configure VRF, blue, on vNET red, scope local, and a gateway address, 192.168.11.5, use the following syntax:

```
CLI (network-admin@switch) > vrf-create name blue vnet red scope local
vrf-gw  192.168.11.5
```

vrf-delete

Virtual Routing and Forwarding (VRF) is a technology that virtualizes the hardware routing capabilities of a vRouter or a Layer 3 switch and offers per logical instance dedicated control and data planes. This command deletes a VRF configuration.

Syntax `vrf-delete`

`name` *`name-string`*	Specify a name for the VRF.
`vnet` *`name-string`*	Specify the name of the vNET.

Defaults None

Access Network Administrator

History Command introduced in Version 3.1.0

Usage Use this command to delete a VRF.

Examples To delete VRF, blue, and vNet, red, , use the following syntax:

```
CLI (network-admin@switch) > vrf-delete name blue vnet red
```

vrf-modify

Virtual Routing and Forwarding (VRF) is a technology that virtualizes the hardware routing capabilities of a vRouter or a Layer 3 switch and offers per logical instance dedicated control and data planes. This command modifies a VRF configuration.

Syntax `vrf-modify`

`name` *`name-string`*	Specify a name for the VRF.
`vnet` *`name-string`*	Specify the name of the vNET.
`scope local|cluster|fabric`	Specify the scope of the VRF.
`vrf-gw` *`ip-address`*	Specify an IPv4 address for the gateway.
`vrf-gw2` *`ip-address`*	Specify a second IPv4 address for the gateway.
`vrf-gw-ip6` *`ip-address`*	Specify an IPv6 address for the gateway.
`vrf-gw2-ip6` *`ip-address`*	Specify a second IPv6 address for the gateway.
`l3-vni 0..16777215`	specify an L3 VNI.
`enable|disable`	Enable or disable VRF.
`description` *`description-string`*	Specify a VRF description.

Defaults None

Access Network Administrator

History

Version 3.1.0	Command introduced.
Version 6.0.0	The parameter, `description`, added.
Version 6.1.0	The parameter, `l3-vni`, added.

Usage Use this command to modify a VRF.

Examples To modify VRF, blue, and a gateway address, 192.168.13.7, use the following syntax:

```
CLI (network-admin@switch) > vrf-modify name blue vnet red vrf-gw
192.168.13.7
```

vrf-show

Virtual Routing and Forwarding (VRF) is a technology that virtualizes the hardware routing capabilities of a vRouter or a Layer 3 switch and offers per logical instance dedicated control and data planes. This command displays a VRF configuration.

Syntax `vrf-show`

`name` *`name-string`*	Displays the VRF name.
`vnet` *`name-string`*	Displays the name of the vNET.
`scope local|cluster|fabric`	Displays the scope of the VRF.
`vrf-gw` *`ip-address`*	Displays an IPv4 address for the gateway.
`vrf-gw2` *`ip-address`*	Displays a second IPv4 address for the gateway.
`vrf-gw-ip6` *`ip-address`*	Displays an IPv6 address for the gateway.
`vrf-gw2-ip6` *`ip-address`*	Displays a second IPv6 address for the gateway.
`l3-vni` *`0..16777215`*	Displays the L3 VNI
`active yes|no`	Displays the status of the VRF.
`hw-router-mac` *`mac-address`*	Displays the MAC address of the vRouter.
`hw-vrid` *`number`*	Displays the vRouter ID as a number from 1 to 15.
`enable|disable`	Enable or disable VRF.
`description` *`description-string`*	Displays the VRF description.

Defaults None

Access Network Administrator

History Command introduced in Version 6.1.0.

Version 3.1.0	Command introduced.
Version 6.0.0	The parameter, `description`, added.
Version 6.1.0	The parameter, `l3-vni`, added.

Usage Use this command to display information about a VRF configuration.

Examples To display information about a VRF configuration, use the following syntax:

```
CLI (network-admin@switch) > vrf-show format name,vnet,anycast-mac,l3-
vni,active,hwrouter-mac,hw-vrid,flags,enable
name vnet anycast-mac       l3-vni active hw-router-mac     hw-vrid flags  enable
---- ---- ----------------- ------ ------ ----------------- ------- ------ ------
VRF1 0:0  64:0e:94:40:00:02 101000 yes 66:0e:94:48:68:a7    1       subnet yes
```

vrf-mroute-show

This command displays information about distrbuted multicast forwarding in a L3/VXLAN network.

Syntax `vrf-mroute-show`

`type <*,G>|<*,G,V>|`	Displays the hardware router type.
`srcip` *`ip-address`*	Displays the source IP address.
`srcip-mask` *`srcip-mask-number`*	Displays the source netmask.
`group` *`ip-address`*	Displays the group IP address.
`group-mask` *`group-mask-number`*	Displays the netmask.
`vnet` *`vnet name`*	Displays the vNET name.
`bd` *`bridge-domain name`*	Displays the bridge domain name.
`vlan` *`vlan-id`*	Displays the VLAN ID.
`vrid` *`vrid-number`*	Displays the vRouter ID.
`hw-group-id` *`hw-group-id-number`*	Displays the hardware group ID.
`send_vnet` *`vnet name`*	Displays the sending vNET name.
`send-vlan` *`vlan-id`*	Displays the sending VLAN ID.
`send-bd` *`send-bd-string`*	Displays the sending bridge domain.
`ports` *`port-list`*	Displays the port list.
`encap-id` *`encap-id-number`*	Displays the encapsulation ID.
`flags Trunk|Active`	Displays the hardware flags.

Defaults None

Access Network Administrator

History Command introduced in Version 5.1.0.

Usage Use this command to display multicast information on virtual routing and fowarding.

Examples To display multicast routing, use the following syntax:

```
CLI (network-admin@switch) > vrf-mroute-show
type    srcip   group     vnet bd vlan vrid hw-group-id send_vnet send-vlan  send-bd ports encap-id flags
------- ------- --------- ---- -- ---- ---- ----------- --------- ---------  ------- ----- -------- ------
<*,G,V> 0.0.0.0 225.1.1.1 10 0 0x2000009 10                                          none  -1      Active
<*,G,V> 0.0.0.0 225.1.1.1 10 0 0x2000009 0                                            19    4      Active
```

vrf-multicast-modify

This commands allows to modify multicast routing for VRF on a switch.

Syntax `vrf-multicast-modify`

`scope local|fabric`	Specify the scope for multicast routing.
`enable|disable`	Specify to enable or disable multicast routing. Enabled by default.

Defaults None

Access Network Administrator

History Command introduced in Version 5.1.0.

Usage Use this command to modify multicast routing for VRF on a switch.

> **Warning!** You must reboot the switch after changing the settings. Rebooting may cause a disruption on the network.

Examples To disable multicast routing use the following syntax:

```
CLI (network-admin@switch) > vrf-multicast-modify  disable
```

vrf-multicast-show

This commands displays multicast routing for VRF on a switch.

Syntax `vrf-multicast-show`

`scope local|fabric`	Specify the scope for multicast routing.
`enable|disable`	Specify to enable or disable multicast routing. Enabled by default.

Defaults None

Access Network Administrator

History Command introduced in Version 5.1.0.

Usage Use this command to display multicast routing for VRF on a switch.

Examples To display multicast routing, use the following syntax:

```
CLI (network-admin@switch) > vrf-multicast-show
```

vrf-multicast-igmp-modify

This commands allows to modify IGMP's use of IPMC table in DMF forwarding.

Syntax `vrf-multicast-igmp-modify`

`scope local|fabric`	Specify the scope as `fabric` or `local`.
`use-table|no-use-table`	enable/disable IGMP's use of the IPMC Table in DMF Forwarding

Defaults None

Access Network Administrator

History

Usage Use this command to modify IGMP's use of IPMC table in DMF Forwarding.

Examples To enable IGMP's use of the IPMC Table in DMF forwarding, use the following syntax:

```
CLI (network-admin@switch) > vrf-multicast-igmp-modify  enable
```

vrf-multicast-igmp-show

This commands displays information about IGMP's use of IPMC table in DMF forwarding.

Syntax `vrf-multicast-igmp-show`

Defaults None

Access Network Administrator

History

Usage Use this command to display information on IGMP's use of IPMC table in DMF Forwarding.

Examples To display information on IGMP's use of the IPMC Table in DMF forwarding, use the following syntax:

```
CLI (network-admin@switch) > vrf-multicast-igmp-show
```

vrf-route-add

Virtual Routing and Forwarding (VRF) is a technology that virtualizes the hardware routing capabilities of a vRouter or a Layer 3 switch and offers per logical instance dedicated control and data planes. This command adds a static route to a VRF configuration.

Syntax `vrf-route-add`

`vrf-name` *`name-string`*	Specify the name of the VRF configuration.
`vnet vnet` *`name-string`*	Specify the vNET of the VRF.
Specify the following route arguments:	
`network` *`ip-address`*	Specify an IP address.
`netmask` *`netmask`*	Specify the netmask.
`gateway-ip` *`ip-address`*	Specify the VRF gateway IP address.

Defaults None

Access Network Administrator

History Command introduced in Version 3.1.0.

Usage Use this command to configure a static route for a VRF configuration.

Examples To add the static route 172.21.16.25 with the netmask 255.255.255.0 for the VRF configuration, **blue**, use the following syntax:

```
CLI (network-admin@switch) > vrf-route-add vrf-name blue vnet red
network 172.21.16.25 netmask 255.255.255.0 gateway-ip 192.168.13.7
```

vrf-route-remove

Virtual Routing and Forwarding (VRF) is a technology that virtualizes the hardware routing capabilities of a vRouter or a Layer 3 switch and offers per logical instance dedicated control and data planes. This command removes a static route from a VRF configuration.

Syntax `vrf-route-remove`

`vrf-name` *`name-string`*	Specify the name of the VRF configuration.
`vnet vnet` *`name-string`*	Specify the vNET of the VRF.
Specify the following route arguments:	
`network` *`ip-address`*	Specify an IP address.
`netmask` *`netmask`*	Specify the netmask.
`gateway-ip` *`ip-address`*	Specify the VRF gateway IP address.

Defaults None

Access Network Administrator

History Command introduced in Version 3.1.0

Usage Use this command to remove a static route from a VRF configuration.

Examples To remove the static route 172.21.16.25 with the netmask 255.255.255.0 for the VRF configuration, blue, use the following syntax:

```
CLI (network-admin@switch) > vrf-route-remove vrf-name blue vnet red
network 172.21.16.25 netmask 255.255.255.0 gateway-ip 192.168.13.7
```

vrf-route-show

Virtual Routing and Forwarding (VRF) is a technology that virtualizes the hardware routing capabilities of a vRouter or a Layer 3 switch and offers per logical instance dedicated control and data planes. This command displays a static route on a VRF configuration.

Syntax `vrf-route-show`

`vrf-name` *`name-string`*	Displays the name of the VRF configuration.
`vrf-vnet vnet` *`name-string`*	Displays the vNET of the VRF.
`scope local|cluster|fabric`	Displays the scope of the VRF.
`network` *`ip-address`*	Displays the IP address.
`netmask` *`netmask`*	Displays the netmask.
`gateway-ip` *`ip-address`*	Displays the VRF gateway IP address.
`active in-rib|not-in-rib`	Displays the status of the static route.

Defaults None

Access Network Administrator

History Command introduced in Version 3.1.0

Usage Use this command to display a static route for a VRF configuration.

Examples To display the static route for the VRF configuration, blue, use the following syntax:

```
CLI (network-admin@switch) > vrf-route-show vrf-name vrf-vnet red
```

vrouter-bfd-flapcount-clear

Bidirectional Forwarding Detection (BFD) provides fast BFD peer failure detection times independently of all media types, encapsulations, topologies, and routing protocols BGP, EIGRP, IS-IS, and OSPF. By sending rapid failure detection notices to the routing protocols in the local router to initiate the routing table recalculation process, BFD contributes to greatly reduced overall network convergence time. This command clears the BFD neighbor flap count.

Syntax `vrouter-bfd-flapcount-clear`

`vrouter-name` *`name-string`*	Specifies a name for the vRouter service.
Specify the following BFD arguments:	
`all`	Specify `all` to clear BFD neighbor flapcount for all neighbors.
`vrf` *`vrouter-vrf`*	Specify a VRF name.

Defaults None.

Access CLI

History

Usage Clears BFD neighbor flap count.

Examples To clear BFD neighbor flap count, use the following command:

```
CLI (network-admin@switch) > vrouter-bfd-flapcount-clear
```

vrouter-bfd-neighbor-flapcount-clear

Bidirectional Forwarding Detection (BFD) provides fast BFD peer failure detection times independently of all media types, encapsulations, topologies, and routing protocols BGP, EIGRP, IS-IS, and OSPF. By sending rapid failure detection notices to the routing protocols in the local router to initiate the routing table recalculation process, BFD contributes to greatly reduced overall network convergence time. This command clears the BFD neighbor flap count on a per neighbor or per VRF basis.

Syntax `vrouter-bfd-neighbor-flapcount-clear`

`vrouter-name` *`name-string`*	Specifies a name for the vRouter service.
Specify the following BFD arguments:	
`neighbor` *`ip-address`*	Specify the neighbor IP address.
`vrf` *`vrouter-vrf`*	Specify a VRF name.

Defaults None.

Access CLI

History

Usage Clears BFD neighbor flap count.

Examples To clear BFD neighbor flap count, use the following command:

```
CLI (network-admin@switch) > vrouter-bfd-neighbor-flapcount-clear
```

vrouter-bfd-neighbor-show

Bidirectional Forwarding Detection (BFD) provides fast BFD peer failure detection times independently of all media types, encapsulations, topologies, and routing protocols BGP, EIGRP, IS-IS, and OSPF. By sending rapid failure detection notices to the routing protocols in the local router to initiate the routing table recalculation process, BFD contributes to greatly reduced overall network convergence time.

Syntax `vrouter-bfd-neighbor-show`

`vrouter-name` *`name-string`*	Specifies a name for the vRouter service.
Specify the following BFD arguments:	
`out-addr` *`ip-address`*	Specifies the outgoing IP address.
`neighbor` *`ip-address`*	Specifies a neighbor IP address.
`local-discr` *`local-discr-number`*	Specifies the local discriminator.
`remote-discr` *`remote-discr-number`*	Specifies the remote discriminator.
`holdown holdown-number(ms)`	Specifies the detection time if the BFD session is established.
`multiplier` *`multiplier-number`*	Specifies a detection time multiplier.
`state unknown|admin-down|down|init| upno-session|not-replicator-vtep`	Specifies the state of the BFD session.
`interface` *`interface-string`*	Specifies the interface of the connection.
`flap-count` *`flap-count-number`*	Specifies the flap count on the router.
`remote-router` *`remote-router-string`*	Specifies the remote router name derived from the IP address.
`tx-int` *`tx-int-number`*	Specifies the minimum transmit interval in milliseconds.
`rx-int` *`rx-int-number`*	Specifies the minimum receive interval in milliseconds.

Defaults None.

Access CLI

History

Version 2.2.6	Command introduced.
Version 2.4.1	The parameters, `flap-count` and `remote-router`, added.

Usage Displays information about Bidirectional Forwarding Direction neighbors.

Examples To display information about BFD, use the following command:

```
CLI (network-admin@switch) > vrouter-bfd-neighbor-show
```

vrouter-bgp-add

This command adds Border Gateway Protocol (BGP) to a virtual router (vRouter) service on a fabric, cluster, or standalone switch.

Syntax `vrouter-bgp-add`

`vrouter-name` *`name-string`*	Specify a name for the vRouter service.
Specify the following BGP arguments:	
`neighbor` *`ip-address`*	Specify a neighbor IP address to use for BGP filtering.
`l3-port` *`l3port-usable-port name`*	Specify the L3 port name for the BGP session.
`remote-as` *`external|internal|-2..4294967295`*	Specify the remote Autonomous System (AS) number. This is a value between 1 and 4294967295.
`local-as` *`external|internal|-2..4294967295`*	Specify the locally configured AS number. This is a value between 1 and 4294967295.
`vrf` *`vrouter-vrf`*	Specify the name of the VRF.
`next-hop-self|no-next-hop-self`	Specify if the next-hop is the same router or not.
`prepend|no-prepend`	Specify if you want routers to prepend the local AS to AS_PATH advertisements.
`replace-as|no-replace-as`	Specify if you want to prevent routers from appending the globally configured ASN in outbound BGP UPDATEs toward customer networks that are using the "Local AS" mechanism. This option will append the old ASN instead.
`password` *`password-string`*	Specify a password, if desired.
`ebgp-multihop` *`number`*	Specify a value for external BGP to accept or attempt BGP connections to external peers, not directly connected, on the network. This is a value between 1 and 255.
`update-source vrouter` *`loopback-interface ip`*	Specify the source IP address of BGP packets sent by the router. This parameter is required if you want BGP to perform peering over a loopback interface.
`update-source-interface` *`update-source-interface-string`*	Specify the source interface of BGP packets sent by the router. This parameter is required for peering over any interface.
`prefix-list-in vrouter` *`prefix-list name`*	Specify the prefix list to filter traffic inbound.
`prefix-list-out vrouter` *`prefix-list name`*	Specify the prefix list to filter traffic outbound.
`route-reflector-client|no-route-reflector-client`	Specify if a route reflector client is used.

override-capability|no-override-capability	Specify if you want to override capability.
soft-reconfig-inbound| no-soft-reconfig-inbound	Specify if you want a soft reconfiguration of inbound routes.
max-prefix *max-prefix-number*	Specify the maximum number of prefixes.
max-prefix-warn-only| no-max-prefix-warn-only	Specify if you want a warning message when the maximum number of prefixes is exceeded.
bfd|no-bfd	Specify if you want BFD protocol support for fault detection.
bfd-multihop|no-bfd-multihop	Specify if you want to always use BFD multihop port for fault detection.
multi-protocol ipv4-unicast|ipv6-unicast| l2vpn-evpn	Specify a multi-protocol for BGP.
weight none|*weight*	Specify a default weight value between 0 and 65535 for the neighbor routes.
default-originate| no-default-originate	Specify if you want to announce default routes to the neighbor or not.
neighbor-keepalive-interval *seconds*	Specify the BGP keepalive interval in seconds. This is a value between 0 and 65535 seconds.
neighbor-holdtime *seconds*	Specify the BGP neighbor hold time in seconds. This is a value between 0 and 65535 seconds.
connect-retry-interval *seconds*	Specify the interval between retrying a connection. The interval can be from 0 to 65535 seconds.
unnumbered-interop|no-unnumbered-interop	Specify to enable interoperability between different Netvisor ONE versions for unnumbered BGP neighbors. This option sends both link local address and the global next hop address even if they are the same.
route-map-in vrouter *route-map name*	Specify the name of the route map for incoming routes.
route-map-out vrouter *route-map name*	Specify the name of the route map for outgoing routes.
allowas-in|no-allowas-in	Specify if you want to reject routes with local AS in AS_PATH. Normally, when you do not set this option, nodes reject routes containing their own AS which helps prevent routing loops. However, in some cases nodes that belong to the same AS have no direct connectivity; for example when you form clusters and choose not to use the cluster link for iBGP communication. In this case the only way to direct routes through connected eBGP neighbors is to set this option so that routes are not rejected from the cluster peer.

interface *vrouter interface nic*	Specify the interface to reach the neighbor.
advertisement-interval *seconds*	Specify the minimal time between sending out BGP routing updates. This is a value between 0 and 600 seconds. The default value is zero (0) seconds.
description *description-string*	Specify a BGP neighbor description.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.2	Parameters `next-hop-self` and `password` added.
Version 2.2.2	The parameters, `ebgp-multihop`, and `update-source vrouter`, added.
Version 2.2.3	The parameters, `prefix-list-in`, and `prefix-list-out` added. The parameters, `override-capability`, `soft-reconfig-inbound`, `max-prefix`, and `max-prefix-warn` added.
Version 2.2.6	The parameter, `bfd|no-bfd`, added.
Version 2.3.1	The parameter, `multi-protocol`, added.
Version 2.4	The parameters, `weight` and `default-originate` added. The parameters, `neighbor-keepalive-interval`, `neighbor-holdtime`, `route-map-in vrouter`, and `route-map-out vrouter`, added. The options, `ipv4-multicast|ipv6-multicast| vpnv4-unicast`, are deprecated for `multi-protocol`.
Version 2.4.1	The options, `ipv4-multicast|ipv6-multicast| vpnv4-unicast`, are deprecated for `multi-protocol`.
Version 2.5.2	The parameter, `allowas-in|no-allowas-in`, added.
Version 2.6.2	The parameters, `bfd-multihop` and `interface`, added.
Version 3.0.2	The parameter, `connection-retry-interval` added.
Version 3.1.0	The parameter, `advertisement-interval`, added.
Version 5.1.3	The parameter, `l3-port`, added.

Version 6.0.0	The parameter, `description`, added.
Version 6.0.0	The parameter, `update-source-interface`, added.
Version 6.1.0	The parameters, `local-as`, `no-prepend`, `replace-as` added. The option `l2vpn-evpn` added under `multi-protocol` parameter.
Version 6.1.1	The parameter `unnumbered-interop|no-unnumbered-interop` added.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide tenants with a vRouter service that forwards traffic between networks and implements Layer 4 protocols. Use this command to add BGP to the vRouter service.

Examples To add BGP to the vRouter service, BGP-vService, the neighbor IP address of 209.75.183.3, remote AS 45, and network address of 172.26.21.7/32, use the following command:

```
CLI (network-admin@switch) > vrouter-bgp-add vrouter-name BGP-vService
neighbor 209.75.183.3 remote-as 45 network 172.26.21.7/32
```

vrouter-bgp-modify

This command modifies Border Gateway Protocol (BGP) to a virtual router (vRouter) service on a fabric, cluster, or standalone switch.

Syntax `vrouter-bgp-modify`

`vrouter-name` *`name-string`*	Specify a name for the vRouter service.
Specify the following BGP arguments:	
`neighbor` *`ip-address`*	Specify a neighbor IP address to use for BGP filtering.
`l3-port` *`l3port-usable-port name`*	Specify the L3 port name for the BGP session.
`vrf vrouter-vrf`	Specify the name of the VRF.
Specify any of the following BGP options:	
`remote-as` *`external|internal|-2..4294967295`*	Specify the remote Autonomous System (AS) number. This is a value between 1 and 4294967295.
`local-as` *`external|internal|-2..4294967295`*	Specify the locally configured AS number. This is a value between 1 and 4294967295.
`next-hop-self|no-next-hop-self`	Specify if the next-hop is the same router or not.
`prepend|no-prepend`	Specify if you want routers to prepend the local AS to AS_PATH advertisements.
`replace-as|no-replace-as`	Specify if you want to prevent routers from appending the globally configured ASN in outbound BGP UPDATEs toward customer networks that are using the "Local AS" mechanism. This option will append the old ASN instead.
`password` *`password-string`*	Specify a password, if desired.
`ebgp-multihop` *`number`*	Specify a value for external BGP to accept or attempt BGP connections to external peers, not directly connected, on the network. This is a value between 1 and 255.
`update-source vrouter` *`loopback-interface ip`*	Specify the source IP address of BGP packets sent by the router. This parameter is required if you want BGP to perform peering over a loopback interface.
`update-source-interface update-source-interface-string`	Specify the interface name of BGP packets. This parameter is required for peering over any interface.
`prefix-list-in vrouter` *`prefix-list name`*	Specify the prefix list to filter traffic inbound.
`prefix-list-out vrouter` *`prefix-list name`*	Specify the prefix list to filter traffic outbound.
`route-reflector-client|`	Specify if a route reflector client is used.

no-route-reflector-client	
override-capability| no-override-capability	Specify if you want to override capability.
soft-reconfig-inbound| no-soft-reconfig-inbound	Specify if you want a soft reconfiguration of inbound routes.
max-prefix *max-prefix-number*	Specify the maximum number of prefixes.
max-prefix-warn-only| no-max-prefix-warn-only	Specify if you want a warning message when the maximum number of prefixes is exceeded.
bfd|no-bfd	Specify if you want BFD protocol support for fault detection.
bfd-multihop|no-bfd-multihop	Specify if you want to always use BFD multihop port for fault detection.
multi-protocol ipv4-unicast|ipv6-unicast| l2vpn-evpn	Specify a multi-protocol for BGP.
weight none	Specify a default weight value between 0 and 65535 for the neighbor routes.
default-originate| no-default-originate	Specify if you want to announce default routes to the neighbor or not.
neighbor-keepalive-interval *seconds*	Specify the BGP keepalive interval in seconds. This is a value between 0 and 65535 seconds.
neighbor-holdtime *seconds*	Specify the BGP neighbor hold time in seconds. This is a value between 0 and 65535 seconds.
connect-retry-interval *seconds*	Specify the interval between retrying a connection. The interval can be from 0 to 65535 seconds.
unnumbered-interop|no-unnumbered-interop	Specify to enable interoperability between different Netvisor ONE versions for unnumbered BGP neighbors. This option sends both link local address and the global next hop address even if they are the same.
route-map-in vrouter *route-map name*	Specify the name of the route map for incoming routes.
route-map-out vrouter *route-map name*	Specify the name of the route map for outgoing routes.
interface *vrouter interface nic*	Specify the interface to reach the neighbor.
no-route-map-in	Specify if you want to remove an ingress route-map from a BGP neighbor
no-route-map-out	Specify if you want to remove an egress route-map from a BGP neighbor
advertisement-interval *seconds*	Specify the minimal time between sending out BGP routing updates. This is a value between 0 and 600 seconds.

	The default value is zero (0) seconds.
`description` *`description-string`*	Specify a BGP neighbor description.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.2	Parameters `next-hop-self` and `password` added.
Version 2.2.2	The parameters `ebgp-multihop`, and `update-source vrouter` added.
Version 2.2.3	The parameters `prefix-list-in`, and `prefix-list-out` added. The parameters, `override-capability`, `soft-reconfig-inbound`, `max-prefix`, and `max-prefix-warn` added.
Version 2.2.6	The parameter, `bfd|no-bfd`, added.
Version 2.3.1	The parameter, `multi-protocol`, added.
Version 2.4	The parameters `weight` and `default-originate` added. The parameters `neighbor-keepalive-interval`, `neighbor-holdtime`, `route-map-in vrouter`, and `route-map-out vrouter` added. The options `ipv4-multicast| ipv6-multicast| vpnv4-unicast` are deprecated for `multi-protocol`.
Version 2.4.1	The options `ipv4-multicast|ipv6-multicast| vpnv4-unicast` are deprecated for `multi-protocol`.
Version 2.6.2	The parameters `bfd-multihop` and `interface` added.
Version 3.0.2	The parameter `connection-retry-interval` added.
Version 3.1.0	The parameters `advertisement-interval`, `no-route-map-in` and `no-route-map-out` added.
Version 5.1.3	The parameter `l3-port` added.
Version 6.0.0	The parameter `description` added.
Version 6.0.1	The parameter `update-source-interface` added.
Version 6.1.0	The parameters `local-as`, `no-prepend`, and `replace-as` added. The option `l2vpn-evpn` added to the `multi-protocol` parameter.

Version 6.1.1	The parameter `unnumbered-interop|no-unnumbered-interop` added.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a vRouter service that forwards traffic between networks and implements Layer 4 protocols. Use this command to modify BGP configurations on the vRouter service.

Examples To modify BGP to the vRouter service, BGP-vService, the neighbor IP address of 209.75.183.3, remote AS 45, and network address of 172.26.21.7/32, password, st@rsh1p, use the following command:

```
CLI (network-admin@switch) > vrouter-bgp-modify vrouter-name BGP-
vService neighbor 209.75.183.3 remote-as 45 password
password:********
```

vrouter-bgp-neighbor-show

This command displays information about Border Gateway Protocol (BGP) neighbors.

Syntax `vrouter-bgp-neighbor-show`

`vrouter-name` *`name-string`*	Specifies the name of the vRouter.
Specifies the following BGP neighbor arguments:	
`neighbor` *`ip-address`*	Specifies the IP address of the neighbor.
`l3-port l3-port-number`	Specifies the Layer 3 port used for BGP.
`ver` *`ver-number`*	Specifies the BGP version.
`remote-as` *`remote-as-number`*	Specifies the AS number of the remote connection.
`msg_rcvd` *`msg_rcvd-number`*	Specifies the number of messages received from the receive socket buffer.
`msg_sent` *`msg_sent-number`*	Specifies the number of messages written to the transmit socket buffer.
`tblver` *`tblver-number`*	Specifies the version of the routing table.
`inQ` *`inQ-number`*	Specifies the number of BGP packets queued for a neighbor.
`outQ` *`outQnumber`*	Specifies the number of BGP packets queued for transmission to a neighbor.
`up/down` *`up/down-string`*	Specifies if the neighbor is up or down.
`state/pfxrcd` *`state/pfxrcd-string`*	Specifies the current state of the BGP session. The state can be any of the following types: • 1 — Idle • 2 — Connect • 3 — Active • 4 — OpenSent • 5 — OpenConfirm • 6 — Established
`remote-router` *`remote-router-string`*	Specifies the neighbor router name.
`multi-protocol ipv4-unicast|ipv6-unicast|l2vpn-evpn`	Specify a multi-protocol for BGP.
`description` *`description-string`*	Specify a BGP neighbor description.
`vrf` *`vrf`*	Specify the name of VRF.

Defaults None

Access CLI

History

Version 2.0	Command introduced.
Version 2.4.1	The parameter, `remote-router`, added.
Version 5.1.3	The parameter, `l3-port`, added.
Version 6.0.0	The parameter, `description`, added.
Version 6.1.0	The option, `l2vpn-evpn`, added to the `multi-protocol` parameter.

Usage Use this command to display information about BGP neighbors configured on a vRouter.

Examples To display all information about BGP neighbors, use the following command:

```
CLI (network-admin@switch) > vrouter-bgp-neighbor-show
vrouter-name:   vrouter1
neighbor:        10.9.100.201
ver:             4
remote-as:      100
msg_rcvd:       11
msg_sent:       19
tblver:          0
inQ:             0
outQ:            0
up/down:         00:54:04
state/pfxrcd:   Connect
remote-router:  vrouter2
description:    none
vrouter-name:   vrouter2
neighbor:        10.9.100.101
ver:             4
remote-as:      100
msg_rcvd:       12
msg_sent:       18
tblver:          0
inQ:             0
outQ:            0
up/down:         00:53:37
state/pfxrcd:   Connect
remote-router:  vrouter1
description:    none
```

vrouter-bgp-neighbor-failed-show

This command displays BGP neighbor failed summary.

Syntax `vrouter-bgp-neighbor-failed-show`

`vrouter-name` *`name-string`*	Specifies the name of the vRouter.
Specifies the following BGP neighbor arguments:	
`neighbor` *`bgp-neighbor`*	The IP address of the BGP neighbor.
`l3-port` *`l3-port-number`*	The Layer 3 port used for BGP.
`nic` *`nic-string`*	The NIC name.
`remote-router` *`remote-router-string`*	The remote router name.
`vrf` *`vrf-vrouter`*	The name of VRF.

Defaults None

Access CLI

History

Usage Use this command to display information about failed BGP neighbors.

Examples To display information about failed BGP neighbors, use the following command:

`CLI (network-admin@switch)` `> vrouter-bgp-neighbor-failed-show`

vrouter-bgp-remove

This command removes Border Gateway Protocol (BGP) from a virtual router (vRouter) service on a fabric, cluster, or standalone switch.

Syntax `vrouter-bgp-remove`

`vrouter-name` *`name-string`*	Specify the name of the vRouter service.
Specify the following BGP arguments:	
`ip` *`ip-address`*	Specify the IP address of the route to remove from the vRouter. This is either the neighbor IP address or network IP address.
`l3-port` *`l3port-usable-port-name`*	Specify the Layer 3 port to remove from the vrouter.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Version 1.2.1	Command introduced.
Version 5.1.3	Parameter `l3-port` added.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a vRouter service that forwards traffic between networks and implements Layer 4 protocols. Use this command to remove BGP to the vRouter service.

Examples To remove the neighbor BGP route from the vRouter service, BGP-vService, use the following command:

```
CLI (network-admin@switch) > vrouter-bgp-remove vrouter-name BGP-
vService name 209.75.183.3
```

vrouter-bgp-neighbor-detail-show

This command displays detailed information about Border Gateway Protocol (BGP) neighbors.

Syntax `vrouter-bgp-neighbor-detail-show`

`vrouter-name` *`name-string`*	Specifies the name of the vRouter.
Specifies the following BGP neighbor arguments:	
`neighbor vrouter` *`bgp-neighbor neighbor`*	Specifies the IP address of the neighbor.
`l3-port` *`l3-port-number`*	Specifies the Layer 3 port number.
`remote-as` *`remote-as-number`*	Specifies the AS number of the remote connection.
`local-as local-as-number`	Specifies the number local AS .
`remote-id ip-address`	Specifies the neighbor router ID.
`state idle|connect|active|open-sent| open-confirm|established|clearing`	Specifies the current state of the BGP session. The state can be any of the following types: • 1 — Idle • 2 — Connect • 3 — Active • 4 — OpenSent • 5 — OpenConfirm • 6 — Established
`up-for up-for-string`	Specifies the time of an active connection.
`last-read` *`last-read-string`*	Specifies the time of the last message received.
`holdtime` *`holdtime-number (s)`*	Specifies the holdtime in seconds.
`keepalive` *`keepalive-number (s)`*	Specifies the keepalive interval in seconds.
`min-adv` *`min-adv-number (s)`*	Specifies the minimum advertisement level in seconds.
`open-sent` *`open-sent-number`*	Specifies the number of open messages sent.
`open-rcvd` *`open-rcvd-number`*	Specifies the number of open messages received.
`notif-sent` *`notif-sent-number`*	Specifies the number of notification messages sent.
`notif-rcvd` *`notif-rcvd-number`*	Specifies the number of notification messages received.
`update-sent` *`update-sent-number`*	Specifies the number of update messages sent.
`update-rcvd` *`update-rcvd-number`*	Specifies the number of update messages received.
`keepalive-sent` *`keepalive-sent-number`*	Specifies the number of keepalive messages sent.
`keepalive-rcvd` *`keepalive-rcvd-number`*	Specifies the number of keepalive messages received.
`comm-attr-send-ipv4 both|standard| extended`	Specifies the type of community attribute send to this neighbor for IPv4.

prefix-accepted-ipv4 *prefix-accepted-ipv4-number*	Specifies the number of prefixes accepted for IPv4 unicast.
comm-attr-send-ipv6 both|standard|extended	Specifies the type of community attribute send to this neighbor for IPv6 unicast.
prefix-accepted-ipv6 *prefix-accepted-ipv6-number*	Specifies number of prefixes accepted for IPv6 unicast.
conn-established *conn-established-number*	Specifies the number of times a session has been successfully established.
conn-dropped *conn-dropped-number*	Specifies the number of times a session has failed or taken down.
last-reset *last-reset-string*	Specifies the time since the session was last reset.
start-due *start-due-number (s)*	Specifies the next start timer due in seconds.
connect-due *connect-due-number (s)*	Specifies the next connect timer due in seconds.

Defaults None

Access CLI

History Command introduced in Version 3.0.0.

Version 3.0.0	Command introduced.
Version 5.1.3	The parameter, `l3-port`, added.

Usage Use this command to display detailed information about BGP neighbors configured on a vRouter.

Examples To display all information about BGP neighbors, use the following command:

```
CLI (network-admin@switch) > vrouter-bgp-neighbor-detail-show
```

vrouter-bgp-show

This command displays Border Gateway Protocol (BGP) information for a virtual router (vRouter) service on a fabric, cluster, or standalone switch.

Syntax `vrouter-bgp-show`

`vrouter-name` *`name-string`*	Specify a name for the vRouter service.
Specify the following BGP arguments:	
`neighbor` *`ip-address`*	Specify a neighbor IP address to use for BGP filtering.
`l3-port` *`l3port-usable-port name`*	Specify the L3 port name for the BGP session.
`remote-as` *`external|internal|-2..4294967295`*	Specify the remote Autonomous System (AS) number. This is a value between 1 and 4294967295.
`local-as` *`external|internal|-2..4294967295`*	Specify the locally configured AS number. This is a value between 1 and 4294967295.
`vrf` *`vrouter-vrf`*	Specify the name of the VRF.
`next-hop-self|no-next-hop-self`	Specify if the next-hop is the same router or not.
`prepend|no-prepend`	Specify if you want routers to prepend the local AS to AS_PATH advertisements.
`replace-as|no-replace-as`	Specify if you want to prevent routers from appending the globally configured ASN in outbound BGP UPDATEs toward customer networks that are using the "Local AS" mechanism. This option will append the old ASN instead.
`password` *`password-string`*	Specify a password, if desired.
`ebgp-multihop` *`number`*	Specify a value for external BGP to accept or attempt BGP connections to external peers, not directly connected, on the network. This is a value between 1 and 255.
`update-source vrouter` *`loopback-interface ip`*	Specify the source IP address of BGP packets sent by the router. This parameter is required if you want BGP to perform peering over a loopback interface.
`update-source-interface` *`update-source-interface-string`*	Specify the source interface of BGP packets sent by the router. This parameter is required for peering over any interface.
`prefix-list-in vrouter` *`prefix-list name`*	Specify the prefix list to filter traffic inbound.
`prefix-list-out vrouter` *`prefix-list name`*	Specify the prefix list to filter traffic outbound.

route-reflector-client|no-route-reflector-client	Specify if a route reflector client is used.
override-capability|no-override-capability	Specify if you want to override capability.
soft-reconfig-inbound| no-soft-reconfig-inbound	Specify if you want a soft reconfiguration of inbound routes.
max-prefix *max-prefix-number*	Specify the maximum number of prefixes.
max-prefix-warn-only| no-max-prefix-warn-only	Specify if you want a warning message when the maximum number of prefixes is exceeded.
bfd|no-bfd	Specify if you want BFD protocol support for fault detection.
bfd-multihop|no-bfd-multihop	Specify if you want to always use BFD multihop port for fault detection.
multi-protocol ipv4-unicast|ipv6-unicast| l2vpn-evpn	Specify a multi-protocol for BGP.
weight none|*weight*	Specify a default weight value between 0 and 65535 for the neighbor routes.
default-originate| no-default-originate	Specify if you want to announce default routes to the neighbor or not.
neighbor-keepalive-interval *seconds*	Specify the BGP keepalive interval in seconds. This is a value between 0 and 65535 seconds.
neighbor-holdtime *seconds*	Specify the BGP neighbor hold time in seconds. This is a value between 0 and 65535 seconds.
connect-retry-interval *seconds*	Specify the interval between retrying a connection. The interval can be from 0 to 65535 seconds.
unnumbered-interop|no-unnumbered-interop	Specify to enable interoperability between different Netvisor ONE versions for unnumbered BGP neighbors. This option sends both link local address and the global next hop address even if they are the same.
route-map-in vrouter *route-map name*	Specify the name of the route map for incoming routes.
route-map-out vrouter *route-map name*	Specify the name of the route map for outgoing routes.
allowas-in|no-allowas-in	Specify if you want to reject routes with local AS in AS_PATH. Normally, when you do not set this option, nodes reject routes containing their own AS which helps prevent routing loops. However, in some cases nodes that belong to the same AS have no direct connectivity; for example when you form clusters and choose not to use the cluster link for iBGP communication. In this case the only way to direct routes through connected eBGP neighbors

	is to set this option so that routes are not rejected from the cluster peer.
`interface` *`vrouter interface nic`*	Specify the interface to reach the neighbor.
`advertisement-interval` *`seconds`*	Specify the minimal time between sending out BGP routing updates. This is a value between 0 and 600 seconds. The default value is zero (0) seconds.
`description` *`description-string`*	Specify a BGP neighbor description.

Defaults None.

Access CLI

History .

Version 1.2	Command introduced.
Version 2.2	Parameters `next-hop-self` and `password` added.
Version 2.2.2	The parameters `ebgp-multihop`, and `update-source vrouter` added.
Version 2.2.3	The parameters, `prefix-list-in` and `prefix-list-out` added. The parameters, `override-capability`, `soft-reconfig-inbound`, `max-prefix`, and `max-prefix-warn` added.
Version 2.2.6	The parameters `bfd|no-bfd` added.
Version 2.3.1	The parameter `multi-protocol` added.
Version 2.4	The parameters `weight` and `default-originate` added. The parameters, `neighbor-keepalive-interval`, `neighbor-holdtime`, `route-map-in vrouter`, and `route-map-out vrouter` added.
Version 2.4.1	The options `ipv4-multicast|ipv6-multicast|vpnv4-unicast` are deprecated for `multi-protocol`.
Version 2.5.2	The parameter `allowas-in|no-allowas-in` added.
Version 2.6.2	The parameters `bfd-multihop` and `interface` added.
Version 3.0.2	The parameter `connection-retry-interval` added.
Version 3.1.0	The parameter `advertisement-interval` added.
Version 5.1.2	The parameter `l3-port` added.
Version 6.0.0	The parameter `description` added.

Version 6.0.1	The parameter `update-source-interface` added.
Version 6.1.0	The parameters `local-as`, `no-prepend`, `replace-as` added. The option `l2vpn-evpn` to the `multi-protocol` parameter.
Version 6.1.1	The parameter `unnumbered-interop|no-unnumbered-interop` added.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a vRouter service that forwards traffic between networks and implements Layer 4 protocols. Use this command to display information about BGP on the vRouter service.

Examples To display abridged BGP vRouter service information, use the following command:

```
CLI (network-admin@switch) > vrouter-bgp-show format neighbor,remote-as,update-
       source,multi-protocol
vrouter-name   neighbor     remote-as update-source multi-protocol
-------------- ------------ --------- ------------- --------------
vrouter-bgw-11 172.16.0.161 64311     ipv4-unicast
vrouter-bgw-11 172.16.2.161 64312     ipv4-unicast
vrouter-bgw-11 172.16.4.161 64313     ipv4-unicast
vrouter-bgw-11 172.16.6.161 64314     ipv4-unicast
vrouter-bgw-11 172.16.133.2 64518     ipv4-unicast
vrouter-bgw-11 101.1.1.1    60000     ipv4-unicast
vrouter-bgw-11 172.16.134.1 66611     172.16.133.1  l2vpn-evpn
vrouter-bgw-11 172.16.134.2 66611     172.16.133.1  l2vpn-evpn
```

vrouter-bgp-neighbor-reset

This command is used to reset a BGP neighbor in the configuration.

Syntax `vrouter-bgp-neighbor-reset`

`vrouter-name` *`name-string`*	Specify the name of the vRouter to reset.
`neighbor` *`ip-address`*	Specify the IP address of the BGP neighbor.
`l3-port`	Specify the Layer 3 port.
`vrf` *`vrf-name`*	Specify the name of the VRF.

Defaults None

Access CLI

History Command introduced in Version 2.2.3.

Version 2.2.2	Command introduced.
Version 5.2.0	The parameter, `l3-port`, added.

Usage Use this command to reset a BGP neighbor on the network.

Examples To reset the BGP neighbor with the IP address, 10.9.31.234, use the following syntax:

```
CLI (network-admin@switch) > vrouter-bgp-neighbor-reset  neighbor
10.9.31.234
```

vrouter-bgp-neighbor-shutdown

This command is used to send BGP an admin-down notification message to a BGP peer.

Syntax `vrouter-bgp-neighbor-shutdown`

`vrouter-name name-string`	Specify the name of the vRouter to reset.
`neighbor` *`ip-address`*	Specify the IP address of the BGP neighbor.
`l3-port` *`l3-port-number`*	Specify the Layer 3 port.

Defaults None

Access CLI

History

Version 2.6.2	Command introduced.
Version 5.2.0	The parameter, `l3-port`, added.

Usage Use this command to end BGP admin-down notification message to a BGP peer.

Examples To end BGP admin-down notification message to a BGP peer with the IP address, 10.9.31.234, use the following syntax:

```
CLI (network-admin@switch) > vrouter-bgp-neighbor-shutdown vrouter bgp-2 neighbor 10.9.31.234
```

vrouter-bgp-neighbor-no-shutdown

This command is used to send BGP an admin-down notification message to a BGP peer.

Syntax `vrouter-bgp-neighbor-shutdown`

`vrouter-name name-string`	Specify the name of the vRouter to reset.
`neighbor` *`ip-address`*	Specify the IP address of the BGP neighbor.

Defaults None

Access CLI

History

`Version 2.6.2`	Command introduced.
`Version 5.2.0`	The parameter, `l3-port`, added.

Usage Use this command to send BGP admin-down notification message to a BGP peer.

Examples To send BGP admin-down notification message to a BGP peer with the IP address, 10.9.31.234, use the following syntax:

```
CLI (network-admin@switch) > vrouter-bgp-neighbor-no-shutdown  vrouter
bgp-2 neighbor 10.9.31.234
```

vrouter-bgp-network-remove

This command remove a BGP network for a vRouter service.

Syntax `vrouter-bgp-network-remove`

`vrouter-name` *`name-string`*	Specify the name of the vRouter to add the BGP network.
`network` *`ip-address`*	Specify the IP address to add to the vRouter.
`netmask` *`netmask`*	Specify the netmask for the IP address.

Defaults None

Access CLI

History Command introduced in Version 2.4.

Usage Use this command to remove a BGP network for a vRouter service.

Examples To remove the vRouter, BGP-net, use the following syntax:

```
CLI (network-admin@switch) > vrouter-bgp-network-remove  vrouter-name
BGP-net
```

vrouter-bgp-network-show

This command displays a BGP network for a vRouter service.

Syntax `vrouter-bgp-network-add`

`vrouter-name` *`name-string`*	Specify the name of the vRouter to add the BGP network.
`network` *`ip-address`*	Specify the IP address to add to the vRouter.
`netmask` *`netmask`*	Specify the netmask for the IP address.

Defaults None

Access CLI

History Command introduced in Version 2.4.

Usage Use this command to display a BGP network for a vRouter service.

Examples To display the vRouter, BGP-net, use the following syntax:

```
CLI (network-admin@switch) > vrouter-bgp-network-show vrouter-name BGP-net
```

vrouter-bgp-neighbor-reset-all

This command is used to reset the up/down counters for all BGP neighbors in a configuration.

Syntax `vrouter-bgp-neighbor-reset-all`

`vrouter-name` *`name-string`*	Specify the name of the vRouter to reset.
`vrf` *`vrf-name`*	Specify the name of the VRF.

Defaults None

Access CLI

History

Version 6.0.1	Command introduced.

Usage Use this command to reset the up/down counters for all BGP neighbors in a network.

Examples To reset the up/down counters of BGP neighbors for the vRouter `vr1` in VRF `vrf1`, use the following syntax:

```
CLI (network-admin@switch)1 > vrouter-bgp-neighbor-reset-all  vrouter-
name vr1 vrf vrf1
```

vrouter-bgp-network-add

This command adds a BGP network to a vRouter service.

Syntax `vrouter-bgp-network-add`

`vrouter-name` *`name-string`*	Specify the name of the vRouter to add the BGP network.
`network` *`ip-address`*	Specify the IP address to add to the vRouter.
`netmask` *`netmask`*	Specify the netmask for the IP address.

Defaults None

Access CLI

History Command introduced in Version 2.4.

Usage Use this command to add a BGP network to a vRouter service.

Examples To add the IP address 172.16.21.35/32 to vRouter, BGP-net, use the following syntax:

```
CLI (network-admin@switch) > vrouter-bgp-network-add vrouter-name BGP-net network 172.16.21.35 netmask 32
```

vrouter-cached-routes-show

This command is used to display the cached routes for a vRouter.

Syntax `vrouter-cached-routes-show`

`vrid` *`vrid-number`*	Specifies the vRouter ID.
`ip` *`ip-address`*	Specifies the IP address.
`prelen` *`prelen-number`*	Specifies the prefix length.
`vnet` *`vnet-name`*	Specifies the vNET of the router.
`vlan` *`vlan-number`*	Specifies the VLAN number.
`vxlan` *`vxlan-number`*	Specifies the VXLAN number.
`nexthop` *`ip-address`*	Specifies the IP address for the next hop on the route.
`age-in-seconds` *`age-in-seconds-number`*	Specifies the age of the cached route.
`index` *`index-number`*	Specifies the interface index number in the zone or container.

Defaults None

Access CLI

History

Version 2.1	Command introduced.
Version 2.2.3	The parameter, `ecmp-group`, deprecated.
Version 2.2.5	The parameter, `age-in-seconds`, added.
Version 2.4.1	The parameter, `vnet`, added.
Version 2.6.2	The parameter, `index`, added.

Usage Use this command to display cached routes which can be helpful when troubleshooting a connection.

Examples To display cached routes, use the following command:

```
CLI (network-admin@switch) > vrouter-cached-routes-show
```

vrouter-community-list-remove

A community is a group of prefixes that share some common property and can be configured with the BGP community attribute. The BGP Community attribute is an optional transitive attribute of variable length. The attribute consists of a set of four octet values that specify a community.

This command is used to remove BGR community lists.

Syntax `vrouter-community-list-remove`

`vrouter-name` *`name-string`*	Specify a vRouter to add the community list.
Add the following community list parameters:	
`style standard|expanded`	Specify the style of the community list.
`name` *`name-string`*	Specify a name for the community list.
`action permit|deny`	Specify the action for the community list.
`community-attribute` *`community-attribute-string`*	Specify the community attribute.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to remove BGP community lists.

Examples To add a community list, use the following syntax:

```
CLI (network-admin@switch) > vrouter-community-list-remove vrouter VR1
style standard BGP-Comm permit
```

vrouter-community-list-show

A community is a group of prefixes that share some common property and can be configured with the BGP community attribute. The BGP Community attribute is an optional transitive attribute of variable length. The attribute consists of a set of four octet values that specify a community.

This command is used to display BGR community lists.

Syntax `vrouter-community-list-show`

`vrouter-name` *`name-string`*	Specify a vRouter to add the community list.
Add the following community list parameters:	
`style standard|expanded`	Specify the style of the community list.
`name` *`name-string`*	Specify a name for the community list.
`action permit|deny`	Specify the action for the community list.
`community-attribute` *`community-attribute-string`*	Specify the community attribute.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to display BGP community lists.

Examples To add a community list, use the following syntax:

```
CLI (network-admin@switch) > vrouter-community-list-show
```

vrouter-community-list-add

A community is a group of prefixes that share some common property and can be configured with the BGP community attribute. The BGP Community attribute is an optional transitive attribute of variable length. The attribute consists of a set of four octet values that specify a community.

This command is used to add BGR community lists.

Syntax `vrouter-community-list-add`

`vrouter-name` *`name-string`*	Specify a vRouter to add the community list.
Add the following community list parameters:	
`style standard|expanded`	Specify the style of the community list.
`name` *`name-string`*	Specify a name for the community list.
`action permit|deny`	Specify the action for the community list.
`community-attribute` *`community-attribute-string`*	Specify the community attribute.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to add BGP community lists.

Examples To add a community list, use the following syntax:

```
CLI (network-admin@switch) > vrouter-community-list-add vrouter VR1
style standard BGP-Comm permit
```

vrouter-create

This command creates a new virtual router (vRouter) service for a fabric, cluster, or standalone switch.

Syntax `vrouter-create`

`name` *`name-string`*	Specify the name of the vRouter.
`vnet` *`vnet-name`*	Specify the name of the vNET.
`router-type hardware|software`	Specify if the vrouter uses hardware or software. Note that if you specify hardware as the router type, you cannot assign IP addresses using DHCP. You must specify a static IP address.
Any of the following options:	
`shared-vnet-mgr` *`vnet-manager name`*	Specifies the vNET manager to share with if this is a shared service
`disable|enable`	Specify to enable or disable the vRouter service.
`location` *`fabric-node name`*	Specify the location of the service.
`storage-pool` *`storage-pool-name`*	Specify the storage pool.
`router-ipstack quagga|frr`	Specify the vRouter IP stack.
`evpn-border|no-evpn-border`	Specify to enable or disable EVPN border gateway.
`evpn-dup-addr-max-moves` *`2..1000`*	Specify the maximum number of EVPN duplicate address moves. The default value is 5.
`evpn-dup-addr-moves-duration` *`2..1800`*	Specify the EVPN duplicate address move time duration. The default vale is 180s.
`evpn-dup-addr-freeze none|permanent|-` *`1..3600`*	EVPN duplicate address freeze duration (seconds). The default value is 180s. By default, if 5 MAC moves are detected in a 180s time window, the duplicate MAC address entry is frozen for 180s.
`cluster-active-active-routing|no-cluster-active-active-routing`	Specify active-active routing with or without VRRP.
`hw-vrrp-id` *`hw-vrrp-id-number`*	Specifies the VRRP ID for a hardware router.
`bgp-as` *`bgp-as-number`*	Specify the Autonomous System Number (ASN) if the vRouter runs Border Gateway Protocol (BGP).
`router-id` *`ip-address`*	Specify the vRouter IP address
`proto-multi none|pim-ssm`	Specify the optional multicast protocol for the vRouter service. Select none, Vector Multicast Routing Protocol (VMRP), or Protocol Independent Multicast-source specific mode (PIM-SIM).
`bgp-redistribute static|connected|rip|ospf`	Specify how BGP routes are redistributed.

bgp-redist-static-metric none	Specify a static metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
bgp-redist-connected-metric none	Specify a connected metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
bgp-redist-rip-metric none	Specify a RIP metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
bgp-redist-ospf-metric none	Specify a OSPF metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
bgp-cluster-id *ip-address*	Specify an IP address for a BGP cluster.
bgp-max-paths *bgp-max-paths-number*	Specify the maximum number of paths for BGP. This is a number between 1 and 255 or 0 to unset.
bgp-ibgp-multipath *bgp-ibgp-multipath-number*	Specify the number of multipaths for BGP. This is a number between 1 and 255 or 0 to unset.
bgp-bestpath-as-path none|ignore	Specify a parameter for a best path as path.
bgp-dampening| no-bgp-dampening	Specify a BGP damp
bgp-graceful-shutdown| no-bgp-graceful-shutdown	Specify a graceful shutdown for BGP routing (RFC8326).
bgp-stalepath-time *second*	Specify the length of time befor a BGP path becomes stale. This is a value between 0 and 3600 or 0 to unset.
bgp-scantime *seconds*	Specify a BGP scanner interval in seconds. The default interval is 60 seconds with a range of 5 to 60 seconds.
bgp-delayed-startup *seconds*	Specify a time in seconds to delay forming peer adjacency on bootup.
bgp-keepalive-interval *seconds*	Specify a BGP keepalive interval in seconds. The default is 60 seconds with a range of 0 to 65535 seconds.
bgp-holdtime *seconds*	Specify a BGP holdtime in seconds. The default is 180 seconds with a range of 0 to 65535 seconds.
bgp-distance-external *integer*	Specify the BGP distance for routes external to the AS.
bgp-distance-internal *integer*	Specify the BGP distance for routes internal to the AS.
bgp-distance-local *integer*	Specify the BGP distance for routes local to the AS.
bgp-ipv4-unicast|no-bgp-ipv4-	Specify a MP-BGP Control default IPv4 Unicast AFI/SAFI.

unicast	
rip-redistribute static|connected|ospf|bgp	Specify how RIP routes are redistributed.
vrrp-track-port *port-list*	Specify a port to track a VRRP configuration.
ospf-redistribute static|connected|rip|bgp	Specify how OSPF routes are redistributed.
ospf-redist-static-metric-type 1|2	Specify a static metric type for OSPF route redistribution. This is a number between 0 and 16777214 or 'none' to unset.
ospf-redist-connected-metric none	Specify a connected metric for OSPF route redistribution.
ospf-redist-connected-metric-type 1|2	Specify a connected metric type for OSPF route redistribution.
ospf-stub-router-on-startup|no-ospf-stub-router-on-startup	Specify if you want advertise self as stub router temporary on startup.
ospf-stub-router-on-startup-period *integer*	Specify the time period to advertise self as stub router on startup. This s a value between 5 and 86400 seconds.
ospf-redist-rip-metric none	Specify a RIP metric type for OSPF route redistribution. This is a number between 0 and 16777214 or 'none' to unset.
ospf-redist-rip-metric-type 1|2	Specify a RIP metric type for OSPF route redistribution.
ospf-redist-bgp-metric none	Specify a BGP metric type for OSPF route redistribution. This is a number between 0 and 16777214 or 'none' to unset.
ospf-redist-bgp-metric-type 1|2	Specify a BGP metric type for OSPF route redistribution.
ospf6-redistribute static|connected|bgp4	Specify if you want to redistribute OSPF6 routes.
ospf-distance-external *integer*	Specify the OSPF distance for routes external to the AS.
ospf-distance-internal *integer*	Specify the OSPF distance for routes internal to the AS.
ospf-distance-local *integer*	Specify the OSPF distance for routes local to the AS.
ospf-stub-router-on-startup|no-ospf-stub-router-on-startup	Specify if you want the OSPF router to act as a stub router at startup.
ospf-stub-router-on-startup-period *seconds*	Specify the time period for the OSPF stub router in seconds. You can configure from 5 to 86400 seconds.

ospf-bfd-all-if| no-ospf-bfd-all-if	Specify if you want to use BFD protocol for fault detection on all OSPF interfaces.
ospf-default-information none| originate|always	Specify if you want to control origination of default route.
ospf-default-info-originate-metric none	Specify the metric for OSPF origination of default route.
ospf-default-info-originate-metric-type 1|2	Specify the metric type for OSPF origination of default route.
ospf6-redist-static-metric none	Specify a metric for OSPF6 redistribute of static routes.
ospf6-redist-static-metric-type 1|2	Specify a metric type for OSPF6 redistribution of static routes.
ospf6-redist-connected-metric none	Specify a metric for OSPF6 redistribution of connected routes.
ospf6-redist-connected-metric-type 1|2	Specify a metric type for OSPF6 redistribution.
ospf-default-information none| originate|always	Specify how to control the origination of default route.
ospf-default-info-originate-metric none	Specify the metric for OSPF origination of default route.
ospf-default-info-originate-metric-type 1|2	Specify the metric type for OSPF origination of default route.
ospf-default-info-originate-route-map vrouter route-map *name*	Specify the route map for OSPF origination of default route.
vrrp-track-port *port-list*S	Specify the ports for VRRP tracking.
bgp-snmp|no-bgp-snmp	Enable or disable BGP SNMP MIB.
bgp-snmp-notification|no-bgp-snmp-notification	Enable or disable SNMP notifications for BGP MIBs.
ospf-snmp|no-ospf-snmp	Enable or disable OSPF SNMP MIB.
ospf-snmp-notification|no-ospf-snmp-notification	Enable or disable SNMP notifications for OSPF MIBs.
ospf6-snmp|no-ospf6-snmp	Enable or disable OSPFv3 SNMP MIB.
ospf6-snmp-notification|no-bgp-snmp-notification	Enable or disable SNMP notifications for OSPFv3 MIBs.
ip-snmp|no-ip-snmp	Enable or disable ipForward SNMP MIBs.
no-bgp-redist-static-route-map	Remove route map for BGP static redistribution.
no-bgp-redist-connected-route-map	Remove route map for BGP connected redistribution.
no-bgp-redist-ospf-route-map	Remove route map for BGP OSPF redistribution.

`bgp-graceful-shutdown|no-bgp-graceful-shutdown`	Specify BGP graceful shutdown according to RFE 8326.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.0	Parameter `router-type` added.
Version 2.2	The parameter, `hw-vrrp-id`, added. The parameters, `bgp-redistribute`, `rip-redistribute`, and `ospf-redistribute`, added.
Version 2.2.3	The parameters `bgp-redist` and `ospf-dist` added. The parameter `vrrp-track-port` added. The parameters `bgp-cluster`, `bgp-max-paths`, `bgp-multipath`, `bgp-best-path`, `bgp-dampening`, `bgp-graceful-restart`, and `bgp-stalepath-time` added.
Version 2.3.1	The parameters, `ospf6-`, added.
Version 2.4	The parameters, `ospf-stub-router-on-startup` and `vrrp-track-port` added. The parameters `bgp-scantime`, `bgp-keepalive-interval`, and `bgp-holdtime` added.
Version 2.4.1	The parameter, `bgp-distance-`, and `ospf-distance`, added.
Version 2.5.4	The parameter, `shared-vnet-mgr`, added.
Version 2.6.0	SNMP MIBs for BGP, OSPF, OSPFv3, and ipForward added.
Version 3.0.0	The parameters, `ospf-bfd-all-if`, `ospf-default-information`, `ospf-default-info-originate`, and `ospf-default-info-originate-metric-type` added.
Version 3.1.0	The parameters for route maps added.
Version 5.1.1	The parameter `bgp-graceful-shutdown|no-bgp-graceful-shutdown` is added.
Version 5.1.1	The parameter `bgp-graceful-restart|no-bgp-graceful-restart` is removed.
Version 6.1.0	The parameter `evpn-border|no-evpn-border` added.
Version 6.1.1	The parameters `evpn-dup-addr-max-moves`, `evpn-dup-addr-moves-duration`, and `evpn-dup-addr-freeze` added.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command creates a new vRouter service.

Examples To create a vRouter, `MyvService`, for the vNET, `net-ops`, as a shared service, with the IP address of `208.74.182.1`, use the following command:

```
CLI (network-admin@switch) > vrouter-create name MyvService vnet net-
ops shared-vnet-services router-id 208.74.182.1
```

vrouter-delete

This command deletes a virtual router (vRouter) service for a fabric, cluster, or standalone switch.

Syntax `vrouter-delete`

`name` *`name-string`*	Specify the name of the vRouter service.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command deletes a vRouter service.

Examples To delete the vRouter service, `MyvService`, use the following command:

```
CLI (network-admin@switch) > vrouter-delete name MyvService
```

vrouter-modify

This command modifies a virtual router (vRouter) services for a fabric, cluster, or standalone switch.

Syntax `vrouter-modify`

`name` *`name-string`*	Specify the name of the vRouter.
Any of the following options:	
`disable|enable`	Specify to enable or disable the vRouter service.
`gateway` *`ip-address`*	Specify the IP address of the gateway.
`storage-pool` *`storage-pool-name`*	Specify the storage pool.
`evpn-border|no-evpn-border`	Specify to enable or disable EVPN border gateway.
`evpn-dup-addr-max-moves` *`2..1000`*	Specify the maximum number of EVPN duplicate address moves. The default value is 5.
`evpn-dup-addr-moves-duration` *`2..1800`*	Specify the EVPN duplicate address move time duration. The default vale is 180s.
`evpn-dup-addr-freeze none|permanent|-` *`1..3600`*	EVPN duplicate address freeze duration (seconds). The default value is 180s. By default, if 5 MAC moves are detected in a 180s time window, the duplicate MAC address entry is frozen for 180s.
`cluster-active-active-routing| no-cluster-active-active-routing`	Specify if you want active-active routing with or without VRRP.
`hw-vrrp-id` *`hw-vrrp-id-number`*	Specify the VRRP ID assigned to the hardware vRouter.
`bgp-as` *`bgp-as-number`*	Specify the Autonomous System Number (ASN) if the vRouter runs Border Gateway Protocol (BGP).
`router-id` *`ip-address`*	Specify the vRouter IP address
`proto-multi none|pim-ssm`	Specify the optional multicast protocol for the vRouter service. Select none or Protocol Independent Multicast-source specific mode (PIM-SSM).
`bgp-redistribute static|connected|rip| ospf`	Specify how BGP routes are redistributed.
`bgp-redist-static-metric none`	Specify a static metric for BGP route redistribution.
`bgp-redist-static-route-map vrouter route-map` *`name`*	Specify the route map for BGP redistribution of static routes.
`bgp-redist-connected-metric none`	Specify a connected metric for BGP route redistribution
`bgp-redist-connected-route-map vrouter route-map name`	Specify the route map for BGP redistribution of connected routes.

bgp-redist-rip-metric none	Specify a RIP metric for BGP route redistribution.
bgp-redist-ospf-metric none	Specify a OSPF metric for BGP route redistribution.
bgp-redist-ospf-route-map vrouter route-map *name*	Specify the route map for BGP redistribution of OSPF routes.
bgp-cluster-id *ip-address*	Specify an IP address for a BGP cluster.
bgp-max-paths *bgp-max-paths-number*	Specify the maximum number of paths for BGP.
bgp-ibgp-multipath *bgp-ibgp-multipath-number*	Specify the number of multipaths for BGP.
bgp-bestpath-as-path none|ignore	Specify a parameter for a best path as path.
bgp-dampening|no-bgp-dampening	Specify a BGP damp
bgp-graceful-restart| no-bgp-graceful-restart	Specify a graceful restart for BGP routing.
bgp-stalepath-time *second*	Specify the length of time befor a BGP path becomes stale. This is a value between 0 and 3600.
bgp-scantime *seconds*	Specify a BGP scanner interval in seconds. The default interval is 60 seconds with a range of 5 to 60 seconds.
bgp-delayed-startup *seconds*	Specify if you want to delay forming peer adjacency when switch is starting. This is a value between 5 and 36000 seconds.
bgp-keepalive-interval *seconds*	Specify a BGP keepalive interval in seconds. The default is 60 seconds with a range of 0 to 65535 seconds.
bgp-holdtime *seconds*	Specify a BGP holdtime in seconds. The default is 180 seconds with a range of 0 to 65535 seconds.
bgp-distance-external *integer*	Specify the BGP distance for routes external to the AS.
bgp-distance-internal *integer*	Specify the BGP distance for routes internal to the AS.
bgp-distance-local *integer*	Specify the BGP distance for routes local to the AS.
rip-redistribute static|connected|ospf| bgp	Specify how RIP routes are redistributed.
ospf-redistribute static|connected|rip| bgp	Specify how OSPF routes are redistributed.
vrrp-track-port *port-list*	Specify a port to track a VRRP configuration.
ospf-redist-static-metric none	Specify a static route metric type for OSPF route redistribution.
ospf-redist-static-metric-	Specify a static route metric type for OSPF route

type 1|2	redistribution.
ospf-redist-static-route-map vrouter route-map *name*	Specify the route map for OSPF redistribution of static routes.
ospf-redist-connected-metric none	Specify a connected metric type for OSPF route redistribution.
ospf-redist-connected-metric-type 1|2	Specify a connected metric type for OSPF route redistribution.
ospf-redist-connected-route-map vrouter route-map *name*	Specify the route map for OSPF redistribution of connected routes.
ospf-redist-rip-metric none	Specify a RIP metric type for OSPF route redistribution.
ospf-redist-rip-metric-type 1|2	Specify a RIP metric type for OSPF route redistribution.
ospf-redist-bgp-metric none	Specify a BGP metric type for OSPF route redistribution.
ospf-redist-bgp-metric-type 1|2	Specify a BGP metric type for OSPF route redistribution.
ospf-redist-bgp-route-map vrouter route-map *name*	Specify the route map for OSPF redistribution of BGP routes.
ospf6-redistribute static|connected|bgp4	Specify if you want to redistribute OSPF6 routes.
ospf6-redist-static-metric none	Specify a metric for OSPF6 redistribute of static routes.
ospf6-redist-static-metric-type 1|2	Specify a metric type for OSPF6 redistribution of static routes.
ospf-distance-external *integer*	Specify the OSPF distance for routes external to the AS.
ospf-distance-internal *integer*	Specify the OSPF distance for routes internal to the AS.
ospf-distance-local *integer*	Specify the OSPF distance for routes local to the AS.
ospf-stub-router-on-startup| no-ospf-stub-router-on-startup	Specify if you want advertise self as stub router temporary on startup.
ospf-stub-router-on-startup-period *integer*	Specify the time period to advertise self as stub router on startup. This s a value between 5 and 86400 seconds.
ospf-bfd-all-if| no-ospf-bfd-all-if	Specify if you want to use BFD protocol for fault detection on all OSPF interfaces.
ospf-default-information none|originate| always	Specify if you want to control origination of default route.

`ospf-default-info-originate-metric none`	Specify the metric for OSPF origination of default route.
`ospf-default-info-originate-metric-type 1|2`	Specify the metric type for OSPF origination of default route.
`ospf6-redist-connected-metric none`	Specify a metric for OSPF6 redistribution of connected routes.
`ospf6-redist-connected-metric-type 1|2`	Specify a metric type for OSPF6 redistribution.
`ospf-bfd-all-if|no-ospf-bfd-all-if`	Enables or disables BFD protocol for fault detection on all (global) OSPF interfaces. Default is disabled.
`ospf-default-information none|originate|always`	Specify how to control the origination of default route.
`ospf-default-info-originate-metric none`	Specify the metric for OSPF origination of default route.
`ospf-default-info-originate-metric-type 1|2`	Specify the metric type for OSPF origination of default route.
`ospf-default-info-originate-route-map vrouter route-map` *`name`*	Specify the route map for OSPF origination of default route.
`vrrp-track-port` *`port-list`*	Specify the ports to track for VRRP.
`bgp-snmp|no-bgp-snmp`	Enable or disable BGP SNMP MIB.
`bgp-snmp-notification|no-bgp-snmp-notification`	Enable or disable SNMP notifications for BGP MIBs.
`ospf-snmp|no-ospf-snmp`	Enable or disable OSPF SNMP MIB.
`ospf-snmp-notification|no-ospf-snmp-notification`	Enable or disable SNMP notifications for OSPF MIBs.
`ospf6-snmp|no-ospf6-snmp`	Enable or disable OSPFv3 SNMP MIB.
`ospf6-snmp-notification|no-bgp-snmp-notification`	Enable or disable SNMP notifications for OSPFv3 MIBs.
`ip-snmp|no-ip-snmp`	Enable or disable ipForward SNMP MIBs.
`no-bgp-redist-static-route-map`	Remove route map for BGP static redistribution.
`no-bgp-redist-connected-route-map`	Remove route map for BGP connected redistribution.
`no-bgp-redist-ospf-route-map`	Remove route map for BGP OSPF redistribution.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.0	Parameter `router-type` added.
Version 2.1	The parameter, `storage-pool`, deprecated. The parameter, `gateway`, added.
Version 2.2	The parameter `bgp-redistribute`, `rip-redistribute`, and `ospf-redistribute`, added.
Version 2.2.3	The parameters `bgp-redist` and `ospf-dist` added. The parameter `vrrp-track-port` added. The parameters `bgp-cluster`, `bgp-max-paths`, `bgp-multipath`, `bgp-best-path`, `bgp-dampening`, `bgp-graceful-restart`, and `bgp-stalepath-time` added.
Version 2.3.1	The parameters, `ospf6-`, added.
Version 2.4	The parameters, `ospf-stub-router-on-startup` and `vrrp-track-port` added. The parameters `bgp-scantime`, `bgp-keepalive-interval`, and `bgp-holdtime` added.
Version 2.4.1	The parameter, `bgp-distance-`, and `ospf-distance`, added.
Version 2.5.3	The parameter `ospf-bfd-all-if|no-ospf-bfd-all-if` added.
Version 2.5.4	The parameter, `shared-vnet-mgr`, added.
Version 2.6.0	SNMP MIBs for BGP, OSPF, OSPFv3, and ipForward added.
Version 2.6.2	The parameter, `cluster-active-active-routing` and `bgp-delayed-startup`, added.
Version 3.0.0	The parameters, `ospf-bfd-all-if`, `ospf-default-information`, `ospf-default-info-originate`, and `ospf-default-info-originate-metric-type` added.
Version 3.1.0	The parameters for route maps added.
Version 6.1.0	The parameter `evpn-border|no-evpn-border` added.
Version 6.1.1	The parameters `evpn-dup-addr-max-moves`, `evpn-dup-addr-moves-duration`, and `evpn-dup-addr-freeze` added.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command modifies a vRouter service.

Examples To modify a vRouter, `MyvService`, for the vNET, `net-ops`, as a shared service, and disable it, use the following command:

```
CLI (network-admin@switch) > vrouter-modify name MyvService vnet net-ops shared-vnet-services
disable
```

vrouter-migrate

The command migrates a vRouter service.

Syntax `vrouter-migrate name name-string location fabric-node-name storage-pool storage-pool-name`

`name` *`name-string`*	Specify the name of the vRouter.
Between one or two of the following options:	
`location` *`fabric-node-name`*	Specify the location name.
`storage-pool` *`storage-pool-name`*	Specify the storage pool name.

Defaults None.

Access CLI.

History Command introduced in nvOS Version 1.2.1.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command migrates a vRouter service.

Examples To migrate the vRouter service, `MyvService`, on fabric, `pn-fabric`, to the storage pool, `keep-all`, use the following command:

```
CLI (network-admin@switch) > vrouter-migrate name MyvService location
pn-fabric storage-pool keep-all
```

vrouter-show

This command displays a virtual router (vRouter) service for a fabric, cluster, or standalone switch.

Syntax `vrouter-show`

`id`	The ID number assigned to the configuration.
`name` *`name-string`*	Specifies the name of the vRouter.
`type vnet-mgr|vrouter|netzone|orphaned| netvm|` `nat|ovs`	Specifies the type of vRouter.
`scope local|fabric`	Specifies the scope of the vRouter.
`vnet` *`vnet-name`*	Specifies the name of the vNET.
`location` *`fabric-node-name`*	Specifies the location of the vRouter on the fabric.
`router-type hardware|software`	Specifies the router type as hardware or software.
`hw-router-mac` *`mac-address`*	Specifies the MAC address of the hardware router.
`fabric-comm`	Specifies if Netvisor uses the vRouter as a fabric communication interface.
`router-ipstack quagga|frr`	Specifies the type of vRouter IP stack.
`evpn-border|no-evpn-border`	Enable or disable EVPN border gateway.
`evpn-dup-addr-max-moves` *`2..1000`*	Specify the maximum number of EVPN duplicate address moves. The default value is 5.
`evpn-dup-addr-moves-duration` *`2..1800`*	Specify the EVPN duplicate address move time duration. The default vale is 180s.
`evpn-dup-addr-freeze none|permanent|-` *`1..3600`*	EVPN duplicate address freeze duration (seconds). The default value is 180s. By default, if 5 MAC moves are detected in a 180s time window, the duplicate MAC address entry is frozen for 180s.
`hw-vrid` *`hw-vrid-number`*	Specifies the virtual router ID of the hardware router.
`hw-vrrp-id` *`hw-vrrp-id-number`*	Specifies the VRRP ID for a hardware router.
`bgp-as` *`bgp-as-number`*	Specifies the Autonomous System Number (ASN) if the vRouter runs Border Gateway Protocol (BGP).
`router-id` *`ip-address`*	Specifies the vRouter IP address
`proto-multi none|vmrp|pim-ssm`	Specifies the optional multicast protocol for the vRouter service. Select none, Vector Multicast Routing Protocol (VMRP), or Protocol Independent Multicast-source specific mode (PIM-SIM).
`bgp-redistribute static|connected|rip|`	Specify how BGP routes are redistributed.

ospf	
bgp-redist-static-metric none	Specify a static metric for BGP route redistribution.
bgp-redist-connected-metric none	Specify a connected metric for BGP route redistribution
bgp-redist-rip-metric none	Specify a RIP metric for BGP route redistribution.
bgp-redist-ospf-metric none	Specify a OSPF metric for BGP route redistribution.
bgp-cluster-id *ip-address*	Specify an IP address for a BGP cluster.
bgp-max-paths *bgp-max-paths-number*	Specify the maximum number of paths for BGP.
bgp-ibgp-multipath *bgp-ibgp-multipath-number*	Specify the number of multipaths for BGP.
bgp-bestpath-as-path none|ignore	Specify a parameter for a best path as path.
bgp-dampening| no-bgp-dampening	Specify a BGP damp
bgp-graceful-restart| no-bgp-graceful-restart	Specify a graceful restart for BGP routing.
bgp-stalepath-time *second*	Specify the length of time befor a BGP path becomes stale. This is a value between 0 and 3600.
bgp-scantime *seconds*	Specify a BGP scanner interval in seconds. The default interval is 60 seconds with a range of 5 to 60 seconds.
bgp-keepalive-interval *seconds*	Specify a BGP keepalive interval in seconds. The default is 60 seconds with a range of 0 to 65535 seconds.
bgp-holdtime *seconds*	Specify a BGP holdtime in seconds. The default is 180 seconds with a range of 0 to 65535 seconds.
bgp-distance-external *integer*	Specify the BGP distance for routes external to the AS.
bgp-distance-internal *integer*	Specify the BGP distance for routes internal to the AS.
bgp-distance-local *integer*	Specify the BGP distance for routes local to the AS.
bgp-ipv4-unicast| no-bgp-ipv4-unicast	Specify a MP-BGP Control default IPv4 Unicast AFI/SAFI.
rip-redistribute static|connected|ospf| bgp	Specify how RIP routes are redistributed.
ospf-redistribute static|connected|rip| bgp	Specify how OSPF routes are redistributed.
vrrp-track-port *port-list*	Specify a port to track a VRRP configuration.

`ospf-redist-static-metric-type 1|2`	Specify a static metric type for OSPF route redistribution.
`ospf-distance-external` *`integer`*	Specify the OSPF distance for routes external to the AS.
`ospf-distance-internal` *`integer`*	Specify the OSPF distance for routes internal to the AS.
`ospf-distance-local` *`integer`*	Specify the OSPF distance for routes local to the AS.
`ospf-stub-router-on-startup|no-ospf-stub-router-on-startup`	Specify if you want advertise self as stub router temporarily on startup.
`ospf-stub-router-on-startup-period` *`integer`*	Specify the time period to advertise self as stub router on startup. This s a value between 5 and 86400 seconds.
`ospf-bfd-all-if|no-ospf-bfd-all-if`	Specify if you want to use BFD protocol for fault detection on all OSPF interfaces.
`ospf-default-information none|originate|always`	Specify if you want to control origination of default route.
`ospf-default-info-originate-metric none`	Specify the metric for OSPF origination of default route.
`ospf-default-info-originate-metric-type 1|2`	Specify the metric type for OSPF origination of default route.
`ospf-redist-connected-metric none`	Specify a connected metric type for OSPF route redistribution.
`ospf-redist-connected-metric-type 1|2`	Specify a connected metric type for OSPF route redistribution.
`ospf-redist-rip-metric none`	Specify a RIP metric type for OSPF route redistribution.
`ospf-redist-rip-metric-type 1|2`	Specify a RIP metric type for OSPF route redistribution.
`ospf-redist-bgp-metric none`	Specify a BGP metric type for OSPF route redistribution.
`ospf-redist-bgp-metric-type 1|2`	Specify a BGP metric type for OSPF route redistribution.
`ospf6-redistribute static|connected|bgp4`	Specify if you want to redistribute OSPF6 routes.
`ospf6-redist-static-metric none`	Specify a metric for OSPF6 redistribute of static routes.
`ospf6-redist-static-metric-type 1|2`	Specify a metric type for OSPF6 redistribution of static routes.
`ospf6-redist-connected-metric none`	Specify a metric for OSPF6 redistribution of

	connected routes.
`ospf6-redist-connected-metric-type 1|2`	Specify a metric type for OSPF6 redistribution.
`ospf-default-information none|originate|always`	Specify how to control the origination of default route.
`ospf-default-info-originate-metric none`	Specify the metric for OSPF origination of default route.
`ospf-default-info-originate-metric-type 1|2`	Specify the metric type for OSPF origination of default route.
`ospf-default-info-originate-route-map vrouter route-map` *`name`*	Specify the route map for OSPF origination of default route.
`bgp-snmp|no-bgp-snmp`	Enable or disable BGP SNMP MIB.
`bgp-snmp-notification|no-bgp-snmp-notification`	Enable or disable SNMP notifications for BGP MIBs.
`ospf-snmp|no-ospf-snmp`	Enable or disable OSPF SNMP MIB.
`ospf-snmp-notification|no-ospf-snmp-notification`	Enable or disable SNMP notifications for OSPF MIBs.
`ospf6-snmp|no-ospf6-snmp`	Enable or disable OSPFv3 SNMP MIB.
`ospf6-snmp-notification|no-bgp-snmp-notification`	Enable or disable SNMP notifications for OSPFv3 MIBs.
`ip-snmp|no-ip-snmp`	Enable or disable ipForward SNMP MIBs.
`no-bgp-redist-static-route-map`	Remove route map for BGP static redistribution.
`no-bgp-redist-connected-route-map`	Remove route map for BGP connected redistribution.
`no-bgp-redist-ospf-route-map`	Remove route map for BGP OSPF redistribution.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.0	Parameter `type` added.
Version 2.2	The parameter, `location`, `hw-router-mac`, and `hw-vrrp-id`, added. The parameters, `bgp-redistribute`, `rip-redistribute`, and `ospf-redistribute`, added.
Version 2.2.3	The parameters `bgp-redist` and `ospf-dist` added. The parameter `vrrp-track-port` added. The parameters `bgp-cluster`, `bgp-max-paths`, `bgp-multipath`, `bgp-best-path`, `bgp-dampening`, `bgp-graceful-restart`, and `bgp-stalepath-time`

	added
Version 2.3.1	The parameters, `ospf6-`, added.
Version 2.4	The parameters, `ospf-stub-router-on-startup` and `vrrp-track-port` added. The parameters `bgp-scantime`, `bgp-keepalive-interval`, and `bgp-holdtime` added.
Version 2.4.1	The parameter, `bgp-distance-`, and `ospf-distance-`, added.
Version 2.5.4	The parameter, `shared-vnet-mgr`, added.
Version 2.6	SNMP MIBs for BGP, OSPF, OSPFv3, and ipForward added.
Version 3.0.0	The parameters, `ospf-bfd-all-if`, `ospf-default-information`, `ospf-default-info-originate`, and `ospf-default-info-originate-metric-type` added.
Version 3.1.0	The parameters for route maps added.
Version 6.1.0	The parameter `evpn-border|no-evpn-border` added
Version 6.1.1	The parameters `evpn-dup-addr-max-moves`, `evpn-dup-addr-moves-duration`, and `evpn-dup-addr-freeze` added.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command displays vRouter service.

Examples To display the configuration for vRouter1, use the following command:

```
CLI (network-admin@switch) > vrouter-show name vRouter1 format all layout vertical
id:          c00029d:0
name:        vRouter1
type:        vrouter
scope:       fabric
vnet:
location:    switch
zone-id:     c00029d:1
router-type: hardware
evpn-border: enable
```

vrouter-ecmp-group-show

This command is used to display the Equal Cost Multipath (ECMP) routing group for a vRouter.

Syntax `vrouter-ecmp-group-show`

`vrid` *`vrid-number`*	Specifies the vRouter ID.
`ecmp-group ecmp-group-number`	Specifies the ECMP group.
`nexthop_ip` *`ip-address`*	Specifies the IP address.
`nexthop_count` *`nexthop_count-number`*	Specifies the nexthop count.
`ecmp-ref-count` *`ecmp-ref-count-number`*	Specifies the ECMP group reference count.

Defaults None

Access CLI

History Command introduced in Version 2.4.

Usage Use this command to display ECMP routes which can be helpful when troubleshooting a connection.

Examples To display an ECMP group, use the following command:

CLI (network-admin@switch) > `vrouter-ecmp-group-show`

```
vrid ecmp-group nexthop_ip   nexthop_count ecmp-ref-count
---- ---------- ------------ ------------- --------------
4    200261     10.60.26.34  2             155
```

vrouter-ecmp-cached-routes-show

This command is used to display the ECMP cached routes for a vRouter.

Syntax `vrouter-cached-routes-show`

`vrid` *`vrid-number`*	Specifies the vRouter ID.
`ip` *`ip-address`*	Specifies the IP address.
`prelen` *`prelen-number`*	Specifies the prefix length.
`vlan` *`vlan-number`*	Specifies the VLAN number.
`nexthop` *`ip-address`*	Specifies the IP address for the next hop on the route.
`age-in-seconds` *`age-in-seconds-number`*	Specifies the age of the cached route.

Defaults None

Access CLI

History

Version 2.3.3	Command introduced.
Version 2.4.1	The parameter, `vnet`, added.

Usage Use this command to display cached routes which can be helpful when troubleshooting a connection.

Examples To display cached routes, use the following command:

```
CLI (network-admin@switch) > vrouter-ecmp-cached-routes-show
```

vrouter-evpn-arp-cache-show

This command displays the ARP cache as populated by EVPN.

Syntax `vrouter-evpn-arp-cache-show`

name *name-string*	The vRouter name.
Specify the following evpn-arp-cache arguments:	
vni 0..16777215	The VXLAN identifier for tunnel. The value 0 indicates unconfigure VXLAN.
ip *ip-string*	The IP address.
mac *mac-string*	The MAC address.
remote-vtep *remote-vtep-string*	The remote VTEP.
type *type-string*	The type.
state *state-string*	The state.
remote-seq *remote-seq-number*	The remote sequence number.
local-seq *local-seq-number*	The local sequence number.

Defaults None

Access CLI

History

Version 6.1.0	Command introduced.

Usage Use this command to display the ARP cache entries populated by EVPN.

Examples To display the ARP cache for EVPN with VNI 10211, use the following command:

```
CLI  (network-admin@bgw21*)  >  vrouter-evpn-arp-cache-show  vni  10211
name     vni   ip                mac               remote-vtep type   state  remote-seq local-seq
-------- ----- ----------------- ----------------- ----------- ------ ------ ---------- ---------
bgw21-vr 10211 2000::100:0:211:8 00:11:01:00:00:08 7.1.1.1     remote active 0          0
bgw21-vr 10211 100.0.211.7       00:11:01:00:00:07 7.1.1.1     remote active 0          0
bgw21-vr 10211 100.0.211.6       00:11:01:00:00:06 7.1.1.1     remote active 0          0
bgw21-vr 10211 2000::100:0:211:9 00:11:01:00:00:09 7.1.1.1     remote active 0          0
bgw21-vr 10211 2000::100:0:211:a 00:11:01:00:00:0a 7.1.1.1     remote active 0          0
bgw21-vr 10211 100.0.211.3       00:11:01:00:00:03 7.1.1.1     remote active 0          0
bgw21-vr 10211 2000::100:0:211:6 00:11:01:00:00:06 7.1.1.1     remote active 0          0
bgw21-vr 10211 100.0.211.2       00:11:01:00:00:02 7.1.1.1     remote active 0          0
bgw21-vr 10211 2000::100:0:211:7 00:11:01:00:00:07 7.1.1.1     remote active 0          0
bgw21-vr 10211 2000::100:0:211:4 00:11:01:00:00:04 7.1.1.1     remote active 0          0
bgw21-vr 10211 100.0.211.10      00:11:01:00:00:0a 7.1.1.1     remote active 0          0
bgw21-vr 10211 100.0.211.8       00:11:01:00:00:08 7.1.1.1     remote active 0          0
bgw21-vr 10211 2000::100:0:211:2 00:11:01:00:00:02 7.1.1.1     remote active 0          0
bgw21-vr 10211 100.0.211.4       00:11:01:00:00:04 7.1.1.1     remote active 0          0
bgw21-vr 10211 100.0.211.5       00:11:01:00:00:05 7.1.1.1     remote active 0          0
bgw21-vr 10211 100.0.211.1       00:11:01:00:00:01 7.1.1.1     remote active 0          0
bgw21-vr 10211 100.0.211.9       00:11:01:00:00:09 7.1.1.1     remote active 0          0
bgw21-vr 10211 2000::100:0:211:3 00:11:01:00:00:03 7.1.1.1     remote active 0          0
bgw21-vr 10211 2000::100:0:211:1 00:11:01:00:00:01 7.1.1.1     remote active 0          0
bgw21-vr 10211 2000::100:0:211:5 00:11:01:00:00:05 7.1.1.1     remote active 0          0
```

vrouter-evpn-bgp-neighbor-summary-show

This command displays BGP neighbors associated with EVPN.

Syntax `vrouter-evpn-bgp-neighbor-summary-show`

`vrouter-name` *`name-string`*	The vRouter name
Specify the following arguments:	
`neighbor` *`neighbor-string`*	The BGP neighbor
`ver` *`ver-number`*	The version number
`as` *`as-number`*	The remote AS number
`msg-rcvd` *`msg-rcvd-number`*	Message received number
`msg-sent` *`msg-sent-number`*	Message sent number
`Tb/Ver` *`Tb/Ver-number`*	Tb/Ver number
`InQ` *`InQ-number`*	InQ number
`OutQ` *`OutQ-number`*	OutQ number
`up/down` *`up/down-string`*	Up/down
`state` *`state-string`*	State
`pfxrcd` *`pfxrcd-number`*	pfxrcd number

Defaults None

Access CLI

History

Version 6.1.0	Command introduced.

Usage Use this command to display the BGP neighbors associated with EVPN.

Examples To display the BGP neighbors associated with EVPN, use the following command:

```
CLI  (network-admin@bgw11*)  >  vrouter-evpn-bgp-neighbor-summary-show  format  all
vrouter-name   neighbor     ver as    msg-rcvd msg-sent Tb/Ver InQ OutQ up/down  state       pfxrcd
-------------- ------------ --- ----- -------- -------- ------ --- ---- -------- ----------- ------
vrouter-bgw-11 172.16.134.1 4   65011 122      226      0      0   0    00:00:39 Connect     0
vrouter-bgw-11 172.16.134.2 4   65011 83       190      0      0   0    00:07:36 Established 4
```

vrouter-evpn-bgp-routes-show

This command is used to display the supported EVPN routes received by a border gateway node.

Syntax `vrouter-evpn-bgp-routes-show`

`vrouter-name` *`name-string`*	The vRouter name.
Specify the following arguments:	
`rd rd-string`	EVPN route distinguisher.
`vni` *`vni-string`*	The VNI.
`valid-route` *`yes|no`*	Valid EVPN route.
`best-route` *`yes|no`*	Best EVPN route.
`network` *`network-string`*	Network - displays EVPN route contents.
`route-type` *`route-type-string`*	Route type.
`next-hop` *`next-hop-string`*	Next hop address.
`metric` *`metric-number`*	Metric.
`locprf` *`locprf-number`*	locprf number.
`weight` *`weight-number`*	Weight.
`path` *`path-string`*	Path.
`extended-community` *`extended-community-string`*	Extended community.

Defaults None

Access CLI

History

Version 6.1.0	Command introduced.

Usage Use this command to display the EVPN BGP routes.

Examples To display the EVPN BGP routes, use the following command:

```
CLI (network-admin@bgw11*) > vrouter-evpn-bgp-routes-show format vrouter-name,rd,vni,network,route-
type,next-hop,path,extended-community

vrouter-name   rd             vni    network                  route-type next-hop     path extended-community
-------------- -------------- ------ ------------------------ ---------- ------------ ---- -----------------------------------------
vrouter-bgw-11 0.0.0.0:2      103501 [24]:[10.2.3.0]          5          172.16.133.3      ET:8 RT:64518:103501 Rmac:00:00:5e:00:01:06
vrouter-bgw-11 0.0.0.0:2      103501 [24]:[10.2.4.0]          5          172.16.134.3      RT:1075:103501 ET:8 Rmac:00:00:5e:00:01:01
vrouter-bgw-11 0.0.0.0:2      103501 [24]:[10.2.4.0]          5          172.16.134.3      RT:1075:103501 ET:8 Rmac:00:00:5e:00:01:01
vrouter-bgw-11 192.168.0.11:3 10201  [48]:[00:3b:01:00:00:01] 2          172.16.133.3      ET:8 RT:64518:10201
vrouter-bgw-11 192.168.0.11:3 10201  [32]:[172.16.133.3]      3          172.16.133.3      ET:8 RT:64518:10201
vrouter-bgw-11 192.168.0.11:4 10403  [32]:[172.16.133.3]        3              172.16.133.3        ET:8
RT:64518:10403
vrouter-bgw-11 192.168.0.13:3 10404  [32]:[172.16.134.3]        3              172.16.134.3
```

```
RT:1075:10404  ET:8
vrouter-bgw-11 192.168.0.13:4 10201   [48]:[00:3d:01:00:00:01] 2             172.16.134.3
RT:1075:10201  ET:8
vrouter-bgw-11 192.168.0.13:4 10201   [32]:[172.16.134.3]       3             172.16.134.3
RT:1075:10201  ET:8
vrouter-bgw-11 192.168.0.14:3 10404   [32]:[172.16.134.3]       3             172.16.134.3
RT:1075:10404  ET:8
vrouter-bgw-11 192.168.0.14:4 10201   [48]:[00:3d:01:00:00:01] 2             172.16.134.3
RT:1075:10201  ET:8
vrouter-bgw-11 192.168.0.14:4 10201   [32]:[172.16.134.3]       3             172.16.134.3
RT:1075:10201  ET:8
```

vrouter-evpn-bgp-vni-show

This command is used to display the VNI information for BGP EVPN.

Syntax `vrouter-evpn-bgp-vni-show`

`vrouter-name` *`name-string`*	The vRouter name.
Specify the following arguments:	
`vni` *`vni-string`*	VXLAN identifier for tunnel.
`type` *`type-string`*	Type 2 or type 3.
`rd` *`rd-string`*	Route distinguisher.
`import-rt` *`import-rt-string`*	Import route target.
`export-rt` *`export-rt-string`*	Export route target.

Defaults None

Access CLI

History

Version 6.1.0	Command introduced.

Usage Use this command to display VNI information for BGP EVPN.

Examples To display VNI information for BGP EVPN, use the following command:

```
CLI (network-admin@bgw21*) > vrouter-evpn-bgp-vni-show sort-asc vni

switch vrouter-name vni    type rd         import-rt    export-rt
------ ------------ ------ ---- ---------- ------------ ------------
bgw21  bgw21-vr     10110  2    2.4.0.1:15 65012:10110  65012:10110
bgw21  bgw21-vr     10112  2    2.4.0.1:27 65012:10112  65012:10112
bgw21  bgw21-vr     10120  2    2.4.0.1:30 65012:10120  65012:10120
bgw21  bgw21-vr     10121  2    2.4.0.1:35 65012:10121  65012:10121
bgw21  bgw21-vr     10122  2    2.4.0.1:39 65012:10122  65012:10122
bgw21  bgw21-vr     10130  2    2.4.0.1:16 65012:10130  65012:10130
bgw21  bgw21-vr     10131  2    2.4.0.1:17 65012:10131  65012:10131
bgw21  bgw21-vr     10140  2    2.4.0.1:20 65012:10140  65012:10140
bgw21  bgw21-vr     10145  2    2.4.0.1:33 65012:10145  65012:10145
bgw21  bgw21-vr     10146  2    2.4.0.1:13 65012:10146  65012:10146
bgw21  bgw21-vr     10147  2    2.4.0.1:19 65012:10147  65012:10147
bgw21  bgw21-vr     10148  2    2.4.0.1:32 65012:10148  65012:10148
bgw21  bgw21-vr     10149  2    2.4.0.1:12 65012:10149  65012:10149
bgw21  bgw21-vr     10150  2    2.4.0.1:28 65012:10150  65012:10150
```

vrouter-evpn-duplicate-mac-show

This command is used to display duplicate MAC address information for BGP EVPN.

Syntax `vrouter-evpn-duplicate-mac-show`

`vrouter-name` *`name-string`*	The vRouter name.
Specify the following arguments:	
`host-mac` *`mac-address`*	Host MAC address.
`seq` *`1..4294967295`*	Sequence number assigned to the MAC which denotes the number of moves.

Defaults None

Access CLI

History

Version 6.1.1	Command introduced.

Usage Use this command to display duplicate MAC address information for BGP EVPN.

Examples To display duplicate MAC information, use the following command:

```
CLI (network-admin@switch) > vrouter-evpn-duplicate-mac-show
switch       vrouter-name    host-mac          seq
------------ --------------- ----------------- ---
switch       vRouter1        00:12:c0:80:33:6a 7
```

vrouter-evpn-vni-mac-show

This command is used to display VNI and MAC address information for EVPN.

Syntax `vrouter-evpn-vni-mac-show`

`vrouter-name` *`name-string`*	The vRouter name.
Specify the following arguments:	
`vni` *`0..16777215`*	VXLAN identifier for tunnel.
`mac` *`mac-string`*	MAC address.
`type` *`type-string`*	`local` or `remote` type.
`intf/remote-vtep` *`intf/remote-vtep-string`*	local interface or remote VTEP IP address.
`vlan` *`vlan-number`*	VLAN ID.
`local-seq` *`local-seq-number`*	Local sequence number
`remote-seq` *`remote-seq-number`*	Remote sequence number.

Defaults None

Access CLI

History

Version 6.1.0	Command introduced.

Usage Use this command to display VNI and MAC address information for BGP EVPN.

Examples To display VNI and MAC address information for EVPN with VNI 10211, use the following command:

```
CLI (network-admin@bgw21*) > vrouter-evpn-vni-mac-show vni 10211

vrouter-name vni   mac               type   intf/remote-vtep vlan local-seq remote-seq
------------ ----- ----------------- ------ ---------------- ---- --------- ----------
bgw21-vr     10211 00:12:01:00:00:02 local  9000becvni10211  0    0         0
bgw21-vr     10211 00:12:01:00:00:0a local  9000becvni10211  0    0         0
bgw21-vr     10211 00:11:01:00:00:05 remote 7.1.1.1          0    0         0
bgw21-vr     10211 00:11:01:00:00:0a remote 7.1.1.1          0    0         0
bgw21-vr     10211 00:12:01:00:00:07 local  9000becvni10211  0    0         0
bgw21-vr     10211 00:11:01:00:00:02 remote 7.1.1.1          0    0         0
bgw21-vr     10211 00:12:01:00:00:09 local  9000becvni10211  0    0         0
bgw21-vr     10211 00:11:01:00:00:07 remote 7.1.1.1          0    0         0
bgw21-vr     10211 00:11:01:00:00:04 remote 7.1.1.1          0    0         0
bgw21-vr     10211 00:12:01:00:00:03 local  9000becvni10211  0    0         0
bgw21-vr     10211 00:11:01:00:00:08 remote 7.1.1.1          0    0         0
bgw21-vr     10211 00:12:01:00:00:08 local  9000becvni10211  0    0         0
bgw21-vr     10211 00:11:01:00:00:01 remote 7.1.1.1          0    0         0
bgw21-vr     10211 00:11:01:00:00:03 remote 7.1.1.1          0    0         0
bgw21-vr     10211 00:12:01:00:00:06 local  9000becvni10211  0    0         0
bgw21-vr     10211 00:12:01:00:00:01 local  9000becvni10211  0    0         0
```

```
bgw21-vr     10211 00:11:01:00:00:09 remote 7.1.1.1          0    0         0
bgw21-vr     10211 00:12:01:00:00:05 local  9000becvni10211  0    0         0
bgw21-vr     10211 00:12:01:00:00:04 local  9000becvni10211  0    0         0
bgw21-vr     10211 00:11:01:00:00:06 remote 7.1.1.1          0    0         0
```

vrouter-fib-arps-show

This command is used to display information about Address Resolution Protocol (ARP) in the forwarding information database. Before using this command, the switch must be part of a fabric.

Syntax `vrouter-fib-arps-show`

`vrid` *`vrid-number`*	Displays the virtual router identifier.
`ip` *`ip-address`*	Displays the IP address.
`if-id` *`if-id-number`*	Displays the interface identifier.
`port` *`port-number`*	Displays the port number.
`vnet` *`vnet-name`*	Displays the vNET of the router.
`bd` *`bridge-domain name`*	Displays the bridge domain name.
`vlan` *`vlan-id`*	Displays the VLAN identifier.
`mac` *`mac-address`*	Displays the MAC address.
`egress-id` *`egress-id-number`*	Displays the egress identifier.
`flags ECMP|Trunk|route-to-if|local-subnet|hit| KEEP-SMAC|KEEP-TTL|drop`	Displays hardware flags.

Defaults None

Access CLI

History

Version 2.2.5	Command introduced.
Version 2.4.1	The parameter, `vnet`, added.
Version 2.6.2	Additional options added to flags, `KEEP-SMAC` and `KEEP-TTL`.
Version 3.1.0	The parameter, `drop`, added.

Usage Use this command to display ARP information in the forwarding information database.

Examples To display ARP information, use the following syntax:

```
CLI (network-admin@switch) > vrouter-fib-arps-show format all layout
vertical
switch:      aquila22-m
ip:            10.16.113.1
if-id:      0
vlan:        113
mac:            66:0e:94:9f:30:aa
flags:
switch:      aquila22-m
```

```
ip:             10.16.113.2
if-id:       0
vlan:         113
mac:             66:0e:94:f8:74:66
flags:
switch:       aquila22-m
ip:             10.16.115.1
if-id:       1
vlan:         115
mac:             66:0e:94:f8:74:66
flags:
```

vrouter-fib-routes-show

This command displays information about routes in the forwarding information database.

Syntax `vrouter-fib-routes-show`

`vrid` *`vrid-number`*	Display the virtual router identifier.
`ip` *`ip-address`*	Display the IP address of the route.
`prelen` *`prelen-number`*	Display the prefix length.
`nexthop` *`ip-address`*	Display the IP address for the next hop in the network.
`if-ip` *`ip-address`*	Displays the IP address of the interface.
`intf-id` *`intf-id-number`*	Displays the interface identifier.
`vnet` *`vnet-name`*	Specifies the vNET of the router.
`vlan` *`vlan-id`*	Displays the VLAN identifier.
`port` *`port-number`*	Displays the port number.
`nexthop-mac` *`mac-address`*	Displays the MAC address of the next hop on the network.
`flags ECMP|Trunk|route-to-if|local-subnet|hit| KEEP-SMAC|KEEP-TTL| KEEP-VLAN|drop`	Displays hardware router flags.
`egress-id` *`egress-id-number`*	Displays the egress identifier.
`ecmp-group` *`ecmp-group-number`*	Displays the ECMP group.
`state up|admin-down| if-admin-down| if-vlan-down| nexthop-up| nexthop-down`	Displays the route state.

Defaults None

Access CLI

History

Version 2.2.5	Command introduced.
Version 2.4.1	The parameter, `vnet`, added.
Version 2.6.2	Additional options added to flags, `KEEP-SMAC` and `KEEP-TTL`.

Usage Use this command to display routes in the forwarding information database.

Examples To display routes in the forwarding information database, use the following syntax:

```
CLI (network-admin@switch) > vrouter-fib-routes-show format all layout
vertical
switch:      pleiades-24
vrid:        0
ip:          10.17.123.1
prelen:      32
nexthop:     10.17.123.1
if-ip:       10.17.123.2
vlan:        123
port:        0
flags:
ecmp-group:  -1
state:       up
switch:      pleiades-24
vrid:        0
ip:          10.17.125.1
prelen:      32
nexthop:     10.17.125.1
if-ip:       10.17.125.1
vlan:        125
port:        0
flags:
ecmp-group:  -1
state:       up
```

vrouter-igmp-static-join-add

This command adds Internet Group Management Protocol (IGMP) to a virtual router (vRouter) service on a fabric, cluster, or standalone switch.

> **Informational Note:** IGMPv1 is not supported by Netvisor or ONVL. If you are using IGMPv1, you must disable IGMP snooping on the switch.

Syntax `vrouter-igmp-static-join-add`

`vrouter-name` *`name-string`*	Specify the name of the vRouter service.
Specify the following IGMP static join arguments:	
`name` *`name-string`*	Specify the name of the IGMP configuration.
`group-ip` *`ip-address`*	Specify the group IP address used to statically bind to the interface.
`source-ip` *`ip-address`*	Specify the source IP address for the IGMP query.
`interface` *`nic`*	Specify the interface for IGMP.

Defaults None.

Access CLI.

History Command introduced in nvOS Version 1.2.1.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a vRouter service that forwards traffic between networks and implements IPv4 protocols.

Examples To add this parameter to a vRouter service, `MyvService`, with group IP address `232.0.0.1` and source IP address `192.0.2.3`, on a `vrouter` interface, use the following command:

```
CLI (network-admin@switch) > vrouter-igmp-static-join-add vrouter-name
MyvService name IGMP-vrouter group-ip 232.0.0.1 source-ip 192.0.2.3
interface vrouter
```

vrouter-igmp-static-join-remove

This command adds Internet Group Management Protocol (IGMP) to a virtual router (vRouter) service on a fabric, cluster, or standalone switch..

Syntax `vrouter-igmp-static-join-remove`

`vrouter-name` *`name-string`*	Specify the name of the vRouter service.
Specify the following IBMP static join arguments:	
`name` *`name-string`*	Specify the name of the IGMP configuration.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a vRouter service that forwards traffic between networks and implements IPv4 protocols.

Examples To remove the IGMP-vRouter configuration from the vRouter service, MyvService, use the following command:

```
CLI (network-admin@switch) > vrouter-igmp-static-join-remove vrouter-name MyvService name IGMP-vRouter
```

vrouter-igmp-static-join-show

This command displays the Internet Group Management Protocol (IGMP) on a virtual router (vRouter) service on a fabric, cluster, or standalone switch.

Syntax `vrouter-igmp-static-join-show`

`vrouter-name` *`name-string`*	Specify the name of the vRouter service.
Specify the following IGMP static join arguments:	
`name` *`name-string`*	Specify the name of the IGMP configuration.
`group-ip` *`ip-address`*	Specify the group IP address used to statically bind to the interface.
`source-ip` *`ip-address`*	Specify the source IP address for the IGMP query.
`interface` *`nic`*	Specify the interface for IGMP.

Defaults None.

Access CLI.

History Command introduced in nvOS Version 1.2.1.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a vRouter service that forwards traffic between networks and implements IPv4 protocols. This command displays information about IGMP on a vRouter.

Examples To display all IGMP information on all vRouter services, use the following command:

```
CLI (network-admin@switch) > vrouter-igmp-static-join-show  layout
vertical
```

vrouter-interface-add

This command is used to add interfaces to virtual router (vRouter) services on a fabric, cluster, standalone switch, or virtual network (vNET).

Syntax `vrouter-interface-add`

`vrouter-name` *`name-string`*	Specify the name for the vRouter interface.
Specify any of the following options:	
`vlan` *`vlan-id`*	Specify the VLAN identifier. This is a value between 1 and 4094.
`ip` *`ip-address`*	Specify the IP address of the interface.
`netmask` *`netmask`*	Specify the netmask.
`assignment none|dhcp|dhcpv6`	Specify the DHCP method for IP address assignment. Note that if you specify hardware as the router type, you cannot assign IP addresses using DHCP. You must specify a static IP address.
`ip2` *`ip-address`*	Specify the IP address of the interface.
`netmask2` *`netmask`*	Specify the netmask.
`assignment2 none|dhcp|dhcpv6`	Specify the DHCP method for IP address assignment. Note that if you specify hardware as the router type, you cannot assign IP addresses using DHCP. You must specify a static IP address.
`linklocal` *`ip-address`*	Specify an IPv6 linklocal address.
`ipv6-unnumbered|no-ipv6-unnumbered`	Specify either of the options to enable or disable IPv6 unnumbered on the interface.
`vnet` *`vnet-name`*	Specify the vNET assigned to the vRouter.
`vlan-type public|private`	Specify the type of VLAN for the interface.
`if mgmt|data|span`	Specify if the interface is a management, data or span interface.
`alias-on` *`alias-on-string`*	Specify an alias for the interface.
`exclusive|no-exclusive`	Specify if the interface is exclusive to the configuration. Exclusive means that other configurations cannot use the interface. Exclusive is specified when you configure the interface as a span interface and allows higher throughput through the interface.
`nic-enable|nic-disable`	Specify if the NIC is enabled or disabled.
`pim|no-pim`	Specify if the vRouter interface is a PIM interface.
`pim-dr-priority` *`integer`*	Specify the direct router (DR) priority as an integer between 1 and 4294967295. Netvisor selects the

	vRouter interface with higher DR priority as the designated router. By default, all interfaces are priority 1. In case of same priority, Netvisor selects the vRouter interface with highest network address as DR.
`pim-cluster|no-pim-cluster`	Specify if you want to provide alternative routing for Layer 3 attached sources for leaf cluster routing configuration. It allows traffic to failover not black-hole when the unicast path to the Spine fails.
`fabric-nic|no-fabric-nic`	Specify if VNIC is on a VLAN used for fabric setup.
`vrrp-id` *`id-number`*	Specify the ID for the VRRP interface. The IDs on both vRouters must be the same ID number.
`vrrp-primary` *`string`*	Specifies the primary interface for VRRP failover.
`vrrp-priority` *`number`*	Speicfies the priority for the VRRP interface. This is a value between 1 (lowest) and 255 (highest).
`vrrp-adv-int` *`mseconds`*	Specify a VRRP advertisement interval in milliseconds. The range is from 30 to 40950 with a default value of 1000.
`vrrp-preempt-mode disable|enable`	Specify one of the options to allow or prevent a high priority backup router from becoming master router. `vrrp-preempt-mode` is enabled by default.
`l3-port` *`l3port-usable-port name`*	Specify a Layer 3 port for the interface.
`secondary-macs` *`secondary-macs-string`*	Specify a secondary MAC address for the interface.
`mtu` *`bytes`*	Specify a MTU value in bytes between 68 and 9216.
`if-nat-realm internal|external`	Specify a NAT realm for the interface.
`priority-tag|` `no-priority-tag`	Specify if you want to add a VLAN 0 priority tag on forwarded traffic.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters, `exclusive` and `nic`, added.
Version 2.2	The parameters `vrrp-id`, `vrrp-priority`, and `vrrp-primary` added.
Version 2.2.5	The parameters, `l3-port`, and `secondary-macs`, added.
Version 2.3	The parameter, `vrrp-adv-int`, added.

Version 2.4.1	The parameter, `vlan-type`, added.
Version 2.5	The parameter, `mtu`, added.
Version 2.6.0	The parameter, `if-nat-realm internal|external`, and `vnet`, added.
Version 2.6.2	The parameter, `vxlan`, deprecated.
Version 3.0.0	The parameter, `ip2` and `netmask2` added. The parameters, `pim`, `pim-dr-priority`, and `pim-cluster`, added. The parameter, `linklocal`, added. The option, `autov6`, deprecated for the parameter, `assignment`.
Version 3.1.0	The parameter, `fabric-nic` and `priority-tag`, added.
Version 5.1.3	The parameter, `ipv6-unnumbered|no-ipv6-unnumbered`, added
Version 6.0.0	The parameter, `vrrp-preempt-mode`, added.

Usage You can add interfaces to the vRouter services on a fabric, cluster, standalone switch, or virtual network (vNET). This command adds an interface to a vRouter service.

Examples To add an interface with the IP address, 192.168.10.11/32, VLAN 25, and data to vRouter service, MyvService, use the following command:

```
CLI (network-admin@switch) > vrouter-interface-add  vrouter-name
MyvService ip 192.168.10.11/32 assigment none vlan 25 if data
```

vrouter-interface-modify

This command is used to modify interfaces on the virtual router (vRouter) service on a fabric, cluster, standalone switch, or virtual network (vNET).

Syntax `vrouter-interface-modify`

`vrouter-name` *`name-string`*	Specify the name for the vRouter interface.
Specify any of the following options:	
`nic nic-string`	Specify the virtual NIC assigned to interface.
`pim|no-pim`	Specify if the vRouter interface is a PIM interface.
`nic-enable|nic-disable`	Specify if the NIC is enabled or disabled.
`pim-dr-priority` *`integer`*	Specify the direct router (DR) priority as an integer between 1 and 4294967295. Netvisor selects the vRouter interface with higher DR priority as the designated router. By default, all interfaces are priority 1. In case of same priority, Netvisor selects the vRouter interface with highest network address as DR.
`vrrp-priority` *`number`*	Speicfies the priority for the VRRP interface. This is a value between 1 (lowest) and 255 (highest).
`vrrp-adv-int` *`mseconds`*	Specify a VRRP advertisement interval in milliseconds. The range is from 30 to 40950 with a default value of 1000.
`vrrp-preempt-mode disable|enable`	Specify one of the options to allow or prevent a high priority backup router from becoming master router. `vrrp-preempt-mode` is enabled by default.
`mtu` *`bytes`*	Specify a MTU value in bytes between 68 and 9398.
`priority-tag|no-priority-tag`	Specify if you want to add a VLAN 0 priority tag on forwarded traffic.
`pim-cluster|no-pim-cluster`	Specify if VNIC is on an exclusive transit VLAN.
`fabric-nic|no-fabric-nic`	Specify if VNIC is on a VLAN used for fabric setup.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter nic, added.
Version 2.2	The parameters `vrrp-priority` added.

Version 2.3	The parameter, `vrrp-adv-int`, added.
Version 2.5.0	The parameter, `mtu`, added.
Version 3.1.0	The parameter, `fabric-nic` and `priority-tag`, added.
Version 6.0.0	The parameter, `vrrp-preempt-mode`, added.

Usage You can modify the interfaces on the vRouter service on a fabric, cluster, standalone switch, or virtual network (vNET). This command modifies an interface to a vRouter service.

Examples To modify a vrouter interface and to add VLAN 0 priority tag, use the following command:

```
CLI (network-admin@switch) > vrouter-interface-modify vrouter-name
MyvService priority-tag
```

vrouter-interface-remove

This command is used to remove interfaces on the virtual router (vRouter) service in a fabric, cluster, standalone switch, or virtual network (vNET).

Syntax `vrouter-interface-remove vrouter-name` *`name-string`* `[nic` *`nic-string`*`]`

`vrouter-name` *`name-string`*	Specify the name for the vRouter interface.
Specify one of the following interface arguments:	
`nic` *`nic-string`*	Specify the name of the NIC.
`l3-port` *`l3port-usable-port name`*	Specify the name of the Layer 3 port.

Defaults None.

Access CLI

History

Version 1.2.1	Command introduced.
Version 5.1.3	The argument `l3-port` introduced.

Usage You can remove the interfaces on the vRouter service from a fabric, cluster, standalone switch, or virtual network (vNET). This command removes an interface to a vRouter service.

Examples To remove eth1 NIC from the vRouter service, MyvService, use the following command:

```
CLI (network-admin@switch) > vrouter-interface-remove vrouter-name
MyvService nic eth1
```

vrouter-interface-show

This command is used to display the interfaces on the virtual router (vRouter) service on a fabric, cluster, standalone switch, or virtual network (vNET).

Syntax `vrouter-interface-show`

`vrouter-name` *`name-string`*	Specify the name for the vRouter interface.
Specify any of the following options:	
`vlan` *`vlan-id`*	Specify the VLAN identifier. This is a value between 1 and 4094.
`ip` *`ip-address`*	Specify the IP address of the interface.
`netmask` *`netmask`*	Specify the netmask.
`assignment none|dhcp|dhcpv6`	Specify the DHCP method for IP address assignment. Note that if you specify hardware as the router type, you cannot assign IP addresses using DHCP. You must specify a static IP address.
`ip2` *`ip-address`*	Specify the IP address of the interface.
`netmask2` *`netmask`*	Specify the netmask.
`assignment2 none|dhcp|dhcpv6`	Specify the DHCP method for IP address assignment. Note that if you specify hardware as the router type, you cannot assign IP addresses using DHCP. You must specify a static IP address.
`linklocal` *`ip-address`*	Specify an IPv6 linklocal address.
`ipv6-unnumbered|no-ipv6-unnumbered`	Specify if IPv6 unnumbered has been enabled or not.
`vnet` *`vnet-name`*	Specify the vNET assigned to the vRouter.
`vlan-type public|private`	Specify the type of VLAN for the interface.
`if mgmt|data|span`	Specify if the interface is a management, data or span interface.
`alias-on` *`alias-on-string`*	Specify an alias for the interface.
`exclusive|no-exclusive`	Specify if the interface is exclusive to the configuration. Exclusive means that other configurations cannot use the interface. Exclusive is specified when you configure the interface as a span interface and allows higher throughput through the interface.
`nic-enable|nic-disable`	Specify if the NIC is enabled or disabled.
`pim|no-pim`	Specify if the vRouter interface is a PIM interface.

`nic-state down|up`	Specify the NIC state.
`pim-dr-priority` *`integer`*	Specify the direct router (DR) priority as an integer between 1 and 4294967295. Netvisor selects the vRouter interface with higher DR priority as the designated router. By default, all interfaces are priority 1. In case of same priority, Netvisor selects the vRouter interface with highest network address as DR.
`pim-cluster|no-pim-cluster`	Specify if you want to provide alternative routing for Layer 3 attached sources for leaf cluster routing configuration. It allows traffic to failover not black-hole when the unicast path to the Spine fails.
`fabric-nic|no-fabric-nic`	Specify if VNIC is on a VLAN used for fabric setup.
`vrrp-id` *`id-number`*	Specify the ID for the VRRP interface. The IDs on both vRouters must be the same ID number.
`vrrp-primary` *`string`*	Specifies the primary interface for VRRP failover.
`vrrp-priority` *`number`*	Specifies the priority for the VRRP interface. This is a value between 1 (lowest) and 255 (highest).
`vrrp-adv-int` *`mseconds`*	Specify a VRRP advertisement interval in milliseconds. The range is from 30 to 40950 with a default value of 1000.
`vrrp-preempt-mode disable|enable`	Specify one of the options to allow or prevent a high priority backup router from becoming master router. `vrrp-preempt-mode` is enabled by default.
`l3-port` *`l3port-usable-port name`*	Specify a Layer 3 port for the interface.
`secondary-macs` *`secondary-macs-string`*	Specify a secondary MAC address for the interface.
`mtu` *`bytes`*	Specify a MTU value in bytes between 68 and 9216.
`if-nat-realm internal|external`	Specify a NAT realm for the interface.
`priority-tag|no-priority-tag`	Specify if you want to add a VLAN 0 priority tag on forwarded traffic.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters, `exclusive` and `nic`, added.
Version 2.2	The parameters `vrrp-id`, `vrrp-priority`, and `vrrp-primary` added.
Version 2.2.5	The parameters, `l3-port`, and `secondary-macs`, added.

Version 2.3	The parameter, `vrrp-adv-int`, added.
Version 2.4.1	The parameter, `vlan-type`, added.
Version 2.5.0	The parameter, `mtu`, added.
Version 2.6.0	The parameter, `if-nat-realm internal|external`, added.
Version 2.6.2	The parameter, `vxlan`, deprecated.
Version 3.0.0	The parameter, `ip2` and `netmask2` added. The parameters, `pim`, `pim-dr-priority`, and `pim-cluster`, added. The parameter, `linklocal`, added. The option, `autov6`, deprecated for the parameter, `assignment`.
Version 3.1.0	The parameter, `fabric-nic` and `priority-tag`, added.
Version 5.1.3	The parameter, `ipv6-unnumbered|no-ipv6-unnumbered`, added.
Version 6.0.0	The parameter, `vrrp-preempt-mode`, added.

Usage You can display information about the interfaces on the vRouter service on a fabric, cluster, standalone switch, or virtual network (vNET).

Examples To display information about all interfaces on vRouter services, use the following command:

```
CLI (network-admin@switch) > vrouter-interface-show interface layout
```

vrouter-interface-ip-add

This command is used to migrate a vRouter interface from a single stack (IPv4) to dual stack (IPv4 and IPv6) back to a single stack (IPv4).

Syntax `vrouter-interface-ip-add`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
`nic` *`nic-string`*	Specify the virtual NIC assigned to the interface.
`ip` *`ip-address`*	Specify the IP address assigned to the interface.
`netmask` *`netmask`*	Specify the netmask of the IP address.
Specify any of the following options	
`vnet` *`vnet-name`*	Specify the vNET assigned to the vRouter.
`l2-net` *`l2-net name`*	Specify the Layer 2 interface.
`type primary|secondary`	Specify the IP address as primary or secondary.

Defaults None

Access Network administrator

History

Version 3.0.0	Command introduced.
Version 3.0.4	The parameter, `type`, added.

Usage Use this command to migrate a vRouter interf ace from a single stack (IPv4) to dual stack (IPv4 and IPv6) back to a single stack (IPv4).

Examples To migrate an interface to dual stack with the IPv6 address, 1000::4/92, use the following syntax:

```
CLI (network-admin@switch) > vrouter-interface-ip-add vrouter-name vr1
nic eth0.10 ip 1000::4/92 vnet 0:0 l2-net 10
```

vrouter-interface-ip-remove

This command is used to migrate a vRouter interface from a single stack (IPv4) to dual stack (IPv4 and IPv6) back to a single stack (IPv4).

Syntax `vrouter-interface-ip-remove`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
`nic` *`nic-string`*	Specify the virtual NIC assigned to the interface.
`ip` *`ip-address`*	Specify the IP address assigned to the interface.

Defaults None

Access Network administrator

History Command introduced in Version 3.0.0.

Usage Use this command to migrate a vRouter interface from a dual stack (IPv4 and IPv6) to single stack (IPv4 and IPv6) back to a single stack (IPv4).

Examples To migrate an interface to single stack and remove the IPv6 address, 1000::4/92, use the following syntax:

```
CLI (network-admin@switch) > vrouter-interface-ip-remove vrouter-name
vr1 nic eth0.10 ip 1000::4/92
```

vrouter-interface-ip-show

This command is used to migrate a vRouter interface from a single stack (IPv4) to dual stack (IPv4 and IPv6) back to a single stack (IPv4).

Syntax `vrouter-interface-ip-remove`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
`nic` *`nic-string`*	Specify the virtual NIC assigned to the interface.
`ip` *`ip-address`*	Specify the IP address assigned to the interface.
`netmask` *`netmask`*	Specify the netmask of the IP address.
Specify any of the following options	
`vnet` *`vnet-name`*	Specify the vNET assigned to the vRouter.
`l2-net` *`l2-net name`*	Specify the Layer 2 interface.
`type primary|secondary`	Specify the IP address as primary or secondary.

Defaults None

Access Network administrator

History

Version 3.0.0	Command introduced.
Version 3.0.4	The parameter, `type`, added.

Usage Use this command to display a vRouter interface with dual stack (IPv4 and IPv6) IP addresses.

Examples To display an interface to dual stack with the IPv6 address, **1000::4/92**, use the following syntax:

```
CLI (network-admin@switch) > vrouter-interface-ip-show
vrouter-name nic     vnet vlan vlan-type ip                            assignment nic-state
------------ -------  ---- ---- --------- ------------------------------   ----------  ---------
vr1          eth0.10 0:0  10   public    10.2.3.4/24                     static     up
vr1          eth0.10 0:0  10   public    1000::4/92                      static     up
vr1            eth0.10 0:0  10    public     fe80::640e:94ff:fe17:4f99/64    static      up
```

vrouter-interface-config-add

This command is used to add additional routing protocol configuration to a vRouter.

Syntax `vrouter-interface-config-add`

`vrouter-name` *`name-string`*	Specify the vRouter name to add the interface.
Specify the following interface configuration arguments:	
`nic` *`vrouter-interface-nic`*	Specify the NIC to add to the interface.
`l3-port` *`l3port-usable-port name`*	Specify a Layer 3 port to add to the interface.
`ospf-hello-interval` *`seconds`*	Specify the OSPF hello interval with a number between 1 and 65535. This configures the interval between sending OSPF hello messages on an interface. The default value is 10.
`ospf-dead-interval` *`seconds`*	Specify the OSPF dead interval with a number between 2 and 65535. This configures the interval in which the vRouter must receive an OSPF hello message before the state of the neighbor changes to down. The default interval is 5.
`ospf-retransmit-interval` *`seconds`*	Specify the OSPF retransmit interval from 3 to 65535 seconds. The default is 5 seconds. (IPv4 orIPv6)
`ospf-priority` *`number`*	Specify the OSPF priority with a number between 0 and 255. A vRouter with a priority of 0 does not participate in the designated router decision. The default value is 1.
`ospf-auth-key` *`ospf-auth-key-string`*	Specify an authorization key string for the vRouter interface.
`ospf-cost` *`number`*	Specify the OSPF cost with a value between 0 and 655365.
`ospf-msg-digest-id` *`id`*	Specify a value between 0and 255. If you specify 0, then OSPF MD5 authentication is not set.
`ospf-msg-digest-key` *`ospf-msg-digest-key-string`*	Specify a string for the OSPF message digest key.
`ospf-passive-if|no-ospf-passive-if`	Specify if the OSPF interface is passive or not.
`ospf-network-type default|point-to-point`	Specify the type of OSPF network.
`ospf-bfd default|enable|disable`	Specify if BFD protocol support for OSPF fault detection is enabled. The default is Disable.
`bfd-interval` *`interval`*	Specify the desired Bidirectional Forwarding Detection (BFD) transmit interval from 200 ms to 3000 ms. The default value is 750 ms.

`bfd-min-rx` *`interval`*	Specify the required BFD receive interval from 200 milliseconds to 3000 milliseconds. The default value is 500 ms.
`bfd-multiplier` *`integer`*	Specify the BFD detection multiplier from 2 to 20. The default value is 3.
`nd-suppress-ra|no-nd-suppress-ra`	Specify if you want to suppress the transmit of IPv6 router advertisements.
`v6-ra-prefix` *`ip-address`*	Specify the IPv6 prefix to include in router advertisements.
`prefix-netmask` *`netmask`*	Specify the IPv6 prefix netmask.
`autoconf|no-autoconf`	Specify if you want the prefix used for IPv6 autoconfiguration.
`ra-interval` *`seconds`*	Specify the interval between router advertisements in seconds with a range of 1 to 1800 seconds.
`ra-lifetime` *`seconds`*	Specify the time that the vRouter is considered as the default router in seconds with a range of 0 to 9000.

Defaults None

Access CLI

History

Version 2.1	Command introduced.
Version 2.2	The parameter, `ospf-cost`, added.
Version 2.2.2	The parameters, `ospf-msg-digest-key`, and `ospf-msg-digest-id`, added.
Version 2.2.3	The parameters `ospf-passive-if` and `no-ospf-passive-if` added.
Version 2.2.6	The parameters, `bfd-interval`, `bfd-min-rx`, and `bfd-multiplier`, added.
Version 2.4.1	The parameter, `ospf-network-type`, added.
Version 2.5	The parameters, `nd-suppress-ra`, `v6-ra-prefix`, `prefix-netmask`, `autoconf|no-autoconf`, `ra-interval`, and `ra-lifetime` added.
Version 2.5.3	The parameter, `ospf-bfd default|enable|disable` added.
Version 3.0.0	The parameters, `ospf-retransmit-interval`,`ra-prefix`, `ra-interval` added.
Version 5.1.3	The parameter, l3-port, added.

Usage This command is used to add additional routing protocol configuration to a vRouter.

Examples To add an interface to vRouter, vroute-int, interface eth0.11, hello interval 10, dead interval 20, with priority 5, use the following command:

```
CLI (network-admin@switch) > vrouter-interface-config-add  vrouter-name
vroute-int nic eth0.11 ospf-hello-interval 10 ospf-dead-interval 20
ospf-priority 5
```

vrouter-interface-config-remove

This command is used to remove additional routing protocol information in a vRouter configuration.

Syntax `vrouter-interface-config-remove`

`vrouter-name` *`name-string`*	Specifies the vRouter name on the interface.
Specify the following interface configuration arguments:	
`nic` *`vrouter-interface-nic`*	Specifies the NIC to add to the interface.
`l3-port` *`l3port-usable-port name`*	Specifies the Layer 3 port to remove.

Defaults None

Access CLI

History Command introduced in Version 2.1.

Version 2.1	Command introduced.
Version 5.1.3	The parameter, `l3-port`, added.

Usage You can use vRouter interfaces to separate traffic on the vRouter.

Examples To remove an interface on vRouter, vroute-int, with interface eth0.11, use the following command:

```
CLI (network-admin@switch) > vrouter-interface-config-remove  vrouter-
name vroute-int nic eth0.11
```

vrouter-interface-config-modify

This command is used to modify routing protocol configuration to a vRouter.

Syntax `vrouter-interface-config-modify`

`vrouter-name` *`name-string`*	Specify the vRouter name to add the interface.
Specify the following interface configuration arguments:	
`nic` *`vrouter-interface-nic`*	Specify the NIC to modify.
`l3-port` *`l3port-usable-port name`*	Specify the Layer 3 port to modify.
`ospf-hello-interval` *`seconds`*	Specify the OSPF hello interval with a number between 1 and 65535. This configures the interval between sending OSPF hello messages on an interface. The default value is 10.
`ospf-dead-interval` *`seconds`*	Specify the OSPF dead interval with a number between 2 and 65535. This configures the interval in which the vRouter must receive an OSPF hello message before the state of the neighbor changes to down. The default interval is 5.
`ospf-retransmit-interval` *`seconds`*	Specify the OSPF retransmit interval from 3 to 65535 seconds. The default is 5 seconds. (IPv4 orIPv6)
`ospf-priority` *`number`*	Specify the OSPF priority with a number between 0 and 255. A vRouter with a priority of 0 does not participate in the designated router decision. The default value is 1.
`ospf-auth-key` *`ospf-auth-key-string`*	Specify an authorization key string for the vRouter interface.
`ospf-cost` *`number`*	Specify the OSPF cost with a value between 0 and 655365.
`ospf-msg-digest-id` *`id`*	Specify a value between 0and 255. If you specify 0, then OSPF MD5 authentication is not set.
`ospf-msg-digest-key` *`ospf-msg-digest-key-string`*	Specify a string for the OSPF message digest key.
`ospf-passive-if|no-ospf-passive-if`	Specify if the OSPF interface is passive or not.
`ospf-network-type default|point-to-point`	Specify the type of OSPF network.
`ospf-bfd default|enable|disable`	Specify if BFD protocol support for OSPF fault detection is enabled. The default is Disable.
`bfd-interval` *`interval`*	Specify the desired Bidirectional Forwarding Detection (BFD) transmit interval from 200 ms to 3000 ms. The default value is 750 ms.
`bfd-min-rx` *`interval`*	Specify the required BFD receive interval from 200 milliseconds to 3000 milliseconds. The default value is

	500 milliseconds.
`bfd-multiplier` *`integer`*	Specify the BFD detection multiplier from 2 to 20. The default value is 3.
`nd-suppress-ra|no-nd-suppress-ra`	Specify if you want to suppress the transmit of IPv6 router advertisements.
`v6-ra-prefix` *`ip-address`*	Specify the IPv6 prefix to include in router advertisements.
`prefix-netmask` *`netmask`*	Specify the IPv6 prefix netmask.
`autoconf|no-autoconf`	Specify if you want the prefix used for IPv6 autoconfiguration.
`ra-interval` *`seconds`*	Specify the interval between router advertisements in seconds with a range of 1 to 1800 seconds.
`ra-lifetime` *`seconds`*	Specify the time that the vRouter is considered as the default router in seconds with a range of 0 to 9000.

Defaults None

Access CLI

History

Version 2.1	Command introduced.
Version 2.2	The parameter, `ospf-cost`, added.
Version 2.2.2	The parameters, `ospf-msg-digest-key`, and `ospf-msg-digest-id`, added.
Version 2.2.3	The parameters `ospf-passive-if` and `no-ospf-passive-if` added.
Version 2.2.6	The parameters, `bfd-interval`, `bfd-min-rx`, and `bfd-multiplier`, added.
Version 2.4.1	The parameter, `ospf-network-type`, added.
Version 2.5	The parameters, `nd-suppress-ra`, `v6-ra-prefix`, `prefix-netmask`, `autoconf|no-autoconf`, `ra-interval`, and `ra-lifetime` added.
Version 2.5.3	The parameter, `ospf-bfd default|enable|disable` added.
Version 3.0.0	The parameters, `ospf-retransmit-interval`,`ra-prefix`, `ra-interval` added.
Version 5.1.3	The parameter, `l3-port`, added.

Usage This command is used to modify a routing protocol configuration to a vRouter.

Examples

- To modify an interface to vRouter, vroute-int, interface eth0.11, hello interval 10, dead interval 20, with priority 5, use the following command:

```
CLI (network-admin@switch) > vrouter-interface-config-modify vrouter-name vroute-int nic eth0.11 ospf-hello-interval 10 ospf-dead-interval 20 ospf-priority 5
```

- To remove OSPF authentication key from a configuration, use empty double quotes as shown below:

```
CLI (network-admin@switch) > vrouter-interface-config-modify ospf-auth-key ""
```

vrouter-interface-config-show

This command is used to display routing protocol information on a vRouter.

Syntax `vrouter-interface-config-show`

`vrouter-name` *`name-string`*	Specify the vRouter name to add the interface.
Specify the following interface configuration arguments:	
`nic` *`vrouter-interface-nic`*	Specify the NIC.
`l3-port` *`l3port-usable-port name`*	Specify the Layer 3 port.
`ospf-hello-interval` *`seconds`*	Specify the OSPF hello interval with a number between 1 and 65535. This configures the interval between sending OSPF hello messages on an interface. The default value is 10.
`ospf-dead-interval` *`seconds`*	Specify the OSPF dead interval with a number between 2 and 65535. This configures the interval in which the vRouter must receive an OSPF hello message before the state of the neighbor changes to down. The default interval is 5.
`ospf-retransmit-interval` *`seconds`*	Specify the OSPF retransmit interval from 3 to 65535 seconds. The default is 5 seconds. (IPv4 orIPv6)
`ospf-priority` *`number`*	Specify the OSPF priority with a number between 0 and 255. A vRouter with a priority of 0 does not participate in the designated router decision. The default value is 1.
`ospf-auth-key` *`ospf-auth-key-string`*	Specify an authorization key string for the vRouter interface.
`ospf-cost` *`number`*	Specify the OSPF cost with a value between 0 and 655365.
`ospf-msg-digest-id` *`id`*	Specify a value between 0and 255. If you specify 0, then OSPF MD5 authentication is not set.
`ospf-msg-digest-key` *`ospf-msg-digest-key-string`*	Specify a string for the OSPF message digest key.
`ospf-passive-if|no-ospf-passive-if`	Specify if the OSPF interface is passive or not.
`ospf-network-type default|point-to-point`	Specify the type of OSPF network.
`ospf-bfd default|enable|disable`	Specify if BFD protocol support for OSPF fault detection is enabled. The default is Disable.
`bfd-interval` *`interval`*	Specify the desired Bidirectional Forwarding Detection (BFD) transmit interval from 200 ms to 3000 ms. The default value is 750 ms.

`bfd-min-rx` *`interval`*	Specify the required BFD receive interval from 200 milliseconds to 3000 milliseconds. The default value is 500 ms.
`bfd-multiplier` *`integer`*	Specify the BFD detection multiplier from 2 to 20. The default value is 3.
`nd-suppress-ra|no-nd-suppress-ra`	Specify if you want to suppress the transmit of IPv6 router advertisements.
`v6-ra-prefix` *`ip-address`*	Specify the IPv6 prefix to include in router advertisements.
`prefix-netmask` *`netmask`*	Specify the IPv6 prefix netmask.
`autoconf|no-autoconf`	Specify if you want the prefix used for IPv6 autoconfiguration.
`ra-interval` *`seconds`*	Specify the interval between router advertisements in seconds with a range of 1 to 1800 seconds.
`ra-lifetime` *`seconds`*	Specify the time that the vRouter is considered as the default router in seconds with a range of 0 to 9000.

Defaults None

Access CLI

History

Version 2.1	Command introduced.
Version 2.2	The parameter, `ospf-cost`, added.
Version 2.2.2	The parameters, `ospf-msg-digest-key`, and `ospf-msg-digest-id`, added.
Version 2.2.3	The parameters `ospf-passive-if` and `no-ospf-passive-if` added.
Version 2.2.6	The parameters, `bfd-interval`, `bfd-min-rx`, and `bfd-multiplier`, added.
Version 2.4.1	The parameter, `ospf-network-type`, added.
Version 2.5	The parameters, `nd-suppress-ra`, `v6-ra-prefix`, `prefix-netmask`, `autoconf|no-autoconf`, `ra-interval`, and `ra-lifetime` added.
Version 2.5.3	The parameter, `ospf-bfd default|enable|disable` added.
Version 3.0.0	The parameters, `ospf-retransmit-interval`,`ra-prefix`, `ra-interval` added.
Version 5.1.3	The parameter, `l3-port`, added

Usage You can display additional routing information for a vRouter configuration.

Examples To display the interface, use the following command:

```
CLI (network-admin@switch) > vrouter-interface-config-show
```

vrouter-interface-config-raprefix-add

This command is used to add Router Advertisement (RA) prefixes to a vRouter interface.

Syntax `vrouter-interface-config-raprefix-add`

`vrouter-name` *`name-string`*	Specify the vRouter name.
`nic` *`vrouter interface nic`*	Specify the vRouter interface NIC.
`v6-ra-prefix` *`ip-address`*	Specify the IPv6 RA prefix address to include in the Router Advertisement.
`prefix-netmask` *`netmask`*	Specify the netmask for the prefix.
`autoconf|no-autoconf`	Specify if the RA prefix can be used for IPv6 autoconfiguration.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to add a RA prefix to a vRouter interface.

Examples To add a RA prefix, use the following syntax:

```
CLI (network-admin@switch) > vrouter-interface-config-raprefix-add
```

vrouter-interface-config-raprefix-remove

This command is used to remove Router Advertisement (RA) prefixes from a vRouter interface.

Syntax `vrouter-interface-config-raprefix-remove`

`vrouter-name` *`name-string`*	Specify the vRouter name.
`nic` *`vrouter interface nic`*	Specify the vRouter interface NIC.
`v6-ra-prefix` *`ip-address`*	Specify the IPv6 RA prefix address to include in the Router Advertisement.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to remove a RA prefix to a vRouter interface.

Examples To remove a RA prefix, use the following syntax:

```
CLI (network-admin@switch) > vrouter-interface-config-raprefix-remove
```

vrouter-interface-config-raprefix-show

This command is used to add Router Advertisement (RA) prefixes to a vRouter interface.

Syntax `vrouter-interface-config-raprefix-show`

`vrouter-name` *`name-string`*	Specify the vRouter name.
`nic` *`vrouter interface nic`*	Specify the vRouter interface NIC.
`v6-ra-prefix` *`ip-address`*	Specify the IPv6 RA prefix address to include in the Router Advertisement.
`prefix-netmask` *`netmask`*	Specify the netmask for the prefix.
`autoconf|no-autoconf`	Specify if the RA prefix can be used for IPv6 autoconfiguration.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to display information about a RA prefix configuration.

Examples To display RA information, use the following syntax:

```
CLI (network-admin@switch) > vrouter-interface-config-raprefix-show
```

vrouter-log-clear

This command clears vRouter protocol logs such as FRR log files.

Syntax `vrouter-log-clear vrouter-name vrouter name protocol zebra|ospf|ospf6|bgp|bfd|rip`

`vrouter-log-clear`	Clears vRouter log protocols from a protocol log file
Specify the following interface arguments:	
`vrouter-name vrouter name`	Specify the name of the vRouter service.
`protocol zebra|ospf|ospf6|bgp|bfd|rip`	Specify the protocol of the log file to clear from the switch.

Defaults None.

Access CLI

History Command introduced in Version 2.5.3

Usage Use this command to clear FRR files from a specific protocol log file. Because FRR log files accumulate on the switch, you may want to clear a particular log file so they do not create space issues.

Examples To clear OSPF protocol log files, use the following command:

```
CLI (network-admin@switch) > vrouter-log-clear protocol ospf
```

vrouter-log-show

This command displays FRR logs files, such as Zebra, OSPF, OSPF6, BGP, BFD and RIP can be viewed directly from the console using the Netvisor CLI.

Syntax `vrouter-log-show vrouter-name vrouter-name protocol zebra|ospf|ospf6|bgp|bfd|rip`

`vrouter-log-clear`	Clears vRouter log protocols from a protocol log file
Specify the following interface arguments:	
`vrouter-name` *`vrouter name`*	Specify the name of the vRouter service.
`protocol zebra|ospf|ospf6|bgp|bfd|rip`	Specify the protocol of the log file to clear from the switch.

Defaults None.

Access CLI

History Command introduced in Version 2.5.3.

Usage FRR logs files, such as Zebra, OSPF, OSPF6, BGP, BFD and RIP can be viewed directly from the console using the Netvisor

Examples To display OSPF protocol logs from the vRouter named myrouter, use this command:

```
CLI (network-admin@switch) > vrouter-log-show vrouter-name myrouter protocol ospf
```

vrouter-loopback-interface-add

This command adds a loopback address to a virtual router (vRouter) service for a fabric, cluster, virtual network (vNET), or standalone switch. The maximum number of loopback interfaces is 255. Netvisor supports IPv4 and IPv6 addresses.

Syntax `vrouter-loopback-interface-add`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following loopback interface arguments:	
`index` *`number`*	Specify the interface index from 1 to 255.
`ip-address`	Specify the network IP address.

Defaults None.

Access CLI

History Command introduced in Version 2.2.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command adds a loopback address for an existing vRouter service.

Examples To add the loopback interface of 192.168.11.13 to vRouter, MyvService, , use the following command:

```
CLI (network-admin@switch) > vrouter-loopback-interface-add  vrouter-
name MyvService index 1 ip-address 192.168.11.13
```

vrouter-loopback-interface-remove

This command removes a loopback address to a virtual router (vRouter) service for a fabric, cluster, virtual network (vNET), or standalone switch.

Syntax `vrouter-loopback-interface-add vrouter-name name-string index number`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following loopback interface arguments:	
`index` *`number`*	Specify the interface index from 1 to 255.

Defaults None.

Access CLI.

History Command introduced in Version 2.2.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command removes a loopback interface from an existing Router service.

Examples To remove the loopback interface of 192.168.11.13 to vRouter, MyvService, , use the following command:

```
CLI (network-admin@switch) > vrouter-loopback-interface-remove vrouter-name MyvService index 1
```

vrouter-loopback-interface-show

This command displays information about a loopback address added to a virtual router (vRouter) service for a fabric, cluster, virtual network (vNET), or standalone switch.

Syntax `vrouter-loopback-interface-show vrouter-name name-string index number ip-address`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following loopback interface arguments:	
`index` *`number`*	Specify the interface index from 1 to 255.
`ip-address`	Specify the network IP address.

Defaults None.

Access CLI.

History Command introduced in Version 2.2.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command adds a loopback address for an existing vRouter service.

Examples To add the loopback interface of 192.168.11.13 to vRouter, MyvService, , use the following command:

```
CLI (network-admin@switch) > vrouter-loopback-interface-show
vrouter-name index ip-address
------------ ----- -------------
MyvService   1     192.168.11.13
```

vrouter-mfib-routes-show

This command is used to display multicast routes in forwarding information database.

Syntax `vrouter-mfib-routes-show`

`type <*,G>|<*,G,V>`	Displays the type of hardware router.
`srcip` *`ip-address`*	Displays the source IP address.
`srcip-mask` *`netmask`*	Displays the source netmask.
`group` *`ip-address`*	Displays the group IP address.
`group-mask` *`netmask`*	Displays the group netmask.
`vnet` *`vnet-name`*	Displays the vNET for the VLAN.
`vlan` *`vlan-id`*	Displays the VLAN identifier.
`vrid` *`vrouter-id`*	Displays the virtual router identifier.
`hw-group-id` *`hw-group-id`*	Displays the hardware group identifier.
`send-vnet` *`vnet-name`*	Displays the vNET of the sending VLAN.
`send-vlan` *`vlan-id`*	Displays the sending VLAN identifier.
`ports` *`port-list`*	Displays the port list.
`encap-id` *`encap-id-number`*	Displays the encapsulation identifier.
`flags Trunk|Active`	Displays the hardware flags for the route.

Defaults None

Access CLI

History .

Version 2.2.5	Command introduced.
Version 2.4.1	The parameter, `vnet`, added.
Version 2.6.2	The parameter, `send-vnet`, added.

Usage Use this command to display information about multicast routes in the forwarding information database (FIB).

Examples To display multicast routes in the FIB, use the following syntax:

```
 CLI (network-admin@switch) > vrouter-mfib-routes-show
switch:                      pleiades23
type:                        <S,G,V>
srcip                       10.16.110.100
group:                       239.2.2.2
vlan:                        113
vrid:                        0
```

```
hw-group-id:                    2000006
send-vlan ports:                none
encap-id flags:                 -1
flags:                          Active
switch:                         pleiades23
type:                           <S,G,V>
srcip                          10.16.110.100
group:                          239.1.1.1
vlan:                           113
vrid:                           0
hw-group-id:                    2000007
send-vlan ports:                none
encap-id flags:                 0
flags:                          Active
switch:                         pleiades23
type:                           <*,G,V>
srcip                           0.0.0.0
group:                          239.2.2.2
vlan:                           115
vrid:                           0
hw-group-id:                    2000005
send-vlan ports:                none
encap-id flags:                 1
flags:                          Active
```

vrouter-mrib-routes-show

This command is used to display multicast routes in Routing Information Base (RIB).

Syntax `vrouter-mrib-routes-show`

`type <*,G>|<*,G,V>`	Displays the RIB route type.
`srcip` *`ip-address`*	Displays the source IP address.
`group` *`ip-address`*	Displays the group IP address.
`vlan` *`0..4095`*	Displays the VLAN ID.
`vrid` *`vrid-number`*	Displays the virtual router ID.
`hw-group-id` *`hw-group-id-number`*	Displays the hardware group ID.
`vnic` *`vnic-string`*	Displays the VNIC name.
`vnic-vlan` *`vnic-vlan-number`*	Displays the VLAN assigned to the VNIC.
`ports` *`port-list`*	Displays the port list.
`flags` *`in-hw`*	Displays the hardware flags for the route.

Defaults None

Access CLI

History

Usage Use this command to display information about multicast routes in the Routing Information Base (RIB).

Examples To display multicast routes in the RIB, use the following syntax:

```
CLI (network-admin@switch) > vrouter-mrib-routes-show
```

vrouter-multicast-igmp-group-show

This command displays the Internet Group Management Protocol (IGMP) group state for each multicast router.

Syntax `vrouter-multicast-igmp-group-show`

`vrouter-name` *`name-string`*	Displays the vRouter name.
`if-name` *`if-name-string`*	Displays the physical name of the virtual interface.
`address` *`ip-address`*	Displays the local IP address.
`vif` *`vif-number`*	Displays the virtual interface identifier.
`reporter` *`ip-address`*	Displays the reporter IP address.
`timer` *`timer-number`*	Displays the timer number.

Defaults None

Access CLI

History Command introduced in Version 2.2.5.

Usage Use this command to display information about IGMP group state for each multicast router.

Examples To display information about IGMP group state, use the following syntax:

```
CLI (network-admin@switch) > vrouter-multicast-igmp-group-show
  vrouter-name if-name  address    reporter
  ------------ -------- ---------- -------------
  vr0          eth0.110 224.0.0.13 10.16.110.1
  vr0          eth0.110 224.0.0.2  10.16.110.1
  vr0          eth0.110 224.0.0.22 10.16.110.1
  vr0          eth0.111 224.0.0.13 10.16.111.1
  vr0          eth0.111 224.0.0.2  10.16.111.1
  vr0          eth0.111 224.0.0.22 10.16.111.1
  vr0          eth0.112 224.0.0.2  10.16.112.1
  vr0          eth0.112 224.0.0.22 10.16.112.1
  vr0          eth0.110 224.0.0.5  10.16.110.1
  vr0          eth0.111 224.0.0.5  10.16.111.1
  vr0          eth0.112 224.0.0.5  10.16.112.1
  vr0          eth0.112 224.0.0.13 10.16.112.2
  vr0          eth0.110 224.0.0.6  10.16.110.1
  vr0          eth0.111 224.0.0.6  10.16.111.1
  vr0          eth0.112 224.0.0.6  10.16.112.2
  vr0          eth0.113 224.0.0.5  10.16.113.1
  vr0          eth0.113 224.0.0.13 10.16.113.2
  vr0          eth0.113 224.0.0.2  10.16.113.2
  vr0          eth0.113 224.0.0.22 10.16.113.1
  vr0          eth0.113 224.0.0.6  10.16.113.2
  vr1          eth1.112 224.0.0.13 10.16.112.2
  vr1          eth1.112 224.0.0.2  10.16.112.2
  vr1          eth1.112 224.0.0.22 10.16.112.2
  vr1          eth0.114 224.0.0.13 10.16.114.1
  vr1          eth0.114 224.0.0.2  10.16.114.1
```

```
vr1          eth0.114 224.0.0.22 10.16.114.1
vr1          eth1.112 224.0.0.5  10.16.112.1
vr1          eth0.114 224.0.0.5  10.16.114.1
vr1          eth0.114 224.0.0.6  10.16.114.1
vr1          eth1.112 224.0.0.6  10.16.112.2
vr2          eth1.114 224.0.0.13 10.16.114.2
vr2          eth1.114 224.0.0.2  10.16.114.2
vr2          eth1.114 224.0.0.22 10.16.114.2
vr2          eth0.115 224.0.0.13 10.16.115.1
vr2          eth0.115 224.0.0.2  10.16.115.1
vr2          eth0.115 224.0.0.22 10.16.115.1
vr2          eth1.114 224.0.0.5  10.16.114.2
vr2          eth0.115 224.0.0.5  10.16.115.1
vr2          eth1.114 224.0.0.6  10.16.114.1
vr2          eth0.115 224.0.0.6  10.16.115.1
vr2          eth0.115 224.1.1.1  10.16.115.100
vr2          eth1.113 224.0.0.5  10.16.113.1
vr2          eth1.113 224.0.0.13 10.16.113.2
vr2          eth1.113 224.0.0.2  10.16.113.2
```

vrouter-multicast-route-show

This command displays the multicast forwarding state for one more multicast routers or one or more multicast groups.

Syntax `vrouter-multicast-route-show`

`vrouter-name` *`name-string`*	Displays the vRouter name.
`source` *`ip-address`*	Displays the source IP address.
`group` *`ip-address`*	Displays the group IP address.
`parent` *`parent-number`*	Displays the parent number.
`oif_bitmap` *`oif_bitmap-number`*	Displays the bitmap of virtual interfaces to forward packets.
`incoming-if` *`if-string`*	Displays the name of the incoming interface.
`outgoing-if` *`if-string`*	Displays the name of the outgoing interface.

Defaults None

Access CLI

History Command introduced in Version 2.2.5.

Usage Use this command to display information about muticast routes.

Examples To display multicast route information use the following syntax:

```
CLI (network-admin@switch) > vrouter-multicast-route-show
  vrouter-name  source           group       incoming-if  outgoing-ifs
  ------------  -------------    ---------   -----------  ------------
  vr0             10.16.110.100  224.1.1.1   eth0.110      eth0.112
  vr1             10.16.110.100  224.1.1.1   eth1.112      eth0.114
  vr2            10.16.110.100  224.1.1.1  eth1.114     eth0.115
```

vrouter-ospf6-add

This command adds Open Shortest Path First (OSPF6) routing protocol to a virtual router (vRouter) service for a fabric, cluster, virtual network (vNET), or standalone switch.

Syntax `vrouter-ospf6-add`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following OSPF arguments:	
`nic` *`vrouter- interface-nic`*	Specify the OSPF6 control for this interface.
`ospf6-area` *`ospf-area-number`*	Specify the OSPF6 area number in dotted decimal format.

Defaults None.

Access CLI.

History Command introduced in Version 2.3.1.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command adds OSPF for an existing Router service.

Examples To add OSPF6 to vRouter, MyvService, with the NIC eth1.0, and OSPF6 area 1.0.0.0, use the following command:

```
CLI (network-admin@switch) > vrouter-ospf-add vrouter-name MyvService
nic eth1.0 ospf6-area 1.0.0.0
```

vrouter-ospf6-remove

This command removes an Open Shortest Path First (OSPF6) routing protocol from a virtual router (vRouter) service for a fabric, cluster, virtual network (vNET), or standalone switch.

Syntax `vrouter-ospf6-remove`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following OSPF arguments:	
`nic` *`vrouter- interface-nic`*	Specify the OSPF6 control for this interface.

Defaults None.

Access CLI.

History Command introduced in Version 2.3.1.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command adds OSPF for an existing Router service.

Examples To remove OSPF6 from vRouter, MyvService, with the NIC eth1.0, use the following command:

```
CLI (network-admin@switch) > vrouter-ospf-remove  vrouter-name
MyvService nic eth1.0
```

vrouter-ospf6-show

This command displays information about OSPF6 on a virtual router (vRouter) service for a fabric, cluster, virtual network (vNET), or standalone switch.

Syntax `vrouter-ospf6-show`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following OSPF arguments:	
`nic` *`vrouter- interface-nic`*	Specify the OSPF6 control for this interface.
`ospf6-area` *`ospf-area-number`*	Specify the OSPF6 area number in dotted decimal format.

Defaults None.

Access CLI

History Command introduced in Version 2.3.1.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command displays OSPF6 for an existing Router service.

Examples To display information about all OSPF6 instances configured on vRouters, use the following command:

```
CLI (network-admin@switch) > vrouter-ospf6-show layout vertical
```

vrouter-ospf6-interface-show

This command is used to display specific OSPFv6 configuration information

Syntax `vrouter-ospf6-interface-show`

`vrouter-name` *`name-string`*	Displays the name of the vRouter.
Specify any of the following optional OSPF parameters:	
`nic vrouter interface` *`nic`*	Displays the name of the vNIC.
`nic-state down|up`	Displays the vNIC state.
`l3-port` *`l3-port-number`*	Displays the Layer 3 port numbers.
`link-local-ip` *`ip-address`*	Displays the IPv6 link-local IP address.
`ip6` *`ip-address`*	Displays the IP address of the interface.
`netmask-ip6` *`netmask`*	Displays the netmask of the IP address.
`area ip-address`	Displays the area ID for the interface in IPv4 format.
`mtu` *`mtu-number`*	Displays MTU for the interface.
`mtu-mismatch-detection|no-mtu-mismatch-detection`	Displays if MTU mismatch detection is configured.
`network-type point-to-point|broadcast|loopback`	Displays the OSPF network type.
`state down|loopback|waiting|point-to-point|dr-other|backup|dr`	Displays OSPF interface state.
`dr-id` *`ip-address`*	Displays the designated router ID.
`dr-ip` *`ip-address`*	Displays the designated router IP address.
`bdr-id` *`ip-address`*	Displays the backup designated router ID.
`bdr-ip ip-address`	Displays the designated router IP address.
`priority` *`priority-number`*	Displays the priority.
`cost` *`cost-number`*	Displays the cost.
`hello` *`hello-number(s)`*	Displays the hello-interval in seconds.
`dead` *`dead-number(s)`*	Displays the dead time in seconds.
`retransmit` *`retransmit-number(s)`*	Displays the retransmit interval time in seconds.
`if-scoped-lsa` *`if-scoped-lsa-number`*	Displays the number of interface LSAs scoped for the area.
`ls-update` *`ls-update-number`*	Displays the number of pending LSAs for LSUpdate.

`ls-ack` *`ls-ack-number`*	Displays the number of pending LSAs for LSAck.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to display information about an OSPFv6 interface.

Examples To display information about an OSPF interface, use the following syntax:

```
CLI (network-admin@switch) > vrouter-ospf6-interface-show
```

vrouter-ospf6-neighbor-show

This command is used to display OSPF6 neighbors for a vRouter configured for OSPF6.

Syntax `vrouter-ospf6-neighbor-show`

`vrouter-name` *`name-string`*	Specifies the name of the vRouter.
`neighbor-rid` *`ip-address`*	Specifies the IP address of the OSPF neighbor
`pri` *`pri-number`*	Specifies the priority.
`state` *`state-string`*	Specifies the current state of the OSPF neighbor.
`dead-time` *`dead-time`*	Specifies the dead-time. Dead-time is the interval of time that the vRouter waits before declaring a neighbor is down.
`duration` *`duration-string`*	Specifies the duration in hh:mm:ss.
`interface` *`interface-string`*	Specifies the interface on the vRouter.

Defaults None.

Access CLI

History Command introduced in Version 2.3.1.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command displays OSPF6 information for an existing Router service.

Examples To display information about all OSPF6 neighbors on the network, use the following command:

```
CLI (network-admin@switch) > vrouter-ospf6-neighbor-show  layout
vertical
```

vrouter-ospf-area-add

This command is used to add areas and stubs as well as prefixes to an OSPF configuration.

Syntax `vrouter-ospf-area-add`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following OSPF area arguments:	
`area` *`area-number`*	Specify the stub area number for the configuration. Stub areas are shielded from external routes but receive information about networks that belong to other areas of the same OSPF domain
`stub-type none|stub|stub-no-summary|nssa|nssa-no-summary`	Specify the stub type as stubby or not-so-stubby areas (NSSA). You can define totally stubby areas. Routers in totally stubby areas keep their Link State Database (LSDB)-only information about routing within their area, plus the default route. Not-so-stubby areas (NSSAs) are an extension of OSPF stub areas. Like stub areas, they prevent the flooding of AS-external link-state advertisements (LSAs) into NSSAs, relying instead on default routing to external destinations. As a result, NSSAs (like stub areas) must be placed at the edge of an OSPF routing domain. NSSAs are more flexible than stub areas in that an NSSA can import external routes into the OSPF routing domain, thereby providing transit service to small routing domains that are not part of the OSPF routing domain
`prefix-list-in vrouter` *`prefix-list name`*	Specify an inbound prefix list name to filter incoming packets.
`prefix-list-out vrouter` *`prefix-list name`*	Specify an outbound prefix list name to filter outgoing packets.

Defaults None

Access CLI

History Command introduced in Version 2.2.3.

Usage An OSPF network can be divided into sub-domains called areas. An area is a logical collection of OSPF networks, routers, and links that have the same area identification.. A router within an area must maintain a topological database for the area to which it belongs. The router doesn't have detailed information about network topology outside of its area, thereby reducing the size of its database.

Areas limit the scope of route information distribution. It is not possible to do route update filtering within an area. The link-state database (LSDB) of routers within the same area must be synchronized and be exactly the same. However, route summarization and filtering is possible between different areas. The main benefit of creating areas is a reduction in the number of routes to propagate through the filtering and the summarization of routes.

Examples To add an OSPF area, 0, with the stub type, stub, use the following syntax:

`CLI (network-admin@switch) >` `vrouter-ospf-area-add vrouter-name vrouter-ospf area`

```
0 stub-type stub
```

vrouter-ospf-area-modify

This command is used to modify areas and stubs as well as prefixes to an OSPF configuration.

Syntax `vrouter-ospf-area-modify`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following OSPF area arguments:	
`area` *`area-number`*	Specify the stub area number for the configuration. Stub areas are shielded from external routes but receive information about networks that belong to other areas of the same OSPF domain
`stub-type none|stub|stub-no-summary|nssa|nssa-no-summary`	Specify the stub type as stubby or not-so-stubby areas (NSSA). You can define totally stubby areas. Routers in totally stubby areas keep their Link State Database (LSDB)-only information about routing within their area, plus the default route. Not-so-stubby areas (NSSAs) are an extension of OSPF stub areas. Like stub areas, they prevent the flooding of AS-external link-state advertisements (LSAs) into NSSAs, relying instead on default routing to external destinations. As a result, NSSAs (like stub areas) must be placed at the edge of an OSPF routing domain. NSSAs are more flexible than stub areas in that an NSSA can import external routes into the OSPF routing domain, thereby providing transit service to small routing domains that are not part of the OSPF routing domain
`prefix-list-in vrouter` *`prefix-list name`*	Specify an inbound prefix list name to filter incoming packets.
`prefix-list-out vrouter` *`prefix-list name`*	Specify an outbound prefix list name to filter outgoing packets.

Defaults None

Access CLI

History Command introduced in Version 2.2.3.

Usage An OSPF network can be divided into sub-domains called areas. An area is a logical collection of OSPF networks, routers, and links that have the same area identification.. A router within an area must maintain a topological database for the area to which it belongs. The router doesn't have detailed information about network topology outside of its area, thereby reducing the size of its database.

Areas limit the scope of route information distribution. It is not possible to do route update filtering within an area. The link-state database (LSDB) of routers within the same area must be synchronized and be exactly the same. However, route summarization and filtering is possible between different areas. The main benefit of creating areas is a reduction in the number of routes to propagate through the filtering and the summarization of routes.

Examples To modify an OSPF area, 0, and change the stub type to nssa, use the following syntax:

```
CLI (network-admin@switch) > vrouter-ospf-area-modify vrouter-name vrouter-ospf
```

```
area 0 stub-type nssa
```

vrouter-ospf-area-remove

This command is used to remove an areas from an OSPF configuration.

Syntax `vrouter-ospf-area-remove`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following OSPF area arguments:	
`area` *`area-number`*	Specify the area number.

Defaults None

Access CLI

History Command introduced in Version 2.2.3.

Usage An OSPF network can be divided into sub-domains called areas. An area is a logical collection of OSPF networks, routers, and links that have the same area identification.. A router within an area must maintain a topological database for the area to which it belongs. The router doesn't have detailed information about network topology outside of its area, thereby reducing the size of its database.

Areas limit the scope of route information distribution. It is not possible to perform route update filtering within an area. The link-state database (LSDB) of routers within the same area must be synchronized and be exactly the same. However, route summarization and filtering is possible between different areas. The main benefit of creating areas is a reduction in the number of routes to propagate through the filtering and the summarization of routes.

Examples To remove an OSPF area, 0, use the following syntax:

```
CLI (network-admin@switch) > vrouter-ospf-area-remove vrouter-name vrouter-ospf
area 0
```

vrouter-ospf-add

This command adds Open Shortest Path First (OSPF) routing protocol to a virtual router (vRouter) service for a fabric, cluster, virtual network (vNET), or standalone switch.

Syntax `vrouter-ospf-add`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following OSPF arguments:	
`network` *`ip-address`*	Specify the network IP address.
`netmask` *`netmask`*	Specify the netmask of the IP address.
`ospf-area` *`ospf-area-number`*	Specify the OSPF area number in dotted decimal format.

Defaults None.

Access CLI.

History

Version 1.2	Command introduced.
Version 2.1	The parameters, `stub-area` and `stub-type`, added.
Version 2.2.3	The parameters, `stub-area` and `stub-type`, moved to the command `vrouter-ospf-area`.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command adds OSPF for an existing Router service.

Examples To add OSPF to vRouter, MyvService, with the IP address of 192.168.11.3, netmask 32, and OSPF area 1.0.0.0, use the following command:

```
CLI (network-admin@switch) > vrouter-ospf-add vrouter-name MyvService
network 192.168.11.3/32 ospf-area 1.0.0.0
```

vrouter-ospf-remove

This command is used to remove an OSPF configuration from a vRouter service on a fabric, cluster, virtual network (vNET), or standalone switch.

Syntax `vrouter-ospf-remove`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following OSPF arguments:	
`network` *`ip-address`*	Specify the network IP address.

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command removes OSPF for an existing Router service.

Examples To remove ospf-route from the vRouter, MyvService, use the following command:

```
CLI (network-admin@switch) > vrouter-ospf-remove  vrouter-name
MyvService  name  ospf-route
```

vrouter-ospf-show

This command displays information about OSPF on a virtual router (vRouter) service for a fabric, cluster, virtual network (vNET), or standalone switch.

Syntax `vrouter-ospf-show`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following OSPF arguments:	
`network` *`ip-address`*	Specify the network IP address.
`netmask` *`netmask`*	Specify the netmask of the IP address.
`ospf-area` *`ospf-area-number`*	Specify the OSPF area number in dotted decimal format.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters, `stub-area` and `stub-type`, added.
Version 2.2.3	The parameters, `stub-area` and `stub-type`, moved to the command `vrouter-ospf-area`.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command displays OSPF for an existing Router service.

Examples To display information about all OSPF instances configured on vRouters, use the following command:

```
CLI (network-admin@switch) > vrouter-ospf-show layout vertical
```

vrouter-ospf-interface-show

This command is used to display specific OSPF configuration information

Syntax `vrouter-ospf-interface-show`

`vrouter-name` *`name-string`*	Displays the name of the vRouter.
Specify any of the following optional OSPF parameters:	
`nic vrouter interface` *`nic`*	Displays the name of the vNIC.
`nic-state down|up`	Displays the vNIC state.
`l3-port` *`l3-port-number`*	Displays the Layer 3 port numbers.
`ip` *`ip-address`*	Displays the IP address of the interface.
`netmask` *`netmask`*	Displays the netmask of the IP address.
`broadcast` *`ip-address`*	Displays the broadcast IP address.
`area ip-address`	Displays the area ID for the interface in IPv4 format.
`mtu` *`mtu-number`*	Displays MTU for the interface.
`mtu-mismatch-detection| no-mtu-mismatch-detection`	Displays if MTU mismatch detection is configured.
`router-id` *`ip-address`*	Displays the router ID as an IP address.
`network-type point-to-point|broadcast| loopback`	Displays the OSPF network type.
`state down|loopback|waiting|point-to-point|dr-other|backup|dr`	Displays OSPF interface state.
`dr-id` *`ip-address`*	Displays the designated router ID.
`dr-ip` *`ip-address`*	Displays the designated router IP address.
`bdr-id` *`ip-address`*	Displays the backup designated router ID.
`bdr-ip ip-address`	Displays the designated router IP address.
`priority` *`priority-number`*	Displays the priority.
`cost` *`cost-number`*	Displays the cost.
`hello` *`hello-number(s)`*	Displays the hello-interval in seconds.
`dead` *`dead-number(s)`*	Displays the dead time in seconds.
`retransmit` *`retransmit-number(s)`*	Displays the retransmit interval time in seconds.
`hello-due` *`hello-due-string`*	Displays the hello due in.
`neighbor` *`neighbor-number`*	Displays the neighbor count.

`adjacent` *`adjacent-number`*	Displays the adjacent number count.

Defaults None

Access Network Administrator

History Command introduced in Version 3.0.0.

Usage Use this command to display statistics about a NAT configuration.

Examples To display information about an OSPF interface, use the following syntax:

```
CLI (network-admin@switch) > vrouter-ospf-interface-show
```

vrouter-ospf-neighbor-show

This command is used to display OSPF neighbors for a vRouter configured for OSPF.

Syntax `vrouter-ospf-neighbor-show`

`vrouter-name` *`name-string`*	Specifies the name of the vRouter.
`neighbor` *`ip-address`*	Specifies the IP address of the OSPF neighbor
`pri` *`pri-number`*	Specifies the priority.
`state` *`state-string`*	Specifies the current state of the OSPF neighbor.
`dead-time` *`dead-time`*	Specifies the dead-time. Dead-time is the interval of time that the vRouter waits before declaring a neighbor is down.
`address` *`ip-address`*	Specifies the IP address of the vRouter.
`interface` *`interface-string`*	Specifies the interface on the vRouter.
`vlan` *`vlan-id`*	Specifies the VLAN ID.
`l3-port` *`l3-port-number`*	Specifies the Layer 3 port number.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command displays OSPF information for an existing Router service.

Examples To display information about all OSPF neighbors on the network, use the following command:

```
CLI (network-admin@switch) > vrouter-ospf-neighbor-show layout vertical
```

vrouter-packet-relay-add

This command is used to forward packets to a DHCP server.

Syntax `vrouter-packet-relay-add`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following packet relay arguments:	
`forward-proto dhcp`	Specify the forwarding protocol.
`forward-ip` *`ip-address`*	Specify the IP address to forward packets.
`nic` *`vrouter interface nic`*	Specify the interface of the vRouter.

Defaults None

Access CLI

History Command introduced in Version 2.2.3.

Usage Using the `vrouter-packet-relay` command configures the Layer3 interface which receives the client's DHCP broadcast. You can change the broadcast request into a unicast and send it to a centralized DHCP server that is located to a different subnet in your network. The unicast DHCP request is normally routed to the destination DHCP Server within the network, even if the server is far away from the DHCP client.

Examples To forward DHCP packets to a DHCP server with the IP address, 10.30.21.11, and vRouter interface `eth0`, use the following syntax:

```
CLI (network-admin@switch) > vrouter-packet-relay-add vrouter-name vrouter-dhcp forward-proto dhcp forward-ip 10.30.21.11 nic eth0
```

vrouter-packet-relay-remove

This command is used to remove a packet forwarding configuration.

Syntax `vrouter-packet-relay-remove`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following packet relay arguments:	
`forward-proto dhcp`	Specify the forwarding protocol.
`forward-ip` *`ip-address`*	Specify the IP address to forward packets.
`nic` *`vrouter interface nic`*	Specify the interface of the vRouter.

Defaults None

Access CLI

History Command introduced in Version 2.2.3.

Usage Using the `vrouter-packet-relay` command configures the Layer3 interface which receives the client's DHCP broadcast. You can change the broadcast request into a unicast and send it to a centralized DHCP server located in a different subnet in your network. The unicast DHCP request is normally routed to the destination DHCP Server within the network, even if the server is far away from the DHCP client.

Examples To remove the configuration with a DHCP server with the IP address, 10.30.21.11, and vRouter interface `eth0`, use the following syntax:

```
CLI (network-admin@switch) > vrouter-packet-relay-remove vrouter-name
vrouter-dhcp forward-proto dhcp forward-ip 10.30.21.11 nic eth0
```

vrouter-packet-relay-show

This command is used to display information about DHCP packet relay configuration.

Syntax `vrouter-packet-relay-show`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following packet relay arguments:	
`forward-proto dhcp`	Specify the forwarding protocol.
`forward-ip` *`ip-address`*	Specify the IP address to forward packets.
`nic` *`vrouter interface nic`*	Specify the interface of the vRouter.
`vrf` *`vrouter vrf|default`*	Specify the name of the VRF.

Defaults None

Access CLI

History Command introduced in version 2.2.3.

Usage Use this command to view DHCP packet relay configuration.

Examples To view the DHCP packet relay configuration, use the following command:

```
CLI (network-admin@switch) > vrouter-packet-relay-show

vrouter-name forward-proto forward-ip   nic      vrf
------------ ------------- ------------ -------- ----
vr1          dhcp          192.168.1.10 eth2.102 vrf1
vr1          dhcp          192.168.2.10 eth2.102 vrf1
```

vrouter-ping

This command is used to ping from a vRouter to a host IP address on the network.

Syntax `vrouter-ping`

`vrouter-name` *`name-string`*	Specify the name of the vRouter used to ping the host.
`host-ip` *`ip-address`*	Specify the IP address of the host on the network.
Specify between 0 and 3 of the following options:	
`count` *`count-number`*	Specify the number of packets to transmit to the host.
`fragment|no-fragment`	Specify if you want to toggle fragments.
`interval` *`interval-number`*	Specify the interval between successive transmissions.
`outgoing-interface` *`outgoing-interface-string`*	Specify the outgoing interface to ping.

Defaults None

Access CLi

History

Version 2.3.1	Command introduced.
Version 2.6.2	The parameter, `outgoing-interface`, added.

Usage Use this command to ping a host on the network from a vRouter.

Examples To ping the host, `192.168.11.134`, from vRouter, `myvrouter`, use the following syntax:

```
CLI (network-admin@switch) > vrouter-ping vrouter-name myvrouter host-ip 192.168.11.134
```

vrouter-prefix-list-add

Prefix lists are used by BGP and OSPF to filter route advertisements.

Syntax `vrouter-prefix-list-add`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following prefix-list arguments:	
`name` *`name-string`*	Specify a name for the prefix list.
`action permit|deny`	Specify the type of action, permit or deny.
`prefix` *`ip-address`*	Specify the IP address used as the prefix.
`netmask` *`netmask`*	Specify the netmask of the IP address.
Specify any of the following options:	
`seq` *`number`*	Specify a sequence number. This is a number between 1 and 4294967295.
`min-prefix-len` *`number`*	Specify the minimum prefix length. This is a value between 0 and 32.
`max-prefix-len` *`number`*	Specify the maximum prefix length. This is a value between 0 and 32.

Defaults None

Access CLI

History

Version 2.2.3	Command introduced.
Version 2.2.4	The parameter, `any`, added.
Version 2.5	The parameter, `anyv6`, added.
Version 5.1.0	The parameters, `any` and `anyv6`, deprecated.

Usage Use this command to specify prefix lists used with BGP and OSPF.

Examples To configure a prefix list, no-ads, with the action, deny, prefix, 10.9.11.13/32, and minimum prefix length 15, use the following syntax:

```
CLI (network-admin@switch) > vrouter-prefix-list-add  vrouter-name
vrouter-ospf name no-ads action deny prefix 10.9.11.13 netmask
255.255.255.0 min-prefix-len 15
```

vrouter-prefix-list-modify

Prefix lists are used by BGP and OSPF to filter route advertisements.

Syntax `vrouter-prefix-list-modify`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following prefix-list arguments:	
`name` *`name-string`*	Specify a name for the prefix list.
`action permit|deny`	Specify the type of action, permit or deny.
`prefix` *`ip-address`*	Specify the IP address used as the prefix.
`netmask` *`netmask`*	Specify the netmask of the IP address.
Specify any of the following options:	
`seq` *`number`*	Specify a sequence number. This is a number between 1 and 4294967295.
`min-prefix-len` *`number`*	Specify the minimum prefix length. This is a value between 0 and 32.
`max-prefix-len` *`number`*	Specify the maximum prefix length. This is a value between 0 and 32.

Defaults None

Access CLI

History

Version 2.2.3	Command introduced.
Version 2.2.4	The parameter, `any`, added.
Version 2.5	The parameter, `anyv6`, added.
Version 5.1.0	The parameters, `any` and `anyv6`, deprecated.

Usage Use this command to modify prefix lists used with BGP and OSPF.

Examples To modify a prefix list, no-ads, and change the action to permit, use the following syntax:

```
CLI (network-admin@switch) > vrouter-prefix-list-modify  vrouter-name
vrouter-ospf name no-ads action permit
```

vrouter-prefix-list-remove

Prefix lists are used by BGP and OSPF to filter route advertisements.

Syntax `vrouter-prefix-list-remove`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following prefix-list arguments:	
`name` *`name-string`*	Specify a name for the prefix list.
Specify any of the following options:	
`seq` *`number`*	Specify a sequence number. This is a number between 1 and 4294967295.

Defaults None

Access CLI

History Command introduced in Version 2.2.3.

Usage Use this command to remove prefix lists used with BGP and OSPF.

Examples To remove a prefix list, no-ads, use the following syntax:

```
CLI (network-admin@switch) > vrouter-prefix-list-remove  vrouter-name
vrouter-ospf  name  no-ads
```

vrouter-prefix-list-show

Prefix lists are used by BGP and OSPF to filter route advertisements.

Syntax `vrouter-prefix-list-show`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following prefix-list arguments:	
`name` *`name-string`*	Specify a name for the prefix list.
`action permit|deny`	Specify the type of action, permit or deny.
`prefix` *`ip-address`*	Specify the IP address used as the prefix.
`netmask` *`netmask`*	Specify the netmask of the IP address.
Specify any of the following options:	
`seq` *`number`*	Specify a sequence number. This is a number between 1 and 4294967295.
`min-prefix-len` *`number`*	Specify the minimum prefix length. This is a value between 0 and 32.
`max-prefix-len` *`number`*	Specify the maximum prefix length. This is a value between 0 and 32.

Defaults None

Access CLI

History

Version 2.2.3	Command introduced.
Version 2.2.4	The parameter, `any`, added.
Version 2.5	The parameter, `anyv6`, added.
Version 5.1.0	The parameters, `any` and `anyv6`, deprecated.

Usage Use this command to modify prefix lists used with BGP and OSPF.

Examples To modify a prefix list, no-ads, and change the action to permit, use the following syntax:

```
CLI (network-admin@switch) > vrouter-prefix-list-modify vrouter-name
vrouter-ospf name no-ads action permit
```

vrouter-rib-history-show

This command displays past changes to the RIB routing table. It was added to assist with troubleshooting and add time-machine-like capability for packet paths.

Syntax `vrouter-rib-history-show`

`time date/time: yyyy-mm-ddThh:mm:ss`	Specifies the time for the statistics.
`start-time` *`start-time`*	Specifies the start time for the statistics display using the notation *yyyy-mm-ddThh:mm:ss*.
`end-time` *`end-time`*	Specifies the end time for the statistics display using the notation *yyyy-mm-ddThh:mm:ss.*
`duration duration: #d#h#m#s`	Specify the duration for the traffic statistics.
`interval duration: #d#h#m#s`	Specifies the time interval for the statistics display.
`since-start| no-since-start`	Specifies if the statistics are collected from the start of the VLAN.
`older-than duration: #d#h#m#s`	Specifies if the statistics are older than the stated duration.
`within-last duration: #d#h#m#s`	Specifies the statistics collected within the last duration.
`caller init|control|logger|gre-tunnel|flush| user|static-route-init| fabric-tunnel| router-if|vnet-service|l3-check|vrf|vxlan-routing`	Specifies the feature that made the change for this entry.
`last-caller init|control|logger|gre-tunnel| flush|user| static-route-init|fabric-tunnel| router-if|vnet-service|l3-check|vrf|vxlan-routing`	Specifies the most recent caller for this entry.
`reason save|restart|add|modify|remove| remove-all|inject|evict| router-delete`	Specifies the reason for the history entry.
`last-reason save|restart|add|modify|remove| remove-all|inject|evict| router-delete`	Specifies the most recent reason for the entry.
`changes vrid|ip|prelen|number-of-nexthops| nexthops-in-hw|ecmp-group| nexthop|egress-id|flags|vlan|intf_ip|intf_id|number-of-tunnels`	Specifies the change in the entry.
`count` *`count-number`*	Specifies the count for RIB history.

vrid *id*	Specifies the virtual router ID.
ip *ip-address*	Specifies the IP address.
prelen *number*	Specifies the prefix length as a value from 0 to 128.
number-of-nexthops *number-of-nexthops-number*	Specifies the number of next hops in the route.
nexthops-in-hw *nexthops-in-hw-number*	Specifies the number next hops in hardware.
ecmp-group *ecmp-group-number*	Specifies the ECMP group number.
nexthop *ip-address*	Specifies the next hop IP address.
egress-id *egress-id-number*	Specifies the egress ID.
flags ECMP|in-hw|in-cache| in-ecmp-cache|local-subnet|drop	Specifies the flags for the routes. ECMP in-hw - stored in hardware cache - stored in the RIB. local-subnet - stored in the local subnet
vnet *vnet name*	Specifies the vNET name.
bd *bridge-domain name*	Specifies the bridge domain name.
vlan *vlan-id*	Specifies the VLAN ID.
intf_ip ip-address	Specifies the interface IP address.
intf_id *vrouter-hw-if hw-id*	Specifies the router interface.
number-of-tunnels *number-of-tunnels-number*	Specifies the number of tunnels dependent on the route.

Defaults None

Access Network-admin

History Command introduced in Version 2.4.1.

Usage Use this command to display the RIB history.

Examples To display RIB history, use the following syntax:

```
CLI (network-admin@switch) > vrouter-rib-history-show
```

```
time:                   15:29:41
caller:                 router-if
reason:                 add
ip:                     10.16.111.0 24
prelen:                 24
nexthop:                10.16.111.1
flags:                  in-hw,local-subnet
vlan:                   111
intf_ip:                10.16.111.1
intf_id:
time:                   15:29:43
caller:                 router-if
reason:                 add
ip:                     10.16.100.0
prelen:                 24
nexthop:                10.16.100.1
flags:                  in-hw,local-subnet
vlan:                   100
intf_ip:                10.16.100.1
intf_id:                1
```

vrouter-rib-history-settings-modify

This command allows you to modify the RIB history log settings on the switch.

Syntax `vrouter-rib-history-settings-modify`

`enable|disable`	Specify if you want to enable RIB history logging on the switch.
`disk-space` *`disk-space-number`*	Specify if the amount of disk space allocated for the log files.
`log-file-count` *`number`*	Specify the number of log files for rotation. This is a value between 1 and 20.

Defaults None

Access Network-admin

History Command introduced in Version 2.4.1.

Usage Use this command to modify the RIB history log settings.

Examples To enable RIB history logging, use the following syntax:

```
CLI (network-admin@switch) > vrouter-rib-history-settings-modify enable
```

vrouter-rib-history-settings-show

This command displays RIB history information.

Syntax `vrouter-rib-history-settings-show`

`enable|disable`	Specify if you want to enable RIB history logging on the switch.
`disk-space` *`disk-space-number`*	Specify if the amount of disk space allocated for the log files.
`log-file-count` *`number`*	Specify the number of log files for rotation. This is a value between 1 and 20.

Defaults None

Access Network-admin

History Command introduced in Version 2.4.1.

Usage Use this command to view the RIB history settings

Examples To view the RIB history settings, use the following syntax:

```
CLI (network-admin@switch) > vrouter-rib-history-settings-show
switch:         switchname
enable:         yes
disk-space:     50M
log-file-count: 10
```

vrouter-rib-routes-lookup

Netvisor allows you to display information about routes in the Routing Information database using this command.

Syntax `vrouter-rib-routes-lookup`

`vrid` *`vr-id`*	Specifies the virtual router ID.
`ip` *`ip-address`*	Specifies the IP address.

Defaults None

Access Network administrator

History Command introduced in Version 5.1.0

Usage Use this command to display routes in the RIB.

Examples To display routes, use the following syntax:

```
CLI (network-admin@switch) > vrouter-rib-routes-lookup
```

vrouter-rib-routes-show

This command is used to display the Routing Information database (RIB) for vRouter routes.

Syntax `vrouter-rib-routes-show`

`vrid` *`vrid-number`*	Specifies the vRouter ID assigned.
`ip` *`ip-address`*	Specifies the IP address.
`prelen` *`prelen-number`*	Specifies the prefix length.
`numer-of-nexthops` *`numer-of-nexthops-number`*	Specifies the number of next hops for the route.
`nexthops-in-hw` *`nexthops-in-hw-number`*	Specifies the number of next hops for hardware routing.
`nexthop` *`ip-address`*	Specifies the IP address for the next hop on the route.
`ecmp-group` *`ecmp-group-number`*	Specifies the Equal Cost Multipath (ECMP) group number.
`egress-id` *`egress-id-number`*	Specifies the egress ID assigned to an outgoing route.
`flags ECMP|in-hw|in-cache| local-subnet`	Specifies the flags for the routes. ECMP `in-hw` - stored in hardware `cache` - stored in the RIB. l `local-subnet` - stored in the local subnet.
`vlan` *`vlan-number`*	Specifies the VLAN of the routes.
`intf_ip` *`ip-address`*	Specifies the IP address of the interface participating in the routing table.
`intf_id vrouter-hw-if hw-id`	Specifies the hardware ID if the router interface is hardware.
`ecmp-nexthops|no-ecmp-nexthops`	Specifies filter to display single/mutiple route entries (per nexthop)
`number-of-tunnels` *`number-of-tunnels-number`*	Specifies the number of tunnels dependent on this route.

Defaults None

Access CLI

History

Version 2.1	Command introduced.
Version 2.2	The parameters, `vlan` and `vxlan`, deprecated.
Version 2.2.3	The parameters, `vlan`, and `intf_id` added.
Version 2.2.5	The parameter, `local-subnet`, added to RIB route flags.
Version 2.4	The parameter, `number-of-tunnels`, added.
Version 2.5.4	The parameter, `ecmp-nexthops|no-ecmp-nexthops`, added.

Usage Use this command to display the RIB for vRouters which can be helpful when troubleshooting a connection.

Examples To display the RIB routes, use the following command:

```
CLI (network-admin@switch) > vrouter-rib-routes-show
switch:             Spine-1
vrid:               0
ip:                 192.168.10.52
prelen:             30
number-of-nexthops: 1
nexthops-in-hw:     1
nexthop:            192.168.0.225
egress-id:          100037
flags:              in-hw
vlan:               4081
intf-ip:            192.168.0.226
intf-id:            10
number-of-tunnels:  0
switch:             Spine-1
vrid:               0
ip:                 192.168.10.24
prelen:             30
number-of-nexthops: 1
nexthops-in-hw:     1
nexthop:            192.168.0.225
egress-id:          100037
flags:              in-hw
vlan:               4081
intf-ip:            192.168.0.226
intf-id:            10
number-of-tunnels:  0
```

vrouter-rip-add

This command adds Routing Information Protocol (RIP) to a virtual router (vRouter) service on a fabric, cluster, virtual network (vNET), or standalone switch.

Syntax `vrouter-rip-add`

`vrouter-name` *`name-string`*	Specify the name of the vRouter service.
`network` *`ip-address`*	Specify the IP address.
`netmask` *`netmask`*	Specify the netmask of the IP address.

Defaults None.

Access CLI.

History Command introduced in nvOS Version 1.2.1.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command displays adds RIP to an existing Router service.

Examples To add RIP with an IP address of 172.16.0.0/16 to the vRouter service, MyvService, use the following command:

```
CLI (network-admin@switch) > vrouter-rip-add vrouter-name MyvService
network 172.16.0.0/16
```

vrouter-rip-remove

This command removes a RIP instance from a vRouter service on a fabric, cluster, virtual network (vNET), or standalone switch.

Syntax `vrouter-rip-remove`

`vrouter-name` *`name-string`*	Specify the name of the vRouter service.
`network` *`ip-address`*	Specify the IP address.

Defaults None.

Access CLI

History Command introduced in nvOS Version 1.2.1.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command removes a RIP instance on an existing Router service.

Examples To remove RIP with an IP address of 172.16.0.0/16 from the vRouter service, MyvService, use the following command:

```
CLI (network-admin@switch) > vrouter-rip-remove vrouter-name MyvService
network 172.16.0.0
```

vrouter-rip-show

This command displays RIP information on vRouter services on a fabric, cluster, virtual network (vNET), or standalone switch.

Syntax `vrouter-rip-show`

`vrouter-name` *`name-string`*	Specifies the name of the vRouter service.
`network` *`ip-address`*	Specifies the IP address.
`netmask` *`netmask`*	Specifies the netmask of the IP address.
`next-hop` *`ip-address`*	Specifies the next hop IP address

Defaults None.

Access CLI.

History

Version 1.2	Command added.
Version 2.1	The parameter, `metric`, added..

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command displays information about RIP instances on existing vRouter services.

Examples To display RIP information on all vRouter services, use the following command:

```
CLI (network-admin@switch) > vrouter-rip-show layout vertical
```

vrouter-rip-routes-show

This command displays RIP routes currently installed on vRouter services on a fabric, cluster, virtual network (vNET), or standalone switch.

Syntax `vrouter-rip-routes-show`

`vrouter-name` *`name-string`*	Specifies the name of the vRouter service.
`network` *`ip-address`*	Specifies the IP address.
`netmask` *`netmask`*	Specifies the netmask of the IP address.
`next-hop` *`ip-address`*	Specifies the next hop IP address.
`metric` *`metric-number`*	Specifies the metric assigned to the route.
`source` *`ip-address`*	Specifies the source IP address.
`tag` *`tag-number`*`s`	Specifies the tag number.
`type rip|connected|static|ospf|bgp| missing|kernel-route|igmp|babel|pim| ospf6`	Specifies the type of connection.
`attribute normal|static|default| redistribute|interface`	Specifies the attribute for the connection.

Defaults None.

Access CLI.

History Command introduced in Version 2.2.

Usage This command displays information about RIP routes installed on the vRouter.

Examples To display RIP information on all vRouter services, use the following command:

```
CLI (network-admin@switch) > vrouter-rip-routes-show layout verticalz
```

vrouter-route-map-add

Netvisor uses this command to create route maps for BGP and OSPF vRouter configurations.

Syntax `vrouter-route-map-add`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following route-map arguments:	
`name` *`name-string`*	Specify the name of the route map.
`seq` *`number`*	Specify the sequence number to assign to the route map. This is a value between 1 and 65535.
Specify one or more of the following options:	
`action permit|deny`	Specify the route map to permit or deny packets.
`match-prefix` *`prefix-list-name`*	Specify the prefixes used to match.
`match-mac vrouter mac-list name`	Specify the MAC address used for matching.
`match-community` *`match-community-string`*	Specify the community string to match. (BGP only)
`match-evpn-default-route none|true|false`	Specify to match 0.0.0.0 and/or :: route. (BGP EVPN route only)
`match-evpn-route-type none|type-2|type-3| type-5`	Specifies to match EVPN router type.
`match-evpn-vni 0..16777215`	Specifies to match the EVPN VNI.
`match-evpn-rd match-evpn-rd-string`	Specifies to match evpn Route Distinguisher (RD) e.g., ASN:XX or A.B.C.D:XX.
`exact-match|no-exact-match`	Specify if the community string is an exact match or not. (BGP only)
`community-attribute unset|none|no-export|no-advertise| internet|local-AS`	Specify the community attribute. If you specify a community attribute, you cannot add a generic community attribute as well.
`community-attribute-generic` *`community-attribute-generic-string`*	Specify a generic community attribute such as AA:NN. (BGP only)
`additive|no-additive`	Specify if a given community is appended to existing communities value.
`comm-list-del vrouter` *`community-list name`*	Specify if you want to remove community values from BGP community attributes

`local-pref` *`integer`*	Specify a local preference. This is a value between 1 and 4294967295.
`ipv6-nh-prefer-global none|true|false`	Specify to set ipv6 next-hop prefer-global.
`metric none`	Specify a metric for the route map.
`metric-type 1|2`	Specify the metric type as 1 or 2.
`as-path-prepend` *`integer`*	Specify an integer from 1 to 4294967295.
`as-path-prepend-last-as` *`integer`*	Specify an integer from 1 to 10.
`as-path-exclude` *`integer`*	Specify an integer from 1 to 4294967295.
`origin none|egp|igp|incomplete`	Specify the origin of BGP prefix: • none — Resets the origin to none. • egp — Specifies the route as a remote EGP route. • igp — Specifies the route as a local IGP route. • incomplete — Route is of unknown heritage.

Defaults None

Access CLI - Network Admin

History

Version 2.4.0	Command introduced.
Version 2.6.0	The parameters `metric` and `metric-type` added for OSPF. The parameter `as-path-*` added.
Version 3.0.0	The parameters for BGP communities added.
Version 3.0.3	The parameter `origin` added.
Version 7.0.0	The parameters `match-evpn-default-route`, `match-evpn-route-type`, `match-evpn-vni` and `match-evpn-rd` added.

Usage Use this command to create route maps for BGP or OSPF configurations to ensure that prefixes are installed into the route table.

Examples To add a route map on vRouter1, with the name bgp-map, sequence number 75, action permit, match-prefix prefix1, community-attribue local-AS and local preference 25, use the following syntax:

```
CLI (network-admin@switch) > vrouter-route-map-add vrouter-name
vRouter1 name bgp-map seq 75 action permit match-prefix prefix1
community-attribute local-AS local-pref 25
```

vrouter-route-map-modify

This command is used to modify route maps for BGP and OSPF vRouter configurations.

Syntax `vrouter-route-map-modify`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following route-map arguments:	
`name` *`name-string`*	Specify the name of the route map.
`seq` *`number`*	Specify the sequence number to assign to the route map. This is a value between 1 and 65535.
Specify one or more of the following options:	
`action permit|deny`	Specify the route map to permit or deny packets.
`match-prefix` *`prefix-list-name`*	Specify the prefixes used to match.
`match-mac vrouter mac-list name`	Specify the MAC address used for matching.
`match-community` *`match-community-string`*	Specify the community string to match. (BGP only)
`match-evpn-default-route none|true|false`	Specify to match 0.0.0.0 and/or :: route. (BGP EVPN route only)
`match-evpn-route-type none|type-2|type-3| type-5`	Specifies to match EVPN router type.
`match-evpn-vni 0..16777215`	Specifies to match the EVPN VNI.
`match-evpn-rd match-evpn-rd-string`	Specifies to match evpn Route Distinguisher (RD) e.g., ASN:XX or A.B.C.D:XX.
`exact-match|no-exact-match`	Specify if the community string is an exact match or not. (BGP only)
`community-attribute unset|none|no-export|no-advertise| internet|local-AS`	Specify the community attribute. If you specify a community attribute, you cannot add a generic community attribute as well.
`community-attribute-generic` *`community-attribute-generic-string`*	Specify a generic community attribute such as AA:NN. (BGP only)
`additive|no-additive`	Specify if a given community is appended to existing communities value.

`comm-list-del vrouter` *`community-list name`*	Specify if you want to remove community values from BGP community attributes
`local-pref` *`integer`*	Specify a local preference. This is a value between 1 and 4294967295.
`ipv6-nh-prefer-global none|true|false`	Specify to set ipv6 next-hop prefer-global.
`metric none`	Specify a metric for the route map.
`metric-type 1|2`	Specify the metric type as 1 or 2.
`as-path-prepend` *`integer`*	Specify an integer from 1 to 4294967295.
`as-path-prepend-last-as` *`integer`*	Specify an integer from 1 to 10.
`as-path-exclude` *`integer`*	Specify an integer from 1 to 4294967295.
`origin none|egp|igp|incomplete`	Specify the origin of BGP prefix: • none — Resets the origin to none. • egp — Specifies the route as a remote EGP route. • igp — Specifies the route as a local IGP route. • incomplete — Route is of unknown heritage.

Defaults None

Access CLI - Network Admin

History

Version 2.4.0	Command introduced.
Version 2.6.0	The parameters `metric` and `metric-type`, added for OSPF. The parameter `as-path-*` added.
Version 3.0.0	The parameters for BGP communities added.
Version 3.0.3	The parameter `origin` added.
Version 7.0.0	The parameters `match-evpn-default-route`, `match-evpn-route-type`, `match-evpn-vni` and `match-evpn-rd` added.

Usage Use this command to modify route maps for BGP or OSPF configurations to ensure that prefixes are installed into the route table.

Examples To modify a route map on vRouter1, with the name **bgp-map**, and change the local preference to 27, use the following syntax:

```
CLI (network-admin@switch) > vrouter-route-map-modify vrouter-name
vRouter1 name bgp-map local-pref 27
```

vrouter-route-map-remove

This command is used to remove route maps for BGP and OSPF vRouter configurations.

Syntax `vrouter-route-map-remove vrouter-name name-string name name-string seq number`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
`name` *`name-string`*	Specify the name of the route map.
`seq` *`number`*	Specify the sequence number to assign to the route map. This is a value between 1 and 65535.

Defaults None

Access CLI - Network Admin

History Command introduced in Version 2.4.

Usage Use this command to remove route maps for BGP configurations.

Examples To remove a route map on vRouter1, with the name bgp-map, sequence number 75, use the following syntax:

```
CLI (network-admin@switch) > vrouter-route-map-remove vrouter-name
vRouter1 name bgp-map seq 75
```

vrouter-route-map-show

This command is used to display route maps for BGP and OSPF vRouter configurations.

Syntax `vrouter-route-map-show`

`vrouter-name` *`name-string`*	Specify the name of the vRouter.
Specify the following route-map arguments:	
`name` *`name-string`*	Specify the name of the route map.
`seq` *`number`*	Specify the sequence number to assign to the route map. This is a value between 1 and 65535.
`action permit|deny`	Specify the route map to permit or deny packets.
`match-prefix` *`prefix-list-name`*	Specify the prefixes used to match.
`match-mac vrouter mac-list name`	Specify the MAC address used for matching.
`match-community` *`match-community-string`*	Specify the community string to match. (BGP only)
`match-evpn-default-route none|true|false`	Specify to match 0.0.0.0 and/or :: route. (BGP EVPN route only)
`match-evpn-route-type none|type-2|type-3| type-5`	Specifies to match EVPN router type.
`match-evpn-vni 0..16777215`	Specifies to match the EVPN VNI.
`match-evpn-rd match-evpn-rd-string`	Specifies to match evpn Route Distinguisher (RD) e.g., ASN:XX or A.B.C.D:XX.
`exact-match|no-exact-match`	Specify if the community string is an exact match or not. (BGP only)
`community-attribute unset|none|no-export|no-advertise| internet|local-AS`	Specify the community attribute. If you specify a community attribute, you cannot add a generic community attribute as well.
`community-attribute-generic` *`community-attribute-generic-string`*	Specify a generic community attribute such as AA:NN. (BGP only)
`additive|no-additive`	Specify if a given community is appended to existing communities value.
`comm-list-del vrouter` *`community-list name`*	Specify if you want to remove community values from BGP community attributes
`local-pref` *`integer`*	Specify a local preference. This is a value between 1 and 4294967295.

`ipv6-nh-prefer-global none|true|false`	Specify to set ipv6 next-hop prefer-global.
`metric none`	Specify a metric for the route map.
`metric-type 1|2`	Specify the metric type as 1 or 2.
`as-path-prepend` *`integer`*	Specify an integer from 1 to 4294967295.
`as-path-prepend-last-as` *`integer`*	Specify an integer from 1 to 10.
`as-path-exclude` *`integer`*	Specify an integer from 1 to 4294967295.
`origin none|egp|igp|incomplete`	Specify the origin of BGP prefix: • none — Resets the origin to none. • egp — Specifies the route as a remote EGP route. • igp — Specifies the route as a local IGP route. • incomplete — Route is of unknown heritage.

Defaults None

Access CLI - Network Admin

History

Version 2.4.0	Command introduced.
Version 2.6.0	The parameters `metric` and `metric-type` added for OSPF. The parameters `as-path-*` added.
Version 3.0.0	The parameters for BGP communities added.
Version 3.0.3	The parameter `origin` added.
Version 7.0.0	The parameters `match-evpn-default-route`, `match-evpn-route-type`, `match-evpn-vni` and `match-evpn-rd` added.

Usage Use this command to display route maps for BGP configurations.

Examples

- To display a route map on vRouter1, with the name r-map, use the following syntax:

```
CLI (network-admin@switch) > vrouter-route-map-show  format
vrouternamе,name,seq,action,match-prefix,match-evpn-route-type

vrouter-name name  seq action match-prefix match-evpn-route-type
------------ ----- --- ------ ------------ --------------------
vr1          rmap1 10  deny   100
vr1          rmap1 20  permit none         type-5
```

- To display a route map on vRouter1, with the name bgp-map, use the following syntax:

```
CLI (network-admin@switch) > vrouter-route-map-show vrouter-name vRouter1 name bgp-map
```

```
vrouter-name   name    seq action match-prefix community-attribute
-------------- ------- --- ------ ------------ -------------------
vRouter1       bgp-map 75  permit  prefix1     local-AS
```

vrouter-routes-multicast-show

This command allows you to display information about multicast routes on a vRouter configured on the switch.

Syntax `vrouter-routes-multicast-show`

`vrouter-name` *`name-string`*	Specifies the vRouter name.
`source` *`ip-address`*	Specifies the source IP address.
`group` *`ip-address`*	Specifies the IP address of the group.
`proto rip|connected|static|ospf|bgp| missing| kernel-route|igmp| babel|pim|ospf6`	Specifies the protocol used by the routes.
`input` *`input-string`*	Specifies the input interface for incoming routes.
`iVifI` *`iVifI-number`*	Specifies the input index for on a virtual interface (VNIC).
`output` *`output-string`*	Specifies the output interface for an outgoing routes.
`oVifI` *`oVifI-number`*	Specifies the output index for a virtual interface (VNIC).
`ttl` *`ttl-number`*	Specifies the time-to-live (TTL) value.
`uptime` *`uptime-string`*	Specifies the uptime for the route.

Defaults None

Access CLI

History Command introduced in nvOS Version 1.2.1

Usage You can display information about the multicast routes on a vRouter.

Examples To display multicast route information, use the following command:

```
CLI (network-admin@switch) > vrouter-routes-multicast-show  layout
vertical
vrouter-name:              vr1
source:                    10.13.25.200
group:                     232.1.1.1
proto:                     vr1.eth0
iVifI:                     2
output:                    vr1.eth1
oVifI:                     3
ttl:                       1
uptime:                    00:00:01
```

vrouter-routes-show

This command is used to display information about all routes on one or all configured vRouters.

Syntax `vrouter-routes-show`

`vrouter-name` *`name-string`*	Specifies the name of a vRouter.
Any of the routes arguments:	
`network` *`ip-address`*	Specifies the IP address of the vRouter.
`netmask` *`netmask`*	Specifies the netmask.
`type rip|connected|static|ospf|bgp|missing|kernel-route|igmp|babel|pim|ospf6`	Specifies the type of route on the vRouter.
`interface` *`interface-string`*	Specifies the interface for the route.
`next-hop` *`ip-address`*	Specifies the next-hop IP address.
`distance` *`number`*	Specifies the administrative distance in a number from 0 to 255. • 0 — Connected interface • 1 — Static route • 110 — OSPF • 120 — RIP • 200 — Internal BGP
`metric` *`metric-number`*	Specifies the cost of advertised routes on the network.

Defaults None

Access CLI

History

Version 2.0	Command introduced.
Version 2.1	The parameters, `next-hop` and `distance`, added.
Version 2.2	The parameter, `metric`, added.

Usage Use this command to identify routes on vRouters configured on the switch.

Examples To display all route information for all vRouters, use the following command:

CLI (network-admin@switch) > `vrouter-routes-show`

```
vrovrouter-name network       type      interface
--------------- ------------- --------- ---------------
vr-ext-50       10.121.1.0/24 connected ext.50.mgr.eth0
vr-ext-50       10.111.1.0/24 rip       ext.50.mgr.eth0
vr-ext-50       127.0.0.0/8   connected lo0
vr-www-51       10.121.1.0/24 connected www.51.mgr.eth1
```

```
vr-www-51       10.111.1.0/24 connected www.51.mgr.eth0
vr-www-51       127.0.0.0/8   connected lo0
```

vrouter-routes-stats-show

This command is used to display statistical information about all routes on one or all configured vRouters.

Syntax `vrouter-routes-stats-show vrouter-name` *`name-string`*

`vrouter-name` *`name-string`*	Specifies the name of a vRouter.
`fib-max-routes` *`fib-max-routes-number`*	Specifies the maximum number of routes in the Forwarding Information Database.
`fib-current-routes` *`fib-current-routes-number`*	Specifies the number of current routes in the Forwarding Information Database.
`rib-current-routes` *`rib-current-routes-number`*	Specifies the number of current routes in the Routing Information Database

Defaults None

Access CLI

History Command introduced in Version 2.3.3.

Usage Use this command to identify routes on vRouters configured on the switch.

Examples To display all route information for all vRouters, use the following command:

```
CLI (network-admin@switch) > vrouter-routes-stats-show
vrouter-name network       type        interface
------------ ------------- ---------   ---------------
vr-ext-50    10.121.1.0/24 connected   ext.50.mgr.eth0
vr-ext-50    10.111.1.0/24 rip         ext.50.mgr.eth0
vr-ext-50    127.0.0.0/8   connected   lo0
vr-www-51    10.121.1.0/24 connected   www.51.mgr.eth1
vr-www-51    10.111.1.0/24 connected   www.51.mgr.eth0
vr-www-51    127.0.0.0/8   connected   lo0
```

vrouter-static-route-modify

This command modifies the administrative distance of a static route entry for an existing virtual router (vRouter) service for a fabric, cluster, standalone switch, or virtual network (vNET).

Syntax `vrouter-static-route-modify`

`vrouter-name` *`name-string`*	Specify the name of the vRouter service.
`network` *`ip-address`*	Specify the IP subnet of the network that you want to modify a static route.
`netmask` *`netmask`*	Specify the netmask of the IP subnet.
`gateway-ip` *`ip-address`*	Specify the IP address of the gateway.
`drop`	Specify if you want to drop packets to create a null static route. **Note:** This option is mutually exclusive with `gateway-ip` parameter.
`bfd-dst-ip` *`ip-address`*	Specify the destination IP address for BFD monitoring.
`distance` *`number`*	Specify the administrative distance as a number between 0 and 255. • 0 — Connected interface • 1 — Static route • 110 — OSPF • 120 — RIP • 200 — Internal BGP
`interface` *`vrouter-interface-nic`*	Specify the vRouter interface for the static route, if the `gateway-ip` is a link-local IPv6 address.
`vrf` *`vrf`*	Specify the name of the VRF.

Defaults None.

Access CLI

History

Version 6.0.0	Command introduced.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command modifies the administrative distance of a static route entry for an existing Router service.

Examples To modify the administrative distance of a static route entry for the vRouter service, MyvService, use the following command:

```
CLI (network-admin@switch) > vrouter-static-route-modify  vrouter-name
MyvService network 10.1.0.0/16 gateway-ip 10.0.0.1 distance 20
```

vrouter-static-route-add

This command adds a static route entry for an existing virtual router (vRouter) service for a fabric, cluster, standalone switch, or virtual network (vNET).

Syntax `vrouter-static-route-add`

`vrouter-name` *`name-string`*	Specify the name of the vRouter service.
`network` *`ip-address`*	Specify the IP subnet of the network that you want to add a static route.
`netmask` *`netmask`*	Specify the netmask of the IP subnet.
`gateway-ip` *`ip-address`*	Specify the IP address of the gateway that you want to route packets destined for the network IP address to.
`drop`	Specify if you want to drop packets to create a null static route. **Note:** This option is mutually exclusive with `gateway-ip` parameter.
`bfd-dst-ip` *`ip-address`*	Specify the destination IP address for BFD monitoring.
`distance` *`number`*	Specify the administrative distance as a number between 0 and 255. • 0 — Connected interface • 1 — Static route • 110 — OSPF • 120 — RIP • 200 — Internal BGP
`interface` *`vrouter-interface-nic`*	Specify the vRouter interface for the static route, if the `gateway-ip` is a link-local IPv6 address.
`vrf` *`vrf`*	Specify the name of the VRF.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, `distance`, added.
Version 2.6.2	The parameter, `bfd-dst-ip`, added.
Version 3.0.0	The parameter, `interface`, added.
Version 3.0.3	The parameter, `drop`, added.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command adds a static route entrv for an existing Router service.

Examples To add a static route entry for the vRouter service, MyvService, use the following command:

```
CLI (network-admin@switch) > vrouter-static-route-add  vrouter-name
MyvService network 10.1.0.0/16 gateway-ip 10.0.0.1
```

vrouter-static-route-remove

This command removes a static route entry for an existing virtual router (vRouter) service for a fabric, cluster, standalone switch, or virtual network (vNET).

Syntax `vrouter-static-route-remove`

`vrouter-name` *`name-string`*	Specify the name of the vRouter service.
`network` *`ip-address`*	Specify the IP subnet of the network that you want to add a static router.
`gateway-ip` *`ip-address`*	Specify the IP address of the gateway that you want to route packets destined for the network IP address.
`interface vrouter interface nic`	Specify the vRouter interface for the static route.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, `gateway`, added.
Version 3.0.0	The parameter, `interface`, added.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command removes a static route entrv for an existing Router service.

Examples To remove static route, 10.0.0.0/16 from the vRouter service, MyvRouter, use the following command:

```
CLI (network-admin@switch) > vrouter-static-route-remove  vrouter-name
MyvService  network  10.0.0.0/16
```

vrouter-static-route-show

This command displays static route entries for an existing virtual router (vRouter) service for a fabric, cluster, standalone switch, or virtual network (vNET).

Syntax `vrouter-static-route-show`

`vrouter-name` *`name-string`*	Specifies the name of the vRouter service.
`network` *`ip-address`*	Specifies the IP subnet of the network that you want to add a static router.
`netmask` *`netmask`*	Specifies the netmask of the IP subnet.
`gateway-ip` *`ip-address`*	Specifies the IP address of the gateway that you want to route packets destined for the network IP address.
`bfd-dst-ip` *`ip-address`*	Specifies the destination IP address for BFD monitoring.
`distance` *`number`*	Specifies the administrative distance in a number from 0 to 255. • 0 — Connected interface • 1 — Static route • 110 — OSPF • 120 — RIP • 200 — Internal BGP
`bfd none|single-hop|multi-hop`	Specifies the BFD protocol for the gateway fault detection.
`bfd-src-ip` *`ip-address`*	Specifies the source IP address for the BFD session.
`interface vrouter interface nic`	Specify the vRouter interface for the static route.
`drop`	Specify if you want to drop packets to create a null static route.

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameter, `distance`, added.
Version 2.6.2	The parameters, `bfd-dst-ip`, `bfd`, `bfd-src-ip`, added.

Version 3.0.0	The parameter, `interface`, added.
Version 3.0.3	The parameter, `drop`, added.

Usage Each fabric, cluster, standalone switch, or virtual network (vNET) can provide its tenants with a virtual router (vRouter) service that forwards traffic between networks and implements Layer 3 protocols. This command displays static route entries for an existing Router service.

Examples To display all static routes for all vRouter services, use the following command:

```
CLI (network-admin@switch) > vrouter-static-route-show  layout  vertical
```

vrouter-static-bfd-remove

Currently when a static route is created, Netvisor installs a route entry in the routing information database (RIB) regardless of the reachability of the gateway. When static routes are conditional over BFD neighborship formation, Netvisor alleviates this issue.

Netvisor supports static route reachability detection by using BFD protocol, and a static route entry is installed in the RIB only if BFD is able to communicate with the gateway. After installation, BFD periodically monitors reachability and removes the route if connectivity is interrupted. The Pluribus vRouter acts as a gateway, and sends out BFD hellos periodically to specified neighbors. Static BFD sessions are also configurable.

IPv4 and IPv6 addresses are both supported.

Syntax `vrouter-static-bfd-remove`

`vrouter-name` *`name-string`*	Specify the vRouter name.
`src-ip` *`ip-address`*	Specify the source IPv4 or IPv6 address.
`dst-ip` *`ip-address`*	Specify the destination IPv4 or IPv6 address.

Defaults None

Access Network Administrator

History Command introduced in Version 2.5.3.

Usage Use this command to add BFD to a static route.

Examples To remove BFD from a static route with source IP address, 10.1.1.13 to destination IP address, 172.21.16.35, use the following syntax:

```
CLI (network-admin@switch) > vrouter-static-bfd-remove src-ip 10.1.1.13
dst-ip 172.21.16.35 type single-hop
```

vrouter-static-bfd-add

Currently when a static route is created, Netvisor installs a route entry in the routing information database (RIB) regardless of the reachability of the gateway. When static routes are conditional over BFD neighborship formation, Netvisor alleviates this issue.

Netvisor supports static route reachability detection by using BFD protocol, and a static route entry is installed in the RIB only if BFD is able to communicate with the gateway. After installation, BFD periodically monitors reachability and removes the route if connectivity is interrupted. The Pluribus vRouter acts as a gateway, and sends out BFD hellos periodically to specified neighbors. Static BFD sessions are also configurable.

IPv4 and IPv6 addresses are both supported.

Syntax `vrouter-static-bfd-add`

`vrouter-name` *`name-string`*	Specify the vRouter name.
`src-ip` *`ip-address`*	Specify the source IPv4 or IPv6 address.
`dst-ip` *`ip-address`*	Specify the IPv4 or IPv6 destination address.
`type single-hop|multi-hop`	Specify the type of bi-directional forwarding hop, either single-hop or multi-hop.

Defaults None

Access Network Administrator

History Command introduced in Version 2.5.3.

Usage Use this command to add BFD to a static route.

Examples To add BFD to a static route with source IP address, 10.1.1.13 to destination IP address, 172.21.16.35, use the following syntax:

```
CLI (network-admin@switch) > vrouter-static-bfd-add src-ip 10.1.1.13
dst-ip 172.21.16.35 type single-hop
```

vrouter-static-bfd-show

Currently when a static route is created, Netvisor installs a route entry in the routing information database (RIB) regardless of the reachability of the gateway. When static routes are conditional over BFD neighborship formation, Netvisor alleviates this issue.

Netvisor supports static route reachability detection by using BFD protocol, and a static route entry is installed in the RIB only if BFD is able to communicate with the gateway. After installation, BFD periodically monitors reachability and removes the route if connectivity is interrupted. The Pluribus vRouter acts as a gateway, and sends out BFD hellos periodically to specified neighbors. Static BFD sessions are also configurable.

IPv4 and IPv6 addresses are both supported.

Syntax `vrouter-static-bfd-show`

`vrouter-name` *`name-string`*	Specify the vRouter name.
`src-ip` *`ip-address`*	Specify the source IPv4 or IPv6 address.
`dst-ip` *`ip-address`*	Specify the IPv4 or IPv6 destination address.
`type single-hop|multi-hop`	Specify the type of bi-directional forwarding hop, either single-hop or multi-hop.

Defaults None

Access Network Administrator

History Command introduced in Version 2.5.3.

Usage Use this command to display BFD on a static route.

Examples To display BFD from a static route with source IP address, 10.1.1.13 to destination IP address, 172.21.16.35, use the following syntax:

```
CLI (network-admin@switch) > vrouter-static-bfd-show  vrouter-name
static-1 src-ip 172.21.16.45 dst-ip 10.1.1.101 type multihop
```

vrouter-traceroute

This command is used to identify routing from a vRouter on the network.

Syntax `vrouter-traceroute`

`vrouter-name` *`vrouter-name`*	Specify the name of the vRouter service.
`host-ip` *`ip-address`*	Specify the IP address of the host.
Specify between 0 and 3 of the following options:	
`resolve|no-resolve`	Specify if you want to display IP addresses as host names in the output.
`src-ip` *`ip-address`*	Specify if you want to select an alternative source address.
`probe-type icmp-probe|udp-probe`	Specify the type of probe used in the traceroute function.
`outgoing-interface` *`outgoing-interface-string`*	Specify the outgoing interface to ping.

Defaults None

Access CLI

History

Version 2.3.1	Command introduced.
Version 2.6.2	The parameter, `outgoing-interface`, added.

Usage Use this command to identify routes on the network between a vRouter and a host.

Examples To perform a traceroute between vRouter, vr-1, and host IP address, 192.168.11.134, use the following syntax:

```
CLI (network-admin@switch) > vrouter-traceroute vrouter-name vr-1 host-ip 192.168.11.134
```

vrouter-vrf-add

This command adds a VRF to a vRouter.

Syntax `vrouter-vrf-add`

`vrouter-name` *`name-string`*	Specify the name of the vRouter service.
`vrf` *`vrf-name`*	Specify the name of the VRF.
`bgp-as 1..4294967295`	Specify the BGP Autonomous System number from 1 to 4294967295
`bgp-redistribute static|connected|rip|ospf`	Specify a static metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
`bgp-redist-static-metric none|-1..4294967295`	Specify a static metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
`bgp-redist-connected-metric none|-1..4294967295`	Specify a connected metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
`bgp-redist-rip-metric none|-1..4294967295`	Specify a RIP metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
`bgp-redist-ospf-metric none|-1..4294967295`	Specify a OSPF metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
`bgp-cluster-id ip-address`	Specify an IP address for a BGP cluster ID.
`bgp-dampening|no-bgp-dampening`	Enable or disable dampening for BGP routes.
`bgp-keepalive-interval 0..65535`	Specify a BGP keepalive interval in seconds. The default is 60 seconds with a range of 0 to 65535 seconds.
`bgp-holdtime 0..65535`	Specify a BGP holdtime in seconds. The default is 180 seconds with a range of 0 to 65535 seconds.
`bgp-distance-external 0..255`	Specify the BGP distance for routes external to the AS.
`bgp-distance-internal 0..255`	Specify the BGP distance for routes internal to the AS.
`bgp-distance-local 0..255`	Specify the BGP distance for routes local to the AS.

`bgp-global-nh-preference none|true|false`	Use global nexthop preference for choosing nexthop type in BGP-IPv6.
`bgp-default-shutdown|no-bgp-default-shutdown`	Apply administrative shutdown to newly configured peers.
`no-bgp-redist-static-route-map`	Remove route map for BGP static redistribution.
`no-bgp-redist-connected-route-map`	Remove route map for BGP connected redistribution.
`no-bgp-redist-ospf-route-map`	Remove route map for BGP OSPF redistribution.
`bgp-graceful-shutdown|no-bgp-graceful-shutdown`	Specify to enable or disable BGP graceful shutdown (RFC 8326).

Defaults None.

Access CLI

History

Version 6.1.1	Command introduced.

Usage Use the command to add a VRF to a vRouter.

Examples To add a VRF `vrf2` to the vRouter `vRouter1` use the following command:

```
CLI (network-admin@switch) > vrouter-vrf-add vrouter-name vRouter1 vrf vrf2 bgp-redistribute
```

vrouter-vrf-modify

This command modifies a vRouter VRF.

Syntax `vrouter-vrf-modify`

`vrouter-name` *`name-string`*	Specify the name of the vRouter service.
`vrf` *`vrf-name`*	Specify the name of the VRF.
`bgp-as 1..4294967295`	Specify the BGP Autonomous System number from 1 to 4294967295
`bgp-redistribute static|connected|rip|ospf`	Specify a static metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
`bgp-redist-static-metric none|-1..4294967295`	Specify a static metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
`bgp-redist-connected-metric none|-1..4294967295`	Specify a connected metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
`bgp-redist-rip-metric none|-1..4294967295`	Specify a RIP metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
`bgp-redist-ospf-metric none|-1..4294967295`	Specify a OSPF metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
`bgp-cluster-id ip-address`	Specify an IP address for a BGP cluster ID.
`bgp-dampening|no-bgp-dampening`	Enable or disable dampening for BGP routes.
`bgp-keepalive-interval 0..65535`	Specify a BGP keepalive interval in seconds. The default is 60 seconds with a range of 0 to 65535 seconds.
`bgp-holdtime 0..65535`	Specify a BGP holdtime in seconds. The default is 180 seconds with a range of 0 to 65535 seconds.
`bgp-distance-external 0..255`	Specify the BGP distance for routes external to the AS.
`bgp-distance-internal 0..255`	Specify the BGP distance for routes internal to the AS.
`bgp-distance-local 0..255`	Specify the BGP distance for routes local to the AS.
`bgp-global-nh-preference none|true|false`	Use global nexthop preference for choosing nexthop type in BGP-IPv6.

`bgp-default-shutdown|no-bgp-default-shutdown`	Apply administrative shutdown to newly configured peers.
`no-bgp-redist-static-route-map`	Remove route map for BGP static redistribution.
`no-bgp-redist-connected-route-map`	Remove route map for BGP connected redistribution.
`no-bgp-redist-ospf-route-map`	Remove route map for BGP OSPF redistribution.
`bgp-graceful-shutdown|no-bgp-graceful-shutdown`	Specify to enable or disable BGP graceful shutdown (RFC 8326).

Defaults None.

Access CLI

History

Version 6.1.1	Command introduced.

Usage Use the command to modify a vRouter VRF.

Examples To configure BGP dampening for the VRF `vrf2` belonging to the vRouter `vRouter1,` use the following command:

```
CLI (network-admin@switch) > vrouter-vrf-modify vrouter-name vRouter1
vrf vrf2 bgp-dampening
```

vrouter-vrf-remove

This command removes a VRF from a vRouter.

Syntax `vrouter-vrf-remove`

`vrouter-name` *`name-string`*	Specify the name of the vRouter service.
`vrf` *`vrf-name`*	Specify the name of the VRF.

Defaults None.

Access CLI

History

Version 6.1.1	Command introduced.

Usage Use the command to removea VRF from a vRouter.

Examples To remove the VRF `vrf2` belonging to the vRouter `vRouter1,` use the following command:

```
CLI (network-admin@switch) > vrouter-vrf-remove vrouter-name vRouter1
vrf vrf2
```

vrouter-vrf-show

This command displays a vRouter VRF configuration.

Syntax `vrouter-vrf-show`

`vrouter-name` *`name-string`*	Specify the name of the vRouter service.
`vrf` *`vrf-name`*	Specify the name of the VRF.
`bgp-as 1..4294967295`	Specify the BGP Autonomous System number from 1 to 4294967295
`bgp-redistribute static|connected|rip|ospf`	Specify a static metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
`bgp-redist-static-metric none|-1..4294967295`	Specify a static metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
`bgp-redist-connected-metric none|-1..4294967295`	Specify a connected metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
`bgp-redist-rip-metric none|-1..4294967295`	Specify a RIP metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
`bgp-redist-ospf-metric none|-1..4294967295`	Specify a OSPF metric for BGP route redistribution. This is a number between 0 and 4294967295 or specify none to unset.
`bgp-cluster-id ip-address`	Specify an IP address for a BGP cluster ID.
`bgp-dampening|no-bgp-dampening`	Specify if dampening for BGP routes is enabled or disabled.
`bgp-keepalive-interval 0..65535`	Specify a BGP keepalive interval in seconds. The default is 60 seconds with a range of 0 to 65535 seconds.
`bgp-holdtime 0..65535`	Specify a BGP holdtime in seconds. The default is 180 seconds with a range of 0 to 65535 seconds.
`bgp-distance-external 0..255`	Specify the BGP distance for routes external to the AS.
`bgp-distance-internal 0..255`	Specify the BGP distance for routes internal to the AS.
`bgp-distance-local 0..255`	Specify the BGP distance for routes local to the AS.
`bgp-global-nh-preference none|true|false`	Use global nexthop preference for choosing nexthop type in BGP-IPv6.

`bgp-default-shutdown|no-bgp-default-shutdown`	Apply administrative shutdown to newly configured peers.
`no-bgp-redist-static-route-map`	Remove route map for BGP static redistribution.
`no-bgp-redist-connected-route-map`	Remove route map for BGP connected redistribution.
`no-bgp-redist-ospf-route-map`	Remove route map for BGP OSPF redistribution.
`bgp-graceful-shutdown|no-bgp-graceful-shutdown`	Specify if BGP graceful shutdown (RFC 8326) is enabled or disabled.

Defaults None.

Access CLI

History

Version 6.1.1	Command introduced.

Usage Use the command to display a vRouter VRF configuration.

Examples To display the vRouter VRF configuration, use the command:

```
CLI (network-admin@switch)1 > vrouter-vrf-show format vrf,hw-vrid,bgp-as,bgp-max-paths,bgp-bestpath-as-path,bgp-ibgp-multipath,bgp-delayed-startup,bgp-update-delay-strict
vrouter-name vrf  hw-vrid bgp-as bgp-max-paths bgp-bestpath-as-path bgp-ibgp-multipath bgp-delayed-startup(s) bgp-update-delay-strict(s
------------ ---- ------- ------ ------------- -------------------- ----------------- ---------------------- -------------------------
leaf1        vrf1 1       12000  16            multipath-relax      8                 5                      60
leaf1        vrf2 2       12002  16            multipath-relax      8                 5                      60
leaf2        vrf1 1       12000  16                                 0                 5                      0
leaf2        vrf2 2       12002  16                                 0                 5                      0
```

vrouter-vtysh-cmd

Display FRR show output using the Netvisor CLI.

Syntax `vrouter-vtysh-cmd`

`name` *`name-string`*	Specify the name of the vRouter service configuration.
`cmd` *`cmd-string`*	Specify any FRR show/debug/undebug/no debug/clear ip/clear ipv6 command.

Defaults None

Access CLI

History Command introduced in Version 2.5.3.

Usage Use this command to display information on FRR show or debug output.

Examples To display information about IP routing, use the following syntax :

```
CLI (network-admin@Spine1) > vrouter-vtysh-cmd name vr1 cmd "show ip
route"
Codes: K - kernel route, C - connected, S - static, R - RIP,
     O - OSPF, I - IS-IS, B - BGP, P - PIM, A - Babel,
      > - selected route, * - FIB route

C>* 100.1.1.0/24 is directly connected, eth1.100
C>* 127.0.0.0/8 is directly connected, lo0
```

vsg-create

Starting from Netvisor ONE release 6.0.1 it is possible to import/export subnet prefixes between Unicast Fabric VRFs. This operation is sometimes informally referred to as 'prefix leaking'.

To implement this functionality a new innovative entity called Virtual Service Group (vSG) is introduced: it's an abstraction that defines in an intuitive and user-friendly way the policies by which prefixes are shared.

Use this command to create a Virtual Service Group (vSG).

Syntax `vsg-create name`

`name` *`name-string`*	Specify a name for the vSG.
`description` *`description-string`*	Specify a vSG description.

Defaults None

Access Network Administrator

History

Version 6.0.1	Command introduced.

Usage Use this command to configure a vSG.

Examples To configure a vSG named vSG1, use the following syntax.

```
CLI (network-admin@switch) > vsg-create name VSG1
```

vsg-delete

Starting from Netvisor ONE release 6.0.1 it is possible to import/export subnet prefixes between Unicast Fabric VRFs. This operation is sometimes informally referred to as 'prefix leaking'.

To implement this functionality a new innovative entity called Virtual Service Group (vSG) is introduced: it's an abstraction that defines in an intuitive and user-friendly way the policies by which prefixes are shared.

Use this command to delete a VRF Service Group (vSG).

Syntax `vsg-delete name`

`name` *`name-string`*	Specify the name of the vSG.

Defaults None

Access Network Administrator

History

Version 6.0.1	Command introduced.

Usage Use this command to delete a vSG.

Examples To delete a vSG named VSG1, use the following syntax.

```
CLI (network-admin@switch) > vsg-delete name VSG1
```

vsg-modify

Starting from Netvisor ONE release 6.0.1 it is possible to import/export subnet prefixes between Unicast Fabric VRFs. This operation is sometimes informally referred to as 'prefix leaking'.

To implement this functionality a new innovative entity called Virtual Service Group (vSG) is introduced: it's an abstraction that defines in an intuitive and user-friendly way the policies by which prefixes are shared.

Use this command to modify a vSG.

Syntax `vsg-modify name`

`name` *`name-string`*	Specify a name for the vSG.
`description` *`description-string`*	Specify a vSG description.

Defaults None

Access Network Administrator

History

Version 6.0.1	Command introduced.

Usage Use this command to modify a vSG.

Examples To add the description `network1` to a vSG named VSG1, use the following syntax:

```
CLI (network-admin@switch) > vsg-modify name VSG1 description network1
```

vsg-show

Starting from Netvisor ONE release 6.0.1 it is possible to import/export subnet prefixes between Unicast Fabric VRFs. This operation is sometimes informally referred to as 'prefix leaking'.

To implement this functionality a new innovative entity called Virtual Service Group (vSG) is introduced: it's an abstraction that defines in an intuitive and user-friendly way the policies by which prefixes are shared.

Use this command to display a vSG.

Syntax `vsg-show name`

`name` *`name-string`*	Specify a name for the vSG.
`description` *`description-string`*	Specify a vSG description.

Defaults None

Access Network Administrator

History

Version 6.0.1	Command introduced.

Usage Use this command to display a vSG.

Examples To display a vSG named GROUP-A, use the following syntax:

```
CLI (network-admin@switch) > vsg-show name GROUP-A
switch name    description
------ ------- -------------------
switch GROUP-A ANY-TO-ANY-SHARING
```

vsg-network-add

Starting from Netvisor ONE release 6.0.1 it is possible to import/export subnet prefixes between Unicast Fabric VRFs. This operation is sometimes informally referred to as 'prefix leaking'.

To implement this functionality a new innovative entity called Virtual Service Group (vSG) is introduced: it's an abstraction that defines in an intuitive and user-friendly way the policies by which prefixes are shared.

Use this command to add a network or subnet to a vSG.

Syntax `vsg-network-add name`

`vsg-name` *`name-string`*	Specify the name of the vSG.
`vrf` *`vrf-name`*	Specify the VRF name.
`vnet` *`vnet name`*	Specify the vNET for the VRF.
`subnet` *`subnet name`*	Specify the subnet name or 'all' for all subnets.
`network` *`ip-address`*	Specify the network IP address.
`netmask` *`netmask`*	Specify the network mask.
`network6` *`ip-address`*	Specify the IP subnet.
`netmask6` *`netmask`*	Specify the IP subnet network mask.

Defaults None

Access Network Administrator

History

Version 6.0.1	Command introduced.

Usage Use this command to add a network to a Virtual Service Group (vSG).

Examples To add a network to a vSG named GROUP-A, use the following syntax:

```
CLI (network-admin@switch) > vsg-network-add vsg-name GROUP-A vrf
TENANT-GREY subnet SUBNET-11
```

vsg-network-remove

Starting from Netvisor ONE release 6.0.1 it is possible to import/export subnet prefixes between Unicast Fabric VRFs. This operation is sometimes informally referred to as 'prefix leaking'.

To implement this functionality a new innovative entity called Virtual Service Group (vSG) is introduced: it's an abstraction that defines in an intuitive and user-friendly way the policies by which prefixes are shared.

Use this command to add a network or subnet to a vSG.

Syntax `vsg-network-remove`

`vsg-name` *`name-string`*	Specify the name of the vSG to be removed.
`vrf` *`vrf-name`*	Specify the VRF name.
`vnet` *`vnet name`*	Specify the vNET for the VRF.
`subnet` *`subnet name`*	Specify the subnet name or 'all' for all subnets.
`network` *`ip-address`*	Specify the network IP address.
`netmask` *`netmask`*	Specify the network mask.
`network6` *`ip-address`*	Specify the IP subnet.
`netmask6` *`netmask`*	Specify the IP subnet network mask.

Defaults None

Access Network Administrator

History

Version 6.0.1	Command introduced.

Usage Use this command to remove a network from a Virtual Service Group (vSG).

Examples To remove a network from a VSG named GROUP-A, use the following syntax:

```
CLI (network-admin@switch) > vsg-network-remove vsg-name GROUP-A vrf
TENANT-GREY subnet SUBNET-11
```

vsg-network-show

Starting from Netvisor ONE release 6.0.1 it is possible to import/export subnet prefixes between Unicast Fabric VRFs. This operation is sometimes informally referred to as 'prefix leaking'.

To implement this functionality a new innovative entity called Virtual Service Group (vSG) is introduced: it's an abstraction that defines in an intuitive and user-friendly way the policies by which prefixes are shared.

Use this command to display the network or subnets that belong to a vSG.

Syntax `vsg-network-show`

`vsg-name` *`name-string`*	Specify the name of the vSG.
`vrf` *`vrf-name`*	Specify the VRF name.
`vnet` *`vnet name`*	Specify the vNET for the VRF.
`subnet` *`subnet name`*	Specify the subnet name or 'all' for all subnets.
`network` *`ip-address`*	Specify the network IP address.
`netmask` *`netmask`*	Specify the network mask.
`network6` *`ip-address`*	Specify the IP subnet.
`netmask6` *`netmask`*	Specify the IP subnet network mask.

Defaults None

Access Network Administrator

History

Version 6.0.1	Command introduced.

Usage Use this command to display the network or subnets that belong to a Virtual Service Group (vSG).

Examples To display the networks that belong to the VSG named GROUP-A, use the following syntax:

```
CLI (network-admin@switch) > vsg-network-show vsg-name   GROUP-A
switch vsg-name vrf           vnet subnet    network         network_state
------ -------- ------------- ---- --------- --------------- -------------
switch GROUP-A  TENANT-GREY   0:0  SUBNET-11 10.0.11.0/24    ok
switch GROUP-A  TENANT-GREEN  0:0  SUBNET-21 10.0.21.0/24    ok
switch GROUP-A  SERVICE-AMBER 0:0  SUBNET-1  10.1.1.0/24     ok
```

vsg-vrf-add

Starting from Netvisor ONE release 6.0.1 it is possible to import/export subnet prefixes between Unicast Fabric VRFs. This operation is sometimes informally referred to as 'prefix leaking'.

To implement this functionality a new innovative entity called Virtual Service Group (vSG) is introduced: it's an abstraction that defines in an intuitive and user-friendly way the policies by which prefixes are shared.

Use this command to add a VRF to a vSG.

The vsg-vrf-add command enables the user to optionally specify the type of prefix sharing to apply to each VRF as well as an associated vNET. The promiscuous keyword (i.e., the default option) identifies VRFs whose prefixes can be freely shared with any other VRF. Instead, the isolated keyword identifies VRFs whose prefixes can only be shared with VRFs marked as promiscuous.

Syntax `vsg-vrf-add`

`vsg-name` *`name-string`*	Specify the name of the vSG.
`vnet` *`vnet-name`*	Specify the vNET name for the VRF.
`vrf` *`vrf name`*	Specify the VRF name.
`type promiscuous|isolated`	Specify the VRF list type.
`export-leaked-networks none|evpn`	Specifies the VRF export to protocols.

Defaults None

Access Network Administrator

History

Version 6.0.1	Command introduced.
Version 7.0.0	The parameter `export-leaked-networks` added.

Usage Use this command to add a VRF to a Virtual Service Group (vSG).

Examples To add the VRF `SERVICE-AMBER` to a vSG named GROUP-A, use the following syntax:

```
CLI (network-admin@switch) > vsg-vrf-add vsg-name GROUP-A vrf SERVICE-
AMBER promiscuous
```

vsg-vrf-remove

Starting from Netvisor ONE release 6.0.1 it is possible to import/export subnet prefixes between Unicast Fabric VRFs. This operation is sometimes informally referred to as 'prefix leaking'.

To implement this functionality a new innovative entity called Virtual Service Group (vSG) is introduced: it's an abstraction that defines in an intuitive and user-friendly way the policies by which prefixes are shared.

Use this command to remove a VRF from a vSG.

Syntax `vsg-vrf-remove`

`vsg-name` *`name-string`*	Specify the name of the vSG.
`vnet` *`vnet-name`*	Specify the vNET name for the VRF.
`vrf` *`vrf name`*	Specify the VRF name.

Defaults None

Access Network Administrator

History

Version 6.0.1	Command introduced.

Usage Use this command to remove a VRF from a Virtual Service Group (vSG).

Examples To remove the VRF `vrf1` from a VSG named VSG1, use the following syntax:

```
CLI (network-admin@switch) > vsg-vrf-remove vsg-name VSG1 vnet vnet-1
vrf vrf1
```

vsg-vrf-show

Starting from Netvisor ONE release 6.0.1 it is possible to import/export subnet prefixes between Unicast Fabric VRFs. This operation is sometimes informally referred to as 'prefix leaking'.

To implement this functionality a new innovative entity called Virtual Service Group (vSG) is introduced: it's an abstraction that defines in an intuitive and user-friendly way the policies by which prefixes are shared.

Use this command to display the VRFs that belong to a vSG.

Syntax `vsg-vrf-show`

`vsg-name` *`name-string`*	Specify the name of the vSG.
`vnet` *`vnet-name`*	Specify the vNET name for the VRF.
`vrf` *`vrf name`*	Specify the VRF name.
`type promiscuous|isolated`	Specify the VRF list type.
`export-leaked-networks none|evpn`	Specify the VRF export to protocols.

Defaults None

Access Network Administrator

History

Version 6.0.1	Command introduced.
Version 7.0.0	The parameter `export-leaked-networks` added.

Usage Use this command to display the VRFs that belong to a Virtual Service Group (vSG).

Examples To display the VRFs that belong to a vSG named GROUP-A, use the following syntax:

```
CLI (network-admin@switch) > vsg-vrf-show vsg-name GROUP-A

vsg-name vnet  vrf       type         export-leaked-networks
-------- ----- -------- ----------- ----------------------
vsg-1    0:0   vrf3     promiscuous evpn
```

vtep-create

Previous versions of Netvisor required configuring a tunnel from every node in the fabric and manually adding VNIs to them. Also, when a new VTEP is added to the fabric, there is no notification about this event, and requires manually creating tunnels from the new node to all other nodes in the fabric. VTEP commands are used to automatically create tunnels between nodes in a fabric.

Syntax `vtep-create`

`name` *`name-string`*	Specify a name for the VTEP.
`location fabric-node-extended-name`	Specify the location of the switch.
`vrouter-name` *`name-string`*	Specify the name of the vRouter service.
`ip` *`ip-address`*	Specify the primary IP address.
`virtual-ip` *`ip-address`*	Specify the virtual IP address.
`description` *`description-string`*	Specify a VTEP description.
`mac-learning|no-mac-learning`	Specify if you want to enable or disable MAC address learning.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Version 2.6.0	Command introduced.
Version 6.0.0	The parameter, `mac-learning`, added.

Usage Use this command to create a VTEP on a switch.

Examples To create a VTEP on Spine 1, use the following syntax:

```
CLI network-admin@Spine1 > vtep-create name vtep1 ip 10.10.10.1
vrouter-name VR1
```

vtep-group-create (unsupported)

vtep-group-delete (unsupported)

vtep-group-modify (unsupported)

vtep-group-show (unsupported)

vtep-modify

Previous versions of Netvisor required configuring a tunnel from every node in the fabric and manually adding VNIs to them. Also, when a new VTEP is added to the fabric, there is no notification about this event, and requires manually creating tunnels from the new node to all other nodes in the fabric. VTEP commands are used to automatically create tunnels between nodes in a fabric.

Syntax `vtep-modify`

`name` *`name-string`*	Specify a name for the VTEP.
`mac-learning|no-mac-learning`	Specify if you want to enable or disable MAC address learning.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Version 2.6.0	Command introduced.
Version 6.0.0	The parameter, `mac-learning`, added.

Usage Use this command to modify a VTEP

Examples To enable MAC address learning on vtep1, use the following syntax:

```
CLI network-admin@Spine1 > vtep-modify name vtep1 mac-learning
```

vtep-delete

Previous versions of Netvisor required configuring a tunnel from every node in the fabric and manually adding VNIs to them. Also, when a new VTEP is added to the fabric, there is no notification about this event, and requires manually creating tunnels from the new node to all other nodes in the fabric. VTEP commands are used to automatically create tunnels between nodes in a fabric.

Syntax `vtep-delete`

`name` *`name-string`*	Specify the name of a VTEP to delete.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Usage Use this command to delete a VTEP on a switch.

Examples To delete a VTEP on Spine 1, use the following syntax:

```
CLI  network-admin@Spine1>vtep-delete  name  vtep1
```

vtep-show

Previous versions of Netvisor required configuring a tunnel from every node in the fabric and manually adding VNIs to them. Also, when a new VTEP is added to the fabric, there is no notification about this event, and requires manually creating tunnels from the new node to all other nodes in the fabric. VTEP commands are used to automatically create tunnels between nodes in a fabric.

Syntax `vtep-show`

`scope fabric`	Display the VTEP scope.
`name` *`name-string`*	Display a name for the VTEP.
`location fabric-node-name|host-external`	Display the location of the switch.
`vrouter-name` *`name-string`*	Display the name of the vRouter service.
`ip` *`ip-address`*	Display the primary IP address.
`virtual-ip` *`ip-address`*	Display the virtual IP address.
`description description-string`	Display the VTEP description.
`mac-learning|no-mac-learning`	Display VTEPs with either `mac-learning` or `no-mac-learning` configured.
`evpn-border true|false`	Display if VTEP is on EVPN border or not.

Defaults None

Access Network Administrator

History

Version 2.6.0	Command introduced.
Version 6.0.0	The parameter `mac-learning` added. The keyword `host-external` for the `location` parameter added.
Version 6.1.0	The parameter `evpn-border true|false` added.

Usage Use this command to display a VTEP on a switch.

Examples To display the VTEPs on switch1, use the following syntax:

```
CLI (network-admin@switch1) > vtep-show format all
scope  name        location      vrouter-name        ip         virtual-ip description evpn-border
------ ----------- ------------- ------------------- ---------- ---------- ----------- -----------
fabric  VTEP1      switch1       vr1                 190.11.1.2 190.11.1.1             false
```

```
fabric  VTEP2      switch2       vr2                 190.11.1.3 190.11.1.1             false
fabric  VTEP3      switch3       vr3                 190.12.1.3 190.12.1.1             false
fabric  VTEP4      switch4       vr4                 190.12.1.2 190.12.1.1             false
fabric  FAB2-VTEP1 host-external                      20.1.1.1                         false
```

vtep-vxlan-add

Previous versions of Netvisor required configuring a tunnel from every node in the fabric and manually adding VNIs to them. Also, when a new VTEP is added to the fabric, there is no notification about this event, and requires manually creating tunnels from the new node to all other nodes in the fabric. VTEP commands are used to automatically create tunnels between nodes in a fabric.

Syntax `vtep-vxlan-add name`

`name` *`name-string`*	Specify the name of the VTEP.
`vxlan` *`vxlan-id`*	Specify the VXLAN identifier.
`isolated|not-isolated`	Specify if you want to configure VNI mode as isolated or not.

Defaults None

Access Network Administrator

History Command introduced in Version 2.6.0.

Version 2.6.0	Command introduced.
Version 6.0.1	The parameter `isolated|not-isolated` added.

Usage Use this command to add a VXLAN to a VTEP on a switch.

Examples To add a VXLAN to VTEP1 on Spine 1, use the following syntax:

```
CLI network-admin@Spine1 > vtep-vxlan-add vtep-name vtep1 vxlan 10000
```

vtep-vxlan-remove

Previous versions of Netvisor required configuring a tunnel from every node in the fabric and manually adding VNIs to them. Also, when a new VTEP is added to the fabric, there is no notification about this event, and requires manually creating tunnels from the new node to all other nodes in the fabric. VTEP commands are used to automatically create tunnels between nodes in a fabric.

Syntax `vtep-vxlan-remove`

`name` *`name-string`*	Specify the name of the VTEP.
`vxlan` *`vxlan-id`*	Specify the VXLAN identifier.

Defaults None

Access Network Administrator

History

Version 2.6.0	Command introduced.

Usage Use this command to remove a VXLAN to a VTEP from a switch.

Examples To remove a VXLAN to VTEP1 on Spine 1, use the following syntax:

```
CLI network-admin@Spine1>vtep-vxlan-remove vtep-name vtep1 vxlan 10000
```

vtep-vxlan-show

Previous versions of Netvisor required configuring a tunnel from every node in the fabric and manually adding VNIs to them. Also, when a new VTEP is added to the fabric, there is no notification about this event, and requires manually creating tunnels from the new node to all other nodes in the fabric. VTEP commands are used to automatically create tunnels between nodes in a fabric.

Syntax `vtep-vxlan-show`

`name` *`name-string`*	Specify the name of the VTEP.
`vxlan` *`vxlan-id`*	Specify the VXLAN identifier.
`hw_update_pending yes|no`	Hardware update for VXLAN is pending.
`bd_deactivated yes|no`	Static tunnel deactivated in hardware for this bridge domain.
`isolated|not-isolated`	Specify if the VNI mode is isolated or not.

Defaults None

Access Network Administrator

History

Version 2.6.0	Command introduced.
Version 6.0.1	The parameter `isolated|not-isolated` added.

Usage Use this command to display a VXLAN to a VTEP from a switch.

Examples To display a VXLAN to VTEP1 on Spine 1, use the following syntax:

```
CLI network-admin@Spine1 > vtep-vxlan-show vtep-name vtep1 vxlan 10000
```

vtep-auto-vlan-modify

You use this command to automatically assign VLANs to a VTEP.

Syntax `vtep-auto-vlan-modify`

`vlans` *`0..4095`*	Specify the starting VLAN ID.
`vlan-end` *`0..4095`*	Specify the ending VLAN ID.

Defaults None

Access Network Administrator

History Command introduced in Version 3.1.0.

Usage Use the command to automatically assign VLANs to VTEP.

Examples To automatically assign VLANs 10 to 20 to VTEPs, use the following syntax:

```
CLI (network-admin@switch) > vtep-auto-vlan-modify vlans 10 vlan-end 20
```

vtep-auto-vlan-show

You use this command to display automatically assigned VLANs to a VTEP.

Syntax `vtep-auto-vlan-show`

Defaults None

Access Network Administrator

History Command introduced in Version 3.1.0.

Usage Use the command to display automatically assigned VLANs to VTEPs.

Examples To display assigned VXLANs to VTEPs, use the following syntax:

```
CLI (network-admin@switch) > vtep-auto-vlan-show
vlans:     2500-2999
```

vtep-auto-vxlan-modify

You use this command to automatically assign VXLANs to a VTEP.

Syntax `vtep-auto-vxlan-modify`

`vxlans` *`vxlan-id`*	Specify the starting VXLAN ID.
`vxlan-end` *`vxlan-id`*	Specify the ending VXLAN ID.

Defaults None

Access Network Administrator

History Command introduced in Version 3.1.0.

Usage Use the command to automatically assign VXLANs to VTEP.

Examples To automatically assign VXLANs to VTEPs, use the following syntax:

```
CLI (network-admin@switch) > vtep-auto-vxlan-modify
```

vtep-auto-vxlan-show

You use this command to display automatically assigned VXLANs for VTEPs.

Syntax `vtep-auto-vxlan-show`

Defaults None

Access Network Administrator

History Command introduced in Version 3.1.0.

Usage Use the command to display automatically assigned VXLANs to VTEPs.

Examples To display assigned VXLANs to VTEPs, use the following syntax:

```
CLI (network-admin@switch) > vtep-auto-vxlan-show
```

vxlan-dest-port-modify

This command is used to modify a destination port for a VXLAN.

Syntax `vxlan-dest-port-modify port port-number`

One or more of the following options:	
`port port-number`	Specifies the VXLAN port number.
`trans_mode trans_mode-number`	Specifies the VXLAN trans mode number.

Defaults None

Access CLI

History Command introduced in Version 2.3.

Usage Use this command to modify a destination port for a VXLAN.

Examples To modify the port, use the following syntax:

```
CLI (network-admin@switch) > vxlan-dest-port-modify port 21
```

vxlan-dest-port-show

This command is used to display a destination port for a VXLAN.

Syntax `vxlan-dest-port-show`

Defaults None

Access CLI

History Command introduced in Version 2.3.

Usage Use this command to display a destination port for a VXLAN.

Examples To display the port, use the following syntax:

```
CLI (network-admin@switch) > vxlan-dest-port-show
```

vxlan-stats-settings-modify

This command is used to modify settings for VXLAN statistics collection.

Syntax `vxlan-stats-settings-modify`

`disable|enable`	Enable or disable statistics collection.
`interval duration: #d#h#m#s`	Specify the interval between statistics collection.
`disk-space` *`disk-space-numbe`*	Specify the amount of disk space for statistics collection.

Defaults None

Access CLI

History Command introduced in Version 2.5.1.

Usage Use this command to display the settings for VXLAN statistics collection.

Examples To enable the statistics collection, use the following syntax:

```
CLI (network-admin@switch) > vxlan-stats-settings-modify enable
```

vxlan-stats-settings-show

This command is used to display statistics settings for a VXLAN.

Syntax `vxlan-stats-settings-show`

Defaults None

Access CLI

History Command introduced in Version 2.5.1.

Usage Use this command to display settings for VXLAN statistics collection.

Examples To display the statistics collection, use the following syntax:

```
CLI (network-admin@switch) > vxlan-stats-settings-show
switch:        Spine1
enable:        yes
interval:     30m
disk-space:  50M
switch:        Leaf1
enable:        yes
interval:     30m
disk-space:  50M
```

vxlan-stats-show

This command displays Virtual Extensible LANs (VXLAN) statistics on a fabric, cluster, virtual network (vNET), or a standalone switch.

Syntax `vxlan-stats-show`

`time date/time: yyyy-mm-ddTHH:mm:ss]`	Specifies the time to start statistic collection.
`start-time date/time: yyyy-mm-ddTHH:mm:ss`	Specifies the start-time of statistic collection.
`end-time date/time: yyyy-mm-ddTHH:mm:ss`	Specifies the end-time of statistic collection.
`duration duration: #d#h#m#s`	Specifies the duration of statistic collection.
`interval duration: #d#h#m#s`	Specifies the interval between statistic collection.
`since-start`	Specifies the statistics collected since start time.
`older-than duration: #d#h#m#s`	Specifies statistics older than the specified time.
`within-last duration: #d#h#m#s`	Specifies the statistics collected within the specified duration.
`vnid` *`vnid-number`*	Specifies a number for VNID. This is a value from 0 and 16777215.
`vxlan-name` *`vxlan-name`*	Specifies a name for the VXLAN
`vnet` *`vnet name`*	Specifies the vNET for the VLAN.
`bd` *`bridge-domain-name`*	Specifies the VXLAN bridge domain.
`vlan` *`vlan-name`*	Specifies the name of the VLAN.
`ibits` *`ibits-number`*	Number of incoming bits for VLAN
`obits` *`obits-number`*	Number of outgoing bits for VLAN

Defaults None.

Access CLI

History

Version 1.2	Command introduced.
Version 2.1	The parameters, `multicast`, `deep-inspection`, and `untagged-ports`, deprecated. The parameter, `vlan`, added.
Version 2.6.2	The parameter, `vnet`, added.
Version 3.0.0	The output is now displayed in bits instead of bytes.
Version 6.1.0	The parameter, `bd`, added.

Usage Virtual Extensible LAN (VXLAN) is an encapsulation protocol for running an overlay network on existing Layer 3 infrastructure on a fabric, cluster, vNET, or standalone switch. Use this command to display information about a VXLAN.

Examples To view the VXLAN statistics for the bridge domain `BD100`, use the following command:

```
CLI (network-admin@switch) > vxlan-stats-show bd BD100 layout vertical
time:         03:23:19
vnid:         12591499
vxlan-name:
vnet:
bd:           BD100
ibytes:       7.60T
ibits:        66.8T
ipkts:        3.59G
idrops-pkts:  0
obytes:       7.54T
obits:        66.5T
opkts:        3.59G
odrops-pkts:  0
```

vxlan-stats-clear

This command clears VXLAN statistics on a fabric, cluster, virtual network (vNET), or a standalone switch.

Syntax `vxlan-stats-clear`

`vnid` *`0..16777215`*	Specify the VXLAN ID.

Defaults None.

Access CLI

History

Version 6.1.0	Command introduced.

Usage VXLAN is an encapsulation protocol for running an overlay network on existing Layer 3 infrastructure on a fabric, cluster, vNET, or standalone switch. Use this command to clear VXLAN statistics.

Examples To clear the VXLAN statistics, use the following command:

```
CLI (network-admin@switch) > vxlan-stats-clear
```

W Commands

web-cert-clear

You can perform TLS certificate management for the Netvisor Web service. For HTTPS communication between a REST API client and the Web application server running on the switch, you must configure a server certificate and deploy it on the Web application server.

Syntax `web-cert-clear`

Defaults None

Access Network admin

History Command introduced in Version 2.4.1.

Usage Use this command to delete certificates from the OS.

Examples To delete a Web certificate, use the following syntax:

```
CLI (network-admin@switch) > web-cert-clear
```

web-cert-import

You can perform TLS certificate management for the Netvisor Web service. For HTTPS communication between a REST API client and the Web application server running on the switch, you must configure a server certificate and deploy it on the Web application server.

Syntax `web-cert-import`

`file-ca` *`file-ca-string`*	Specify the name of the CA Certificate file.
`file-server` *`file-server-string`*	Specify the name of the Server Certificate file.
`file-inter` *`file-inter-string`*	Specify the name of the intermediate CA Certificate file.

Defaults None

Access Network admin

History Command introduced in Version 2.4.1.

Usage Use this command to import certificates into the OS.

Examples To import a Web certificate, use the following syntax:

```
CLI (network-admin@switch) > web-cert-import
```

web-cert-info-show

You can perform TLS certificate management for the Netvisor Web service. For HTTPS communication between a REST API client and the Web application server running on the switch, you must configure a server certificate and deploy it on the Web application server.

Syntax `web-cert-info-show`

`cert-type ca|intermediate|server`	Specifies the type of the CA Certificate.
`subject` *`subject-string`*	Specifies the subject in the Certificate file.
`issuer` *`issuer-string`*	Specifies the issuer of the intermediate CA Certificate file.
`serial-number` *`serial-number-number`*	Specifies the serial number in the Certificate file.
`valid-from` *`valid-from-string`*	Specifies the valid from date in the Certificate file.
`valid-to` *`valid-to-string`*	Specifies the valid to date in the Certificate file.

Defaults None

Access Network admin

History Command introduced in Version 2.4.1.

Usage Use this command to display certificates in the OS.

Examples To display a Web certificate, use the following syntax:

```
CLI (network-admin@switch) > web-cert-info-show
```

web-cert-request-show

You can perform TLS certificate management for the Netvisor Web service. For HTTPS communication between a REST API client and the Web application server running on the switch, you must configure a server certificate and deploy it on the Web application server.

Syntax `web-cert-request-show`

`cert-request` *`cert-request-string`*	Displays the certificate request parameters.

Defaults None

Access Network admin

History Command introduced in Version 2.4.1.

Usage Use this command to display certificate requests.

Examples To display a certificate request, use the following syntax:

`CLI (network-admin@switch) >` `web-cert-request-show`

web-cert-request-create

You can perform TLS certificate management for the Netvisor Web service. For HTTPS communication between a REST API client and the Web application server running on the switch, you must configure a server certificate and deploy it on the Web application server.

Syntax `web-cert-request`

Defaults None

Access Network admin

History Command introduced in Version 2.4.1.

Usage Use this command to request certificates for the OS.

Examples Torequest a Web certificate, use the following syntax:

```
CLI (network-admin@switch) > web-cert-request-create
```

web-cert-self-signed-create

You can perform TLS certificate management for the Netvisor Web service. For HTTPS communication between a REST API client and the Web application server running on the switch, you must configure a server certificate and deploy it on the Web application server.

Syntax `web-cert-self-signed-create`

`country` *`country-string`*	Specify the country for the certificate.
`state` *`state-string`*	Specify the state for the certificate
`city` *`city-string`*	Specify the city for the certificate
`organization` *`organization-string`*	Specify the organization for the certificate
`common-name` *`common-name-string`*	Specify the common name for the certificate. The common name must match the host for authentication.

Defaults None

Access Network admin

History Command introduced in Version 2.4.1.

Usage Use this command to create self-signed certificate requests.

Examples To create a self-signed certificate, use the following syntax:

```
CLI (network-admin@switch) > web-cert-self-signed-create country us
state ca city palo alto organization engineering common-name web-server
```

Acknowledgments for Open Source Software

The Pluribus Networks Command Line Interface (CLI) used the following Open Source Software:

bean.js

(bean.js):

bean.js - copyright Jacob Thornton 2011

https://github.com/fat/bean

MIT License

special thanks to:

dean edwards: http://dean.edwards.name/

dperini: https://github.com/dperini/nwevents

the entire mootools team: github.com/mootools/mootools-core

Bonzo: DOM Utility (c) Dustin Diaz 2011

https://github.com/ded/bonzo

License MIT

d3v2

(d3v2):

Copyright (c) 2012, Michael Bostock

All rights reserved.

Redistribution and use in source and binary forms, with or without

modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

The name Michael Bostock may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL MICHAEL BOSTOCK BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

d3v2

(d3v2):

TERMS OF USE - EASING EQUATIONS

Open source under the BSD License.

Copyright 2001 Robert Penner

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation * and/or other materials provided with the distribution.

Neither the name of the author nor the names of contributors may be used to endorse or promote products derived from this software without specific * prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

DataTables

(DataTables):

@summary DataTables

@description Paginate, search and sort HTML tables

@version 1.9.4

@file jquery.dataTables.js

@author Allan Jardine (www.sprymedia.co.uk)

@contact www.sprymedia.co.uk/contact

@copyright Copyright 2008-2012 Allan Jardine, all rights reserved.

This source file is free software, under either the GPL v2 license or a BSD style license, available at: http://datatables.net/license_gpl2

http://datatables.net/license_bsd

This source file is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the license files for details.

For details please refer to: http://www.datatables.net

(Envision)

Envision.js

(c) 2012 Carl Sutherland, Humble Software

Distributed under the MIT License

Source: http://www.github.com/HumbleSoftware/envisionjs

Homepage: http://www.humblesoftware.com/envision

excanvas

(excanvas.js):

Filament Group modification note:

This version of excanvas is modified to support lazy loading of this file. More info here: http://pipwerks.com/2009/03/12/lazy-loading-excanvasjs/

Copyright 2006 Google Inc.

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

FloodLight

Copyright 2012, Big Switch Networks, Inc.

Originally created by David Erickson, Stanford University

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License

Flotr2

Flotr2 (c) 2012 Carl Sutherland

MIT License

Special thanks to:

Flotr: http://code.google.com/p/flotr/ (fork)

Flot: https://github.com/flot/flot (original fork)

g.Raphael

g.Raphael 0.5 - Charting library, based on RaphaÃ«l

Copyright (c) 2009 Dmitry Baranovskiy (http://g.raphaeljs.com)

Licensed under the MIT (http://www.opensource.org/licenses/mit-license.php) license.

GRUB

GRUB -- GRand Unified Bootloader

Copyright (C) 1999,2000,2001,2002,2004 Free Software Foundation, Inc.

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or

(at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the

GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

GSON

Copyright (C) 2008 Google Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License.

You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

DNS/DHCP

Copyright (c) 2004-2013 by Internet Systems Consortium, Inc. ("ISC")

Copyright (c) 1995-2003 by Internet Software Consortium

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND ISC DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL ISC BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Internet Systems Consortium, Inc.

950 Charter Street

Redwood City, CA 94063

<info@isc.org>

https://www.isc.org

JIT

Copyright (c) 2011 Sencha Inc. - Author: Nicolas Garcia Belmonte (http://philogb.github.com/)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

jquery.js

jQuery JavaScript Library v1.4.3

http://jquery.com/

Copyright 2010, John Resig

Dual licensed under the MIT or GPL Version 2 licenses.

http://jquery.org/license

Includes Sizzle.js

http://sizzlejs.com/

Copyright 2010, The Dojo Foundation

Released under the MIT, BSD, and GPL Licenses.

Date: Thu Oct 14 23:10:06 2010 -0400

jQuery UI

Copyright (c) 2011 Paul Bakaus, http://jqueryui.com/

This software consists of voluntary contributions made by many individuals (AUTHORS.txt, http://jqueryui.com/about) For exact contribution history, see the revision history and logs, available at http://jquery-ui.googlecode.com/svn/

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

jquery.cookie.js

jQuery Cookie plugin

Copyright (c) 2010 Klaus Hartl (stilbuero.de)

Dual licensed under the MIT and GPL licenses:

http://www.opensource.org/licenses/mit-license.php

http://www.gnu.org/licenses/gpl.html

jquery.hotkeys.js

jQuery Hotkeys Plugin

Copyright 2010, John Resig

Dual licensed under the MIT or GPL Version 2 licenses.

Based upon the plugin by Tzury Bar Yochay:

http://github.com/tzuryby/hotkeys

Original idea by:

Binny V A, http://www.openjs.com/scripts/events/keyboard_shortcuts/

jquery.validate.min.js

Query Validation Plugin 1.8.1

http://bassistance.de/jquery-plugins/jquery-plugin-validation/

http://docs.jquery.com/Plugins/Validation

Copyright (c) 2006 - 2011 JÃ¶rn Zaefferer

Dual licensed under the MIT and GPL licenses:

http://www.opensource.org/licenses/mit-license.php

http://www.gnu.org/licenses/gpl.html

JSTL

DO NOT ALTER OR REMOVE COPYRIGHT NOTICES OR THIS HEADER.

Copyright (c) 1997-2010 Oracle and/or its affiliates. All rights reserved.

The contents of this file are subject to the terms of either the GNU General Public License Version 2 only ("GPL") or the Common Development and Distribution License("CDDL") (collectively, the "License"). You

may not use this file except in compliance with the License. You can obtain a copy of the License at

https://glassfish.dev.java.net/public/CDDL+GPL_1_1.html or packager/legal/LICENSE.txt. See the License for the specific language governing permissions and limitations under the License.

When distributing the software, include this License Header Notice in each file and include the License file at packager/legal/LICENSE.txt.

GPL Classpath Exception:

Oracle designates this particular file as subject to the "Classpath" exception as provided by Oracle in the GPL Version 2 section of the License file that accompanied this code.

Modifications:

If applicable, add the following below the License Header, with the fields enclosed by brackets [] replaced by your own identifying information:

"Portions Copyright [year] [name of copyright owner]"

Contributor(s):

If you wish your version of this file to be governed by only the CDDL or only the GPL Version 2, indicate your decision by adding "[Contributor] elects to include this software in this distribution under the [CDDL or GPL Version 2] license." If you don't indicate a single choice of license, a recipient has the option to distribute your version of this file under either the CDDL, the GPL Version 2 or to extend the choice of license to its licensees as provided above. However, if you add GPL Version 2 code and therefore, elected the GPL Version 2 license, then the option applies only if the new code is made subject to such option by the copyright holder.

This file incorporates work covered by the following copyright and permission notice:

Copyright 2004 The Apache Software Foundation

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

jstree

jsTree 1.0-rc3

http://jstree.com/

Copyright (c) 2010 Ivan Bozhanov (vakata.com)

Licensed same as jquery - under the terms of either the MIT License or the GPL Version 2 License

http://www.opensource.org/licenses/mit-license.php

http://www.gnu.org/licenses/gpl.html

$Date: 2011-02-09 01:17:14 +0200 (ср, 09 февр 2011) $

$Revision: 236 $

Start Copyright text (libedit 3.0)

Copyright (c) 1992, 1993

The Regents of the University of California. All rights reserved.

This code is derived from software contributed to Berkeley by Christos Zoulas of Cornell University.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(log4j

Licensed to the Apache Software Foundation (ASF) under one or more contributor license agreements. See the NOTICE file distributed with this work for additional information regarding copyright ownership.

The ASF licenses this file to You under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

(pciutils-3.1.10):

The PCI Utilities -- Declarations

Copyright (c) 1997--2008 Martin Mares <mj@ucw.cz>

Can be freely distributed and used under the terms of the GNU GPL.

qtip 2.0

qTip2 - Pretty powerful tooltips - v2.0.0 - 2012-10-03

http://craigsworks.com/projects/qtip2/

Copyright (c) 2012 Craig Michael Thompson; Licensed MIT, GPL

raphael 2.1.0

Raphaël 2.1.0 - JavaScript Vector Library

Copyright © 2008-2012 Dmitry Baranovskiy (http://raphaeljs.com)

Copyright © 2008-2012 Sencha Labs (http://sencha.com)

Licensed under the MIT (http://raphaeljs.com/license.html) license.

Copyright (c) 2013 Adobe Systems Incorporated. All rights reserved.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License.

You may obtain a copy of the License at //

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

Eve 0.4.2 - JavaScript Events Library

Author Dmitry Baranovskiy (http://dmitry.baranovskiy.com/)

Rickshaw v1.1.2

Adapted from https://github.com/Jakobo/PTClass */

Copyright (c) 2005-2010 Sam Stephenson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Based on Alex Arnell's inheritance implementation.

section: Language

class Class

Manages Prototype's class-based OOP system.

Refer to Prototype's web site for a [tutorial on classes and inheritance](http://prototypejs.org/learn/class-inheritance).

science.js 1.7.0

Copyright (c) 2011, Jason Davies

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

The name Jason Davies may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL JASON DAVIES BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT

LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

sizzle

Copyright (c) 2009, John Resig

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of the <organization> nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY John Resig ''AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL <copyright holder> BE LIABLE FOR ANY

DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

tcl 8.5.9

This software is copyrighted by the Regents of the University of California, Sun Microsystems, Inc., Scriptics Corporation, ActiveState Corporation and other parties. The following terms apply to all files associated with the software unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute, and license this software and its documentation for any purpose, provided that existing copyright notices are retained in all copies and that this notice is included verbatim in any distributions. No written agreement, license, or royalty fee is required for any of the authorized uses. Modifications to this software may be copyrighted by their authors and need not follow the licensing terms described here, provided that the new terms are clearly indicated on the first page of each file where they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. THIS SOFTWARE IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the U.S. government, the Government shall have only "Restricted Rights" in the software and related documentation as defined in the Federal Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2). If you are acquiring the software on behalf of the Department of Defense, the software shall be classified as "Commercial Computer Software" and the Government shall have only "Restricted Rights" as defined in Clause 252.227-7013 (b) (3) of DFARs. Notwithstanding the foregoing, the authors grant the U.S. Government and others acting in its behalf permission to use and distribute the software in accordance with the terms specified in this license.

tcllib 1.13

This software is copyrighted by Ajuba Solutions and other parties.

The following terms apply to all files associated with the software unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute, and license this software and its documentation for any purpose, provided that existing copyright notices are retained in all copies and that this notice is included verbatim in any distributions. No written agreement, license, or royalty fee is required for any of the authorized uses.

Modifications to this software may be copyrighted by their authors and need not follow the licensing terms described here, provided that the new terms are clearly indicated on the first page of each file where they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. THIS SOFTWARE IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the U.S. government, the Government shall have only "Restricted Rights" in the software and related documentation as defined in the Federal Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2). If you are acquiring the software on behalf of the Department of Defense, the software shall be classified as "Commercial Computer Software" and the Government shall have only "Restricted Rights" as defined in Clause 252.227-7013 (c) (1) of DFARs. Notwithstanding the foregoing, the authors grant the U.S. Government and others acting in its behalf permission to use and distribute the software in accordance with the terms specified in this license.

tclreadline 2.1.0

Copyright (c) 1998 - 2000, Johannes Zellner <johannes@zellner.org>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of Johannes Zellner nor the names of contributors to this software may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

UI Widgets

The MIT License

Copyright (c) 2010 Filament Group, Inc

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell

copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Underscore.js v1.1.7

Underscore.js 1.1.7

(c) 2011 Jeremy Ashkenas, DocumentCloud Inc.

Underscore is freely distributable under the MIT license.

Portions of Underscore are inspired or borrowed from Prototype,

Oliver Steele's Functional, and John Resig's Micro-Templating.

For all details and documentation:

http://documentcloud.github.com/underscore

Underscore.js v1.1.7

Xelerated version (hxps 2.5.3 and earlier):

Copyright 2008-2012 (c) Xelerated AB.

This program may be used and/or copied only with the written permission from Xelerated AB, or in accordance with the terms and conditions stipulated in the agreement/contract under which the program has been supplied.

All rights reserved.

Underscore.js v1.1.7

Marvell version (hxps 2.6 and above):

(c), Copyright 2008-2013, Marvell International Ltd. (Marvell)

This code contains confidential information of Marvell.

No rights are granted herein under any patent, mask work right or copyright of Marvell or any third party. Marvell reserves the right at its sole discretion to request that this code be immediately returned to Marvell.

This code is provided "as is". Marvell makes no warranties, expressed, implied or otherwise, regarding its accuracy, completeness or performance.

Oracle Solaris Open Source Projects

http://solaris.java.net/license.html

About Pluribus Networks

Pluribus Networks delivers an open, controllerless software-defined network fabric for modern data centers, multi-site data centers and distributed cloud edge environments.

The Linux-based Netvisor® ONE operating system and the Unified Cloud Fabric™ have been purpose-built to deliver radically simplified networking and comprehensive visibility along with white box economics by leveraging hardware from our partners Dell EMC, Edgecore, Celestica and Champion ONE, as well as Pluribus' own Freedom™ Series of switches.

The Unified Cloud Fabric provides a fully automated underlay and virtualized overlay with comprehensive visibility and brownfield interoperability and is optimized to deliver rich and highly secure per-tenant services across data center sites with simple operations having no single point of failure.

Further simplifying network operations is Pluribus UNUM™, an agile, multi-functional web management portal that provides a rich graphical user interface to manage the Unified Cloud Fabric. UNUM has two key modules - UNUM Fabric Manager for provisioning and management of the fabric and UNUM Insight Analytics to quickly examine billions of flows traversing the fabric to ensure quality and performance.

Pluribus is deployed in more than 275 customers worldwide, including the 4G and 5G mobile cores of more than 75 Tier 1 service providers delivering mission-critical traffic across the data center for hundreds of millions of connected devices. Pluribus is networking, simplified.

For additional information contact Pluribus Networks at info@pluribusnetworks.com, or visit www.pluribusnetworks.com.

Follow us on Twitter @pluribusnet or on LinkedIn at https://www.linkedin.com/company/pluribus-networks/.

Corporate Headquarters

Pluribus Networks, Inc.
5201 Great America Parkway, Suite 422
Santa Clara, CA 95054
1-855-438-8638 / +1-650-289-4717

India Office

Pluribus Networks India Private Limited
Indiqube Brigade Square, 4th Floor
21, Cambridge Road
Bangalore 560008

Document Version - February 2022