MIB REFERENCE GUIDE

Brocade FastIron MIB Reference, 08.0.61

Supporting FastIron Software Release 08.0.61

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Document conventions

The document conventions describe text formatting conventions, command syntax conventions, and important notice formats used in Brocade technical documentation.

Notes, cautions, and warnings

Notes, cautions, and warning statements may be used in this document. They are listed in the order of increasing severity of potential hazards.

NOTE
A Note provides a tip, guidance, or advice, emphasizes important information, or provides a reference to related information.

ATTENTION
An Attention statement indicates a stronger note, for example, to alert you when traffic might be interrupted or the device might reboot.



CAUTION
A Caution statement alerts you to situations that can be potentially hazardous to you or cause damage to hardware, firmware, software, or data.



DANGER
A Danger statement indicates conditions or situations that can be potentially lethal or extremely hazardous to you. Safety labels are also attached directly to products to warn of these conditions or situations.

Text formatting conventions

Text formatting conventions such as boldface, italic, or Courier font may be used to highlight specific words or phrases.

Format	Description
bold text	Identifies command names.
	Identifies keywords and operands.
	Identifies the names of GUI elements.
	Identifies text to enter in the GUI.
italic text	Identifies emphasis.
	Identifies variables.
	Identifies document titles.
`Courier font`	Identifies CLI output.

Format	Description
	Identifies command syntax examples.

Command syntax conventions

Bold and italic text identify command syntax components. Delimiters and operators define groupings of parameters and their logical relationships.

Convention	Description
bold text	Identifies command names, keywords, and command options.
italic text	Identifies a variable.
value	In Fibre Channel products, a fixed value provided as input to a command option is printed in plain text, for example, **--show** WWN.
[ ]	Syntax components displayed within square brackets are optional. Default responses to system prompts are enclosed in square brackets.
{ **x** | **y** | **z** }	A choice of required parameters is enclosed in curly brackets separated by vertical bars. You must select one of the options. In Fibre Channel products, square brackets may be used instead for this purpose.
x | **y**	A vertical bar separates mutually exclusive elements.
< >	Nonprinting characters, for example, passwords, are enclosed in angle brackets.
...	Repeat the previous element, for example, *member*[*member*...].
\	Indicates a "soft" line break in command examples. If a backslash separates two lines of a command input, enter the entire command at the prompt without the backslash.

Brocade resources

Visit the Brocade website to locate related documentation for your product and additional Brocade resources.

White papers, data sheets, and the most recent versions of Brocade software and hardware manuals are available at www.brocade.com. Product documentation for all supported releases is available to registered users at MyBrocade.

Click the **Support** tab and select **Document Library** to access product documentation on MyBrocade or www.brocade.com. You can locate documentation by product or by operating system.

Release notes are bundled with software downloads on MyBrocade. Links to software downloads are available on the MyBrocade landing page and in the Document Library.

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- By sending your feedback to documentation@brocade.com

Provide the publication title, part number, and as much detail as possible, including the topic heading and page number if applicable, as well as your suggestions for improvement.

Contacting Brocade Technical Support

As a Brocade customer, you can contact Brocade Technical Support 24x7 online or by telephone. Brocade OEM customers should contact their OEM/solution provider.

Brocade customers

For product support information and the latest information on contacting the Technical Assistance Center, go to www.brocade.com and select **Support**.

If you have purchased Brocade product support directly from Brocade, use one of the following methods to contact the Brocade Technical Assistance Center 24x7.

Online	Telephone
Preferred method of contact for non-urgent issues: • Case management through the MyBrocade portal. • Quick Access links to Knowledge Base, Community, Document Library, Software Downloads and Licensing tools	Required for Sev 1-Critical and Sev 2-High issues: • Continental US: 1-800-752-8061 • Europe, Middle East, Africa, and Asia Pacific: +800-AT FIBREE (+800 28 34 27 33) • Toll-free numbers are available in many countries. • For areas unable to access a toll-free number: +1-408-333-6061

Brocade OEM customers

If you have purchased Brocade product support from a Brocade OEM/solution provider, contact your OEM/solution provider for all of your product support needs.

- OEM/solution providers are trained and certified by Brocade to support Brocade® products.
- Brocade provides backline support for issues that cannot be resolved by the OEM/solution provider.
- Brocade Supplemental Support augments your existing OEM support contract, providing direct access to Brocade expertise. For more information, contact Brocade or your OEM.
- For questions regarding service levels and response times, contact your OEM/solution provider.

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Supported hardware and software

This document provides information for the following devices that support the FastIron IP MIB:

Brocade FastIron devices running software release 8.0.40 and later:

- Brocade ICX 7750 Series
- Brocade ICX 7450 Series
- Brocade ICX 7250 Series
- Ruckus ICX 7150

What's new in this document

The following table includes descriptions of the new information added to this guide for the FastIron 08.0.61 release.

TABLE 1 Summary of Enhancements in FastIron OS 08.0.61

Feature	Description	Location
SNMP support for Ruckus ICX 7150.	Added support for Ruckus ICX 7150 .	• Refer to Registration MIB Definition on page 61 for SNMP new system OIDs for ICX7150 device. • Refer to Configured module table on page 109 for SNMP new module type for ICX7150 device. • Refer to Brocade Entity MIBs on page 420 for ICX7150 device. • Refer to Egress MIB counter table on page 138 and Egress MIB counter table on page 138 for a new queue type of egress counter introduced to ICX7150 device. • Refer to Traps for stacking on page 491 for a new trap introduced to when Self-Authenticated Upgrade license is changed.

Overview

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Introduction

The Management Information Base (MIB) is a database of objects that can be used by a Network Management System (NMS) to manage and monitor devices on the network. The MIB can be retrieved by a network management system that uses Simple Network Management Protocol (SNMP). The MIB structure determines the scope of management access allowed by a device. By using SNMP, a manager application can issue read or write operations within the scope of the MIB.

Obtaining and installing the IP MIBs

You can obtain the IP MIBs by downloading the file from the Brocade Technical Support website.

After obtaining the MIB, follow the instructions for your network management system (NMS) to be able to use the MIB with your system.

Downloading the MIB from the Technical Support website

To download the MIB from the Brocade Technical Support website, you must have a user name and password to access the Brocade support site and perform the following steps.

1. Go to http://www.brocade.com in your Web browser.
2. Log in with your user name and password.
3. Click the Downloads tab, and then click the Knowledge Portal link.
4. Log in to the Knowledge Portal, and then click the Software tab.
5. Click the product name. Each product release has a link for its corresponding MIB.
6. Navigate to the link for the MIB and either open the file or save it to disk.

Downloading the MIB from the Brocade FTP site

You can also download the MIB from the Knowledge Portal. Contact Brocade Technical Support for details. For the latest edition of this document, which contains the most up-to-date information, refer to the Product Manuals tab at http://www.brocade.com .

Importing IP MIB into a UNIX environment

You can import the IP MIB into third-party network management applications, such as HP OpenView. By default, the IP MIB files are in DOS ASCII format that uses the following characters:

- CR/LF - Indicates the end of a line
- ^Z - Indicates the end of a file

However, in a UNIX environment, the characters LF are used to indicate the end of a line. No character indicates the end of a file. Thus, if you need to import the IP MIB into a UNIX environment, you must use a tool that converts the DOS ASCII into UNIX ASCII, such as the dos2unix tool.

Reloading MIBs into a third-party NMS

Third-party network management systems, such as HP OpenView may have problems reloading MIB files. Ensure that you must upload the following when reloading the Brocade IP MIBs:

- Unload the Enterprise MIBs which were installed from the previous upgrade before reloading any new Enterprise MIB file.
- Unload the Standard MIBs which were installed from the previous upgrade before reloading any new Standard MIB file.

Standard objects

The IP MIB supports certain standard MIB objects, which are derived from Request for Comments (RFCs) documents. Refer to Supported Standard MIBs on page 21 for details on the supported standard MIBs.

Proprietary objects

Proprietary objects are MIB objects that have been developed specifically to manage Brocade IP devices. The object identifier (OID) for these MIB objects begin with *1.3.6.1.4.1.1991* . In this manual, the prefix *1.3.6.1.4.1.1991* is represented by the characters *brcdlp.*

For example, the OID for the object snChassis is *1.3.6.1.4.1.1991.1.1.1* , but documented as *brcdlp.1.1.1* in this manual.

SNMP support

The SNMPv3 engine is supported on the Brocade IP devices. The SNMPv3 engine can accept V1, V2c, and V3 packet formats.

NOTE
If the SNMP GET-BULK request with a high count of max-repetitions, then the device will respond with the total count of 10.

Supported Standard MIBs

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- RFC compliance - management 22
- IEEE standards 23
- LLDP MIB support 23
- LLDP\LLDP-MED MIB support 23
- RFC 1493: Definitions of Managed Objects for Bridges 24
- RFC 1757: Remote Network Monitoring Management Information Base 24
- RFC 1850: OSPF Version 2 Management Information Base 24
- RFC 2096: IP Forwarding Table MIB 25
- RFC 2233: The Interfaces Group MIB using SMIv2 26
- RFC 2515: Definitions of Managed Objects for ATM Management 26
- RFC 2787: Definitions of Managed Objects for the Virtual Router Redundancy Protocol 27
- RFC 2863: The Interfaces Group MIB 29
- RFC 3418: Management Information Base (MIB) for the SNMP 34
- RFC 4087: IP Tunnel MIB 34
- RFC 4133: Entity MIB (Version 3) 36
- RFC 4273: Definitions of Managed Objects for BGP-4 37
- draft-ietf-idr-bgp4-mibv2-12 MIB 39
- RFC 4293: Management Information Base for the Internet Protocol (IP) 47
- RFC 4836: MAU (Medium Attachment Unit) MIBs 50
- RFC 5676: Definitions of Managed Objects for Mapping SYSLOG Messages to Simple Network Management Protocol (SNMP) Notifications 51
- LLDP-MIB 51
- LLDP-EXT-DOT1-MIB 55
- LLDP-EXT-DOT3-MIB 57

Supported on Brocade FastIron devices

Brocade FastIron devices support the following RFCs:

- 2819 - Remote Network Monitoring Management Information Base
- 2863 - The Interfaces Group MIB
- 3411 - SNMP Framework MIB

  NOTE
  In RFC 3411, the snmpEngineBoots object supports the maximum value 9999.

- 3412 - Message Processing and Dispatching (MPD) for the SNMP MIB
- 3413 - SNMP Target MIB
- 3414 - User-Security Model for SNMPv3 MIB
- 3415 - View-based Access Control Model for SNMP MIB

  NOTE
  The GET/SET operation is not supported on **vacmViewTreeFamilyTable** , **vacmAccessTable** , and **vacmSecurityToGroupTable** of RFC 3415.

- 3418 - Management Information Base (MIB) for the SNMP (Refer to RFC 3418: Management Information Base (MIB) for the SNMP on page 34 for details.)
- 4188 - Definitions of Managed Objects for Bridges
- 4273 - Definitions of Managed Objects for BGP-4

The following standard MIBs are supported only on the Brocade FastIron X Series IPv6 devices:

- 2452 - IP Version 6 Management Information Base for the Transmission Control Protocol
- 2454 - IP Version 6 Management Information Base for the User Datagram Protocol
- 2465 - Management Information Base for IP Version 6: Textual Conventions and General Group

  NOTE
  RFC 2465 MIB support on BrocadeFastIron X Series IPv6 devices is limited to **ipv6NetToMediaTable** and **ipv6AddrTable** only. The SET operation is not supported on **ipv6IfDescr** object of **ipv6IfTable**.

- 2466 - Management Information Base for IP Version 6: ICMPv6 Group
- 2932 - IPv4 Multicast Routing MIB
- 2933 - Internet Group Management Protocol MIB
- 2934 - Protocol Independent Multicast MIB for IPv4
- 4001 - Textual Conventions for Internet Network Addresses
- 4363 - Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering, and Virtual LAN Extensions. (Refer to GUID-027622E0-B3B6-4031-8E95-8240ABF16DE1 for details.)

RFC compliance - management

- 854 - TELNET
- 1445 - Administrative Model for SNMPv2 - Support for View Subtree (partially supported)
- 1492 - TACACS+
- 2030 - SNTP
- 2068 - HTTP
- 2284 - PPP EAP - Support EAP extension
- 2578 - SNMPv2
- 2579 - Textual Conventions for SMIv2
- 2865 - RADIUS
- 2866 - RADIUS Accounting
- 2868 - RADIUS Attributes for Tunnel Protocol (partially supported)
- 2869 - RADIUS Extensions - EAP Message (type 79) and Message-Authenticator (type 80)
- 3164 - BSD Syslog Protocol
- 3176 - sFlow (Refer to GUID-CF07D266-9773-4F98-8484-DFEA8795EAF2 for details.)
- 3410 - SNMPvV3
- 3411 - Architecture for SNMP
- 3412 - Message Processing and Dispatching for SNMP
- 3413 - Simple Network Management Protocol (SNMP) Applications (partially supported)

- 3414 - USM for SNMPv3
- 3415 - VACM for SNMPvV3
- 3416 - Version 2 of the Protocol Operations for the SNMP
- 3579 - RADIUS Support for Extensible Authentication Protocol (EAP) (partially supported)
- 3584 - Coexistence between Version 1, Version 2, and Version 3 of the Internet-standard Network Management Framework
- 3815 - Managed Objects for the Multiprotocol Label Switching (MPLS) and Label Distribution Protocol (LDP)
- 3826 - The Advanced Encryption Standard (AES) Cipher Algorithm in the SNMP User-based Security Model
- 4188 - Definitions of Managed Objects for Bridges
- 4251 - The Secure Shell (SSH) Protocol Architecture
- 4252 - The Secure Shell (SSH) Authentication Protocol
- 4253 - The Secure Shell (SSH) Transport Protocol
- 4254 - The Secure Shell (SSH) Connection Protocol
- 4273 - Definitions of Managed Objects for BGP-4 (Refer to RFC 4273: Definitions of Managed Objects for BGP-4 on page 37 for details.)
- draft-ietf-idr-bgp4-mibv2-12 MIB on page 39 — Definitions of Managed Objects for the Fourth Version of Border Gateway Protocol (BGP-4), Second Version
- 4330 - Simple Network Time Protocol (SNTP) Version 4 for IPv4 and IPv6
- draft-grant-tacacs-02.txt - The TACACS+ Protocol
- draft-ietf-pwe3-pw-mib-11.txt - PW-STD-MIB Definitions (read-only)

IEEE standards

- GUID-08900058-D8D9-42A8-8F9C-930BBDB0DDB7 — IEEE 802.1ag CFM MIB
- GUID-C19DEAFE-DE7A-402A-BF71-0D858759B699— IEEE 802.1ag SECY MIB
- GUID-C1218260-AA43-4922-9F4D-F1BDBACA9F5C— IEEE 802.3 LAG MIB

LLDP MIB support

The following standard MIBs are supported on the Brocade ICX series devices with LLDP capability.

The following MIBs are in the 802.1AB standard, Station and Media Access Control Connectivity Discovery:

- LLDP-MIB on page 51
- LLDP-EXT-DOT1-MIB on page 55
- LLDP-EXT-DOT3-MIB on page 57

LLDP\LLDP-MED MIB support

The following standard MIBs are supported on the Brocade FastIron devices with LLDP\LLDP-MED capability.

- LLDP-EXT-DOT1-MIB
- LLDP-EXT-DOT3-MIB

The following MIB is in the ANSI/TIA-1057 standard, Link Layer Discovery Protocol (LLDP) for Media Endpoint Devices (MED):

- LLDP-EXT-MED-MIB

RFC 1493: Definitions of Managed Objects for Bridges

The following groups are supported on the Brocade ICX Series devices.

Object group name	Object identifier
dot1dBridge	1.3.6.1.2.1.17
dot1dBase	1.3.6.1.2.1.17.1
dot1dStp	1.3.6.1.2.1.17.2
dot1dTp	1.3.6.1.2.1.17.4

NOTE
The dot1dTpFdbTable (OID 1.3.6.1.2.1.17.4.4) in RFC 1493 is used to find dynamically learned MAC addresses. Statically configured MAC addresses are in the snFdbTable (refer to Forwarding database static table information on page 227).

NOTE
The SNMP MIB object dot1dStpPortTable (OID 1.3.6.1.2.1.17.2.15) does not display information for tagged ports that belong to an 802.1W RSTP configuration. The design of that MIB table is based on a Single STP standard, and does not accommodate Multiple STPs. Thus, the table displays information only for SSTP and for tagged and untagged ports.

NOTE
RFC 4188 has been converted to SMIv2 format. The object dot1dStpPortPathCost32 was added to support IEEE 802. The existing MIB dot1dStpPortPathCost has an upper range of 65535. Over that value, this MIB stays at the upper value and you should access dot1dStpPortPathCost32, which has a higher upper-range value.

RFC 1757: Remote Network Monitoring Management Information Base

Object group name	Object identifier
statistics	1.3.6.1.2.1.16.1
history	1.3.6.1.2.1.16.2
alarm	1.3.6.1.2.1.16.3
event	1.3.6.1.2.1.16.9

RFC 1850: OSPF Version 2 Management Information Base

The following tables from RFC 1850 are supported on the BrocadeFastIron devices.

Object	Object identifier	Supported?
ospfGeneralGroup	1.3.6.1.2.1.14.1	Yes
ospfAreaTable	1.3.6.1.2.1.14.2	Yes
ospfStubAreaTable	1.3.6.1.2.1.14.3	Yes. SET operation is not supported.
ospfLsdbTable	1.3.6.1.2.1.14.4	Yes
ospfHostTable	1.3.6.1.2.1.14.6	Yes. SET operation is not supported.
ospfIfTable	1.3.6.1.2.1.14.7	Yes
ospfIfMetricTable	1.3.6.1.2.1.14.8	Yes. SET operation is not supported.
ospfVirtIfTable	1.3.6.1.2.1.14.9	Yes
ospfNbrTable	1.3.6.1.2.1.14.10	Yes. SET operation is not supported.
ospfVirtNbrTable	1.3.6.1.2.1.14.11	Yes
ospfExtLsdbTable	1.3.6.1.2.1.14.12	Yes
ospfAreaAggregateTable	1.3.6.1.2.1.14.14	Yes
ospfTrap	1.3.6.1.2.1.14.16	Yes
ospfTrapControl	1.3.6.1.2.1.14.16.1	Yes

RFC 2096: IP Forwarding Table MIB

RFC 2096 is supported on the Brocade FastIron devices. RFC 2096 replaces RFC 1213.

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Object group name	Object identifier
ipCidrRouteDest	1.3.6.1.2.1.4.24.4.1.1
ipCidrRouteMask	1.3.6.1.2.1.4.24.4.1.2
ipCidrRouteTos	1.3.6.1.2.1.4.24.4.1.3
ipCidrRouteNextHop	1.3.6.1.2.1.4.24.4.1.4
ipCidrRouteIfIndex	1.3.6.1.2.1.4.24.4.1.5
ipCidrRouteType	1.3.6.1.2.1.4.24.4.1.6
ipCidrRouteProto	1.3.6.1.2.1.4.24.4.1.7
ipCidrRouteAge	1.3.6.1.2.1.4.24.4.1.8
ipCidrRouteInfo	1.3.6.1.2.1.4.24.4.1.9
ipCidrRouteNextHopAS	1.3.6.1.2.1.4.24.4.1.10
ipCidrRouteMetric1	1.3.6.1.2.1.4.24.4.1.11
ipCidrRouteMetric2	1.3.6.1.2.1.4.24.4.1.12
ipCidrRouteMetric3	1.3.6.1.2.1.4.24.4.1.13
ipCidrRouteMetric4	1.3.6.1.2.1.4.24.4.1.14
ipCidrRouteMetric5	1.3.6.1.2.1.4.24.4.1.15
ipCidrRouteStatus	1.3.6.1.2.1.4.24.4.1.16

RFC 2233: The Interfaces Group MIB using SMIv2

The interface entry table or ifXTable is based on RFC 2233. It contains information about the interfaces. Each sub-layer is considered to be an interface. This table contains entries for the ATM physical ports, as well as for any sub-interfaces that have been configured.

Object group name	Object identifier
ifMIB	1.3.6.1.2.1.31
ifMIBObjects	1.3.6.1.2.1.31.1
ifTable	1.3.6.1.2.1.2.2
ifXTable	1.3.6.1.2.1.31.1.1
ifStackTable	1.3.6.1.2.1.31.1.2
ifConformance	1.3.6.1.2.1.31.2

RFC 2515: Definitions of Managed Objects for ATM Management

Only the following object groups from RFC 2515 are supported on devices that support ATM.

ATM interface configuration parameters table

The ATM Interface Configuration Table from RFC 2515 contains the configuration of cell layers on the ATM interface of a local device. This information is in addition to the information contained in the ifTable.

The table contains one entry for each ATM interface port. AAL5 virtual channel connection performance statistics table on page 26 has the object identifier for the atmInterfaceConf table.

ATM interface transmission convergence sub-layer table

The ATM Interface Transmission Convergence sub-layer table from RFC 2515 contains configuration and state parameters of the ATM interfaces that use the Transmission Convergence sub-layer for carrying ATM cells over SONET/SDH or DS3. AAL5 virtual channel connection performance statistics table on page 26 has the object identifier for the atmInterfaceTC table.

AAL5 virtual channel connection performance statistics table

The ATM Adaptation Layer Type 5 (AAL5) virtual channel connection performance statistics table from RFC 2515 contains the performance statistics of a virtual channel connection at the interface associated with an AAL5 entity in an ATM host or ATM switch. Table 2 has the object identifier for the aal5Vcc table.

TABLE 2 Object group names and OIDs

Object group name	Object identifier
atmMIB	1.3.6.1.2.1.37
atmMIBObjects	1.3.6.1.2.1.37.1
atmInterfaceConfTable	1.3.6.1.2.1.37.1.2
atmInterfaceTCTable	1.3.6.1.2.1.37.1.4
aal5VccTable	1.3.6.1.2.1.37.1.12

TABLE 2 Object group names and OIDs (continued)

Object group name	Object identifier
atmTCMIB	1.3.6.1.2.1.37.3

Other object groups from this RFC are not supported.

RFC 2787: Definitions of Managed Objects for the Virtual Router Redundancy Protocol

The Brocade ICX 7250, Brocade ICX 7450, and Brocade ICX 7750 devices support RFC 2787, Definitions of Managed Objects for the Virtual Router Redundancy Protocol. The MIB objects of RFC 2787 is also supported on the Brocade FastIron devices.

NOTE
SNMP support for VRRP MIBs is limited only to IPv4 and not supported on IPv6. The Brocade FastIron devices support only VRRP version 2 MIBs.

NOTE
The following MIB tables in RFC 2787 supports SNMP GET, SNMP SET, and SNMP WALK operations on the Brocade FastIron devices. Refer to IP VRRP MIB Definition on page 295, for information on the proprietary MIB support.

The following are the VRRP MIB groups:

- vrrpOperations (OID: 1.3.6.1.2.1.68.1)
- vrrpStatistics (OID: 1.3.6.1.2.1.68.2)
- vrrpConformance (OID: 1.3.6.1.2.1.68.3) - This MIB group is not supported on the Brocade FastIron devices.

VRRP operations table (vrrpOperTable)

The operations table for a VRRP router that consists of a sequence (one or more conceptual rows) of vrrpOperEntry objects.

Object	Object identifier	Supported?
vrrpNodeVersion	1.3.6.1.2.1.68.1.1	Yes. Supports VRRP v2 and always return the OID value 2 on the Brocade FastIron devices.
vrrpNotificationCntl	1.3.6.1.2.1.68.1.2	Yes. Controls VRRP enable/disable syslogs on the Brocade FastIron devices.
vrrpOperTable	1.3.6.1.2.1.68.1.3	Yes
vrrpOperVrId	1.3.6.1.2.1.68.1.3.1.1	Yes
vrrpOperVirtualMacAddr	1.3.6.1.2.1.68.1.3.1.2	Yes
vrrpOperState	1.3.6.1.2.1.68.1.3.1.3	Yes
vrrpOperAdminState	1.3.6.1.2.1.68.1.3.1.4	Yes
vrrpOperPriority	1.3.6.1.2.1.68.1.3.1.5	Yes
vrrpOperIpAddrCount	1.3.6.1.2.1.68.1.3.1.6	Yes
vrrpOperMasterIpAddr	1.3.6.1.2.1.68.1.3.1.7	Not supported on the Brocade FastIron devices.
vrrpOperPrimaryIpAddr	1.3.6.1.2.1.68.1.3.1.8	Yes
vrrpOperAuthType	1.3.6.1.2.1.68.1.3.1.9	Yes. The value ipAuthenticationHeader(3)Type is not supported on the Brocade FastIron devices.

Object	Object identifier	Supported?
vrrpOperAuthKey	1.3.6.1.2.1.68.1.3.1.10	Yes. The value ipAuthenticationHeader(3)Type is not supported on the Brocade FastIron devices.
vrrpOperAdvertisementInterval	1.3.6.1.2.1.68.1.3.1.11	Yes
vrrpOperPreemptMode	1.3.6.1.2.1.68.1.3.1.12	Yes
vrrpOperVirtualRouterUpTime	1.3.6.1.2.1.68.1.3.1.13	Yes. Returns always zero on the Brocade FastIron devices.
vrrpOperProtocol	1.3.6.1.2.1.68.1.3.1.14	Yes
vrrpOperRowStatus	1.3.6.1.2.1.68.1.3.1.15	Yes

VRRP associated IP address table (vrrpAssoIpAddrTable)

The table of addresses associated with the virtual router.

Object	Object identifier	Supported?
vrrpAssoIpAddr	1.3.6.1.2.1.68.1.4.1.1	Yes
vrrpAssoIpAddrRowStatus	1.3.6.1.2.1.68.1.4.1.2	Yes

VRRP router statistics (vrrpStatistics)

The table of MIB objects represents the VRRP statistics.

Object	Object identifier	Supported?
vrrpRouterChecksumErrors	1.3.6.1.2.1.68.2.1	Yes
vrrpRouterVersionErrors	1.3.6.1.2.1.68.2.2	Yes
vrrpRouterVrIdErrors	1.3.6.1.2.1.68.2.3	Yes

VRRP router statistics (vrrpRouterStatsTable)

The table of MIB objects represents the total number of VRRP packets received with an invalid VRRP checksum value.

Object	Object identifier	Supported?
vrrpStatsBecomeMaster	1.3.6.1.2.1.68.2.4.1.1	Yes
vrrpStatsAdvertiseRcvd	1.3.6.1.2.1.68.2.4.1.2	Yes
vrrpStatsAdvertiseIntervalErrors	1.3.6.1.2.1.68.2.4.1.3	Yes
vrrpStatsAuthFailures	1.3.6.1.2.1.68.2.4.1.4	Yes
vrrpStatsIpTtlErrors	1.3.6.1.2.1.68.2.4.1.5	Yes
vrrpStatsPriorityZeroPktsRcvd	1.3.6.1.2.1.68.2.4.1.6	Yes
vrrpStatsPriorityZeroPktsSent	1.3.6.1.2.1.68.2.4.1.7	Yes
vrrpStatsInvalidTypePktsRcvd	1.3.6.1.2.1.68.2.4.1.8	Yes
vrrpStatsAddressListErrors	1.3.6.1.2.1.68.2.4.1.9	Yes
vrrpStatsInvalidAuthType	1.3.6.1.2.1.68.2.4.1.10	Yes
vrrpStatsAuthTypeMismatch	1.3.6.1.2.1.68.2.4.1.11	Yes
vrrpStatsPacketLengthErrors	1.3.6.1.2.1.68.2.4.1.12	Yes

RFC 2863: The Interfaces Group MIB

RFC 2863 is supported on the Brocade ICX series devices.

ifIndex

On the Brocade FastIron devices, there are 64 ifIndexes per module.

Table 3 details the Brocade FastIron index ranges, and they are subject to change from one release to the next.

TABLE 3 Brocade FastIron index ranges

	Brocade ICX 7250	Brocade ICX 7450	Brocade ICX 7750
Physical port	576	624	6x40 (240)
Management port	1	1	1
Virtual port	255 default, 512 maximum	255 default, 512 maximum	255 default, 512 maximum
GRE tunnel	32 default, ranges from 16 to 64	32 default, ranges from 16 to 64	32 default, ranges from 16 to 64
Loopback port	1 default	1 default	1 default
Trunk	8 maximum	8 maximum	8 maximum

ifIndex assignment persistance

The following interfaces have ifIndex assignments that are persistent across reboots and switchover operations:

- Physical ports
- Virtual ports
- Loopback ports

NOTE
The ifIndex should be derived from the snIfIndexLookupTable using the InterfaceId (in OID form), instead of assuming that the ifIndex will always stay persistent across reloads.

On the following interfaces, IfIndex assignments are not persistent across reboots and switchover operations:

- Trunk ports
- IP/GRE tunnels

ifType for interfaces

If the snmp-server legacy iftype command is configured on the device CLI, ifType returns **gigabitEthernet(117)** or **fastEther(62)**. If the command is not configured (or **no snmp-server legacy iftype** is used) then ifType returns the value **ethernetCsmacd(6)**.

Preserved SNMP statistics on interfaces

After configuring **snmp-server preserve-statistics,** the SNMP statistics listed in the following tables are separated from the CLI statistics. When the **clear statistics** *interface-type interface-id* command is entered, the command clears only CLI statistics, leaving the SNMP statistics intact.

IF-MIB (RFC 2863) ifTable objects

Statistics from the following objects in the ifTable are preserved when the **snmp-server preserve-statistics** command is enabled on the CLI.

ifTable objects	Syntax
ifIndex 1.3.6.1.2.1.2.2.1.1	InterfaceIndex
ifDescr 1.3.6.1.2.1.2.2.1.2	DsiplayString
ifType 1.3.6.1.2.1.2.2.1.3	IANAifType
ifMtu 1.3.6.1.2.1.2.2.1.4	Integer32
ifSpeed 1.3.6.1.2.1.2.2.1.5	Gauge32
ifAdminStatus 1.3.6.1.2.1.2.2.1.7	PhysAddress
ifOperStatus 1.3.6.1.2.1.2.2.1.8	Integer
ifInOctets 1.3.6.1.2.1.2.2.1.10	Counter32
ifInUcastPkts 1.3.6.1.2.1.2.2.1.11	Counter32
ifInNUcastPkts 1.3.6.1.2.1.2.2.1.12 **NOTE** This object is deprecated on the Brocade FastIron devices.	Counter32
ifInDiscards 1.3.6.1.2.1.2.2.1.13	Counter32
ifInErrors 1.3.6.1.2.1.2.2.1.14	Counter32
ifInUnknownProtos 1.3.6.1.2.1.2.2.1.15	Counter32
ifOutOctets 1.3.6.1.2.1.2.2.1.16	Counter32
ifOutUcastPkts 1.3.6.1.2.1.2.2.1.17	Counter32
ifOutNUcastPkts 1.3.6.1.2.1.2.2.1.18	Counter32
ifOutDiscards 1.3.6.1.2.1.2.2.1.19	Counter32

ifTable objects	Syntax
ifOutErrors 1.3.6.1.2.1.2.2.1.20	Counter32

IF-MIB (RFC 2863) ifXTable objects

Statistics from the following objects in the ifXTable are preserved when the **snmp-server preserve-statistics** command is enabled on the CLI.

ifXTable objects	Syntax
ifName 1.3.6.1.2.1.31.1.1.1.1	DisplayString
ifInMulticastPkts 1.3.6.1.2.1.31.1.1.1.2	Counter32
ifInBroadcastPkts 1.3.6.1.2.1.31.1.1.1.3	Counter32
ifOutMulticastPkts 1.3.6.1.2.1.31.1.1.1.4	Counter32
ifOutBroadcastPkts 1.3.6.1.2.1.31.1.1.1.5	Counter32
ifHCInOctets 1.3.6.1.2.1.31.1.1.1.6	Counter64
ifHCInUcastPkts 1.3.6.1.2.1.31.1.1.1.7	Counter64
ifHCInMulticastPkts 1.3.6.1.2.1.31.1.1.1.8	Counter64
ifHCInBroadcastPkts 1.3.6.1.2.1.31.1.1.1.9	Counter64
ifHCOutOctets 1.3.6.1.2.1.31.1.1.1.10	Counter64
ifHCOutUcastPkts 1.3.6.1.2.1.31.1.1.1.11	Counter64
ifHCOutMulticastPkts 1.3.6.1.2.1.31.1.1.1.12	Counter64
ifHCOutBroadcastPkts 1.3.6.1.2.1.31.1.1.1.13	Counter64
ifLinkUpDownTrapEnable 1.3.6.1.2.1.31.1.1.1.14 **NOTE** This object is used to control the generation of traps of the physical and GRE tunnel interfaces. By default, traps are enabled per interfaces for physical interfaces and disabled for tunnel interfaces.	Integer

ifXTable objects	Syntax
ifHighSpeed 1.3.6.1.2.1.31.1.1.1.15	Gauge32
ifPromiscuousMode 1.3.6.1.2.1.31.1.1.1.16	TruthValue
ifConnectorPresent 1.3.6.1.2.1.31.1.1.1.17	TruthValue
ifAlias 1.3.6.1.2.1.31.1.1.1.18	DisplayString
ifCounterDiscontinuityTime 1.3.6.1.2.1.31.1.1.1.19	TimeStamp

EthernetLike-MIB (RFC 2665) dot3StatsTable objects (Ethernet ports only)

Statistics from the following objects in the dot3StatsTable are preserved when the **snmp-server preserve-statistics** command is enabled on the CLI.

dot3StatsTable objects	Syntax
dot3StatsIndex 1.3.6.1.2.1.10.7.2.1.1	Interface Index
dot3StatsAlignmentErrors 1.3.6.1.2.1.10.7.2.1.2	Counter32
dot3StatsFCSErrors 1.3.6.1.2.1.10.7.2.1.3	Counter32
dot3StatsSingleCollisionFrames 1.3.6.1.2.1.10.7.2.1.4	Counter32
dot3StatsMultipleCollisionFrames 1.3.6.1.2.1.10.7.2.1.5	Counter32
dot3StatsSQETestErrors 1.3.6.1.2.1.10.7.2.1.6	Counter32
dot3StatsDeferredTransmissions 1.3.6.1.2.1.10.7.2.1.7	Counter32
dot3StatsLateCollisions 1.3.6.1.2.1.10.7.2.1.8	Counter32
dot3StatsExcessiveCollisions 1.3.6.1.2.1.10.7.2.1.9	Counter32
dot3StatsInternalMacTransmitErrors 1.3.6.1.2.1.10.7.2.1.10	Counter32
dot3StatsCarrierSenseErrors 1.3.6.1.2.1.10.7.2.1.11	Counter32
dot3StatsFrameTooLongs 1.3.6.1.2.1.10.7.2.1.13	Counter32

dot3StatsTable objects	Syntax
dot3StatsInternalMacReceiveErrors 1.3.6.1.2.1.10.7.2.1.16	Counter32
dot3StatsEtherChipSet 1.3.6.1.2.1.10.7.2.1.17 NOTE This object is deprecated.	Object Identifier
dot3StatsSymbolErrors 1.3.6.1.2.1.10.7.2.1.18	Counter32
dot3StatsDuplexStatus 1.3.6.1.2.1.10.7.2.1.19	Integer

RMON-MIB (RFC 2819) etherStatsTable objects (Ethernet ports only)

Statistics from the following objects in the etherStatsTable are preserved when the **snmp-server preserve-statistics** command is enabled on the CLI.

etherStatsTable objects	Syntax
etherStatsDropEvents 1.3.6.1.2.1.16.1.1.1.3	Counter32
etherStatsOctets 1.3.6.1.2.1.16.1.1.1.4	Counter32
etherStatsPkts 1.3.6.1.2.1.16.1.1.1.5	Counter32
etherStatsBroadcastPkts 1.3.6.1.2.1.16.1.1.1.6	Counter32
etherStatsMulticastPkts 1.3.6.1.2.1.16.1.1.1.7	Counter32
etherStatsCRCAlignErrors 1.3.6.1.2.1.16.1.1.1.8	Counter32
etherStatsUndersizePkts 1.3.6.1.2.1.16.1.1.1.9	Counter32
etherStatsOversizePkts 1.3.6.1.2.1.16.1.1.1.10	Counter32
etherStatsFragments 1.3.6.1.2.1.16.1.1.1.11	Counter32
etherStatsPkts64Octets 1.3.6.1.2.1.16.1.1.1.14	Counter32
etherStatsPkts65to127Octets 1.3.6.1.2.1.16.1.1.1.15	Counter32
etherStatsPkts128to255Octets 1.3.6.1.2.1.16.1.1.1.16	Counter32

etherStatsTable objects	Syntax
etherStatsPkts256to511Octets 1.3.6.1.2.1.16.1.1.1.17	Counter32
etherStatsPkts512to1023Octets 1.3.6.1.2.1.16.1.1.1.18	Counter32
etherStatsPkts1024to1518Octets 1.3.6.1.2.1.16.1.1.1.19	Counter32

RFC 3418: Management Information Base (MIB) for the SNMP

RFC 3418, Management Information Base (MIB) for the Simple Network Management Protocol (SNMP) is supported on the Brocade FastIron series devices.

Object group name	Object identifier	Supported?
sysDescr	1.3.6.1.2.1.1.1	Yes
sysObjectID	1.3.6.1.2.1.1.2	Yes
sysUpTime	1.3.6.1.2.1.1.3	Yes
sysContact	1.3.6.1.2.1.1.4	Yes
sysName	1.3.6.1.2.1.1.5	Yes
sysLocation	1.3.6.1.2.1.1.6	Yes
sysServices	1.3.6.1.2.1.1.7	Yes
sysORLastChange	1.3.6.1.2.1.1.8	Yes
sysORTable	1.3.6.1.2.1.1.9	Yes
sysORIndex	1.3.6.1.2.1.1.9.1.1	Yes
sysORID	1.3.6.1.2.1.1.9.1.2	Yes
sysORDescr	1.3.6.1.2.1.1.9.1.3	Yes
sysORUpTime	1.3.6.1.2.1.1.9.1.4	Yes

RFC 4087: IP Tunnel MIB

The following tables in RFC 4087 are supported on the BrocadeFastIron devices.

tunnelInetConfigTable

The tunnelInetConfigTable can be used to map a set of tunnel endpoints to the associated ifIndex value. Every row in the tunnelIfTable with a fixed destination address should have a corresponding row in the tunnelInetConfigTable.

Object names	Description
tunnelInetConfigAddressType	Read-only. Index value.
tunnelInetConfigLocalAddress	Read-only. Index value.
tunnelInetConfigRemoteAddress	Read-only. Index value.

Object names	Description
tunnelInetConfigEncapsMethod	Read-only. Index value. This is the encapsulation method used by the tunnel. Only 6to4 and GRE tunnel types are supported.
tunnelInetConfigID	Read-only. Index value. Always 1 in 6 to 4 tunnel type.
tunnelInetConfigIfIndex	Read-only.
tunnelInetConfigStatus	Read-only. Always returns active(1).
tunnelInetConfigStorageType	Read-only. Always returns nonVolatile(3).

ifTable support

Support for the tunnelIfTable and tunnelInetConfigTable affects the ifTable (RFC 1213).

Object names	Description
ifIndex	Read-only. Index value.
ifDescr	Read-only.
ifType	Read-only.
ifMtu	Read-only.
ifSpeed	Read-only.
ifPhysAddress	Not supported.
ifAdminStatus	Read-only.
ifOperStatus	Read-only.
ifLastChange	Read-only. Always returns 0.
ifSpecific	Read-only. This is a deprecated MIB object.
ifInOctets	Not supported.
ifInUcastPkts	Read-only. Reports total received packet count from tunnel.
ifInNUcastPkts	Not supported. Returns 0. This is a deprecated MIB object.
ifInDiscards	Not supported.
ifInErrors	Not supported.
ifInUnknownProtos	Not supported.
ifOutOctets	Read-only.
ifOutUcastPkts	Read-only. Reports total transmitted packet count to tunnel and total received packet count from tunnel.
ifOutNUcastPkts	Not supported. Returns 0. This is a deprecated MIB object.
ifOutDiscards	Not supported.
ifOutErrors	Not supported.
ifOutQLen	Read-only.

ifXTable

Support for the tunnelIfTable and tunnelInetConfigTable also affects ifXTable (RFC 2233).

Object names	Description
ifName	Read-only.

Object names	Description
ifInMulticastPkts	Read-only. Returns 0.
ifInBroadcastPkts	Not supported. Returns 0.
ifOutMulticastPkts	Read-only. Returns 0.
ifOutBroadcastPkts	Not supported. Returns 0.
ifHCInOctets	Read-only. Returns 0.
ifHCInUcastPkts	Read-only. Reports total received packet count from tunnel.
ifHCInBroadcastPkts	Not supported. Returns 0.
ifHCOutOctets	Read-only. Returns 0.
ifHCOutUcastPkts	Read-only. Reports total received packet count from tunnel.
ifHCOutMulticastPkts	Not supported. Returns 0.
ifHCOutBroadcastPkts	Not supported. Returns 0.
ifLinkUpDownTrapEnable	Read-only. Always returns disabled(2).
ifHighSpeed	Read-only.
ifPromiscuousMode	Read-only. Always returns true(1).
ifConnectorPresent	Read-only. Always returns false(2).
ifAlias	Read-only.
ifCounterDiscontinuityTime	Read-only.

RFC 4133: Entity MIB (Version 3)

RFC 4133, Entity MIB (Version 3) is supported on the Brocade ICX 7250, Brocade ICX 7450, Brocade ICX 7750, and Brocade ICX 7150 devices.

Object group name	Object identifier	Supported?
entPhysicalTable	1.3.6.1.2.1.47.1.1.1	Yes
entPhysicalIndex	1.3.6.1.2.1.47.1.1.1.1.1	Yes. Not-accessible.
entPhysicalDescr	1.3.6.1.2.1.47.1.1.1.1.2	Yes
entPhysicalVendorType	1.3.6.1.2.1.47.1.1.1.1.3	Yes. **NOTE** This object is defined for assigning vendor type OIDs (For example, brcdIp.1.17.1.3.2.2 and brcdIp. 1.17.1.5.2) to various physical entities like chassis, power supply, Fan, MP, SFM, and various types of LP modules.
entPhysicalContainedIn	1.3.6.1.2.1.47.1.1.1.1.4	Yes
entPhysicalClass	1.3.6.1.2.1.47.1.1.1.1.5	Yes
entPhysicalParentRelPos	1.3.6.1.2.1.47.1.1.1.1.6	Yes
entPhysicalName	1.3.6.1.2.1.47.1.1.1.1.7	Yes
entPhysicalHardwareRev	1.3.6.1.2.1.47.1.1.1.1.8	Yes.

Object group name	Object identifier	Supported?
		NOTE The information is available only for MP, SFM, and LP modules.
entPhysicalFirmwareRev	1.3.6.1.2.1.47.1.1.1.1.9	Yes. **NOTE** The information is available only for MP, SFM, and LP modules. **NOTE** The information is displayed for the power supply of the Brocade ICX devices.
entPhysicalSoftwareRev	1.3.6.1.2.1.47.1.1.1.1.10	Yes. **NOTE** The information is available only for MP, SFM, and LP modules.
entPhysicalSerialNum	1.3.6.1.2.1.47.1.1.1.1.11	Yes. Read-only.
entPhysicalMfgName	1.3.6.1.2.1.47.1.1.1.1.12	Yes
entPhysicalModelName	1.3.6.1.2.1.47.1.1.1.1.13	Yes
entPhysicalAlias	1.3.6.1.2.1.47.1.1.1.1.14	Yes. Read-only.
entPhysicalAssetID	1.3.6.1.2.1.47.1.1.1.1.15	Yes. Read-only.
entPhysicalIsFRU	1.3.6.1.2.1.47.1.1.1.1.16	Yes
entPhysicalMfgDate	1.3.6.1.2.1.47.1.1.1.1.17	Yes
entPhysicalUris	1.3.6.1.2.1.47.1.1.1.1.18	Yes. Read-only.
entPhysicalContainsTable	1.3.6.1.2.1.47.1.3.3	Yes
entLastChangeTime	1.3.6.1.2.1.47.1.4.1	Yes
entConfigChange	1.3.6.1.2.1.47.2.0.1	Yes **NOTE** This notification is generated when the value of entLastChangeTime is changed, and occurs if the time interval is 5 mins between the changes in the entLastChangeTime.

RFC 4273: Definitions of Managed Objects for BGP-4

NOTE

The definitions of managed objects for BGP-4 is used instead of RFC 1567, Definitions of Managed Objects for the Fourth Version of the Border Gateway Protocol (BGP-4) using SMIv2. RFC 1657 has been obsoleted by RFC 4273.

Object group name	Object identifier	Notes
bgpVersion	1.3.6.1.2.1.15.1	The vector of the supported BGP version numbers.

Object group name	Object identifier	Notes
bgpLocalAS	1.3.6.1.2.1.15.2	The local autonomous system number.
bgpPeerTable	1.3.6.1.2.1.15.3	The bgpPeerRemoteAs object is the remote autonomous system number received in the BGP OPEN message.
bgpPeerEntry	1.3.6.1.2.1.15.3.1	-
bgpPeerIdentifier	1.3.6.1.2.1.15.3.1.1	-
bgpPeerState	1.3.6.1.2.1.15.3.1.2	-
bgpPeerAdminStatus	1.3.6.1.2.1.15.3.1.3	-
bgpPeerNegotiatedVersion	1.3.6.1.2.1.15.3.1.4	-
bgpPeerLocalAddr	1.3.6.1.2.1.15.3.1.5	-
bgpPeerLocalPort	1.3.6.1.2.1.15.3.1.6	-
bgpPeerRemoteAddr	1.3.6.1.2.1.15.3.1.7	-
bgpPeerRemotePort	1.3.6.1.2.1.15.3.1.8	-
bgpPeerRemoteAs	1.3.6.1.2.1.15.3.1.9	-
bgpPeerInUpdates	1.3.6.1.2.1.15.3.1.10	-
bgpPeerOutUpdates	1.3.6.1.2.1.15.3.1.11	-
bgpPeerInTotalMessages	1.3.6.1.2.1.15.3.1.12	-
bgpPeerOutTotalMessages	1.3.6.1.2.1.15.3.1.13	-
bgpPeerLastError	1.3.6.1.2.1.15.3.1.14	-
bgpPeerFsmEstablishedTransitions	1.3.6.1.2.1.15.3.1.15	-
bgpPeerFsmEstablishedTime	1.3.6.1.2.1.15.3.1.16	-
bgpPeerConnectRetryInterval	1.3.6.1.2.1.15.3.1.17	-
bgpPeerHoldTime	1.3.6.1.2.1.15.3.1.18	-
bgpPeerKeepAlive	1.3.6.1.2.1.15.3.1.19	-
bgpPeerHoldTimeConfigured	1.3.6.1.2.1.15.3.1.20	-
bgpPeerKeepAliveConfigured	1.3.6.1.2.1.15.3.1.21	-
bgpPeerMinASOriginationInterval	1.3.6.1.2.1.15.3.1.22	-
bgpPeerMinRouteAdvertisementInterval	1.3.6.1.2.1.15.3.1.23	-
bgpPeerInUpdateElapsedTime	1.3.6.1.2.1.15.3.1.24	-
bgpIdentifier	1.3.6.1.2.1.15.4	-
bgp4PathAttrTable	1.3.6.1.2.1.15.6	-
bgp4PathAttrEntry	1.3.6.1.2.1.15.6.1	-
bgp4PathAttrPeer	1.3.6.1.2.1.15.6.1.1	-
bgp4PathAttrIpAddrPrefixLen	1.3.6.1.2.1.15.6.1.2	-
bgp4PathAttrIpAddrPrefix	1.3.6.1.2.1.15.6.1.3	-
bgp4PathAttrOrigin	1.3.6.1.2.1.15.6.1.4	-
bgp4PathAttrASPathSegment	1.3.6.1.2.1.15.6.1.5	This object is the sequence of AS path segments. Each AS path segment is represented by a triplet of *type* , *length* , and *value* .
bgp4PathAttrNextHop	1.3.6.1.2.1.15.6.1.6	-
bgp4PathAttrMultiExitDisc	1.3.6.1.2.1.15.6.1.7	-
bgp4PathAttrLocalPref	1.3.6.1.2.1.15.6.1.8	-
bgp4PathAttrAtomicAggregate	1.3.6.1.2.1.15.6.1.9	-

Object group name	Object identifier	Notes
bgp4PathAttrAggregatorAS	1.3.6.1.2.1.15.6.1.10	The AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
bgp4PathAttrAggregatorAddr	1.3.6.1.2.1.15.6.1.11	-
bgp4PathAttrCalcLocalPref	1.3.6.1.2.1.15.6.1.12	-
bgp4PathAttrBest	1.3.6.1.2.1.15.6.1.13	-
bgp4PathAttrUnknown	1.3.6.1.2.1.15.6.1.14	-

draft-ietf-idr-bgp4-mibv2-12 MIB

The following section of draft-ietf-idr-bgp4-mibv2-12 defines MIB objects for managing the Border Gateway Protocol, version 4.

BGP4v2 per-peer session management information

The following table displays information about the BGP4v2 per-peer session management information group. Use the **show ip bgp neighbor***id* command to display the BGP4v2 per-peer session management information.

Name, OID, and syntax	Access	Description
bgp4V2PeerTable brcdIp.3.5.1.1.2	None	The BGP4v2 per-peer table. The table contains one entry per BGP peer and the information about the connections with the BGP peers.
bgp4V2PeerInstance brcdIp.3.5.1.1.2.1.1 Syntax: Unsigned32	None	Specifies the routing instance index. Some of the BGP implementations permit the creation of multiple instances of a BGP routing process. The implementations that do not support multiple routing instances, return 1 for this object. The VRF index is used to identify the peer instance. The VRF index is a zero-based index.
bgp4V2PeerLocalAddrType brcdIp.3.5.1.1.2.1.2 Syntax: InetAddressType	None	Specifies the address family of a local-end peering session. The following address types are supported: • ipv4(1) • ipv6(2)
bgp4V2PeerLocalAddr brcdIp.3.5.1.1.2.1.3 Syntax: InetAddress	None	Specifies the local IP address of the received BGP connection.
bgp4V2PeerRemoteAddrType brcdIp.3.5.1.1.2.1.4 Syntax: InetAddressType	None	Specifies the address family of a remote end peering session. The following address types are supported: • ipv4(1) • ipv6(2)
bgp4V2PeerRemoteAddr brcdIp.3.5.1.1.2.1.5 Syntax: InetAddress	None	Specifies the remote IP address of the received BGP peer.
bgp4V2PeerLocalPort brcdIp.3.5.1.1.2.1.6	Read-only	Indicates the local port for the TCP connection between the BGP peers.

Name, OID, and syntax	Access	Description
Syntax: InetPortNumber		
bgp4V2PeerLocalAs brcdIp.3.5.1.1.2.1.7 Syntax: InetAutonomousSystemNumber	Read-only	Indicates a Autonomous System (AS) is the peering session that represents itself to the remote peer. Some implementations of BGP can represent itself as multiple autonomous systems.
bgp4V2PeerLocalIdentifier brcdIp.3.5.1.1.2.1.8 Syntax: Bgp4V2IdentifierTC	Read-only	Specifies the BGP identifier of the local system for the peering session. It is required that all the values of bgp4V2PeerLocalIdentifier and bgp4V2PeerInstance objects must be identical.
bgp4V2PeerRemotePort brcdIp.3.5.1.1.2.1.9 Syntax: InetPortNumber	Read-only	Specifies the remote port for the TCP connection between the BGP peers. **NOTE** The objects bgp4V2PeerLocalAddr, bgp4V2PeerLocalPort, bgp4V2PeerRemoteAddr, and bgp4V2PeerRemotePort provides the appropriate references to the standard MIB TCP connection table or to the IPv6 TCP MIB as referenced in RFC 4022.
bgp4V2PeerRemoteAs brcdIp.3.5.1.1.2.1.10 Syntax: InetAutonomousSystemNumber	Read-only	Specifies the remote AS number received in the BGP OPEN message.
bgp4V2PeerRemoteIdentifier brcdIp.3.5.1.1.2.1.11 Syntax: Bgp4V2IdentifierTC	Read-only	Specifies the BGP identifier of the received remote BGP peer. The entry received must be 0.0.0.0 unless the bgp4V2PeerState is in the openconfirm(5) or in established(6) state.
bgp4V2PeerAdminStatus brcdIp.3.5.1.1.2.1.12 Syntax: Integer	Read-only	Specifies whether the BGP finite state machine (FSM) for the remote peer is halted or running, the BGP FSM for a remote peer is halted after processing a stop event. Likewise, if in the running state after processing a start event. The bgp4V2PeerState is in the idle state when the FSM is halted. Although, some extensions such as Graceful Restart leaves the peer in the idle state with the FSM running. • halted(1) • running(2)
bgp4V2PeerState brcdIp.3.5.1.1.2.1.13 Syntax: Integer	Read-only	Indicates the BGP peer connection states: • idle(1) • connect(2) • active(3) • opensent(4) • openconfirm(5) • established(6)
bgp4V2PeerDescription brcdIp.3.5.1.1.2.1.14 Syntax: SnmpAdminString	Read-only	Specifies a user-configured description identifying the peer. The object must contain a description that is unique within the existing BGP instance for the peer.

BGP4v2 per-peer error management information

The following table contains the BGP4v2 per-peer error management information objects.

Name, OID, and syntax	Access	Description
bgp4V2PeerErrorsTable brcdIp.3.5.1.1.3	None	On a per-peer basis, the table reflects the last protocol-defined error encountered and reported on the peer session.
bgp4V2PeerLastErrorCodeReceived brcdIp.3.5.1.1.3.1.1 Syntax: Unsigned32	Read-only	Specifies the last error code received from the peer through a notification message on the connection. The field is zero(0), if no error occurs.
bgp4V2PeerLastErrorSubCodeReceived brcdIp.3.5.1.1.3.1.2 Syntax: Unsigned32	Read-only	Specifies the last error subcode received from the peer through a notification message on the connection. The field is zero(0), if no error occurs.
bgp4V2PeerLastErrorReceivedTime brcdIp.3.5.1.1.3.1.3 Syntax: TimeStamp	Read-only	Indicates the time stamp when the last notification is received from the peer.
bgp4V2PeerLastErrorReceivedText brcdIp.3.5.1.1.3.1.4 Syntax: SnmpAdminString	Read-only	Specifies the implementation-specific explanation of the error reported.
bgp4V2PeerLastErrorReceivedData brcdIp.3.5.1.1.3.1.5 Syntax: Octet String	Read-only	Specifies the data of the last error code received by the peer. As per RFC 2578, some implementations have limitations dealing with Octet Strings that are larger than 255. So, the data is truncated.
bgp4V2PeerLastErrorCodeSent brcdIp.3.5.1.1.3.1.6 Syntax: Unsigned32	Read-only	Specifies the last error code sent to the peer through a notification message on the connection. The field is zero(0), if no error occurs.
bgp4V2PeerLastErrorSubCodeSent brcdIp.3.5.1.1.3.1.7 Syntax: Unsigned32	Read-only	Specifies the last error subcode sent to the peer through a notification message on the connection. The field is zero(0), if no error occurs.
bgp4V2PeerLastErrorSentTime brcdIp.3.5.1.1.3.1.8 Syntax: TimeStamp	Read-only	Indicates the time stamp when the last notification is sent to the peer.
bgp4V2PeerLastErrorSentText brcdIp.3.5.1.1.3.1.9 Syntax: SnmpAdminString	Read-only	Specifies the implementation-specific explanation of the error reported.
bgp4V2PeerLastErrorSentData brcdIp.3.5.1.1.3.1.10 Syntax: Octet String	Read-only	Specifies the data of the last error code sent to the peer. As per RFC 2578, some implementations have limitations dealing with Octet Strings that are larger than 255. So, the data is truncated.

BGP4v2 per-peer event times table

The following table contains the BGP4v2 per-peer event times-related objects.

Name, OID, and syntax	Access	Description
bgp4V2PeerEventTimesTable brcdIp.3.5.1.1.4	None	A table reporting the per-peering session amount of time elapsed and update events while the peering session advanced into the established state.
bgp4V2PeerFsmEstablishedTime brcdIp.3.5.1.1.4.1.1 Syntax: Gauge32	Read-only	Indicates how long (in seconds) the peer has been in the established state or how long since the peer was last in the established state. The value of the object is set to zero(0) when a new peer is configured or when the router is booted. The value remains zero if the peer has never reached the established state.
bgp4V2PeerInUpdatesElapsedTime brcdIp.3.5.1.1.4.1.2 Syntax: Gauge32	Read-only	Indicates the elapsed time (in seconds) since the last BGP update message was received from the peer. The value of the object is set to zero(0) each time bgpPeerInUpdates is incremented.

BGP4v2 NLRI table

The following table contains the BGP4v2 Network Layer Reachability Information (NLRI) objects. Use the **show ip bgp routes detail** command to display all the BGP attributes of a route, such as communities. Use the **show ip bgp routes** command to display the entries learned through NLRI available in the update.

Name, OID, and syntax	Access	Description
bgp4V2NlriTable brcdIp.3.5.1.1.9	None	The BGP4v2-received path attribute table contains information about paths to destination networks received from all the BGP4 peers. Collectively, this represents the Adj-Ribs-In. For NLRI, the route in which the bgp4V2NlriBest object is true represents the route that is installed in the LocRib from the Adj-Ribs-In.
bgp4V2NlriIndex brcdIp.3.5.1.1.9.1.1 Syntax: Unsigned32	None	Specifies the index that allows multiple instances of a base prefix for a certain AFI-SAFI from a given peer. This is used to allow a peer in future implementations to send more than a single route instance and allow extensions that extend an NLRI field to send the same prefix while utilizing other extension-specific information. The index is always 1.
bgp4V2NlriAfi brcdIp.3.5.1.1.9.1.2 Syntax: Bgp4V2AddressFamilyIdentifierTC	None	Specifies the address family of the prefix for NLRI. **NOTE** It is not necessary that an AFI definition is equivalent to an InetAddressType.
bgp4V2NlriSafi brcdIp.3.5.1.1.9.1.3 Syntax: Bgp4V2SubsequentAddressFamilyIdentifierTC	None	Specifies the subsequent address family of the prefix for NLRI.
bgp4V2NlriPrefixType brcdIp.3.5.1.1.9.1.4 Syntax: InetAddressType	None	Specifies the type of the IP address prefix in an NLRI field. The value of the object is derived from the appropriate value from the bgp4V2NlriAfi field. Where an appropriate

Name, OID, and syntax	Access	Description
		InetAddressType is not available, the value of the object is unknown(0).
bgp4V2NlriPrefix brcdIp.3.5.1.1.9.1.5 Syntax: InetAddress	None	Indicates an IP address prefix in an NLRI field. The object is an IP address containing the prefix with the length specified by the bgp4V2NlriPrefixLen object. Any bits beyond the length specified by the bgp4V2NlriPrefixLen object are set to zero(0).
bgp4V2NlriPrefixLen brcdIp.3.5.1.1.9.1.6 Syntax: InetAddressPrefixLength	None	Indicates the length in bits of the address prefix in an NLRI field.
bgp4V2NlriBest brcdIp.3.5.1.1.9.1.7 Syntax: TruthVal	Read-only	Indicates whether the route is chosen as the best BGP4 route for the destination.
bgp4V2NlriCalcLocalPref brcdIp.3.5.1.1.9.1.8 Syntax: Unsigned32	Read-only	Specifies the degree of preference calculated by the receiving BGP4 speaker for an advertised route. The value of the object is zero (0) where the prefix is ineligible.
bgp4V2NlriOrigin brcdIp.3.5.1.1.9.1.9 Syntax: Integer	Read-only	Specifies the ultimate origin of the path information: • igp(1) - The networks that are interior. • egp(2) - The networks learned through an Exterior Gateway Protocol (EGP). • incomplete(3) - The networks that are learned by some other means.
bgp4V2NlriNextHopAddrType brcdIp.3.5.1.1.9.1.10 Syntax: InetAddressType	Read-only	Specifies the address family of the address for the border router that is used to access the destination network.
bgp4V2NlriNextHopAddr brcdIp.3.5.1.1.9.1.11 Syntax: InetAddress	Read-only	Specifies the address of the border router that is used to access the destination network. The address is the next-hop address received in the update packet associated with the prefix: • For RFC 2545 style double nexthops, the object contains the global scope next hop. • For bgpPathAttrLinkLocalNextHop, the object contains the link local scope next hop, if it is present. • For bgp4V2NlriNextHopAddr, the object contains the link local next hop, if a mechanism is developed to use only a link local next hop.
bgp4V2NlriLinkLocalNextHopAddrType brcdIp.3.5.1.1.9.1.12 Syntax: InetAddressType	Read-only	Specifies the address type for an IPv6 link local address. The object is present only when receiving RFC 2545 style double nexthops. The object is present optionally in BGP implementations that do not support IPv6. The

Name, OID, and syntax	Access	Description
		value of the object is unknown(0) when there is no IPv6 link local next hop present.
bgp4V2NlriLinkLocalNextHopAddr brcdIp.3.5.1.1.9.1.13 Syntax: InetAddress	Read-only	Indicates the value that contains an IPv6 link local address and is present only when receiving RFC 2545 style double nexthops. The object is present optionally in BGP implementations that do not support IPv6. The length of the object is zero(0) when there is no IPv6 link local next hop present.
bgp4V2NlriLocalPrefPresent brcdIp.3.5.1.1.9.1.14 Syntax: TruthVal	Read-only	Indicates if the value is true when the LOCAL_PREF value is sent in the UPDATE message. The value is always true.
bgp4V2NlriLocalPref brcdIp.3.5.1.1.9.1.15 Syntax: Unsigned32	Read-only	Specifies the degree of preference of the originating BGP4 speaker for an advertised route.
bgp4V2NlriMedPresent brcdIp.3.5.1.1.9.1.16 Syntax: TruthVal	Read-only	Indicates if the value is true when a Multi-Exit Discriminator (MED) value is sent in the UPDATE message.
bgp4V2NlriMed brcdIp.3.5.1.1.9.1.17 Syntax: Unsigned32	Read-only	Indicates the metric used to discriminate between multiple exit points to an adjacent autonomous system. When an MED value is absent but has a calculated default value, the object will contain the calculated value.
bgp4V2NlriAtomicAggregate brcdIp.3.5.1.1.9.1.18 Syntax: TruthVal	Read-only	Indicates if the value is true when the ATOMIC_AGGREGATE path attribute is present and indicates that NLRI cannot be made more specific.
bgp4V2NlriAggregatorPresent brcdIp.3.5.1.1.9.1.19 Syntax: TruthVal	Read-only	Indicates if the value is true when the AGGREGATOR path attribute is sent in the UPDATE message.
bgp4V2NlriAggregatorAS brcdIp.3.5.1.1.9.1.20 Syntax: InetAutonomousSystemNumber	Read-only	Specifies an AS number of the last BGP4 speaker that performed route aggregation. The value of the object is zero(0) when the bgp4V2NlriAggregatorPresent object is false.
bgp4V2NlriAggregatorAddr brcdIp.3.5.1.1.9.1.21 Syntax: Bgp4V2IdentifierTC	Read-only	Specifies the IP address of the last BGP4 speaker that performed route aggregation. The value of the object is 0.0.0.0 when the bgp4V2NlriAggregatorPresent object is false.
bgp4V2NlriAsPathCalcLength brcdIp.3.5.1.1.9.1.22 Syntax: Unsigned32	Read-only	Indicates the value that represents the calculated length of the AS-Path according to the rules in the BGP specification. The value is used in route selection.
bgp4V2NlriAsPathString brcdIp.3.5.1.1.9.1.23 Syntax: SnmpAdminString	Read-only	Specifies a string depicting the AS-Path to the network, which is received from the peer that is advertised. The format of the string is implementation-dependent and it must be designed for operator readability.

Name, OID, and syntax	Access	Description
		SnmpAdminString is capable of representing a maximum of 255 characters. This may lead to the string being truncated in the presence of a large AS-Path. NOTE It is recommended that when the content of the object is truncated, the final three octets should be reserved for the ellipses string (...). The bgp4V2NlriAsPath object gives access to the full AS-Path.
bgp4V2NlriAsPath brcdIp.3.5.1.1.9.1.24 Syntax: Octet String	Read-only	Specifies the contents of the BGP4 AS_PATH attribute to provide an authorized form of the BGP4 AS_PATH along with the human-readable bgp4V2NlriAsPathString object that can be truncated. The object is parsed using the rules defined for four-octet autonomous systems as defined in RFC 4893. RFC 4271 and RFC 5065 define the general format of the AS_PATH attribute and its code points. The AS_PATH attribute is composed of a sequence of AS segments. Each AS segment is represented in the following fields: • The path segment type and path segment are one octet in length each. Any one of the following can represent the path segment type field: – 1 - AS_SET (RFC 4721) – 2 - AS_SEQUENCE (RFC 4721) – 3 - AS_CONFED_SEQUENCE (RFC 3065) – 4 - AS_CONFED_SET (RFC 3065) • The path segment length field contains the number of autonomous systems (not the number of octets) in the path segment value field. • The path segment value field contains one or more autonomous system numbers, each encoded as a four octet length field in network-byte order.

Name, OID, and syntax	Access	Description
		NOTE An SNMP agent can truncate the objects that are less than its maximum theoretical length of 4072 octets. It is recommended that when such truncation occurs on the boundary of an encoded AS, the partial AS be discarded from the object and the object size adjusted accordingly. When such truncation happens, either alone or in conjunction with the truncation of a partially encoded AS, it will yield an empty path segment value. In that case, the path segment type and path segment length components of the truncated AS_PATH attributue are also discarded and the object size is adjusted accordingly.
bgp4V2NlriPathAttrUnknown brcdIp.3.5.1.1.9.1.25 Syntax: Octet String	Read-only	Specifies the path attributes that are not understood by the implementation are presented. These path attributes use the type, length, and value encoding from RFC 4271. NOTE An SNMP agent can truncate the objects that are less than its maximum theoretical length of 4072 octets.
bgp4V2NlriRxPathIdentifier brcdIp.3.5.1.1.9.1.26 Syntax: String	Read-only	Path identifier that identifies the incoming path. In order for a BGP speaker to advertise multiple paths for the same address prefix, a new identifier (Path Identifier) is introduced so that a particular path for an address prefix can be identified by the combination of the address prefix and the Path Identifier. The assignment of the Path Identifier for a path by a BGP speaker is purely a local matter. In order to carry the Path Identifier in an UPDATE message, the existing NLRI encodings are extended by prepending the Path Identifier field, which is of four-octets.
bgp4V2NlriTxPathIdentifier brcdIp.3.5.1.1.9.1.27 Syntax: String	Read-only	Path identifier that identifies the outgoing path. In order for a BGP speaker to advertise multiple paths for the same address prefix, a new identifier (Path Identifier) needs to be introduced so that a particular path for an address prefix can be identified by the combination of the address prefix and the Path Identifier. The assignment of the Path Identifier for a path by a BGP speaker is purely a local matter. In order to carry the Path Identifier in an UPDATE message, the existing NLRI encodings are extended by prepending the Path Identifier field, which is of four-octets.

RFC 4293: Management Information Base for the Internet Protocol (IP)

RFC 4293, Management Information Base for the Internet Protocol (IP) obsoletes the following:

- RFC 2011: SNMPv2 Management Information Base for the Internet Protocol using SMIv2
- RFC 2465: Management Information Base for IP Version 6: Textual Conventions and General Group
- RFC 2466: Management Information Base for IP Version 6: ICMPv6 Group

The following table summarizes the tables from the RFC that are supported.

Object group name	Object identifier	Supported IP version	Access
IP scalar variables	1.3.6.1.2.1.4	IPv4 and IPv6	Only the following objects have read-write access: • ipDefaultTTL • ipv6IpDefaultHopLimit • ipv6IpForwarding All other scalar variables are read-only. **NOTE** GET operation is not supported on the Brocade FastIron devices for the ipv6InterfaceTableLastChange scalar object.
ipNetToMediaTable	1.3.6.1.2.1.4.22	IPv4	All objects are read-only.
ipv4InterfaceTable	1.3.6.1.2.1.4.28	IPv4	All objects are read-only.
ipv6InterfaceTable	1.3.6.1.2.1.4.30	IPv6	All objects are read-only.
ipSystemStatsTable			
ipSystemStatsInOctets	1.3.6.1.2.1.4.31.1.1.5	None	Always returns 0.
ipSystemStatsHCInOctets	1.3.6.1.2.1.4.31.1.1.6	None	Always returns 0.
ipSystemStatsInAddrErrors	1.3.6.1.2.1.4.31.1.1.9	IPv4	IPv6 returns 0.
ipSystemStatsInUnknownProtos	1.3.6.1.2.1.4.31.1.1.10	IPv4	IPv6 returns 0.
ipSystemStatsInTruncatedPkts	1.3.6.1.2.1.4.31.1.1.11	IPv6	IPv4 returns 0.
ipSystemStatsInDiscards	1.3.6.1.2.1.4.31.1.1.17	IPv4	IPv6 returns 0.
ipSystemStatsOutNoRoutes	1.3.6.1.2.1.4.31.1.1.22	IPv4	IPv6 returns 0.
ipSystemStatsOutFragReqds	1.3.6.1.2.1.4.31.1.1.26	IPv4	IPv6 returns 0.
ipSystemStatsOutFragFails	1.3.6.1.2.1.4.31.1.1.28	IPv4	IPv6 returns 0.
ipSystemStatsOutTransmits	1.3.6.1.2.1.4.31.1.1.30	IPv4	IPv6 returns 0.
ipSystemStatsHCOutTransmits	1.3.6.1.2.1.4.31.1.1.31	IPv4	IPv6 returns 0.
ipSystemStatsOutOctets	1.3.6.1.2.1.4.31.1.1.32	None	Always returns 0.
ipSystemStatsHCOutOctets	1.3.6.1.2.1.4.31.1.1.33	None	Always returns 0.
ipSystemStatsInMcastPkts	1.3.6.1.2.1.4.31.1.1.34	None	Always returns 0.
ipSystemStatsHCInMcastPkts	1.3.6.1.2.1.4.31.1.1.35	None	Always returns 0.
ipSystemStatsInMcastOctets	1.3.6.1.2.1.4.31.1.1.36	None	Always returns 0.
ipSystemStatsHCInMcastOctets	1.3.6.1.2.1.4.31.1.1.37	None	Always returns 0.

Object group name	Object identifier	Supported IP version	Access
ipSystemStatsOutMcastPkts	1.3.6.1.2.1.4.31.1.1.38	None	Always returns 0.
ipSystemStatsHCOutMcastPkts	1.3.6.1.2.1.4.31.1.1.39	None	Always returns 0.
ipSystemStatsOutMcastOctets	1.3.6.1.2.1.4.31.1.1.40	None	Always returns 0.
ipSystemStatsHCOutMcastOctets	1.3.6.1.2.1.4.31.1.1.41	None	Always returns 0.
ipSystemStatsInBcastPkts	1.3.6.1.2.1.4.31.1.1.42	None	Always returns 0.
ipSystemStatsHCInBcastPkts	1.3.6.1.2.1.4.31.1.1.43	None	Always returns 0.
ipSystemStatsOutBcastPkts	1.3.6.1.2.1.4.31.1.1.44	None	Always returns 0.
ipSystemStatsHCOutBcastPkts	1.3.6.1.2.1.4.31.1.1.45	None	Always returns 0.
ipSystemStatsDiscontinuityTime	1.3.6.1.2.1.4.31.1.1.46	None	Always returns 0.
ipIfStatsTableLastChange	1.3.6.1.2.1.4.31.2	IPv4 and IPv6	All objects are read-only.
ipIfStatsTable			
ipIfStatsInOctets	1.3.6.1.2.1.4.31.3.1.5	None	Always returns 0.
ipIfStatsHCInOctets	1.3.6.1.2.1.4.31.3.1.6	None	Always returns 0.
ipIfStatsInHdrErrors	1.3.6.1.2.1.4.31.3.1.7	IPv6	IPv4 returns 0.
ipIfStatsInNoRoutes	1.3.6.1.2.1.4.31.3.1.8	IPv6	IPv4 returns 0.
ipIfStatsInAddrErrors	1.3.6.1.2.1.4.31.3.1.9	IPv6	IPv4 returns 0.
ipIfStatsInUnknownProtos	1.3.6.1.2.1.4.31.3.1.10	IPv6	IPv4 returns 0.
ipIfStatsInTruncatedPkts	1.3.6.1.2.1.4.31.3.1.11	IPv6	IPv4 returns 0.
ipIfStatsInForwDatagrams	1.3.6.1.2.1.4.31.3.1.12	IPv4	IPv6 returns 0.
ipIfStatsReasmReqds	1.3.6.1.2.1.4.31.3.1.14	IPv6	IPv4 returns 0.
ipIfStatsReasmOKs	1.3.6.1.2.1.4.31.3.1.15	IPv6	IPv4 returns 0.
ipIfStatsReasmFails	1.3.6.1.2.1.4.31.3.1.16	IPv6	IPv4 returns 0.
ipIfStatsInDiscards	1.3.6.1.2.1.4.31.3.1.17	IPv6	IPv4 returns 0.
ipIfStatsInDelivers	1.3.6.1.2.1.4.31.3.1.18	IPv6	IPv4 returns 0.
ipIfStatsHCInDelivers	1.3.6.1.2.1.4.31.3.1.19	IPv6	IPv4 returns 0.
ipIfStatsOutRequests	1.3.6.1.2.1.4.31.3.1.20	IPv6	IPv4 returns 0.
ipIfStatsHCOutRequests	1.3.6.1.2.1.4.31.3.1.21	IPv6	IPv4 returns 0.
ipIfStatsOutForwDatagrams	1.3.6.1.2.1.4.31.3.1.23	IPv6	IPv4 returns 0.
ipIfStatsHCOutForwDatagrams	1.3.6.1.2.1.4.31.3.1.24	IPv6	IPv4 returns 0.
ipIfStatsOutDiscards	1.3.6.1.2.1.4.31.3.1.25	IPv6	IPv4 returns 0.
ipIfStatsOutFragReqds	1.3.6.1.2.1.4.31.3.1.26	None	Always returns 0.
ipIfStatsOutFragOKs	1.3.6.1.2.1.4.31.3.1.27	IPv6	IPv4 returns 0.
ipIfStatsOutFragFails	1.3.6.1.2.1.4.31.3.1.28	IPv6	IPv4 returns 0.
ipIfStatsOutFragCreates	1.3.6.1.2.1.4.31.3.1.29	IPv6	IPv4 returns 0.
ipIfStatsOutTransmits	1.3.6.1.2.1.4.31.3.1.30	IPv4	IPv6 returns 0.
ipIfStatsHCOutTransmits	1.3.6.1.2.1.4.31.3.1.31	IPv4	IPv6 returns 0.
ipIfStatsOutOctets	1.3.6.1.2.1.4.31.3.1.32	None	Always returns 0.
ipIfStatsHCOutOctets	1.3.6.1.2.1.4.31.3.1.33	None	Always returns 0.
ipIfStatsInMcastPkts	1.3.6.1.2.1.4.31.3.1.34	IPv6	IPv4 returns 0.
ipIfStatsHCInMcastPkts	1.3.6.1.2.1.4.31.3.1.35	IPv6	IPv4 returns 0.
ipIfStatsInMcastOctets	1.3.6.1.2.1.4.31.3.1.36	None	Always returns 0.
ipIfStatsHCInMcastOctets	1.3.6.1.2.1.4.31.3.1.37	None	Always returns 0.

Object group name	Object identifier	Supported IP version	Access
ipIfStatsOutMcastPkts	1.3.6.1.2.1.4.31.3.1.38	IPv6	IPv4 returns 0.
ipIfStatsHCOutMcastPkts	1.3.6.1.2.1.4.31.3.1.39	IPv6	IPv4 returns 0.
ipIfStatsOutMcastOctets	1.3.6.1.2.1.4.31.3.1.40	None	Always returns 0.
ipIfStatsHCOutMcastOctets	1.3.6.1.2.1.4.31.3.1.41	None	Always returns 0.
ipIfStatsInBcastPkts	1.3.6.1.2.1.4.31.3.1.42	None	Always returns 0.
ipIfStatsHCInBcastPkts	1.3.6.1.2.1.4.31.3.1.43	None	Always returns 0.
ipIfStatsOutBcastPkts	1.3.6.1.2.1.4.31.3.1.44	None	Always returns 0.
ipIfStatsHCOutBcastPkts	1.3.6.1.2.1.4.31.3.1.45	None	Always returns 0.
ipIfStatsDiscontinuityTime	1.3.6.1.2.1.4.31.3.1.46	None	Always returns 0.
ipAddressPrefixTable	1.3.6.1.2.1.4.32	IPv4 and IPv6	All objects are read-only.
ipAddressTable	1.3.6.1.2.1.4.34	IPv4 and IPv6	All objects are read-only.
ipNetToPhysicalTable **NOTE** Only ARP entries that are currently being used are included in the ARP table.	1.3.6.1.2.1.4.35	IPv4 and IPv6	Only the following objects have read-create access: • ipNetToPhysicalPhysAddress • ipNetToPhysicalType • ipNetToPhysicalRowStatus All other objects are read-only.
ipv6ScopeZoneIndexTable	1.3.6.1.2.1.4.36	IPv6	All objects are read-only.
ipDefaultRouterTable	1.3.6.1.2.1.4.37	IPv4 and IPv6	All objects are read-only. **NOTE** This table objects are not supported on the Brocade FastIron devices.
Ipv6RouterAdvertTable	1.3.6.1.2.1.4.39	IPv6	Only the following objects have read-write access; all others are read-only: • ipv6RouterAdvertSendAdverts • ipv6RouterAdvertManagedFlag • ipv6RouterAdvertOtherConfigFlag • ipv6RouterAdvertReachableTime • ipv6RouterAdvertRetransmitTime • ipv6RouterAdvertCurHopLimit • ipv6RouterAdvertDefaultLifetime
icmpStatsTable	1.3.6.1.2.1.5.29	IPv4 and IPv6	All objects are read-only.
icmpMsgStatsTable	1.3.6.1.2.1.5.30	IPv4 and IPv6	All objects are read-only.

RFC 4836: MAU (Medium Attachment Unit) MIBs

The following tables list the supported MIB objects from RFC 4836.

NOTE
The rpMauTable, rpJackTable, and ifJackTable objects are not supported from RFC 4836.

ifMauTable

The following table lists the ifMauTable objects. SET operations are not supported on the following table.

Object group name	Object identifier	Access
ifMauIfIndex	1.3.6.1.2.1.26.2.1.1.1	Yes
ifMauIndex	1.3.6.1.2.1.26.2.1.1.2	Yes
ifMauType	1.3.6.1.2.1.26.2.1.1.3	Yes
ifMauStatus	1.3.6.1.2.1.26.2.1.1.4	Yes
ifMauMediaAvailable	1.3.6.1.2.1.26.2.1.1.5	Yes
ifMauMediaAvailableStateExits	1.3.6.1.2.1.26.2.1.1.6	No
ifMauJabberState	1.3.6.1.2.1.26.2.1.1.7	No
ifMauJabberingStateEnters	1.3.6.1.2.1.26.2.1.1.8	No
ifMauFalseCarriers	1.3.6.1.2.1.26.2.1.1.9	No
ifMauTypeList	1.3.6.1.2.1.26.2.1.1.10	No
ifMauDefaultType	1.3.6.1.2.1.26.2.1.1.11	No
ifMauAutoNegSupported	1.3.6.1.2.1.26.2.1.1.12	Yes
ifMauTypeListBits	1.3.6.1.2.1.26.2.1.1.13	No
ifMauHCFalseCarriers	1.3.6.1.2.1.26.2.1.1.14	No

ifMauAutoNegTable

The following table lists the ifMauAutoNegTable objects. SET operations are not supported on the following table.

Object group name	Object identifier	Access
ifMauAutoNegAdminStatus	1.3.6.1.2.1.26.5.1.1.1	Yes
ifMauAutoNegRemoteSignaling	1.3.6.1.2.1.26.5.1.1.2	Yes
ifMauAutoNegConfig	1.3.6.1.2.1.26.5.1.1.4	Yes
ifMauAutoNegRestart	1.3.6.1.2.1.26.5.1.1.8	Yes
ifMauAutoNegCapabilityBits	1.3.6.1.2.1.26.5.1.1.9	Yes
ifMauAutoNegCapAdvertisedBits	1.3.6.1.2.1.26.5.1.1.10	Yes
ifMauAutoNegCapReceivedBits	1.3.6.1.2.1.26.5.1.1.11	No
ifMauAutoNegRemoteFaultAdvertised	1.3.6.1.2.1.26.5.1.1.12	Yes
ifMauAutoNegRemoteFaultReceived	1.3.6.1.2.1.26.5.1.1.13	Yes

RFC 5676: Definitions of Managed Objects for Mapping SYSLOG Messages to Simple Network Management Protocol (SNMP) Notifications

The Brocade FastIron devices are provided with the following SNMP MIB objects to represent SYSLOG messages.

NOTE
This enhancement supports SYSLOG RFC 3164 and RFC 5424. RFC 3164 is enabled by default while RFC 5424 needs to be configured. Use **logging enable rfc5424** command to generate syslog specific to RFC 5424 and **no logging enable rfc5424** command to generate syslog specific to RFC 3164. RFC 5424 obsoletes RFC 3164.

NOTE
Use **snmp-server enable traps syslog** command to enable SYSLOG traps.

SYSLOG objects

The following table lists the SYSLOG message scalar objects.

NOTE
The syslogMsgTable and syslogMsgSDTable are not supported for this release.

Object	Object identifier	Supported?
syslogMsgControl	1.3.6.1.2.1.192.1.1	Yes
syslogMsgTableMaxSize	1.3.6.1.2.1.192.1.1.1	Yes
syslogMsgEnableNotifications	1.3.6.1.2.1.192.1.1.2	Yes

The following table lists the SYSLOG notifications.

Object	Object identifier	Supported?
syslogMsgNotifications	1.3.6.1.2.1.192.0	Yes
syslogMsgNotification	1.3.6.1.2.1.192.0.1	Yes

LLDP-MIB

The following tables in the LLDP-MIB are supported on the Brocade FastIron devices.

- lldpPortConfigTable
- lldpConfigManAddrTable
- lldpstatistics
- lldpStatsTxPortTable
- lldpStatsRxPortTable
- lldpLocalSystemData
- lldpLocPortTable
- lldpLocManAddrTable

- lldpRemTable
- lldpRemManAddrTable
- lldpRemUnknownTLVTable
- lldpRemOrgDefInfoTable

lldpPortConfigTable

The following table controls the LLDP frame transmission on the individual ports.

Object	Object identifier	Supported?
lldpPortConfigPortNum	1.0.8802.1.1.2.1.1.6.1.1	Yes
lldpPortConfigAdminStatus	1.0.8802.1.1.2.1.1.6.1.2	Yes
lldpPortConfigNotificationEnable	1.0.8802.1.1.2.1.1.6.1.3	Yes
lldpPortConfigTLVsTxEnable	1.0.8802.1.1.2.1.1.6.1.4	Yes

lldpConfigManAddrTable

The following table controls the selection of LLDP management address TLV instances to be transmitted on the individual ports.

Object	Object identifier	Supported?
lldpConfigManAddrPortsTxEnable	1.0.8802.1.1.2.1.1.7.1.1	Yes

lldpstatistics

The following table lists the LLDP statistics group objects.

Object	Object identifier	Supported?
lldpStatsRemTablesLastChangeTime	1.0.8802.1.1.2.1.2.1	Yes
lldpStatsRemTablesInserts	1.0.8802.1.1.2.1.2.2	Yes
lldpStatsRemTablesDeletes	1.0.8802.1.1.2.1.2.3	Yes
lldpStatsRemTablesDrops	1.0.8802.1.1.2.1.2.4	Yes
lldpStatsRemTablesAgeouts	1.0.8802.1.1.2.1.2.5	Yes

lldpStatsTxPortTable

The following table contains LLDP transmission statistics for the individual ports.

Object	Object identifier	Supported?
lldpStatsTxPortNum	1.0.8802.1.1.2.1.2.6.1.1	Yes
lldpStatsTxPortFramesTotal	1.0.8802.1.1.2.1.2.6.1.2	Yes

lldpStatsRxPortTable

The following table contains LLDP reception statistics for the individual ports.

Object	Object identifier	Supported?
lldpStatsRxPortNum	1.0.8802.1.1.2.1.2.7.1.1	Yes
lldpStatsRxPortFramesDiscardedTotal	1.0.8802.1.1.2.1.2.7.1.2	Yes
lldpStatsRxPortFramesErrors	1.0.8802.1.1.2.1.2.7.1.3	Yes
lldpStatsRxPortFramesTotal	1.0.8802.1.1.2.1.2.7.1.4	Yes
lldpStatsRxPortTLVsDiscardedTotal	1.0.8802.1.1.2.1.2.7.1.5	Yes
lldpStatsRxPortTLVsUnrecognizedTotal	1.0.8802.1.1.2.1.2.7.1.6	Yes
lldpStatsRxPortAgeoutsTotal	1.0.8802.1.1.2.1.2.7.1.7	Yes

lldpLocalSystemData

The following table lists the LLDP local system data objects.

Object	Object identifier	Supported?
lldpLocChassisIdSubtype	1.0.8802.1.1.2.1.3.1	Yes
lldpLocChassisId	1.0.8802.1.1.2.1.3.2	Yes
lldpLocSysName	1.0.8802.1.1.2.1.3.3	Yes
lldpLocSysDesc	1.0.8802.1.1.2.1.3.4	Yes
lldpLocSysCapSupported	1.0.8802.1.1.2.1.3.5	Yes
lldpLocSysCapEnabled	1.0.8802.1.1.2.1.3.6	Yes

lldpLocPortTable

The following table contains one or more rows per-port information associated with the local system known to the agent.

Object	Object identifier	Supported?
lldpLocPortNum	1.0.8802.1.1.2.1.3.7.1.1	Yes
lldpLocPortIdSubtype	1.0.8802.1.1.2.1.3.7.1.2	Yes
lldpLocPortId	1.0.8802.1.1.2.1.3.7.1.3	Yes
lldpLocPortDesc	1.0.8802.1.1.2.1.3.7.1.4	Yes

lldpLocManAddrTable

The following table contains management address information on the local system known to the agent.

Object	Object identifier	Supported?
lldpLocManAddrSubtype	1.0.8802.1.1.2.1.3.8.1.1	Yes
lldpLocManAddr	1.0.8802.1.1.2.1.3.8.1.2	Yes
lldpLocManAddrLen	1.0.8802.1.1.2.1.3.8.1.3	Yes
lldpLocManAddrIfSubtype	1.0.8802.1.1.2.1.3.8.1.4	Yes
lldpLocManAddrIfId	1.0.8802.1.1.2.1.3.8.1.5	Yes
lldpLocManAddrOID	1.0.8802.1.1.2.1.3.8.1.6	Yes

lldpRemTable

The following table contains one or more rows per-physical network connection known to the agent.

Object	Object identifier	Supported?
lldpRemTimeMark	1.0.8802.1.1.2.1.4.1.1.1	Yes
lldpRemLocalPortNum	1.0.8802.1.1.2.1.4.1.1.2	Yes
lldpRemIndex	1.0.8802.1.1.2.1.4.1.1.3	Yes
lldpRemChassisIdSubtype	1.0.8802.1.1.2.1.4.1.1.4	Yes
lldpRemChassisId	1.0.8802.1.1.2.1.4.1.1.5	Yes
lldpRemPortIdSubtype	1.0.8802.1.1.2.1.4.1.1.6	Yes
lldpRemPortId	1.0.8802.1.1.2.1.4.1.1.7	Yes
lldpRemPortDesc	1.0.8802.1.1.2.1.4.1.1.8	Yes
lldpRemSysName	1.0.8802.1.1.2.1.4.1.1.9	Yes
lldpRemSysDesc	1.0.8802.1.1.2.1.4.1.1.10	Yes
lldpRemSysCapSupported	1.0.8802.1.1.2.1.4.1.1.11	Yes
lldpRemSysCapEnabled	1.0.8802.1.1.2.1.4.1.1.12	Yes

lldpRemManAddrTable

The following table contains one or more rows per-management address information on the remote system learned on a particular port contained in the local chassis known to the agent.

Object	Object identifier	Supported?
lldpRemManAddrSubtype	1.0.8802.1.1.2.1.4.2.1.1	Yes
lldpRemManAddr	1.0.8802.1.1.2.1.4.2.1.2	Yes
lldpRemManAddrIfSubtype	1.0.8802.1.1.2.1.4.2.1.3	Yes
lldpRemManAddrIfId	1.0.8802.1.1.2.1.4.2.1.4	Yes
lldpRemManAddrOID	1.0.8802.1.1.2.1.4.2.1.5	Yes

lldpRemUnknownTLVTable

The following table contains information about an incoming TLV that is not recognized by the receiving LLDP agent.

Object	Object identifier	Supported?
lldpRemUnknownTLVType	1.0.8802.1.1.2.1.4.3.1.1	Yes
lldpRemUnknownTLVInfo	1.0.8802.1.1.2.1.4.3.1.2	Yes

lldpRemOrgDefInfoTable

The following table contains one or more rows per physical network connection that advertises the organizationally-defined information.

Object	Object identifier	Supported?
lldpRemOrgDefInfoOUI	1.0.8802.1.1.2.1.4.4.1.1	Yes
lldpRemOrgDefInfoSubtype	1.0.8802.1.1.2.1.4.4.1.2	Yes

Object	Object identifier	Supported?
lldpRemOrgDefInfoIndex	1.0.8802.1.1.2.1.4.4.1.3	Yes
lldpRemOrgDefInfo	1.0.8802.1.1.2.1.4.4.1.4	Yes

LLDP-EXT-DOT1-MIB

The following tables in the LLDP-EXT-DOT1-MIB are supported on the Brocade FastIron devices.

- lldpXdot1ConfigPortVlanTable
- lldpXdot1ConfigVlanNameTable
- lldpXdot1ConfigProtoVlanTable
- lldpXdot1ConfigProtocolTable
- lldpXdot1LocTable
- lldpXdot1LocProtoVlanTable
- lldpXdot1LocVlanNameTable
- lldpXdot1LocProtocolTable
- lldpXdot1RemTable
- lldpXdot1RemProtoVlanTable
- lldpXdot1RemVlanNameTable
- lldpXdot1RemProtocolTable

lldpXdot1ConfigPortVlanTable

The following table lists the object that controls the selection of LLDP Port VLAN-ID TLVs to be transmitted on the individual ports.

Object	Object identifier	Supported?
lldpXdot1ConfigPortVlanTxEnable	1.0.8802.1.1.2.1.5.32962.1.1.1.1.1	Yes

lldpXdot1ConfigVlanNameTable

The following table lists the object that controls the selection of LLDP VLAN name TLV instances to be transmitted on the individual ports.

Object	Object identifier	Supported?
lldpXdot1ConfigVlanNameTxEnable	1.0.8802.1.1.2.1.5.32962.1.1.2.1.1	Yes

lldpXdot1ConfigProtoVlanTable

The following table lists the object that controls selection of LLDP Port and Protocol VLAN-ID TLV instances to be transmitted on the individual ports.

Object	Object identifier	Supported?
lldpXdot1ConfigProtoVlanTxEnable	1.0.8802.1.1.2.1.5.32962.1.1.3.1.1	Yes

lldpXdot1ConfigProtocolTable

The following table lists the object that controls the selection of LLDP TLV instances to be transmitted on the individual ports.

Object	Object identifier	Supported?
lldpXdot1ConfigProtocolTxEnable	1.0.8802.1.1.2.1.5.32962.1.1.4.1.1	Yes

lldpXdot1LocTable

The following table contains one row per port for IEEE 802.1 organizationally-defined LLDP extension on the local system known to the agent.

Object	Object identifier	Supported?
lldpXdot1LocPortVlanId	1.0.8802.1.1.2.1.5.32962.1.2.1.1.1	Yes

lldpXdot1LocProtoVlanTable

The following table contains one or more rows per-port and per-protocol VLAN information about the local system.

Object	Object identifier	Supported?
lldpXdot1LocProtoVlanId	1.0.8802.1.1.2.1.5.32962.1.2.2.1.1	Yes
lldpXdot1LocProtoVlanSupported	1.0.8802.1.1.2.1.5.32962.1.2.2.1.2	Yes
lldpXdot1LocProtoVlanEnabled	1.0.8802.1.1.2.1.5.32962.1.2.2.1.3	Yes

lldpXdot1LocVlanNameTable

The following table contains one or more rows per IEEE 802.1Q VLAN name information on the local system known to the agent.

Object	Object identifier	Supported?
lldpXdot1LocVlanId	1.0.8802.1.1.2.1.5.32962.1.2.3.1.1	Yes
lldpXdot1LocVlanName	1.0.8802.1.1.2.1.5.32962.1.2.3.1.2	Yes

lldpXdot1LocProtocolTable

The following table contains one or more rows per-protocol identity information on the local system known to the agent.

Object	Object identifier	Supported?
lldpXdot1LocProtocolIndex	1.0.8802.1.1.2.1.5.32962.1.2.4.1.1	Yes
lldpXdot1LocProtocolId	1.0.8802.1.1.2.1.5.32962.1.2.4.1.2	Yes

lldpXdot1RemTable

The following table contains one or more rows per-physical network connection known to the agent.

Object	Object identifier	Supported?
lldpXdot1RemPortVlanId	1.0.8802.1.1.2.1.5.32962.1.3.1.1.1	Yes

lldpXdot1RemProtoVlanTable

The following table contains one or more rows per-port and per-protocol VLAN information about the remote system received on the particular port.

Object	Object identifier	Supported?
lldpXdot1RemProtoVlanId	1.0.8802.1.1.2.1.5.32962.1.3.2.1.1	Yes
lldpXdot1RemProtoVlanSupported	1.0.8802.1.1.2.1.5.32962.1.3.2.1.2	Yes
lldpXdot1RemProtoVlanEnabled	1.0.8802.1.1.2.1.5.32962.1.3.2.1.3	Yes

lldpXdot1RemVlanNameTable

The following table contains one or more rows per IEEE 802.1Q VLAN name information about the remote system received on the particular port.

Object	Object identifier	Supported?
lldpXdot1RemVlanId	1.0.8802.1.1.2.1.5.32962.1.3.3.1.1	Yes
lldpXdot1RemVlanName	1.0.8802.1.1.2.1.5.32962.1.3.3.1.2	Yes

lldpXdot1RemProtocolTable

The following table contains one or more rows per protocol information about the remote system received on the particular port.

Object	Object identifier	Supported?
lldpXdot1RemProtocolIndex	1.0.8802.1.1.2.1.5.32962.1.3.4.1.1	Yes
lldpXdot1RemProtocolId	1.0.8802.1.1.2.1.5.32962.1.3.4.1.2	Yes

LLDP-EXT-DOT3-MIB

The following tables in the LLDP-EXT-DOT3-MIB are supported on the Brocade FastIron devices.

- lldpXdot3PortConfigTable
- lldpXdot3LocPortTable
- lldpXdot3LocPowerTable
- lldpXdot3LocLinkAggTable
- lldpXdot3LocMaxFrameSizeTable
- lldpXdot3RemPortTable
- lldpXdot3RemPowerTable
- lldpXdot3RemLinkAggTable
- lldpXdot3RemMaxFrameSizeTable

lldpXdot3PortConfigTable

The following table lists the objects that controls the selection of LLDP TLVs to be transmitted on the individual ports.

Object	Object identifier	Supported?
lldpXdot3PortConfigTLVsTxEnable	1.0.8802.1.1.2.1.5.4623.1.1.1.1.1	Yes

lldpXdot3LocPortTable

The following table contains one row per port of Ethernet port information (as part of the LLDP 802.3 organizational extension) on the local system known to the agent.

Object	Object identifier	Supported?
lldpXdot3LocPortAutoNegSupported	1.0.8802.1.1.2.1.5.4623.1.2.1.1.1	Yes
lldpXdot3LocPortAutoNegEnabled	1.0.8802.1.1.2.1.5.4623.1.2.1.1.2	Yes
lldpXdot3LocPortAutoNegAdvertisedCap	1.0.8802.1.1.2.1.5.4623.1.2.1.1.3	Yes
lldpXdot3LocPortOperMauType	1.0.8802.1.1.2.1.5.4623.1.2.1.1.4	Yes

lldpXdot3LocPowerTable

The following table contains one row per port of power Ethernet information (as part of the LLDP 802.3 organizational extension) on the local system known to the agent.

Object	Object identifier	Supported?
lldpXdot3LocPowerPortClass	1.0.8802.1.1.2.1.5.4623.1.2.2.1.1	Yes
lldpXdot3LocPowerMDISupported	1.0.8802.1.1.2.1.5.4623.1.2.2.1.2	Yes
lldpXdot3LocPowerMDIEnabled	1.0.8802.1.1.2.1.5.4623.1.2.2.1.3	Yes
lldpXdot3LocPowerPairControlable	1.0.8802.1.1.2.1.5.4623.1.2.2.1.4	Yes
lldpXdot3LocPowerPairs	1.0.8802.1.1.2.1.5.4623.1.2.2.1.5	Yes
lldpXdot3LocPowerClass	1.0.8802.1.1.2.1.5.4623.1.2.2.1.6	Yes

lldpXdot3LocLinkAggTable

The following table contains one row per port of link aggregation information (as part of the LLDP 802.3 organizational extension) on the local system known to the agent.

Object	Object identifier	Supported?
lldpXdot3LocLinkAggStatus	1.0.8802.1.1.2.1.5.4623.1.2.3.1.1	Yes
lldpXdot3LocLinkAggPortId	1.0.8802.1.1.2.1.5.4623.1.2.3.1.2	Yes

lldpXdot3LocMaxFrameSizeTable

The following table contains one row per port of maximum frame size information (as part of the LLDP 802.3 organizational extension) on the local system known to the agent.

Object	Object identifier	Supported?
lldpXdot3LocMaxFrameSize	1.0.8802.1.1.2.1.5.4623.1.2.4.1.1	Yes

lldpXdot3RemPortTable

The following table contains Ethernet port information (as part of the LLDP 802.3 organizational extension) of the remote system.

Object	Object identifier	Supported?
lldpXdot3RemPortAutoNegSupported	1.0.8802.1.1.2.1.5.4623.1.3.1.1.1	Yes
lldpXdot3RemPortAutoNegEnabled	1.0.8802.1.1.2.1.5.4623.1.3.1.1.2	Yes
lldpXdot3RemPortAutoNegAdvertisedCap	1.0.8802.1.1.2.1.5.4623.1.3.1.1.3	Yes
lldpXdot3RemPortOperMauType	1.0.8802.1.1.2.1.5.4623.1.3.1.1.4	Yes

lldpXdot3RemPowerTable

The following table contains Ethernet power information (as part of the LLDP 802.3 organizational extension) of the remote system.

Object	Object identifier	Supported?
lldpXdot3RemPowerPortClass	1.0.8802.1.1.2.1.5.4623.1.3.2.1.1	Yes
lldpXdot3RemPowerMDISupported	1.0.8802.1.1.2.1.5.4623.1.3.2.1.2	Yes
lldpXdot3RemPowerMDIEnabled	1.0.8802.1.1.2.1.5.4623.1.3.2.1.3	Yes
lldpXdot3RemPowerPairControlable	1.0.8802.1.1.2.1.5.4623.1.3.2.1.4	Yes
lldpXdot3RemPowerPairs	1.0.8802.1.1.2.1.5.4623.1.3.2.1.5	Yes
lldpXdot3RemPowerClass	1.0.8802.1.1.2.1.5.4623.1.3.2.1.6	Yes

lldpXdot3RemLinkAggTable

The following table contains port link aggregation information (as part of the LLDP 802.3 organizational extension) of the remote system.

Object	Object identifier	Supported?
lldpXdot3RemLinkAggStatus	1.0.8802.1.1.2.1.5.4623.1.3.3.1.1	Yes
lldpXdot3RemLinkAggPortId	1.0.8802.1.1.2.1.5.4623.1.3.3.1.2	Yes

lldpXdot3RemMaxFrameSizeTable

The table contains one row per port of maximum frame size information (as part of the LLDP 802.3 organizational extension) of the remote system.

Object	Object identifier	Supported?
lldpXdot3RemMaxFrameSize	1.0.8802.1.1.2.1.5.4623.1.3.4.1.1	Yes

Registration MIB Definition

This section describes the Registration objects that identify the Brocade product that is being managed. The following table presents the objects for product registration. The sysOID will return one of these values.

Object name and identifier	Description
snFastIronStackICX7750 brcdIp.1.3.48.7	Brocade ICX 7750 Stack
snFastIronStackICX7750Switch brcdIp.1.3.48.7.1	Brocade ICX 7750 Stack Switch
snFastIronStackICX7750BaseL3Router brcdIp.1.3.48.7.2	Brocade ICX 7750 Stack Base Layer3 Router
snFastIronStackICX7750Router brcdIp.1.3.48.7.3	Brocade ICX 7750 Stack Router
snFastIronStackICX7450 brcdIp.1.3.48.8	Brocade ICX 7450 Stack
snFastIronStackICX7450Switch brcdIp.1.3.48.8.1	Brocade ICX 7450 Stack Switch
snFastIronStackICX7450BaseL3Router brcdIp.1.3.48.8.2	Brocade ICX 7450 Stack Base Layer3 Router
snFastIronStackICX7450Router brcdIp.1.3.48.8.3	Brocade ICX 7450 Stack Router
snFastIronStackICX7250 brcdIp.1.3.48.9	Brocade ICX 7250 Stack
snFastIronStackICX7250Switch brcdIp.1.3.48.9.1	Brocade ICX 7250 Stack Switch
snFastIronStackICX7250BaseL3Router brcdIp.1.3.48.9.2	Brocade ICX 7250 Stack Base Layer3 Router
snFastIronStackICX7250Router brcdIp.1.3.48.9.3	Brocade ICX 7250 Stack Router
snFastIronStackICX7150 brcdIp.1.3.48.10	Brocade ICX 7150 Stack
snFastIronStackICX7150Switch brcdIp.1.3.48.10.1	Brocade ICX 7150 Stack Switch
snFastIronStackICX7150Router brcdIp.1.3.48.10.2	Brocade ICX 7150 Stack Router
snFastIronSPXFamily brcdIp.1.3.63	Brocade ICX 7750/7450 Family
snFastIronSPX brcdIp.1.3.63.1	Brocade FastIron SPX
snFastIronSPXSwitch brcdIp.1.3.63.1.1	Brocade FastIron SPX Switch
snFastIronSPXRouter brcdIp.1.3.63.1.2	Brocade FastIron SPX Router
snICX7250Family brcdIp.1.3.62	Brocade ICX 7250 series family
snICX725024Family brcdIp.1.3.62.1	Brocade ICX 7250 24-port Family
snICX725024BaseFamily	Brocade ICX 7250 24-port Base Family

Object name and identifier	Description
brcdIp.1.3.62.1.1	
snICX725024 brcdIp.1.3.62.1.1.1	Brocade ICX 7250 24-port 1G
snICX725024Switch brcdIp.1.3.62.1.1.1.1	Brocade ICX 7250 24-port Switch
snICX725024BaseL3Router brcdIp.1.3.62.1.1.1.2	Brocade ICX 7250 24-port Base Layer 3 Router
snICX725024Router brcdIp.1.3.62.1.1.1.3	Brocade ICX 7250 24-port Router
snICX725024HPOEFamily brcdIp.1.3.62.1.2	Brocade ICX 7250 24-port HPOE Family
snICX725024HPOE brcdIp.1.3.62.1.2.1	Brocade ICX 7250 24-port HPOE+1G
snICX725024HPOESwitch brcdIp.1.3.62.1.2.1.1	Brocade ICX 7250 24-port HPOE Switch
snICX725024HPOEBaseL3Router brcdIp.1.3.62.1.2.1.2	Brocade ICX 7250 24-port HPOE Base Layer 3 Router
snICX725024HPOERouter brcdIp.1.3.62.1.2.1.3	Brocade ICX 7250 24-port HPOE Base Router
snICX725024GFamily brcdIp.1.3.62.1.3	Brocade ICX 7250 24-port 1G Family
snICX725024G brcdIp.1.3.62.1.3.1	Brocade ICX 7250 24-port 1G
snICX725024GSwitch brcdIp.1.3.62.1.3.1.1	Brocade ICX 7250 24-port 1G Switch
snICX725024GBaseL3Router brcdIp.1.3.62.1.3.1.2	Brocade ICX 7250 24-port 1G Base Layer 3 Router
snICX725048Family brcdIp.1.3.62.2	Brocade ICX 7250 48-port Family
snICX725048BaseFamily brcdIp.1.3.62.2.1	Brocade ICX 7250 48-port Base Family
snICX725048 brcdIp.1.3.62.2.1.1	Brocade ICX 7250 48-port 1G
snICX725048Switch brcdIp.1.3.62.2.1.1.1	Brocade ICX 7250 48-port Switch
snICX725048BaseL3Router brcdIp.1.3.62.2.1.1.2	Brocade ICX 7250 48-port Base Layer 3 Router
snICX725048Router brcdIp.1.3.62.2.1.1.3	Brocade ICX 7250 48-port Router
snICX725048HPOEBaseFamily brcdIp.1.3.62.2.2	Brocade ICX 7250 48-port HPOE Base Family
snICX725048HPOE brcdIp.1.3.62.2.2.1	Brocade ICX 7250 48-HPOE 48-port POE+ 1G
snICX725048HPOESwitch brcdIp.1.3.62.2.2.1.1	Brocade ICX 7250 48-HPOE 48-port Switch
snICX725048HPOEBaseL3Router brcdIp.1.3.62.2.2.1.2	Brocade ICX 7250 48-HPOE 48-port Base Layer 3 Router
snICX725048HPOERouter brcdIp.1.3.62.2.2.1.3	Brocade ICX 7250 48-HPOE 48-port Router
snICX7750Family	Brocade ICX 7750 Series Family

Object name and identifier	Description
brcdIp.1.3.60	
snICX775048CFamily brcdIp.1.3.60.1	Brocade ICX 7750 48C (48-port) Family
snICX775048CBaseFamily brcdIp.1.3.60.1.1	Brocade ICX 7750 48C (48-port) Base Family
snICX775048C brcdIp.1.3.60.1.1.1	Brocade ICX 7750 48C (48-port) (FE/GE/10GE RJ-45 w/12x40G)
snICX775048CSwitch brcdIp.1.3.60.1.1.1.1	Brocade ICX 7750 48C (48-port) Switch
snICX775048CBaseL3Router brcdIp.1.3.60.1.1.1.2	Brocade ICX 7750 48C (48-port) Base Layer 3 Router
snICX775048CRouter brcdIp.1.3.60.1.1.1.3	Brocade ICX 7750 48C (48-port) Router
snICX775048FFamily brcdIp.1.3.60.2	Brocade ICX 7750 48F (48-port) Family
snICX775048FBaseFamily brcdIp.1.3.60.2.1	Brocade ICX 7750 48F (48-port) Base Family
snICX775048F brcdIp.1.3.60.2.1.1	Brocade ICX 7750 (GE/10GE SFP+ w/12x40G)
snICX775048FSwitch brcdIp.1.3.60.2.1.1.1	Brocade ICX 7750 48F (48-port) Switch
snICX775048FBaseL3Router brcdIp.1.3.60.2.1.1.2	Brocade ICX 7750 48F (48-port) Base Layer 3 Router
snICX775048FRouter brcdIp.1.3.60.2.1.1.3	Brocade ICX 7750 48F (48-port) Router
snICX775026QFamily brcdIp.1.3.60.3	Brocade ICX 7750 26Q (26-port) Family
snICX775026QBaseFamily brcdIp.1.3.60.3.1	Brocade ICX 7750 26Q (26-port) Base Family
snICX775026Q brcdIp.1.3.60.3.1.1	Brocade ICX 7750 26Q (26-port) (40G QSFP w/6x40G)
snICX775026QSwitch brcdIp.1.3.60.3.1.1.1	Brocade ICX 7750 26Q (26-port) Switch
snICX775026QBaseL3Router brcdIp.1.3.60.3.1.1.2	Brocade ICX 7750 26Q (26-port) Base Layer 3 Router
snICX775026QRouter brcdIp.1.3.60.3.1.1.3	Brocade ICX 7750 26Q (26-port) Router
snICX7450Family brcdIp.1.3.61	Brocade ICX 7450 Series Family
snICX745024Family brcdIp.1.3.61.1	Brocade ICX 7450 24 (24-port) Family
snICX745024BaseFamily brcdIp.1.3.61.1.1	Brocade ICX 7450 24 (24-port) Base Family
snICX745024 brcdIp.1.3.61.1.1.1	Brocade ICX 7450 24 (24-port) 1G
snICX745024Switch brcdIp.1.3.61.1.1.1.1	Brocade ICX 7450 24 (24-port) Switch
snICX745024BaseL3Router brcdIp.1.3.61.1.1.1.2	Brocade ICX 7450 24 (24-port) Base Layer3 Switch
snICX745024Router	Brocade ICX 7450 24 (24-port) Router

Object name and identifier	Description
brcdIp.1.3.61.1.1.1.3	
snICX745024HPOEFamily brcdIp.1.3.61.1.2	Brocade ICX 7450 24 (24-port) HPOE Family
snICX745024HPOE brcdIp.1.3.61.1.2.1	Brocade ICX 7450 24 (24-port) HPOE
snICX745024HPOESwitch brcdIp.1.3.61.1.2.1.1	Brocade ICX 7450 24 (24-port) HPOE Switch
snICX745024HPOEBaseL3Router brcdIp.1.3.61.1.2.1.2	Brocade ICX 7450 24 (24-port) HPOE Base Layer3 Router
snICX745024HPOERouter brcdIp.1.3.61.1.2.1.3	Brocade ICX 7450 24 (24-port) HPOE Router
snICX745032ZPFamily brcdIp.1.3.61.3	Brocade ICX 7450 32ZP Family
snICX745032ZPBaseFamily brcdIp.1.3.61.3.1	Brocade ICX 7450 32ZP Base Family
snICX745032ZP brcdIp.1.3.61.3.1.1	Brocade ICX 7450 32ZP 24-port 1G/8-port 2.5G
snICX745032ZPSwitch brcdIp.1.3.61.3.1.1.1	Brocade ICX 7450 32ZP 24-port 1G/8-port 2.5G Switch
snICX745032ZPBaseL3Router brcdIp.1.3.61.3.1.1.2	Brocade ICX 7450 32ZP 24-port 1G/8-port 2.5G Base Layer3 router
snICX745032ZPRouter brcdIp.1.3.61.3.1.1.3	Brocade ICX 7450 32ZP 24-port 1G/8-port 2.5G Router
snICX745048Family brcdIp.1.3.61.2	Brocade ICX 7450 48 (48-port) Family
snICX745048BaseFamily brcdIp.1.3.61.2.1	Brocade ICX 7450 48 (48-port) Base Family
snICX745048 brcdIp.1.3.61.2.1.1	Brocade ICX 7450 48 (48-port)
snICX745048Switch brcdIp.1.3.61.2.1.1.1	Brocade ICX 7450 48 (48-port) Switch
snICX745048BaseL3Router brcdIp.1.3.61.2.1.1.2	Brocade ICX 7450 48 (48-port) Base Layer3 Router
snICX745048Router brcdIp.1.3.61.2.1.1.3	Brocade ICX 7450 48 (48-port) Router
snICX745048HPOEBaseFamily brcdIp.1.3.61.2.2	Brocade ICX 7450 48 (48-port) HPOE Base Family
snICX745048HPOE brcdIp.1.3.61.2.2.1	Brocade ICX 7450 48 (48-port) HPOE
snICX745048HPOESwitch brcdIp.1.3.61.2.2.1.1	Brocade ICX 7450 48 (48-port) HPOE Switch
snICX745048HPOEBaseL3Router brcdIp.1.3.61.2.21.2	Brocade ICX 7450 48 (48-port) HPOE Base Layer3 Router
snICX745048HPOERouter brcdIp.1.3.61.2.2.1.3	Brocade ICX 7450 48 (48-port) HPOE Router
snICX745048FBaseFamily brcdIp.1.3.61.2.3	Brocade ICX 7450 48F (48-port) Base Family

Object name and identifier	Description
snICX745048F brcdIp.1.3.61.2.3.1	Brocade ICX 7450 48F (48-port)
snICX745048FSwitch brcdIp.1.3.61.2.3.1.1	Brocade ICX 7450 48F (48-port) Switch
snICX745048FBaseL3Router brcdIp.1.3.61.2.3.1.2	Brocade ICX 7450 48F (48-port) Base Layer3 Router
snICX745048FRouter brcdIp.1.3.61.2.3.1.3	Brocade ICX 7450 48F (48-port) Router
snICX7150Family brcdIp.1.3.64	Brocade ICX 7150 series family
snICX715024Family brcdIp.1.3.64.1	Brocade ICX 7150 24 (24-port) Family
snICX715024BaseFamily brcdIp.1.3.64.1.1	Brocade ICX 7150 24 (24-port) Base Family
snICX715024 brcdIp.1.3.64.1.1.1	Brocade ICX 7150 24 (24-port) 1G
snICX715024Switch brcdIp.1.3.64.1.1.1.1	Brocade ICX 7150 24 (24-port) Switch
snICX715024Router brcdIp.1.3.64.1.1.1.2	Brocade ICX 7150 24 (24-port) Router
snICX715024POEFamily brcdIp.1.3.64.1.2	Brocade ICX 7150 24 (24-port) POE Family
snICX715024POE brcdIp.1.3.64.1.2.1	Brocade ICX 7150-POE 24-port POE+1G
snICX715024POESwitch brcdIp.1.3.64.1.2.1.1	Brocade ICX 7150 24-POE (24-port) Switch
snICX715024POERouter brcdIp.1.3.64.1.2.1.2	Brocade ICX 7150 24-POE (24-port) Base Router
snICX715048Family brcdIp.1.3.64.2	Brocade ICX 7150 48 (48-port) Family
snICX715048BaseFamily brcdIp.1.3.64.2.1	Brocade ICX 7150 48 (48-port) Base Family
snICX715048 brcdIp.1.3.64.2.1.1	Brocade ICX 7150 48 (48-port) 1G
snICX715048Switch brcdIp.1.3.64.2.1.1.1	Brocade ICX 7150 48 (48-port) Switch
snICX715048Router brcdIp.1.3.64.2.1.1.2	Brocade ICX 7150 48 (48-port) Router
snICX715048POEFamily brcdIp.1.3.64.2.2	Brocade ICX 7150 48 (48-port) POE Family
snICX715048POE brcdIp.1.3.64.2.2.1	Brocade ICX 7150 48-POE (48-port) POE+ 1G
snICX715048POESwitch brcdIp.1.3.64.2.2.1.1	Brocade ICX 7150 48-POE (48-port) Switch
snICX715048POERouter brcdIp.1.3.64.2.2.1.2	Brocade ICX 7150 48-POE (48-port) Router
snICX715048POEFFamily brcdIp.1.3.64.2.3	Brocade ICX 7150 48-POEF (48-port) Family
snICX715048POEF brcdIp.1.3.64.2.3.1	Brocade ICX 7150 48-POEF (48-port) POEF+ 1G

Object name and identifier	Description
snICX715048POEFSwitch brcdIp.1.3.64.2.3.1.1	Brocade ICX 7150 48-POEF (48-port) Switch
snICX715048POEFRouter brcdIp.1.3.64.2.3.1.2	Brocade ICX 7150 48-POEF (48-port) Router
snICX7150C12POEFamily brcdIp.1.3.64.3	Brocade ICX 7150 C12 (12-port) POE Family
snICX7150C12POEBaseFamily brcdIp.1.3.64.3.1	Brocade ICX 7150 C12 (12-port) POE Base Family
snICX7150C12POE brcdIp.1.3.64.3.1.1	Brocade ICX 7150 C12 (12-port) POE+1G
snICX7150C12POESwitch brcdIp.1.3.64.3.1.1.1	Brocade ICX 7150 C12 (12-port) POE Switch
snICX7150C12POERouter brcdIp.1.3.64.3.1.1.2	Brocade ICX 7150 C12 (12-port) POE Router
snICX715048ZPFamily	Brocade ICX 7150 48P POE 48-port Management Module
snICX715048ZP	Brocade ICX7150 48-ZP 32-port POEF+ 1G/16-port 2.5G
snICX715048ZPSwitch	Brocade ICX7150 48-ZP 32-port POEF+ 1G/16-port 2.5G Switch
snICX715048ZPRouter	Brocade ICX7150 48-ZP 32-port POEF+ 1G/16-port 2.5G Router

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General chassis information

The following objects apply to all devices.

Name, OID, and syntax	Access	Description
snChasType brcdIp.1.1.1.1.1 Syntax: DisplayString	Read-only	Shows the type of device being managed. This object can have up to 128 characters. Possible value: 1
snChasSerNum brcdIp.1.1.1.1.2 Syntax: DisplayString	Read-only	Shows the serial number of the chassis stored in the EEPROM of the device. This is not the serial number on the label of the device. If the chassis serial number is available, it is the lowest three octets of the lowest MAC address in the device. For example, if the lowest MAC address is 00e0 52a9 2b20, then the serial number of the chassis is a92b20. If the serial number is unknown or unavailable, then the value is a null string. This object can have up to 128 characters.

Fan status

Name, OID, and syntax	Access	Description
snChasFanStatus brcdIp.1.1.1.1.4 Syntax: Integer32	Read-only	Description
snChasMainBrdDescription brcdIp.1.1.1.1.5 Syntax: DisplayString	Read-only	Shows the status of fans in stackable products. There are six fans per device. This is a packed bit string. Each bit shows one of the following values: • 0 - Fan failure. • 1 - Fan is operational The following shows the meaning of each bit: **Bit position Meaning** 6 - 31 Reserved

Name, OID, and syntax	Access	Description
		5 Fan6 status 4 Fan5 status 3 Fan4 status 2 Fan3 status 1 Fan2 status 0 Fan1 status (Bit 0 is the least significant bit.)
snChasMainPortTotal brcdIp.1.1.1.1.6 Syntax: Integer	Read-only	Shows the main board. This object can have up to 128 characters.
snChasExpBrdDescription brcdIp.1.1.1.1.7 Syntax: DisplayString	Read-only	Shows the description of the expansion board. This object can have up to 128 characters.
snChasExpPortTotal brcdIp.1.1.1.1.8 Syntax: Integer	Read-only	Shows the total number of ports on the expansion board. Valid values: 1 - 24
snChasStatusLeds brcdIp.1.1.1.1.9 Syntax: Integer	Read-only	This object is replaced by the object snAgentBrdStatusLedString. This status LED on the front panel of a device shows the status of the link. It is represented by one bit. There can be up to 32 bits per slot. Status can be one of the following: • 0 - Link off • 1 - Link on
snChasTrafficLeds brcdIp.1.1.1.1.10 Syntax: Integer	Read-only	This object is replaced by the object snAgentBrdTrafficLedString. This traffic LED on the front panel of a device shows the traffic status. It is represented by one bit. There can be up to 32 bits per slot. Status can be one of the following: • 0 - No traffic • 1 - Traffic is flowing
snChasMediaLeds brcdIp.1.1.1.1.11 Syntax: Integer	Read-only	This object is replaced by the object snAgentBrdMediaLedString. It is represented by one bit. There can be up to 32 bits per slot. Status can be one of the following: • 0 - Half-duplex • 1 - Full-duplex
snChasEnablePwrSupplyTrap brcdIp.1.1.1.1.12 Syntax: Integer	Read-write	Indicates if the SNMP agent process has been enabled to generate power supply failure traps: • disabled(0) • enabled(1) Default: enabled(1)
snChasMainBrdId brcdIp.1.1.1.1.13 Syntax: Octet String	R-only	Applies to all stackable products. It identifies the main board. This is an encoded octet string. Each octet provides the following information: **Octet 0** - Identifies the format of this octet string. **Octets 1 and 2:** **If Octet 0 has a value of 1, then:**

Name, OID, and syntax	Access	Description
		Octet 1 - Product type: • FIWG - 0x57 • FIBB - 0x42 • FIMLS - 0x4D • TI - 0x54 • TIRT - 0x52 **Octet 2** - Board type: • POWERPC - 1 • ALPHA - 2 The length of the octet string is 27. **If Octet 0 has a value of 2, then:** **Octet 1** - Product type: • BI_WG - 0x57 • BI_BB - 0x42 • NI_M4 - 0x4D • BI_SLB - 0x53 **Octet 2** - Module type: • MASTER_FIBER_8G - 0x0 • MASTER_FIBER_4G - 0x1 • MASTER_COPPER_16 - 0x2 • FI_MASTER_FIBER_2G - 0x4 • FI_MASTER_FIBER_4G - 0x5 • MASTER_COPPER_8G - 0x6 • FI_MASTER_FIBER_8G - 0x7 • MASTER_COPPER_12_2 - 0x9 • MASTER_FIBER_2G - 0x12 • MASTER_FIBER_0G - 0x14 • FI_MASTER_COPPER_8G - 0x1D • FI_MASTER_COPPER_4G - 0x1F • FI_MASTER_COPPER_2G - 0x20 • MASTER_COPPER_4G - 0x21 • MASTER_COPPER_2G - 0x22 • MASTER_M4_8G - 0x23 • MASTER_M4_4G - 0x24 • MASTER_M4_0G - 0x26 The length of the octet string is 28. **Octet 3** - Processor type (both format version 1 and 2): • PVR_M603 - 3 • PVR_M604 - 4 • PVR_M603E - 6 • PVR_M603EV - 7 • PVR_M604E - 9 **Octet 4 to Octet 5** - Processor speed in MHz (both format version 1 and 2) **Octet 6** - MAC type: • MAC_NONE - 0

Name, OID, and syntax	Access	Description
		• MAC_SEEQ_10_100 - 1 • MAC_DEC_10_100 - 2 • PHY_ICS - 3 • MAC_XI0GMAC_1000 - 4 • MAC_SEEQ_1000 - 5 • MAC_GMAC_1000 - 6 • MAC_VLSI_1000 - 7 **Octet 7** - PHY type (both format version 1 and 2): • PHY_NONE - 0 • PHY_QSI - 1 • PHY_BROADCOM - 2 • PHY_ICS - 3 • PHY_NATIONAL - 4 • PHY_LEVEL1 - 6 • PHY_LEVEL16 - 7 • PHY_LEVEL24 - 8 **Octet 8** - Port type: • COPPER - 0 • FIBER - 1 **Octet 9** - Fiber port type (both format version 1 and 2): • NONFIBER - 0 • SX_FIBER - 1 • LX_FIBER - 2 • LHX_FIBER - 3 • LX_SX_FIBER - 4 • LHB_FIBER - 5 **Octet 10 to Octet 13** - DRAM size in KBytes (both format version 1 and 2) **Octet 14 to Octet 17** - Boot flash size in KBytes (both format version 1 and 2) **Octet 18 to Octet 21** - Code flash size in KBytes (both format version 1 and 2) **Octet 22 to Octet 27** - Serial number (both format version 1 and 2) **Octet 28** - Chassis backplane type (format version 1 only): This octet applies only if Octet 0 is equal to 1. • chassis4000 - 0x00 • chassis8000 - 0x04 • chassis15000 - 0x05 • Turbo8 - 0x07 (stack2) • FastIron2 - 0x06 (stack1)
snChasEnableFanTrap brcdIp.1.1.1.1.16 Syntax: Integer	Read-write	For chassis devices only. Indicates if the SNMP agent process has been enabled to generate fan failure traps: • disabled(0) • enabled(1) Default: enabled(1)
snChasIdNumber brcdIp.1.1.1.1.17	Read-only	Shows the chassis identity number. This is used by inventory control. This is not the number on the label of the device.

Name, OID, and syntax	Access	Description
Syntax: DisplayString		By default, this object displays a null string. This object can have up to 64 characters.
snChasEnableTempWarnTrap brcdIp.1.1.1.1.21 Syntax: Integer	Read-write	Indicates if the SNMP agent process has been enabled to generate temperature warning traps: • disabled(0) • enabled(1) Default: enabled(1)

Flash card

The following objects manage the flash cards in all the devices.

Name, OID, and syntax	Access	Description
snChasFlashCard brcdIp.1.1.1.1.22 Syntax: Integer32	Read-only	Applies only to M4 management modules. This object is a bit array that contains the flash card status. This is a packed bit string. The status of each flash card is encoded into one bit. There can be up to two flash cards. The bits are: • 2 to 31 - Reserved • 1 - Flash card 2 status • 0 - Flash card 1 status (Bit 0 is the least significant bit.) Flash card status can be one of the following: • 0 - Flash card is absent • 1 - Flash card is present
snChasFlashCardLeds brcdIp.1.1.1.1.23 Syntax: Integer32	Read-only	Shows the status of LEDs on a flash card. Each bit shows one of the following: • 0 - Flash card is off • 1 - Flash card is on
snChasNumSlots brcdIp.1.1.1.1.24 Syntax: Integer32	Read-only	Shows the number of slots in the chassis.
snChasArchitectureType brcdIp.1.1.1.1.25 Syntax: Integer	Read-only	Shows the architecture type: • stackable(1) - old stackable • bigIron(2) • terathon(3) • fifthGen(4)
snChasProductType brcdIp.1.1.1.1.26 Syntax: Integer	Read-only	Shows the product type. The following shows the meaning of each bit: • invalid(0) • BigIron MG8(1) • BigIron RX 800(4) • BigIron RX 400(6) • BigIron RX 200(8)

Name, OID, and syntax	Access	Description
		• BigIron RX-32(15)
snChasGlobalIgnoreShutdownTemperature brcdIp.1.1.1.1.30 Syntax: Integer **NOTE** This object is supported only on the Brocade ICX 7750 and ICX 7450 devices.	Read-write	Enables or disables the temperature threshold shutdown (Battleshort mode) at global level. Able to fetch the temperature threshold shutdown (Battleshort mode) status enabled (1) or disabled (0) at global level. **NOTE** The device allow either to enable global battle short mode or unit specific battle short mode at a time not for both configuration. The valid values are: • enable(1) • disable(0) The default value is disable(0). SNMP WALK and SNMP GET operations of the OID gives the default value as zero for the unsupported platforms.

Power supply table

The following table applies to the power supply in all products.

Name, OID, and syntax	Access	Description
snChasPwrSupplyTable brcdIp.1.1.1.2.1	None	A table containing power supply information. Only installed power supplies appear in the table.
snChasPwrSupplyIndex brcdIp.1.1.1.2.1.1.1 Syntax: Integer32	Read-only	The index to the power supply table.
snChasPwrSupplyDescription brcdIp.1.1.1.2.1.1.2 Syntax: DisplayString	Read-only	The power supply description. For example, you may see the description, "right side power supply". This object can have up to 128 characters.
snChasPwrSupplyOperStatus brcdIp.1.1.1.2.1.1.3 Syntax: Integer	Read-only	The status of the power supply: • other(1) - Status is neither normal(2) or failure(3). This value is not used for stackables including FastIron 4802. • normal(2) • failure(3)

Stacking power supply table

The following table shows the status of a power supply on devices that support the stacking functionality.

Name, OID, and syntax	Access	Description
snChasPwrSupply2Table brcdIp.1.1.1.2.2	None	A table of power supply information for each unit. Only an installed power supply is displayed in a table row.
snChasPwrSupply2Unit brcdIp.1.1.1.2.2.1.1 Syntax: Integer	Read-only	The index to the power supply table.
snChasPwrSupply2Index brcdIp.1.1.1.2.2.1.2 Syntax: Integer	Read-only	The index to the power supply table that identifies the power supply unit.
snChasPwrSupply2Description brcdIp.1.1.1.2.2.1.3 Syntax: DisplayString	Read-only	The power supply description string. This description can have up to 128 characters.
snChasPwrSupply2OperStatus brcdIp.1.1.1.2.2.1.4 Syntax: Integer	Read-only	The power supply operation status: • other(1) • normal(2) • failure(3)

Fan table

The following table applies to the fans in all devices, except for devices that support the stacking functionality.

Name, OID, and syntax	Access	Description
snChasFanTable brcdIp.1.1.1.3.1	None	A table containing fan information. Only installed fans appear in the table.
snChasFanIndex brcdIp.1.1.1.3.1.1.1 Syntax: Integer32	Read-only	The index to the fan table.
snChasFanDescription brcdIp.1.1.1.3.1.1.2 Syntax: DisplayString	Read-only	The fan description. For example, you may see the description "left side panel, back fan". This object can have up to 128 characters.
snChasFanOperStatus brcdIp.1.1.1.3.1.1.3 Syntax: Integer	Read-only	The status of the fan operation: • other(1) • normal(2) • failure(3)

Stacking fan table

The following table shows the fan status for devices that support the stacking functionality.

Name, OID, and syntax	Access	Description
snChasFan2Table brcdIp.1.1.1.3.2	None	A table of fan information for each unit. Only an installed fan is displayed in a table row.
snChasFan2Unit brcdIp.1.1.1.3.2.1.1	Read-only	The unit to the fan table.

Name, OID, and syntax	Access	Description
Syntax: Integer		
snChasFan2Index brcdIp.1.1.1.3.2.1.2 Syntax: Integer	Read-only	The index to the fan table.
snChasFan2Description brcdIp.1.1.1.3.2.1.3 Syntax: DisplayString	Read-only	The fan description string. This description can have up to 128 characters.
snChasFan2OperStatus brcdIp.1.1.1.3.2.1.4 Syntax: Integer	Read-only	The fan operation status: • other(1) • normal(2) • failure(3)

Stacking chassis unit information

The following table manages the temperature for devices that supports the stacking functionality.

Name, OID, and syntax	Access	Description
snChasUnitTable brcdIp.1.1.1.4.1	None	A table of information for each unit in a stack. Only an active unit is displayed in a table row.
snChasUnitIndex brcdIp.1.1.1.4.1.1.1 Syntax: Integer32	Read-only	The index to the table.
snChasUnitSerNum brcdIp.1.1.1.4.1.1.2 Syntax: DisplayString	Read-only	The serial number of the unit. If the serial number is unknown or unavailable, then the value should be a zero length string. There can be up to 128 characters for the serial number.
snChasUnitNumSlots brcdIp.1.1.1.4.1.1.3 Syntax: Integer32	Read-only	Number of slots of the chassis for each unit.
snChasUnitActualTemperature brcdIp.1.1.1.4.1.1.4 Syntax: Integer	Read-only	Temperature of the chassis. Each unit is 0.5° Celsius. This object applies only to management modules with temperature sensors in hardware. For management modules without temperature sensors, it returns "no-such-name". Values are from -110 through 250° Celsius.
snChasUnitWarningTemperature brcdIp.1.1.1.4.1.1.5 Syntax: Integer	Read-only	Actual temperature higher than the threshold value triggers the switch to send a temperature warning trap. Each unit is 0.5° Celsius. This object applies only to management modules with temperature sensors in hardware. For management modules without temperature sensors, it returns "no-such-name". Values are from 0 through 250° Celsius.
snChasUnitShutdownTemperature brcdIp.1.1.1.4.1.1.6 Syntax: Integer	Read-only	Actual temperature higher than the threshold value will shut down a portion of the switch hardware to cool down the system. Each unit is 0.5° Celsius. This object applies only to management modules with temperature sensors

Name, OID, and syntax	Access	Description
		in hardware. For management modules without temperature sensors, it returns "no-such-name". Values are from 0 through 250° Celsius.
snChasUnitPartNum brcdIp. 1.1.1.4.1.1.7 Syntax: DisplayString	Read-only	Nothing is displayed if the part number is unknown or unavailable.
snChasUnitIgnoreShutdownTemperature brcdIp.1.1.1.4.1.1.8 Syntax: Integer NOTE This object is supported only on the Brocade ICX 7750 and ICX 7450 devices.	Read-write	Enables or disables the temperature threshold shutdown (Battleshort mode) on the unit specific. Fetches the temperature threshold shutdown (Battleshort mode) status enabled (1) or disabled (0) on the unit specific. NOTE The device allow either to enable global battle short mode or unit specific battle short mode at a time not for both configuration. The default value is disabled(0). SNMP WALK and SNMP GET operations of the OID gives the default value as zero for the unsupported platforms.

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Agent global group

The following objects allow you to reload the agent.

Name, OID, and syntax	Access	Description
snAgReload brcdIp.1.1.2.1.1 Syntax: Integer	Read-write	Reboots the agent. The following values can only be read: • other(1) - Agent is in unknown or other state. • running(2) - Agent is running. • busy(4) - Reload is not allowed at this time as flash is busy. The following value can be written: • reset(3) - Do a hard reset. NOTE The agent returns a response before the action occurs. This object requires a password to be set for the snAgGblPassword object. User can disable the password using **no snmp-server pw-check** command.
snAgEraseNVRAM brcdIp.1.1.2.1.2 Syntax: Integer	Read-write	Erases the NVRAM of the agent. This object can have one of the following values: • normal(1) - NVRAM is not being erased. • error(2) - Either the erase operation failed or the flash memory is bad. • erasing(4) - NVRAM is being erased. If the process starts, you cannot set this object to erase(3) until the process is finished and the value of this object is either normal(1) or error(2). • busy(5) - Operation is not allowed at this time as flash is busy. The following value can be written: • erase(3) - Erase operation. The agent returns a response even before the erase operation is complete. The read values will be erased until the erase operation is finished. New erase requests will be rejected until an error(2) or normal(1) value is obtained.

Name, OID, and syntax	Access	Description
snAgWriteNVRAM brcdIp.1.1.2.1.3 Syntax: Integer	Read-write	Saves all configuration information to NVRAM of the agent. The following values can only be read: • normal(1) • error(2) - Operation failed or the flash is bad. • writing(4) - Agent is writing to NVRAM flash. • busy(5) - Operation is not allowed at this time as flash is busy. The following value can be written: • write(3) - Write operation. The agent returns a response even before the write operation is complete. The read values will be written until the write operation is finished. New write requests will be rejected until an error(2) or normal(1) value is obtained. This object requires a password to be set for the snAgGblPassword object.
snAgConfigFromNVRAM brcdIp.1.1.2.1.4 Syntax: Integer	Read-write	Configures the switch from NVRAM of the agent. The following values can only be read: • normal(1) • error(2) - Operation failed or the flash is bad. • configing(4) - Configuring from NVRAM flash is in process. • busy(5) - Operation is not allowed at this time as flash is busy. The following value can be written: • config(3) - Do configuration. The agent returns a response after configuration is done. This object requires a password to be set for the snAgGblPassword object. NOTE The object snAgConfigFromNVRAM is obsolete and it is not supported on any of the FastIron devices.

Image and configuration file download and upload

The following objects manage file downloads and uploads. They are available in all devices.

When uploading or downloading configuration files to and from the TFTP server using SNMP, check for the following:

- If the SNMP password check is enabled on the device, the object must be sent with the following information in the same PDU as the TFTP objects:
  - If AAA is used for SNMP authentication and the authentication method is enable or line, then the value of snAgGlbPassword must be in cleartext format.
  - If AAA is used for SNMP authentication and the authentication method is local, RADIUS, Telnet, TACACS, or TACACS+, then the value of snAgGlbPassword must be in the *user password* format. The space between *user* and *password* is the delimiter.
  - If AAA is not used for authentication, then the value of snAgGlbPassword for the enable password must be in cleartext format.
- Make sure that the user has administrative access (privilege=0) on the device; otherwise, the user will not be able to upload files to the TFTP server.

NOTE
An atomic set of snAgImgLoad, snAgImgFname, snAgTftpServerAddrType and snAgTftpServerAddr is required for a successful download or upload.

Name, OID, and syntax	Access	Description
snAgImgFname brcdIp.1.1.2.1.6 Syntax: DisplayString	Read-write	Shows the name of the image file, including path, that is currently associated with the system. When the object is not used, the value is blank. It can have up to 32 characters.
snAgImgLoad brcdIp.1.1.2.1.7 Syntax: Integer	Read-write	Downloads or uploads a new software image to the agent. Use one of the following values in an SNMP set: • uploadMPPrimary(19) - Uploads the primary image from the management processor flash memory to the TFTP server. • downloadMPPrimary(20) - Downloads the primary image from the TFTP server to management processor flash memory. • uploadMPSecondary(21) - Uploads the secondary image from the management processor flash memory to the TFTP server. • downloadMPSecondary(22) - Downloads the secondary image from the TFTP server to management processor flash memory. • downloadSPPrimary(24) - Downloads the primary image from the TFTP server to secondary processor flash memory. • downloadSPSecondary(25) - Downloads the secondary image from the TFTP server to secondary processor flash memory. • uploadMPBootROM(26) - Uploads the Boot from the management processor flash memory to the TFTP server. • downloadMPBootROM(27) - Downloads the Boot from flash image from the TFTP server to management processor flash memory. • uploadMPBootTFTP(28) - Uploads the Boot from TFTP image from management processor flash memory to the TFTP server. • downloadMPBootTFTP(29) - Downloads the Boot from TFTP image from the TFTP server to management processor flash memory. • uploadMPMonitor(30) - Uploads the Monitor image from management processor flash memory to the TFTP server.

Name, OID, and syntax	Access	Description
		• downloadMPMonitor(31) - Downloads the Monitor image from the TFTP server to management processor flash memory. • downloadSPBootROM(32) - Download the Boot image from the TFTP server to secondary processor flash memory . • downloadSPMonitor(33) - Download the monitor image from TFTP server to SP flash. The following messages may be displayed: • normal(1) • flashPrepareReadFailure(2) • flashReadError(3) • flashPrepareWriteFailure(4) • flashWriteError(5) • tftpTimeoutError(6) • tftpOutOfBufferSpace(7) • tftpBusy(8) • tftpRemoteOtherErrors(9) • tftpRemoteNoFile(10) • tftpRemoteBadAccess(11) • tftpRemoteDiskFull(12) • tftpRemoteBadOperation(13) • tftpRemoteBadId(14) • tftpRemoteFileExists(15) • tftpRemoteNoUser(16) • operationError(17) • loading(18) - The operation is in process. • uploadMPPrimary(19) • downloadMPPrimary(20) • uploadMPSecondary(21) • downloadMPSecondary(22) • tftpWrongFileType(23) • downloadSPPrimary(24) • downloadSPSecondary(25) • uploadMPBootROM(26) • downloadMPBootROM(27) • uploadMPBootTFTP(28) • downloadMPBootTFTP(29) • uploadMPMonitor(30) • downloadMPMonitor(31) • downloadSPBootROM(32) • downloadSPMonitor(33) This object requires a password to be set for the snAgGblPassword object.

Name, OID, and syntax	Access	Description
snAgCfgFname brcdIp.1.1.2.1.8 Syntax: DisplayString	Read-write	Shows the name of the configuration file, including its path, currently associated with the system. If there are multiple configuration files, the names are separated by semicolons (;). This object can have up to 32 characters.
snAgCfgLoad brcdIp.1.1.2.1.9 Syntax: Integer	Read-write	Downloads or uploads a configuration file to the agent. Use one of the following values for an SNMP set: • uploadFromFlashToServer(20) - Uploads the configuration file from the flash to the TFTP server. • downloadToFlashFromServer(21) - Downloads the configuration file from the TFTP server to flash. • uploadFromDramToServer(22) - Uploads the configuration file from the DRAM to the TFTP server. • downloadToDramFromServer(23) - Downloads the configuration file from the TFTP server to DRAM. • uploadFromFlashToNMS(24) - Uploads the configuration file from flash to the network management system. • downloadToFlashFromNMS(25) - Downloads the configuration file from the network management system to flash. • uploadFromDramToNMS(26) - Uploads the configuration file from DRAM to the network management system. • downloadToDramFromNMS(27) - Downloads the configuration file from the network management system to DRAM. The following values may be read: • normal(1) • flashPrepareReadFailure(2) • flashReadError(3) • flashPrepareWriteFailure(4) • flashWriteError(5) • tftpTimeoutError(6) • tftpOutOfBufferSpace(7) • tftpBusy(8) • tftpRemoteOtherErrors(9) • tftpRemoteNoFile(10) • tftpRemoteBadAccess(11) • tftpRemoteDiskFull(12) • tftpRemoteBadOperation(13) • tftpRemoteBadId(14) • tftpRemoteFileExists(15)

Name, OID, and syntax	Access	Description
		• tftpRemoteNoUser(16) • operationError(17) • loading(18) • tftpWrongFileType(29) • operationDoneWithNMS(28) • tftpWrongFileType(29) • downloadToDramFromServerOverwrite(30) The objects Image and configuration file download and upload and "snAgTftpServerIp" are required to allow the download or upload process to occur.No write requests is allowed while a download or upload process is in progress. The snAgCfgEosTable objects must be sent along in one PDU for network management systems to recognize values from (24) to (27).A separate write memory using the CLI or an SNMP "set snAgWriteNVRAM" is required to save the configuration to NVRAM.This object requires a password to be set for the snAgGblPassword object. NOTE The snAgTftpServerIp object is deprecated by the snAgTftpServerAddrType object and the snAgTftpServerAddr object supports both IPv4 and IPv6.
snAgTftpServerAddrType brcdIp.1.1.2.1.65 Syntax: IpAddress	Read-write	Shows the TFTP server IP address type. The supported address types are ipv4(1) and ipv6(2). The default address type is ipv4(1).
snAgTftpServerAddr brcdIp.1.1.2.1.66 Syntax: DisplayString	Read-write	Shows the TFTP server IP address.
snAgGblPasswordCheckMode brcdIp.1.1.2.1.68 Syntax: EnabledStatus NOTE This object is not supported on the Brocade FastIron devices.	Read-only	When enabled all image- or file-related MIB object SET request PDUs must include the password using the snAgGblPassword object. • enabled(1) - The password checking for SNMP SET request is enabled. The default value is enabled(1). • disabled(2) - The password checking for SNMP SET request is disabled.

Default gateway IP address

The following table lists the MIB object for the default gateway IP address.

Name, OID, and syntax	Access	Description
snAgDefGwayIp brcdIp.1.1.2.1.10 Syntax: Integer	Read-write	Shows the IP address of the default gateway router.

Configuration notes

When using the snAgGblPassword object in a Set operation, the following must be considered:

The device always insist on a password to be part of snAgGblPassword object. You can override this requirement by entering the **no snmp-server pw-check** command.

By default, the object uses the value of the **enable super-user** password configured on the device as the default password. To allow a device to use other authentication schemes, use the **aaa authen snmp-server default enable** | **local** | **none** command.

The **enable** option instructs the device to use the configured enable super-user password. If the enable super-user password is missing, then the device checks for the if implicit TACACS+ enable password. The device stores a previous (unrelated to SNMP) implicit enable operation result and remembers the enable password that was approved by TACACS+. You can enter the following command to use this method.

```
SnmpSet(snAgGblPassword.0="<enable-password>", snAgEraseNVRAM.0=3)
```

The **local** option instructs the device to use a configured local username and password value. You can enter the following SNMP command to use this method.

```
SnmpSet(snAgGblPassword.0="<username> <password>", snAgEraseNVRAM.0=3)
```

The **none** option instructs the device to ignore the value of snAgGblPassword and the authentication check will always pass. You can enter the following SNMP command to use this method.

```
SnmpSet(snAgGblPassword.0="<anything here>", snAgEraseNVRAM.0=3)
aaa authentication login default TACACS+
aaa authentication enable default TACACS+
aaa authentication enable implicit-user
```

The snAgGblPassword object must be set for the following objects:

- snAgCfgLoad
- snAgImgLoad
- snAgConfigFromNVRAM
- snAgEraseNVRAM
- snAgWriteNVRAM
- snAgGblTelnetPassword
- snAgReload
- snAgSystemLog

Usage notes on CPU utilization and system CPU utility table

There are three groups of CPU utilization MIB objects.

Group A consists of the following object and it is not to be used.

MIB object	OID
snAgGblCpuUtilData	brcdIp.1.1.2.1.35

The object in this group can display management module CPU utilization. The data it displays is from the last time that this object was read. If there is more than one management station reading the object, conflict occurs because every read resets the CPU utilization until the next read. It is recommended that this object not to be used.

Group B consists of the following objects.

MIB object	OID
snAgGblCpuUtil1SecAvg	brcdIp.1.1.2.1.50
snAgGblCpuUtil5SecAvg	brcdIp.1.1.2.1.51
snAgGblCpuUtil1MinAvg	brcdIp.1.1.2.1.52

Group B was created to resolve the multi-management stations issue of snAgGblCpuUtilData. These three objects are time-based. However, they only work for the management CPU utilization.

Use snAgentCpuUtilTable if supported on a device instead of snAgGblCpuUtil1SecAvg, snAgGblCpuUtil5SecAvg, and snAgGblCpuUtil1MinAvg.

Group C consists of the snAgentCpu table.

MIB object	OID
snAgentCpu	brcdIp.1.1.2.11
snAgentCpuUtilTable	brcdIp.1.1.2.11.1
snAgentCpuUtilEntry	brcdIp.1.1.2.11.1.1
snAgentCpuUtilSlotNum	brcdIp.1.1.2.11.1.1.1
snAgentCpuUtilCpuId	brcdIp.1.1.2.11.1.1.2
snAgentCpuUtilInterval	brcdIp.1.1.2.11.1.1.3
snAgentCpuUtilValue NOTE This object is deprecated. Use the snAgentCpuUtilPercent and snAgentCpuUtil100thPercent objects for these devices.	brcdIp.1.1.2.11.1.1.4

The snAgentCpu table was created because switch families evolved from a single-CPU system to a multi-CPU system and CPU utilization information to non-management CPUs is required.

Image version

The following objects show information about software images in a device. These objects are available in all devices.

Name, OID, and syntax	Access	Description
snAgImgVer brcdIp.1.1.2.1.11 Syntax: DisplayString	Read-only	Shows the version of the running software. The software image file name is displayed in the following format. `major.minor.maintenance[letters]` It can have up to 32 characters.
snAgFlashImgVer brcdIp.1.1.2.1.12 Syntax: DisplayString	Read-only	Shows the version of the software image that has been saved in the local storage, such as the flash memory. The software image file name is displayed in the following format: `major.minor.maintenance[letters]` It can have up to 32 characters. If this file is unknown or not available, then this object displays a null string.
snAgGblIfIpAddr brcdIp.1.1.2.1.13 Syntax: Integer	Read-write	Shows the IP address of the interface.
snAgGblIfIpMask brcdIp.1.1.2.1.14 Syntax: Integer	Read-write	Shows the IP address mask of the interface.
snAgGblPassword brcdIp.1.1.2.1.15 Syntax: DisplayString	Read-write	Shows the system security access password, which is used only for an SNMP-Set. An SNMP-Get will return a zero string. If the **password-change any** command (the default) is configured on the device, then this object must be part of the SNMP Set operation on some critical SNMP objects. The value of this object depends on the authentication method for SNMP operation: • If there is no AAA authentication configuration for SNMP, then this object will have the enable super-user password. • If AAA authentication for SNMP is configured and has the leading method as “enable” or “line”, this object will have the corresponding “enable” or “line” password. • If the switch has AAA authentication for SNMP operation, and the method specified is one of local, TACACS+, or RADIUS, this object will have the *username password* format with one space character between *username* and *password* . The maximum size allows concatenation of 48 octets of username and 48 octets of password, with one blank character Refer to Configuration notes on page 83 for more details. Valid values: Up to 48 octets

Name, OID, and syntax	Access	Description
snAgGblDataRetrieveMode brcdIp.1.1.2.1.19 Syntax: Integer	Read-write	Retrieves the VLAN Table and Port-STP Table data as indicated by the selected mode. The mode can be one of the following: • nextbootCfg(0) - Retrieves the next boot configuration data. • operationalData(1) - Retrieves the current running data. Default: nextbootCfg(0)
snAgSystemLog brcdIp.1.1.2.1.20 Syntax: Octet String	Read-write	Indicates whether any network management system has login privileges. The agent allows only one network management system to be logged in. The value of this object consists of an Octet String. The following four bytes contain a secret code. The value of the first byte can be one of the following: • login(1) - Login for a network management system. • heartbeat(2) - A value for the login NMS periodically to check in; otherwise, the Agent automatically sets this object to logout(3) after a timeout period. • logout(3) - A value for an NMS to log out. • changePassword(4) - A value for the login NMS to change the password, only if snAgGblPasswordChangeMode was configured to "anyMgmtEntity". • changeReadOnlyCommunity(5) - A value for the login NMS to change the read-only community string, only if snAgGblPasswordChangeMode was configured to "anyMgmtEntity". • changeReadWriteCommunity(6) - A value for the login NMS to change the read-write community string, only if snAgGblPasswordChangeMode was configured to "anyMgmtEntity". This object requires a password to be set for the snAgGblPassword object.
snAgGblEnableColdStartTrap brcdIp.1.1.2.1.21 Syntax: Integer	Read-write	Indicates if the SNMP agent process has been enabled to generate cold start traps: • disabled(0) • enabled(1) Default: enabled(1)
snAgGblEnableLinkUpTrap brcdIp.1.1.2.1.22 Syntax: Integer	Read-write	Indicates if the SNMP agent process has been enabled to generate link up traps: • disabled(0) • enabled(1)

Name, OID, and syntax	Access	Description
		Default: enabled(1)
snAgGblEnableLinkDownTrap brcdIp.1.1.2.1.23 Syntax: Integer	Read-write	Indicates if the SNMP agent process has been enabled to generate link down traps: • disabled(0) • enabled(1) Default: enabled(1)
snAgGblPasswordChangeMode brcdIp.1.1.2.1.24 Syntax: Integer	Read-only	Specifies which management entity is allowed to change the "enable" password for the device. For security reasons, this object can only be modified using the device CLI. Valid values: • anyMgmtEntity(1) - Any SNMP management station, console command line interface, or Telnet command line interface can be used to change the password. • consoleAndTelnet(2) - The password can be changed using the console command line interface or the Telnet command line interface. • consoleOnly(3) - Only the console command line interface can be used. • telnetOnly(4) - Only the Telnet command line interface can be used. Default: consoleAndTelnet(2)
snAgGblReadOnlyCommunity brcdIp.1.1.2.1.25 Syntax: DisplayString	Read-write	Allows you to configure SNMP read-only community strings for the device. This object can be used in an SNMP-Set, but not an SNMP-Get. Get returns a blank. Valid values: Up to 32 characters NOTE To use this object, make sure that "password-change any" has been configured in the device to allow passwords to be updated from SNMP or any method.
snAgGblReadWriteCommunity brcdIp.1.1.2.1.26 Syntax: DisplayString	Read-write	Allows you to configure SNMP read-write community strings for the device. This object can be used in an SNMP-Set, but not an SNMP-Get. Get will return a blank. Valid values: Up to 32 characters. NOTE To use this object, make sure that "password-change any" has been configured in the device to allow passwords to be updated from SNMP or any method.
snAgGblCurrentSecurityLevel brcdIp.1.1.2.1.27 Syntax: Integer	Read-only	Represents the current login security level (0 through 5). Each level of security requires a password to permit users for different system

Name, OID, and syntax	Access	Description
		configurations. Levels are defined in the Image version object.
snAgGblSecurityLevelSet brcdIp.1.1.2.1.28 Syntax: Integer	Read-write	Shows the security level required to set an "enable" password. This security level can be from 0 through 5.
snAgGblLevelPasswordsMask brcdIp.1.1.2.1.29 Syntax: Integer32	Read-only	Shows the bitmap of level passwords, which were successfully assigned to the system: • Bit 0 - Level 0 = admin • Bit 4 - Level 4 = port configuration • Bit 5 - Level 5 = read only
snAgGblQueueOverflow brcdIp.1.1.2.1.30 Syntax: Integer	Read-only	The device queues are overflowing: • No(0) • Yes(1)
snAgGblBufferShortage brcdIp.1.1.2.1.31 Syntax: Integer	Read-only	There is a shortage in the device buffers: • No(0) • Yes(1)
snAgGblDmaFailure brcdIp.1.1.2.1.32 Syntax: Integer	Read-only	The device DMAs are in good condition: • No(0) • Yes(1)
snAgGblResourceLowWarning brcdIp.1.1.2.1.33 Syntax: Integer	Read-only	The device has low resources available: • No(0) • Yes(1)
snAgGblExcessiveErrorWarning brcdIp.1.1.2.1.34 Syntax: Integer	Read-only	The device has excessive collision, FCS errors, alignment warnings, and other excessive warnings: • No(0) • Yes(1)
snAgGblCpuUtilData brcdIp.1.1.2.1.35 Syntax: Gauge	Read-only	The statistics collection of utilization of the CPU in the devices. Reading this object in the Brocade FastIron devices will reset all the counters. Therefore, it is not required to set the object to snAgGblUtilCollect.
snAgGblCpuUtilCollect brcdIp.1.1.2.1.36 Syntax: Integer	Read-write	Enables or disables the collection of CPU utilization statistics in a device. This can be one of the following: • enable(1) • disable(0)
snAgGblTelnetTimeout brcdIp.1.1.2.1.37 Syntax: Integer32	Read-write	Shows how many minutes a Telnet session can remain idle before it times out. Each value unit is one minute. The value of this object can be up to 240 minutes. A value of 0 means that the Telnet session never times out.
snAgGblEnableWebMgmt brcdIp.1.1.2.1.38 Syntax: Integer	Read-write	Enables or disables access to the device from the Web Management Interface: • disable(0) • enable(1)
snAgGblSecurityLevelBinding brcdIp.1.1.2.1.39 Syntax: Integer32	Read-only	After a network management system logs in to a device with a user ID and password, the privilege level assigned to that system is saved in this

Name, OID, and syntax	Access	Description
		object. The privilege level can be one of the following: • Bit 0 - Level 0 = admin • Bit 4 - Level 4 = port configuration • Bit 5 - Level 5 = read only • 255 - Invalid binding
snAgGblEnableSLB brcdIp.1.1.2.1.40 Syntax: Integer	Read-only	Enables or disables Server Load Balancing: • disable(0) • enable(1)
snAgSoftwareFeature brcdIp.1.1.2.1.41 Syntax: Octet String	Read-only	Contains a bit string representing the software feature of the running software image. Each bit can have one of the following values: • 0 - The feature is not available • 1 - The feature is available Bit 0 is the least significant bit of an octet, and bit 7 is the most significant bit of an octet: • Octet 0, bit 0 - RMON • Octet 0, bit 1 - IPX switching • Octet 0, bit 2 - Server Load Balancing • Octet 0, bit 3 - Layer 3 filter in switch • Octet 0, bit 4 - IPX routing • Octet 0, bit 6 - IP multicast routing • Octet 0, bit 7 - Local access control • Octet 1, bit 0 - BGP routing • Octet 1, bit 1 - Loopback interface • Octet 1, bit 2 - BigIron multi-management module • Octet 1, bit 3 - BigIron SYSIF II • Octet 1, bit 4 - BigIron POS support • Octet 1, bit 6 - 64 subnet • Octet 1, bit 7 - multi-slot trunk • Octet 2, bit 0 - TACACS • Octet 2, bit 1 - Gigabit Ethernet port auto-negotiation mode • Octet 2, bit 3 - Exodus requested OSPF enhancement • Octet 2, bit 4 - OSPF NSSA • Octet 2, bit 5 - POS • Octet 2, bit 6 - QoS • Octet 2, bit 7 - Single Span • Octet 3, bit 0 - Fast Span • Octet 3, bit 1 - Base Layer 3 • Octet 3, bit 2 - Static log buffer • Octet 3, bit 3 - Layer 2 POS • Octet 3, bit 4 - BI15K • Octet 3, bit 5 - Layer 2 ATM • Octet 3, bit 6 - ATM • Octet 3, bit 7 - NETFLOW

Name, OID, and syntax	Access	Description
		• Octet 4, bit 0 - sFlow • Octet 4, bit 1 - GVRP • Octet 4, bit 2 - GARP • Octet 4, bit 3 - Dynamic trunk • Octet 4, bit 4 - IGC 8G • Octet 4, bit 5 - Rate limit • Octet 4, bit 6 - IPC rate limit • Octet 4, bit 7 - MPLS • Octet 5, bit 0 - IS-IS • Octet 5, bit 1 - Link aggregation • Octet 5, bit 2 - Port dual mode • Octet 5, bit 3 - Private VLAN • Octet 5, bit 4 - MBGP • Octet 5, bit 5 - IPV6 protocol VLAN • Octet 5, bit 6 - X10G • Octet 5, bit 7 - FastIron Edge switch/ router • Octet 6, bit 0 - FDP • Octet 6, bit 1 - Port tag • Octet 6, bit 3 - snSwPortVlanId object has changed from read-only to read-write • Octet 6, bit 4 - LLDP Additional bits are added for new features. Check the MIB file for the software version you are running.
snAgGblEnableModuleInsertedTrap brcdIp.1.1.2.1.42 Syntax: Integer	Read-write	Indicates if the SNMP agent process has been enabled to generate traps for hardware modules that have been inserted in the chassis: • disabled(0) • enabled(1) Default: enabled(1)
snAgGblEnableModuleRemovedTrap brcdIp.1.1.2.1.43 Syntax: Integer	Read-write	Indicates if the SNMP agent process has been enabled to generate traps for hardware modules that have been removed from the chassis: • disabled(0) • enabled(1) Default: enabled(1)
snAgGblEnableTelnetServer brcdIp.1.1.2.1.45 Syntax: Integer	Read-write	Enables or disables the Telnet server in a device: • disable(0) • enable(1) Default: enable(1)
snAgGblTelnetPassword brcdIp.1.1.2.1.46 Syntax: DisplayString	Read-write	Contains the Telnet access password, which is only used with an SNMP-Set. An SNMP-Get produces a zero string. This object can have 48 characters. This object requires a password to be set for the snAgGblPassword object.

Name, OID, and syntax	Access	Description
snAgBuildDate brcdIp.1.1.2.1.47 Syntax: DisplayString	Read-only	Shows the date when the software was built. It can display up to 32 characters.
snAgBuildtime brcdIp.1.1.2.1.48 Syntax: DisplayString	Read-only	Shows the time when the software was built. It can display up to 32 characters.
snAgBuildVer brcdIp.1.1.2.1.49 Syntax: DisplayString	Read-only	Shows the image label of the software. It can display up to 32 characters.
snAgGblCpuUtil1SecAvg brcdIp.1.1.2.1.50 Syntax: Gauge32	Read-only	Shows CPU utilization every second. Use snAgentCpuUtilTable on the devices.
snAgGblCpuUtil5SecAvg brcdIp.1.1.2.1.51 Syntax: Gauge32	Read-only	Shows CPU utilization every five seconds. Use snAgentCpuUtilTable on the devices.
snAgGblCpuUtil1MinAvg brcdIp.1.1.2.1.52 Syntax: Gauge32	Read-only	Shows CPU utilization every minute. Use snAgentCpuUtilTable on the devices.
snAgGblDynMemUtil brcdIp.1.1.2.1.53 Syntax: Gauge32	Read-only	Shows the system dynamic memory utilization of the device in percentage units.
snAgGblDynMemTotal brcdIp.1.1.2.1.54 Syntax: Guage32	Read-only	Shows the total amount of system dynamic memory available in a device in number of bytes. NOTE This object is deprecated. Refer to snAgSystemDRAMTotal for system dynamic memory details.
snAgGblDynMemFree brcdIp.1.1.2.1.55 Syntax: Gauge32	Read-only	Shows the amount of system dynamic memory that is currently available in a device in number of bytes.
snAgImgLoadSPModuleType brcdIp.1.1.2.1.56 Syntax: Integer	Read-write	Shows the switch processor module type that receives the downloaded image: • other(1) • vm1(2) • pos12(3) • pos48(4) • atm(5) • gignpa(6) • lp(7)
snAgImgLoadSPModuleNumber brcdIp.1.1.2.1.57 Syntax: Integer32	Read-write	Shows the slot number of a switch processor module that receives the downloaded image. Setting this object to zero (0) means that the switch processor modules receives the image.
snAgTrapHoldTime brcdIp.1.1.2.1.58 Syntax: Integer	Read-write	The number of seconds that traps will be held during device initialization. Traps are buffered while the device is initialized; they are sent when the device is back online.

Name, OID, and syntax	Access	Description
		Valid value: 1 - 600
snAgSFlowSourceInterface brcdIp.1.1.2.1.59 Syntax: InterfaceIndex	Read-write	Identifies the source interface for sFlow packets sent by the device that is running sFlow Export. Use the ifIndex value for this object to specify the source interface to be used. The interface should have an IP address configured for sFlow. A value of zero (0) indicates that a source interface has not been configured for sFlow. Port 65534 is used to specify a null port.
snAgGblTelnetLoginTimeout brcdIp.1.1.2.1.60 Syntax: Integer	Read-write	Indicates how many minutes you have to log in before Telnet is disconnected. Valid values: 1 - 10 minutes Default: 1 minute
snAgGblBannerExec brcdIp.1.1.2.1.61 Syntax: DisplayString	Read-write	Enter a message that will be displayed when a user enters the Privileged EXEC CLI level of a device. Enter up to 2048 characters for this banner. Use the character "\n" within the string to start a new line. Leave this object blank if no message is to be displayed.
snAgGblBannerIncoming brcdIp.1.1.2.1.62 Syntax: DisplayString	Read-write	Enter a message that will be displayed on the console when a user establishes a Telnet session. This message includes the location where the user is connecting from and displays a text message that can be configured. Enter up to 2048 characters for this banner. Use the character "\n" within the string to start a new line. Leave this object blank if no message is to be displayed.
snAgGblBannerMotd brcdIp.1.1.2.1.63 Syntax: DisplayString	Read-write	Enter the message of the day that is displayed on a user's terminal when the user establishes a Telnet CLI session. Enter up to 2048 characters for this banner. Use the character "\n" within the string to start a new line. Leave this object blank if no message is to be displayed.
snAgWebMgmtServerTcpPort brcdIp.1.1.2.1.64 Syntax: Integer	Read-write	This object allows you to specify which TCP port will be used for the Web Management Interface. Enter a number from 1 through 65535.

Agent board table

The agent board table provides information about the boards. It contains the board ID, board status, LEDs, status, and other information about the main and expansion boards.

Name, OID, and syntax	Access	Description
snAgentBrdTable brcdIp.1.1.2.2.1	None	A table of each physical board information.
snAgentBrdIndex brcdIp.1.1.2.2.1.1.1 Syntax: Integer32	Read-only	The index to the agent board table. Valid values: 1 - 42
snAgentBrdMainBrdDescription brcdIp.1.1.2.2.1.1.2 Syntax: DisplayString	Read-only	Contains the main board description. This object can have up to 128 characters.
snAgentBrdMainBrdId brcdIp.1.1.2.2.1.1.3 Syntax: Octet String	Read-only	The main board identifier, which can uniquely identify a board type. It is an encoded octet string. The octets in the string provide the following information: **Octet 0** - Identifies the format of this object's octet string. If the format version has a value of 2, the octets after the version octet have the following meaning: **Octet 1** - Product type: • BI_WG - 0x57 • BI_BB - 0x42 • BI_NI - 0x4E • BI_NI2 - 0x32 • NI_M4 - 0x4D • BI_SLB - 0x53 **Octet 2** - Module type: • MASTER_FIBER_8G - 0x0 • MASTER_FIBER_4G - 0x1 • MASTER_COPPER_16 - 0x2 • SLAVE_FIBER_4G - 0x3 • FI_MASTER_FIBER_2G - 0x4 • FI_MASTER_FIBER_4G - 0x5 • MASTER_COPPER_8G - 0x6 • FI_MASTER_FIBER_8G - 0x7 • SLAVE_FIBER_8G - 0x8 • MASTER_COPPER_12_2 - 0x9 • SLAVE_COPPER_24 - 0xA • FI_SLAVE_COPPER_24 - 0xB • SLAVE_100FX_16 - 0xC • SLAVE_100FX_8 - 0xD • SLAVE_COPPER_8G - 0xE • SLAVE_COPPER_16_2 - 0xF • STACK_FIBER_8G - 0x10 • STACK_COPPER_8G - 0x11 • MASTER_FIBER_2G - 0x12 • SLAVE_100FX_24 - 0x13 • MASTER_FIBER_0G - 0x14 • POS_622M - 0x15

Name, OID, and syntax	Access	Description
		• POS_155M - 0x16 • SLAVE_FIBER_2G - 0x17 • SLAVE_COPPER_2G - 0x18 • FI_SLAVE_FIBER_2G - 0x19 • FI_SLAVE_FIBER_4G - 0x1A • FI_SLAVE_FIBER_8G - 0x1B • FI_SLAVE_COPPER_8G - 0x1C • FI_MASTER_COPPER_8G - 0x1D • POS_155M2P - 0x1E • FI_MASTER_COPPER_4G - 0x1F • FI_MASTER_COPPER_2G - 0x20 • MASTER_COPPER_4G - 0x21 • MASTER_COPPER_2G - 0x22 • MASTER_M4_8G - 0x23 • MASTER_M4_4G - 0x24 • MASTER_M4_2G - 0x25 • MASTER_M4_0G - 0x26 • MASTER_M5_0G - 0x27 • POS_2488M - 0x28 • SLAVE_M5_0G - 0x29 • POS_N2488M - 0x2A • STACK_IPC_48_2 - 0x2B • SLAVE_NPA_FIBER_4G - 0x2C • ATM_2PORT - 0x2D • ATM_4PORT - 0x2E • SLAVE_FIBER_10G - 0x2F • STACK_FES_48_2 - 0x30 • STACK_FES_24_2 - 0x31 • STACK_FES_96_4 - 0x32 • STACK_FES_12G - 0x33 • STACK_FESX_24G - 0x34 • STACK_FESX_24_2_G - 0x35 • STACK_FESX_24_1_G - 0x36 • STACK_FESX_48G - 0x37 • STACK_FESX_48_2_G - 0x38 • STACK_FESX_48_1_G - 0x39 • SUPERX_FI_MGMT - 0x40 • SUPERX_FI_2P10G - 0x41 • SUPERX_FI_24GC - 0x42 • SUPERX_FI_24GF - 0x43 • SUPERX_FI_2P10G_WAN - 0x44 • SUPERX_FI_MGMT_II - 0x4a • SLAVE_JC_48E - 0xC3 • SLAVE_JC_48T - 0xC4 • MASTER_JC_M4_8G - 0xC5 • SLAVE_JC_8G - 0xC6 • SLAVE_JC_B16GF - 0xC8

Name, OID, and syntax	Access	Description
		• MASTER_JC_B2404 - 0xC9 • SLAVE_JC_B16GC - 0xCA • SLAVE_JC_B24FX - 0xCE **Octet 3** - Processor type: • PVR_M603 - 3 • PVR_M604 - 4 • PVR_M603E - 6 • PVR_M603EV - 7 • PVR_M750 - 8 • PVR_M604E - 9 • PVR_M8245 - 81 **Octet 4 to Octet 5** - Processor speed in MHz **Octet 6** - MAC type: • MAC_None - 0 • MAC_SEEQ_10_100 - 1 • MAC_DEC_10_100 - 2 • MAC_3COM_10_100 - 3 • MAC_X10GMAC_10000 - 4 • MAC_SEEQ_1000 - 5 • MAC_GMAC_1000 - 6 • MAC_VLSI_1000 - 7 **Octet 7** - PHY type: • PHY_NONE - 0 • PHY_QSI - 1 • PHY_BROADCOM - 2 • PHY_ICS - 3 • PHY_NATIONAL - 4 • PHY_LEVEL1 - 6 • PHY_BROADCOM_10_100 - 7 • PHY_LEVEL24 - 8 • PHY_BROADCOM_10000 - 9 • PHY_3COM_10_100 - 9 (for others) **Octet 8** - Port type: • COPPER - 0 • FIBER - 1 **Octet 9** - Fiber port type: • NONFIBER - 0 • SX_FIBER - 1 • LX_FIBER - 2 • LHX_FIBER - 3 • LX_SX_FIBER=4 • LHB_FIBER=5 **Octet 10 to Octet 13** - Size of DRAM in Kilobytes

Name, OID, and syntax	Access	Description
		Octet 14 to Octet 17 - Size of boot flash in Kilobytes **Octet 18 to Octet 21** - Size of code flash in Kilobytes **Octet 22 to Octet 27** - Serial number **Octet 28** - Chassis backplane type: • chassis4000 = 0x00 • chassis8000 = 0x02 • chassis15000 = 0x01 • chassisFISX = 0x04 • Turbo8 = 0x07 (stack2) • FastIron2 = 0x06 (stack1)
snAgentBrdMainPortTotal brcdIp.1.1.2.2.1.1.4 Syntax: Integer32	Read-only	Shows the total number of ports on the main board.
snAgentBrdExpBrdDescription brcdIp.1.1.2.2.1.1.5 Syntax: DisplayString	Read-only	Contains the expansion board description string. Expansion boards are those boards attached to the main board. This object can have up to 128 characters.
snAgentBrdExpBrdId brcdIp.1.1.2.2.1.1.6 Syntax: Octet String	Read-only	The expansion board identifier. Expansion boards are those boards attached to the main board. It is an encoded octet string with the following meaning: **Octet 0** - Identifies the format of this string. This octet has a value of 1. **Octet 1** - Expansion board type: • HUNDRED_MEG_1PORT - 1 • HUNDRED_MEG_2PORT - 2 • HUNDRED_MEG_1PORT_COPPER - 3 • HUNDRED_MEG_2PORT_COPPER - 4 • HUNDRED_MEG_2PORT_LX - 5 • GIGA_1PORT - 8 • GIGA_2PORT - 9 **Octet 2** - Fiber port type: • NONFIBER - 0 • SX_FIBER - 1 • LX_FIBER - 2 • LHX_FIBER - 3 • LX_SX_FIBER - 4 • LHB_FIBER - 5
snAgentBrdExpPortTotal brcdIp.1.1.2.2.1.1.7 Syntax: Integer	Read-only	Shows the total number of ports for the expansion board.

Name, OID, and syntax	Access	Description
snAgentBrdStatusLeds brcdIp.1.1.2.2.1.1.8 Syntax: Integer32	Read-only	The object is replaced by the object snAgentBrdStatusLedString. The value of this LED can be one of the following: • 0 - off (Link off) • 1 - on (Link on)
snAgentBrdTrafficLeds brcdIp.1.1.2.2.1.1.9 Syntax: Integer32	Read-only	The object is replaced by the object snAgentBrdTrafficLedString. The value of this LED can be one of the following: • 0 - off (No traffic) • 1 - on (Traffic is flowing)
snAgentBrdMediaLeds brcdIp.1.1.2.2.1.1.10 Syntax: Integer32	Read-only	Applies to devices that have an LED for media type, but this object has been replaced by the object snAgentBrdMediaLedString. The value of this LED can be one of the following: • 0 - Half-duplex • 1 - Full-duplex
snAgentBrdSpeedLeds brcdIp.1.1.2.2.1.1.11 Syntax: Integer32	Read-only	Applies to devices that have an LED for board speed. This object has been replaced by the object snAgentBrdSpeedLedString. The value of this LED can be one of the following: • 0 - 10 Mbit • 1 - 100Mbit
snAgentBrdModuleStatus brcdIp.1.1.2.2.1.1.12 Syntax: Integer	Read-only	Shows the status of a module: • moduleEmpty(0) - The slot of the chassis is empty. • moduleGoingDown(2) - The module is going down. • moduleRejected(3) - The module is being rejected due to a wrong configuration. • moduleBad(4) - The module hardware is bad. • moduleConfigured(8) - The module is configured (stacking). • moduleComingUp(9) - The module is in power-up cycle. • moduleRunning(10) - The module is running. • moduleBlocked(11) - The module is blocked for full height card. By default, this mode is set to notActivated(0).
snAgentBrdRedundantStatus brcdIp.1.1.2.2.1.1.13 Syntax: Integer	Read-only	Shows the status of the redundant module. Non-management modules always return other(1).

Name, OID, and syntax	Access	Description
		The management module returns the rest of the states: • other(1) • active(2) • standby(3) • crashed(4) • comingUp(5)
snAgentBrdAlarmLeds brcdIp.1.1.2.2.1.1.14 Syntax: Integer	Read-only	Applies to devices with an alarm LED. This object has been replaced by the object snAgentBrdAlarmLedString. The value of this LED can be one of the following: • 0 - No alarm • 1 - Alarm
snAgentBrdTxTrafficLeds brcdIp.1.1.2.2.1.1.15 Syntax: Integer	Read-only	Applies only to POS modules that have an LED. This object has been replaced by the object snAgentBrdTxTrafficLedString. The value of this LED can be one of the following: • 0 - No transmit traffic • 1 - Transmit traffic
snAgentBrdRxTrafficLeds brcdIp.1.1.2.2.1.1.16 Syntax: Integer	Read-only	Applies only to POS modules that have an LED for transmit traffic, but this object has been replaced by the object snAgentBrdRxTrafficLedString. The value of this LED can be one of the following: • 0 - off (Not receive traffic) • 1 - on (Receive traffic)
snAgentBrdStatusLedString brcdIp.1.1.2.2.1.1.17 Syntax: Octet String	Read-only	The object contains an octet string that shows the value of the status of the link LED on the front panel. Each LED is encoded into 1 bit for each switch port.. The value of each bit can be one of the following: • 0 - Link is off • 1 - Link is on
snAgentBrdTrafficLedString brcdIp.1.1.2.2.1.1.18 Syntax: Octet String	Read-only	A bit array that contains the value of the front panel traffic LEDs. This is a packed bit string; each LED is encoded into 1 bit for each switch port. The value of each bit can be one of the following: • 0 - No traffic • 1 - Traffic is flowing
snAgentBrdMediaLedString brcdIp.1.1.2.2.1.1.19 Syntax: Octet String	Read-only	Applies to devices with an LED for media type. It contains an octet string with 64-bits per slot. The value of each bit can be one of the following: • 0 - Half-duplex • 1 - Full-duplex

Name, OID, and syntax	Access	Description
snAgentBrdSpeedLedString brcdIp.1.1.2.2.1.1.20 Syntax: Octet String	Read-only	Applies to devices that have an LED for traffic speed. Contains an octet string with 64-bits per slot. The value of each bit can be one of the following: • 0 - 10 Mbit • 1 - 100 Mbit
snAgentBrdAlarmLedString brcdIp.1.1.2.2.1.1.21 Syntax: Octet String	Read-only	Applies to devices that have an alarm LED. Contains an octet string with 64-bits per slot. The value of each bit can be one of the following: • 0 - No alarm • 1 - Alarm
snAgentBrdTxTrafficLedString brcdIp.1.1.2.2.1.1.22 Syntax: Octet String	Read-only	Applies only to POS modules. Contains an octet string with 64-bits per slot. The value of each bit can be one of the following: • 0 - No transmit traffic • 1 - Transmit traffic
snAgentBrdRxTrafficLedString brcdIp.1.1.2.2.1.1.23 Syntax: Octet String	Read-only	Applies only to POS modules. Contains an octet string with 64-bits per slot. The value of each bit can be one of the following: • 0 - No receive traffic • 1 - Receive traffic
snAgentBrdMemoryTotal brcdIp.1.1.2.2.1.1.24 Syntax: CounterBasedGauge64	Read-only	Shows the total memory in bytes within this module.
snAgentBrdMemoryAvailable brcdIp.1.1.2.2.1.1.25 Syntax: CounterBasedGauge64	Read-only	Shows the available total memory in bytes within this module.
snAgentBrdSerialNumber brcdIp.1.1.2.2.1.1.26 Syntax: DisplayString	Read-only	No string is displayed if the serial number has not been programmed in the EEPROM or the module does not support a serial number.
snAgentBrdPartNumber brcdIp.1.1.2.2.1.1.27 Syntax: DisplayString	Read-only	Nothing is displayed if the part number has not been programmed in the EEPROM or the module does not support a part number.
snAgentBrdMemoryUtil100thPercent brcdIp.1.1.2.2.1.1.28 Syntax: Unsigned32	Read-only	Indicates the dynamic memory that is currently utilized within this module, in units of one-hundredth of a percent.
snAgentBrdUpTime brcdIp.1.1.2.2.1.1.29 Syntax: TimeTicks	Read-only	Indicates the uptime for the module, in units of one-hundredth of a second. This value is valid only if the value of snAgentBrdModuleStatus is “moduleRunning(10)”.

Agent stacking board table

The following table provides information on boards in a stacking device.

Name, OID, and syntax	Access	Description
snAgentBrd2Table brcdIp.1.1.2.2.2 Syntax: SEQUENCE OF SnAgentBrd2Entry	None	A table of physical board information for each unit.
snAgentBrd2Unit brcdIp.1.1.2.2.2.1.1 Syntax: Integer	Read-only	The index to the agent module table.
snAgentBrd2Slot brcdIp.1.1.2.2.2.1.2 Syntax: Integer	Read-only	The index to the agent module table.
snAgentBrd2MainBrdDescription brcdIp.1.1.2.2.2.1.3 Syntax: DisplayString	Read-only	The main board description string. The size of the string can be from 0 through 128.
snAgentBrd2MainBrdId brcdIp.1.1.2.2.2.1.4 Syntax: Octet String	Read-only	The main board identifier, which can uniquely identify a board type. It is an encoded octet string. The octets in the string provide the following information: **Octet 0** - Identifies the format of this object's octet string. If the format version has a value of 2, the octets after the version octet have the following meaning: **Octet 1** - Product type: • BI_WG - 0x57 • BI_BB - 0x42 • BI_NI - 0x4E • BI_NI2 - 0x32 • NI_M4 - 0x4D • BI_SLB - 0x53 **Octet 2** - Module type: • MASTER_FIBER_8G - 0x0 • MASTER_FIBER_4G - 0x1 • MASTER_COPPER_16 - 0x2 • SLAVE_FIBER_4G - 0x3 • FI_MASTER_FIBER_2G - 0x4 • FI_MASTER_FIBER_4G - 0x5 • MASTER_COPPER_8G - 0x6 • FI_MASTER_FIBER_8G - 0x7 • SLAVE_FIBER_8G - 0x8 • MASTER_COPPER_12_2 - 0x9 • SLAVE_COPPER_24 - 0xA • FI_SLAVE_COPPER_24 - 0xB • SLAVE_100FX_16 - 0xC • SLAVE_100FX_8 - 0xD • SLAVE_COPPER_8G - 0xE

Name, OID, and syntax	Access	Description
		• SLAVE_COPPER_16_2 - 0xF • STACK_FIBER_8G - 0x10 • STACK_COPPER_8G - 0x11 • MASTER_FIBER_2G - 0x12 • SLAVE_100FX_24 - 0x13 • MASTER_FIBER_0G - 0x14 • POS_622M - 0x15 • POS_155M - 0x16 • SLAVE_FIBER_2G - 0x17 • SLAVE_COPPER_2G - 0x18 • FI_SLAVE_FIBER_2G - 0x19 • FI_SLAVE_FIBER_4G - 0x1A • FI_SLAVE_FIBER_8G - 0x1B • FI_SLAVE_COPPER_8G - 0x1C • FI_MASTER_COPPER_8G - 0x1D • POS_155M2P - 0x1E • FI_MASTER_COPPER_4G - 0x1F • FI_MASTER_COPPER_2G - 0x20 • MASTER_COPPER_4G - 0x21 • MASTER_COPPER_2G - 0x22 • MASTER_M4_8G - 0x23 • MASTER_M4_4G - 0x24 • MASTER_M4_2G - 0x25 • MASTER_M4_0G - 0x26 • MASTER_M5_0G - 0x27 • POS_2488M - 0x28 • SLAVE_M5_0G - 0x29 • POS_N2488M - 0x2A • STACK_IPC_48_2 - 0x2B • SLAVE_NPA_FIBER_4G - 0x2C • ATM_2PORT - 0x2D • ATM_4PORT - 0x2E • SLAVE_FIBER_10G - 0x2F • STACK_FES_48_2 - 0x30 • STACK_FES_24_2 - 0x31 • STACK_FES_96_4 - 0x32 • STACK_FES_12G - 0x33 • STACK_FESX_24G - 0x34 • STACK_FESX_24_2_G - 0x35 • STACK_FESX_24_1_G - 0x36 • STACK_FESX_48G - 0x37 • STACK_FESX_48_2_G - 0x38 • STACK_FESX_48_1_G - 0x39 • SUPERX_FI_MGMT - 0x40 • SUPERX_FI_2P10G - 0x41 • SUPERX_FI_24GC - 0x42 • SUPERX_FI_24GF - 0x43

Name, OID, and syntax	Access	Description
		• SUPERX_FI_2P10G_WAN - 0x44 • SUPERX_FI_MGMT_II - 0x4a • SLAVE_JC_48E - 0xC3 • SLAVE_JC_48T - 0xC4 • MASTER_JC_M4_8G - 0xC5 • SLAVE_JC_8G - 0xC6 • SLAVE_JC_B16GF - 0xC8 • MASTER_JC_B2404 - 0xC9 • SLAVE_JC_B16GC - 0xCA **Octet 3** - Processor type: • PVR_M603 - 3 • PVR_M604 - 4 • PVR_M603E - 6 • PVR_M603EV - 7 • PVR_M750 - 8 • PVR_M604E - 9 • PVR_M8245 - 81 **Octet 4 to Octet 5** - Processor speed in MHz. **Octet 6** - MAC type: • MAC_None - 0 • MAC_SEEQ_10_100 - 1 • MAC_DEC_10_100 - 2 • MAC_3COM_10_100 - 3 • MAC_X10GMAC_10000 - 4 • MAC_SEEQ_1000 - 5 • MAC_GMAC_1000 - 6 • MAC_VLSI_1000 - 7 **Octet 7** - PHY type: • PHY_NONE - 0 • PHY_QSI - 1 • PHY_BROADCOM - 2 • PHY_ICS - 3 • PHY_NATIONAL - 4 • PHY_LEVEL1 - 6 • PHY_BROADCOM_10_100 - 7 • PHY_LEVEL24 - 8 • PHY_BROADCOM_10000 - 9 • PHY_3COM_10_100 - 9 **Octet 8** - Port type: • COPPER - 0 • FIBER - 1 **Octet 9** - Fiber port type: • NONFIBER - 0 • SX_FIBER - 1 • LX_FIBER - 2

Name, OID, and syntax	Access	Description
		• LHX_FIBER - 3 • LX_SX_FIBER=4 • LHB_FIBER=5 **Octet 10 to Octet 13** - Size of DRAM in Kilobytes. **Octet 14 to Octet 17** - Size of boot flash in Kilobytes. **Octet 18 to Octet 21** - Size of code flash in Kilobytes. **Octet 22 to Octet 27** - Serial number. **Octet 28** - Chassis backplane type: • chassis4000 - 0x00 • chassis8000 - 0x02 • chassis15000 - 0x01 • chassisFISX - 0x04 • Turbo8 - 0x07 (stack2) • FastIron2 - 0x06 (stack1)
snAgentBrd2MainPortTotal brcdIp.1.1.2.2.2.1.5 Syntax: Integer	Read-only	The total number of ports for the main board.
snAgentBrd2ModuleStatus brcdIp.1.1.2.2.2.1.6 Syntax: Integer	Read-only	Shows the status of the module. The following are the status of the module: • moduleEmpty(0) - The slot of the chassis is empty. • moduleGoingDown(2) - The module is going down. • moduleRejected(3) - The module is being rejected due to wrong configuration. • moduleBad(4) - The module hardware is bad. • moduleConfigured(8) - The module is configured (stacking). • moduleComingUp(9) - The module is in power-up cycle. • moduleRunning(10) - The module is running. • moduleBlocked(11) - The module is blocked for full height card. By default, this mode is set to notActivated(0).
snAgentBrd2RedundantStatus brcdIp.1.1.2.2.2.1.7 Syntax: Integer	Read-only	The status of a redundant module. Non-management modules always return other(1). Management modules return the other states: • other(1) • active(2) • standby(3) • crashed(4) • comingUp(5)

Trap receiver table

The trap receiver table allows you to configure trap receivers on IPv4 devices.

NOTE
To delete a trap receiver, the agent needs the following varbinds in the setRequest PDU: snAgTrpRcvrIpAddr, snAgTrpRcvrCommunityOrSecurityName, and snAgTrpRcvrStatus. The snAgTrpRcvrStatus object must be set to delete(3).

Name, OID, and syntax	Access	Description
snAgTrpRcvrTable brcdIp.1.1.2.3.1 Syntax: SEQUENCE OF SnAgTrpRcvrEntry	None	The trap receiver table.
snAgTrpRcvrIndex brcdIp.1.1.2.3.1.1.1 Syntax: Integer	Read-only	Shows the index in the trap receiver table. Valid values: 1 - 10
snAgTrpRcvrIpAddr brcdIp.1.1.2.3.1.1.2 Syntax: IpAddress	Read-write	Indicates the IP address of the SNMP manager that will receive the trap.
snAgTrpRcvrCommunityOrSecurityName brcdIp.1.1.2.3.1.1.3 Syntax: Octet String	Read-write	Indicates the community string to use to access the trap receiver. This object can have up to 32 octets.
snAgTrpRcvrStatus brcdIp.1.1.2.3.1.1.4 Syntax: Integer	Read-write	Controls the management of the table rows. The following are the values: • ignore(5) - Do not send traps to this entry at this time. • delete(3) - Deletes the row. • create(4) - Creates a new row. If the row exists, then a SET with a value of create(5) returns error "badValue". Deleted rows are deleted immediately. The following values can be returned on reads: • other(1) - Some other case. • valid(2) - Row exists and is valid. • ignore(5) - Do not send traps to this entry at this time.
snAgTrpRcvrUDPPort brcdIp.1.1.2.3.1.1.5 Syntax: Integer	Read-write	Indicates the UDP port number of the trap receiver. Valid values: 0 - 65535 Default: 162
snAgTrpRcvrSecurityModel brcdIp.1.1.2.3.1.1.6 Syntax: Integer	Read-write	Allows configuration of security model (v1, v2c, or 3).
snAgTrpRcvrSecurityLevel brcdIp.1.1.2.3.1.1.7 Syntax: Integer	Read-write	Allows configuration of the security level (noauth, auth, or auth+priv).

Boot sequence table

The boot sequence table shows a list of software image loads. The images are in the sequence that will be used at boot up. When the devices are booted, the first image in the table will be loaded into the device. If that software image fails, the second image will be tried. The process continues until a successful load is completed.

The boot sequence table is available in all devices. The combination of all the objects in this table must be unique. Duplicate instructions are rejected.

NOTE

Ensure that each entry is unique. It is possible to create entries with the same instructions by creating a new sequence index. Duplicate instructions may cause loops.

Name, OID, and syntax	Access	Description
snAgBootSeqTable brcdIp.1.1.2.4.1	None	Identifies the boot sequence table.
snAgBootSeqIndex brcdIp.1.1.2.4.1.1.1 Syntax: Integer	Read-only	The index to the boot sequence table.
snAgBootSeqInstruction brcdIp.1.1.2.4.1.1.2 Syntax: Integer	Read-write	Shows the image from which the device will boot: • fromPrimaryFlash(1) • fromSecondaryFlash(2) • fromTftpServer(3) • fromBootpServer(4)
snAgBootSeqIpAddr brcdIp.1.1.2.4.1.1.3 Syntax: IpAddress	Read-write	If the object Boot sequence table is set to "fromTftpServer", this object shows the IP address of the TFTP server that contains the image that will be used in the boot.
snAgBootSeqFilename brcdIp.1.1.2.4.1.1.4 Syntax: DisplayString	Read-write	Shows the name of the image filename on the TFTP server that will be used in the boot. This object applies only if the object Boot sequence table is set to "fromTftpServer". This object can have up to 32 characters.
snAgBootSeqRowStatus brcdIp.1.1.2.4.1.1.5 Syntax: Integer	Read-write	Creates or deletes an entry in the boot sequence table: • other(1) • valid(2) • delete(3) • create(4)

SP boot sequence table

Name, OID, and syntax	Access	Description
snAgSpBootSeqTable brcdIp.1.1.2.4.2	None	Identifies the SP boot sequence table.
snAgSpBootSeqSpNumber brcdIp.1.1.2.4.2.1.1	None	The slot number of a switch processor module for which this boot sequence applies. Setting value 0 applies to all SP modules. Index 0 is

Name, OID, and syntax	Access	Description
		valid only for setting to simplify the set operation for all the modules.
snAgSpBootSeqIndex brcdIp.1.1.2.4.2.1.2 Syntax: Integer	None	The index to the boot sequence table.
snAgSpBootSeqInstruction brcdIp.1.1.2.4.2.1.3 Syntax: Integer	Read-write	Shows the image from which the device will boot: • fromSpPrimaryFlash(1) • fromSpSecondaryFlash(2) • fromMpPrimaryFlash(3) • fromMpSecondaryFlash(4) • fromPcmciaCard1(5) • fromPcmciaCard2(6) • fromTftpServer(7) • interactively(8)
snAgSpBootSeqIpAddr brcdIp.1.1.2.4.2.1.4 Syntax: IpAddress	Read-write	If the object Boot sequence table on page 105 is set to "fromTftpServer", this object shows the IP address of the TFTP server that contains the image that will be used in the boot.
snAgSpBootSeqFilename brcdIp.1.1.2.4.2.1.5 Syntax: DisplayString	Read-write	Shows the name of the image filename on the TFTP server that will be used in the boot. This object applies only if the object Boot sequence table on page 105 is set to "fromTftpServer". This object can have up to 32 characters.
snAgSpBootSeqRowStatus brcdIp.1.1.2.4.2.1.6 Syntax: Integer	Read-write	Creates or deletes an entry in the boot sequence table: • valid(1) • delete(2) • create(3)

Encoded octet strings table

Each row in the Encoded Octet Strings (EOS) table represents a fragmented configuration file data packet, including its checksum. An SNMP SET represents a configuration file download process, while an SNMP GET represents a configuration file upload.

This action occurs only if the SNMP-SET of snAgCfgLoad command is sent along with this table consecutively. Consecutive SETs are performed until the network management system has no more packets to send. Likewise, consecutive GETs are done until the agent has no more packets to send.

The applicable snAgCfgLoad command value is as follows:

- uploadFromFlashToNMS(23)
- downloadToFlashFromNMS(24)
- uploadFromDramToNMS(25)
- downloadToDramFromNMS(26)

Name, OID, and syntax	Access	Description
snAgCfgEosTable brcdIp.1.1.2.5.1	None	The EOS table.

Name, OID, and syntax	Access	Description
snAgCfgEosIndex brcdIp.1.1.2.5.1.1.1 Syntax: Integer32	Read-only	Each VLAN EOS buffer identifier has multiple VLAN table entries.
snAgCfgEosPacket brcdIp.1.1.2.5.1.1.2 Syntax: Octet String	Read-write	An encoded octet string. On reads, it contains an integral number of configuration file data packets. The size of each encoded octet string is less than or equal to 1400 bytes. This object can contain up to 1000 octets.
snAgCfgEosChkSum brcdIp.1.1.2.5.1.1.3 Syntax: Integer32	Read-write	A checksum of each configuration file data packet.

Agent System Parameters

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Agent system parameters configuration table

The agent system parameters configuration table presents the definition of the configuration system parameters. For example, the table may show the maximum number of VLANs a network can have.

Name, OID, and syntax	Access	Description
snAgentSysParaConfigTable brcdIp.1.1.2.7.1	None	The agent system parameters configuration table.
snAgentSysParaConfigIndex brcdIp.1.1.2.7.1.1.1 Syntax: Integer32	Read-only	The index to the agent system parameters configuration table.
snAgentSysParaConfigDescription brcdIp.1.1.2.7.1.1.2 Syntax: DisplayString	Read-only	The parameter description string. This object can have up to 32 characters.
snAgentSysParaConfigMin brcdIp.1.1.2.7.1.1.3 Syntax: Integer32	Read-only	The minimum value of this agent system parameter.
snAgentSysParaConfigMax brcdIp.1.1.2.7.1.1.4 Syntax: Integer32	Read-only	The maximum value of this agent system parameter.
snAgentSysParaConfigDefault brcdIp.1.1.2.7.1.1.5 Syntax: Integer32	Read-only	The default value of this agent system parameter.
snAgentSysParaConfigCurrent brcdIp.1.1.2.7.1.1.6 Syntax: Integer32	Read-write	The current configured value of this agent system parameter.

Configured module table

The configured module table contains information about modules. It includes the object **snAgentConfigModuleSerialNumber** , which contains the serial number of the Brocade FastIron devices.

Name, OID, and syntax	Access	Description
snAgentConfigModuleTable brcdIp.1.1.2.8.1	None	A table of information about each configured module.
snAgentConfigModuleIndex brcdIp.1.1.2.8.1.1.1 Syntax: Integer32	Read-only	The index to the agent configured module table.
snAgentConfigModuleType brcdIp.1.1.2.8.1.1.2 Syntax: Integer32	Read-write	The module type that has been configured for the device: • fgs24PortManagementModule(144) • fgs48PortManagementModule(145) • fgsXfp2Port10gModule(152) • fgsCx42Port10gModule(153) • fgsXfp1Cx41Port10gModule(154) • fgsXpf1Port10gModule(155) • fls24PortCopperBaseModule(160) • fls48PortCopperBaseModule(161) • flsXfp1Port10gModule(168) • flsCx41Port10gModule(169) • fcx624SBaseModule(176) • fcx648SBaseModule(177) • fcx624SPoeBaseModule(180) • fcx648SPoeBaseModule(181) • fcxXfp2Port10gModule(184) • fcxCx42Port16gModule(185) • fcx624SFBaseModule(192) • fdryIcx6430624BaseModule(2016) • fdryIcx6430648BaseModule(2017) • fdryIcx6430624PoeBaseModule(2020) • fdryIcx6430648PoeBaseModule(2021) • fdryIcx6430sfp4Port4gModule(2024) • fdryIcx6450624BaseModule(2032) • fdryIcx6450648BaseModule(2033) • fdryIcx6450624PoeBaseModule(2036) • fdryIcx6450648PoeBaseModule(2037) • fdryIcx6450sfp4Port40gModule(2040) • fdryIcx665056BaseModule(2055) • fdryIcx6650sfp4Port40gModule(2056) • fdryIcx6650sfp8Port10gModule(2057) • fdryIcx6430612CBaseModule(2058) • fdryIcx6430Copper2Port2gModule(2059)

Name, OID, and syntax	Access	Description
		• fdryIcx6430sfp2Port2gModule(2060) • fdryIcx7750QSFP6port40gModule(2132) • fdryIcx77506Q6port40gModule(2133) • fdryIcx775026QBaseModule(2134) • fdryIcx775048FBaseModule(2135) • fdryIcx775048CBaseModule(2136) • fdryIcx6430612CBaseModule(2137) • fdryIcx6430Copper2Port2gModule(2138) • fdryIcx6430sfp2Port2gModule(2139) • fdryIcx6450612CPDBaseModule(2140) • fdryIcx6450Copper2Port2gModule(2141) • fdryIcx6450sfp2Port2gModule(2142) • fdryIcx7250624BaseModule(2162) • fdryIcx7250648BaseModule(2163) • fdryIcx7250624GBaseModule(2160) • fdryIcx7250624PoeBaseModule(2164) • fdryIcx7250648PoeBaseModule(2165) • fdryIcx7250sfpplus8Port80gModule(2169) • fdryIcx7250sfpplus4Port4gModule(2168) • fdryFcx624BaseModule(2208) • fdryFcx648BaseModule(2209) • fdryFcxSfpPlus4Port10gModule(2220) • fdryFws24PortCopperBaseModule(2224) - From FastIron release version 08.0.20, this module ID is reused for Brocade ICX 7450 as FWS is not supported. • fdryFws48PortCopperBaseModule(2225) - From FastIron release version 08.0.20, this module ID is reused for Brocade ICX 7450 as FWS is not supported. • fdryFws24GPortCopperBaseModule(2226) • fdryFws48GPortCopperBaseModule(2227) - From FastIron release version 08.0.20, this module ID is reused for

Name, OID, and syntax	Access	Description
		Brocade ICX 7450 as FWS is not supported. • fdryIcx7450624BaseModule(2224) • fdryIcx7450648BaseModule(2225) • fdryIcx7450648FBaseModule(2227) • fdryIcx7450624PoeBaseModule(2228) • fdryIcx7450648PoeBaseModule(2229) • fdryIcx7450632ZPBaseModule(2230) • fdryIcx7400ServiceModule (2232) • fdryIcx7450sfpplus4Port40gModule(2233) • fdryIcx7450copper4Port40gModule(2234) • fdryIcx7450sfp4Port4gModule(2235) • fdryIcx7450qsfpplus1Port40gModule(2236) • fdryIcx6610624BaseModule(2240) • fdryIcx6610648BaseModule(2241) • fdryIcx6610624PoeBaseModule(2244) • fdryIcx6610648PoeBaseModule(2245) • fdryIcx6610624FBaseModule(2246) • fdryIcx6610DualMode8PortModule(2248) • fdryIcx6610Qsfp10Port160gModule(2249) • fdryIcx7150648ZPBaseModule (2066) • fdryIcx7150648648ZPsfpplus8Port80gModule (2075)
snAgentConfigModuleRowStatus brcdIp.1.1.2.8.1.1.3 Syntax: Integer	Read-write	To create or delete a configured module table entry: • other(1) • valid(2) • delete(3) • create(4)
snAgentConfigModuleDescription brcdIp.1.1.2.8.1.1.4 Syntax: DisplayString	Read-only	The description of the configured module.
snAgentConfigModuleOperStatus brcdIp.1.1.2.8.1.1.5 Syntax: DisplayString	Read-only	The module operational status. A blank indicates that the physical module has not been inserted in the chassis.
snAgentConfigModuleSerialNumber brcdIp.1.1.2.8.1.1.6	Read-only	The module serial number. A blank indicates that the serial number has not been programmed in

Name, OID, and syntax	Access	Description
Syntax: DisplayString		the module's EEPROM or the serial number is not supported in the module. This object returns the device serial number.
snAgentConfigModuleNumberOfPorts brcdIp.1.1.2.8.1.1.7 Syntax: Integer32	Read-only	The number of ports in the module.
snAgentConfigModuleMgmtModuleType brcdIp.1.1.2.8.1.1.8 Syntax: Integer	Read-only	The management module types: • other(1) • nonManagementModule(2) • unknownManagementModule(3) • m1ManagementModule(4) • m2ManagementModule(5) • m3ManagementModule(6) • m4ManagementModule(7) • m5ManagementModule(8) • jetcoreStackManagementModule(9) • muchoManagementModule(10) • rottWeilerManagementModule(11) • fesXStackManagementModule(12) • fgsStackManagementModule(13)
snAgentConfigModuleNumberOfCpus brcdIp.1.1.2.8.1.1.9 Syntax: Integer32	Read-only	The number of CPUs in the module.

Configuration module table for stacking

The following table contains information about modules in a stacking device.

Name, OID, and syntax	Access	Description
snAgentConfigModule2Table brcdIp.1.1.2.8.2	None	A table of each configured stacking module information.
snAgentConfigModule2Unit brcdIp.1.1.2.8.2.1.1 Syntax: Integer	Read-only	The index to the configured stacking module table. Value can be from 1 through 8.
snAgentConfigModule2Slot brcdIp.1.1.2.8.2.1.2 Syntax: Integer	Read-only	The index to the agent configured module table. Value can be from 1 through 4.
snAgentConfigModule2Type brcdIp.1.1.2.8.2.1.3 Syntax: Integer	Read-only	The module type that has been configured for the device: • fgs24PortManagementModule(144) • fgs48PortManagementModule(145) • fgsXfp2Port10gModule(152) • fgsCx42Port10gModule(153) • fgsXfp1Cx41Port10gModule(154) • fgsXpf1Port10gModule(155) • fls24PortCopperBaseModule(160)

Name, OID, and syntax	Access	Description
		• fls48PortCopperBaseModule(161) • flsXfp1Port10gModule(168) • flsCx41Port10gModule(169) • fcx624SBaseModule(176) • fcx648SBaseModule(177) • fcx624SPoeBaseModule(180) • fcx648SPoeBaseModule(181) • fcxXfp2Port10gModule(184) • fcxCx42Port16gModule(185) • fcx624SFBaseModule(192) • fdrylcx6430624BaseModule(2016) • fdrylcx6430648BaseModule(2017) • fdrylcx6430624PoeBaseModule(2020) • fdrylcx6430648PoeBaseModule(2021) • fdrylcx6430sfp4Port4gModule(2024) • fdrylcx6450624BaseModule(2032) • fdrylcx6450648BaseModule(2033) • fdrylcx6450624PoeBaseModule(2036) • fdrylcx6450648PoeBaseModule(2037) • fdrylcx6450sfp4Port40gModule(2040) • fdrylcx665056BaseModule(2055) • fdrylcx6650sfp4Port40gModule(2056) • fdrylcx6650sfp8Port10gModule(2057) • fdrylcx6430612CBaseModule(2058) • fdrylcx6430Copper2Port2gModule(2059) • fdrylcx6430sfp2Port2gModule(2060) • fdrylcx7150624BaseModule(2064) • fdrylcx7150648BaseModule(2065) • fdrylcx7150648ZPBaseModule(2066) • fdrylcx7150612CPoeBaseModule(2068) • fdrylcx7150624PoeBaseModule(2069) • fdrylcx7150648PoeBaseModule(2070) • fdrylcx7150648PoeFBaseModule(2071) • fdrylcx7150gc2Port2gModule(2072) • fdrylcx7150sfpplus4Port40gModule(2073) • fdrylcx7150sfpplus2Port20gModule(2074) • fdrylcx7150sfpplus8Port80gModule(2075) • fdrylcx7750QSFP6port40gModule(2132) • fdrylcx77506Q6port40gModule(2133) • fdrylcx775026QBaseModule(2134) • fdrylcx775048FBaseModule(2135) • fdrylcx775048CBaseModule(2136) • fdrylcx6430612CBaseModule(2137) • fdrylcx6430Copper2Port2gModule(2138) • fdrylcx6430sfp2Port2gModule(2139) • fdrylcx6450612CPDBaseModule(2140) • fdrylcx6450Copper2Port2gModule(2141)

Name, OID, and syntax	Access	Description
		• fdryIcx6450sfp2Port2gModule(2142) • fdryIcx7250624BaseModule(2162) • fdryIcx7250648BaseModule(2163) • fdryIcx7250624GBaseModule(2160) • fdryIcx7250624PoeBaseModule(2164) • fdryIcx7250648PoeBaseModule(2165) • fdryIcx7250sfpplus8Port80gModule(2169) • fdryIcx7250sfpplus4Port4gModule(2168) • fdryFcx624BaseModule(2208) • fdryFcx648BaseModule(2209) • fdryFcxSfpPlus4Port10gModule(2220) • fdryFws24PortCopperBaseModule(2224) - From FastIron release version 08.0.20, this module ID is reused for Brocade ICX 7450 as FWS is not supported. • fdryFws48PortCopperBaseModule(2225) - From FastIron release version 08.0.20, this module ID is reused for Brocade ICX 7450 as FWS is not supported. • fdryFws24GPortCopperBaseModule(2226) • fdryFws48GPortCopperBaseModule(2227) - From FastIron release version 08.0.20, this module ID is reused for Brocade ICX 7450 as FWS is not supported. • fdryIcx7450624BaseModule(2224) • fdryIcx7450648BaseModule(2225) • fdryIcx7450648FBaseModule(2227) • fdryIcx7450624PoeBaseModule(2228) • fdryIcx7450648PoeBaseModule(2229) • fdryIcx7450632ZPBaseModule(2230) • fdryIcx7400ServiceModule (2232) • fdryIcx7450sfpplus4Port40gModule(2233) • fdryIcx7450copper4Port40gModule(2234) • fdryIcx7450sfp4Port4gModule(2235) • fdryIcx7450qsfpplus1Port40gModule(2236) • fdryIcx6610624BaseModule(2240) • fdryIcx6610648BaseModule(2241) • fdryIcx6610624PoeBaseModule(2244) • fdryIcx6610648PoeBaseModule(2245) • fdryIcx6610624FBaseModule(2246) • fdryIcx6610DualMode8PortModule(2248) • fdryIcx6610Qsfp10Port160gModule(2249)
snAgentConfigModule2RowStatus brcdIp.1.1.2.8.2.1.4 Syntax: Integer	Read-write	To create or delete a configured module table entry: • other(1) • valid(2) • delete(3) • create(4)
snAgentConfigModule2Description brcdIp.1.1.2.8.2.1.5 Syntax: Integer	Read-only	A description of the configured module.

Name, OID, and syntax	Access	Description
snAgentConfigModule2OperStatus brcdIp.1.1.2.8.2.1.6 Syntax: Integer	Read-only	The module operational status. A zero length string indicates that the physical module has not been inserted in the chassis.
snAgentConfigModule2SerialNumber brcdIp.1.1.2.8.2.1.7 Syntax: DisplayString	Read-only	The module serial number. A zero length string indicates that the module serial number EEPROM has not been programmed or the module does not support serial number EEPROM.
snAgentConfigModule2NumberOfPorts brcdIp.1.1.2.8.2.1.8 Syntax: Integer	Read-only	The number of ports on a module.
snAgentConfigModule2MgmtModuleType brcdIp.1.1.2.8.2.1.9 Syntax: Integer	Read-only	The management module types: • other(1) • nonManagementModule(2) • unknownManagementModule(3) • m1ManagementModule(4) • m2ManagementModule(5) • m3ManagementModule(6) • m4ManagementModule(7) • m5ManagementModule(8) • jetcoreStackManagementModule(9) • muchoManagementModule(10) • rottWeilerManagementModule(11) • fesXStackManagementModule(12) • fgsStackManagementModule(13)
snAgentConfigModule2NumberOfCpus brcdIp.1.1.2.8.2.1.10 Syntax: Integer	Read-only	The number of CPUs on the module.

Agent user access group

The agent user access group section presents the objects used to control user access to devices.

Name, OID, and syntax	Access	Description
snAgentUserMaxAccnt brcdIp.1.1.2.9.1.1 Syntax: Integer32	Read-only	Shows the maximum number of user accounts that can be configured on the device.

Agent user account table

The objects in this table provide information about user accounts.

Name, OID, and syntax	Access	Description
snAgentUserAccntTable brcdIp.1.1.2.9.2	None	A table of user account information.
snAgentUserAccntName	Read-only	Displays the user name.

Name, OID, and syntax	Access	Description
brcdIp.1.1.2.9.2.1.1 Syntax: DisplayString		This object can have up to 48 characters
snAgentUserAccntPassword brcdIp.1.1.2.9.2.1.2 Syntax: DisplayString	Read-write	Contains the user password. Valid values: Up to 48 characters **NOTE** **The password-change any** command must be configured on the device to set the password field through SNMP SET operation.
snAgentUserAccntEncryptCode brcdIp.1.1.2.9.2.1.3 Syntax: Integer32	Read-write	States the password encryption method code.
snAgentUserAccntPrivilege brcdIp.1.1.2.9.2.1.4 Syntax: Integer32	Read-write	Shows the user privilege.
snAgentUserAccntRowStatus brcdIp.1.1.2.9.2.1.5 Syntax: Integer	Read-write	Creates, modifies, or deletes a user account table entry: • other(1) • valid(2) • delete(3) • create(4) • modify(5)

Agent redundant group

Use the following objects to manage redundant management groups.

Name, OID, and syntax	Access	Description
snAgentRedunActiveMgmtMod brcdIp.1.1.2.10.1.1 Syntax: Integer32	Read-write	Shows the slot number of the active management module. Setting this object does not take effect immediately. You must save the configuration data to flash storage, then reboot the system before the new value takes effect. Setting a value of 0 requests the system to auto-select an active management module after power up. Default: 0
snAgentRedunSyncConfig brcdIp.1.1.2.10.1.2 Syntax: Integer32	Read-write	Shows how often the data in the active management module will be copied to the backup management module. The value for this object is in seconds. Setting this object to 0 disables the copy process. Setting it to a negative value starts the process immediately, but runs only once. Default: Every 10 seconds
snAgentRedunBkupCopyBootCode brcdIp.1.1.2.10.1.3	Read-write	If enabled, the backup management module copies the boot code of the active management module to its boot code flash storage after

Name, OID, and syntax	Access	Description
Syntax: Integer		power up, and whenever the active management module's boot code is updated. The backup management module does not copy the boot code it is identical to what is already in flash storage: • disabled(0) • enabled(1) Default: disabled(0)
snAgentEnableMgmtModRedunStateChangeTrap brcdIp.1.1.2.10.1.4 Syntax: Integer	Read-write	Indicates if the SNMP agent process has been enabled to generate management module redundancy state change traps: • disabled(0) • enabled(1) Default: enabled(1)
snAgentRedunBkupBootLoad brcdIp.1.1.2.10.1.5 Syntax: Integer	Read-write	Downloads a new boot code from boot flash storage of the active management module to the backup management module. In a set operation, enter the value downloadBackup(20) to download the boot code from the active management module to the backup management module. A set operation is rejected during a download until an error or normal state is reached. One of the following values is returned by a get operation: • normal(1) - No operation. • operationError(17) - Error codes. • downloadBackup(20) - Download boot code from active module to backup to the backup module.
snAgentRedunSwitchOver brcdIp.1.1.2.10.1.6 Syntax: Integer	Read-write	Switches a backup management module to an active management module: • other(1) • reset(2) - Resets the backup module to active.

System CPU utilization table

Name, OID, and syntax	Access	Description
snAgentCpuUtilTable brcdIp.1.1.2.11.1	None	The table to list utilization for all CPUs.
snAgentCpuUtilSlotNum brcdIp.1.1.2.11.1.1.1 Syntax: Integer32	Read-only	The slot number of the module that contains the CPU.
snAgentCpuUtilCpuId brcdIp.1.1.2.11.1.1.2 Syntax: Integer32	Read-only	The ID of the CPU: • For non-VM1/WSM management module, there is one CPU. • For VM1/WSM, there is one management CPU and three slave

Name, OID, and syntax	Access	Description
		CPUs. The management CPU could be turned off. • For POS and ATM, there is no management CPU but two slave CPUs. • The ID for the management CPU is 1. A value of 2 and greater identifies the slave CPUs.
snAgentCpuUtilInterval brcdIp.1.1.2.11.1.1.3 Syntax: Integer32	Read-only	The value, in seconds, for this utilization. For both management and slave CPUs, utilizations for 1 sec, 5 sec, 60 sec, and 300 sec intervals are displayed.
snAgentCpuUtilValue brcdIp.1.1.2.11.1.1.4 Syntax: Gauge32	Read-only	The statistical CPU utilization in units of one-hundredth of a percent.
snAgentCpuUtilPercent brcdIp.1.1.2.11.1.1.5 Syntax: Gauge32	Read-only	The statistical CPU utilization in units of one percent.
snAgentCpuUtil100thPercent brcdIp.1.1.2.11.1.1.6 Syntax: Gauge32	Read-only	The statistical CPU utilization in units of one-hundredth of a percent.

System process utilization table

The following table lists CPU utilization and statistics for all CPU processes on the device.

Name, OID, and syntax	Access	Description
snCpuProcessTable brcdIp.1.1.2.11.2	None	System process utilization table.
snCpuProcessName brcdIp.1.1.2.11.2.1.1 Syntax: DisplayString	Read-only	Name of the process.
snCpuProcess5SecUtil brcdIp.1.1.2.11.2.1.2 Syntax: Gauge	Read-only	Statistics collected during the last 5 seconds of process utilization. Divide this number by 100 to get the percentage utilization. It can have a value 0 or a value between 100 to 10000 in multiples of 100. If the agent is queried immediately after turning on the CPU usage and 5 seconds have not been elapsed, then the data will not be available.
snCpuProcess1MinUtil brcdIp.1.1.2.11.2.1.3 Syntax: Gauge	Read-only	Statistics collected during the last 1 minute of process utilization. Divide this number by 100 to get the percentage utilization. It can have a value 0 or a value between 100 to 10000 in multiples of 100. If the agent is queried immediately after turning on the CPU usage and 1 minute have not been elapsed, then the data will not be available.
snCpuProcess5MinUtil brcdIp.1.1.2.11.2.1.4	Read-only	Statistics collected during the last 5 minutes of process utilization. Divide this number by 100 to

Name, OID, and syntax	Access	Description
Syntax: Gauge		get the percentage utilization. It can have a value 0 or a value between 100 to 10000 in multiples of 100. If the agent is queried immediately after turning on the CPU usage and 5 minutes have not been elapsed, then the data will not be available.
snCpuProcess15MinUtil brcdIp.1.1.2.11.2.1.5 Syntax: Gauge	Read-only	Statistics collected during the last 15 minutes of process utilization. Divide this number by 100 to get the percentage utilization.
snCpuProcessRuntime brcdIp.1.1.2.11.2.1.6 Syntax: Counter	Read-only	Process runtime in milliseconds.
snAgentCpuProcessEnable brcdIp.1.1.2.11.3 Syntax: EnabledStatus	Read-write	Enables the CPU utilization statistics collection.

Switch Group Configuration

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Switch group configuration

The switch group configuration table is supported on the Brocade FastIron devices.

Name, OID, and syntax	Access	Description
snSwGroupOperMode brcdIp.1.1.3.1.1 Syntax: Integer	Read-write	Indicates if switch ports have VLANs defined: • noVLan(1) - All switch ports with no port VLANs and no tag assigned. • vlanByPort(2) - All switch ports with basic port-based VLANs.
snSwGroupIpL3SwMode brcdIp.1.1.3.1.2 Syntax: Integer	Read-write	Indicates if the Layer 3 IP switch is enabled for the switch group: • disabled(0) • enabled(1)
snSwGroupIpMcastMode brcdIp.1.1.3.1.3 Syntax: Integer	Read-write	Indicates if the IP multicast pruning mode is enabled for the switch group: • disabled(0) • enabled(1)
snSwGroupDefaultCfgMode brcdIp.1.1.3.1.4 Syntax: Integer	Read-write	Indicates if the switch group contains a default configuration. If the default configuration is overwritten, the state will change to non-default: • default(1) - Has a default configuration. • nonDefault(2) - Has a non-default configuration.
snSwGroupSwitchAgeTime brcdIp.1.1.3.1.5 Syntax: Integer32	Read-write	Sets the aging period for ports on the device, defining how long a port address remains active in the address table. Valid values: 0 = no aging, or 67 - 65535 seconds Default: 300 seconds
snVLanGroupVlanCurEntry brcdIp.1.1.3.1.6 Syntax: Integer32	Read-only	Shows the number of VLANs that are currently configured.
snVLanGroupSetAllVLan brcdIp.1.1.3.1.7 Syntax: Integer32	Read-write	Shows the VLAN index of a particular entry in snVLanByPortTable (snVLanByPortVLanIndex). All the attributes of the row except for PortMask will be used to set the same attributes for the entire VLAN group. VLanId and PortMask must be set for the particular entry prior to setting this object. Switch software will be based on this VLAN information to set the entire VLAN.

Name, OID, and syntax	Access	Description
		NOTE All the intended attributes of the given row of the table (given VLAN) must be set prior setting this object. When this object is set, Set-All-VLAN action takes place simultaneously. The previous setting is overwritten by the new one.
snSwPortSetAll brcdIp.1.1.3.1.8 Syntax: Integer32	Read-write	The value of this object is the index number of the snSwPortInfoTable (snSwPortInfoPortIndex). The objects snSwPortInfoMonitorMode, snSwPortInfoTagType, snSwPortInfoChnMode, snSwPortInfoSpeed, snSwPortInfoAdminStatus are all the read-write attributes of that row of the table. They will be used to set the same attributes for all the ports in the system. **NOTE** Before setting this object, all the intended attributes of the given row of the table must be set. Otherwise, the current data of the row will be used to set the entire port table. The previous setting will be overwritten by the new one.
snFdbTableCurEntry brcdIp.1.1.3.1.9 Syntax: Integer32	Read-only	Shows the total number of entries in the Filtering Databse (FDB) that are configured currently.
snFdbTableStationFlush brcdIp.1.1.3.1.10 Syntax: Integer	Read-write	Shows the state of the flush operation for the FDB table. The following value can be written: • flush(3) - Perform the flush operation. After the flush operation starts, any new flush request is rejected until the operation is complete or failed. The following values can only be read: • normal(1) - Normal state • error(2) - Operation failed • flushing(4) - Operation is in process
snPortStpSetAll brcdIp.1.1.3.1.11 Syntax: Integer32	Read-write	The value of this object is 1, which means that Port STP **Set-all** command is invoked. The snPortStpPriority and snPortStpPathCost which are the read-write STP-related attributes of the first row of the table, will be used to set the same attributes for all the ports in the system. **NOTE** Before setting this object, all the intended attributes of the given row of the table must be set. Otherwise, the current data of the row will be used to set the entire port table. The previous setting will be overwritten by the new one.

Name, OID, and syntax	Access	Description
snSwProbePortNum brcdIp.1.1.3.1.12 Syntax: Integer32	Read-write	Indicates which chassis port is assigned as the chassis switch probe port. That port operates as a traffic analyzer port. Only one port in the chassis or stackable switch can be assigned as the traffic analyzer port. The value of this object represents the following: • Bit 0 to bit 7 - Port number • Bit 8 to bit 11 - Slot number
snSw8021qTagMode brcdIp.1.1.3.1.13 Syntax: Integer	Read-write	Indicates if IEEE802.1q has been enabled for the switch group: • disabled(0) • enabled(1) Default: disabled(0)
snSwGlobalStpMode brcdIp.1.1.3.1.14 Syntax: Integer	Read-write	Indicates whether or not Spanning Tree System Global Mode has been enabled for the switch group: • disabled(0) • enabled(1)
snSwIpMcastQuerierMode brcdIp.1.1.3.1.15 Syntax: Integer	Read-write	The IP Multicast pruning mode is configured in either Non-Querier or Querier mode. • querier(1) - Send out host queries. (active) • nonQuerier(2) - Do not send out host queries. (passive) Default: querier(1)
snSwViolatorPortNumber brcdIp.1.1.3.1.17 Syntax: Integer32	Read-only	Indicates the port number of the switch or router that receives the violator packet. This number is included in the locked address violation trap. The value of this object contains the following: • Bit 0 to bit 7 - Port number • Bit 8 to bit 11 - Slot number (for chassis devices only)
snSwViolatorMacAddress brcdIp.1.1.3.1.18 Syntax: MAC address	Read-only	Indicates the source MAC address of the violator packet received by the switch or router. This number is included in the locked address violation trap.
snVLanGroupVlanMaxEntry brcdIp.1.1.3.1.19 Syntax: Integer32	Read-write	Shows the maximum number of VLAN entries that can be configured.
snSwEosBufferSize brcdIp.1.1.3.1.20 Syntax: Integer32	Read-only	Specifies buffer size for all the different EOS buffers.
snVLanByPortEntrySize brcdIp.1.1.3.1.21 Syntax: Integer32	Read-only	Specifies the size of each VLAN table entry.
snSwPortEntrySize brcdIp.1.1.3.1.22 Syntax: Integer32	Read-only	Specifies the size of each port table entry.
snFdbStationEntrySize brcdIp.1.1.3.1.23	Read-only	Specifies the size of each FDB station table entry.

Name, OID, and syntax	Access	Description
Syntax: Integer32		
snPortStpEntrySize brcdIp.1.1.3.1.24 Syntax: Integer32	Read-only	Specifies the size of each port STP table entry.
snSwEnableBridgeNewRootTrap brcdIp.1.1.3.1.25 Syntax: Integer	Read-write	Indicates whether the SNMP agent process is permitted to generate bridge new root traps.
snSwEnableBridgeTopoChangeTrap brcdIp.1.1.3.1.26 Syntax: Integer	Read-write	Indicates whether the SNMP agent process is permitted to generate bridge topology change traps.
snSwEnableLockedAddrViolationTrap brcdIp.1.1.3.1.27 Syntax: Integer	Read-write	Indicates whether the SNMP agent process is permitted to generate locked address violation traps.
snSwIpxL3SwMode brcdIp.1.1.3.1.28 Syntax: Integer	Read-write	Indicates whether or not Layer 3 IPX switch mode is enabled: • disabled(0) • enabled(1) Default: disabled(0)
snVLanByIpSubnetMaxSubnets brcdIp.1.1.3.1.29 Syntax: Integer32	Read-only	Shows the maximum number of subnets for each IP VLAN.
snVLanByIpxNetMaxNetworks brcdIp.1.1.3.1.30 Syntax: Integer32	Read-only	Shows the maximum number of networks for each IPX VLAN.
snSwProtocolVLanMode brcdIp.1.1.3.1.31 Syntax: Integer	Read-write	Indicates whether or not protocol VLAN is enabled: • disabled(0) • enabled(1)
snMacStationVLanId brcdIp.1.1.3.1.32 Syntax: Integer	Read-write	Shows the MAC Station's VLAN ID index in the standard Forwarding Database for Transparent Bridge Table (dot1dTpFdbTable). Because the dot1dTpFdbTable index is the MAC address assigned to one of the ports in the bridge (VLAN) and each MAC address can be re-assigned to different ports belonging to different bridges (VLANs), the snMacStationVLanId can be used to specify which bridge (VLAN) MAC Station information of the dot1dTpFdbTable to retrieve. If you do not specify the VLAN ID in this MIB, the default VLAN (bridge) ID will be used when dot1dTpFdbTable is retrieved. Valid values: 1 - 4095
snSwClearCounters brcdIp.1.1.3.1.33 Syntax: Integer	Read-write	Clears software counters: • valid(0) - An SNMP-GET of this MIB shows that it is a valid command to use. • clear(1) - Clear counter commands of the following counters: Dot3, MIB2, IP, and IPX counters for all ports.

Name, OID, and syntax	Access	Description
snSw8021qTagType brcdIp.1.1.3.1.34 Syntax: Integer32	Read-write	Specifies the IEEE802.1q tag type that is embedded in the length or type field of an Ethernet packet. It specifies that the two octets after the length or type field in an Ethernet packet are the tag value. Default: 33024
snSwBroadcastLimit brcdIp.1.1.3.1.35 Syntax: Integer32	Read-write	Specifies the number of broadcast packets per second. This limits the number of broadcast packets to forward out of the switch ports. Setting this object to 0 disables the limitation check. Default: 0
snSwMaxMacFilterPerSystem brcdIp.1.1.3.1.36 Syntax: Integer32	Read-only	Specifies the maximum number of MAC filters per system in the MAC filter table.
snSwMaxMacFilterPerPort brcdIp.1.1.3.1.37 Syntax: Integer32	Read-only	Specifies the maximum number of MAC filters per port in the port MAC access filter table.
snSwDefaultVLanId brcdIp.1.1.3.1.38 Syntax: Integer	Read-write	Shows the VLAN ID of the default port VLAN. Valid values: 1 - 4095
snSwGlobalAutoNegotiate brcdIp.1.1.3.1.39 Syntax: Integer	Read-write	Applies only to Gigabit Ethernet ports. Specifies the negotiation mode of the port: • disable(0) - All Gigabit Ethernet ports are in non negotiation mode. • enable(1) - All Gigabit Ethernet ports will start auto-negotiation indefinitely until they succeed. • negFullAuto(2) - All Gigabit Ethernet ports will start with auto-negotiation. If the negotiation fails, then they will automatically switch to non-negotiation mode. Gigabit Ethernet ports on all stackable products do not support negFullAuto(2). • other(3) Default: negFullAuto(2)
snSwQosMechanism brcdIp.1.1.3.1.40 Syntax: Integer	Read-write	Specifies the Quality of Service (QoS) mechanism: • strict(0) • weighted(1) Default: weighted(1)
snSwSingleStpMode brcdIp.1.1.3.1.41 Syntax: Integer	Read-write	Indicates if the Single Spanning Tree System Mode in the Switch Group is enabled: • disabled(0) • enabled(1) Default: disabled(0)

Name, OID, and syntax	Access	Description
snSwFastStpMode brcdIp.1.1.3.1.42 Syntax: Integer	Read-write	Indicates if Fast Spanning Tree System Mode in the Switch Group is enabled: • disabled(0) • enabled(1)
snSwViolatorIfIndex brcdIp.1.1.3.1.43 Syntax: Integer32	Read-only	The port number of the device that received a violator packet. This number is included in the locked address violator trap.
snSwSingleStpVLanId brcdIp.1.1.3.1.44 Syntax: Integer32	Read-only	The VLAN ID of the Single Spanning Tree VLAN if Single Spanning Tree was enabled. This object returns zero if Single Spanning Tree was disabled.
snSwBroadcastLimit2 brcdIp.1.1.3.1.45 Syntax: Unsigned32	Read-write	Limit the number of broadcast packets to forward out of the switch ports. This object specifies the number of broadcast packets per second. Default value: 4294967295

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Switch port information

The following table contains information about the switch port groups.

The snSwIfInfoTable, which is indexed by ifIndex port format, replaces the snSwPortInfoTable, which is indexed by a proprietary port format.

NOTE
The objects snSwIfStatsInFrames through snSwIfStatsOutKiloBitsPerSec use common application programming interface (API) for LP port statistics.

Name, OID, and syntax	Access	Description
snSwIfInfoTable brcdIp.1.1.3.3.5	None	The switch port information table.
snSwIfInfoPortNum brcdIp.1.1.3.3.5.1.1 Syntax: InterfaceIndex	Read-only	Shows the port or interface index.
snSwIfInfoMonitorMode brcdIp.1.1.3.3.5.1.2 Syntax: Integer	Read-write	This object is deprecated by snSwIfInfoMirrorMode object and snPortMonitorTable.
snSwIfInfoMirrorPorts brcdIp.1.1.3.3.5.1.3 Syntax: Integer	Read-write	Contains a list of port or interface indexes (ifindex) that mirror this interface when monitoring is enabled.
snSwIfInfoTagMode brcdIp.1.1.3.3.5.1.4 Syntax: Integer	Read-write	Indicates if the port has an 802.1q tag: • tagged(1) - Ports can have multiple VLAN IDs because these ports can be members of more than one VLAN. • untagged(2) - There is only one VLAN ID per port. • dual(3) - Dual mode is associated with a VLAN ID snSwIfVlanId; dual mode with snSwIfVlanId zero disables the dual mode.
snSwIfInfoTagType brcdIp.1.1.3.3.5.1.5 Syntax: Integer32	Read-write	Indicates the IEEE802.1q tag type of an interface. The tag type is embedded in the two octets in the length or type field of an Ethernet packet. It specifies that the two octets after the length or type field in an Ethernet packet is the tag value. Default value: 33024
snSwIfInfoChnMode brcdIp.1.1.3.3.5.1.6 Syntax: Integer	Read-write	Indicates if the port operates in half- or full-duplex mode: • none(0) - This is not used. • halfDuplex(1) - Half-duplex mode. Available only for 10/100 Mbps ports.

Name, OID, and syntax	Access	Description
		• fullDuplex(2) - Full-duplex mode. 100BaseFx, 1000BaseSx, and 1000BaseLx ports operate only at fullDuplex(2). The read-back channel status from hardware are as follows: • halfDuplex(1) - Half-duplex mode. • fullDuplex(2) - Full-duplex mode. The port media type (expansion or regular) and port link type (trunk or feeder) determine the value of this object. The port cannot be set to half-duplex mode if the port connect mode is m200e(4). However, the value of this parameter may be automatically set whenever the expansion port is connected, for example, in the case of a cascade-connecting device.
snSwIfInfoSpeed brcdIp.1.1.3.3.5.1.7 Syntax: Integer	Read-write	Indicates the speed configuration for a port: • none(0) - Link down or no traffic. • sAutoSense(1) - Auto-sensing 10 or 100 Mbits. • s10M(2) - 10 Mbits per second. • s100M(3) - 100 Mbits per second. • s1G(4) - 1 Gbits per second. • s1GM(5) - 1 Gbits per second master. • s155M(6) - 155 Mbits per second (ATM) (for expansion board only). • s10G(7) - 10 Gbits per second. • s16G(11) - 16 Gbits per second. • s100G(12) - 100 Gbits per second. • s40G(13) - 40 Gbits per second. • S2500M(14) - 2.5 Gbits per second. The read-back hardware status are the following: • none(0) - Link down or no traffic. • s10M(2) - 10 Mbits per second. • s100M(3) - 100 Mbits per second. • s1G(4) - 1G bits per second. • s1GM(5) - 1G bits per second master. • s155M(6) - 155 Mbits per second (ATM) (for expansion board only). • s10G(7) - 10 Gbits per second. • s16G(11) - 16 Gbits per second. • s40G(13) - 40 Gbits per second. • S2500M(14) - 2.5 Gbits per second. The port media type (expansion or regular) and port link type (trunk or feeder) determine whether this object can be written and the valid values for this object. It is not allowed to change speed for trunk ports. For expansion ports, all of the above speeds can be set; however, the value of this parameter may be automatically set whenever the

Name, OID, and syntax	Access	Description
		expansion port is connected, for example, in the case of a cascade-connecting device.
snSwIfInfoMediaType brcdIp.1.1.3.3.5.1.8 Syntax: Integer	Read-only	Shows the media type for the port: • other(1) - Other or unknown media. • m100BaseTX(2) - 100 Mbits per second copper. • m100BaseFX(3) - 100 Mbits per second fiber. • m1000BaseFX(4) - 1 Gbits per second fiber. • mT3(5) - 45 Mbits per second (T3). • m155ATM(6) - 155 Mbits per second (ATM). • m1000BaseTX(7) - 1 Gbits per second copper. • m622ATM(8) - 622 Mbits per second (ATM). • m155POS(9) - 155 Mbits per second (POS). • m622POS(10) - 622 Mbits per second (POS). • m2488POS(11) - 2488 Mbits per second (POS). • m10000BaseFX(12) - 10 Gbits per second fiber. • m16GStacking(14) - 16 Gbits per second fiber. • m100GBaseFX(15) - 100 Gbits per second fiber. • m40GStacking(16) - 40 Gbits per second fiber. • m40GBaseFX(17) - 40 Gbits per second fiber. • m10000BaseTX(18) - 10 Gbits per second copper. • m2500BaseTX(19) - 2.5 Gbits per second.
snSwIfInfoConnectorType brcdIp.1.1.3.3.5.1.9 Syntax: Integer	Read-only	Shows the type of connector that the port offers: • other(1) - Other or unknown connector. • copper(2) - Copper connector. • fiber(3) - Fiber connector. This describes the physical connector type. • both(4) - Supports both Copper and Fiber.
snSwIfInfoAdminStatus brcdIp.1.1.3.3.5.1.10 Syntax: Integer	Read-write	Shows the desired state of all ports: • up(1) - Ready to pass packets • down(2) • testing(3) - No operational packets can be passed (same as ifAdminStatus in MIB-II)

Name, OID, and syntax	Access	Description
snSwIfInfoLinkStatus brcdIp.1.1.3.3.5.1.11 Syntax: Integer	Read-only	Shows the current operational state of the interface: • up(1) - Ready to pass packets • down(2) • testing(3) - No operational packets can be passed (same as ifAdminStatus in MIB-II)
snSwIfInfoPortQos brcdIp.1.1.3.3.5.1.12 Syntax: Integer	Read-write	Indicates the Quality of Service (QoS) level selected for the port: • low(0) - Low priority • high(1) - High priority • level0(0) • level1(1) • level2(2) • level3(3) • level4(4) • level5(5) • level6(6) • level7(7)
snSwIfInfoPhysAddress brcdIp.1.1.3.3.5.1.13 Syntax: Physical address	Read-only	Shows the physical address of the port.
snSwIfLockAddressCount brcdIp.1.1.3.3.5.1.14 Syntax: Integer	Read-write	Indicates the number of source MAC addresses that are allowed on the interface. Valid values: 0 - 2048. The value 0 means an unlimited number of addresses are allowed. Default: 8
snSwIfStpPortEnable brcdIp.1.1.3.3.5.1.15 Syntax: Integer	Read-write	Indicates if STP is enabled for the port: • disabled(0) • enabled(1)
snSwIfDhcpGateListId brcdIp.1.1.3.3.5.1.16 Syntax: Integer	Read-write	Specifies the ID for a DHCP gateway list entry relative to this switch port. Valid values: 0 - 32. A value of 0 means that the ID is unassigned.
snSwIfName brcdIp.1.1.3.3.5.1.17 Syntax: Display string	Read-write	Indicates the port name or description. This description may have been entered using the CLI. Valid values: Up to 32 characters for most devices.
snSwIfDescr brcdIp.1.1.3.3.5.1.18 Syntax: Display string	Read-only	A textual string containing the slot or port information about the interface.
snSwIfInfoAutoNegotiate brcdIp.1.1.3.3.5.1.19 Syntax: Integer	Read-write	Applies only to Gigabit Ethernet ports. Indicates if auto-negotiation mode is enabled on the port: • disabled(0) - The port will be placed in non-negotiation mode. • enabled(1) - The port will start auto-negotiation indefinitely until it succeeds.

Name, OID, and syntax	Access	Description
		• negFullAuto(2) - The port will start with auto-negotiation. If the negotiation fails, then it will automatically switch to non-negotiation mode. This option is not supported in stackable products with Gigabit Ethernet ports. • global(3) - The port negotiation mode follows the value of snSwGlobalAutoNegotiate. • other(4) - Non-Gigabit Ethernet port returns this value. Default: global(3)
snSwIfInfoFlowControl brcdIp.1.1.3.3.5.1.20 Syntax: Integer	Read-write	Indicates if port flow control is enabled: • disable(0) • enable(1) Default: enabled(1)
snSwIfInfoGigType brcdIp.1.1.3.3.5.1.21 Syntax: Integer	Read-only	Applies only to Gigabit Ethernet ports. Shows the media type for the port: • m1000BaseSX(0) - 1-Gbps fiber, with a short wavelength transceiver • m1000BaseLX(1) - 1-Gbps fiber, with a long wavelength transceiver (3 km) • m1000BaseLH(2) - 1-Gbps fiber, with a special wavelength transceiver (50 km) • m1000BaseLHB(4) - 1-Gbps fiber, with a special wavelength transceiver (150 km) • m1000BaseTX(5) - 1-Gbps copper (100 m) • m10000BaseSR(6) - 10-Gbps fiber, with a short range wavelength transceiver (100 m) • m10000BaseLR(7) - 10-Gbps fiber, with a long range wavelength transceiver (10 km) • m10000BaseER(8) - 10-Gbps fiber, with a extended range wavelength transceiver (40 km) • sfpCWDM1470nm80Km(9) - 1-Gbps CWDM fiber, with a wavelength 1470nm, reach 80 kms • sfpCWDM1490nm80Km(10) - 1-Gbps CWDM fiber, with a wavelength 1490nm, reach 80 kms • sfpCWDM1510nm80Km(11) - 1-Gbps CWDM fiber, with a wavelength 1510nm, reach 80 kms • sfpCWDM1530nm80Km(12) - 1-Gbps CWDM fiber, with a wavelength 1530nm, reach 80 kms

Name, OID, and syntax	Access	Description
		• sfpCWDM1550nm80Km(13) - 1-Gbps CWDM fiber, with a wavelength 1550nm, reach 80 kms • sfpCWDM1570nm80Km(14) - 1-Gbps CWDM fiber, with a wavelength 1570nm, reach 80 kms • sfpCWDM1590nm80Km(15) - 1-Gbps CWDM fiber, with a wavelength 1590nm, reach 80 kms • sfpCWDM1610nm80Km(16) - 1-Gbps CWDM fiber, with a wavelength 1610nm, reach 80 kms • sfpCWDM1470nm100Km(17) - 1-Gbps CWDM fiber, with a wavelength 1470nm, reach 100 kms • sfpCWDM1490nm100Km(18) - 1-Gbps CWDM fiber, with a wavelength 1490nm, reach 100 kms • sfpCWDM1510nm100Km(19) - 1-Gbps CWDM fiber, with a wavelength 1510nm, reach 100 kms • sfpCWDM1530nm100Km(20) - 1-Gbps CWDM fiber, with a wavelength 1530nm, reach 100 kms • sfpCWDM1550nm100Km(21) - 1-Gbps CWDM fiber, with a wavelength 1550nm, reach 100 kms • sfpCWDM1570nm100Km(22) - 1-Gbps CWDM fiber, with a wavelength 1570nm, reach 100 kms • sfpCWDM1590nm100Km(23) - 1-Gbps CWDM fiber, with a wavelength 1590nm, reach 100 kms
snSwIfInfoGigType (continued)		• sfpCWDM1610nm100Km(24) - 1Gbps CWDM fiber, with a wavelength 1610nm, reach 100 kms • m1000BaseLHX(25) - 1Gbps fiber, with a special wavelength transceiver (150km) • m1000BaseLMC(35) - Link Media Copper • mXFP10000BaseSR(36) - 10GBASE fiber, 850nm serial pluggable XFP optic (LC), target range 300m over MMF • mXFP10000BaseLR(37) - 10GBASE fiber, 1310nm serial pluggable XFP optic (LC) for up to 10km over SMF • mXFP10000BaseER(38) - 10GBASE fiber, 1550nm serial pluggable XFP optic (LC) for up to 40km over SMF • mXFP10000BaseSW(39) - not used • mXFP10000BaseLW(40) - not used • mXFP10000BaseEW(41) - not used

Name, OID, and syntax	Access	Description
		• mXFP10000BaseCX4(42) - 10GBASE-CX4, XFP module,15m, CX4 connector • mXFP10000BaseZR(43) - 1550nm serial pluggable XFP optic (LC) for up to 80km over SMF • mXFP10000BaseZRD(44) - 10GBASE-ZR DWDM, XFP optic, 80km • mXFP10000BaseSRSW(46) - same as mXFP10000BaseSR(36) • mXFP10000BaseLRLW(47) - same as mXFP10000BaseLR(37) • mXFP10000BaseEREW(48) - same as mXFP10000BaseER(38) • mCFP100GBaseSR10(145) - 100GbE CFP optic (MPO 2x12), SR10, for distances up to 100m over MMF • mCFP100GBaseLR4(146) - 100GbE CFP optic (SC), LR4, for distances up to 10 km over SMF • mCFP100GBaseER4(147) - 100GbE CFP optic, ER4, for distances up to 40 km over SMF • mCFP100GBase10x10g2Km(148) - 100GbE CFP optic (LC), 10x10, for distances up to 2 km over SMF • mCFP100GBase10x10g10Km(149) - 100GbE CFP optic (LC), 10x10, for distances up to 10 km over SMF • qSFP40000BaseSR4(150) - SR proper value for 40G • qSFP40000Base10KmLR4(151) - LR proper vallue for 40G • mCFP2-100GBaseSR10(154) • mCFP2-100GBaseLR4(155) • mCFP2-100GBaseER4(156) • mCFP2-100GBase10x10g2Km(157) • mCFP2-100GBase10x10g10Km(158) • notApplicable(255) - a non-gigabit port
snSwIfFastSpanPortEnable brcdIp.1.1.3.3.5.1.22 Syntax: Integer	Read-write	Indicates if fast span is enabled on the port: • disabled(0) • enabled(1)
snSwIfFastSpanUplinkEnable brcdIp.1.1.3.3.5.1.23 Syntax: Integer	Read-write	Indicates if fast span uplink is enabled on the port: • disabled(0) • enabled(1)
snSwIfVlanId brcdIp.1.1.3.3.5.1.24 Syntax: Integer	Read-only	Shows the ID of a VLAN of which this port is a member. Port must be untagged. Valid values: 0 - 4095; where 0 means an invalid VLAN ID value, which is returned for tagged

Name, OID, and syntax	Access	Description
		ports. Reading is valid only for untagged and dual mode. Writing is valid for only dual mode.
snSwIfRouteOnly brcdIp.1.1.3.3.5.1.25 Syntax: Integer	Read-write	Indicates if Layer 2 switching is enabled on a routing switch port: • disabled(0) - Instructs the routing switch to perform routing first. If that fails, it performs switching. • enabled(1) - Instructs the routing switch to perform routing only. For a Layer 2 switching-only product, reading this object always returns "disabled". Writing "enabled" to this object takes no effect. Default: disabled(0)
snSwIfPresent brcdIp.1.1.3.3.5.1.26 Syntax: Integer	Read-only	Indicates if the mini-GBIC optic is absent or present: • false(0) • true(1)
snSwIfGBICStatus brcdIp.1.1.3.3.5.1.27 Syntax: Integer	Read-only	Indicates if the Gigabit port has a GBIC or miniGBIC port: • GBIC(1) - GBIC • miniGBIC(2) - MiniGBIC • empty(3) - GBIC is missing • other(4) - Not a removable Gigabit port
snSwIfLoadInterval brcdIp.1.1.3.3.5.1.28 Syntax: Integer	Read-write	Shows the number of seconds for which average port utilization should be calculated. Valid values: 30 - 300, in 30 second increments. Default: 300 seconds
snSwIfStatsInFrames brcdIp.1.1.3.3.5.1.29 Syntax: Counter32	Read-only	Shows the total number of packets received on the interface.
snSwIfStatsOutFrames brcdIp.1.1.3.3.5.1.30 Syntax: Counter32	Read-only	Shows the total number of packets transmitted out of the interface.
snSwIfStatsAlignErrors brcdIp.1.1.3.3.5.1.31 Syntax: Counter32	Read-only	Shows the number of dot3StatsAlignmentErrors, which consists of frames received on a particular interface that are not an integral number of octets in length and do not pass the FCS check. The count represented by an instance of this object is incremented when the alignmentError status is returned by the MAC service to the LLC (or other MAC user). According to the conventions of IEEE 802.3 Layer Management, received frames for which multiple error conditions are obtained, are counted exclusively according to the error status presented to the LLC.
snSwIfStatsFCSErrors brcdIp.1.1.3.3.5.1.32 Syntax: Counter32	Read-only	Shows the number of dot3StatsFCSErrors, which consists of frames received on a particular interface that are an integral number of octets in length but do not pass the FCS check.

Name, OID, and syntax	Access	Description
		The count represented by an instance of this object is incremented when the frameCheckError status is returned by the MAC service to the LLC (or other MAC user). According to the conventions of IEEE 802.3 Layer Management, received frames for which multiple error conditions are obtained, are counted exclusively according to the error status presented to the LLC.
snSwIfStatsMultiColliFrames brcdIp.1.1.3.3.5.1.33 Syntax: Counter32	Read-only	Shows the number of dot3StatsMultipleCollisionFrames, which consists of successfully transmitted frames on a particular interface for which transmission is inhibited by more than one collision. A frame that is counted by an instance of this object is also counted by the corresponding instance of ifOutUcastPkts, ifOutMulticastPkts, or ifOutBroadcastPkts and is not counted by the corresponding instance of the dot3StatsSingleCollisionFrames object.
snSwIfStatsTxColliFrames brcdIp.1.1.3.3.5.1.34 Syntax: Counter32	Read-only	Shows the number of successfully transmitted frames on a particular interface for which transmission is inhibited by more than one collision. This count is a combination of the dot3StatsSingleCollisionFrames and dot3StatsMultipleCollisionFrames objects.
snSwIfStatsRxColliFrames brcdIp.1.1.3.3.5.1.35 Syntax: Counter32	Read-only	Shows the number of successfully received frames on a particular interface for which transmission is inhibited by more than one collision.
snSwIfStatsFrameTooLongs brcdIp.1.1.3.3.5.1.36 Syntax: Counter32	Read-only	Shows the number of dot3StatsFrameTooLongs, which consists of frames received on a particular interface that exceed the maximum permitted frame size. The count represented by an instance of this object is incremented when the frameTooLong status is returned by the MAC service to the LLC (or other MAC user). According to the conventions of IEEE 802.3 Layer Management, received frames for which multiple error conditions are obtained are counted exclusively according to the error status presented to the LLC.
snSwIfStatsFrameTooShorts brcdIp.1.1.3.3.5.1.37 Syntax: Counter32	Read-only	Shows the number frames received on a particular interface that are below the minimum permitted frame size.
snSwIfStatsInBcastFrames brcdIp.1.1.3.3.5.1.38 Syntax: Counter32	Read-write	Shows the total number of broadcast packets received on the interface.
snSwIfStatsOutBcastFrames brcdIp.1.1.3.3.5.1.39 Syntax: Counter32	Read-only	Shows the total number of broadcast packets transmitted out of the interface.
snSwIfStatsInMcastFrames brcdIp.1.1.3.3.5.1.40 Syntax: Counter32	Read-only	Shows the total number of multicast packets received on the interface.

Name, OID, and syntax	Access	Description
snSwIfStatsOutMcastFrames brcdIp.1.1.3.3.5.1.41 Syntax: Counter32	Read-only	Shows the total number of multicast packets transmitted out of the interface.
snSwIfStatsInDiscard brcdIp.1.1.3.3.5.1.42 Syntax: Counter32	Read-only	Shows the number of inbound packets that will be discarded even though they have no errors. These packets will be discarded to prevent them from being delivered to a higher-layer protocol. For example, packets may be discarded to free up buffer space.
snSwIfStatsOutDiscard brcdIp.1.1.3.3.5.1.43 Syntax: Counter32	Read-only	Shows the number of outbound packets that will be discarded even though they contain no errors. For example, packets may be discarded to free up buffer space.
snSwIfStatsMacStations brcdIp.1.1.3.3.5.1.44	Read-only	Shows the total number of MAC Stations connected to the interface.
snSwIfStatsLinkChange brcdIp.1.1.3.3.5.1.45 Syntax: Counter32	Read-only	Shows the total number of link state changes on the interface.
snSwIfInOctets brcdIp.1.1.3.3.5.1.46 Syntax: Counter64	Read-only	Shows the total number of octets received on the interface, including framing characters. This object is a 64-bit counter of the ifInOctets object defined in RFC 1213. The octet string is in big-endian byte order. This object has eight octets.
snSwIfOutOctets brcdIp.1.1.3.3.5.1.47 Syntax: Counter64	Read-only	Shows the total number of octets transmitted out of the interface, including framing characters. This object is a 64-bit counter of the ifOutOctets object, defined in RFC 1213. The octet string is in big-endian byte order. This object has eight octets.
snSwIfStatsInBitsPerSec brcdIp.1.1.3.3.5.1.48 Syntax: Gauge32	Read-only	Shows the number of bits per second received on the interface over a five-minute interval.
snSwIfStatsOutBitsPerSec brcdIp.1.1.3.3.5.1.49 Syntax: Gauge32	Read-only	Shows the number of bits per second transmitted out of the interface over a five-minute interval.
snSwIfStatsInPktsPerSec brcdIp.1.1.3.3.5.1.50 Syntax: Gauge32	Read-only	Shows the number of packets per second received on the interface over a five-minute interval.
snSwIfStatsOutPktsPerSec brcdIp.1.1.3.3.5.1.51 Syntax: Gauge32	Read-only	Shows the number of packets per second transmitted out of the interface over a five-minute interval.
snSwIfStatsInUtilization brcdIp.1.1.3.3.5.1.52 Syntax: Integer	Read-only	Indentifies the input network utilization in hundredths of a percent over a five-minute interval. Valid values: 0 - 10000
snSwIfStatsOutUtilization brcdIp.1.1.3.3.5.1.53 Syntax: Integer	Read-only	Shows the output network utilization in hundredths of a percent over a five-minute interval.

Name, OID, and syntax	Access	Description
		Valid values: 0 - 10000
NOTE Ethernet devices must allow a minimum idle period between transmission of frames known as interframe gap (IFG) or interpacket gap (IPG). The gap provides a brief recovery time between frames to allow devices to prepare to receive the next frame. The minimum IFG is 96 bit times, which is 9.6 microseconds for 10 Mbps Ethernet, 960 nanoseconds for 100 Mbps Ethernet, and 96 nanoseconds for 1 Gbps Ethernet. In addition, to account for the bit rate on the port, port utilization should also account for the IFG, which normally is filtered by the packet synchronization circuitry.Refer to the etherHistoryUtilization objects in the *RFC 1757: Remote Network Monitoring Management Information Base* for details.		
snSwIfStatsInKiloBitsPerSec brcdIp.1.1.3.3.5.1.54 Syntax: Unsigned32	Read-only	Shows the bit rate, in kilobits per second, received on a 10 Gigabit or faster interface within a five-minute interval.
snSwIfStatsOutKiloBitsPerSec brcdIp.1.1.3.3.5.1.55 Syntax: Unsigned32	Read-only	Shows the bit rate, in kilobits per second, transmitted from a 10 Gigabit or faster interface within a five-minute interval.
snSwIfStatsInJumboFrames brcdIp.1.1.3.3.5.1.56 Syntax: Counter64	Read-only	The total number of jumbo packets received on the interface.
snSwIfStatsOutJumboFrames brcdIp.1.1.3.3.5.1.57 Syntax: Counter64	Read-only	The total number of jumbo packets transmitted out of the interface.
snSwIfSInfoMirrorMode brcdIp.1.1.3.3.5.1.58 Syntax: Integer	Read-write	Enables or disables the mirror port. • disable(0) • enable(1)
snSwIfMacLearningDisable brcdIp.1.1.3.3.5.1.59 Syntax: TruthVal	Read-write	DIsplays the status of MAC learning on an Ethernet port. For POS ports, a Get operation will return the default value and a Set operation will return an error.
snSwIfInfoL2FowardEnable brcdIp.1.1.3.3.5.1.60 Syntax: Integer	Read-write	Displays the status of the cluster Layer 2 forward feature on an Ethernet port. The STP packets coming from the MCT VLANs is dropped when the object is set to the disabled(2) state. • enabled(1) • disabled(2) • globalConfig(3) NOTE The snSwIfInfoL2FowardEnable object has more preference than the brcdMctL2Forward object for the interface when set to enabled(1) or disabled(2). When set to globalConfig(3), the status of the brcdMctL2Forward object is applied for the interface.
snSwIfInfoAllowAllVlan brcdIp.1.1.3.3.5.1.61 Syntax: TruthVal	Read-write	Specifies allowing all VLAN packets for Policy-Based Routing (PBR).

Name, OID, and syntax	Access	Description
snSwIfInfoNativeMacAddress brcdIp.1.1.3.3.5.1.62 Syntax: PhysAddress	Read-only	The port's native MAC address. The native MAC address represents the switch port.
snSwIfQosMonitorDropCounterMode brcdIp.1.1.3.3.5.1.63 Syntax: Integer	Read-write	Enables/disables the monitoring egress drop counter on the port. The ICX7150 has a set of queue drop counters and a port is selected to associate with these counters. Only when the port is selected, these drop counters are monitored and included in the total egress drop for the port. You can select only one port in a unit. This OID is only applied to ICX7150 platform and is enabled by default on other FI platforms. Valid values: • disable(0) • enable(1)
snSwIfLRMAdapterPresent brcdIp.1.1.3.3.5.1.64 Syntax: Integer	Read-only	Displays the state for Long Reach Module (LRM) adapter is presented on this port. Some FastIron ICX devices support LRM optics on 10G fiber ports. LRM adapter (Fluffy) is used to support LRM optics on those switch ports. Valid values are false and true. The default is false state. • false: the port is not connected to LRM adapter • true: the port is connected to LRM adapter

Egress MIB counter table

The following table lists the egress counters of all queues given a particular port supported on the Brocade ICX 7250, Brocade ICX 7450, and Brocade ICX 7750 devices.

Name, OID, and syntax	Access	Description
brcdIfEgressCounterInfoTable brcdIp.1.1.3.3.11	None	The table lists the information of egress counters of all the queues present in the physical ports.
brcdIfEgressCounterIfIndex brcdIp.1.1.3.3.11.1.1 Syntax: InterfaceIndex	None	The port number of egress counter in the physical port. The port or interface index (ifindex).
brcdIfEgressCounterQueueId brcdIp.1.1.3.3.11.1.2 Syntax: Integer	None	The queue number of egress counter in the given port.
brcdIfEgressCounterType brcdIp.1.1.3.3.11.1.3 Syntax: Integer	Read-only	The queue type of the egress counter in a given port. • other(1) • unicast(2) • multicast(3)

Name, OID, and syntax	Access	Description
		• total(4)
brcdIfEgressCounterPkts brcdIp.1.1.3.3.11.1.4 Syntax: Counter64	Read-only	The egress packet counters of the queue in a given port.
brcdIfEgressCounterDropPkts brcdIp.1.1.3.3.11.1.5 Syntax: Counter64	Read-only	The egress dropped packet counters of the queue in a given port. The ICX7150 platform has another set of queue drop counters which are displayed only when the port is monitored using the snSwIfQosMonitorDropCounterMode object or CLI command. Without the above port selection, only a partial amount of the total drop counters may display.

Interface ID Registration Group

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Interface ID to ifIndex lookup table

Given an interface ID, the interface ID to ifIndex lookup table returns the ifIndex value. The table is useful for mapping a known interface to the corresponding ifIndex value. The contents of the interface ID to ifIndex lookup table can only be accessed using GET operations. Unlike other SNMP tables, this table does not support GET-NEXT operations. If you try to walk the table using GET-NEXT, no rows will be returned.

Name, OID, and syntax	Access	Description
snInterfaceLookupTable brcdIp.1.1.3.3.3	None	The Interface ID to ifIndex lookup table.
snInterfaceLookupInterfaceId brcdIp.1.1.3.3.3.1.1 Syntax: InterfaceId	Read-only	Shows the interface ID, which consists of the following: **Octet 0** - Port type, which can be one of the following: • 1 - Ethernet • 2 - POS • 3 - ATM • 4 - Virtual • 5 - Loopback • 6 - GRE Tunnel **Octet 1** • If the value of Octet 0 is 1, 2, 3, 7, or 9, then this octet shows the slot number of the device. • If the value of Octet 0 is 6 or 8, then this octet shows the tunnel ID. • If the value of Octet 0 is 5, then this octet shows the loopback ID. • If the value of Octet 0 is 4, then this octet shows a virtual ID. **Octet 2** - If the value of Octet 0 is 1, 2, 3, 7, or 9, then this octet shows the port number. **Octet 3** - If the value of Octet 0 is 7 or 9, then this octet shows the ATM Subif number. **Octet 4** - If the value of Octet 0 is 9, then this octet shows the ATM VPI number.

Name, OID, and syntax	Access	Description
		Octet 5 - If the value of Octet 0 is 9, then this octet shows the ATM VCI number.
snInterfaceLookupIfIndex brcdIp.1.1.3.3.3.1.2 Syntax: Integer32	Read-only	Shows the interface in the ifIndex format.

ifIndex to interface ID lookup table

The ifIndex to interface ID lookup table maps ifindex values to the interface ID lookup table. If the table provides an ifIndex, this table returns the interface ID value.

Name, OID, and syntax	Access	Description
snIfIndexLookupTable brcdIp.1.1.3.3.4	None	The ifIndex to interface ID lookup table.
snIfIndexLookupIfIndex brcdIp.1.1.3.3.4.1.1 Syntax: Integer32	Read-only	Shows the interface in the ifIndex format.
snIfIndexLookupInterfaceId brcdIp.1.1.3.3.4.1.2 Syntax: InterfaceId	Read-only	Shows the interface ID, which consists of the following: **Octet 0** - Port type, which can be one of the following: • 1 - Ethernet • 2 - POS • 3 - ATM • 4 - Virtual • 5 - Loopback • 6 - GRE Tunnel • 7 - ATM Subif • 8 - MPLS Tunnel • 9 - ATM PVC • 10 - Management • 11 - Trunk • 12 - IP Tunnel (for IP tunnels, except MPLS) **Octet 1** • If the value of Octet 0 is 1, 2, 3, 7, or 9, then this octet shows the slot number of the device. • If the value of Octet 0 is 6 or 8, then this octet shows the tunnel ID. • If the value of Octet 0 is 5, then this octet shows the loopback ID. • If the value of Octet 0 is 4, then this octet shows a virtual ID. **Octet 2** - If the value of Octet 0 is 1, 2, 3, 7, or 9, then this octet shows the port number.

Name, OID, and syntax	Access	Description
		Octet 3 - If the value of Octet 0 is 7 or 9, then this octet shows the ATM Subif number). **Octet 4** - If the value of Octet 0 is 9, then this octet shows the ATM VPI number. **Octet 5** - If the value of Octet 0 is 9, then this octet shows the ATM VCI number.

Interface ID2 to ifIndex lookup table

The Interface ID2 to ifIndex lookup table is useful for mapping a known interface to the corresponding ifIndex value. If the provides an interface ID2, this table returns the ifIndex value.

NOTE

The contents of the interface ID2 to ifIndex lookup table can only be accessed using GET operations. Unlike other SNMP tables, this table does not support GET-NEXT operations. If you try to walk the table using GET-NEXT, no rows will be returned.

Name, OID, and syntax	Access	Description
snInterfaceLookup2Table brcdIp.1.1.3.3.7	None	The Interface ID2 to ifIndex lookup table.
snInterfaceLookup2InterfaceId brcdIp.1.1.3.3.7.1.1 Syntax: InterfaceId	Read-only	Shows the interface ID, which consists of the following: **Octet 0** - Port type, which can be one of the following: • 1 - Ethernet • 2 - POS • 3 - ATM • 4 - Virtual • 5 - Loopback • 6 - GRE Tunnel • 7 - ATM Subif • 8 - MPLS Tunnel • 9 - ATM PVC • 10 - Management • 11 - Trunk • 12 - IP Tunnel (for IP tunnels, except MPLS). **Octet 1** • If the value of Octet 0 is 1, 2, 3, 7, or 9, then this octet shows the slot number of the device. • If the value of Octet 0 is 6 or 8, then this octet shows the tunnel ID. • If the value of Octet 0 is 5, then this octet shows the loopback ID. • If the value of Octet 0 is 4, then this octet shows a virtual ID.

Name, OID, and syntax	Access	Description
		Octet 2 - If the value of Octet 0 is 1, 2, 3, 7, or 9, then this octet shows the port number. **Octet 3** - If the value of Octet 0 is 7 or 9, then this octet shows the ATM Subif number. **Octet 4** - If the value of Octet 0 is 9, then this octet shows the ATM VPI number. **Octet 5** - If the value of Octet 0 is 9, then this octet shows the ATM VCI number.
snInterfaceLookup2IfIndex brcdIp.1.1.3.3.7.1.2 Syntax: Integer32	Read-only	Shows the interface in the ifIndex format.

ifIndex to interface ID2 lookup table

The ifIndex to interface ID2 lookup table maps ifindex values to the Interface ID lookup table. If the provides an ifIndex, this table returns the interface ID value.

Name, OID, and syntax	Access	Description
snIfIndexLookup2Table brcdIp.1.1.3.3.8	None	The ifIndex to interface ID2 lookup table.
snIfIndexLookup2IfIndex brcdIp.1.1.3.3.8.1.1 Syntax: Integer32	Read-only	Shows the interface in the ifIndex format.
snIfIndexLookup2InterfaceId brcdIp.1.1.3.3.8.1.2 Syntax: InterfaceId	Read-only	Shows the interface ID, which consists of the following: **Octet 0** - Port type, which can be one of the following: • 7 - ATM Subif • 8 - MPLS Tunnel • 9 - ATM PVC • 10 - Management • 11 - Trunk • 12 - IP Tunnel (for IP tunnels, except MPLS) **Octet 1** • If the value of Octet 0 is 1, 2, 3, 7, or 9, then this octet shows the slot number of the device. • If the value of Octet 0 is 6 or 8, then this octet shows the tunnel ID. • If the value of Octet 0 is 5, then this octet shows the loopback ID. • If the value of Octet 0 is 4, then this octet shows a virtual ID. **Octet 2** - If the value of Octet 0 is 1, 2, 3, 7, or 9, then this octet shows the port number.

Name, OID, and syntax	Access	Description
		Octet 3 - If the value of Octet 0 is 7 or 9, then this octet shows the ATM Subif number. **Octet 4** - If the value of Octet 0 is 9, then this octet shows the ATM VPI number. **Octet 5** - If the value of Octet 0 is 9, then this octet shows the ATM VCI number.

ifIndex to optical parameters table

If the table provides an ifIndex, the ifIndex to optical parameters table returns the optical parameters for the ifIndex.

NOTE
The following objects provide information for POS and Ethernet optical monitoring. They are equivalent to the output of the **show optics** command.

NOTE
The following snIfOpticalMonitoringInfoTable is supported on the Brocade ICX 7250, Brocade ICX 7450, and Brocade ICX 7750 devices.

Name, OID, and syntax	Access	Description
snIfOpticalMonitoringInfoTable brcdIp.1.1.3.3.6	None	This table lists the instrumented parameters of all optical interfaces.
snIfOpticalMonitoringTemperature brcdIp.1.1.3.3.6.1.1 Syntax: Display string	Read-only	This object holds the value of the transmitter laser diode temperature for the interface. This object indicates the health of the transmitter. The format is xxx.yyyy C (Celcius), followed by whether the measured value is normal, high or low alarm, or high or low warning. For 100G LR4 and LR10 optic, this object returns the average temperature for all the lanes.
snIfOpticalMonitoringTxPower brcdIp.1.1.3.3.6.1.2 Syntax: Display string	Read-only	This object holds the value of the transmitter optical signal power for the interface, measured in dBm, followed by whether this is a normal value, or high or low warning or alarm. For 100G LR4 and LR10 optic, this object returns the aggregated Tx power for all the lanes.
snIfOpticalMonitoringRxPower brcdIp.1.1.3.3.6.1.3 Syntax: Display string	Read-only	This object holds the value of the receiver optical signal power for the interface, measured in dBm, followed by whether this is a normal value, high or low warning, or alarm. For 100G LR4 and LR10 optic, this object returns the aggregated Rx power for all the lanes.
snIfOpticalMonitoringTxBiasCurrent brcdIp.1.1.3.3.6.1.4 Syntax: Display string	Read-only	The Tx bias current. It is measured in mA, and is followed by whether this is a normal value, high or low warning, or alarm. For 100G LR4 and LR10 optic, this object returns the aggregated Tx bias current for all the lanes.

Optical lane monitoring table

The following table objects display the optical parameters table per lane for 100G of type LR4, LR10, ER4, SR4, SR10, CWDM4, and 40G of type LR4 and SR4 is supported.

NOTE
The following snIfOpticalLaneMonitoringTable is supported on the Brocade ICX 7250, Brocade ICX 7450, and Brocade ICX 7750 devices.

Name, OID, and syntax	Access	Description
snIfOpticalLaneMonitoringTable brcdIp.1.1.3.3.10	None	This table lists the instrumented parameters of all lanes within a 40G optic of type SR4 and LR4, 100G optic of type LR4 and LR10. The LR4 and SR4 have 4 lanes per optic and LR10 has 10 lanes per optic.
snIfOpticalLaneMonitoringLane brcdIp.1.1.3.3.10.1.1 Syntax: Unsigned32	None	This objects is the lane number of the 40G and 100G optic. LR4 and SR4 have 4 lanes per optic and LR10 has 10 lanes per optic.
snIfOpticalLaneMonitoringTemperature brcdIp.1.1.3.3.10.1.2 Syntax: DisplayString	Read-only	This object holds the value of the transmitter laser diode temperature for the lane in the interface. Indicates the health of the transmitter. The format is xxx.yyyy C (Celcius), followed by whether the measured value is normal, high/low alarm, or high/low warning.
snIfOpticalLaneMonitoringTxPower brcdIp.1.1.3.3.10.1.3 Syntax: DisplayString	Read-only	This object holds the value of the transmitter optical signal power for the lane in the interface, measured in dBm, followed by whether this is a this is a normal value, or high or low warning or alarm.
snIfOpticalLaneMonitoringRxPower brcdIp.1.1.3.3.10.1.4 Syntax: DisplayString	Read-only	This object holds the value of the receiver optical signal power for the lane in the interface, measured in dBm, followed by whether this is a normal value, or high/low warning or alarm.
snIfOpticalLaneMonitoringTxBiasCurrent brcdIp.1.1.3.3.10.1.5 Syntax: DisplayString	Read-only	The Tx Bias Current. It is measured in mA, and is followed by whether this is a normal value, or high/low warning or alarm.

Interface media information table

The following table shows the information of the media device installed in the physical ports.

These objects retrieve information from the output of the **show media** command.

Name, OID, and syntax	Access	Description
snIfMediaInfoTable brcdIp.1.1.3.3.9	None	The information of the media device (SFP/XFP/Copper) installed in the physical port. Only the ifIndices of Ethernet ports that are associated with the operational cards are included in this table.

Name, OID, and syntax	Access	Description
snIfMediaType brcdIp.1.1.3.3.9.1.1 Syntax: Display string	Read-only	The type of the media installed in the physical port.
snIfMediaVendorName brcdIp.1.1.3.3.9.1.2 Syntax: Display string	Read-only	The media vendor name (full name of the corporation).
snIfMediaVersion brcdIp.1.1.3.3.9.1.3 Syntax: Display string	Read-only	The media vendor product version number.
snIfMediaPartNumber brcdIp.1.1.3.3.9.1.4 Syntax: Display string	Read-only	The media vendor part number.
snIfMediaSerialNumber brcdIp.1.1.3.3.9.1.5 Syntax: Display string	Read-only	The vendor serial number of the media device.

CAM Statistics

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IP CAM statistics table

The following table lists the CAM statistics for Layer 3. The objects in the table are the output for the **dm cam-stat ip** command.

Name, OID, and syntax	Access	Description
snCAMIpStatTable brcdIp.1.1.2.12.2	None	IP CAM statistics table.
snCAMIpStatIfIndex brcdIp.1.1.2.12.2.1.1 Syntax: Unsigned32	Read-only	The ifIndex value of the local interface.
snCAMIpStatLevel brcdIp.1.1.2.12.2.1.2 Syntax: Unsigned32	Read-only	The level of CAM entry for that interface.
snCAMIpStatFreeEntries brcdIp.1.1.2.12.2.1.3 Syntax: Unsigned32	Read-only	Free entries in the IP CAM for that interface and level.
snCAMIpStatTotalEntries brcdIp.1.1.2.12.2.1.4 Syntax: Unsigned32	Read-only	Total entries in the IP CAM for that interface and level.

The output provides the following information:

- L3 L3 1 - 2047 (0x00001 - 0x007ff), free 2047 (0x007ff)
- L3 L2 2048 - 4095 (0x00800 - 0x00fff), free 2048 (0x00800)
- L3 4096 - 32767 (0x01000 - 0x07fff), free 28662 (0x06ff6)

Values are shared across the DMA. Also, if IP activity across DMAs is not different, some fields may show the same values.

CAM statistics table

The following table shows CAM statistics for all master DMAs. The objects are equivalent to the **dm cam stat** *dma master num* command.

Name, OID, and syntax	Access	Description
snCAMStatTable	None	CAM statistics table.

Name, OID, and syntax	Access	Description
brcdIp.1.1.2.12.3		
snCamStatDMAIdNumber brcdIp.1.1.2.12.3.1.1 Syntax: Unsigned32	Read-only	DMA ID number.
snCamStatDMAMasterNumber brcdIp.1.1.2.12.3.1.2 Syntax: Unsigned32	Read-only	DMA master for the DMA ID number.
snCamStatFreePool0Entries brcdIp.1.1.2.12.3.1.3 Syntax: Unsigned32	Read-only	CAM free pool0 entries.
snCamStatFreePool1Entries brcdIp.1.1.2.12.3.1.4 Syntax: Unsigned32	Read-only	CAM free pool1 entries.
snCamStatFreePool2Entries brcdIp.1.1.2.12.3.1.5 Syntax: Unsigned32	Read-only	CAM free pool2 entries.
snCamStatFreePool3Entries brcdIp.1.1.2.12.3.1.6 Syntax: Unsigned32	Read-only	CAM free pool3 entries.
snCamStatFreeL2Entries brcdIp.1.1.2.12.3.1.7 Syntax: Unsigned32	Read-only	CAM free Layer 2 entries
snCamStatFreeL2LowestSection brcdIp.1.1.2.12.3.1.8 Syntax: Unsigned32	Read-only	CAM free Layer 2 lowest section entries.
snCamStatHostLookupCount brcdIp.1.1.2.12.3.1.9 Syntax: Unsigned32	Read-only	CAM host lookup count for router.
snCamStatRouteLookupCount brcdIp.1.1.2.12.3.1.10 Syntax: Unsigned32	Read-only	CAM route lookup count for router.
snCamStatLevel1 brcdIp.1.1.2.12.3.1.11 Syntax: Unsigned32	Read-only	CAM stat level 1 entries for router.
snCamStatLevel2 brcdIp.1.1.2.12.3.1.12 Syntax: Unsigned32	Read-only	CAM stat level 2 entries for router.
snCamStatLevel3 brcdIp.1.1.2.12.3.1.13 Syntax: Unsigned32	Read-only	CAM stat level 3 entries for router.
snCamStatMacFailCount brcdIp.1.1.2.12.3.1.14 Syntax: Unsigned32	Read-only	CAM MAC fail count.
snCamStatIPRouteFailCount brcdIp.1.1.2.12.3.1.15	Read-only	CAM IP route fail count.

Name, OID, and syntax	Access	Description
Syntax: Counter		
snCamStatIPSessionFailCount brcdIp.1.1.2.12.3.1.16 Syntax: Counter	Read-only	CAM IP session fail count.
snCamStatIPMCastFailCount brcdIp.1.1.2.12.3.1.17 Syntax: Counter	Read-only	CAM IP multicast fail count.
snCamStatL2SessionFailCount brcdIp.1.1.2.12.3.1.18 Syntax: Counter	Read-only	CAM Layer 2 session fail count.
snCamStatAddMACCount brcdIp.1.1.2.12.3.1.19 Syntax: Counter	Read-only	CAM add MAC count.
snCamStatAddVLANCount brcdIp.1.1.2.12.3.1.20 Syntax: Counter	Read-only	CAM add VLAN count.
snCamStatAddIPHostCount brcdIp.1.1.2.12.3.1.21 Syntax: Counter	Read-only	CAM add IP host count.
snCamStatAddIPRouteCount brcdIp.1.1.2.12.3.1.22 Syntax: Counter	Read-only	CAM add IP route count.
snCamStatAddIPSessionCount brcdIp.1.1.2.12.3.1.23 Syntax: Counter	Read-only	CAM add IP session count.
snCamStatAddIPMCastCount brcdIp.1.1.2.12.3.1.24 Syntax: Counter	Read-only	CAM add IP multicast count.
snCamStatAddL2SessionCount brcdIp.1.1.2.12.3.1.25 Syntax: Counter	Read-only	CAM add Layer 2 session count.
snCamStatAddIPXCount brcdIp.1.1.2.12.3.1.26 Syntax: Counter	Read-only	CAM add IPX count.
snCamStatDeleteDMACamCount brcdIp.1.1.2.12.3.1.27 Syntax: Counter	Read-only	CAM delete DMA CAM count.

CAM profile

The following object identifies CAM partition profiles. Each profile adjusts the partitions to optimize the device for corresponding applications.

Name, OID, and syntax	Access	Description
snCamProfile brcdIp.1.14.1.1.1.1 Syntax: Integer	Read-only	Identifies the CAM partition profile. Each profile adjusts the partitions to optimize the device for corresponding applications. Displays one of the following: • default(1) • ipv4(2) • ipv4Ipv6(3) • ipv4Ipv62(4) • ipv4Vpls(5) • ipv4Vpn(6) • ipv6(7) • l2Metro(8) • l2Metro2(9) • mplsL3vpn(10) • mplsL3vpn2(11) • mplsVpls(12) • mplsVpls2(13) • mplsVpnVpls(14) • multiService(15) • multiService2(16) • multiService3(17) • multiService4(18) • multiService5(19) • multiService6(20) • telemetry1(21)

CAM usage for Layer 3 traffic

The following table contains information about the CAM usage on the device by Layer 3 traffic.

Name, OID, and syntax	Access	Description
snCamUsageL3Table brcdIp.1.14.1.1.2.1	None	The CAM usage table for Layer 3 traffic.
snCamUsageL3Slot brcdIp.1.14.1.1.2.1.1.1 Syntax: Unsigned32	None	A number that uniquely identifies an interface module on the device.
snCamUsageL3Processor brcdIp.1.14.1.1.2.1.1.2 Syntax: Unsigned32	None	A number which uniquely identifies the network processor of the interface module identified by the CAM usage for Layer 3 traffic object.
snCamUsageL3Type brcdIp.1.14.1.1.2.1.1.3 Syntax: Integer	None	Identifies the type of Layer 3 traffic passing through the network processor: • ipv4(1) • ipv6(2) • ipv4vpn(3) • ipv6vpn(4)

Name, OID, and syntax	Access	Description
snCamUsageL3Supernet brcdIp.1.14.1.1.2.1.1.4 Syntax: Unsigned32	None	Identifies the supernet for the Layer 3 type traffic. It provides information for the longest match lookup. For example: • 0 - All the bits of an IP address will be matched. • 1 - All but the lowest bit in an IP address will be matched. Valid Values: • IPv4 and IPv4VPN (0 - 32), where a value of 32 indicates the entry is the total of other supernets indexed by [0..31]. • IPv6 (0 - 10), where a value of 10 indicates the entry is the total of other Supernets indexed by [0..9].
snCamUsageL3Size brcdIp.1.14.1.1.2.1.1.5 Syntax: Unsigned32	Read-only	The effective CAM size by the Layer 3 traffic: • IPv4 traffic - Each unit is 4 bytes. • IPv4vpn traffic - Each unit is 8 bytes. • IPv6 traffic - Each unit is 16 bytes.
snCamUsageL3Free brcdIp.1.14.1.1.2.1.1.6 Syntax: Gauge32	Read-only	The amount of CAM currently available by the Layer 3 traffic entry: • IPv4 traffic - each unit is 4 bytes. • IPv4vpn traffic - each unit is 8 bytes. • IPv6 traffic - each unit is 16 bytes.
snCamUsageL3UsedPercent brcdIp.1.14.1.1.2.1.1.7 Syntax: Percent	Read-only	The percentage of CAM currently being used by the Layer 3 traffic.

CAM usage for Layer 2 traffic

The following table contains information about the CAM usage on the device by Layer 2 traffic.

Name, OID, and syntax	Access	Description
snCamUsageL2Table brcdIp.1.14.1.1.2.2	None	The CAM usage table for Layer 2 traffic.
snCamUsageL2Slot brcdIp.1.14.1.1.2.2.1.1 Syntax: Unsigned32	None	A number that uniquely identifies an interface module on the device.
snCamUsageL2Processor brcdIp.1.14.1.1.2.2.1.2 Syntax: Unsigned32	None	A number which uniquely identifies the network processor of the interface module identified by the CAM usage for Layer 2 traffic object.
snCamUsageL2Type brcdIp.1.14.1.1.2.2.1.3 Syntax: Integer	None	Identifies the type of Layer 2 traffic passing through the network processor: • forwarding(1) • protocol(2) • flooding(3)

Name, OID, and syntax	Access	Description
		• total(4) • portBUMRL(5)
snCamUsageL2Size brcdIp.1.14.1.1.2.2.1.4 Syntax: Unsigned32	Read-only	Indicates the effective CAM size for this Layer 2 traffic entry. Each unit is 8 bytes.
snCamUsageL2Free brcdIp.1.14.1.1.2.2.1.5 Syntax: Gauge32	Read-only	Shows the amount of CAM currently available for this Layer 2 traffic. Each unit is 8 bytes.
snCamUsageL2UsedPercent brcdIp.1.14.1.1.2.2.1.6 Syntax: Percent	Read-only	Shows the percentage of CAM currently being used for this Layer 2 traffic.

CAM usage session table

The following table contains information about the CAM usage on the device by sessions traffic.

Name, OID, and syntax	Access	Description
snCamUsageSessionTable brcdIp.1.14.1.1.2.3	None	The CAM usage table for Layer 3 traffic.
snCamUsageSessionSlot brcdIp.1.14.1.1.2.3.1.1 Syntax: Unsigned32	None	A number that uniquely identifies an interface module on the device.
snCamUsageSessionProcessor brcdIp.1.14.1.1.2.3.1.2 Syntax: Unsigned32	None	A number which uniquely identifies the network processor on the interface module identified by the CAM usage session table object.
snCamUsageSessionType brcdIp.1.14.1.1.2.3.1.3 Syntax: Integer	None	Identifies the type of session: • ipv4Multicast(1) • ipv4andMacReceiveAcl(2) • ipv4andMacRuleAcl(3) • ipv4andMacTotal(4) • ipv4andMacOut(5) • ipv6Multicast(6) • ipv6ReceiveAcl(7) • ipv6RuleAcl(8) • ipv6Total(9) • ipv6Out(10) • labelOut(11) • ipv4SrcGuardDenial(12) • ipv4SrcGuardPermit(13) • internalForwardingLookup(14) • l2OpenFlowCatchAll(27) • l2OpenFlowUnprotected(28) • l2OpenFlowNormal(29) • l2OpenFlowProtected(30) • ipv4OpenFlowCatchAll(31)

Name, OID, and syntax	Access	Description
		• ipv4OpenFlowUnprotected(32) • ipv4OpenFlowNormal(33) • ipv4OpenFlowProtected(34) • broadcastAcl(35) • macTotal(36)
snCamUsageSessionSize brcdIp.1.14.1.1.2.3.1.4 Syntax: Unsigned32	Read-only	Identifies the effective CAM size for this session traffic entry: • IPv4 sessions - Each unit is 16 bytes. • IPv6 sessions - Each unit is 64 bytes.
snCamUsageSessionFree brcdIp.1.14.1.1.2.3.1.5 Syntax: Gauge32	Read-only	The amount of CAM currently available for this session: • IPv4 sessions - Each unit is 16 bytes. • IPv6 sessions - Each unit is 64 bytes.
snCamUsageSessionUsedPercent brcdIp.1.14.1.1.2.3.1.6 Syntax: Percent	Read-only	The percentage of CAM currently being used by this session.

CAM usage other table

The following table contains information about the CAM usage on the device by traffic other than Layer 3, Layer 2, and Sessions.

Name, OID, and syntax	Access	Description
snCamUsageOtherTable brcdIp.1.14.1.1.2.4	None	CAM usage table for traffic types other than Layer 3, Layer 2, and Sessions traffic.
snCamUsageOtherSlot brcdIp.1.14.1.1.2.4.1.1 Syntax: Unsigned32	None	A number that uniquely identifies an interface module on the device.
snCamUsageOtherProcessor brcdIp.1.14.1.1.2.4.1.2 Syntax: Unsigned32	None	A number which uniquely identifies the network processor on the interface module identified by the CAM usage other table object.
snCamUsageOtherType brcdIp.1.14.1.1.2.4.1.3 Syntax: Integer	None	Identifies the traffic type: • gre(1) • multicastVpls(2)
snCamUsageOtherSize brcdIp.1.14.1.1.2.4.1.4 Syntax: Unsigned32	Read-only	Indicates the effective CAM size for this Other traffic type: • GRE - Each unit is 8 bytes. • Multicast VPLS - Each unit is 16 bytes.
snCamUsageOtherFree brcdIp.1.14.1.1.2.4.1.5 Syntax: Gauge32	Read-only	Indicates the amount of CAM currently available to this traffic type: • GRE: each unit is 8 bytes • Multicast VPLS: each unit is 16 bytes
snCamUsageOtherUsedPercent brcdIp.1.14.1.1.2.4.1.6 Syntax: Percent	Read-only	Indicates the percentage of CAM currently being used for this traffic type.

System DRAM

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System DRAM information group

The system DRAM information group displays memory utilization statistics for protocols that use dynamic memory allocation. It shows the same information that the **show memory** command displays.

NOTE

The following table is not supported on the Brocade FastIron devices.

Name, OID, and syntax	Access	Description
snAgSystemDRAM brcdIp.1.1.2.12.4	None	The system DRAM information groups.
snAgSystemDRAMUtil brcdIp.1.1.2.12.4.1 Syntax: Integer	Read-only	The amount of system dynamic memory that is currently utilized, in percent. This object replaces "snAgGblDynMemUtil".
snAgSystemDRAMTotal brcdIp.1.1.2.12.4.2 Syntax: Integer	Read-only	The total amount of system dynamic memory, in bytes. This object replaces "snAgGblDynMemTotal".
snAgSystemDRAMFree brcdIp.1.1.2.12.4.3 Syntax: Integer	Read-only	The amount of free system dynamic memory, in bytes. This object replaces "snAgGblDynMemFree".
snAgSystemDRAMForBGP brcdIp.1.1.2.12.4.4 Syntax: Integer	Read-only	The amount of free dynamic memory used by BGP, in bytes.
snAgSystemDRAMForOSPF brcdIp.1.1.2.12.4.5 Syntax: Integer	Read-only	The amount of free dynamic memory used by OSPF, in bytes.

System debug group

The following objects are for debugging. They are equivalent to the **debug** command.

Name, OID, and syntax	Access	Description
snAgSystemDebug brcdIp.1.1.2.12.5	None	The system debug group.
snAgSystemDebugTotalIn brcdIp.1.1.2.12.5.1	Read-only	Total incoming packet count. Sum of buffer manager and CPU read count.

Name, OID, and syntax	Access	Description
Syntax: Unsigned32		
snAgSystemDebugTotalOut brcdIp.1.1.2.12.5.2 Syntax: Unsigned32	Read-only	Total outgoing packet count.
snAgSystemDebugCpuQueueRead brcdIp.1.1.2.12.5.3 Syntax: Unsigned32	Read-only	CPU queue read count.
snAgSystemDebugDRAMBuffer brcdIp.1.1.2.12.5.4 Syntax: Unsigned32	Read-only	DRAM buffer count.
snAgSystemDebugBMBuffer brcdIp.1.1.2.12.5.5 Syntax: Unsigned32	Read-only	Buffer Manager (BM) buffer count.
snAgSystemDebugBMFreeBuffer brcdIp.1.1.2.12.5.6 Syntax: Unsigned32	Read-only	Free BM buffer count.
snAgSystemDebugBMFreeBufferMgmt brcdIp.1.1.2.12.5.7 Syntax: Unsigned32	Read-only	Free BM buffer management count.
snAgSystemDebugIpcGigLock brcdIp.1.1.2.12.5.8 Syntax: Unsigned32	Read-only	IPC gigabyte lock count.
snAgSystemDebugDRAMGetError brcdIp.1.1.2.12.5.9 Syntax: Unsigned32	Read-only	DRAM get error count.
snAgSystemDebugDRAMToBMCopyFail brcdIp.1.1.2.12.5.10 Syntax: Unsigned32	Read-only	DRAM to BM copy fail count.

System temperature table

This section displays the SNMP MIB objects for temperature readings on the Brocade FastIron devices.

For stacking devices, refer to System stacking temperature table on page 159. The system temperature table shows temperature reading information for each module's temperature sensor.

Name, OID, and syntax	Access	Description
snAgentTempTable brcdIp.1.1.2.13.1	None	The table that displays the temperature reading for each module's temperature sensor. Note that temperature readings are displayed only for those modules that have temperature sensors.
snAgentTempSlotNum brcdIp.1.1.2.13.1.1.1 Syntax: Integer32	None	The slot number of the module to which the temperature sensor is attached.
snAgentTempSensorId brcdIp.1.1.2.13.1.1.2	None	The identification number of the module's temperature sensor.

Name, OID, and syntax	Access	Description
Syntax: Integer32		The following applies to the Management modules: • Sensor 1 - The intake temperature. • Sensor 2 - The exhaust-side temperature.
snAgentTempSensorDescr brcdIp.1.1.2.13.1.1.3 Syntax: Display string	Read-only	The description of the temperature sensor.
snAgentTempValue brcdIp.1.1.2.13.1.1.4 Syntax: Integer	Read-only	The temperature reading for the temperature sensor. This value is displayed in units of 0.5° Celsius. Valid values: 110 - 250

System temperature threshold table

The following table lists the temperature levels of the fan settings.

Name, OID, and syntax	Access	Description
snAgentTempThresholdTable brcdIp.1.1.2.13.2	None	The table lists the temperature threshold levels for four speeds of fan settings: • low • medium • medium-high • high
snAgentTempThresholdModule brcdIp.1.1.2.13.2.1.1 Syntax: Integer	None	The module in the system for which threshold levels represented by this row are applicable.
snAgentTempThresholdLevel brcdIp.1.1.2.13.2.1.2 Syntax: Integer	None	The temperature threshold level of the module for which threshold levels represented by this row are applicable.
snAgentTempThresholdHighValue brcdIp.1.1.2.13.2.1.3 Syntax: Integer	Read-write	The high value for the temperature threshold, above which the fans would need to operate at the next higher speed. If the value reaches more than the high threshold value for the 'high' level, the module will be shut down.
snAgentTempThresholdLowValue brcdIp.1.1.2.13.2.1.4 Syntax: Integer	Read-write	The low value for the temperature threshold, below which the fans would need to operate at the next lower speed. This value is not applicable for the 'low' level, as there are no more lower speeds.

System stacking temperature table

The following table shows temperature information for a module's temperature sensor in the stacking devices.

Name, OID, and syntax	Access	Description
snAgentTemp2Table brcdIp.1.1.2.13.3	None	This table lists the temperatures of the modules in each unit. This table is applicable only to modules with temperature sensors.
snAgentTemp2UnitNum brcdIp.1.1.2.13.3.1.1 Syntax: Integer	None	The unit number of the module that contains the temperature sensor represented by this row.
snAgentTemp2SlotNum brcdIp.1.1.2.13.3.1.2 Syntax: Integer	None	The slot number of the module that contains the temperature sensor represented by this row.
snAgentTemp2SensorId brcdIp.1.1.2.13.3.1.3 Syntax: Integer	None	The temperature sensor ID of the member module that is represented by this row: For BrocadeFastIron devices: • sensor# 1 - Intake Side Temperature • sensor# 2 - Exhaust Side Temperature
snAgentTemp2SensorDescr brcdIp.1.1.2.13.3.1.4 Syntax: DisplayString	Read-only	Description of the temperature sensor. This is the same as snAgentTempSensorId, which is in numeric format. It is used to traverse the temperature sensor table. The description provides the meaning and purpose of this sensor. There can be up to 128 characters in the description.
snAgentTemp2Value brcdIp.1.1.2.13.3.1.5 Syntax: Integer	Read-only	Temperature of the sensor represented by this row. Each unit is 0.5° Celsius. Valid values: 110° - 250° Celsius.

Software licensing

The following table contains information about the software licenses configured on the device.

Name, OID, and syntax	Access	Description
fdryLicenseTable brcdIp.1.1.2.15.1	None	A list of licenses maintained by the license sub-system.
fdryLicensePackageName brcdIp.1.1.2.15.1.1.1 Syntax: DisplayString	None	The name of the package, whose license information, this entry displays.
fdryLicenseLid brcdIp.1.1.2.15.1.1.2 Syntax: DisplayString	None	The License ID (LID) of the chassis or the line module for which this entry displays license information.
fdryLicenseHash brcdIp.1.1.2.15.1.1.3 Syntax: DisplayString	None	A unique hash for identifying a license entry in the system. This helps traverse through the entries with the same package name and LID.
fdryLicenseType brcdIp.1.1.2.15.1.1.4 Syntax: Integer	Read-only	The type of the license, which can be either normal or trial.

Name, OID, and syntax	Access	Description
fdryLicensePrecedence brcdIp.1.1.2.15.1.1.5 Syntax: Unsigned32	Read-only	Defines the priority of a particular trial license among those having the same package name and LID. This is primarily used for determining which license to use when there are many trial and normal licenses with the same package name and LID.
fdryLicenseTrialDays brcdIp.1.1.2.15.1.1.6 Syntax: Unsigned32	Read-only	The number of trial days for the license, if it is a trial license. Otherwise, the value has no meaning for normal licenses and read as 0 on a Get operation.
fdryLicenseTrialTimeElapsed brcdIp.1.1.2.15.1.1.7 Syntax: Unsigned32	Read-only	The cumulative number of hours used for this trial license. This counts all the usages of the trial license. For a normal license, this is 0.
fdryLicenseTrialTimeLeft brcdIp.1.1.2.15.1.1.8 Syntax: Unsigned32	Read-only	The number of hours left for the trial license. This is derived from the total number of hours and the cumulative number of hours used. For a normal license, this is 0.
fdryLicenseTrialState brcdIp.1.1.2.15.1.1.9 Syntax: Integer	Read-only	This indicates the state of the trial license: • Invalid - The license is not valid. • Unused - The license is never used. • Active - The license has been used at least once. • Expired - The license has expired and can no longer be used.
fdryLicenseVendorInfo brcdIp.1.1.2.15.1.1.10 Syntax: DisplayString	Read-only	This is the Brocade-specific package data which is an octet string. This contains encoded information of license-specific information such as package bit mask, number of ports and so on.
fdryLicenseSlot brcdIp.1.1.2.15.1.1.11 Syntax: Integer32 NOTE This object is not supported on the BrocadeFastIron devices	Read-only	This indicates the slot number of the module to which the license belongs. There is a one-to-one mapping between LID and slot number, as each module has a unique LID and can be present in only one slot.

PoD port license information

The brcdPortLicenseTable contains the port that requires the port license and port license status.

NOTE
The following table objects are supported only on the Brocade ICX 6610, Brocade ICX 6450, and Brocade ICX 6650 devices.

Name, OID, and syntax	Access	Description
brcdPortLicenseTable brcdIp.1.1.2.15.3	None	A list of ports that require the port license.
brcdPortLicenseIndex brcdIp.1.1.2.15.3.1.1 Syntax: InterfaceIndex	None	The port/interface index (ifindex).

Name, OID, and syntax	Access	Description
brcdPortLicenseStatus brcdIp.1.1.2.15.3.1.2 Syntax: Integer	Read-only	The current license state of the port. • validLic(1) - The port requires port license and has a valid license. • noLic(2) - The port requires port license and does not have a valid license.

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DNS table

The table lists the IPv4 and IPv6 DNS service names for the Brocade FastIron devices.

Name, OID, and syntax	Access	Description
fdryDns2DomainNameTable brcdIp.1.1.3.34.1.1 Syntax: Sequence of FdryDns2DomainNameTable	None	The DNS name table.
fdryDns2DomainNameIndex brcdIp.1.1.3.34.1.1.1.1 Syntax: Unsigned32	None	The index to the DNS name table.
fdryDns2DomainNameAddrType brcdIp.1.1.3.34.1.1.1.2 Syntax: InetAddressType	Read-create	The DNS IP address type: • ipv4(1) • ipv6(2) Default: ipv4(1)
fdryDns2DomainNameName brcdIp.1.1.3.34.1.1.1.3 Syntax: DisplayString	Read-create	The DNS domain name string.
fdryDns2DomainNameRowStatus brcdIp.1.1.3.34.1.1.1.4 Syntax: RowStatus	Read-create	This variable is used to create, modify, or delete a row in this table. When a row in this table is in active(1) state, no objects in that row can be modified except for this object.

DNS address table

The address table lists the IPv4 and IPv6 DNS addresses. These objects apply to the Brocade FastIron devices.

Name, OID, and syntax	Access	Description
fdryDnsServerTable brcdIp.1.1.3.34.2.1 Syntax: FdryDnsServerTable	None	The DNS address list table that lists the IPv4 and IPv6 DNS addresses.
fdryDnsServerAddrType brcdIp.1.1.3.34.2.1.1.1 Syntax: InetAddressType	None	The DNS IP address type: • ipv4(1) • ipv6(2) Default: ipv4(1)
fdryDnsServerIndex brcdIp.1.1.3.34.2.1.1.2 Syntax: Unsigned32	None	The index to the DNS address table. Up to four DNS IP addresses are supported for each IPv4 and IPv6 protocol.

Name, OID, and syntax	Access	Description
fdryDnsServerAddr brcdIp.1.1.3.34.2.1.1.3 Syntax: InetAddress	Read-create	The DNS IP address.
fdryDnsServerRowStatus brcdIp.1.1.3.34.2.1.1.4 Syntax: RowStatus	Read-create	This variable is used to create, modify, or delete a row in this table. When a row in this table is in active(1) state, no objects in that row can be modified except for this object.

Trace route group

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Trace route group

This group uses the following method to detect routes used to reach a destination address.

1. The originating Layer 3 Switch sends a probe packet (a UDP packet) to the destination address with a time-to-live (TTL) value of 1.
2. The first Layer 3 Switch that receives this packet decrements the TTL, then drops the packet and returns a ICMP packet to the originator.
3. The originating Layer 3 Switch records the route in the Trace route result table on page 166.
4. The originating Layer 3 Switch sends a probe packet (a UDP packet) to the destination address with a TTL value of 2.
5. The second Layer 3 Switch that receives this packet decrements the TTL, then drops the packet and returns an ICMP packet to the originator.
6. The originating Layer 3 Switch records the route in Trace route result table on page 166.

   This procedure is repeated until the destination is reached or the maximum TTL is reached.

General trace route group

The following objects define the trace route probe packet.

Name, OID, and Syntax	Access	Description
snRtIpTraceRouteGeneral brcdIp.1.2.2.10.1	None	Shows the general IP address of the trace route.
snRtIpTraceRouteTargetAddr brcdIp.1.2.2.10.1.1 Syntax: IpAddress	Read-write	Shows the target IP address of the trace route.
snRtIpTraceRouteMinTtl brcdIp.1.2.2.10.1.2 Syntax: Integer	Read-write	Indicates the minimum TTL value carried in the first probe packet. Valid values: 1 - 255 seconds Default: 1 second
snRtIpTraceRouteMaxTtl brcdIp.1.2.2.10.1.3 Syntax: Integer	Read-write	Indicates the maximum TTL value carried in the last probe packet. Valid values: 1 - 255 seconds.

Name, OID, and Syntax	Access	Description
		Default: 30 second
snRtIpTraceRouteTimeOut brcdIp.1.2.2.10.1.4 Syntax: Integer	Read-write	Indicates the number of seconds the Layer 3 Switch waits for a response from the probe packet (i.e. the ICMP packet) before timing out. Valid values: 1 - 120 seconds. Default: 2 seconds
snRtIpTraceRouteControl brcdIp.1.2.2.10.1.5 Syntax: Integer	Read-write	Indicates the progress of the trace route: • start(1) - snRtIpTraceRouteDestAddr must have been initialized before start(1) can be written. • abort(2) - Stops the current trace route operation. • success(3) - The destination address is reached. • failure(4) - Either the destination address is not reach, trace route times out, or the ending TTL is reached before the operation is completed. • inProgress(5) - Trace route operation has started. Only "start" and "abort" are writable values; whereas, "success", "failure" and "inProgress" are read-only (or returned) values. The Trace route result table on page 166 contains the routes and target addresses.

Trace route result table

This table contains the routes and the target addresses used in the trace route operation to reach the destination address.

Name, OID, and Syntax	Access	Description
snRtIpTraceRouteResultTable brcdIp.1.2.2.10.2.1	None	The trace route results table.
snRtIpTraceRouteResultndex brcdIp.1.2.2.10.2.1.1.1 Syntax: Integer32	Read-only	The index for an entry in the trace route results table.
snRtIpTraceRouteResultAdr brcdIp.1.2.2.10.2.1.1.2 Syntax: IpAddress	Read-only	Indicates the IP address of the Layer 3 Switch or the target IP address of the Layer 3 Switch.
snRtIpTraceRouteResultRoundTripTime1 brcdIp.1.2.2.10.2.1.1.3 Syntax: Time ticks	Read-only	Shows the round trip time between the transmission of the first probe packet and the received response of the ICMP packet.
snRtIpTraceRouteResultRoundTripTime2 brcdIp.1.2.2.10.2.1.1.4 Syntax: Time ticks	Read-only	Shows the round trip time between the transmission of the second probe and the received response of the ICMP packet.

IP forwarding cache table

The IP forwarding cache provides a fast-path mechanism for forwarding IP packets. The cache contains entries for IP destinations.

Name, OID, and Syntax	Access	Description
snRtIpFwdCacheTable brcdIp.1.2.2.11	None	IP forwarding cache table.
snRtIpFwdCacheIndex brcdIp.1.2.2.11.1.1 Syntax: Integer32	Read-only	An index in the IP Forwarding Cache Table for this entry.
snRtIpFwdCacheIp brcdIp.1.2.2.11.1.2 Syntax: IpAddress	Read-only	Shows the IP address of a forwarding cache station.
snRtIpFwdCacheMac brcdIp.1.2.2.11.1.3 Syntax: Octet String	Read-only	Shows the MAC address of a forwarding cache station. This object has six octets.
snRtIpFwdCacheNextHopIp brcdIp.1.2.2.11.1.4 Syntax: IpAddress	Read-only	Indicates the IP address of the Layer 3 Switch for the next hop.
snRtIpFwdCacheOutgoingPort brcdIp.1.2.2.11.1.5 Syntax: Integer	Read-only	Specifies the outgoing port to which packets will be forwarded. Valid values: 0 - 3900. A value of zero indicates that there is no outgoing port for this entry. Non-zero value has the following meaning: • Bit 0 to bit 7 - Port number. • Bit 8 to bit 11 - Slot number. For virtual Layer 3 Switch interface, slot number is 15. Port number is the virtual Layer 3 Switch port number, which is a value from 1 - 60.
snRtIpFwdCacheType brcdIp.1.2.2.11.1.6 Syntax: Integer	Read-only	Indicates the type of entry this is: • dynamic(1) • permanent(2)
snRtIpFwdCacheAction brcdIp.1.2.2.11.1.7 Syntax: Integer	Read-only	Indicates the action taken with this entry: • other(1) • forward(2) • forUs(3) • waitForArp(4) • complexFilter(5) • icmpDeny(6) • dropPacket(7)
snRtIpFwdCacheFragCheck brcdIp.1.2.2.11.1.8 Syntax: Integer	Read-only	Indicates if fragmentation-needed is enabled: • disabled(0) • enabled(1) NOTE Devices cannot forward the packet without fragmenting it.

Name, OID, and Syntax	Access	Description
snRtIpFwdCacheSnapHdr brcdIp.1.2.2.11.1.9 Syntax: Integer	Read-only	Indicates if Ethernet SNAP (also called IEEE 802.3) encapsulation is enabled: • disabled(0) • enabled(1)
snRtIpFwdCacheVLanId brcdIp.1.2.2.11.1.10 Syntax: Integer32	Read-only	Shows the VLAN ID of an IP Forwarding Cache Table entry. A value of zero indicates that no VLAN is associated with this entry.
snRtIpFwdCacheOutgoingIf brcdIp.1.2.2.11.1.11 Syntax: Integer	Read-only	Shows the outgoing interface that will be used to forward packets. An value of zero indicates that no outgoing interface is associated with this entry.

IP AS-Path access list table

The IP forwarding cache provides a fast-path mechanism for forwarding IP packets. The cache contains entries for IP destinations.

Name, OID, and Syntax	Access	Description
snIpAsPathAccessListTable brcdIp.1.2.2.12	None	The IP AS-Path access list table.
snIpAsPathAccessListIndex brcdIp.1.2.2.12.1.1 Syntax: Integer32	Read-only	The table index for a filter entry.
snIpAsPathAccessListSequence brcdIp.1.2.2.12.1.2 Syntax: Integer32	Read-write	The table sequence index for a filter entry.
snIpAsPathAccessListAction brcdIp.1.2.2.12.1.3 Syntax: Integer	Read-write	The action to take if the BGP address matches with this filter.
snIpAsPathAccessListRegExpression brcdIp.1.2.2.12.1.4 Syntax: Octet String	Read-write	Autonomous system in the filter using a regular expression. Each character of the regular expression string is represented by one octet.
snIpAsPathAccessListRowStatus brcdIp.1.2.2.12.1.5 Syntax: Integer	Read-write	This object is used to create and delete row in the table and control if they are used. The values that can be written are: • delete (3) - Deletes the row • create (4) - Creates a new row • modify (5) - Modifies an existing row If the row exists, then a SET with value of create (4) returns error 'badvalue'. Deleted rows go away immediately. The following values can be returned on reads: • nosuch (0) - No such row • invalid (1) - Setting it to 'invalid' has the effect of rendering it inoperative • valid (2) - The row exists and is valid

IP community list table

Name, OID, and Syntax	Access	Description
snIpCommunityListTable brcdIp.1.2.2.13	None	The IP community list table.
snIpCommunityListIndex brcdIp.1.2.2.13.1.1 Syntax: Integer	Read-only	An index for an entry in the table.
snIpCommunityListSequence brcdIp.1.2.2.13.1.2 Syntax: Integer	Read-only	Identifies the sequence of this entry in this table.
snIpCommunityListAction brcdIp.1.2.2.13.1.3 Syntax: Integer	Read-write	Determines what action to take if the address in the packet matches this filter: • deny(0) • permit(1)
snIpCommunityListCommNum brcdIp.1.2.2.13.1.4 Syntax: Octet String	Read-write	Specifies the community number. This is a number from 1 to 0xFFFFFFFF. There are 20 numbers. Each number is represented by four octets.
snIpCommunityListInternet brcdIp.1.2.2.13.1.5 Syntax: Integer	Read-write	Indicates if the community is enabled: • disabled(0) • enabled(1)
snIpCommunityListNoAdvertise brcdIp.1.2.2.13.1.6 Syntax: Integer	Read-write	Indicates if routes will not be advertised to any internal or external peer: • false(0) • true(1)
snIpCommunityListNoExport brcdIp.1.2.2.13.1.7 Syntax: Integer	Read-write	Determines if the route will not be advertised to an EBGP peer: • false(0) • true(1)
snIpCommunityListRowStatus brcdIp.1.2.2.13.1.8 Syntax: Integer	Read-write	Controls the management of the table rows. The values that can be written are: • delete(3) - Deletes the row • create(4) - Creates a new row • modify(5) - Modifies an existing row If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row • invalid(1) - Row is inoperative • valid(2) - Row exists and is valid
snIpCommunityListLocalAs brcdIp.1.2.2.13.1.9 Syntax: Integer	Read-write	Indicates if this route will be sent to peers (advertised) in other sub-autonomous systems within the local confederation: • false(0) - Do not advertise this route to an external system. • true(1) - Advertise this route.

IP prefix list table

An IP prefix list specifies a list of networks. When you apply an IP prefix list to a neighbor, the Layer 3 Switch sends or receives only a route whose destination is in the IP prefix list. You can configure up to 100 prefix lists. The software interprets the prefix lists in sequential order, beginning with the lowest sequence number.

Name, OID, and Syntax	Access	Description
snIpPrefixListTable brcdIp.1.2.2.14	None	IP prefix list table.
snIpPrefixListName brcdIp.1.2.2.14.1.1 Syntax: Octet String	Read-only	Specifies the name of the prefix list. This name can be used when applying the prefix list to a neighbor. It is an octet string; each character of the name is represented by one octet. There can be up to 32 octets for this name.
snIpPrefixListSequence brcdIp.1.2.2.14.1.2 Syntax: Integer32	Read-only	Shows the sequence of an entry in the table. There can be up to 100 prefix list entries. If a sequence number is not specified, then entries are numbered in increments of 5, beginning with prefix list entry 5. Incoming or outgoing routes are matched against the entries in the IP prefix list in numerical order, beginning with the lowest sequence number.
snIpPrefixListDesc brcdIp.1.2.2.14.1.3 Syntax: Octet String	Read-write	Specifies the description of the prefix. This description is in an octet string; each character in the description is represented by one octet. There can be up to 80 octets in the description.
snIpPrefixListAction brcdIp.1.2.2.14.1.4 Syntax: Integer	Read-write	Indicates what to do with the route if it matches this entry: • deny(0) • permit(1)
snIpPrefixListAddr brcdIp.1.2.2.14.1.5 Syntax: IpAddress	Read-write	Shows the IP address of the prefix.
snIpPrefixListMask brcdIp.1.2.2.14.1.6 Syntax: IpAddress	Read-write	Shows the number of bits in the prefix network mask.
snIpPrefixListGeValue brcdIp.1.2.2.14.1.7 Syntax: Integer	Read-write	Specifies that the prefix is greater than the value of the IP prefix list table object. Valid values: 0 - 32
snIpPrefixListLeValue brcdIp.1.2.2.14.1.8 Syntax: Integer	Read-write	Specifies that the prefix is less than the value of the IP prefix list table object. Valid values: 0 - 32

NOTE
You can specify a range of length for prefixes that are more specific than the values for the IP prefix list table and IP prefix list table objects. The **ge-value** or **le-value** you specify must meet the following condition:length < ge-value <= le-value <= 32

If a value for IP prefix list table is specified, then the mask-length range is from the value of IP prefix list table to 32.

If a value for IP prefix list table is specified, then mask-length range is from length to the value of IP prefix list table.

If no value is specified for either the less than or greater than objects, then routes must exactly match the prefixes on the list.

Name, OID, and Syntax	Access	Description
snIpPrefixListRowStatus brcdIp.1.2.2.14.1.9 Syntax: Integer	Read-write	Controls the management of the table rows. The values that can be written are: • delete(3) - Deletes the row • create(4) - Creates a new row • modify(5) - Modifies an existing row If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row • invalid(1) - Row is inoperative • valid(2) - Row exists and is valid
snIpPrefixListLength brcdIp.1.2.2.14.1.10 Syntax: Integer32	Read-write	The length of the IP prefix's mask.

IP AS-Path access list string table

AS-Path is a list of the other ASs through which a route passes. BGP4 routers can use the AS-Path to detect and eliminate routing loops. The IP AS-Path access list string table contains filters that are used to deny or permit updates received from BGP4 neighbors.

Name, OID, and Syntax	Access	Description
snIpAsPathAccessListStringTable brcdIp.1.2.2.16	None	IP AS-Path access list string table.
snIpAsPathAccessListStringName brcdIp.1.2.2.16.1.1 Syntax: DisplayString	Read-only	An index for the entry in the table.
snIpAsPathAccessListStringSequence brcdIp.1.2.2.16.1.2 Syntax: Integer32	Read-only	The sequence index for this entry in this table.
snIpAsPathAccessListStringAction brcdIp.1.2.2.16.1.3 Syntax: Integer	Read-write	Determines what to do with the packet if its address matches this entry: • deny(0) • permit(1)
snIpAsPathAccessListStringRegExpression brcdIp.1.2.2.16.1.4 Syntax: Integer	Read-write	Specifies the AS-Path information that will be permitted or denied. This object contains a regular expression. Each character of the regular expression string is represented by one octet.
snIpAsPathAccessListStringRowStatus brcdIp.1.2.2.16.1.5 Syntax: Integer	Read-write	Controls the management of the table rows. The values that can be written are • delete(3) - Deletes the row • create(4) - Creates a new row • modify(5) - Modifies an existing row If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted

Name, OID, and Syntax	Access	Description
		rows are deleted immediately. The following values can be returned on reads: • noSuch(0) - No such row • invalid(1) - Row is inoperative • valid(2) - Row exists and is valid

IP community list string table

This table contains the list of community strings used.

Name, OID, and Syntax	Access	Description
snIpCommunityListStringTable brcdIp.1.2.2.17	None	IP community list string table.
snIpCommunityListStringName brcdIp.1.2.2.17.1.1 Syntax: Octet String	Read-only	An index for an entry in the table. This object can have up to 32 octets.
snIpCommunityListStringSequence brcdIp.1.2.2.17.1.2 Syntax: Integer32	Read-only	Indicates the sequence of this entry in the table.
snIpCommunityListStringAction brcdIp.1.2.2.17.1.3 Syntax: Integer	Read-write	Indicates the action to take if the community string on the packet matches this filter: • deny(0) • permit(1)
snIpCommunityListStringCommNum brcdIp.1.2.2.17.1.4 Syntax: Integer	Read-write	Shows the community string's number, represented by four octets. This number can be from 1 to 0xFFFFFFFF. There can be up to 20 community string numbers.
snIpCommunityListStringInternet brcdIp.1.2.2.17.1.5 Syntax: Integer	Read-write	Indicates if the community is enabled: • disabled(0) • enabled(1)
snIpCommunityListStringNoAdvertise brcdIp.1.2.2.17.1.6 Syntax: Integer	Read-write	Indicates the community string will not be advertised to any internal or external peers: • false(0) • true(1)
snIpCommunityListStringNoExport brcdIp.1.2.2.17.1.7 Syntax: Integer	Read-write	Indicates if this route is not advertised as an EBGP peer: • false(0) • true(1)
snIpCommunityListStringRowStatus brcdIp.1.2.2.17.1.8 Syntax: Integer	Read-write	Controls the management of the table rows. The values that can be written are: • delete(3) - Delete the row • create(4) - Create a new row • modify(5) - Modify an existing row If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately.

Name, OID, and Syntax	Access	Description
		The following values can be returned on reads: • noSuch(0) - No such row • invalid(1) - Row is inoperative • valid(2) - Row exists and is valid
snIpCommunityListStringLocalAs brcdIp.1.2.2.17.1.9 Syntax: Integer	Read-write	Determines if this route will be sent to peers in other sub autonomous systems within the local confederation. Do not advertise this route to an external system.
snIpCommunityListStringType brcdIp.1.2.2.17.1.10 Syntax: Integer	Read-write	Displays the type of the community list, whether standard or extended.
snIpCommunityListStringRegExpr brcdIp.1.2.2.17.1.11 Syntax: DisplayString	Read-write	This will display the regular expression string for extended community list. This object returns the value NULL for standard community list.

Power Over Ethernet MIB

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Power Over Ethernet global objects

The following objects apply globally to FastIron X Series Power Over Ethernet (POE) devices. The information in these objects is available in the output of the **show inline power** command.

Name, OID, and syntax	Access	Description
snAgentPoeGblPowerCapacityTotal brcdIp.1.1.2.14.1.1 Syntax: Unsigned32	Read-only	This object shows the total inline power capacity available in the device. The inline power capacity is measured in milliwatts.
snAgentPoeGblPowerCapacityFree brcdIp.1.1.2.14.1.2 Syntax: Unsigned32	Read-only	This object shows the inline power capacity currently available in the device that is unallocated. The inline power capacity is measured in milliwatts.
snAgentPoeGblPowerAllocationsRequestsHonored brcdIp.1.1.2.14.1.3 Syntax: Unsigned32	Read-only	This object shows the number of times the inline power allocations requests were honored.

Power Over Ethernet port table

The following table presents information about the FastIron X Series POE ports.

Name, OID, and syntax	Access	Description
snAgentPoePortNumber brcdIp.1.1.2.14.2.2.1.1 Syntax:InterfaceIndex	Read-only	The port number in the ifIndex value.
snAgentPoePortControl brcdIp.1.1.2.14.2.2.1.2 Syntax: Integer	Read-create	Powers on or off the inline power on a port. If a port does not have inline power capability, reading this object returns other(1). Valid values are: • other(1) • disable(2) • enable(3) • enableLegacyDevice(4)
snAgentPoePortWattage brcdIp.1.1.2.14.2.2.1.3 Syntax: Integer32	Read-create	Adjusts the inline power wattage. Valid values are from 1000 through 15400(IEEE802_3AF)/ 30000(IEEE802_3AT). Each unit is in milliwatts. This object can only be set after snAgentPoePortControl has been set to "enable(3)" or "enableLegacyDevice(4)". If a port

Name, OID, and syntax	Access	Description
		does not have inline power capability, reading this object returns an undefined value.
snAgentPoePortClass brcdIp.1.1.2.14.2.2.1.4 Syntax: Integer32	Read-create	Adjusts the inline power class. Valid values are from 0 through 3(IEEE802_3AF)/ 4(IEEE802_3AT). This object can only be set after snAgentPoePortControl has been set to "enable(3)" or "enableLegacyDevice(4)". If a port does not have inline power capability, reading this object returns an undefined value.
snAgentPoePortPriority brcdIp.1.1.2.14.2.2.1.5 Syntax: Integer	Read-create	Shows the inline power allocation priority for the power device: • invalid(0) - Not a POE port • critical(1) • high(2) • low(3) • medium(4) • other(5)
snAgentPoePortConsumed brcdIp.1.1.2.14.2.2.1.6 Syntax: Integer32	Read-only	Amount of inline power consumed by the port. Each unit is in milliwatts.
snAgentPoePortType brcdIp.1.1.2.14.2.2.1.7 Syntax: DisplayString	Read-only	Inline power device type: 802.3af, 802.3at, or legacy device.

Power over module table

The following table shows the configuration of modules on the FastIron X Series devices. The information in this table is available in the output of the **show module** command.

Name, OID, and syntax	Access	Description
snAgentPoeModuleNumber brcdIp.1.1.2.14.3.1.1.1 Syntax: Unsigned32	Read-only	This object shows the POE module number.
snAgentPoeModuleBudget brcdIp.1.1.2.14.3.1.1.2 Syntax: Unsigned32	Read-create	This object shows the module power budget in watts.
snAgentPoeModuleMaxPDTypeSupport brcdIp.1.1.2.14.3.1.1.3 Syntax: Integer NOTE This object is supported only on the Brocade FastIron SX devices.	Read-only	This object shows the POE module type that is capable to support the Power Device (PD) type: • ieee802dot3af(0) = Supports only ieee802dot3af modules. • ieee802dot3at(1) = Also called POE plus type. This module can support ieee802.3at and ieee802.3af.

POE unit table

The follwing table provides POE information for each unit on a stack. Only the unit that has POE capability is displayed in a table row. The information in these objects is available in the output of the **show inline power** command for a POE device in a stack.

Name, OID, and syntax	Access	Description
snAgentPoeUnitTable brcdIp.1.1.2.14.4.1	None	POE unit table.
snAgentPoeUnitIndex brcdIp.1.1.2.14.4.1.1.1 Syntax: Unsigned32	Read-only	The index for the POE unit table.
snAgentPoeUnitPowerCapacityTotal brcdIp.1.1.2.14.4.1.1.2 Syntax: Unsigned32	Read-only	This object shows the total inline power capacity available on a device. Inline power capacity is measured in milliwatts.
snAgentPoeUnitPowerCapacityFree brcdIp.1.1.2.14.4.1.1.3 Syntax: Unsigned32	Read-only	This object shows the unallocated inline power capacity currently available on a device. Inline power capacity is measured in milliwatts.
snAgentPoeUnitPowerAllocationsRequestsHonored brcdIp.1.1.2.14.4.1.1.4 Syntax: Unsigned32	Read-only	This object shows number of times the inline power allocation requests were honored on the device.

POS MIB Definition

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Packet port information table

Packet over SONET (POS) is the serial transmission of data over SONET frames through the use of the Point-to-Point Protocol (PPP). The POS modules allow direct connection to interfaces within SONET. POS is a transport technology that encapsulates packet data, such as an IP datagram, directly into SONET.

The following table presents information about POS ports.

Name, OID, and syntax	Access	Description
snPOSInfoTable brcdIp.1.2.14.1.1	None	POS port information table.
snPOSInfoPortNum brcdIp.1.2.14.1.1.1.1 Syntax: Integer	Read-only	The chassis slot and port number: • Bit 0 to bit 7 - Port number • Bit 8 to bit 11 - Slot number (for chassis devices only)
snPOSIfIndex brcdIp.1.2.14.1.1.1.2 Syntax: Integer	Read-only	Identifies the instance of the ifIndex object as defined in RFC 1213 and RFC 1573.
snPOSDescr brcdIp.1.2.14.1.1.1.3 Syntax: DisplayString	Read-only	Description of the chassis slot and port.
snPOSName brcdIp.1.2.14.1.1.1.4 Syntax: DisplayString	Read-write	Name of the port. Valid values: Up to 255 characters
snPOSInfoSpeed brcdIp.1.2.14.1.1.1.5 Syntax: Integer	Read-write	The bandwidth of the interface, which can be one of the following: • s155000(1) bps • s622000(2) bps • other(3) • s2488000(4) bps
snPOSInfoAdminStatus brcdIp.1.2.14.1.1.1.6 Syntax: Integer	Read-write	The desired state of the interface, which can be one of the following: • up(1) - The port is ready to pass packets. • down(2) - The port is not ready to pass packets. • testing(3) - The port is in test mode. No packets can be passed.

Name, OID, and syntax	Access	Description
snPOSInfoLinkStatus brcdIp.1.2.14.1.1.1.7 Syntax: Integer	Read-only	The current operational state of the link, which can be one of the following: • up(1) - The port is ready to pass packets. • down(2) - The port is not ready to pass packets. • testing(3) - The port is in test mode. No packets can be passed.
snPOSInfoClock brcdIp.1.2.14.1.1.1.8 Syntax: Integer	Read-write	The clock source, which can be one of the following: • internal(1) - The interface is using the clock on the POS module. • line(2) - The interface is using the clock source supplied on the network. Default: internal(1)
snPOSInfoLoopBack brcdIp.1.2.14.1.1.1.9 Syntax: Integer	Read-write	The loopback state of the interface. The loopback state can be one of the following: • line(1) - The loopback path consists of both this POS interface and the POS interface at the remote end of the link. Use this mode to check the POS interface along the link. • internal(2) - The loopback path consists only of the POS circuitry on this interface. Use this mode to check the POS circuitry. • none(3) - The interface is not operating in loopback mode.
snPOSInfoScrambleATM brcdIp.1.2.14.1.1.1.10 Syntax: Integer	Read-write	The state of the ATM scramble mode, which can be one of the following: • disabled(0) - Scrambling is disabled. • enabled(1) - Scrambling of the Synchronous Payload Envelope (SPE) is enabled. Data in the SONET packet is scrambled for security. Default: disabled(0)
snPOSInfoFraming brcdIp.1.2.14.1.1.1.11 Syntax: Integer	Read-write	The frame type used on the interface. The frame type can be one of the following: • sonet(1) - Synchronous Optical Network. • sdh(2) - Synchronous Digital Hierarchy. Default: sonet(1)
snPOSInfoCRC brcdIp.1.2.14.1.1.1.12 Syntax: Integer	Read-write	The length of the CRC field in packets transmitted on the interface. The length can be one of the following: • crc32bits(1) - The field is 8 bits long. • crc16bits(2) - The field is 16 bits long. Default: crc32bits(1)
snPOSInfoKeepAlive brcdIp.1.2.14.1.1.1.13	Read-write	The time interval when keepalive messages are sent.

Name, OID, and syntax	Access	Description
Syntax: Integer		Default: 10 seconds
snPOSInfoFlagC2 brcdIp.1.2.14.1.1.1.14 Syntax: Integer	Read-write	The value of the c2 flag in the SONET headers of packets transmitted by the interface. The c2 flag identifies the payload type of the packets transmitted on this interface. Default: 0xcf, which means that the payload is SONET or SDH.
snPOSInfoFlagJ0 brcdIp.1.2.14.1.1.1.15 Syntax: Integer	Read-write	The value of the j0 flag in the SONET headers of packets transmitted by the interface. This flag sets the trace byte, which is used to trace the origin of an STS-1 frame on a SONET network. Default: 0xcc
snPOSInfoFlagH1 brcdIp.1.2.14.1.1.1.16 Syntax: Integer	Read-write	The value of the h1 flag in the SONET headers of packets transmitted by the interface. This flag sets the H1 pointer, which is used to indicate where the Synchronous Payload Envelope (SPE)starts within the packet. The SPE contains the packet's payload: • 0x00 - The pointer for SONET frames. • 0x02 - The pointer for SDH frames. Default: 0x00
snPOSStatsInFrames brcdIp.1.2.14.1.1.1.17 Syntax: Counter	Read-only	The total number of packets received on the interface.
snPOSStatsOutFrames brcdIp.1.2.14.1.1.1.18 Syntax: Counter	Read-only	The total number of packets transmitted out of the interface.
snPOSStatsAlignErrors brcdIp.1.2.14.1.1.1.19 Syntax: Counter	Read-only	The number of packets that contained frame alignment errors.
snPOSStatsFCSErrors brcdIp.1.2.14.1.1.1.20 Syntax: Counter	Read-only	The number of packets that contained Frame Check Sequence (FCS) errors.
snPOSStatsFrameTooLongs brcdIp.1.2.14.1.1.1.21 Syntax: Counter	Read-only	The number of packets that were longer than the configured MTU.
snPOSStatsFrameTooShorts brcdIp.1.2.14.1.1.1.22 Syntax: Counter	Read-only	The number of packets that were shorter than the minimum valid length.
snPOSStatsInDiscard brcdIp.1.2.14.1.1.1.23 Syntax: Counter	Read-only	The number of inbound packets that were discarded to prevent them from being delivered to a higher-layer protocol, even though no errors had been detected. For example, a packet may be discarded to free up buffer space.
snPOSStatsOutDiscard brcdIp.1.2.14.1.1.1.24 Syntax: Counter	Read-only	The number of outbound packets that were discarded to prevent them from being transmitted, even though they contain no errors. For example, a packet may be discarded to free up buffer space.

Name, OID, and syntax	Access	Description
snPOSInOctets brcdIp.1.2.14.1.1.1.25 Syntax: Octet String	Read-only	The total number of packets in octets that were received on the interface, including framing characters. This object is a 64-bit counter of the ifInOctets object, defined in RFC 1213. The octet string is in big-endian byte order.
snPOSOutOctets brcdIp.1.2.14.1.1.1.26 Syntax: Octet String	Read-only	The total number of packets in octets that were transmitted out of the interface, including framing characters. This object is a 64-bit counter of the ifOutOctets object, defined in RFC 1213. The octet string is in big-endian byte order.
snPOSStatsInBitsPerSec brcdIp.1.2.14.1.1.1.27 Syntax: Gauge	Read-only	The number of bits per second received on the interface over a five-minute interval.
snPOSStatsOutBitsPerSec brcdIp.1.2.14.1.1.1.28 Syntax: Gauge	Read-only	The number of bits per second transmitted out of the interface over a five-minute interval.
snPOSStatsInPktsPerSec brcdIp.1.2.14.1.1.1.29 Syntax: Gauge	Read-only	The number of packets per second received on the interface over a five-minute interval.
snPOSStatsOutPktsPerSec brcdIp.1.2.14.1.1.1.30 Syntax: Gauge	Read-only	The number of packets per second transmitted out of the interface over a five-minute interval.
snPOSStatsInUtilization brcdIp.1.2.14.1.1.1.31 Syntax: Integer	Read-only	The network utilization by incoming traffic in hundredths of a percent over a five-minute interval. NOTE This object is not supported.
snPOSStatsOutUtilization brcdIp.1.2.14.1.1.1.32 Syntax: Integer	Read-only	The network utilization by outgoing traffic in hundredths of a percent over a five-minute interval. NOTE This object is not supported.
snPOSTagType brcdIp.1.2.14.1.1.1.33 Syntax: Integer	Read-only	Shows whether or not the port has a VLAN tag: • tagged(1) - The port has a VLAN tag. This port can have multiple VLANs. • untagged(2) - The port is not tagged.
snPOSStatsB1 brcdIp.1.2.14.1.1.1.34 Syntax: Counter	Read-only	Shows the number of received frames that have parity errors at the section layer of the SONET link.
snPOSStatsB2 brcdIp.1.2.14.1.1.1.35 Syntax: Counter	Read-only	Shows the number of received frames that have parity errors at the line layer of the SONET link.
snPOSStatsB3 brcdIp.1.2.14.1.1.1.36 Syntax: Counter	Read-only	Shows the number of received frames that have parity errors at the path layer of the SONET link.

Name, OID, and syntax	Access	Description
snPOSStatsAIS brcdIp.1.2.14.1.1.1.37 Syntax: Counter	Read-only	Shows the number of Alarm Indicator Signals (AISs) that were received by the interface.
snPOSStatsRDI brcdIp.1.2.14.1.1.1.38 Syntax: Counter	Read-only	Shows the number of Remote Defect Indicator (RDI) signals that were received by the interface.
snPOSStatsLOP brcdIp.1.2.14.1.1.1.39 Syntax: Counter	Read-only	Indicates a loss of pointer (LOP) that results from an invalid path pointer or if an excessive number of new data flags have been enabled.
snPOSStatsLOF brcdIp.1.2.14.1.1.1.40 Syntax: Counter	Read-only	Shows how many times the interface experienced out of frame alignment problems, which is also called a loss of frame (LOF) condition.
snPOSStatsLOS brcdIp.1.2.14.1.1.1.41 Syntax: Counter	Read-only	Indicates the number of times the interface experienced a loss of signal (LOS). With LOS, incoming signals are all zeros during a 100 microsecond period.

POS MIB information table

The following table presents information about the POS session.

Name, OID, and syntax	Access	Description
snPOSInfo2Table brcdIp.1.2.14.1.2	None	This object describes the POS MIB information table.
snPOSInfo2Clock brcdIp.1.2.14.1.2.1.1 Syntax: Integer	Read-write	This object describes the clock source for the POS interface: • internal(1) - Internal source. • line(2) - Clocking is derived from the line. Default Value: internal(1)
snPOSInfo2ScrambleATM brcdIp.1.2.14.1.2.1.2 Syntax: POSStatus	Read-write	ATM style scrambling for the POS interface: • disabled(0) - Scrambling is disabled. • enabled(1) - Scrambling is enabled. Default Value: disabled(0)
snPOSInfo2CRC brcdIp.1.2.14.1.2.1.3 Syntax: Integer	Read-write	Length of Cyclic Redundancy Check (CRC) on the POS interface: • crc32bits(1) - 32 bits • crc16bits(2) - 16 buts Default Value: crc32bits(1)
snPOSInfo2KeepAlive brcdIp.1.2.14.1.2.1.4 Syntax: Unsigned32	Read-write	This object describes the keepalive timer for the POS interface in seconds. Valid values: 0 - 65535 seconds Default: 10 seconds
snPOSInfo2FlagC2 brcdIp.1.2.14.1.2.1.5	Read-write	The C2 flag. Valid values: 0 - 255

Name, OID, and syntax	Access	Description
Syntax: Unsigned32		
snPOSInfo2SSM brcdIp.1.2.14.1.2.1.6 Syntax: Integer	Read-write	The Synchronization Status Message (SSM) is sent over the SONET/SDH line to tell the other end about the quality of the clock being sent over the line: • t1 SonetPrimaryReferenceSource(1) - SONET Primary Reference Source • t1 SonetTraceabilityUnknown(2) - SONET Traceability Unknown • t1 SonetStratum2Traceable(3) - SONET Stratum 2 Traceable • t1 SonetTransitNodeClock(4) - SONET Transit Node Clock • t1 SonetStratum3eTraceable(5) - SONET Stratum 3e Traceable • t1 SonetStratum3Traceable(6) - SONET Stratum 3 Traceable • t1 SonetMinClockTraceable(7) - SONET Minimum Clock Traceable • t1 SonetDus(8) - SONET Do not Use for Synchronization • e1 SdhTraceabilityUnknown(9) - SDH Traceability Unknown • e1 SdhSsmTransitNodeClock-g812(10) - SDH Transit Node Clock G812 • e1 SdhDus(11) - SDH Do not Use for Synchronization • e1 SdhSsmPrimaryReferenceClock-g811(12) - SDH Primary Reference Clock G811 • e1 SdhSsmLocalG812(13) - SDH Local G812 • e1 SdhSsmSyncEquipmentTimingSource(14) - SDH Synchronization Equipment Timing Source Default: t1 SonetTraceabilityUnknown(2)
snPOSInfo2Encapsulation brcdIp.1.2.14.1.2.1.7 Syntax: Integer	Read-write	Layer 2 encapsulation on the POS interface: • ppp(1) - Point to Point Protocol (PPP) • chdlc(2) - Cisco High-level Data Link Control (cHDLC)
snPOSInfo2AlarmMonitoring brcdIp.1.2.14.1.2.1.8 Syntax: Integer	Read-write	Alarm monitoring on the POS interface: • off(0) - Alarm monitoring is off. • on(1) - Alarm monitoring is on. Default: on(1)
snPOSInfo2OverheadJ0ExpectedMessage brcdIp.1.2.14.1.2.1.9 Syntax: Octet String	Read-write	Overhead J0 expected message.
snPOSInfo2OverheadJ0TransmitMessage brcdIp.1.2.14.1.2.1.10	Read-write	Overhead J0 transmit message.

Name, OID, and syntax	Access	Description
Syntax: Octet String		
snPOSInfo2OverheadJ1ExpectedMessage brcdIp.1.2.14.1.2.1.11 Syntax: Octet String	Read-write	Overhead J1expected message.
snPOSInfo2OverheadJ1MessageLength brcdIp.1.2.14.1.2.1.12 Syntax: Integer	Read-write	Overhead J1 length of message: • s16(16) - 16 bytes • s64(64) - 64 bytes Default Value: s64(64)
snPOSInfo2OverheadJ1TransmitMessage brcdIp.1.2.14.1.2.1.13 Syntax: Octet String	Read-write	Overhead J1 transmit message.

POS PPP group

If the POS MIB information table on page 183 object is set to Point to Point Protocol (PPP), the following table provides information on the states of various control protocols.

Name, OID, and syntax	Access	Description
snPOSPPPTable brcdIp.1.2.14.1.3	None	The POS PPP table.
snPOSPPP-LCP brcdIp.1.2.14.1.3.1 Syntax: DisplayString	Read-only	The PPP link control protocol state.
snPOSPPP-IPCP brcdIp.1.2.14.1.3.2 Syntax: DisplayString	Read-only	The PPP IP control protocol state.
snPOSPPP-IPv6CP brcdIp.1.2.14.1.3.3 Syntax: DisplayString	Read-only	The PPP IPv6 control protocol state.
snPOSPPP-OSINLCP brcdIp.1.2.14.1.3.4 Syntax: DisplayString	Read-only	The PPP OSI network layer control protocol state.
snPOSPPP-MPLSCP brcdIp.1.2.14.1.3.5 Syntax: DisplayString	Read-only	The PPP MPLS control protocol state.

POS cHDLC group

If the POS MIB information table on page 183 object is set to Cisco High-level Data Link Control (cHDLC), the following table provides information on various cHDLC parameters.

Name, OID, and syntax	Access	Description
snPOScHDLCTable brcdIp.1.2.14.1.4	None	The POS cHDLC group table.

Name, OID, and syntax	Access	Description
snPOScHDLCLineState brcdIp.1.2.14.1.4.1 Syntax: Integer	Read-only	The state of the POS cHDLC line: • down(0) • up(1) • unknown(2)
snPOScHDLCInLoopback brcdIp.1.2.14.1.4.2 Syntax: Integer	Read-only	Indicates if cHDLC in loopback is used: • no(0) • yes(1) • unknown(2)
snPOScHDLCMySeq brcdIp.1.2.14.1.4.3 Syntax: Unsigned32	Read-only	The cHDLC of the device's sequence number.
snPOScHDLCMySeqSeen brcdIp.1.2.14.1.4.4 Syntax: Unsigned32	Read-only	The cHDLC of the device's sequence number that is seen.
snPOScHDLCPeerSeqSeen brcdIp.1.2.14.1.4.5 Syntax: Unsigned32	Read-only	The cHDLC peer sequence number seen.
snPOScHDLCUniqueSent brcdIp.1.2.14.1.4.6 Syntax: Unsigned32	Read-only	The unique cHDLC sent.
snPOScHDLCUniqueReceived brcdIp.1.2.14.1.4.7 Syntax: Unsigned32	Read-only	The unique cHDLC received.

Stackable Management Group

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- Stackable management secondary switch information 188

General stackable management information

The objects in the following table provide information about the general stacking devices.

Name, OID, and syntax	Access	Description
snStackPriSwitchMode brcdIp.1.1.5.1.1 Syntax: Integer	Read-write	The stackable management primary switch mode is either enabled or disabled. • enabled(1) - Primary switch enabled. • disabled(0) - Primary switch disabled. Default: disabled(0)
snStackMaxSecSwitch brcdIp.1.1.5.1.2 Syntax: Integer	Read-only	The maximum number of secondary switches are allowed in the stackable management group.
snStackTotalSecSwitch brcdIp.1.1.5.1.3 Syntax: Integer	Read-only	The total number of secondary switches currently connected to the stackable management group.
snStackSyncAllSecSwitch brcdIp.1.1.5.1.4 Syntax: Integer	Read-write	Synchronize all the secondary switches in the stackable management group with the following commands: • device(2) • global(3) • local(4) The return result of the previous commands is either: • normal(0) • invalid(1)
snStackSmSlotIndex brcdIp.1.1.5.1.5 Syntax: Integer	Read-write	The slot 0 is the master slot and slots 1-8 are slaves. All the slot-based MIB data can be retrieved with respect to this slot index.
snStackFmpSetProcess brcdIp.1.1.5.1.6 Syntax: Integer	Read-only	The state of the FMT set process: • normal(0) - The set process is either in an idle state or FMP-SET-SUCCESS state. • pending(1) - The pending process is waiting for the result of an FMP-SET. • failure(2) - The failure result of an FMP-SET.

Stackable management secondary switch information

The objects in the following table provide stackable management secondary switch information.

NOTE
The objects in the following table are not supported on FastIron CX and FLS stacking devices.

Name, OID, and syntax	Access	Description
snStackSecSwitchTable brcdIp.1.1.5.2.1	None	If snSwGroupOperMode is configured as basic mode, which is VLAN by Port, Layer 2 switching, then this table is valid. Each VLAN switch port could have a number of VLAN IDs.
snStackSecSwitchIndex brcdIp.1.1.5.2.1.1.1	Read-only	The secondary switch index must not be greater than snStackMaxSecSwitch.
snStackSecSwitchSlotId brcdIp.1.1.5.2.1.1.2	Read-write	The secondary switch slot ID must be set before the configuration command sent from the primary switch to the secondary switch either manually or automatically. Refer to the object snStackSecSwitchCfgCmd.
snStackSecSwitchPortCnts brcdIp.1.1.5.2.1.1.3	Read-only	The number of ports in this secondary switch.
snStackSecSwitchEnabled brcdIp.1.1.5.2.1.1.4	Read-write	The secondary switch has been selected to the stackable management group.
snStackSecSwitchAck brcdIp.1.1.5.2.1.1.5	Read-only	The secondary switch has sent a response to the primary switch.
snStackSecSwitchMacAddr brcdIp.1.1.5.2.1.1.6	Read-only	The secondary switch physical address. The physical address represents a MAC Station.
snStackSecSwitchSyncCmd brcdIp.1.1.5.2.1.1.7	Read-write	Synchronize the secondary switches in the stackable management group with the following commands: • device(2) • global(3) • local(4) The return result of the previous commands is either: • normal(0) • invalid(1)
snStackSecSwitchIpAddr brcdIp.1.1.5.2.1.1.8	Read-write	The secondary switch IP address is used for the manual command of snStackSecSwitchCfgCmd.
snStackSecSwitchSubnetMask brcdIp.1.1.5.2.1.1.9	Read-write	The secondary switch IP subnet mask is used for the manual command of snStackSecSwitchCfgCmd.
snStackSecSwitchCfgCmd brcdIp.1.1.5.2.1.1.10	Read-write	snStackSecSwitchSlotId must be set before the configuration command sent from the primary switch to the secondary switch either manually or automatically: • auto(2) • manual(3) The return result of the previous commands is either: • normal(0)

Name, OID, and syntax	Access	Description
		• invalid(1)

Stacking MIB Definition

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Global objects for stacking

NOTE

This chapter presents the MIB objects for devices that support the stacking functionality. The following MIB objects apply to the Brocade ICX stacking devices.

Name, OID, and syntax	Access	Description
snStackingGlobalConfigState brcdIp.1.1.3.31.1.1 Syntax: Integer	Read-write	Shows the state of the stacking feature: • none(0) - Neutral • enabled(1) - Stacking is enabled and can send and receive packets. • disabled(2) - Stacking is disabled and cannot send or receive packets.
snStackingGlobalMacAddress brcdIp.1.1.3.31.1.2 Syntax: MAC address	Read-write	Management MAC address of the stacking system. This is available so you can change the management MAC address of the stack for administrative purposes; however, it is strongly recommended that this command should be used with extreme caution to prevent duplicate MAC addresses. You must reboot the system before the new MAC address takes effect. This object is mutually exclusive from enabling the persistent MAC timer. Enter zero MAC addresses to remove the configured MAC address.
snStackingGlobalPersistentMacTimerState brcdIp.1.1.3.31.1.3 Syntax: Integer	Read-write	The configured persistent MAC timer state for the stacking feature: • enabled(0) - The persistent MAC timer is active and configured. The persistent MAC timer is set as the default timer (60 minutes). • disabled(1) - Deactivate the persistent MAC timer. It will stop the use of persistent MAC addresses and use a new active stack unit's base MAC address.
snStackingGlobalPersistentMacTimer brcdIp.1.1.3.31.1.4 Syntax: Integer32	Read-write	Persistent MAC timer in minutes for the stacking system. This timer shows the number of minutes to retain the original active stack unit's base MAC address in case the active unit fails or is

Name, OID, and syntax	Access	Description
		removed. This timer is triggered when a new active unit is elected. When the timer expires, the new active unit will change the stacking MAC address to its own base MAC address and advertise its own base MAC address to the management VLAN to update the ARP table of members. If you decide to use the new active unit's MAC address, you must enter this timer again to reactivate the persistent MAC address. Valid values are: • 0 - Keep it forever • 5 to 3600 minutes The default is 60 minutes.
snStackingGlobalTopology brcdIp.1.1.3.31.1.5 Syntax: Integer	Read-only	The topology of the stacking system: • other(1) • chain(2) • ring(3) • standalone(4)
snStackingGlobalMode brcdIp.1.1.3.31.1.6 Syntax: Integer	Read-only	The stacking mode of the system: • stackingMode - the system is installed with STK EEPROM represents it is in stacking mode. • nonStackingMode - the system is not installed with STK EEPROM represents it is not in stacking mode.
snStackingGlobalMixedMode brcdIp.1.1.3.31.1.7 Syntax: Integer	Read-only	The mixed stacking mode of the system: • familyStackingMode - The system is in family stacking mode (heterogeneous). • classicStackingMode - The system is not in family stacking mode (homogeneous).
snStackingGlobalMaxUnitNumber brcdIp.1.1.3.31.1.8 Syntax: Integer32	Read-only	The maximum number of units in the stacking system. The default value will be 1 for non-stacking devices.
snStackingGlobalConfigHightestPriority brcdIp.1.1.3.31.1.9 Syntax: Integer32	Read-only	The highest stack priority that can be configured in the stacking system. The default value will be 0 for non-stacking devices.

Stacking configuration unit table

Use the following table to display and configure stacking information for each unit.

Name, OID, and syntax	Access	Description
snStackingConfigUnitTable brcdIp.1.1.3.31.2.1	None	The stacking configuration table.
snStackingConfigUnitIndex brcdIp.1.1.3.31.2.1.1.1	None	The ID of the unit in a stack.

Name, OID, and syntax	Access	Description
Syntax: Integer		
snStackingConfigUnitPriority brcdIp.1.1.3.31.2.1.1.2 Syntax: Integer32	Read-write	The priority in active or backup election. Value can be from 0 through 255.
snStackingConfigUnitConfigStackPort brcdIp.1.1.3.31.2.1.1.3 Syntax: InterfaceIndex	Read-write	The IfIndex for the configured stacking port. If no stacking port is configured, this object displays zero and the first two 10 Gigabit ports as the default stacking ports. Enter zero to remove the configured stacking port.
snStackingConfigUnitRowStatus brcdIp.1.1.3.31.2.1.1.4 Syntax: Integer	Read-write	This object is used to delete a row in the table and control if they are used. The following values can be written for a SET: • delete(3) - Deletes the row. Deleted rows are deleted immediately. The following values can be returned on reads: • noSuchName - No such row • other(1) - Some other cases • valid(2) - The row exists and is valid
snStackingConfigUnitType brcdIp.1.1.3.31.2.1.1.5 Syntax: DisplayString	Read-only	A description of the configured or active system type for each unit.
snStackingConfigUnitState brcdIp.1.1.3.31.2.1.1.6 Syntax: Integer	Read-only	The state of the unit: • local(1) • remote(2) • reserved(3) • empty(4)
snStackingConfigUnitStackPort1 brcdIp.1.1.3.31.2.1.1.7 Syntax: InterfaceIndex	Read-only	First stack port for each unit. It returns 0 if the stack port does not exist.
snStackingConfigUnitStackPort2 brcdIp.1.1.3.31.2.1.1.8 Syntax: InterfaceIndex or zero	Read-only	Second stack port for each unit. It returns 0 if the stack port does not exist.
snStackingConfigUnitStackConnectPort1 brcdIp. 1.1.3.31.2.1.1.9 Syntax: InterfaceIndex or zero	Read-write	The first connect port for a peripheral unit in a family stacking system. A peripheral unit can have up to two connect ports that can be connected to any suggested neighbor linking ports. Returns 0 if the connect port does not exist.
snStackingConfigUnitStackConnectPort2 brcdIp. 1.1.3.31.2.1.1.10 Syntax: InterfaceIndex or zero	Read-write	The second connect port for a peripheral unit in a family stacking system. A peripheral unit can have up to two connect ports that can be connected to any suggested neighbor linking ports. Returns 0 if the connect port does not exist.

Stacking operation unit table

Use the following table to display information about the role and status of a unit in a stack.

Name, OID, and syntax	Access	Description
snStackingOperUnitTable brcdIp.1.1.3.31.2.2	None	Stacking operation unit table.
snStackingOperUnitIndex brcdIp.1.1.3.31.2.2.1.1 Syntax: Integer	None	ID of the unit in the stack.
snStackingOperUnitRole brcdIp.1.1.3.31.2.2.1.2 Syntax: Integer	Read-only	The role of the unit: • other(1) • active(2) • standby(3) • member(4) • standalone(5)
snStackingOperUnitMac brcdIp.1.1.3.31.2.2.1.3 Syntax: MAC address	Read-only	The unit's MAC address.
snStackingOperUnitPriority brcdIp.1.1.3.31.2.2.1.4 Syntax: Integer32	Read-only	The priority in active or backup election. Values can be from 0 through 255.
snStackingOperUnitState brcdIp.1.1.3.31.2.2.1.5 Syntax: Integer	Read-only	The state of the unit • local(1) • remote(2) • reserved(3) • empty(4)
snStackingOperUnitDescription brcdIp.1.1.3.31.2.2.1.6 Syntax: DisplayString	Read-only	Describes the stacking state of the unit. This object can display up to 128 characters.
snStackingOperUnitStackPort1 brcdIp.1.1.3.31.2.2.1.7 Syntax: InterfaceIndex or zero	Read-only	First stack port for the unit. It returns 0 if the stack port does not exist.
snStackingOperUnitStackPort1State brcdIp.1.1.3.31.2.2.1.8 Syntax: Integer	Read-only	The state of the first stack port state of a unit: • other(1) • up(2) • down(3)
snStackingOperUnitStackPort2 brcdIp.1.1.3.31.2.2.1.9 Syntax: InterfaceIndex or zero	Read-only	Second stack port of a unit. It returns 0 if the stack port does not exist.
snStackingOperUnitStackPort2State brcdIp.1.1.3.31.2.2.1.10 Syntax: Integer	Read-only	The state of the second stack port state of a unit: • other(1) • up(2) • down(3)
snStackingOperUnitNeighbor1 brcdIp.1.1.3.31.2.2.1.11 Syntax: Integer32	Read-only	The first stacking neighbor unit (left) number. If there is no neighbor unit, then it returns 0.
snStackingOperUnitNeighbor2 brcdIp.1.1.3.31.2.2.1.12 Syntax: Integer32	Read-only	The second stacking neighbor unit (right) number. If there is no neighbor unit, then it returns 0.

Name, OID, and syntax	Access	Description
snStackingOperUnitImgVer brcdIp.1.1.3.31.2.2.1.13 Syntax: DisplayString	Read-only	The version of the software image running on the unit. This object can have up to 32 characters.
snStackingOperUnitBuildIVer brcdIp.1.1.3.31.2.2.1.14 Syntax: DisplayString	Read-only	The version of the software build running on the unit. This object can have up to 32 characters.

Stacking configuration stack trunk table

The stacking configuration stack trunk table displays and configures stack trunks for each unit.

Name, OID, and syntax	Access	Description
snStackingConfigStackTrunkTable brcdIp.1.1.3.31.2.3	None	Stacking configuration stack trunk table.
snStackingConfigStackTrunkUnit brcdIp.1.1.3.31.2.3.1.1 Syntax: Integer32	None	The stacking unit ID.
snStackingConfigStackTrunkPort1 brcdIp.1.1.3.31.2.3.1.2 Syntax: InterfaceIndex or zero	None	The IfIndex for the first (primary) port of the configured stack trunk. There are two ports per stack trunk. In some cases, a physical port may contain more than one port. For example, a 40G (1/2/2) for Brocade ICX 6610 has 4x10G ports. It returns 0 if the port does not exist.
snStackingConfigStackTrunkPort2 brcdIp.1.1.3.31.2.3.1.3 Syntax: InterfaceIndex or zero	None	The IfIndex for the second port of the configured stack trunk. There are two ports per stack trunk. In some cases, a physical port may contain more than one logical port. For example, a 40G (1/2/2) for Brocade ICX 6610 has 4x10G ports. It returns 0 if the port does not exist.
snStackingConfigStackTrunkRowStatus brcdIp.1.1.3.31.2.3.1.4 Syntax: Integer	Read-write	This object is used to delete a row in the table and control if the rows are used. The following values can be written for a SET: • delete(3) - Deletes the row. Deleted rows are deleted immediately. The following values can be returned on read-only: • noSuchName - No such row. • other(1) - Some other cases. • valid(2) - The row exists and is valid.
snStackingConfigStackTrunkNumPort1 brcdIp.1.1.3.31.2.3.1.5 Syntax: Integer32	Read-only	The number of logical ports for the first (primary) port of the configured stack trunk. In some cases, a physical port will contain more than one logical port. For example, a 40G (1/2/2) for Brocade ICX 6610 has 4x10G ports. It returns 0 if the port does not exist.
snStackingConfigStackTrunkNumPort2 brcdIp.1.1.3.31.2.3.1.6 Syntax: Integer32	Read-only	The number of logical ports for the second port of the configured stack trunk. In some cases, a physical port will contain more than one logical port. For example, a 40G (1/2/2) for Brocade

Name, OID, and syntax	Access	Description
		ICX 6610 has 4x10G ports. It returns 0 if the port does not exist.

Stacking configuration peripheral port table

The stacking configuration peripheral port table displays and configures family stacking peripheral ports for each unit.

Name, OID, and syntax	Access	Description
snStackingConfigPeriPortTable brcdIp.1.1.3.31.2.4	None	Stacking configuration peripheral port table.
snStackingConfigPeriPortUnit brcdIp.1.1.3.31.2.4.1.1 Syntax: Integer32	None	The stacking unit ID of the peripheral port.
snStackingConfigPeriPortPort brcdIp.1.1.3.31.2.4.1.2 Syntax: InterfaceIndex or zero	None	The IfIndex for the configured family stacking peripheral port. It is up to eight peripheral ports per unit. Each unit can contain up to eight peripheral ports. A unit can be configured for a combination of eight peripheral trunks and peripheral ports.
snStackingConfigPeriPortRowStatus brcdIp.1.1.3.31.2.4.1.3 Syntax: Integer	Read-write	This object is used to delete a row in the table and control if the rows are used. The following values can be written for a SET: • delete(3) - Deletes the row. Deleted rows are deleted immediately. The following values can be returned on read-only: • noSuchName - No such row. • other(1) - Some other cases. • valid(2) - The row exists and is valid.

Stacking configuration peripheral trunk table

The stacking configuration peripheral trunk table displays and configures family stacking peripheral trunks for each unit.

Name, OID, and syntax	Access	Description
snStackingConfigPeriTrunkTable brcdIp.1.1.3.31.2.5	None	Stacking configuration peripheral trunk table.
snStackingConfigPeriTrunkUnit brcdIp.1.1.3.31.2.5.1.1 Syntax: Integer32	None	The stacking unit ID of the peripheral trunk.
snStackingConfigPeriTrunkPort1 brcdIp.1.1.3.31.2.5.1.2 Syntax: InterfaceIndex or zero	None	The IfIndex for the first port of the configured family stacking peripheral trunk. There are two ports per peripheral trunk. It is up to four peripheral trunks per unit. Each unit can contain up to four peripheral ports. A unit can be

Name, OID, and syntax	Access	Description
		configured for a combination of eight peripheral trunks and peripheral ports.
snStackingConfigPeriTrunkPort2 brcdIp.1.1.3.31.2.5.1.3 Syntax: InterfaceIndex or zero	None	The IfIndex for the second port of the configured family stacking peripheral trunk. There are two ports per peripheral trunk. It is up to four peripheral trunks per unit.Each unit can contain up to four peripheral ports. A unit can be configured for a combination of eight peripheral trunks and peripheral ports.
snStackingConfigPeriTrunkRowStatus brcdIp.1.1.3.31.2.5.1.4 Syntax: Integer	Read-write	This object is used to delete a row in the table and control if the rows are used. The following values can be written for a SET: • delete(3) - Deletes the row. Deleted rows are deleted immediately. The following values can be returned on read-only: • noSuchName - No such row. • other(1) - Some other cases. • valid(2) - The row exists and is valid.

Stacking neighbor port table

The stacking neighbor port table displays stacking neighbors for each unit.

Name, OID, and syntax	Access	Description
snStackingNeighborPortTable brcdIp.1.1.3.31.2.6	None	Stacking neighbor port table.
snStackingNeighborPortUnit brcdIp.1.1.3.31.2.6.1.1 Syntax: Integer32	None	The stacking unit ID.
snStackingNeighborPortStackPort brcdIp.1.1.3.31.2.6.1.2 Syntax: InterfaceIndex or zero	None	The IfIndex for the stack port on the unit. Each unit can contain up to 10 stack ports and peripheral ports.
snStackingNeighborPortNeighborPort brcdIp.1.1.3.31.2.6.1.3 Syntax: InterfaceIndex or zero	Read-only	The IfIndex for the neighbor port of the stack port on the unit. It returns 0 if the neighbor port does not exist for the stack port.

FDP MIB Defintions

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FDP interface table

The Foundry Discovery Protocol (FDP) interface table shows whether or not the FDP is enabled on a physical interface. You can use the following table to disable or enable FDP on individual interfaces.

NOTE

You cannot disable the Cisco Discovery Protocol (CDP) on individual interfaces.

Name, OID, and syntax	Access	Description
snFdpInterfaceTable brcdIp.1.1.3.20.1.1.1	None	The FDP interface table
snFdpInterfaceIfIndex brcdIp.1.1.3.20.1.1.1.1.1	None	Shows the ifIndex value of the local interface.
snFdpInterfaceEnable brcdIp.1.1.3.20.1.1.1.1.2 Syntax: Integer	Read-write	Determines if FDP is enabled on the interface: • false(0) - FDP is disabled. • true(1) - FDP is enabled. Default: true(1)
snFdpInterfaceCdpEnable brcdIp.1.1.3.20.1.1.1.1.3 Syntax: Integer	Read-write	Determines if CDP is enabled on the interface: • false(0) - CDP is disabled. • true(1) - CDP is enabled. Default: true(1)

FDP cache table

Each entry in the FDP cache table contains information received from FDP or Cisco Discovery Protocol (CDP) on one interface of one device. The table is available if FDP or CDP is enabled globally. Entries appear when an FDP or CDP advertisement is received from a neighbor device. Entries are deleted when FDP or CDP is disabled on an interface or globally.

Name, OID, and syntax	Access	Description
snFdpCacheTable brcdIp.1.1.3.20.1.2.1	None	The FDP cache table.
snFdpCacheIfIndex brcdIp.1.1.3.20.1.2.1.1.1	None	Shows the ifIndex value of the local interface.
snFdpCacheDeviceIndex brcdIp.1.1.3.20.1.2.1.1.2 Syntax: Integer32	Read-only	A unique value for each device from which FDP or CDP messages are being received.
snFdpCacheDeviceId brcdIp.1.1.3.20.1.2.1.1.3	Read-only	Shows a description for the device as reported in the most recent FDP or CDP message.

Name, OID, and syntax	Access	Description
Syntax: DisplayString		A zero-length string indicates no Device-ID field (TLV) was reported in the most recent FDP or CDP message.
snFdpCacheAddressType brcdIp.1.1.3.20.1.2.1.1.4 Syntax: Integer	Read-only	Indicates the type of address contained in the FDP cache table object for this entry: • ip(1) • ipx(2)
snFdpCacheAddress brcdIp.1.1.3.20.1.2.1.1.5 Syntax: Octet String	Read-only	Shows the network-layer address of the device's SNMP agent, as reported in the most recent FDP or CDP message. A device may have more than one address. This object shows the first address on the device. The format of this object depends on the value of the snFdpCacheAddressType object: • ip(1) - 4 octets • ipx(2) - 10 octets: – Octets 1-4 - Network number – Octets 5-10 - Host number
snFdpCacheVersion brcdIp.1.1.3.20.1.2.1.1.6 Syntax: DisplayString	Read-only	Shows the software version running in the device as reported in the most recent FDP or CDP message.
snFdpCacheDevicePort brcdIp.1.1.3.20.1.2.1.1.7 Syntax: DisplayString	Read-only	Shows the port ID of the device as reported in the most recent FDP or CDP message. This will typically be the value of the ifName object. A zero-length string indicates no Port-ID field (TLV) was reported in the most recent FDP or CDP message.
snFdpCachePlatform brcdIp.1.1.3.20.1.2.1.1.8 Syntax: DisplayString	Read-only	Shows the device's hardware platform as reported in the most recent FDP or CDP message. A zero-length string indicates that no Platform field (TLV) was reported in the most recent FDP or CDP message.
snFdpCacheCapabilities brcdIp.1.1.3.20.1.2.1.1.9 Syntax: DisplayString	Read-only	Shows the device's functional capabilities as reported in the most recent FDP or CDP message.
snFdpCacheVendorId brcdIp.1.1.3.20.1.2.1.1.10 Syntax: Integer	Read-only	Indicates if FDP or CDP received the entry: • fdp(1) • cdp(2)
snFdpCacheIsAggregateVlan brcdIp.1.1.3.20.1.2.1.1.11 Syntax: Integer	Read-only	Indicates if this entry is from a neighbor device that is in an aggregated VLAN: • false(0) - It is not in an aggregated VLAN. • true(1) - It is in an aggregate VLAN.
snFdpCacheDeviceTagType brcdIp.1.1.3.20.1.2.1.1.12 Syntax: Integer	Read-only	Shows the tag type of the neighbor device that sent this entry.
snFdpCacheDevicePortVlanMask brcdIp.1.1.3.20.1.2.1.1.13	Read-only	Shows the port VLAN masks, in a 512-byte octet string, of the neighbor that sent this entry.

Name, OID, and syntax	Access	Description
Syntax: Octet String		
snFdpCachePortTagMode brcdIp.1.1.3.20.1.2.1.1.14 Syntax: Integer	Read-only	Shows the port tag mode on the neighbor device: • untagged(1) • tagged(2) • dual(3)
snFdpCacheDefaultTrafficeVlanIdForDualMode brcdIp.1.1.3.20.1.2.1.1.15 Syntax: Integer32	Read-only	Shows the default traffic a VLAN ID for neighbor devices that have dual-mode ports.

FDP global configuration objects

The following objects are used to configure FDP globally.

Name, OID, and syntax	Access	Description
snFdpGlobalRun brcdIp.1.1.3.20.1.3.1 Syntax: Integer	Read-write	Indicates if the FDP is enabled: • false(0) - FDP is disabled. FDP entries in snFdpCacheTable are deleted when FDP is disabled. • true(1) - FDP is enabled. Enabling FDP automatically enables CDP globally. Default: false(0)
snFdpGlobalMessageInterval brcdIp.1.1.3.20.1.3.2 Syntax: Integer	Read-write	Indicates the interval at which FDP messages are to be generated. Valid values: 5 - 900 seconds Default: 60 seconds
snFdpGlobalHoldTime brcdIp.1.1.3.20.1.3.3 Syntax: Integer	Read-write	Indicates how long the receiving device will hold FDP messages. Valid values: 10 - 255 seconds Default: 180 seconds
snFdpGlobalCdpRun brcdIp.1.1.3.20.1.3.4 Syntax: Integer	Read-write	Shows if the CDP is enabled: • false(0) - CDP is disabled. CDP entries in snFdpCacheTable are deleted when FDP is disabled. • true(1) - CDP is enabled. Enabling CDP does not automatically enable FDP globally. Default: false (0)

FDP cached address entry table

The FDP cached address entry table shows all the cached addresses from which FDP or CDP messages are being received. The table is available if FDP or CDP is enabled globally.

Name, OID, and syntax	Access	Description
snFdpCachedAddressTable brcdIp.1.1.3.20.1.4.1	None	The FDP cached address entry table.
snFdpCachedAddrIfIndex brcdIp.1.1.3.20.1.4.1.1.1 Syntax: Integer	None	Shows the ifIndex value of the local interface.
snFdpCachedAddrDeviceIndex brcdIp.1.1.3.20.1.4.1.1.2 Syntax: Integer32	Read-only	Shows a unique value for each device from which FDP or CDP messages are being received.
snFdpCachedAddrDeviceAddrEntryIndex brcdIp.1.1.3.20.1.4.1.1.3 Syntax: Integer32	Read-only	Shows a unique value for each address on the device from which FDP or CDP messages are being received. A device may have several addresses. There will be one entry for each address.
snFdpCachedAddrType brcdIp.1.1.3.20.1.4.1.1.4 Syntax: Integer	Read-only	Indicates the type of address contained in the FDP cached address entry table object for this entry: • ip(1) • ipx(2)
snFdpCachedAddrValue brcdIp.1.1.3.20.1.4.1.1.5 Syntax: Octet String	Read-only	Indicates the network-layer address of the device's SNMP agent as reported in the most recent FDP or CDP message. The format of this object depends on the value of the snFdpCachedAddrValue object: • ip(1) - 4 octets • ipx(2) - 10 octets: – Octets 1-4 - Network number – Octets 5-10 - Host number

System Logging Group

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Global system logging group objects

The following objects are for global system logging processes for all devices.

Name, OID, and syntax	Access	Description
snAgSysLogGblEnable brcdIp.1.1.2.6.1.1 Syntax: Integer	Read-write	Enables or disables system logging. Set this object to one of the following values: • disable(0) • enable(1) Default: enable(1)
snAgSysLogGblBufferSize brcdIp.1.1.2.6.1.2 Syntax: Integer32	Read-write	Sets the number of dynamic system logging entries. Valid values: Up to 100 entries Default: 50 entries
snAgSysLogGblClear brcdIp.1.1.2.6.1.3 Syntax: Integer	Read-write	Clears the dynamic and static system log buffers. Set this object to one of the following values: • normal(0) - System logs will not be cleared. • clearAll(1) - Clears both dynamic and static system log buffers. • clearDynamic(2) - Clears only the dynamic system log. • clearStatic(3) - Clears only the static system log.
snAgSysLogGblCriticalLevel brcdIp.1.1.2.6.1.4 Syntax: Integer32	Read-write	Filters and identifies the events that will be logged in the logging buffer. This object consists of 32 bits. The following shows the meaning of each bit: **Bit Meaning** 8- 31 Reserved 7 Warning (warning conditions) 6 Notification (normal but significant conditions) 5 Informational (informational messages) 4 Error (error conditions) 2 Debugging (debugging messages) 1 Critical (critical conditions). Setting this bit to 1 tells the logging buffer to accept the corresponding event. 0 Alert (immediate action needed). Setting this bit to 0 makes the logging buffer reject the corresponding event. Default: 255
snAgSysLogGblLoggedCount	Read-write	Shows the number events logged in the system logging buffer.

Name, OID, and syntax	Access	Description
brcdIp.1.1.2.6.1.5 Syntax: Counter32		
snAgSysLogGblDroppedCount brcdIp.1.1.2.6.1.6 Syntax: Counter32	Read-only	Shows the number of events dropped from the system logging buffer.
snAgSysLogGblFlushedCount brcdIp.1.1.2.6.1.7 Syntax: Counter32	Read-only	Shows the number of times that the system logging buffer was cleared.
snAgSysLogGblOverrunCount brcdIp.1.1.2.6.1.8 Syntax: Counter32	Read-only	Shows the number of times that the system logging buffer has wrapped around.
snAgSysLogGblServer brcdIp.1.1.2.6.1.9 Syntax: IpAddress	Read-only	IP address of syslog server.
snAgSysLogGblFacility brcdIp.1.1.2.6.1.10 Syntax: Integer	Read-write	Shows the facility code: • kern(1) • user(2) • mail(3) • daemon(4) • auth(5) • syslog(6) • lpr(7) • news(8) • uucp(9) • sys9(10) • sys10(11) • sys11(12) • sys12(13) • sys13(14) • sys14(15) • cron(16) • local0(17) • local1(18) • local2(19) • local3(20) • local4(21) • local5(22) • local6(23) • local7(24) Default: user(2)
snAgSysLogGblPersistenceEnable brcdIp.1.1.2.6.1.11 Syntax: Integer	Read-write	Enables or disables system logging persistence.

Dynamic system logging buffer table

The following table applies to all devices. It contains the events logged in the dynamic system log. Events that are not logged in the static system log are logged in the dynamic system log.

Name, OID, and syntax	Access	Description
snAgSysLogBufferTable brcdIp.1.1.2.6.2	None	Dynamic system logging buffer table.
snAgSysLogBufferIndex brcdIp.1.1.2.6.2.1.1 Syntax: Integer32	Read-only	Shows the index to the dynamic system logging buffer table.
snAgSysLogBufferTimeStamp brcdIp.1.1.2.6.2.1.2 Syntax: Time ticks	Read-only	Shows the time stamp for when the event is logged.
snAgSysLogBufferCriticalLevel brcdIp.1.1.2.6.2.1.3 Syntax: Integer	Read-only	The critical level of this event: • other(1) • alert(2) • critical(3) • debugging(4) • emergency(5) • error(6) • informational(7) • notification(8) • warning(9)
snAgSysLogBufferMessage brcdIp.1.1.2.6.2.1.4 Syntax: DisplayString	Read-only	Displays the system logging message.
snAgSysLogBufferCalTimeStamp brcdIp.1.1.2.6.2.1.5 Syntax: DisplayString	Read-only	Shows the time stamp when the event is logged. This object is used only if an external time source, such as an SNTP server, is configured. Otherwise, the value of this object is 0. This object returns a NULL terminated time stamp string if the system calendar time was set. It returns a blank if the system calendar time was not set.

Static system logging buffer table

The following table applies to all devices. It contains the events logged in the static system log. The static system log receives power failures, fan failures, temperature warnings, or shutdown messages.

Name, OID, and syntax	Access	Description
snAgStaticSysLogBufferTable brcdIp.1.1.2.6.3	None	Static system logging buffer table.
snAgStaticSysLogBufferIndex brcdIp.1.1.2.6.3.1.1 Syntax: Integer	Read-only	The index to the static system logging buffer table.

Name, OID, and syntax	Access	Description
snAgStaticSysLogBufferTimeStamp brcdIp.1.1.2.6.3.1.2 Syntax: Time ticks	Read-only	A time stamp, in number of time ticks, when the event is logged.
snAgStaticSysLogBufferCriticalLevel brcdIp.1.1.2.6.3.1.3 Syntax: Integer	Read-only	The critical level of this event: • other(1) • alert(2) • critical(3) • debugging(4) • emergency(5) • error(6) • informational(7) • notification(8) • warning(9)
snAgStaticSysLogBufferMessage brcdIp.1.1.2.6.3.1.4 Syntax: DisplayString	Read-only	The system logging message.
snAgStaticSysLogBufferCalTimeStamp brcdIp.1.1.2.6.3.1.5 Syntax: DisplayString	Read-only	A time stamp when the event is logged. This object is used only if an external time source, such as an SNTP server, is configured. Otherwise, the value of this object is 0. If an SNTP server is used to maintain time, then this object adds the value of the snAgStaticSysLogBufferTimeStamp object to the SNTP base to calculate the absolute time. This object returns a NULL terminated time stamp string if the system calendar time was set. It returns a blank if the system calendar time was not set.

System log server table

The system log (syslog) server table shows which server receives syslog messages. Every server in the table receives all syslog messages.

Name, OID, and syntax	Access	Description
snAgSysLogServerTable brcdIp.1.1.2.6.4	None	System log server table.
snAgSysLogServerIP brcdIp.1.1.2.6.4.1.1 Syntax: IpAddress	Read-write	IP address of system log server.
snAgSysLogServerUDPPort brcdIp.1.1.2.6.4.1.2 Syntax: Integer	Read-write	UDP port number of the syslog server. Valid values: 0 - 65535
snAgSysLogServerRowStatus brcdIp.1.1.2.6.4.1.3 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row.

Name, OID, and syntax	Access	Description
		If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • other(1) - Other. • valid(2) - Row exists and is valid.

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sFlow

This section presents the sFlow objects that are proprietary to products.

sFlow collector table

Currently, RFC 3176 allows only one sFlow destination to be configured. To configure two or more destinations, use the following table.

Name, OID, and syntax	Access	Description
snSflowCollectorTable brcdIp.1.1.3.19.2	None	Table of sFlow collectors, beginning with the second collector. Configure the first sFlow collector using the sFlowCollectorAddress and sFlowCollectorPort objects in the RFC 3176 sFlowTable.
snSflowCollectorIndex brcdIp.1.1.3.19.2.1.1 Syntax: Integer32	Read-only	The index to the sFlow collector table.
snSflowCollectorIP brcdIp.1.1.3.19.2.1.2 Syntax: IpAddress	Read-write	The IP address of the sFlow collector.
snSflowCollectorUDPPort brcdIp.1.1.3.19.2.1.3 Syntax: Integer32	Read-write	The number of the UDP port used by the sFlow collector.
snSflowCollectorRowStatus brcdIp.1.1.3.19. 2.1.4 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • other(1) - Some other case. • valid(2) - Row exists and is valid.

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VLAN by port information table

The following table applies to a Layer 2 device if the object snSwGroupOperMode is configured with a value of vlanByPort(2), allowing switch ports to be configured with a VLAN ID. Each VLAN switch port could have a number of VLAN IDs.

Name, OID, and syntax	Access	Description
snVLanByPortTable brcdIp.1.1.3.2.1	None	The VLAN by port information table for Layer 2 Switches.
snVLanByPortEntry brcdIp.1.1.3.2.1.1	None	An entry in the VLAN by port information table.
snVLanByPortVLanIndex brcdIp.1.1.3.2.1.1.1 Syntax: Integer	Read-only	Shows the index to this table. The VLAN ID number must not be greater than the value of the object. Each VLAN identifier can be a member of multiple ports.
snVLanByPortVLanId brcdIp.1.1.3.2.1.1.2 Syntax: Integer	Read-write	The VLAN ID index to the table. Each VLAN identifier can be a member of multiple ports. Valid values: 1 - 4095
snVLanByPortPortMask brcdIp.1.1.3.2.1.1.3 Syntax: PortMask	Read-write	Shows the standalone switch VLAN port membership. This object was obsoleted for Chassis devices.
snVLanByPortQos brcdIp.1.1.3.2.1.1.4 Syntax: Integer	Read-write	Shows the QoS settings for the following devices: Standalone: • level0(0) - Low priority • level1(1) - High priority BigIron • level0(0) • level1(1) • level2(2) • level3(3) • level4(4) • level5(5) • level6(6) • level7(7)
snVLanByPortStpMode brcdIp.1.1.3.2.1.1.5 Syntax: Integer	Read-write	Indicates whether or not the Spanning Tree mode in the switch group is enabled: • disable(0) - No Spanning Tree

Name, OID, and syntax	Access	Description
		• enableStp(1) - Activate Spanning Tree • enableRstp(2) - Activate Rapid Spanning Tree
snVLanByPortStpPriority brcdIp.1.1.3.2.1.1.6 Syntax: Integer	Read-write	Shows the value of the dot1dStpPriority, which is the first two octets of the STP bridge ID. The STP bridge ID is eight octets long. This object contains the writable portion of the bridge ID. The last six octets are contained in the dot1dBaseBridgeAddress of the snVLanByPortBaseBridgeAddress object. Valid values: 1 - 65535
snVLanByPortStpGroupMaxAge brcdIp.1.1.3.2.1.1.7 Syntax: Integer	Read-write	Shows the value of dot1dStpBridgeMaxAge, which is the last six octets of the STP bridge ID. All bridges use this object for MaxAge when this bridge is acting as the root. **NOTE** 802.1D-1990 specifies that the range for this parameter is related to the value of dot1dStpBridgeHelloTime in the VLAN by port information table object. The granularity of this timer is specified by 802.1D-1990 to be one second. An agent may return a bad value error if a set is attempted to a value which is not a whole number of seconds. (Refer to RFC 1493 Bridge MIB.) Valid values: 6 - 40
snVLanByPortStpGroupHelloTime brcdIp.1.1.3.2.1.1.8 Syntax: Integer	Read-write	Shows the value of the dot1dStpBridgeHelloTime, which is the value used by all bridges when this bridge is acting as the root. **NOTE** The granularity of this timer is specified by 802.1D-1990 to be one second. An agent may return a bad Value error if a set is attempted to a value which is not a whole number of seconds. (Refer to RFC 1493 Bridge MIB.) Valid values: 1 - 10
snVLanByPortStpGroupForwardDelay brcdIp.1.1.3.2.1.1.9 Syntax: Integer	Read-write	Shows the value of dot1dStpBridgeForwardDelay, which is the value used by all bridges for ForwardDelay when this bridge is acting as the root.

Name, OID, and syntax	Access	Description
		NOTE 802.1D-1990 specifies that the range for this parameter is related to the value of dot1dStpBridgeMaxAge, which is in the VLAN by port information tableobject.The granularity of this timer is specified by 802.1D-1990 to be one second. An agent may return a bad value error if a set is attempted to a value which is not a whole number of seconds. (Refer to RFC 1493 Bridge MIB.) Valid values: 2 -30
snVLanByPortRowStatus brcdIp.1.1.3.2.1.1.10 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a bad value error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snVLanByPortOperState brcdIp.1.1.3.2.1.1.11 Syntax: Integer	Read-only	Activates the VLAN entry and sets it to running mode: • notActivated(0) - The VLAN entry is not activated and not in running mode. • activated(1) - The VLAN entry is activated and in running mode. Default: notActivated(0)
snVLanByPortBaseNumPorts brcdIp.1.1.3.2.1.1.12 Syntax: Integer32	Read-only	Indicates the number of ports controlled by this bridging entity.
snVLanByPortBaseType brcdIp.1.1.3.2.1.1.13 Syntax: Integer	Read-only	Indicates what type of bridging this bridge can perform. If a bridge is actually performing a certain type of bridging, this will be indicated by entries in the port table for the given type: • unknown(1) • transparent-only(2) • sourceroute-only(3) • srt(4)
snVLanByPortStpProtocolSpecification brcdIp.1.1.3.2.1.1.14 Syntax: Integer	Read-only	Shows what version of STP is being run: • unknown(1) • decLb100(2) - Indicates the DEC LANbridge 100 Spanning Tree Protocol.

Name, OID, and syntax	Access	Description
		• ieee8021d(3) - Returns "ieee8021d(3)". If future versions of the IEEE Spanning Tree Protocol are released that are incompatible with the current version, a new value will be defined.
snVLanByPortStpMaxAge brcdIp.1.1.3.2.1.1.15 Syntax: Integer	Read-only	Shows the value of dot1dStpMaxAge, which is the maximum age that the STP information can exist before it is discarded. The STP information is the information learned from the network. The value of this object is in hundredths of a second, and is the actual value that this bridge is currently using. (Refer to RFC 1493 Bridge MIB.)
snVLanByPortStpHelloTime brcdIp.1.1.3.2.1.1.16 Syntax: Timeout	Read-only	Shows the value of dot1dStpHelloTime, which is the interval between the transmission of configuration bridge PDUs by this node. This value applies to any port when it is the root of the spanning tree or is trying to become the root. This is the actual value that this bridge is currently using. This value is in hundredths of a second. (Refer to RFC 1493 Bridge MIB.)
snVLanByPortStpHoldTime brcdIp.1.1.3.2.1.1.17 Syntax: Integer32	Read-only	Shows the value of dot1dStpHoldTime, which is the interval when no more than two configuration bridge PDUs can be transmitted by this node. The interval is in units of hundredths of a second. (Refer to RFC 1493 Bridge MIB.)
snVLanByPortStpForwardDelay brcdIp.1.1.3.2.1.1.18 Syntax: Timeout	Read-only	Shows the value of dot1dStpForwardDelay, which is the time that controls how long a port stays in the listening and learning states as its spanning state moves towards the forwarding state. This value is also used when a topology change has been detected and is under way. The value is used to age all dynamic entries in the Forwarding Database. This value is the one that this bridge is currently using, in contrast to dot1dStpBridgeForwardDelay in the VLAN by port information table object, which is the value that this bridge and all others would start using when this bridge becomes the root. This time value is in hundredths of a second, (Refer to RFC 1493 Bridge MIB.)
snVLanByPortStpTimeSinceTopologyChange brcdIp.1.1.3.2.1.1.19 Syntax: Time ticks	Read-only	Shows the time since the last time the bridge detected a topology change. This time is in hundredths of a second.
snVLanByPortStpTopChanges brcdIp.1.1.3.2.1.1.20 Syntax: Counter32	Read-only	Shows the total number of topology changes detected by this bridge since the management entity was last reset or initialized.

Name, OID, and syntax	Access	Description
snVLanByPortStpRootCost brcdIp.1.1.3.2.1.1.21 Syntax: Integer32	Read-only	Shows the value of dot1dStpRootCost, which is the cost of the path to the root as seen from this bridge. (Refer to RFC 1493 Bridge MIB.)
snVLanByPortStpRootPort brcdIp.1.1.3.2.1.1.22 Syntax: Integer32	Read-only	Shows the value of dot1dStpRootPort, which is the number of the port that offers the lowest cost path from this bridge to the root bridge. (Refer to RFC 1493 Bridge MIB.)
snVLanByPortStpDesignatedRoot brcdIp.1.1.3.2.1.1.23 Syntax: BridgeId	Read-only	Shows the value of dot1dStpDesignatedRoot, which is the bridge ID of the root of the spanning tree as determined by STP as executed by this node. This value is used as the Root Identifier parameter in all configuration bridge PDUs originated by this node. (Refer to RFC 1493 Bridge MIB.)
snVLanByPortBaseBridgeAddress brcdIp.1.1.3.2.1.1.24 Syntax: BridgeId	Read-only	Indicates the value of the dot1dBaseBridgeAddress, which is the MAC address used by this bridge when it must be referred to in a unique fashion. It is recommended that this is the smallest MAC address of all ports that belong to this bridge; however, it must be unique. When concatenated with dot1dStpPriority, a unique Bridge Identifier is formed, which is used in the STP.
snVLanByPortVLanName brcdIp.1.1.3.2.1.1.25 Syntax: DisplayString	Read-write	Indicates the name of the community string that is allowed to access the VLAN. Valid values: Up to 32 characters
snVLanByPortRouterIntf brcdIp.1.1.3.2.1.1.26 Syntax: Integer32 NOTE This object was deprecated on FastIron devices. Use snVLanByPortCfgRouterIntf instead.	Read-write	This object is optional and applies only to routers. It shows the ID of the virtual interface of a router to the VLAN. If an SNMP-Get value is zero, then this object was not configured. Valid values: 1 - 60
snVLanByPortChassisPortMask brcdIp.1.1.3.2.1.1.27 Syntax: Octet String	Read-write	The object is replaced by VLAN by port information table. It shows the VLAN switch port membership. This object has 32 octets.
snVLanByPortPortList brcdIp.1.1.3.2.1.1.28 Syntax: Octet String	Read-write	Applies to all devices.

VLAN by port membership table

The following table is the Port VLAN (Layer 2 VLAN) port membership table.

Name, OID, and syntax	Access	Description
snVLanByPortMemberTable brcdIp.1.1.3.2.6	None	This table is used to create or delete a port VLAN (Layer 2 VLAN) entry.
snVLanByPortMemberEntry brcdIp.1.1.3.2.6.1	None	An entry in the Port VLAN port membership table.
snVLanByPortMemberVLanId brcdIp.1.1.3.2.6.1.1 Syntax: Integer	Read-only	The VLAN identifier (VLAN ID). Valid values: 1 - 4095 VLAN IDs
snVLanByPortMemberPortId brcdIp.1.1.3.2.6.1.2 Syntax: Integer	Read-only	The ifIndex that is a member of the port VLAN.
snVLanByPortMemberRowStatus brcdIp.1.1.3.2.6.1.3 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Delete the row. • create(4) - Create a new row. If the row exists, then a SET with a value of create(4) returns a bad value error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • other(1) - Some other case. • valid(2) - Row exists and is valid.
snVLanByPortMemberTagMode brcdIp.1.1.3.2.6.1.4 Syntax: Integer	Read-write	For a tagged or dual-mode port, there can be multiple VLANs per port. For an untagged port, there is only one VLAN ID per port. The values are: • tagged(1) • untagged(2)

Port VLAN configuration table

Name, OID, and syntax	Access	Description
snVLanByPortCfgTable brcdIp.1.1.3.2.7	None	The Port VLAN (Layer 2 VLAN) configuration table.
snVLanByPortCfgEntry brcdIp.1.1.3.2.7.1	None	An entry of the port VLAN configuration table.
snVLanByPortCfgVLanId brcdIp.1.1.3.2.7.1.1 Syntax: Integer	Read-write	The VLAN ID index to this table. Each VLAN identifier can be a member of multiple ports. Valid values: 1 - 4095
snVLanByPortCfgQos brcdIp.1.1.3.2.7.1.2 Syntax: PortQosTC	Read-write	Shows the Quality of Service (QoS) settings for the devices. For Stackable devices, the values can be one of the following: • level0(0) - Low priority • level1(1) - High priority

Name, OID, and syntax	Access	Description
		For Chassis devices, the value can be one of the following: • level0(0) • level1(1) • level2(2) • level3(3) • level4(4) • level5(5) • level6(6) • level7(7)
snVLanByPortCfgStpMode brcdIp.1.1.3.2.7.1.3 Syntax: Integer	Read-write	Indicates whether or not Spanning Tree Protocol (STP) is enabled: • disabled(0) • enabled(1) The following values are supported on FastIron SuperX software releases: • disabled(0) • enableStp(1) • enableRstp(2)
snVLanByPortCfgStpPriority brcdIp.1.1.3.2.7.1.4 Syntax: Integer	Read-write	Shows the value of the dot1dStpPriority, which is the first two octets of the STP or RSTP bridge ID. The STP and RSTP bridge IDs are eight octets long. This object contains the writable portion of the bridge ID. The last six octets are contained in the dot1dBaseBridgeAddress of the VLAN by port information table on page 211 object. Valid values: 1 - 65535
snVLanByPortCfgStpGroupMaxAge brcdIp.1.1.3.2.7.1.5 Syntax: Integer32	Read-write	Shows the value of dot1dStpBridgeMaxAge, which is the last six octets or the STP or RSTP bridge ID. All bridges use this object for MaxAge when this bridge is acting as the root. NOTE 802.1D-1990 specifies that the range for this parameter is related to the value of dot1dStpBridgeHelloTime in the VLAN by port information table on page 211 object. The granularity of this timer is specified by 802.1D-1990 to be one second. An agent may return a bad value error if a set is attempted to a value which is not a whole number of seconds. (Refer to RFC 1493 Bridge MIB.) Valid values: 6 - 40
snVLanByPortCfgStpGroupHelloTime brcdIp.1.1.3.2.7.1.6 Syntax: Integer	Read-write	Shows the value of dot1dStpBridgeHelloTime, which is the value used by all bridges when this bridge is acting as the root.

Name, OID, and syntax	Access	Description
		NOTE The granularity of this timer is specified by 802.1D-1990 to be one second. An agent may return a bad Value error if a set is attempted to a value which is not a whole number of seconds. (Refer to RFC 1493 Bridge MIB.) Valid values: 1 - 10
snVLanByPortCfgStpGroupForwardDelay brcdIp.1.1.3.2.7.1.7 Syntax: Integer32	Read-write	Shows the value of dot1dStpBridgeForwardDelay, which is the value used by all bridges for ForwardDelay when this bridge is acting as the root. **NOTE** 802.1D-1990 specifies that the range for this parameter is related to the value of dot1dStpBridgeMaxAge, which is in the VLAN by port information table on page 211 object. The granularity of this timer is specified by 802.1D-1990 to be one second. An agent may return a bad value error if a set is attempted to a value which is not a whole number of seconds. (Refer to RFC 1493 Bridge MIB.) Valid values: 2 - 30
snVLanByPortCfgBaseNumPorts brcdIp.1.1.3.2.7.1.8 Syntax: Integer32	Read-only	The number of ports controlled by this bridging entity.
snVLanByPortCfgBaseType brcdIp.1.1.3.2.7.1.9 Syntax: Integer	Read-only	Indicates what type of bridging this bridge can perform. If a bridge is actually performing a certain type of bridging, this will be indicated by entries in the port table for the given type: • unknown(1) • transparentOnly(2) • sourcerouteOnly(3) • srt(4)
snVLanByPortCfgStpProtocolSpecification brcdIp.1.1.3.2.7.1.10 Syntax: Integer	Read-only	Shows what version of STP is being run: • unknown(1) • decLb100(2) - Indicates the DEC LANbridge 100 Spanning Tree Protocol. • ieee8021d(3) - IEEE 802.1d implementations will return this value. If future versions of the IEEE Spanning Tree Protocol are released that are incompatible with the current version, a new value will be defined.
snVLanByPortCfgStpMaxAge brcdIp.1.1.3.2.7.1.11	Read-only	Shows the value of dot1dStpMaxAge, which is the maximum age that the STP information can exist before it is discarded. The STP information

Name, OID, and syntax	Access	Description
Syntax: Integer		is learned from the network. The value of this object is in hundredths of a second, and is the actual value that this bridge is currently using. (Refer to RFC 1493 Bridge MIB.)
snVLanByPortCfgStpHelloTime brcdIp.1.1.3.2.7.1.12 Syntax: Timeout	Read-only	Shows the value of dot1dStpHelloTime, which is the interval between the transmission of configuration bridge PDUs by this node. This value applies to any port when it is the root of the spanning tree or is trying to become the root. This is the actual value that this bridge is currently using. This value is in hundredths of a second. (Refer to RFC 1493 Bridge MIB.)
snVLanByPortCfgStpHoldTime brcdIp.1.1.3.2.7.1.13 Syntax: Integer32	Read-only	Shows the value of dot1dStpHoldTime, which is the interval when no more than two configuration bridge PDUs can be transmitted by this node. The interval is in units of hundredths of a second. (Refer to RFC 1493 Bridge MIB.)
snVLanByPortCfgStpForwardDelay brcdIp.1.1.3.2.7.1.14 Syntax: Timeout	Read-only	Shows the value of dot1dStpForwardDelay, which controls how fast a port changes its spanning state when moving towards the forwarding state. The value determines how long the port stays in each of the listening and learning states, which precede the forwarding state. This value is also used, when a topology change has been detected and is under way, to age all dynamic entries in the forwarding database. NOTE This value is the one that this bridge is currently using in contrast to dot1dStpBridgeForwardDelay, which is the value that this bridge and all others would start using should this bridge become the root.This value is measured in hundredths of a second. (Refer to RFC 1493 Bridge MIB.)
snVLanByPortCfgStpTimeSinceTopologyChang e brcdIp.1.1.3.2.7.1.15 Syntax: Time ticks	Read-only	Shows the time since the last topology change was detected by the bridge entity. This time is in hundredths of a second.
snVLanByPortCfgStpTopChanges brcdIp.1.1.3.2.7.1.16 Syntax: Counter32	Read-only	Shows the total number of topology changes detected by this bridge since the management entity was last reset or initialized.
snVLanByPortCfgStpRootCost brcdIp.1.1.3.2.7.1.17 Syntax: Integer32	Read-only	Shows the value of dot1dStpRootCost, which is the cost of the path to the root as seen from this bridge. (Refer to RFC 1493 Bridge MIB.)
snVLanByPortCfgStpRootPort brcdIp.1.1.3.2.7.1.18	Read-only	Shows the value of dot1dStpRootPort, which is the port number of the port which offers the

Name, OID, and syntax	Access	Description
Syntax: Integer32		lowest cost path from this bridge to the root bridge. (Refer to RFC 1493 Bridge MIB.)
snVLanByPortCfgStpDesignatedRoot brcdIp.1.1.3.2.7.1.19 Syntax: BridgeId	Read-only	Shows the value of dot1dStpDesignatedRoot, which is the bridge identifier of the root of the spanning tree as determined by the Spanning Tree Protocol as executed by this node. This value is used as the root identifier parameter in all configuration bridge PDUs originated by this node. (Refer to RFC 1493 Bridge MIB.)
snVLanByPortCfgBaseBridgeAddress brcdIp.1.1.3.2.7.1.20 Syntax: MAC address	Read-only	Shows the MAC address used by this bridge when it must be referred to in a unique fashion. It is recommended that this be the numerically smallest MAC address of all ports that belong to this bridge; however, it is only required to be unique. When concatenated with dot1dStpPriority, a unique bridge identifier is formed, which is used in the Spanning Tree Protocol.
snVLanByPortCfgVLanName brcdIp.1.1.3.2.7.1.21 Syntax: DisplayString	Read-write	Shows the name of the VLAN community string. Valid values: Up to 32 characters
snVLanByPortCfgRouterIntf brcdIp.1.1.3.2.7.1.22 Syntax: Integer32	Read-write	This object is optional. It identifies the virtual interface for the router to the VLAN, and applies only to the router. If an SNMP-Get value is zero, that means this object was not configured.
snVLanByPortCfgRowStatus brcdIp.1.1.3.2.7.1.23 Syntax: Integer	Read-write	Deletes a VLAN entry.
snVLanByPortCfgStpVersion brcdIp.1.1.3.2.7.1.24 Syntax: Integer **NOTE** This object is supported only on the FastIron SuperX devices.	Read-write	Shows the version of Spanning Tree Protocol the bridge is currently running: • stpCompatible(0) - STP (IEEE 802.1D) • rstp(2) - RSTP (IEEE 802.1w)
snVLanByPortCfgInOctets brcdIp.1.1.3.2.7.1.25 Syntax: Counter64	Read-only	The number of bytes received on this VLAN. This can be used as the per-VE counter, if there is one-to-one mapping for VLAN-VE.
snVLanByPortCfgTransparentHwFlooding brcdIp.1.1.3.2.7.1.26 Syntax: Integer	Read-write	Enables or disables transparent VLAN flooding on a VLAN: • disabled(0) • enabled(1) Default: disabled(0)

VLAN by protocol configuration table

The following table applies to protocol VLANs.

Name, OID, and syntax	Access	Description
snVLanByProtocolTable brcdIp.1.1.3.2.2	None	The VLAN by protocol configuration table.
snVLanByProtocolEntry brcdIp.1.1.3.2.2.1	None	An entry in the VLAN by protocol configuration table.
snVLanByProtocolVLanId brcdIp.1.1.3.2.2.1.1	Read-only	Shows the VLAN ID index to both the VLAN by port information table and this table.
snVLanByProtocolIndex brcdIp.1.1.3.2.2.1.2 Syntax: Integer	Read-only	Shows the protocol used by this VLAN. The following IP/IPX protocols are used by VLANs in Layer 3 VLAN: • IP(1) • IPX(2) The following protocols are used in Layer 2 bridging: • appleTalk(3) • decNet(4) • netBios(5) • others(6) - Other protocols that are defined here.
snVLanByProtocolDynamic brcdIp.1.1.3.2.2.1.3 Syntax: Integer	Read-write	Applies only to switches. Indicates whether or not dynamic port inclusion is enabled: • disabled(0) • enabled(1)
snVLanByProtocolStaticMask brcdIp.1.1.3.2.2.1.4 Syntax: PortMask	Read-write	Indicates the standalone switch Protocol VLAN port membership (portmask) applied in static mode. This object was obsoleted for Chassis devices.
snVLanByProtocolExcludeMask brcdIp.1.1.3.2.2.1.5 Syntax: PortMask	Read-write	Indicates the standalone switch Protocol VLAN port membership (portmask) applied in exclusive mode. This object was obsoleted for Chassis devices.
snVLanByProtocolRouterIntf brcdIp.1.1.3.2.2.1.6 Syntax: Integer	Read-write	Applies to routers only and is optional. It shows the virtual interface of a router to the VLAN. This object is not configured if an SNMP-Get is equal to zero.
snVLanByProtocolRowStatus brcdIp.1.1.3.2.2.1.7 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

Name, OID, and syntax	Access	Description
snVLanByProtocolDynamicMask brcdIp.1.1.3.2.2.1.8 Syntax: PortMask	Read-only	Shows the portmask, which is the standalone switch Protocol VLAN active port membership. This object was obsoleted.
snVLanByProtocolChassisStaticMask brcdIp.1.1.3.2.2.1.9 Syntax: Octet String	Read-write	This object has 32 octets. It has been obsoleted and replaced by the VLAN by protocol configuration table object.
snVLanByProtocolChassisExcludeMask brcdIp.1.1.3.2.2.1.10 Syntax: Octet String	Read-write	This object has 32 octets. It has been obsoleted and replaced by the VLAN by protocol configuration table object.
snVLanByProtocolChassisDynamicMask brcdIp.1.1.3.2.2.1.11 Syntax: Octet String	Read-write	This object has 32 octets. It has been obsoleted and replaced by the VLAN by protocol configuration table object.
snVLanByProtocolVLanName brcdIp.1.1.3.2.2.1.12 Syntax: DisplayString	Read-write	Shows the name of the community string that is allowed to access the VLAN. Valid values: Up to 32 characters
snVLanByProtocolStaticPortList brcdIp.1.1.3.2.2.1.13 Syntax: Octet String	Read-write	This object is an index of ports that are configured to be members of the Protocol VLAN. Each port index is a 16-bit integer in big-endian order. The first 8 bits are the slot number; the other 8 bits are the port number.
snVLanByProtocolExcludePortList brcdIp.1.1.3.2.2.1.14 Syntax: Octet String	Read-write	This object is an index of ports that are excluded from port membership of the Protocol VLAN. Each port index is a 16-bit integer in big-endian order. The first 8 bits are the slot number; the other 8 bits are the port number.
snVLanByProtocolDynamicPortList brcdIp.1.1.3.2.2.1.15 Syntax: Octet String	Read-only	This object is an index of ports that can dynamically join the port membership of the Protocol VLAN. Each port index is a 16-bit integer in big-endian order. The first 8 its are the slot number; the other 8 bits are the port number.

VLAN by IP subnet configuration table

The following table applies to protocol VLANs that use the IP routing protocol.

Name, OID, and syntax	Access	Description
snVLanByIpSubnetTable brcdIp.1.1.3.2.3	None	The VLAN by IP subnet configuration table.
snVLanByIpSubnetEntry brcdIp.1.1.3.2.3.1	None	An entry in the VLAN by IP subnet configuration table.
snVLanByIpSubnetVLanId brcdIp.1.1.3.2.3.1.1 Syntax: Integer	Read-only	Shows the VLAN ID index to both the VLAN by port information table and this table. Valid values: 1 - 4095
snVLanByIpSubnetIpAddress brcdIp.1.1.3.2.3.1.2 Syntax: IpAddress	Read-only	Shows the IP address for the subnet of the protocol-based IP VLAN.

Name, OID, and syntax	Access	Description
snVLanByIpSubnetSubnetMask brcdIp.1.1.3.2.3.1.3 Syntax: IpAddress	Read-only	Subnet mask associated with the subnet IP address.
snVLanByIpSubnetDynamic brcdIp.1.1.3.2.3.1.4 Syntax: Integer	Read-write	Applies only to switches. Indicates whether or not dynamic port inclusion is enabled: • disabled(0) • enabled(1)
snVLanByIpSubnetStaticMask brcdIp.1.1.3.2.3.1.5 Syntax: PortMask	Read-write	Shows the port membership of the standalone switch VLAN by Subnet in static mode. This object was obsoleted.
snVLanByIpSubnetExcludeMask brcdIp.1.1.3.2.3.1.6 Syntax: PortMask	Read-write	Shows the port membership of the standalone switch VLAN by Subnet in exclusive mode. This object was obsoleted.
snVLanByIpSubnetRouterIntf brcdIp.1.1.3.2.3.1.7 Syntax: Integer	Read-write	Applies only to routers and is optional. It shows the virtual interface of a router to the VLAN. Valid values: 0 - 60. It is not configured if an SNMP-Get is equal to zero.
snVLanByIpSubnetRowStatus brcdIp.1.1.3.2.3.1.8 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snVLanByIpSubnetDynamicMask brcdIp.1.1.3.2.3.1.9 Syntax: PortMask	Read-only	Shows the standalone switch VLAN by subnet active port membership.
snVLanByIpSubnetChassisStaticMask brcdIp.1.1.3.2.3.1.10 Syntax: Octet string	Read-write	This object has 32 octets. It is replaced by the VLAN by IP subnet configuration table object. It shows the chassis VLAN by Subnet port membership applied in static mode.
snVLanByIpSubnetChassisExcludeMask brcdIp.1.1.3.2.3.1.11 Syntax: Octet string	Read-write	This object has 32 octets. It is replaced by the VLAN by IP subnet configuration table object. It shows the chassis VLAN by Subnet port membership applied in exclusive mode.
snVLanByIpSubnetChassisDynamicMask brcdIp.1.1.3.2.3.1.12 Syntax: Octet string	Read-write	This object has 32 octets .It is replaced by the VLAN by IP subnet configuration table object. It shows the chassis VLAN by Subnet port membership applied in exclusive mode.
snVLanByIpSubnetVLanName brcdIp.1.1.3.2.3.1.13 Syntax: Display string	Read-write	Shows the name of the community string that is allowed to access the VLAN. Valid values: Up to 32 characters
snVLanByIpSubnetStaticPortList brcdIp.1.1.3.2.3.1.14	Read-write	This object is an index of ports that are configured to be members of the VLAN by IP

Name, OID, and syntax	Access	Description
Syntax: Octet string		Subnet. Each port index is a 16-bit integer in big-endian order. The first 8 bits are the slot number; the other 8 bits are the port number.
snVLanByIpSubnetExcludePortList brcdIp.1.1.3.2.3.1.15 Syntax: Octet string	Read-write	This object is an index of ports that are excluded from port membership of the VLAN by IP Subnet. Each port index is a 16-bit integer in big-endian order. The first 8 bits are the slot number; the other 8 bits are the port number.
snVLanByIpSubnetDynamicPortList brcdIp.1.1.3.2.3.1.16 Syntax: Octet string	Read-only	This object is an index of ports that can dynamically join the port membership of the VLAN by IP Subnet. Each port index is a 16-bit integer in big-endian order. The first 8 bits are the slot number; the other 8 bits are the port number.

VLAN by IPX network configuration table

The following table applies to protocol VLANs that use the IPX routing protocol. Unless otherwise stated in the object description, all objects in this table apply to all devices.

Name, OID, and syntax	Access	Description
snVLanByIpxNetTable brcdIp.1.1.3.2.4	None	The VLAN by IPX network number table.
snVLanByIpxNetVLanId brcdIp.1.1.3.2.4.1.1 Syntax: Integer	Read-only	The VLAN ID index to both the VLAN by port information table and this table. Valid values: 1 - 4095
snVLanByIpxNetNetworkNum brcdIp.1.1.3.2.4.1.2 Syntax: Octet String	Read-only	Shows the IPX Network Number. This object has four octets.
snVLanByIpxNetFrameType brcdIp.1.1.3.2.4.1.3 Syntax: Integer	Read-only	Shows the frame type for the Layer 3 VLAN: • notApplicable(0) - If none of the following options is selected • ipxEthernet8022(1) • ipxEthernet8023(2) • ipxEthernetII(3) • ipxEthernetSnap(4) Each IPX Network Number must be assigned with one unique Frame type; otherwise, an SNMP-SET error will be returned.
snVLanByIpxNetDynamic brcdIp.1.1.3.2.4.1.4 Syntax: Integer	Read-write	Applies only to switches. Indicates whether or not dynamic port inclusion is enabled: • disabled(0) • enabled(1)
snVLanByIpxNetStaticMask brcdIp.1.1.3.2.4.1.5 Syntax: PortMask	Read-write	Shows the VLAN by IPX network port membership applied in static mode.
snVLanByIpxNetExcludeMask brcdIp.1.1.3.2.4.1.6	Read-write	Shows the VLAN by IPX network port membership applied in exclusive mode.

Name, OID, and syntax	Access	Description
Syntax: PortMask		
snVLanByIpxNetRouterIntf brcdIp.1.1.3.2.4.1.7 Syntax: Integer	Read-write	Applies only to routers and is optional. It shows the virtual interface of a router to the VLAN. Valid values: 0 - 60; however, this object is not configured if an SNMP-Get is equal to zero.
snVLanByIpxNetRowStatus brcdIp.1.1.3.2.4.1.8 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snVLanByIpxNetDynamicMask brcdIp.1.1.3.2.4.1.9 Syntax: PortMask	Read-only	Shows the VLAN by IPX network active port membership.
snVLanByIpxNetChassisStaticMask brcdIp.1.1.3.2.4.1.10 Syntax: Octet String	Read-write	This object has 32 octets and it is replaced by VLAN by IPX network configuration table. Shows the chassis VLAN by IPX network port membership applied in static mode.
snVLanByIpxNetChassisExcludeMask brcdIp.1.1.3.2.4.1.11 Syntax: Octet String	Read-write	This object has 32 octets and it is replaced by VLAN by IPX network configuration table. Shows the chassis VLAN by IPX network port membership applied in exclusive mode.
snVLanByIpxNetChassisDynamicMask brcdIp.1.1.3.2.4.1.12 Syntax: Octet String	Read-only	This object has 32 octets and it is replaced by VLAN by IPX network configuration table. Shows the chassis VLAN by IPX network port membership.
snVLanByIpxNetVLanName brcdIp.1.1.3.2.4.1.13 Syntax: DisplayString	Read-write	Shows the name of the community string that can access this VLAN. Valid values: Up to 32 characters
snVLanByIpxNetStaticPortList brcdIp.1.1.3.2.4.1.14 Syntax: Octet String	Read-write	Lists the membership of a VLAN by IPX network. Each port index is a 16-bit integer in big-endian order. The first 8 bits are the slot number; the other 8 bits are the port number.
snVLanByIpxNetExcludePortList brcdIp.1.1.3.2.4.1.15 Syntax: Octet String	Read-write	Lists the ports that are excluded from the VLAN by IPX network membership. Each port index is a 16-bit integer in big-endian order. The first 8 bits are the slot number; the other 8 bits are the port number.
snVLanByIpxNetDynamicPortList brcdIp.1.1.3.2.4.1.16 Syntax: Octet String	Read-only	Lists the ports that can dynamically join the membership of the VLAN by IPX network. Each port index is a 16-bit integer in big-endian order. The first 8 bits are the slot number; the other 8 bits are the port number.

Forwarding Database Group

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Forwarding database static table information

The following table contains the forwarding database information for each station known to the system. There is one entry per station.

Name, OID, and syntax	Access	Description
snFdbTable brcdIp.1.1.3.4.1	None	The forwarding database static table.
snFdbStationIndex brcdIp.1.1.3.4.1.1.1 Syntax: Integer	Read-only	Shows the FDB Station index to the FDB Station table.
snFdbStationAddr brcdIp.1.1.3.4.1.1.2 Syntax: Integer	Read-write	Shows the snFdbs physical address. The physical address represents a MAC Station.
snFdbStationPort brcdIp.1.1.3.4.1.1.3 Syntax: Integer32	Read-write	Indicates the station slot or port number: • Bit 0 to bit 7 - Port number. • Bit 8 to bit 11 - Slot number (slot for chassis only).
snFdbVLanId brcdIp.1.1.3.4.1.1.4 Syntax: Integer	Read-write	Indicates the Station VLAN ID.
snFdbStationQos brcdIp.1.1.3.4.1.1.5 Syntax: Integer	Read-write	Shows the Quality of Service (QoS) values for the station: For stackable stations, the values can be: • low(0) - Low priority • high(1) - High priority For chassis stations, the values can be: • level0(0) • level1(1) • level2(2) • level3(3) • level4(4) • level5(5) • level6(6) • level7(7)
snFdbStationType brcdIp.1.1.3.4.1.1.6 Syntax: Integer	Read-write	Shows the station type: • notSupported(0) - A read-only value: this product does not support multilayer switching. • host(1) - Any MAC station. • router(2) - A router-typed station.

Name, OID, and syntax	Access	Description
snFdbRowStatus brcdIp.1.1.3.4.1.1.7 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snFdbStationIfindex brcdIp.1.1.3.4.1.1.8 Syntax: InterfaceIndex	Read-write	Station interface index number.

Port STP Configuration Group

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Port STP configuration groups

The Spanning Tree Protocol (STP) eliminates Layer 2 loops in networks by selectively blocking some ports and allowing other ports to forward traffic based on global (bridge) and local (port) parameters you can configure.

Port STP table

The following table applies to all Brocade FastIron devices. These devices use snIfStpTable. The snIfStpTable replaces snPortStpTable.

Name, OID, and syntax	Access	Description
snPortStpTable brcdIp.1.1.3.5.1	None	A specific snPortStpTable consists of a number of switch ports. This table only exists if Port STP table exists and Port STP table is enabled for each VLAN.
snPortStpVLanId brcdIp.1.1.3.5.1.1.1 Syntax: Integer	Read-only	Shows the VLAN ID of the VLAN switch community. Valid values: 1 - 65535
snPortStpPortNum brcdIp.1.1.3.5.1.1.2 Syntax: Integer32	Read-only	Shows the port number of the switch: • Bit 0 to 7 - Port number. • Bit 8 to 11 - Slot number (slot for chassis only).
snPortStpPortPriority brcdIp.1.1.3.5.1.1.3 Syntax: Integer	Read-write	Shows the value of the priority field, which is contained in the first (in network byte order) octet of the Port ID. The second octet of the Port ID is given by the value of dot1dStpPort. The two octets combine to form the identity of the root bridge in a spanning tree (instance of STP). The bridge with the lowest value has the highest priority and is the root. Valid values: 8 - 255
snPortStpPathCost brcdIp.1.1.3.5.1.1.4 Syntax: Integer	Read-write	Shows the value of the dot1dStpPortPathCost, which is the port's path cost to reach the root bridge. When selecting among multiple links to the root bridge, STP chooses the link with the lowest path cost and blocks the other paths. IEEE 802.1D-1990 recommends that the default value of this parameter be in inverse proportion to the speed of the attached LAN. Writing a value of zero to this object sets the path cost to a default value which automatically changes according to port speed. Reading a value of zero indicates an unknown path cost because the port speed cannot be determined due to the speed auto sense that is currently in progress.

Name, OID, and syntax	Access	Description
		Each port type has its own default STP path cost: • 10 Mbps - 100 • 100 Mbps - 19 • Gigabit - 4 Valid values: 0 - 65535 **NOTE** Over the value of 65535, this MIB stays at the upper value and the user should access which has a bigger upper range value.
snPortStpOperState brcdIp.1.1.3.5.1.1.5 Syntax: Integer	Read-only	Indicates if the port STP entry is activated and is in running mode: • notActivated(0) • activated(1) Default: notActivated(0)
snPortStpPortEnable brcdIp.1.1.3.5.1.1.6 Syntax: Integer	None	Indicates whether or not the port is enabled: • disabled(0) • enabled(1)
snPortStpPortForwardTransitions brcdIp.1.1.3.5.1.1.7 Syntax: Integer32	None	Shows the number of times this port has transitioned from the Learning state to the Forwarding state.
snPortStpPortState brcdIp.1.1.3.5.1.1.8 Syntax: Integer	Read-only	Shows the port's current state as defined by application of the Spanning Tree Protocol. This state controls what action a port takes when it receives a frame: • disabled(1) - The port is not participating in STP. This can occur when the port is disconnected or STP is disabled on the port. • blocking(2) - STP has blocked Layer 2 traffic on this port to prevent a loop. The device or VLAN can reach the root bridge using another port with the forwarding(5) state. When a port is in this state, the port does not transmit or receive user frames, but the port does continue to receive STP BPDUs. • listening(3) - STP is responding to a topology change and this port is listening for a BPDU from neighboring bridges in order to determine the new topology. No user frames are transmitted or received during this state. • learning(4) - The port has passed the listening state and will change to the blocking or forwarding state, depending on the results of STP's reconvergence. The port does not transmit or receive user frames during this state. However, the device can

Name, OID, and syntax	Access	Description
		learn the MAC addresses of frames that the port receives during this state and make corresponding entries in the MAC table. • forwarding(5) - STP is allowing the port to send and receive frames. • broken(6) - Ports that are malfunctioning are placed into this state by the bridge.
snPortStpPortDesignatedCost brcdIp.1.1.3.5.1.1.9 Syntax: Integer32	Read-only	The cost to the root bridge as advertised by the designated bridge that is connected to this port. If the designated bridge is the root bridge itself, then the cost is 0. The identity of the designated bridge is shown in the Design Bridge field. This value is compared to the Root Path Cost field in the received bridge PDUs.
snPortStpPortDesignatedRoot brcdIp.1.1.3.5.1.1.10 Syntax: BridgeId	Read-only	The root bridge as recognized on this port. The value is the same as the root bridge ID listed in the Root ID field. Shows the unique ID of the root bridge. The root bridge is recorded as the root in the configuration BPDUs, which are transmitted by the designated bridge for the segment to which the port is attached.
snPortStpPortDesignatedBridge brcdIp.1.1.3.5.1.1.11 Syntax: BridgeId	Read-only	Shows the ID of the designated bridge. The designated bridge is the device that connects the network segment to the root bridge.
snPortStpPortDesignatedPort brcdIp.1.1.3.5.1.1.12 Syntax: Octet String	Read-only	Shows the ID of the port on the designated bridge that connects to the root bridge on the network. This object has two octets.
snPortStpPortAdminRstp brcdIp.1.1.3.5.1.1.13 Syntax: Integer	Read-write	Enables or disables RSTP of a port which is a member of a VLAN. If the VLAN is not operating in RSTP, this object will return FALSE(2) and this object is not writable.
snPortStpPortProtocolMigration brcdIp.1.1.3.5.1.1.14 Syntax: Integer	Read-write	When operating in RSTP (version 2) mode, writing TRUE(1) to this object forces this port to transmit RSTP BPDUs. Any other operation on this object has no effect and it always returns FALSE(2) when read.
snPortStpPortAdminEdgePort brcdIp.1.1.3.5.1.1.15 Syntax: Integer	Read-write	The administrative value of the Edge Port parameter. A value of TRUE(1) indicates that this port should be assumed as an edge port and a value of FALSE(2) indicates that this port should be assumed as a non-edge port.
snPortStpPortAdminPointToPoint brcdIp.1.1.3.5.1.1.16 Syntax: Integer	Read-write	The administrative point-to-point status of the LAN segment attached to this port. A value of TRUE(1) indicates that this port should always be treated as if it is connected to a point-to-point link. A value of FALSE(2) indicates that this port should be treated as having a shared media connection.

STP table

NOTE

The snPortStpTable was deprecated. It has been replaced by snIfStpTable.

Name, OID, and syntax	Access	Description
snIfStpTable brcdIp.1.1.3.5.2	None	A specific snIfStpTable consists of a number of switch ports. This table exists only if snVLanByPortCfgTable exists and snVLanByPortCfgStpMode is enabled for each VLAN.
snIfStpVLanId brcdIp.1.1.3.5.2.1.1 Syntax: Integer	Read-only	Shows the VLAN ID of the VLAN switch community. Valid values: 1 - 65535
snIfStpPortNum brcdIp.1.1.3.5.2.1.2 Syntax: InterfaceIndex	Read-only	Shows the port number of the switch that has the ifIndex value.
snIfStpPortPriority brcdIp.1.1.3.5.2.1.3 Syntax: Integer	Read-write	Shows the value of the priority field, which is contained in the first (in network byte order) octet of the (2 octet long) Port ID. The second octet of the Port ID is given by the value of dot1dStpPort. The two octets combine to form the identity of the root bridge in a spanning tree (instance of STP). The bridge with the lowest value has the highest priority and is the root. Valid values: 0 - 255
snIfStpCfgPathCost brcdIp.1.1.3.5.2.1.4 Syntax: Integer	Read-write	Shows the value of the dot1dStpPortPathCost, which is the port's path cost of paths towards the spanning tree root which include this port. 802.1D-1990 recommends that the default value of this parameter be in inverse proportion to the speed of the attached LAN. Writing value zero to this object sets the path cost to a default value which automatically changes according to port speed. Valid values: 0 - 200000000
snIfStpOperState brcdIp.1.1.3.5.2.1.5 Syntax: Integer	Read-only	Indicates if the port STP entry is activated and is in running mode: • notActivated(0) • activated(1) Default: notActivated(0)
snIfStpPortState brcdIp.1.1.3.5.2.1.8 Syntax: Integer	Read-only	Shows the port's current state as defined by application of the Spanning Tree Protocol. This state controls what action a port takes when it receives a frame: • disabled(1) - The port is not participating in STP. This can occur when the port is disconnected or STP is disabled on the port. • blocking(2) - STP has blocked Layer 2 traffic on this port to prevent a loop. The device or VLAN can reach the root bridge using another port with the forwarding(5) state. When a port is in

Name, OID, and syntax	Access	Description
		this state, the port does not transmit or receive user frames, but the port does continue to receive STP BPDUs. • listening(3) - STP is responding to a topology change and this port is listening for a BPDU from neighboring bridges in order to determine the new topology. No user frames are transmitted or received during this state. • learning(4) - The port has passed the listening state and will change to the blocking or forwarding state, depending on the results of STP's reconvergence. The port does not transmit or receive user frames during this state. However, the device can learn the MAC addresses of frames that the port receives during this state and make corresponding entries in the MAC table. • forwarding(5) - STP is allowing the port to send and receive frames. • broken(6) - Ports that are malfunctioning are placed into this state by the bridge. • preforwarding(7)
snIfStpPortDesignatedCost brcdIp.1.1.3.5.2.1.9 Syntax: Integer32	Read-only	The cost to the root bridge as advertised by the designated bridge that is connected to this port. This value is compared to the Root Path Cost field in received bridge PDUs.
snIfStpPortDesignatedRoot brcdIp.1.1.3.5.2.1.10 Syntax: BridgeId	Read-only	Shows the unique ID of the root bridge. The root bridge is recorded as the root in the configuration BPDUs, which are transmitted by the designated bridge for the segment to which the port is attached.
snIfStpPortDesignatedBridge brcdIp.1.1.3.5.2.1.11 Syntax: BridgeId	Read-only	Shows the ID of the designated bridge. The designated bridge is the device that connects the network segment to the root bridge.
snIfStpPortDesignatedPort brcdIp.1.1.3.5.2.1.12 Syntax: Octet String	Read-only	Shows the ID of the port on the designated bridge that connects to the root bridge on the network. This object has two octets.
snIfStpPortAdminRstp brcdIp.1.1.3.5.2.1.13 Syntax: TruthVal	Read-write	Enables or disables RSTP of a port which is a member of a VLAN. If the VLAN is not operating in RSTP, this object will return FALSE(2) and this object is not writable.
snIfStpPortProtocolMigration brcdIp.1.1.3.5.2.1.14 Syntax: TruthVal	Read-write	When operating in RSTP (version 2) mode, writing TRUE(1) to this object forces this port to transmit RSTP BPDUs. Any other operation on this object has no effect and it always returns FALSE(2) when read.
snIfStpPortAdminEdgePort brcdIp.1.1.3.5.2.1.15	Read-write	The administrative value of the edge port parameter. A value of TRUE(1) indicates that this port should be assumed as an edge port and a

Name, OID, and syntax	Access	Description
Syntax: TruthVal		value of FALSE(2) indicates that this port should be assumed as a non-edge port.
snIfStpPortAdminPointToPoint brcdIp.1.1.3.5.2.1.16 Syntax: TruthVal	Read-write	The administrative point-to-point status of the LAN segment attached to this port. A value of TRUE(1) indicates that this port should always be treated as if it is connected to a point-to-point link. A value of FALSE(2) indicates that this port should be treated as having a shared media connection.
snIfStpOperPathCost brcdIp.1.1.3.5.2.1.17 Syntax: Integer	Read-only	Shows the value of dot1dStpPortPathCost, which is the port's path cost of paths towards the spanning tree root which include this port. 802.1D-1990 recommends that the default value of this parameter be in inverse proportion to the speed of the attached LAN. Reading value zero indicates an unknown path cost value because the port speed cannot be determined due to the speed auto sense in progress or the port link is down. Valid values: 0 - 200000000.
snIfStpPortRole brcdIp.1.1.3.5.2.1.18 Syntax: Integer	Read-only	The STP or RSTP port role: • unknown(0) • alternate(1) • root(2) • designated(3) • backupRole(4) • disabledRole(5)
snIfStpBPDUTransmitted brcdIp.1.1.3.5.2.1.19 Syntax: Counter32	Read-only	The STP or RSTP bridge protocol unit transmitted counter.
snIfStpBPDUReceived brcdIp.1.1.3.5.2.1.20 Syntax: Counter32	Read-only	The STP or RSTP bridge protocol unit received counter.
snIfRstpConfigBPDUReceived brcdIp.1.1.3.5.2.1.21 Syntax: Counter32	Read-only	The RSTP configuration bridge protocol unit received counter.
snIfRstpTCNBPDUReceived brcdIp.1.1.3.5.2.1.22 Syntax: Counter32	Read-only	The RSTP topology change notification bridge protocol unit received counter.
snIfRstpConfigBPDUTransmitted brcdIp.1.1.3.5.2.1.23 Syntax: Counter32	Read-only	The RSTP configuration bridge protocol unit transmitted counter.
snIfRstpTCNBPDUTransmitted brcdIp.1.1.3.5.2.1.24 Syntax: Counter32	Read-only	The RSTP topology change notification bridge protocol unit transmitted counter.

MRP MIB Definition

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MRP table

The following table contains information about Metro Ring Protocol (MRP) MIB objects.

Name, OID, and syntax	Access	Description
snMetroRingTable brcdIp.1.1.3.29.2.1	None	The MRP table.
snMetroRingVlanId brcdIp.1.1.3.29.2.1.1.1 Syntax: Integer32	None	Identifies a VLAN that controls the metro ring.
snMetroRingId brcdIp.1.1.3.29.2.1.1.2 Syntax: Integer32	None	The metro ring identifier.
snMetroRingConfigState brcdIp.1.1.3.29.2.1.1.3 Syntax: Integer	Read-write	The state of the metro ring.
snMetroRingRole brcdIp.1.1.3.29.2.1.1.4 Syntax: Integer	Read-write	Shows the metro ring role: • other(1) - None of the cases below. • master(2) - Device which originates RHP packets. • member(3) - Device which forwards RHP packets.
snMetroRingHelloTime brcdIp.1.1.3.29.2.1.1.5 Syntax: Integer32	Read-write	The time interval to periodically transmit Ring Health Protocol (RHP) in milliseconds.
snMetroRingPreforwardingTime brcdIp.1.1.3.29.2.1.1.6 Syntax: Integer32	Read-write	The time interval that a metro ring stays in the preforwarding state before changing to the forwarding state (in milliseconds).
snMetroRingPort1 brcdIp.1.1.3.29.2.1.1.7 Syntax: InterfaceIndex	Read-write	The ifIndex value of port 1 to configure into the metro ring.
snMetroRingPort2 brcdIp.1.1.3.29.2.1.1.8 Syntax: InterfaceIndex	Read-write	The ifIndex value of port 2 to configure into the metro ring.
snMetroRingName brcdIp.1.1.3.29.2.1.1.9 Syntax: DisplayString	Read-write	The description of the metro ring.
snMetroRingRowStatus brcdIp.1.1.3.29.2.1.1.10 Syntax: Integer	Read-write	Creates and deletes rows in the table, and controls whether they are used. Values are: • delete(3) - Deletes a row. • create(4) - Creates a new row.

Name, OID, and syntax	Access	Description
		If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows disappear immediately. The following values can be returned on reads: • noSuchName - No such row • other(1) - Some other cases. • valid(2) - The row exists and is valid.
snMetroRingOperState brcdIp.1.1.3.29.2.1.1.11 Syntax: Integer	Read-only	Shows the metro ring operational state. Valid values:other(1), enabled(2), disabled(3)
snMetroRingTopoGroupId brcdIp.1.1.3.29.2.1.1.12 Syntax: Integer32	Read-only	The ID of the topology group that controls the metro ring.
snMetroRingRHPTransmitted brcdIp.1.1.3.29.2.1.1.13 Syntax: Counter32	Read-only	The Ring Health Protocol (RHP) transmitted counter.
snMetroRingRHPReceived brcdIp.1.1.3.29.2.1.1.14 Syntax: Counter32	Read-only	The Ring Health Protocol (RHP) received counter.
snMetroRingStateChanged brcdIp.1.1.3.29.2.1.1.15 Syntax: Counter32	Read-only	The counter for the number of times the ring state has changed.
snMetroRingTCRBPDUReceived brcdIp.1.1.3.29.2.1.1.16 Syntax: Counter32	Read-only	The topology change protocol received counter.
snMetroRingPriPort brcdIp.1.1.3.29.2.1.1.17 Syntax: InterfaceIndex	Read-only	The ifIndex value of the primary port.
snMetroRingSecPort brcdIp.1.1.3.29.2.1.1.18 Syntax: InterfaceIndex	Read-only	The ifIndex value of the secondary port.
snMetroRingPriPortState brcdIp.1.1.3.29.2.1.1.19 Syntax: Integer	Read-only	The state of the metro ring primary port: • other(1) - None of the cases below. • preforwarding(2) - Port transmits RHP packets; port does not transmit data packets. • forwarding(3) - Port transmits RHP and data packets. • blocking(4) - Port receives RHP packets; does not receive data packets. • disabled(5) - Port is disabled from the metro ring.
snMetroRingSecPortState brcdIp.1.1.3.29.2.1.1.20 Syntax: Integer	Read-only	The state of the metro ring secondary port: • other(1) - None of the cases below. • preforwarding(2) - Port transmits RHP packets; port does not transmit data packets.

Name, OID, and syntax	Access	Description
		• forwarding(3) - Port transmits RHP and data packets. • blocking(4) - Port receives RHP packets; does not receive data packets. • disabled(5) - Port is disabled from the metro ring.
snMetroRingPriPortType brcdIp.1.1.3.29.2.1.1.21 Syntax: Integer	Read-only	The metro ring primary port type: • other(1) - None of the cases below. • regular(2) - Port is configured to operate on a single ring. • tunnel(3) - Port is configured to operate on multiple rings.
snMetroRingSecPortType brcdIp.1.1.3.29.2.1.1.22 Syntax: Integer	Read-only	The metro ring secondary port type: • other(1) - None of the cases below. • regular(2) - Port is configured to operate on a single ring. • tunnel(3) - Port is configured to operate on multiple rings.
snMetroRingPriPortActivePort brcdIp.1.1.3.29.2.1.1.23 Syntax: InterfaceIndex	Read-only	The ifIndex value of the active primary port.
snMetroRingSecPortActivePort brcdIp.1.1.3.29.2.1.1.24 Syntax: InterfaceIndex	Read-only	The ifIndex value of the active secondary port.

Trunk Port Configuration Group

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Trunk port configuration group

The trunk group feature allows you to manually configure multiple high-speed, load-sharing links between two switches or routers or between a switch and router and a server.

NOTE

The Trunk port configuration group obsoletes Trunk port configuration group. For more information on LAG MIBs, refer to Trunk Port Configuration Group on page 239.

The following objects contain configuration of trunk port memberships.

Name, OID, and syntax	Access	Description
snTrunkTable brcdIp.1.1.3.6.1	None	The trunk port table. A specific snTrunkTable consists of a number of trunk port masks.
snTrunkIndex brcdIp.1.1.3.6.1.1.1 Syntax: Integer32	Read-only	Shows the number of the trunk port entries that can be configured. Valid values: 1 - 64
snTrunkPortMask brcdIp.1.1.3.6.1.1.2 Syntax: PortMask	Read-write	Shows the trunk port membership of the switch.
snTrunkType brcdIp.1.1.3.6.1.1.3 Syntax: Integer	Read-write	Indicates if the trunk port is connected to a switch or a server: • switch(1) • server(2)

Multi-slot trunk port table

The following table applies to multi-slot trunk ports. The objects show the ports that are members of a trunk group and they apply to all devices unless otherwise specified in their descriptions.

Name, OID, and syntax	Access	Description
snMSTrunkTable brcdIp.1.1.3.6.2	None	The multi-slot trunk port configuration table.
snMSTrunkPortIndex brcdIp.1.1.3.6.2.1.1 Syntax: Integer32	Read-only	Identifies the port that is the primary port of a trunk group. For a module with Gigabit ports, the primary port is port 1, 3, 5, or 7. For a module with 10/100 ports, the primary port is port 1, 5, 9, 13, 17, or 21.

Name, OID, and syntax	Access	Description
snMSTrunkPortList brcdIp.1.1.3.6.2.1.2 Syntax: Octet String	Read-write	Contains a list of port indices that are members of a trunk group. Each port index is a 16-bit integer in big-endian order. The first port index must be the index of the primary port.
snMSTrunkType brcdIp.1.1.3.6.2.1.3 Syntax: Integer	Read-write	Specifies if the ports are connected to a switch or a server: • switch(1) • server(2)
snMSTrunkRowStatus brcdIp.1.1.3.6.2.1.4 Syntax: Integer	Read-write	Creates, deletes, or modifies an entry in this table: • invalid(1) • valid(2) • delete(3) • create(4) • modify(5)

The following table contains the objects for multi-slot trunk port configuration iftable.

Name, OID, and syntax	Access	Description
snMSTrunkIfTable brcdIp.1.1.3.6.3	None	The multi-slot trunk port configuration iftable.
snMSTrunkIfIndex brcdIp.1.1.3.6.3.1.1 Syntax: Integer32	Read-only	Identifies the port that is the primary port (IfIndex) of a trunk group. For a module with Gigabit ports, the primary port is port 1, 3, 5, or 7. For a module with 10/100 ports, the primary port is port 1, 5, 9, 13, 17, or 21.
snMSTrunkIfList brcdIp.1.1.3.6.3.1.2 Syntax: Octet String	Read-write	Contains a list of port indices that are members of a trunk group. Each port index is a 16-bit integer in big-endian order. The first port index must be the index of the primary port (ifindex).
snMSTrunkIfType brcdIp.1.1.3.6.3.1.3 Syntax: Integer	Read-write	Specifies if the ports are connected to a switch or a server: • switch(1) • server(2)
snMSTrunkIfRowStatus brcdIp.1.1.3.6.3.1.4 Syntax: Integer	Read-write	Creates, deletes, or modifies an entry: • invalid(1) • valid(2) • delete(3) • create(4) • modify(5)

Switch configuration summary group

The following object applies to the Brocade FastIron devices.

Name, OID, and syntax	Access	Description
snSwSummaryMode brcdIp.1.1.3.7.1 Syntax: Integer	Read-write	Indicates whether or not the switch configuration summary is enabled: • disabled(0) • enabled(1) Default: disabled(0)

RADIUS Group

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RADIUS general group

You can use a Remote Authentication Dial In User Service (RADIUS) server to secure the following types of access to the switch or router:

- Telnet access
- SSH access
- Web management access
- Access to the Privileged EXEC level and CONFIG level of the CLI

The following objects provide information on RADIUS authentication and apply to all devices.

Name, OID, and syntax	Access	Description
snRadiusSNMPAccess brcdIp.1.1.3.12.1.1 Syntax: Integer	Read-only	Indicates if the RADIUS group MIB objects can be accessed by an SNMP manager: • disabled(0) - All RADIUS group MIB objects return a "general error". • enabled(1) Default: disabled(0)
snRadiusEnableTelnetAuth brcdIp.1.1.3.12.1.2 Syntax: Integer	Read-write	Indicates if Telnet authentication as specified by the RADIUS general group object is enabled: • disabled(0) • enabled(1) Default: disabled(0)
snRadiusRetransmit brcdIp.1.1.3.12.1.3 Syntax: Integer	Read-write	Indicates the number of authentication query retransmissions that can be sent to the RADIUS server. Valid values: 1 - 5 Default: 3
snRadiusTimeOut brcdIp.1.1.3.12.1.4 Syntax: Integer	Read-write	Specifies the number of seconds to wait for an authentication reply from the RADIUS server. Each unit is one second. Valid values: 1 - 60 Default: 3
snRadiusDeadTime brcdIp.1.1.3.12.1.5 Syntax: Integer	Read-write	Specifies the RADIUS server dead time. Each unit is one minute. Valid values: 0 - 5 Default: 3
snRadiusKey brcdIp.1.1.3.12.1.6 Syntax: DisplayString	Read-write	Shows the authentication key as encrypted text. This object can have up to 64 characters. A write operation can only be done if the SET request

Name, OID, and syntax	Access	Description
		uses SNMPv3 with data encrypted using a privacy key.
snRadiusLoginMethod brcdIp.1.1.3.12.1.7 Syntax: Octet String	Read-write	Shows the sequence of authentication methods for the RADIUS server. Each octet represents a method for authenticating the user at login. Each octet can have one of the following values: • enable(1) - Authenticate by the "Enable" password for the command line interface. • radius(2) - Authenticate by requesting the RADIUS server. • local(3) - Authenticate by local user account table. • line(4) - Authenticate by the Telnet password. • tacplus(5) - Authenticate by requesting the TACACS Plus server. • none(6) - Do not authenticate. • tacacs(7) - Authenticate by requesting the TACACS server. Setting a zero length octet string invalidates all previous authentication methods.
snRadiusEnableMethod brcdIp.1.1.3.12.1.8 Syntax: Octet String	Read-write	Shows the sequence of authentication methods for the RADIUS server. Each octet represents a method for authenticating the user after login, as the user enters the privilege mode of the command line interface. Each octet can have one of the following values: • enable(1) - Authenticate by the "Enable" password for the command line interface. • radius(2) - Authenticate by requesting the RADIUS server. • local(3) - Authenticate by local user account table. • line(4) - Authenticate by the Telnet password. • tacplus(5) - Authenticate by requesting the TACACS Plus server. • none(6) - Do not authenticate. • tacacs(7) - Authenticate by requesting the TACACS server. Setting a zero length octet string invalidates all previous authentication methods.
snRadiusWebServerMethod brcdIp.1.1.3.12.1.9 Syntax: Octet String	Read-write	Shows the sequence of authentication methods. Each octet represents a method for authenticating the user who is accessing the Web server. Each octet can have one of the following values: • enable(1) - Authenticate by the "Enable" password for the command line interface.

Name, OID, and syntax	Access	Description
		• radius(2) - Authenticate by requesting the RADIUS server. • local(3) - Authenticate by local user account table. • line(4) - Authenticate by the Telnet password. • tacplus(5) - Authenticate by requesting the TACACS Plus server. • none(6) - Do not authenticate. • tacacs(7) - Authenticate by requesting the TACACS server. Setting a zero length octet string invalidates all previous authentication methods.
snRadiusSNMPServerMethod brcdIp.1.1.3.12.1.10 Syntax: Octet String	Read-write	Shows the sequence of authentication methods. Each octet represents a method to authenticate the user who is accessing the SNMP server. Each octet can have one of the following values: • enable(1) - Authenticate by the "Enable" password for the command line interface. • radius(2) - Authenticate by requesting the RADIUS server. • local(3) - Authenticate by local user account table. • line(4) - Authenticate by the Telnet password. • tacplus(5) - Authenticate by requesting the TACACS Plus server. • none(6) - Do not authenticate. • tacacs(7) - Authenticate by requesting the TACACS server. Setting a zero length octet string invalidates all previous authentication methods.

RADIUS server table (IPv4)

The following objects provide information on the RADIUS server and they apply to all IPv4 devices. Configure **enablesnmp config-radius** command along with other RADIUS configurations to populate the objects of RADIUS server table (IPv4).

Name, OID, and syntax	Access	Description
snRadiusServerTable brcdIp.1.1.3.12.2	None	RADIUS server table.
snRadiusServerIp brcdIp.1.1.3.12.2.1.1 Syntax: IpAddress	Read-only	Shows the RADIUS server IP address.
snRadiusServerAuthPort brcdIp.1.1.3.12.2.1.2 Syntax: Integer32	Read-write	Shows the UDP port number for authentication. Displays the default when the value is set to zero. Default: 1812

Name, OID, and syntax	Access	Description
snRadiusServerAcctPort brcdIp.1.1.3.12.2.1.3 Syntax: Integer32	Read-write	Shows the UDP port number used for accounting. Displays the default when the value is set to zero. Default: 1813
snRadiusServerRowStatus brcdIp.1.1.3.12.2.1.4 Syntax: Integer	Read-write	Creates or deletes a RADIUS server table entry: • other(1) • valid(2) • delete(3) • create(4)
snRadiusServerRowKey brcdIp.1.1.3.12.2.1.5 Syntax: DisplayString	Read-write	Shows the authentication key, displayed as encrypted text. Valid values: Up to 64 characters
snRadiusServerUsage brcdIp.1.1.3.12.2.1.6 Syntax: Integer	Read-write	Allows this server to be dedicated for a particular AAA activity: • default(1) • authenticationOnly(2) • authorizationOnly(3) • accountingOnly(4)

TACACS Group

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TACACS general MIBs

The Terminal Access Controller Access Control System (TACACS) or security protocols can be used to authenticate the following types of access to devices:

- Telnet access
- SSH access
- Access to management functions
- Web management access
- Access to the Privileged EXEC level and CONFIG level of the CLI

The TACACS and protocols define how authentication, authorization, and accounting (AAA) information is sent between a device and an authentication database on a TACACS server.

The following objects provide information on TACACS authentication and apply to all devices.

Name, OID, and syntax	Access	Description
snTacacsRetransmit brcdIp.1.1.3.13.1.1 Syntax: Integer	Read-write	Shows the number of authentication query retransmissions to the TACACS server. Valid values: 1 - 5 Default: 3
snTacacsTimeOut brcdIp.1.1.3.13.1.2 Syntax: Integer	Read-write	Specifies how many seconds to wait for an authentication reply from the TACACS server. Valid values: 0 - 15 Default: 3 seconds
snTacacsDeadTime brcdIp.1.1.3.13.1.3 Syntax: Integer	Read-write	Specifies the TACACS server dead time in minutes. Valid values: 0 - 5 Default: 3 minutes
snTacacsKey brcdIp.1.1.3.13.1.4 Syntax: DisplayString	Read-write	Authentication key displayed as encrypted text. Valid values: Up to 64 characters A write operation can only be done if the SET request uses SNMPv3 with data encrypted using a privacy key.
snTacacsSNMPAccess brcdIp.1.1.3.13.1.5 Syntax: Integer	Read-only	Indicates whether the TACACS group MIB objects can be accessed by an SNMP manager: • disabled(0) - All TACACS group MIB objects return "general error". • enabled(1) Default: disabled(0)

TACACS server table (IPv4)

The following objects provide information on the TACACS server. They apply to all IPv4 devices. Configure **enablesnmp config-tacacs** command along with other TACACS configurations to populate the objects of TACACS server table (IPv4).

Name, OID, and syntax	Access	Description
snTacacsServerTable brcdIp.1.1.3.13.2	None	TACACS server table.
snTacacsServerIp brcdIp.1.1.3.13.2.1.1 Syntax: IpAddress	Read-only	Shows the TACACS server IP address.
snTacacsServerAuthPort brcdIp.1.1.3.13.2.1.2 Syntax: Integer32	Read-write	Specifies the UDP port used for authentication. Default: 49
snTacacsServerRowStatus brcdIp.1.1.3.13.2.1.3 Syntax: Integer	Read-write	Creates or deletes a TACACS server table entry: • other(1) • valid(2) • delete(3) • create(4)
snTacacsServerRowKey brcdIp.1.1.3.13.2.1.4 Syntax: DisplayString	Read-write	Authentication key displayed as encrypted text. Valid values: Up to 64 characters
snTacacsServerUsage brcdIp.1.1.3.13.2.1.5 Syntax: Integer	Read-write	Allows this server to be dedicated to a particular AAA activity: • default(1) • authenticationOnly(2) • authorizationOnly(3) • accountingOnly(4)

802.1X Authentication MIB

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802.1X authentication scalar group types

The 802.1X authentication scalar group provides information that is displayed in the outputs of the following CLI commands:

- **show dot1x**
- **show dot1x configuration all**
- **show dot1x configuration ethernet** *port*

NOTE
The following sections present the SNMP MIB objects for 802.1X authentication. These MIB objects are supported on the Brocade ICX devices.

Name, OID, and syntax	Access	Description
brcdDot1xAuthGlobalConfigQuietperiod brcdIp.1.1.3.38.1.1 Syntax: Unsigned32	Read-write	If the Brocade device is unable to authenticate a client, this object shows the amount of time, in seconds, the Brocade device waits before it retries to authenticate that client. The allowed range is from 1 through 4294967294. Default: 60 seconds
brcdDot1xAuthGlobalConfigTxPeriod brcdIp.1.1.3.38.1.2 Syntax: Unsigned32	Read-write	When a client does not return an Extensible Authentication Protocol (EAP) response or identity frame, this object shows the amount of time, in seconds, the Brocade device waits before retransmitting the EAP-request or identity frame to the client. The allowed range is from 1 through 4294967294. Default: 30 seconds
brcdDot1xAuthGlobalConfigSuppTimeOut brcdIp.1.1.3.38.1.3 Syntax: Unsigned32	Read-write	When a supplicant (client) does not respond to an EAP-request frame, this object shows the amount of time, in seconds, before the Brocade device retransmits the frame. The allowed range is from 1 through 4294967294. Default: 30 seconds
brcdDot1xAuthGlobalConfigAuthServerTimeOut brcdIp.1.1.3.38.1.4 Syntax: Unsigned32	Read-write	When the authentication server (RADIUS) does not respond to a message sent from the client, this object shows the amount of time, in

Name, OID, and syntax	Access	Description
		seconds, before the Brocade device retransmits the message. The allowed range is from 1 through 4294967294. Default: 30 seconds
brcdDot1xAuthGlobalConfigMaxReq brcdIp.1.1.3.38.1.5 Syntax: Unsigned32	Read-write	The number of times the Brocade device retransmits an EAP-request or identity request frame if it does not receive an EAP-response or identity response frame from a client. Default: 2 times
brcdDot1xAuthGlobalConfigReAuthMax brcdIp.1.1.3.38.1.6 Syntax: Unsigned32	Read-write	The number of reauthentication attempts that are permitted before the port becomes unauthorized. Default: 2 times
brcdDot1xAuthGlobalConfigReAuthPeriod brcdIp.1.1.3.38.1.7 Syntax: Unsigned32	Read-write	How often (number of seconds) the device automatically reauthenticates clients when periodic reauthentication is enabled. The allowed range is from 1 through 4294967294. Default: 3600 seconds
brcdDot1xAuthGlobalConfigProtocolVersion brcdIp.1.1.3.38.1.8 Syntax: Unsigned32	Read-only	The EAP protocol version.
brcdDot1xAuthGlobalConfigTotalPortsEnabled brcdIp.1.1.3.38.1.9 Syntax: Unsigned32	Read-only	The total number of ports that have 802.1x enabled.
brcdDot1xAuthGlobalConfigReauthStatus brcdIp.1.1.3.38.1.10 Syntax: EnabledStatus	Read-write	Enables or disables reauthentication globally. Default: disabled
brcdDot1xAuthGlobalConfigMacSessionMaxAge brcdIp.1.1.3.38.1.11 Syntax: Unsigned32	Read-write	The maximum age of the 802.1x MAC session. A value from 0 through 65535.
brcdDot1xAuthGlobalConfigNoAgingDeniedSessions brcdIp.1.1.3.38.1.12 Syntax: EnabledStatus	Read-write	Enables or disables **mac-session-no aging** for denied sessions. Default: disabled
brcdDot1xAuthGlobalConfigNoAgingPermittedSessions brcdIp.1.1.3.38.1.13 Syntax: EnabledStatus	Read-write	Enables or disables **mac-session-no aging** for permitted sessions. Default: disabled
brcdDot1xAuthGlobalConfigAuthFailAction brcdIp.1.1.3.38.1.14 Syntax: Integer	Read-write	Configures the action to take when the authentication fails: • blockTraffic(1) • restrictedVlan(2)

802.1X port statistics table

The following table contains Extensible Authentication Protocol (EAP) information specific to interfaces. EAP is an authentication framework that provides common functions and negotiation of authentication methods called EAP methods (for example, EAP-MD5, EAP-TLS, and EAP-GTC). The statistics provided in this table are equivalent to those provided in the output of the following commands:

- **show dot1x statistics ethernet** *port*
- **show dot1x statistics all**

Name, OID, and syntax	Access	Description
brcdDot1xAuthPortStatRxEAPFrames brcdIp.1.1.3.38.2.1.1.1 Syntax: Counter32	Read-only	The total number of EAP over LAN (EAPOL) frames received on the port. The frames received include EAP frames.
brcdDot1xAuthPortStatTxEAPFrames brcdIp.1.1.3.38.2.1.1.2 Syntax: Counter32	Read-only	The number of EAPOL frames transmitted on the port.
brcdDot1xAuthPortStatRxEAPStartFrames brcdIp.1.1.3.38.2.1.1.3 Syntax: Counter32	Read-only	The number of EAPOL-Start frames received on the port.
brcdDot1xAuthPortStatRxEAPLogOffFrames brcdIp.1.1.3.38.2.1.1.4 Syntax: Counter32	Read-only	The number of EAPOL-Logoff frames received on the port.
brcdDot1xAuthPortStatRxEAPRespIdFrames brcdIp.1.1.3.38.2.1.1.5 Syntax: Counter32	Read-only	The number of EAP frames other than response or identity frames received on the port.
brcdDot1xAuthPortStatTxEAPReqIdFrames brcdIp.1.1.3.38.2.1.1.6 Syntax: Counter32	Read-only	The number of EAP-request or -identity frames transmitted on the port.
brcdDot1xAuthPortStatRxEAPInvalidFrames brcdIp.1.1.3.38.2.1.1.7 Syntax: Counter32	Read-only	The number of invalid EAPOL frames received on the port.
brcdDot1xAuthPortStatEAPLastFrameVersionR x brcdIp.1.1.3.38.2.1.1.8 Syntax: Unsigned32	Read-only	The version of the last EAP frame received.
brcdDot1xAuthPortStatRxEAPRespOrIdFrames brcdIp.1.1.3.38.2.1.1.9 Syntax: Counter32	Read-only	The number of received EAP response or identity frames on the port.
brcdDot1xAuthPortStatRxLengthErrorFrame brcdIp.1.1.3.38.2.1.1.10 Syntax: Integer32	Read-only	The length of the EAP error frame received.
brcdDot1xAuthPortStatTxRequestFrames brcdIp.1.1.3.38.2.1.1.11 Syntax: Counter32	Read-only	The number of transmitted EAP request frames on the port.
brcdDot1xAuthPortStatLastEAPFrameSource brcdIp.1.1.3.38.2.1.1.12 Syntax: MacAddress	Read-only	The MAC address of the source from which the last EAP frame was received.

802.1X port configuration table

The following table contains configuration parameters specific to interfaces. The information in this table is equivalent to the output of the following CLI commands:

- **show dot1x port-control auto**
- **show dot1x port-control force-authorized**
- **show dot1x port-control force-unauthorized**
- **show dot1x configuration ethernet** *port*

Name, OID, and syntax	Access	Description
brcdDot1xAuthPortConfigPortControl brcdIp.1.1.3.38.3.1.1.1 Syntax: Integer	Read-write	The control type configured for the interface: • forceUnauthorized(1) - The controlled port is placed. unconditionally in the unauthorized state. • controlauto(2) - The controlled port is unauthorized until authentication takes place between the client and the RADIUS server. • forceAuthorized(3) - The controlled port is placed unconditionally in the authorized state.
brcdDot1xAuthPortConfigFilterStrictSec brcdIp.1.1.3.38.3.1.1.2 Syntax: EnabledStatus	Read-write	Enables or disables filter strict security on the interface: • enabled(1) • disabled(2)
brcdDot1xAuthPortConfigDot1xOnPort brcdIp.1.1.3.38.3.1.1.3 Syntax: EnabledStatus	Read-write	Enables or disables 802.1x on an interface.

802.1x port state table

The following table contains the port-specific parameters indicating the dynamic state that the interface is in. The information in this table is equivalent to the information in the output of the **show dot1x configuration***port* command.

Name, OID, and syntax	Access	Description
brcdDot1xAuthPortStateMacSessions brcdIp.1.1.3.38.4.1.1.1 Syntax: Unsigned32	Read-only	Number of 802.1x MAC sessions per port.
brcdDot1xAuthPortStateAuthMacSessions brcdIp.1.1.3.38.4.1.1.2 Syntax: Unsigned32	Read-only	Number of authorized MAC sessions per port.
brcdDot1xAuthPortStateOriginalPVID brcdIp.1.1.3.38.4.1.1.3 Syntax: Unsigned32	Read-only	The PVID (port's default VLAN ID) that was originally configured on the port (not dynamically assigned).
brcdDot1xAuthPortStatePVIDMacTotal brcdIp.1.1.3.38.4.1.1.4 Syntax: Unsigned32	Read-only	The number of devices transmitting untagged traffic on the port's PVID.

Name, OID, and syntax	Access	Description
brcdDot1xAuthPortStatePVIDMacAuthorized brcdIp.1.1.3.38.4.1.1.5 Syntax: Unsigned32	Read-only	The number of devices transmitting untagged traffic on the port's PVID as a result of dynamic VLAN assignment.
brcdDot1xAuthPortStatePortVlanState brcdIp.1.1.3.38.4.1.1.6 Syntax: Integer	Read-only	The current VLAN state the port is in: • radius(1) - The port PVID was dynamically assigned by a RADIUS server. • restricted(2) - The port PVID is the restricted VLAN. • normal(3) - The port PVID is not set by a RADIUS server, nor is it the restricted VLAN.
brcdDot1xAuthPortStatePVID brcdIp.1.1.3.38.4.1.1.7 Syntax: Unsigned32	Read-only	The 802.1X authentication default port VLAN ID.
brcdDot1xAuthPortStateRestrictPVID brcdIp.1.1.3.38.4.1.1.8 Syntax: Unsigned32	Read-only	The restricted PVID.
brcdDot1xAuthPortStateRadiusAssignPVID brcdIp.1.1.3.38.4.1.1.9 Syntax: Unsigned32	Read-only	The RADIUS- assigned PVID.

802.1X MAC sessions table

The following table contains information about the 802.1X MAC sessions. The information in this table is equivalent to the information in the output of the following CLI commands:

- **show dot1x mac-sessions**
- **show dot1x mac-sessions ip-address**

Name, OID, and syntax	Access	Description
brcdDot1xAuthMacSessionAuthMac brcdIp.1.1.3.38.5.1.1.1 Syntax: MacAddress	NA	MAC address of the client, which represents the user name used for RADIUS authentication.
brcdDot1xAuthMacSessionUserName brcdIp.1.1.3.38.5.1.1.2 Syntax: SnmpAdminString	Read-only	User name of the 802.1x MAC session.
brcdDot1xAuthMacSessionIncomingVlanId brcdIp.1.1.3.38.5.1.1.3 Syntax: VlanId	Read-only	Incoming VLAN ID.
brcdDot1xAuthMacSessionCurrentVlanId brcdIp.1.1.3.38.5.1.1.4 Syntax: VlanId	Read-only	The VLAN to which the port is currently assigned.
brcdDot1xAuthMacSessionAccessStatus brcdIp.1.1.3.38.5.1.1.5 Syntax: Integer	Read-only	Authentication state of the 802.1X MAC session: • permit(1) • blocked(2)

Name, OID, and syntax	Access	Description
		• restrict(3) • init(4)
brcdDot1xAuthMacSessionMaxAge brcdIp.1.1.3.38.5.1.1.6 Syntax: Unsigned32	Read-only	Maximum age of the MAC session in which the MAC address is authenticated.
brcdDot1xAuthMacSessionAddrType brcdIp.1.1.3.38.5.1.1.7 Syntax: InetAddressType	Read-only	IP address type of the client (supplicant): • ipv4(1) • ipv6(2) Default: ipv4(1)
brcdDot1xAuthMacSessionIpAddr brcdIp.1.1.3.38.5.1.1.8 Syntax: InetAddress	Read-only	The IP address of the client.
brcdDot1xAuthMacSessionAging brcdIp.1.1.3.38.5.1.1.9 Syntax: Integer	Read-only	The type of aging being performed: • software(1) • hardware(2) • ena(3) - Aging has not started. • notapplicable(4) - Fake 802.1x MAC session.

802.1x authentication global administration

The following scalar object enables or disables 802.1X authentication globally.

Name, OID, and syntax	Access	Description
brcdDot1xAuthGlobalAdminConfigStatus brcdIp.1.1.3.38.6.1 Syntax: EnabledStatus	Read-write	Enables or disables 802.1x authentication globally. Default: disabled

DHCP Gateway List

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DHCP gateway list table

The following objects provide information on Dynamic Host Configuration Protocol (DHCP) gateways.

Name, OID, and syntax	Access	Description
snDhcpGatewayListTable brcdIp.1.1.3.8.1	None	A table of DHCP gateway addresses.
snDhcpGatewayListId brcdIp.1.1.3.8.1.1.1 Syntax: Integer	Read-only	Shows the ID for a DHCP gateway. Valid values: 1 - 32
snDhcpGatewayListAddrList brcdIp.1.1.3.8.1.1.2 Syntax: Octet String	Read-write	Lists the DHCP gateway addresses in each DHCP gateway list. This list contains 1 to 8 IP addresses represented by octet strings. This object can have 4 to 32 octets.
snDhcpGatewayListRowStatus brcdIp.1.1.3.8.1.1.3 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Delete the row. • create(4) - Create a new row. • modify(5) - Modify an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

DNS group (IPv4)

The Domain Name System (DNS) resolver feature allows you to use a host name to perform Telnet, ping, and traceroute. You can also define a DNS domain on a Layer 2 Switch or Layer 3 Switch and thereby recognize all hosts within that domain.

The following objects provide information on DNS. They apply to all IPv4 devices.

Name, OID, and syntax	Access	Description
snDnsDomainName brcdIp.1.1.3.9.1 Syntax: DisplayString	Read-write	Shows the DNS domain name. This object can have up to 80 characters.
snDnsGatewayIpAddrList brcdIp.1.1.3.9.2 Syntax: Octet String	Read-write	Shows the DNS gateway IP addresses. This list contains up to four IP addresses, represented by octet strings. This object has 16 octets.

IPv4 and IPv6 MIB table for DNS servers

The DNS address table lists the IPv4 and IPv6 DNS addresses. These objects apply to the Brocade FastIron devices.

NOTE

The snDnsDomainName and snDnsGatewayIpAddrList tables have been deprecated and replaced by fdryDnsDomainNameTable and fdryDnsServerAddressTable respectively.The fdryDnsDomainNameTable and fdryDnsServerAddressTable combine IPv4 and IPv6 DNS Servers.

Name, OID, and syntax	Access	Description
fdryDnsServerTable brcdIp.1.1.3.34.2.1	None	The DNS address list table that lists the IPv4 and IPv6 DNS addresses.
fdryDnsServerAddrType brcdIp.1.1.3.34.2.1.1.1 Syntax: InetAddressType	None	The DNS IP address type: • ipv4(1) • ipv6(2) Default: ipv4(1)
fdryDnsServerIndex brcdIp.1.1.3.34.2.1.1.2 Syntax: Unsigned32	None	The index to the DNS address table. Up to four DNS IP addresses are supported for each protocol (IPv4 and IPv6).
fdryDnsServerAddr brcdIp.1.1.3.34.2.1.1.3 Syntax: InetAddress	Read-create	The DNS IP address.
fdryDnsServerRowStatus brcdIp.1.1.3.34.2.1.1.4 Syntax: RowStatus	Read-create	This variable is used to create, modify, or delete a row in this table. When a row in this table is in active(1) state, no objects in that row can be modified except for this object.

MAC Filters

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MAC filters

MAC layer filtering enables you to build access lists based on MAC layer headers in the Ethernet or IEEE 802.3 frame. You can filter on the source and destination MAC addresses as well as other information, such as the EtherType, LLC1 DSAP or SSAP numbers, and a SNAP EtherType. The filters apply to incoming traffic only.

MAC filter table

The objects in the following table provide information on MAC filters.

Name, OID, and syntax	Access	Description
snMacFilterTable brcdIp.1.1.3.10.1	None	The MAC filter table.
snMacFilterIndex brcdIp.1.1.3.10.1.1.1 Syntax: Integer32	Read-only	The table index for a filter entry.
snMacFilterAction brcdIp.1.1.3.10.1.1.2 Syntax: Integer	Read-write	Indicates what action is to be taken if the MAC packet matches this filter: • deny(0) • permit(1)
snMacFilterSourceMac brcdIp.1.1.3.10.1.1.3 Syntax: MAC address	Read-write	Shows the source MAC address.
snMacFilterSourceMask brcdIp.1.1.3.10.1.1.4 Syntax: MAC address	Read-write	Shows the source MAC subnet mask.
snMacFilterDestMac brcdIp.1.1.3.10.1.1.5 Syntax: MAC address	Read-write	Shows the destination MAC address.
snMacFilterDestMask brcdIp.1.1.3.10.1.1.6 Syntax: MAC address	Read-write	Shows the destination MAC subnet mask.
snMacFilterOperator brcdIp.1.1.3.10.1.1.7 Syntax: Integer	Read-write	Indicates the type of comparison to perform: • equal(0) • notEqual(1) • less(2) • greater(3)

Name, OID, and syntax	Access	Description
snMacFilterFrameType brcdIp.1.1.3.10.1.1.8 Syntax: Integer	Read-write	Indicates the frame type: • notUsed(0) • ethernet(1) • LLC(2) • snap(3)
snMacFilterFrameTypeNum brcdIp.1.1.3.10.1.1.9 Syntax: Integer	Read-write	Shows the frame type number. Valid values: 0 - 65535 0 means that this object is not applicable.
snMacFilterRowStatus brcdIp.1.1.3.10.1.1.10 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Delete the row. • create(4) - Create a new row. • modify(5) - Modify an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

MAC filter port access table

The following table shows information about the MAC filter port access.

NOTE
The snMacFilterPortAccessTable is deprecated and it has been replaced by MAC filter ifaccess table on page 259.

Name, OID, and syntax	Access	Description
snMacFilterPortAccessTable brcdIp.1.1.3.10.2	None	MAC filter port access table.
snMacFilterPortAccessPortIndex brcdIp.1.1.3.10.2.1.1 Syntax: Integer	Read-only	The port index. The port index value is from 1 through 42. For virtual router interfaces: • 15 - Slot number • 1 through 60 - Virtual router port, which is the port number.
snMacFilterPortAccessFilters brcdIp.1.1.3.10.2.1.2 Syntax: Octet String	Read-write	Shows the filter numbers of the ports. The first octet corresponds to the first filter number, the second octet to the second filter number, and so on.
snMacFilterPortAccessRowStatus brcdIp.1.1.3.10.2.1.3 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Delete the row. • create(4) - Create a new row.

Name, OID, and syntax	Access	Description
		• modify(5) - Modify an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

MAC filter ifaccess table

Name, OID, and syntax	Access	Description
snMacFilterIfAccessTable brcdIp.1.1.3.10.3	None	MAC filter port access table.
snMacFilterIfAccessPortIndex brcdIp.1.1.3.10.3.1.1 Syntax: InterfaceIndex	Read-only	The port or interface index.
snMacFilterIfAccessFilters brcdIp.1.1.3.10.3.1.2 Syntax: Octet String	Read-write	Shows the filter numbers of the ports. The first octet corresponds to the first filter number, the second octet to the second filter number, and so on.
snMacFilterIfAccessRowStatus brcdIp.1.1.3.10.3.1.3 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Delete the row. • create(4) - Create a new row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

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Port MAC security table

The following table shows the same information as the **show port security mac** command.

Name, OID, and syntax	Access	Description
snPortMacSecurityTable brcdIp.1.1.3.24.1.1.1	None	The port MAC security table.
snPortMacSecurityIfIndex brcdIp.1.1.3.24.1.1.1.1.1 Syntax: Unsigned32	Read-only	The ifIndex value (ID) of the Ethernet interface on which Port MAC security is enabled.
snPortMacSecurityResource brcdIp.1.1.3.24.1.1.1.1.2 Syntax: Integer	Read-only	Indicates how the MAC addresses on an interface are secured: • local(1) - Local resource was used. The interface secures at least one secure MAC address entry. Each interface can store up to 64 local resources. • shared(2) - Shared resource was used. When an interface has secured enough MAC addresses to reach its limit for local resources, it can secure additional MAC addresses by using global or shared resources.
snPortMacSecurityQueryIndex brcdIp.1.1.3.24.1.1.1.1.3 Syntax: Unsigned32	Read-only	An index for a MAC address entry that was secured for this interface.
snPortMacSecurityMAC brcdIp.1.1.3.24.1.1.1.1.4 Syntax: Integer	Read-only	The secured MAC address.
snPortMacSecurityAgeLeft brcdIp.1.1.3.24.1.1.1.1.5 Syntax: Unsigned32	Read-only	The number of minutes the MAC address will remain secure. A value of 0 indicates no aging is in effect.
snPortMacSecurityShutdownStatus brcdIp.1.1.3.24.1.1.1.1.6 Syntax: Integer	Read-only	Indicates if the interface has been shut down due to a security violation: • up(1) - The port is up. • down(2) - The port has been shut down.

Name, OID, and syntax	Access	Description
snPortMacSecurityShutdownTimeLeft brcdIp.1.1.3.24.1.1.1.1.7 Syntax: Unsigned32	Read-only	If the value of Port MAC security table is down(2), this object shows the number of seconds before it is enabled again. If the value is up(1), this object shows 0.
snPortMacSecurityVlanId brcdIp.1.1.3.24.1.1.1.1.8 Syntax: Unsigned32	Read-only	Shows the VLAN membership of this interface. This object shows a value from 1 through 65535.

Port MAC security module statistics table

The following table shows the same information as the **show port security statistics** *module* command.

Name, OID, and syntax	Access	Description
snPortMacSecurityModuleStatTable brcdIp.1.1.3.24.1.1.2	None	The port MAC security module statistics table that shows the port MAC security statistics for each module.
snPortMacSecurityModuleStatSlotNum brcdIp.1.1.3.24.1.1.2.1.1 Syntax: Integer	Read-only	The slot number of the port MAC security module.
snPortMacSecurityModuleStatTotalSecurityPorts brcdIp.1.1.3.24.1.1.2.1.2 Syntax: Unsigned32	Read-only	The total number of Ethernet interfaces on which MAC security is configured in this module.
snPortMacSecurityModuleStatTotalMACs brcdIp.1.1.3.24.1.1.2.1.3 Syntax: Unsigned32	Read-only	The total number of secure MAC addresses learned or configured in this module.
snPortMacSecurityModuleStatViolationCounts brcdIp.1.1.3.24.1.1.2.1.4 Syntax: Unsigned32	Read-only	The number of security violations that occurred in this module.
snPortMacSecurityModuleStatTotalShutdownPorts brcdIp.1.1.3.24.1.1.2.1.5 Syntax: Unsigned32	Read-only	The number of Ethernet interfaces in this module that were shut down due to security violations.

Port MAC security interface table

The following table shows the same information as the **show port security ethernet** *slot/port* command.

Name, OID, and syntax	Access	Description
snPortMacSecurityIntfContentTable brcdIp.1.1.3.24.1.1.3	None	The port MAC security interface table that shows the port MAC security statistics for an Ethernet interface.
snPortMacSecurityIntfContentIfIndex brcdIp.1.1.3.24.1.1.3.1.1 Syntax: InterfaceIndex	None	Shows the ifIndex value of the local interface.

Name, OID, and syntax	Access	Description
snPortMacSecurityIntfContentSecurity brcdIp.1.1.3.24.1.1.3.1.2 Syntax: Integer	Read- write	Indicates whether MAC port security is enabled or disabled on this interface: • disabled(0) • enabled(1)
snPortMacSecurityIntfContentViolationType brcdIp.1.1.3.24.1.1.3.1.3 Syntax: Integer	Read-write	The port security violation type for this interface: • shutdown(0) • restricted(1)
snPortMacSecurityIntfContentShutdownTime brcdIp.1.1.3.24.1.1.3.1.4 Syntax: Unsigned32	Read-write	If snPortMacSecurityIntfContentViolationType is 0 (shutdown), this value indicates the number of seconds the interface shuts down when the violation occurs. If snPortMacSecurityIntfContentViolationType is 1 (restrict), this value will always be 0.
snPortMacSecurityIntfContentShutdownTimeLeft brcdIp.1.1.3.24.1.1.3.1.5 Syntax: Unsigned32	Read-only	If snPortMacSecurityIntfContentViolationType is 0 (shutdown), this value indicates the number of seconds before this interface will be re-enabled. If snPortMacSecurityIntfContentViolationType is 1 (restrict), this value will always be 0.
snPortMacSecurityIntfContentAgeOutTime brcdIp.1.1.3.24.1.1.3.1.6 Syntax: Unsigned32	Read-write	The amount of time, in minutes, the MAC addresses learned on this interface will remain secure. A value of 0 indicates no aging is in effect.
snPortMacSecurityIntfContentMaxLockedMacAllowed brcdIp.1.1.3.24.1.1.3.1.7 Syntax: Unsigned32	Read-write	The maximum number of secure MAC addresses that can be locked to this interface.
snPortMacSecurityIntfContentTotalMACs brcdIp.1.1.3.24.1.1.3.1.8 Syntax: Unsigned32	Read-only	The total number of secure MAC addresses that are locked to this interface.
snPortMacSecurityIntfContentViolationCounts brcdIp.1.1.3.24.1.1.3.1.9 Syntax: Unsigned32	Read-only	The total number of security violations that occurred on this interface.

Port MAC security interface MAC table

The following table shows the same information as the **show port security mac ethernet** *slot/port* command.

Name, OID, and syntax	Access	Description
snPortMacSecurityIntfMacTable brcdIp.1.1.3.24.1.1.4	None	The port MAC security interface MAC table that shows the port MAC security status for each Ethernet interface.
snPortMacSecurityIntfMacIfIndex brcdIp.1.1.3.24.1.1.4.1.1 Syntax: Integer	Read-only	Shows the ifIndex value of the local interface.
snPortMacSecurityIntfMacAddress brcdIp.1.1.3.24.1.1.4.1.2 Syntax: MAC Address	Read-only	The secure MAC addresses for this local Ethernet interface on which the secure MAC address is configured and learned. The maximum number of the secure MAC

Name, OID, and syntax	Access	Description
		addresses is restricted by the object snPortMacSecurityIntfContentMaxLockedMacAllowed.
snPortMacSecurityIntfMacVlanId brcdIp.1.1.3.24.1.1.4.1.3 Syntax: Unsigned32	Read-write	The VLAN membership of this interface. A value of zero indicates it is not applicable.
snPortMacSecurityIntfMacRowStatus brcdIp.1.1.3.24.1.1.4.1.4 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Delete the row. • create(4) - Create a new row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

Port MAC security autosave MAC table

The following table shows the same information as the **show port security autosave** command.

Name, OID, and syntax	Access	Description
snPortMacSecurityAutosaveMacTable brcdIp.1.1.3.24.1.1.5	None	The port MAC security autosave MAC table that shows the secure MAC addresses that were saved automatically.
snPortMacSecurityAutosaveMacIfIndex brcdIp.1.1.3.24.1.1.5.1.1 Syntax: Integer32	Read-only	Shows the ifIndex value of the local interface.
snPortMacSecurityAutosaveMacResource brcdIp.1.1.3.24.1.1.5.1.2 Syntax: Integer32	Read-only	Indicates the resource used to autosave secure MAC addresses: • 1 - Local • 2 - Shared
snPortMacSecurityAutosaveMacQueryIndex brcdIp.1.1.3.24.1.1.5.1.3 Syntax: Unsigned32	Read-only	The index entry within the given resource of the local interface on which MAC port security is autosaved.
snPortMacSecurityAutosaveMacAddress brcdIp.1.1.3.24.1.1.5.1.4 Syntax: MAC Address	Read-only	The secure MAC addresses for this local Ethernet interface on which the secure MAC address is autosaved.

Port MAC security global MIB group

The following table shows the global MIBs for MAC port security.

Name, OID, and syntax	Access	Description
snPortMacGlobalSecurityFeature brcdIp.1.1.3.24.1.2.1 Syntax: Integer	Read-write	Indicates whether port security for this device is disabled or enabled: • 0 - Disabled • 1 - Enabled
snPortMacGlobalSecurityAgeOutTime brcdIp.1.1.3.24.1.2.2 Syntax: Unsigned32	Read-write	The amount of time, in minutes, the MAC addresses learned on this device will remain secure. A value of 0 indicates no aging is in effect.
snPortMacGlobalSecurityAutosave brcdIp.1.1.3.24.1.2.3 Syntax: Unsigned32	Read-write	The port security autosave value for this device.

Port monitor table

The following table shows the status of port monitoring on an interface.

Name, OID, and syntax	Access	Description
snPortMonitorTable brcdIp.1.1.3.25.1	None	The port monitor table.
snPortMonitorIfIndex brcdIp.1.1.3.25.1.1.1	None	Shows the ifIndex value of the local interface.
snPortMonitorMirrorList brcdIp.1.1.3.25.1.1.2 Syntax: DisplayString	Read-write	Lists the monitoring status of each port. The values in this object are space delimited. They consist of a sequence of a port's ifIndex followed by the port's monitoring mode. Port monitoring mode can be one of the following: • 0 - Monitoring is off. • 1 - The port will monitor input traffic. • 2 - The port will monitor output traffic. • 3 - The port will monitor both input and output traffic. For example, you may see the following values: 65 2 66 1 "65" may represent port 2/1 and "66" port 2/2. The entry means that port 2/1 is monitoring output traffic. Port 2/2 is monitoring input traffic.

MAC Authentication MIB Definition

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Multi-device port authentication

Multi-device port authentication is also known as MAC authentication. The following tables describe the multi-device port authentication MIB objects.

The following global objects are available for multi-device port authentication.

Name, OID, and syntax	Access	Description
snMacAuthClearGlobalCmd brcdIp.1.1.3.28.1.1 Syntax: Integer	Read-write	Clears MAC authentication on a global level: • valid(0) - An SNMP-GET of this MIB shows that it is a valid command. • clear(1) - Represents a clear MAC authentication table for all ports.
snMacAuthGlobalConfigState brcdIp.1.1.3.28.1.2 Syntax: Integer	Read-write	Enables or disables MAC authentication on a global level.

MAC clear interface multi-device port authentication objects

The following clear interface objects are available for multi-device port authentication.

Name, OID, and syntax	Access	Description
snMacAuthClearIFCmdTable brcdIp.1.1.3.28.2	None	The status of clearing a MAC authentication entry for an interface.
snMacAuthClearIfCmdIndex brcdIp.1.1.3.28.2.1.1 Syntax: InterfaceIndex	None	The ifIndex value of the local interface on which a clear command is issued and monitored.
snMacAuthClearIfCmdAction brcdIp.1.1.3.28.2.1.2 Syntax: InterfaceIndex	Read-write	The action value of the local interface: • valid(0) - An SNMP-GET of this command shows that it is valid. • clear(1) - Represents clearing a MAC authentication entry for an interface.

Multi-device port authentication objects

The following objects are available for multi-device port authentication.

Name, OID, and syntax	Access	Description
snMacAuthTable brcdIp.1.1.3.28.3	None	Displays the MAC authentication table.
snMacAuthIfIndex brcdIp.1.1.3.28.3.1.1 Syntax: InterfaceIndex	None	In order to identify a particular interface, this object identifies the instance of the ifIndex object, defined in RFC 2863.
snMacAuthVlanId brcdIp.1.1.3.28.3.1.2 Syntax: Integer	None	The ID of a VLAN of which the port is a member. The port must be untagged. For a tagged port that belongs to multiple VLANs, this object returns 0, which is an invalid VLAN ID value.
snMacAuthMac brcdIp.1.1.3.28.3.1.3 Syntax: MacAddress	None	MAC address to be authenticated.
snMacAuthState brcdIp.1.1.3.28.3.1.4 Syntax: Integer	Read-only	The state of MAC authentication.
snMacAuthTimeStamp brcdIp.1.1.3.28.3.1.5 Syntax:Object-Type	Read-only	Time stamp at which the MAC address was authenticated or failed to be authenticated.
snMacAuthAge brcdIp.1.1.3.28.3.1.6 Syntax: Integer	Read-only	Age of the MAC session in which the MAC address is authenticated.
snMacAuthDot1x brcdIp.1.1.3.28.3.1.7 Syntax: Integer	Read-only	Indicates whether dot1x is enabled or not.

Multi-device port authentication clear sessions

The following clear sessions objects are available for multi-device port authentication.

Name, OID, and syntax	Access	Description
snMacAuthClearMacSessionTable brcdIp.1.1.3.28.4	None	The status of clearing a MAC session entry indexed by a MAC address.
snMacAuthClearMacSessionEntry brcdIp.1.1.3.28.4.1	None	An entry of clearing a MAC session entry indexed by a MAC address.
snMacAuthClearMacSessionIfIndex brcdIp.1.1.3.28.4.1.1 Syntax: InterfaceIndex	None	The ifIndex value of the local interface on which a clear command is issued and monitored.
snMacAuthClearMacSessionMac brcdIp.1.1.3.28.4.1.2 Syntax: MacAddress	None	A MAC session entry indexed by a MAC address.
snMacAuthClearMacSessionAction brcdIp.1.1.3.28.4.1.3 Syntax: Integer	Read-write	The action value of the clear MAC session: • valid(0) - An SNMP-GET of this MIB shows that it is a valid command. • clear(1) - Represents clearing a MAC session entry indexed by a MAC address.

MAC VLAN MIB Definition

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MAC-based VLAN global scalar objects

The following global scalar objects are available for MAC-based VLAN.

Name, OID, and syntax	Access	Description
fdryMacVlanGlobalClearOper brcdIp.1.1.3.32.1.1 Syntax: Integer	Read-write	The action value of the clear MAC session: • valid(0) - This value is always returned when the variable is read. • clear(1) - Setting the variable to this value clears the operational MAC-based VLAN information for all ports.
fdryMacVlanGlobalDynConfigState brcdIp.1.1.3.32.1.2 Syntax: Integer	Read-write	Enables or disables MAC-based VLAN dynamic activation on the global level.

MAC-based VLAN port table objects

The following objects are available for MAC-based VLAN port.

Name, OID, and syntax	Access	Description
fdryMacVlanPortMemberTable brcdIp.1.1.3.32.2.1	None	MAC-based VLAN port membership table.
fdryMacVlanPortMemberVLanId brcdIp.1.1.3.32.2.1.1.1 Syntax: InterfaceIndex	None	The VLAN identifier.
fdryMacVlanPortMemberPortId brcdIp.1.1.3.32.2.1.1.2 Syntax: Integer	None	The ifIndex of the port which is a member of the MAC-based VLAN.
fdryMacVlanPortMemberRowStatus brcdIp.1.1.3.32.2.1.1.3 Syntax: RowStatus	Read-write	This object is used to create and delete rows in the table.

MAC-based VLAN interface table objects

The following objects are available for MAC-based VLAN interface.

Name, OID, and syntax	Access	Description
fdryMacVlanIfTable brcdIp.1.1.3.32.2.2	None	MAC-based VLAN interface table.
fdryMacVlanIfIndex brcdIp.1.1.3.32.2.2.1.1 Syntax: InterfaceIndex	None	The ifIndex of the interface which is a member of the MAC-based VLAN.
fdryMacVlanIfEnable brcdIp.1.1.3.32.2.2.1.2 Syntax: Integer	Read-write	The administrative status requested by management for MAC-based VLANs on this interface. The enabled(1) value indicates that MAC-based VLANs should be enabled on this interface. The disabled(2) value indicates that MAC-based VLANs are disabled on this interface.
fdryMacVlanIfMaxEntry brcdIp.1.1.3.32.2.2.1.3 Syntax: Integer32	Read-write	The maximum number of allowed and denied MAC addresses (static and dynamic) that can be learned on this interface. The value can be from 2 through 32. The default value is 2.
fdryMacVlanIfClearOper brcdIp.1.1.3.32.2.2.1.4 Syntax: Integer	Read-write	• valid(0) - This value is always returned when the variable is read. • clear(1) - Setting the variable to this value clears the operational MAC-based VLAN information for a port.
fdryMacVlanIfClearConfig brcdIp.1.1.3.32.2.2.1.5 Syntax: Integer	Read-write	• valid(0) - This value is always returned when the variable is read. • clear(1) - Setting the variable to this value clears the configured MAC-based VLAN information for a port.

MAC-based VLAN table objects

The following objects are available for MAC-based VLAN.

Name, OID, and syntax	Access	Description
fdryMacBasedVlanTable brcdIp.1.1.3.32.2.3	None	MAC-based VLAN table.
fdryMacBasedVlanId brcdIp.1.1.3.32.2.3.1.1 Syntax: Integer	None	The VLAN ID for this entry.
fdryMacBasedVlanMac brcdIp.1.1.3.32.2.3.1.2 Syntax: MAC address	None	A host source MAC address to be authenticated.
fdryMacBasedVlanPriority brcdIp.1.1.3.32.2.3.1.3 Syntax: Integer32	Read-write	The priority of the source MAC address.
fdryMacBasedVlanRowStatus brcdIp.1.1.3.32.2.3.1.4 Syntax: RowStatus	Read-write	This object is used to create and delete rows in the table.

DHCP Snooping MIB Definition

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DHCP Snooping global scalar object

One scalar object can clear all entries in the DHCP binding database.

Name, OID, and syntax	Access	Description
fdryDhcpSnoopGlobalClearOper brcdIp.1.1.3.36.1.1. Syntax: ClearAction	Read-write	Determines if all entries in the DHCP database are cleared: • valid(0) - This value is always returned when the variable is read. • clear(1) - Clears all entries in the DHCP binding database.

DHCP Snooping VLAN configuration table

The following table controls DHCP snooping per-VLAN configuration.

Name, OID, and syntax	Access	Description
fdryDhcpSnoopVlanConfigTable brcdIp.1.1.3.36.2.1	None	A table controls DHCP Snooping per VLAN. When a VLAN is created in a device supporting this table, a corresponding entry of this table is added.
fdryDhcpSnoopVlanVLanId brcdIp.1.1.3.36.2.1.1.1 Syntax: VlanIndex	None	This object indicates the VLAN number on which DHCP Snooping is configured.
fdryDhcpSnoopVlanDhcpSnoopEnable brcdIp.1.1.3.36.2.1.1.2 Syntax: TruthValue	Read-write	This object indicates whether DHCP Snooping is enabled in this VLAN. If set to "true", DHCP snooping is enabled. If set to "false" it is disabled.

DHCP Snooping interface configuration table

The following objects is used to configure interface level DHCP Snooping.

Name, OID, and syntax	Access	Description
fdryDhcpSnoopIfConfigTable brcdIp.1.1.3.36.3.1	None	This table allows you to configure the trust state for DHCP Snooping at each physical interface.
fdryDhcpSnoopIfTrustValue brcdIp.1.1.3.36.3.1.1.1 Syntax: TruthValue	Read-write	DHCP packets received on this interface will be subjected to DHCP checks. This object indicates whether the interface is trusted for DHCP

Name, OID, and syntax	Access	Description
		Snooping. If this object is set to “true”, the interface is trusted. DHCP packets coming to this interface will be forwarded without checking. If this object is set to “false”, the interface is not trusted.

DHCP Snooping binding database table

The following table displays DHCP Snooping entries.

Name, OID, and syntax	Access	Description
fdryDhcpSnoopBindTable brcdIp.1.1.3.36.4.1	None	This table provides the information about the DHCP Snooping binding database learned by the device.
fdryDhcpSnoopBindIpAddr brcdIp.1.1.3.36.4.1.1.1 Syntax: IpAddress	None	The device IP address.
fdryDhcpSnoopBindMacAddr brcdIp.1.1.3.36.4.1.1.2 Syntax: MacAddress	Read-only	The device MAC address.
fdryDhcpSnoopBindType brcdIp.1.1.3.36.4.1.1.3 Syntax: ArpType	Read-only	The type of the ARP entry: • other(1) • static(2) • dynamic(3) • inspect(4) • dhcp(5) • dynamicDhcp(6) • staticDhcp(7) • host(8)
fdryDhcpSnoopBindState brcdIp.1.1.3.36.4.1.1.4 Syntax: ArpState	Read-only	The state of the ARP entry: • other(1) • valid(2) • pending(3)
fdryDhcpSnoopBindPort brcdIp.1.1.3.36.4.1.1.5 Syntax: DisplayString	Read-only	The port of the ARP entry.
fdryDhcpSnoopBindVlanId brcdIp.1.1.3.36.4.1.1.6 Syntax: VlanIndex	Read-only	This object indicates the VLAN number on which DHCP Snooping is configured.
fdryDhcpSnoopBindClearOper brcdIp.1.1.3.36.4.1.1.7 Syntax: ClearAction	Read-write	This object allows you to clear the entry from the DHCP binding database: • valid(0) - Always returned when the variable is read. • clear(1) - Clears this entry in the DHCP binding database.

IP Source Guard MIB Definition

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IP source guard interface configuration table

The following objects are used to configure IP source guard on each interface.

Name, OID, and syntax	Access	Description
fdryIpSrcGuardIfConfigTable brcdIp.1.1.3.37.1.1	None	This table enables or disables IP source guard on each physical interface.
fdryIpSrcGuardIfEnable brcdIp.1.1.3.37.1.1.1.1 Syntax: TruthValue	Read-write	This object indicates whether IP source guard is enabled on this interface. If this object is set to "true", IP source guard is enabled. Traffic coming to this interface will be forwarding the traffic from the list of IP addresses obtained from DHCP Snooping. Otherwise, it is denied. If this object is set to "false", IP source guard is disabled.

IP source guard per port per VLAN configuration table

The following objects are used to configure IP source guard on per port per VLAN.

Name, OID, and syntax	Access	Description
fdryIpSrcGuardPortVlanConfigTable brcdIp.1.1.3.37.2.1	None	This table enables or disables IP source guard per port per VLAN.
fdryIpSrcGuardPortVlanPortId brcdIp.1.1.3.37.2.1.1.1 Syntax: InterfaceIndex	None	The ifIndex of the port for IP source guard per port per VLAN.
fdryIpSrcGuardPortVlanVlanId brcdIp.1.1.3.37.2.1.1.2 Syntax: VlanIndex	None	The number of VLANs for IP source guard per port per VLAN.
fdryIpSrcGuardPortVlanEnable brcdIp.1.1.3.37.2.1.1.3 Syntax: TruthValue	Read-write	This object indicates whether IP source guard is enabled at this interface and this VLAN number. If this object is set to "true", IP source guard per port per VLAN is enabled. If this object is set to "false", IP source guard per port per VLAN is disabled.

IP source guard binding table

The following table is used to configure IP source entries.

Name, OID, and syntax	Access	Description
fdryIpSrcGuardBindTable brcdIp.1.1.3.37.3.1	None	This table provides the IP addresses used for IP source guard on each physical interface with or without specific VLAN memberships.
fdryIpSrcGuardBindIpAddr brcdIp.1.1.3.37.3.1.1.1 Syntax: IpAddress	None	The IP address of the device.
fdryIpSrcGuardBindVlanId brcdIp.1.1.3.37.3.1.1.2 Syntax: VlanIndex	Read-create	This object indicates the specific VLAN memberships on this interface. The VLAN number is optional. If you configure a VLAN number, the binding applies only to that VLAN. If you do not configure a VLAN number, the static applies to all VLANs associated with the port. In this case, the VLAN number will be displayed as “0”.
fdryIpSrcGuardBindRowStatus brcdIp.1.1.3.37.3.1.1.3 Syntax: RowStatus	Read-create	This variable is used to create or delete a row in this table. When a row in this table is in active(1) state, no objects in that row can be modified except this object.
fdryIpSrcGuardBindMode brcdIp.1.1.3.37.3.1.1.4 Syntax: BindMode	Read-only	The mode of the IP source guard entry: • other(1) • active(2) • inactive(3)
fdryIpSrcGuardBindType brcdIp.1.1.3.37.3.1.1.5 Syntax: BindType	Read-only	The type of the IP source guard entry: • other(1) • ip(2)

DAI MIB Definition

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DAI VLAN configuration table

The following objects are used to configure Dynamic ARP Inspection (DAI) VLAN.

Name, OID, and syntax	Access	Description
fdryDaiVlanConfigTable brcdIp.1.1.3.35.1.1	None	This table provides the mechanism to control DAI per VLAN.
fdryDaiVlanVLanId brcdIp.1.1.3.35.1.1.1.1 Syntax: VlanIndex	None	This object indicates the VLAN number on which DAI is configured.
fdryDaiVlanDynArpInspEnable brcdIp.1.1.3.35.1.1.1.2 Syntax: TruthValue	Read-write	This object indicates whether DAI is enabled in this VLAN. If this object is set to "true", DAI is enabled. If this object is set to "false", DAI is disabled.

DAI interface configuration table

The following objects are used to configure DAI on each interface.

Name, OID, and syntax	Access	Description
fdryDaiIfConfigTable brcdIp.1.1.3.35.2.1	None	This table allows you to configure the trust state for DAI purposes on each physical interface.
fdryDaiIfTrustValue brcdIp.1.1.3.35.2.1.1.1 Syntax: TruthValue	Read-write	This object indicates whether the interface is trusted for DAI. If this object is set to "true", the interface is trusted. ARP packets coming to this interface will be forwarded without being checked. If this object is set to "false", the interface is not trusted. ARP packets received on this interface will be subjected to ARP inspection.

DAI entry table

The following table is used to display the DAI entries.

Name, OID, and syntax	Access	Description
fdryDaiArpInspectTable brcd.Ip.1.1.3.35.3.1	None	This table controls DAI entries. When an IP address to MAC address mapping entry is created on a device supporting this table, a corresponding entry of this table will be added.

Name, OID, and syntax	Access	Description
fdryDaiArpInspectIpAddr brcd.lp.1.1.3.35.3.1.1.1 Syntax: IpAddress	None	The IP address of the device.
fdryDaiArpInspectMacAddr brcd.lp.1.1.3.35.3.1.1.2 Syntax: MacAddress	Read-create	The MAC address of the device.
fdryDaiArpInspectRowStatus brcd.lp.1.1.3.35.3.1.1.3 Syntax: RowStatus	Read-create	This variable is used to create or delete a row in this table. When a row in this table is in active(1) state, no objects in that row can be modified except this object.
fdryDaiArpInspectType brcd.lp.1.1.3.35.3.1.1.4 Syntax: ArpType	Read-only	The type of the ARP entry: • other(1) • static(2) • dynamic(3) • inspect(4) • dhcp(5) • dynamicDhcp(6) • staticDhcp(7) • host(8)
fdryDaiArpInspectState brcd.lp.1.1.3.35.3.1.1.5 Syntax: ArpState	Read-only	The state of the ARP entry: • other(1) • valid(2) • pending(3)
fdryDaiArpInspectAge brcd.lp.1.1.3.35.3.1.1.6 Syntax: Unsigned32	Read-only	The timer of the ARP entry.
fdryDaiArpInspectPort brcd.lp.1.1.3.35.3.1.1.7 Syntax: DisplayString	Read-only	The port of the ARP entry.

IPv4 ACL MIB Definition

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ACL global MIB objects

The following table lists the global MIB objects of the ACL table.

Name, OID, and syntax	Access	Description
snAgAclGblAcctEnable brcdIp.1.2.2.15.1.2 Syntax: Integer	Read-write	Specifies the administration status of the ACL accounting. • disabled(0) • enabled(1)
snAgAclGblIfIPv4AcctClear brcdIp.1.2.2.15.1.3 Syntax: InterfaceIndexOrZero	Read-write	Clears the IPv4 ACL accounting information of a particular interface. The value "0" clears IPv4 ACL accounting information on all the interfaces. Returns the value 0 for SNMP GET and GET-NEXT requests.
snAgAclGblIfIPv6AcctClear brcdIp.1.2.2.15.1.4 Syntax: InterfaceIndexOrZero	Read-write	Clears the IPv6 ACL accounting information of a particular interface. The value "0" clears IPv6 ACL accounting information on all the interfaces. Returns the value 0 for SNMP GET and GET-NEXT requests.
snAgAclGblRebindAclNumber brcdIp.1.2.2.15.1.5 Syntax: AclNumber	Read-write	Specifies the valid ACL number for a rebind. Returns the value 0 for SNMP GET and GET-NEXT requests.
snAgAclGblRebindAclName brcdIp.1.2.2.15.1.6 Syntax: DisplayString	Read-write	Specifies the ACL name for a rebind. Returns a null string for SNMP GET and GET-NEXT requests. Maximum 255 characters are allowed.
brcdPbrAclAccntFilterAclName brcdIp. 1.2.2.15.1.7 Syntax: DisplayString	Read-write	Used to control the content of brcdPbrAclAccntTable. Any ACL filter that has a full or partial match with ACL name will not be returned in the brcdPbrAclAccntTable. The default value is null and all ACL filters will be returned by the table, if not specified.
brcdPbrAclAccntCounterType brcdIp. 1.2.2.15.1.8 Syntax: Integer	Read-write	This object is used to control the counter value of the brcdPbrAclAccntAclInfo object in brcdPbrAclAccntTable. It specifies the statistics to query. • cumulative(1) - default • last5min(2)

IPv4 ACL table

The IPv4 ACL table contains the access control lists (ACLs) defined for the device. The snAgAclGblCurRowIndex object determines the number of ACLs that can be added to this table.

Use the following table to create IPv6 ACLs on FastIron IPv6 devices. Apply the ACLs to interfaces using snAgAclBindToPortTable.

Name, OID, and syntax	Access	Description
snAgAclTable brcdIp.1.2.2.15.2	None	Access control list table.
snAgAclIndex brcdIp.1.2.2.15.2.1.1 Syntax: Integer32	Read-only	Shows the index for an ACL entry that is associated with this ACL. This number must be unique among all the entries, even though the value of other objects for an entry may be the same as those of another entry.
snAgAclNumber brcdIp.1.2.2.15.2.1.2 Syntax: AclNumber	Read-write	The access control list number for an entry: • 1 to 99 - Standard access list • 100 to 199 - Extended access list
snAgAclName brcdIp.1.2.2.15.2.1.3 Syntax: DisplayString	Read-write	Shows the ACL name.
snAgAclAction brcdIp.1.2.2.15.2.1.4 Syntax: Integer	Read-write	Indicates if IP packets that matched this access control list are permitted or denied: • deny(0) • permit(1) The default action when no ACLs are configured on a device is to permit all traffic. However, once you configure an ACL and apply it to a port, the default action for that port is to deny all traffic that is not explicitly permitted on the port. • If you want to tightly control access, configure ACLs consisting of permit entries for the access you want to permit. The ACLs implicitly deny all other access. • If you want to secure access in environments with many users, you might want to configure ACLs that consist of explicit deny entries, then add an entry to permit all access to the end of each ACL. The software permits packets that are not denied by the deny entries.
snAgAclProtocol brcdIp.1.2.2.15.2.1.5 Syntax: IPProtocol	Read-write	Indicates the protocol denied or permitted by the extended ACL. The protocol can be one of the following well-known names or any protocol number from 0 through 255: • Internet Control Message Protocol (ICMP) • Internet Group Management Protocol (IGMP)

Name, OID, and syntax	Access	Description
		• Internet Gateway Routing Protocol (IGRP) • Internet Protocol (IP) • Open Shortest Path First (OSPF) • Transmission Control Protocol (TCP) • User Datagram Protocol (UDP) Entering "0" indicates any protocol.
snAgAclSourceIp brcdIp.1.2.2.15.2.1.6 Syntax: IpAddress	Read-write	Applies only to extended ACLs. Identifies the source IP address of the packet that will either be permitted or denied.
snAgAclSourceMask brcdIp.1.2.2.15.2.1.7 Syntax: IpAddress	Read-write	Applies only to extended ACLs. Identifies the source IP subnet mask of the packet that will either be permitted or denied.
snAgAclSourceOperator brcdIp.1.2.2.15.2.1.8 Syntax: Operator	Read-write	Applies only to TCP or UDP ports in extended ACLs. Indicates how the policy will be compared to the ports specified in the IPv4 ACL table and IPv4 ACL table objects: • eq(0) - The policy applies only to packets whose source port number matches the port number specified in the objects. • neq(1) - The policy applies only to packets whose source port numbers are not included in the specified range. • lt(2) - The policy applies only to packets whose source port numbers are less than those in the specified range. • gt(3) - The policy applies only to packets whose source port numbers are greater than those in the specified range. • range(4) - The policy applies to packets whose source port numbers fall within the specified range. • undefined(7)
snAgAclSourceOperand1 brcdIp.1.2.2.15.2.1.9 Syntax: Integer	Read-write	Applies only to TCP or UDP ports in extended ACLs. Shows the source port number to be matched. If used with the IPv4 ACL table object, it defines the start of the range of source port numbers to be matched. Valid values: 0 - 65535. A value of 0 means that this object is not applicable.
snAgAclSourceOperand2 brcdIp.1.2.2.15.2.1.10 Syntax: Integer	Read-write	Applies only to TCP or UDP ports in extended ACLs. Used with the IPv4 ACL table object, it defines the end of the range of source port numbers to be matched.

Name, OID, and syntax	Access	Description
		Valid values: 0 - 65535. A value of 0 means that this object is not applicable.
snAgAclDestinationIp brcdIp.1.2.2.15.2.1.11 Syntax: IpAddress	Read-write	Applies only to extended ACLs. Identifies the destination IP address of the packet that can either be permitted or denied.
snAgAclDestinationMask brcdIp.1.2.2.15.2.1.12 Syntax: IpAddress	Read-write	Applies only to extended ACLs. Identifies the destination subnet mask of the packet that can either be permitted or denied.
snAgAclDestinationOperator brcdIp.1.2.2.15.2.1.13 Syntax: Operator	Read-write	Applies only to TCP or UDP ports in extended ACLs. Indicates how the policy will be compared to the ports specified in the IPv4 ACL table and IPv4 ACL table objects: • eq(0) - The policy applies only to packets whose destination port number matches the port number specified in the objects. • neq(1) - The policy applies only to packets whose destination port numbers are not included in the specified range. • lt(2) - The policy applies only to packets whose destination port numbers are less than those in the specified range. • gt(3) - The policy applies only to packets whose destination port numbers are greater than those in the specified range. • range(4) - The policy applies to packets whose destination port numbers fall within the specified range. • undefined(7)
snAgAclDestinationOperand1 brcdIp.1.2.2.15.2.1.14 Syntax: Integer	Read-write	Applies only to TCP or UDP ports in extended ACLs. Shows the destination port number to be matched. If used with the IPv4 ACL table object, it defines the start of the range of destination port numbers to be matched. Valid values: 0 - 65535. A value of 0 means that this object is not applicable.
snAgAclDestinationOperand2 brcdIp.1.2.2.15.2.1.15 Syntax: Integer	Read-write	Applies only to TCP or UDP ports in extended ACLs. Used with the IPv4 ACL table object, it defines the end of the range of destination port numbers to be matched. Valid values: 0 - 65535. A value of 0 means that this object is not applicable.
snAgAclPrecedence brcdIp.1.2.2.15.2.1.16	Read-write	Applies only to extended ACLs.

Name, OID, and syntax	Access	Description
Syntax: PrecedenceValue		Indicates the IP precedence value that a packet must have to be permitted or denied: • routine(0) • priority(1) • immediate(2) • flash(3) • flash-override(4) • critical(5) • internet(6) • network(7) The following priorities specify a hardware-forwarding queue: routine(0), priority(1), immediate(2), and flash(3).
snAgAclTos brcdIp.1.2.2.15.2.1.17 Syntax: TosValue	Read-write	Applies only to extended ACLs. Indicates the type of service a packet must have to be denied or permitted: • normal(0) - The ACL matches packets that have the normal TOS. If TOS is not defined, packets are matched to this value. • minMonetaryCost(1) - The ACL matches packets that have the minimum monetary cost TOS. • maxReliability(2) - The ACL matches packets that have the maximum reliability TOS. • maxThroughput(4) - The ACL matches packets that have the maximum throughput TOS. • minDelay(8) - The ACL matches packets that have the minimum delay TOS.
snAgAclEstablished brcdIp.1.2.2.15.2.1.18 Syntax: Integer	Read-write	Applies only to extended ACLs. Enables or disables the filtering of established TCP packets that have the ACK or RESET flag turned on. This additional filter only applies to TCP transport protocol: • disabled(0) • enabled(1)
snAgAclLogOption brcdIp.1.2.2.15.2.1.19 Syntax: TruthVal	Read-write	Determines if ACL matches are logged: • false(0) - Do not log ACL matches. • true(1) - Log ACL matches.
snAgAclStandardFlag brcdIp.1.2.2.15.2.1.20 Syntax: TruthVal	Read-write	Indicates if this is a standard ACL: • false(0) - The ACL is an extended ACL. • true(1) - The ACL is a standard ACL.
snAgAclRowStatus brcdIp.1.2.2.15.2.1.21 Syntax: SnRowStatus	Read-write	Creates or deletes an ACL entry: • other(1) • valid(2) • delete(3)

Name, OID, and syntax	Access	Description
		• create(4)
snAgAclFlowCounter brcdIp.1.2.2.15.2.1.22 Syntax: Counter64	Read-only	Shows an approximate count of flows that match the individual ACL entry.
snAgAclPacketCounter brcdIp.1.2.2.15.2.1.23 Syntax: Counter64	Read-only	Shows the number of packets that matched the ACL entry.
snAgAclComments brcdIp.1.2.2.15.2.1.24 Syntax: DisplayString	Read-write	Indicates the description of an individual ACL entry.
snAgAclIpPriority brcdIp.1.2.2.15.2.1.25 Syntax: Integer	Read-write	Indicates the QoS priority option for this ACL. This priority assigns traffic that matches the ACL to a hardware-forwarding queue. In addition to changing the internal forwarding priority, if the outgoing interface is an 802.1Q interface, this option maps the specified priority to its equivalent 802.1p (CoS) priority and marks the packet with the new 802.1p priority. **NOTE** This option applies only to 10 Gigabit Ethernet modules.
snAgAclPriorityForce brcdIp.1.2.2.15.2.1.26 Syntax: Integer	Read-write	Indicates the priority that is being forced on the outgoing packet. This parameter allows you assign packets of outgoing traffic that match the ACL to a specific hardware-forwarding queue, even though the incoming packet may be assigned to another queue. Valid values: • qosp0(0) • qosp1(1) • qosp2(2) • qosp3(3) • Not defined(4) Default: Not defined(4) **NOTE** This option applies only to 10 Gigabit Ethernet modules.
snAgAclPriorityMapping brcdIp.1.2.2.15.2.1.27 Syntax: Integer	Read-write	Indicates the priority of the incoming packet to be matched. This option maps the packet's 802.1p value. It does not change the packet's forwarding priority through the device nor does it mark the packet. Valid values: 0 - 8 Default: Not defined(8)
snAgAclDscpMarking brcdIp.1.2.2.15.2.1.28 Syntax: Integer	Read-write	Indicates the DSCP marking of a packet that will be matched. Valid values: 0 - 64 Default: Not defined(64)

Name, OID, and syntax	Access	Description
		NOTE This option applies only to 10 Gigabit Ethernet modules.
snAgAclDscpMapping brcdIp.1.2.2.15.2.1.29 Syntax: Integer	Read-write	Indicates the DCSP value of the incoming packet value to be matched. Valid values: 0 - 64 Default: Not defined(64) **NOTE** This option applies only to 10 Gigabit Ethernet modules.
snAgAclIcmpCode brcdIp.1.2.2.15.2.1.30 Syntax: Integer	Read write	If you entered a value for ICMP message type number in the IPv4 ACL table object, enter the code number in this object. Valid value for type code 1, Echo reply 1 = Echo reply Valid values for type code 4, Destination unreachable • 1 = Network unreachable • 2 = Host unreachable • 3 = Protocol unreachable • 4 = Port unreachable • 5 = Fragmentation needed but do not fragment bit set • 6 = Source route failed • 7 = Destination network unknown • 8 = Destination host unknown • 9 = Source host isolated • 10 = Destination network administratively prohibited • 11 = Destination host administratively prohibited • 12 = Network unreachable for TOS • 13 = Host unreachable for TOS • 14 = Communication administratively prohibited by filter • 15 = Host precedence violation • 16 = Precedence cutoff in effect Valid values for type code 5, Source quench 1 = Source quench Valid values for type code 6, Redirect • 1 = Redirect for network • 2 = Redirect for host • 3 = Redirect for TOS and network • 4 = Redirect for TOS and host Valid value for type code 9, Echo request

Name, OID, and syntax	Access	Description
		1 = Echo request Valid value for type code 10, Router advertisement 1 = Router advertisement Valid value for type code 11, Router solicitation 1 = Router solicitation Valid values for type code 12, Time exceeded • 1 = Time to live equals 0 during transmit • 2 = Time to live equals 0 during reassembly Valid values for type code 13, Parameter problem • 1 = IP header bad (catchall error) • 2 = Required option missing Valid value for type code 14, Timestamp request 1 = Timestamp request Valid value for type code 15, Timestamp reply 1 = Timestamp reply Valid value for type code 16, Information request 1 = Information request Valid value for type code 17, Information reply 1 = Information reply Valid value for type code 18, Address mask request 1 = Address mask request Valid value for type code 19, Address mask reply 1 = Address mask reply
snAgAclParameters brcdIp.1.2.2.15.2.1.31 Syntax: BITS	Read-write	The mask represents multiple parameters are configured for the ACL. Bit 0 specifies the first octet. • Bit 0 = Matches fragmented IP packets. • Bit 1 = Matches non-fragmented IP packets. • Bit 2 = Matches only the TCP packets with SYN Bit set. Valid only if the snAgAclSourceOperator or snAgAclDestinationOperator object is set to TCP. • Bit 3 = Permits the packets that fail in RPF check. • Bit 4 = Mirrors the packets matching ACL permit clause.

Name, OID, and syntax	Access	Description
		• Bit 5 = Sends the packets matching ACL permit clause to sFlow collector. • Bit 6 = Sets the dscp-mapping. The value is given by snAgAclDscpMarking. • Bit 7 = Sets the dscp-marking. The value is given by snAgAclDscpMapping.
snAgAclVlanId brcdIp.1.2.2.15.2.1.32 Syntax: FdryVlanIdOrNoneTC	Read-create	An optional VLAN ID to match against the incoming packets. By default, the VLAN ID field is ignored during the match and the value 0 is returned.
snAgAclClauseString brcdIp.1.2.2.15.2.1.33 Syntax: DisplayString	Read-only	Returns the equivalent filter clause string.

ACL bind to port table

The ACL bind to port table contains ACL port bindings for a Layer 3 Switch. Port numbers and bind direction are used to index entries.

Name, OID, and syntax	Access	Description
snAgAclIfBindTable brcdIp.1.2.2.15.4	None	The ACL bind to port table.
snAgAclIfBindIndex brcdIp.1.2.2.15.4.1.1 Syntax: InterfaceIndex	Read-only	The number of the virtual or physical interface to which this ACL is bound.
snAgAclIfBindDirection brcdIp.1.2.2.15.4.1.2 Syntax: Direction	Read-only	Shows the traffic direction to which the ACL will be applied: • inbound(0) • outbound(1)
snAgAclIfBindNum brcdIp.1.2.2.15.4.1.3 Syntax: Integer	Read-create	Shows the defined IPv4 ACL number that will be bound to the port.
snAgAclIfBindName brcdIp.1.2.2.15.4.1.4 Syntax: DisplayString	Read-create	The name of the IPv4 ACL name bound to the Interface. Maximum 255 characters are allowed.
snAgAclIfBindVifPortList brcdIp.1.2.2.15.4.1.5 Syntax: Octet string	Read-create	Contains a list of ports for binding a virtual interface. Each port index is an ifIndex. If there are four or more consecutive ifIndexes, then they will be encoded. THe Encoding and decoding scheme is range-based. Each range prefix with 0000 (2 octets) where 0000 is not a valid ifIndex. The next 2 octets indicates the lower range ifIndex, followed by 2 octets of higher range ifIndex. The individual (non- range) ones will be displayed as is. For example: Port list: 0001..0005 0015 0032..0047

Name, OID, and syntax	Access	Description
		Port list in PDU: 0000 0001 0005 000f 0000 0020 002f
snAgAclIfRowStatus brcdIp.1.2.2.15.4.1.6 Syntax: SnRowStatus	Read-create	Controls the management of the table rows. The following values can be written: • delete(3) - Delete the row. • create(4) - Create a new row. • modify(5) - Modify an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snAgAclIfBindDenyLogging brcdIp.1.2.2.15.4.1.7 Syntax: Integer	Read-create	Enables or disables deny logging.
snAgAclIfIpv6BindName brcdIp.1.2.2.15.4.1.8 Syntax: DisplayString	Read-create	The name of the IPv6 ACL name bound to the interface. A maximum 200 characters is allowed.

Textual conventions

The Layer 2 ACL tables use the following textual conventions.

Name and syntax	Description
fdryVlanIdOrNoneTC Syntax: Integer32	The VLAN ID that uniquely identifies a specific VLAN, or no VLAN. The special value of zero is used to indicate that no VLAN ID is present or used. This can be used in any situation where an object or a table entry must refer either to a specific VLAN, or to no VLAN. Valid values: 0 or 1 - 4094
PortQosTC Syntax: Integer	The port QoS priority-hardware queue. The value 0 is the lowest priority and 7 is the highest. Valid values: • level0(0) • level1(1) • level2(2) • level3(3) • level4(4) • level5(5) • level6(6) • level7(7) • invalid(127)
fdryEnetTypeOrZeroTC Syntax: Integer	Ethernet Type field within the Ethernet-II frame: • invalid(0) • ipv4(1)

Name and syntax	Description
	• arp(2) • ipv6(3)
fdryClauseIndexTC Syntax: Unsigned 32	One-based clause index value within a given ACL number.

Layer 2 ACL next clause table

The Layer 2 ACL next clause table (fdryL2AclNextClauseTable) contains the list of the next lowest available clause index that can be used for creating a Layer 2 ACL in the fdryL2AclTable configuration table. (Refer to Layer 2 ACL configuration table on page 288.)

Every Layer 2 ACL in fdryL2AclTable has a clause index that consists of a list of ACL clause entries. A Layer 2 ACL cannot be created without any clause entries. There must be at least one clause entry in a Layer 2 ACL. Thus, when all the clause entries are deleted from a Layer 2 ACL, the ACL itself will also be deleted.

By default, there will be 64 clause entries for each Layer 2 ACL. This number can be changed by issuing the **system-max l2-acl-table-entries** command on the device CLI. You can specify up to 256 clause entires per Layer 2 ACL.

The initial value of fdryL2AclNextClauseIndex in each table row is 1. When a clause entry is created for a Layer 2 ACL, this value is incremented by one. When the number of clause entries created for an ACL reaches the maximum limit, a Get operation on fdryL2AclClauseIndex will return a noSuchInstance error. The error indicates that no more clauses can be added to fdryL2AclTable for this ACL.

When a clause entry for an ACL is removed (in the beginning or middle or end), the clause index is available for adding a new clause entry for this ACL. The fdryL2AclClauseIndex always returns the lowest available clause index where a new clause must be added.

The CLI displays the ACL clause in chronological order. However, SNMP is bounded by clause index, and thus it may not display the rows in chronological order. The clause index does not map to the sequence in which the ACL clause is checked at run time. The clause index is an internal value used to identify unique ACL clauses within a given ACL ID.

For example, if only three clause entries can be created for a Layer 2 ACL, the following steps describe how the ACL clause is assigned.

1. Before adding any clause to a Layer 2 ACL, a Get operation on fdryL2AclNextClauseIndex returns “1”.
2. When you add the first clause entry, a Get operation on fdryL2AclNextClauseIndex returns “2”.
3. When you add the second clause entry, a Get operation on fdryL2AclNextClauseIndex returns “3”.
4. When you add the third clause entry, a Get operation on fdryL2AclNextClauseIndex returns “4”.

5. If you remove the second clause entry (#2), a Get operation on fdryL2AclNextClauseIndex, returns "2" because it is the lowest available index.

   The fdryL2AclNextClauseTable is a read-only table.

Name, OID, and syntax	Access	Description
fdryL2AclNextClauseTable brcdIp.1.2.2.15.6	None	This read-only table contains the list of the next lowest available clause index that can be used for creating a new entry in fdryL2AclTable. The clause index values will not change as a result of switchovers or hitless upgrades, but may change as a result of a device reload. However, the relative order of persistent entries would remain the same.
fdryL2AclNextClauseIndex brcdIp.1.2.2.15.6.1.1 Syntax: Textual conventions on page 286	Read-only	The next lowest available clause index for a given Layer 2 ACL number. The maximum value of this object is the configured maximum number of clauses for a Layer 2 ACL. Even though the syntax of fdryL2AclClauseIndex is Textual conventions on page 286, its value will be from 1 to the configured maximum clause entries for each Layer 2 ACL.

Layer 2 ACL configuration table

The following objects are available for Layer 2 ACL configuration.

NOTE
The following fdryL2AclTable has support only for the numbered Layer2 ACL and does not have support for the named Layer2 ACL.

Name, OID, and syntax	Access	Description
fdryL2AclTable brcdIp.1.2.2.15.7	None	The table of Layer 2 ACLs. A Layer 2 ACL number can have 64 (default) to 256 clauses. The clause index values will not change as a result of switchovers or hitless upgrades, but may change as a result of a device reload. However, the relative order of persistent entries remains the same.
fdryL2AclNumber brcdIp.1.2.2.15.7.1.1 Syntax: AclNumber	None	The access list number for this entry. For Layer 2 ACLs, valid values are from 400 through 599.
fdryL2AclClauseIndex brcdIp.1.2.2.15.7.1.2 Syntax:Textual conventions on page 286	None	The index of the clause within a given ACL number. During row creation, the clause index value should match the next available clause index for a given ACL number. It is advisable to first perform a Get operation on fdryL2AclNextClauseTable for a given ACL number, and use the value of fdryL2AclNextClauseIndex returned by the agent.

Name, OID, and syntax	Access	Description
fdryL2AclAction brcdIp.1.2.2.15.7.1.3 Syntax: Action	Read-write	Action to take if the Layer 2 packet on the port matches this ACL.
fdryL2AclSourceMac brcdIp.1.2.2.15.7.1.4 Syntax: MAC address	Read-write	Optional source MAC address. By default, it matches with any source MAC address within a packet. Default: '000000000000'H
fdryL2AclSourceMacMask brcdIp.1.2.2.15.7.1.5 Syntax: MAC address	Read-write	Optional source MAC address mask. For a Set operation, this object can only be used in conjunction with fdryL2AclSourceMac. By default, this matches any source MAC address within a packet. If you want to match the first two bytes of the address aabb.ccdd.eeff, use the mask ffff.0000.0000. In this case, the clause matches all source MAC addresses that contain "aabb" as the first two bytes and any values in the remaining bytes of the MAC address. Default: '000000000000'H
fdryL2AclDestinationMac brcdIp.1.2.2.15.7.1.6 Syntax: MAC address	Read-write	Optional destination MAC address. By default, it matches any destination MAC address within a packet. Default: '000000000000'H
fdryL2AclDestinationMacMask brcdIp.1.2.2.15.7.1.7 Syntax: MAC address	Read-write	Optional destination MAC address mask. For a Set operation, this object can only be used in conjunction with fdryL2AclDestinationMac. By default, it matches any destination MAC address within a packet. If you want to match the first two bytes of the address aabb.ccdd.eeff, use the mask ffff.0000.0000. In this case, the clause matches all destination MAC addresses that contain "aabb" as the first two bytes and any values in the remaining bytes of the MAC address. Default: '000000000000'H
fdryL2AclVlanId brcdIp.1.2.2.15.7.1.8 Syntax: Textual conventions on page 286	Read-write	The optional VLAN ID to match against the incoming packet. By default, the VLAN ID field is ignored during the match and the value 0 is returned. Default: 0
fdryL2AclEthernetType brcdIp.1.2.2.15.7.1.9 Syntax: Textual conventions on page 286	Read-write	The optional Ethernet type to match against the etype field of the incoming packet. By default, the etype field is ignored during the match. Default: invalid
fdryL2AclDot1pPriority brcdIp.1.2.2.15.7.1.10 Syntax: Textual conventions on page 286	Read-write	This object is optional. It assigns the traffic that matches the ACL to a hardware-forwarding queue. In addition to changing the internal forwarding priority, if the outgoing interface is an 802.1q interface, this option maps the specified priority to its equivalent 802.1p (QoS) priority and marks the packet with the new 802.1p

Name, OID, and syntax	Access	Description
		priority. This option is applicable only for the inbound Layer 2 ACLs. NOTE The fdryL2AclDot1pPriority object following fdryL2AclDot1pPriorityForce cannot be used together in a Layer 2 ACL entry. Default: level0(0)
fdryL2AclDot1pPriorityForce brcdIp.1.2.2.15.7.1.11 Syntax: Textual conventions on page 286	Read-write	This object is optional. It assigns the packets of outgoing traffic that match the Layer 2 ACL to a specific hardware-forwarding queue, even though the incoming packet may be assigned to another queue. This option is applicable only for the inbound ACLs. NOTE The fdryL2AclDot1pPriority object following fdryL2AclDot1pPriorityForce cannot be used together in a Layer 2 ACL entry. Default: level0(0)
fdryL2AclDot1pPriorityMapping brcdIp.1.2.2.15.7.1.12 Syntax: Textual conventions on page 286	Read-write	This object is optional. It matches the packet's 802.1p value. This option does not change the packet's forwarding priority through the device or mark the packet. It is applicable for both inbound and outbound Layer 2 ACLs. Default: level0(0)
fdryL2AclMirrorPackets brcdIp.1.2.2.15.7.1.13 Syntax: TruthVal	Read-write	This object is optional. It is applicable only for the ACLs with a permit clause. When you bind a Layer 2 ACL to a port, you can configure the port to mirror the packets to another port using the **acl-mirror-port** CLI command. Then the packets permitted on this port (as a result of the bound ACL) will be mirrored on the other port. Default: "false"
fdryL2AclLogEnable brcdIp.1.2.2.15.7.1.14 Syntax: TruthVal	Read-write	The optional parameter to enable logging only when a deny clause is specified. Note that the traffic denied by the implicit deny mechanism is not subject to logging. The implicit deny occurs when traffic does not match any of the clauses and there is no **permit any any** clause specified at the end of the Layer 2 ACL. Default: "false"
fdryL2AclRowStatus brcdIp.1.2.2.15.7.1.15 Syntax: RowStatus	Read-write	The row status variable is used according to installation and removal conventions for conceptual rows. Setting this object to active(1) or createAndGo(4) results in the addition of a Layer 2 ACL filter in the router. Duplicate entries will be rejected during row creation.

Name, OID, and syntax	Access	Description
		As part of the row creation, entries are appended to this table. Row insertion may not be supported. Setting this object to destroy(6) removes the associated filter from the router. Other values in the enumeration are not used.

Layer 2 ACL binding configuration table

The Layer 2 ACL binding configuration table lists the Layer 2 ACLs that have been bound to a port.

Name, OID, and syntax	Access	Description
fdryL2AclIfBindTable brcdIp.1.2.2.15.8	None	The table of Layer 2 ACL binding to a port. Layer 2 ACLs and Layer 3 ACLs cannot be bound to the same port. However, you can configure a port to use Layer 2 ACLs, and another port on the same device to use Layer 3 ACLs. In general: • Layer 2 ACLs cannot be bound to virtual interfaces, unlike Layer 3 ACLs. • You cannot modify an existing Layer 2 ACL clause. You must first unbind the Layer 2 ACL, delete it, and then create a new clause.
fdryL2AclIfBindDirection brcdIp.1.2.2.15.8.1.1 Syntax: Direction	None	Indicates if Layer 2 ACLs are bound to incoming or outgoing ports: • inbound(0) • outbound(1))
fdryL2AclIfBindAclNumber brcdIp.1.2.2.15.8.1.2 Syntax: Unsigned32	Read-write	The Layer 2 ACL number that is to be bound to a physical interface. Valid values: 400 - 599
fdryL2AclIfBindRowStatus brcdIp.1.2.2.15.8.1.3 Syntax: RowStatus	Read-write	The row status variable is used according to the installation and removal conventions for conceptual rows. Setting this object to active(1) or createAndGo(4) binds the Layer 2 ACL to the specified physical port. Setting this object to destroy(6) unbinds the Layer 2 ACL from the port. Other values in the enumeration are not used.
fdryL2AclIfBindAclName brcdIp.1.2.2.15.8.1.4 Syntax: AclNameString	Read-only	Represents the name of each configured L2 named ACL.

IPv6 ACL MIB Definition

- IPv6 ACL table..... 293

IPv6 ACL table

The following table contains the IPv6 ACLs for Brocade FastIron IPv6 devices.

Name, OID, and syntax	Access	Description
fdryIpv6AclTable brcdIp.1.2.16.1.1.1	None	The IPv6 access control list filters.
fdryIpv6AclIndex brcdIp.1.2.16.1.1.1.1.1 Syntax: Unsigned32	None	The index number for an ACL entry. This is a unique number even though the name is not unique for a given ACL with the same or different source address, prefix length, destination address, destination prefix length, protocol type, action (permit or deny) type, and operator (neq, eq, gt, and lt).
fdryIpv6AclName brcdIp.1.2.16.1.1.1.1.2 Syntax: DisplayString	Read-create	The ACL name for an entry.
fdryIpv6AclAction brcdIp.1.2.16.1.1.1.1.3 Syntax: Action	Read-create	The action to take if the IP packet matches this ACL.
fdryIpv6AclProtocol brcdIp.1.2.16.1.1.1.1.4 Syntax: IpProtocol	Read-create	The transport protocols. 0 means any protocol.
fdryIpv6AclSourceIp brcdIp.1.2.16.1.1.1.1.5 Syntax: Ipv6Address	Read-create	The source IPv6 address.
fdryIpv6AclSourcePrefixLen brcdIp.1.2.16.1.1.1.1.6 Syntax: Unsigned32	Read-create	The source IPv6 address prefix length.
fdryIpv6AclSourceOperator brcdIp.1.2.16.1.1.1.1.7 Syntax: Operator	Read-create	The type of comparison to perform. This applies only to TCP or UDP.
fdryIpv6AclSourceOperand1 brcdIp.1.2.16.1.1.1.1.8 Syntax: Unsigned32	Read-create	This object refers to the source transport protocol port number of the operand 1.
fdryIpv6AclSourceOperand2 brcdIp.1.2.16.1.1.1.1.9 Syntax: Unsigned32	Read-create	This object refers to the source transport protocol port number of the operand 2.
fdryIpv6AclDestinationIp brcdIp.1.2.16.1.1.1.1.10 Syntax: Ipv6Address	Read-create	The destination IPv6 address.

Name, OID, and syntax	Access	Description
fdryIpv6AclDestinationPrefixLen brcdIp.1.2.16.1.1.1.1.11 Syntax: Unsigned32	Read-create	The destination IPv6 address prefix length.
fdryIpv6AclDestinationOperator brcdIp.1.2.16.1.1.1.1.12 Syntax: Operator	Read-create	The type of comparison to perform. This applies only to TCP or UDP.
fdryIpv6AclDestinationOperand1 brcdIp.1.2.16.1.1.1.1.13 Syntax: Unsigned32	Read-create	This object refers to the destination transport protocol port number of the operand 1.
fdryIpv6AclDestinationOperand2 brcdIp.1.2.16.1.1.1.1.14 Syntax: Unsigned32	Read-create	This object refers to the destination transport protocol port number of the operand 2.
fdryIpv6AclEstablished brcdIp.1.2.16.1.1.1.1.15 Syntax: RtrStatus	Read-create	Enables or disables the filtering of established TCP packets for which the ACK or RESET flag is on. This filter applies only to the TCP transport protocol.
fdryIpv6AclLogOption brcdIp.1.2.16.1.1.1.1.16 Syntax: TruthValue	Read-create	The log flag. This should be set to one, which enables logging.
fdryIpv6AclComments brcdIp.1.2.16.1.1.1.1.17 Syntax: DisplayString	Read-create	A description of the individual ACL entry.
fdryIpv6AclRowStatus brcdIp.1.2.16.1.1.1.1.18 Syntax: RowStatus	Read-create	Creates or deletes an ACL entry.
fdryIpv6AclClauseString brcdIp. 1.2.16.1.1.1.1.20 Syntax: DisplayString	Read-only	Returns the equivalent filter clause string.

IP VRRP MIB Definition

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The following tables are supported on the Brocade FastIron devices.

VRRP and VRRP-Extended MIBs

The following table contains the global objects that apply to Virtual Router Redundancy Protocol (VRRP), Virtual Router Redundancy Protocol Extended (VRRP-E), and Virtual Switch Redundancy Protocol (VSRP).

Name, OID, and syntax	Access	Description
snVrrpIfStateChangeTrap brcdIp.1.2.12.1.2 Syntax: Integer	Read-write	Indicates if the SNMP agent process has been enabled to generate VRRP interface state change traps: • disabled(0) • enabled(1) Default: enabled(1) **NOTE** The standard MIB "vrrpNotificationCntl" will work exactly the same as the Proprietary MIB "snVrrpIfStateChangeTrap".
snVrrpIfMaxNumVridPerIntf brcdIp.1.2.12.1.3 Syntax: Integer	Read-only	Indicates the maximum number of VRID per interface.
snVrrpIfMaxNumVridPerSystem brcdIp.1.2.12.1.4 Syntax: Integer	Read-only	Indicates the maximum number of VRID per system.
snVrrpClearVrrpStat brcdIp.1.2.12.1.5 Syntax: Integer	Read-write	Clear VRRP statistics command.

VRRP interface table

The objects in the following table apply to VRRP, VRRP-E, and VSRP, depending on which protocol is enabled in the device. This table has been replaced by the VRRP and VRRP-E interface table on page 296 table, which is presented in VRRP and VRRP-E interface table on page 296.

Name, OID, and syntax	Access	Description
snVrrpIfTable	None	The VRRP interface table.

Name, OID, and syntax	Access	Description
brcdIp.1.2.12.2.1		
snVrrpIfPort brcdIp.1.2.12.2.1.1.1 Syntax: Integer	Read-only	Shows the IP port of this VRRP interface.
snVrrpIfAuthType brcdIp.1.2.12.2.1.1.2 Syntax: Integer	Read-write	Indicates the authentication type of this interface: • noAuth(0) • simpleTextPasswd(1) • ipAuthHeader(2)
snVrrpIfRxHeaderErrCnts brcdIp.1.2.12.2.1.1.4 Syntax: Counter32	Read-only	Shows the number of VRRP or VRRP-E packets received by the interface that had a header error.
snVrrpIfRxAuthTypeErrCnts brcdIp.1.2.12.2.1.1.5 Syntax: Counter32	Read-only	Shows the number of VRRP or VRRP-E packets received by the interface that had an authentication error.
snVrrpIfRxAuthPwdMismatchErrCnts brcdIp.1.2.12.2.1.1.6 Syntax: Counter32	Read-only	Shows the number of VRRP or VRRP-E packets received by the interface that had a password value that does not match the password used by the interface for authentication.
snVrrpIfRxVridErrCnts brcdIp.1.2.12.2.1.1.7 Syntax: Counter32	Read-only	Shows the number of VRRP or VRRP-E packets received by the interface that contained a VRID that is not configured on this interface.

VRRP and VRRP-E interface table

The following table replaces the VRRP interface table on page 295 (presented in the VRRP interface table on page 295 section), which uses the slot or port number to index an entry. This table uses the ifindex to present the configuration and statistics of VRRP and VRRP-E interfaces. Each entry in the table describes one VRRP or VRRP-E interface.

Name, OID, and syntax	Access	Description
snVrrpIf2Table brcdIp.1.2.12.4.1	None	The VRRP and VRRP-E table for interfaces, using the ifindex.
snVrrpIf2AuthType brcdIp.1.2.12.4.1.1.1 Syntax: Integer	Read-write	The authentication type of the interface: • noAuth(0) • simpleTextPasswd(1) • ipAuthHeader(2)
snVrrpIf2RxHeaderErrCnts brcdIp.1.2.12.4.1.1.3 Syntax: Counter32	Read-only	The number of packets received by the interface that had a header error.
snVrrpIf2RxAuthTypeErrCnts brcdIp.1.2.12.4.1.1.4 Syntax: Counter32	Read-only	The number of packets received by the interface that had an authentication error.
snVrrpIf2RxAuthPwdMismatchErrCnts brcdIp.1.2.12.4.1.1.5 Syntax: Counter32	Read-only	The number of packets received by the interface that had a password value that does not match the password used by the interface for authentication.

Name, OID, and syntax	Access	Description
snVrrpIf2RxVridErrCnts brcdIp.1.2.12.4.1.1.6 Syntax: Counter32	Read-only	The number of packets received by the interface that contained a VRID that is not configured on this interface.

VRRP virtual router table

The following table has been replaced by the VRRP and VRRP-E virtual router configuration table on page 302. The new table is presented in the section VRRP and VRRP-E virtual router configuration table on page 302.

Name, OID, and syntax	Access	Description
snVrrpVirRtrTable brcdIp.1.2.12.3.1	None	The VRRP virtual router table.
snVrrpVirRtrPort brcdIp.1.2.12.3.1.1.1 Syntax: Integer32	Read-only	Shows the port number of this VRRP interface.
snVrrpVirRtrId brcdIp.1.2.12.3.1.1.2 Syntax: Integer	Read-only	Shows the VRID that has been configured on this interface. If multiple VRIDs are configured, there is an entry for each VRID.
snVrrpVirRtrOwnership brcdIp.1.2.12.3.1.1.3 Syntax: Integer	Read-write	Indicates the owner of the router interface. The owner or master router owns the IP addresses associated with the VRID: • incomplete(0) - No IP address has been assigned to this VRRP router interface. • owner(1) - The owner or the master router is the owner of the VRRP router interface. • backup(2) - The backup router is the owner of the interface.
snVrrpVirRtrCfgPriority brcdIp.1.2.12.3.1.1.4 Syntax: Integer	Read-write	Applies only if the VRRP virtual router table object is set to backup(2). It indicates the backup router's preferability to becoming the active router for the interface. The higher the number, the higher the priority. If two or more devices are tied with the highest priority, the backup interface with the highest IP address becomes the active router for the VRID. Valid values: 3 - 254 Default: 100
snVrrpVirRtrTrackPriority brcdIp.1.2.12.3.1.1.5 Syntax: Integer	Read-write	Applies to interfaces that are configured with track ports. It indicates the priority of the track ports. A higher number indicates a higher priority. Track port priority is always lower than the VRRP virtual router table priority. This object is adjusted dynamically with the VRRP virtual router table object when the track port state first changes from up to down.

Name, OID, and syntax	Access	Description
		Valid values: 1 - 254
snVrrpVirRtrCurrPriority brcdIp.1.2.12.3.1.1.6 Syntax: Integer	Read-only	The current VRRP priority of this Layer 3 Switch for the VRID. The current priority can differ from the configured priority for the following reasons: • The VRID is still in the initialization stage and has not yet become a master or backup. In this case, the current priority is 0. • The VRID is configured with track ports and the link on a tracked interface has gone down. A higher number indicates a higher priority. This object is adjusted dynamically with the VRRP virtual router table object. Valid values: 1 - 254
snVrrpVirRtrHelloInt brcdIp.1.2.12.3.1.1.7 Syntax: Integer	Read-write	Shows the number of seconds between hello messages that are sent between the master and the backup. Valid values: 1 - 84 seconds Default: 1 second
snVrrpVirRtrDeadInt brcdIp.1.2.12.3.1.1.8 Syntax: Integer	Read-write	Applies only to VRRP backups. It shows the configured value for the dead interval. The dead interval is the number of seconds that a backup router waits for a hello message from the VRID master before determining that the master is no longer active. If the master does not send a hello message before the dead interval expires, the backups negotiate (compare priorities) to select a new master for the VRID. Valid values: 0 - 84 seconds. A value of 0 means that this object has not been configured. Default: 0 seconds
snVrrpVirRtrPreemptMode brcdIp.1.2.12.3.1.1.9 Syntax: Integer	Read-write	Indicates if the backup preempt mode is enabled. The backup preempt mode prevents a backup router with a higher VRRP priority from taking control of the VRID from another backup router that has a lower priority, but has already assumed control of the VRID: • disabled(0) - Prohibit preemption. • enabled(1) - Allow preemption. Default: enabled(1)
snVrrpVirRtrState brcdIp.1.2.12.3.1.1.10 Syntax: Integer	Read-only	Specifies the state of the VRRP router's interface: • init(0) - Initialization state. • master(1) - Master state. • backup(2) - Backup state.

Name, OID, and syntax	Access	Description
snVrrpVirRtrActivate brcdIp.1.2.12.3.1.1.11 Syntax: Integer	Read-write	Indicates if the VRRP router feature is enabled. • disabled(0) - The VRRP Router is deactivated. • enabled(1) - The VRRP Router has been activated.
snVrrpVirRtrIpAddrMask brcdIp.1.2.12.3.1.1.12 Syntax: Octet String	Read-write	The number of IP addresses of this virtual router of this interface.
snVrrpVirRtrTrackPortMask brcdIp.1.2.12.3.1.1.13 Syntax: Octet String	Read-write	This object was obsoleted and replaced by VRRP virtual router table. It specifies the identity of the physical port whose state is to be monitored. Each bit represents a port on a device. There can be up to 64 octets in this object: • Chassis devices can have up to 32 octets. • Stackable devices can have up to 4 octets. Default: 0 octets If this object is configured on an interface, then the preference level for the interface will be adjusted dynamically, depending on the state of the track port: • When the track port states first changes from up to down, the interface's preference level is reduced by the value of the Preference Level parameter. • The next time the track port state changes from down to up, the interface's preference level is increased by the amount specified by the preference level.
snVrrpVirRtrTrackVifMask brcdIp.1.2.12.3.1.1.14 Syntax: Octet String	Read-write	This object was obsoleted and replaced by VRRP virtual router table. It specifies the identity of the virtual interface whose state is to be monitored. Each bit represents a port on a device. Valid values: • Chassis devices can have up to 32 octets. • Stackable devices can have up to 4 octets. Default: 0 octets If this object is configured on an interface, then the preference level for the interface will be adjusted dynamically, depending on the state of the track port: • When the track port states first changes from up to down, the interface's preference level is reduced

Name, OID, and syntax	Access	Description
		by the value of the preference level parameter. • The next time the track port state changes from down to up, the interface's preference level is increased by the amount specified by the preference level.
snVrrpVirRtrRowStatus brcdIp.1.2.12.3.1.1.15 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Delete the row. • create(4) - Create a new row. • modify(5) - Modify an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snVrrpVirRtrRxArpPktDropCnts brcdIp.1.2.12.3.1.1.16 Syntax: Counter32	Read-only	Shows the number of ARP packets addressed to the interface that were dropped.
snVrrpVirRtrRxIpPktDropCnts brcdIp.1.2.12.3.1.1.17 Syntax: Counter32	Read-only	Shows the number of IP packets addressed to the interface that were dropped.
snVrrpVirRtrRxPortMismatchCnts brcdIp.1.2.12.3.1.1.18 Syntax: Counter32	Read-only	Shows the number of packets received that did not match the configuration for the receiving interface.
snVrrpVirRtrRxNumOfIpMismatchCnts brcdIp.1.2.12.3.1.1.19 Syntax: Counter32	Read-only	Shows the number of packets received that did not match the configured IP addresses.
snVrrpVirRtrRxIpMismatchCnts brcdIp.1.2.12.3.1.1.20 Syntax: Counter32	Read-only	Shows the number of receive VRRP IP addresses that did not match the configured VRRP addresses.
snVrrpVirRtrRxHelloIntMismatchCnts brcdIp.1.2.12.3.1.1.21 Syntax: Counter32	Read-only	Shows the number of packets received that did not match the configured hello interval.
snVrrpVirRtrRxPriorityZeroFromMasterCnts brcdIp.1.2.12.3.1.1.22 Syntax: Counter32	Read-only	Shows the counts of the virtual router interface with priority zero from the master.
snVrrpVirRtrRxHigherPriorityCnts brcdIp.1.2.12.3.1.1.23 Syntax: Counter32	Read-only	Shows the number of VRRP packets received by the interface that had a higher backup priority for the VRID than what this interface's backup priority is.
snVrrpVirRtrTransToMasterStateCnts brcdIp.1.2.12.3.1.1.24 Syntax: Counter32	Read-only	Shows the number of times this interface has changed from the backup state to the master state for the VRID.

Name, OID, and syntax	Access	Description
snVrrpVirRtrTransToBackupStateCnts brcdIp.1.2.12.3.1.1.25 Syntax: Counter32	Read-only	Shows the number of times this interface has changed from the master state to the backup state for the VRID.
snVrrpVirRtrCurrDeadInt brcdIp.1.2.12.3.1.1.26 Syntax: Integer32	Read-only	Shows the number of seconds a backup waits for a hello message from the master before determining that the master is no longer active. If the master does not send a hello message before the dead interval expires, the backups negotiate (compare priorities) to select a new master.
snVrrpVirRtrTrackPortList brcdIp.1.2.12.3.1.1.27 Syntax: Octet String	Read-write	This object specifies the identity of the physical port whose state is to be monitored. Each port index is a 16-bit integer in big-endian order. The first 8 bits are the slot number; the next 8 bits are the port number. Default value is 0 length octet string. If this object is configured on an interface, then the preference level for the interface will be adjusted dynamically, depending on the state of the track port: • When the track port state first changes from up to down, the interface's preference level is reduced by the value of the preference level parameter. • The next time the track port state changes from down to up, the interface's preference level is increased by the amount specified by the preference level.
snVrrpVirRtrTrackVifPortList brcdIp.1.2.12.3.1.1.28 Syntax: Octet String	Read-write	This object specifies the identity of the virtual interface whose state is to be monitored. Each port index is a 16-bit integer in big-endian order. The first 8 bits are the slot number; the next 8 bits are the port number. Default value is 0 length octet string. If this object is configured on an interface, then the preference level for the interface will be adjusted dynamically, depending on the state of the track port:
snVrrpVirRtrTrackVifPortList (Continued)		• When the track port states first changes from up to down, the interface's preference level is reduced by the value of the preference level parameter. • The next time the track port state changes from down to up, the interface's preference level is increased by the amount specified by the preference level.

VRRP and VRRP-E virtual router configuration table

The following table replaces the VRRP virtual router table on page 297, which uses a slot or port number to index entries. This new table uses the ifindex method to present the configuration and statistics for VRRP and VRRP-E. Each entry in the table describes one VRRP or VRRP-E router.

Name, OID, and syntax	Access	Description
snVrrpVirRtr2Table brcdIp.1.2.12.5.1	None	The VRRP virtual router 2 table.
snVrrpVirRtr2Id brcdIp.1.2.12.5.1.1.1 Syntax: Integer	Read-only	Shows one of the VRIDs configured on this interface. If multiple VRIDs are configured on the interface, there is an entry for each VRID.
snVrrpVirRtr2Ownership brcdIp.1.2.12.5.1.1.2 Syntax: Integer	Read-write	Indicates the owner of the VRRP router interface. The owner or master router owns the IP addresses associated with the VRID: • incomplete(0) - No IP address has been assigned to this VRRP or VRRP-E interface. • owner(1) - The owner or the master router is the owner of the VRRP router interface. This applies only to VRRP. • backup(2) - The backup router (VRRP or VRRP-E) is the owner of the interface. This is the only value that can be assigned to a VRRP-E router interface.
snVrrpVirRtr2CfgPriority brcdIp.1.2.12.5.1.1.3 Syntax: Integer	Read-write	Indicates the preferability of a router for becoming the active router for the interface. A higher number indicates a higher priority. If two or more devices are tied with the highest priority, the backup interface with the highest IP address becomes the active router for the VRID. Valid values: 0 - 255, where: • 0 - The master no longer participates in the VRRP and a backup router should transition to be the new master. • 255 - The router is the owner. Default: 100.
snVrrpVirRtr2TrackPriority brcdIp.1.2.12.5.1.1.4 Syntax: Integer	Read-write	Applies to interfaces that are configured with track ports. It indicates the priority of the track ports. The higher the number, the higher the priority. Track port priority is always lower than the "snVrrpVirRtrCfgPriority" priority. This object dynamically adjusts the value of the VRRP and VRRP-E virtual router configuration table object when the track port state first changes from up to down. Valid values: 1 - 254
snVrrpVirRtr2CurrPriority brcdIp.1.2.12.5.1.1.5	Read-only	The current VRRP or VRRP-E priority of this Layer 3 Switch for the VRID. The current priority

Name, OID, and syntax	Access	Description
Syntax: Integer		can differ from the configured priority for the following reasons: • The VRID is still in the initialization stage and has not become a master or backup yet. In this case, the current priority is 0. • The VRID is configured with track ports and the link on a tracked interface has gone down. A higher number indicates a higher priority. This object is adjusted dynamically when the tracked port first changes from up to down. Valid values: 1 - 254
snVrrpVirRtr2HelloInt brcdIp.1.2.12.5.1.1.6 Syntax: Integer	Read-write	Shows the number of seconds between hello advertisements from the master and the backup. Valid values: 1 - 84 Default: 1 second.
snVrrpVirRtr2DeadInt brcdIp.1.2.12.5.1.1.7 Syntax: Integer	Read-write	Applies only to VRRP or VRRP-E backups. It shows the configured value for the dead interval. The dead interval is the number of seconds that a backup router waits for a hello message from the VRID master before determining that the master is no longer active. If the Master does not send a hello message before the dead interval expires, the backups negotiate (compare priorities) to select a new master for the VRID. Valid values: 1 - 84 Default: 0, which means that this object has not been configured.
snVrrpVirRtr2PreemptMode brcdIp.1.2.12.5.1.1.8 Syntax: Integer	Read-write	Indicates if the backup preempt mode is enabled: • disabled(0) - Prohibit preemption. • enabled(1) - Allow preemption. Default: enabled(1) The backup preempt mode prevents a backup router with a higher VRRP priority from taking control of the VRID from another backup router that has a lower priority, but has already assumed control of the VRID.
snVrrpVirRtr2State brcdIp.1.2.12.5.1.1.9 Syntax: Integer	Read-only	Specifies the VRRP or VRRP-E router's interface state: • init(0) - Initialization state • master(1) - Master state • backup(2) - Backup state
snVrrpVirRtr2IpAddrMask brcdIp.1.2.12.5.1.1.10 Syntax: Octet String	Read-write	The number of IP addresses of this virtual router of this interface.

Name, OID, and syntax	Access	Description
snVrrpVirRtr2Activate brcdIp.1.2.12.5.1.1.11 Syntax: Integer	Read-write	Indicates if VRRP or VRRP-E router is enabled: • disabled(0) - The router is deactivated. • enabled(1) - The router has been activated.
snVrrpVirRtr2BackupInt brcdIp.1.2.12.5.1.1.12 Syntax: Integer	Read-write	Time interval between backup routers hello message advertisements in seconds. The default is 60 seconds.
snVrrpVirRtr2RowStatus brcdIp.1.2.12.5.1.1.13 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Delete the row. • create(4) - Create a new row. • modify(5) - Modify an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snVrrpVirRtr2RxArpPktDropCnts brcdIp.1.2.12.5.1.1.14 Syntax: Counter32	Read-only	The received VRRP and VRRP-E ARP packet drop counts.
snVrrpVirRtr2RxIpPktDropCnts brcdIp.1.2.12.5.1.1.15 Syntax: Counter32	Read-only	Shows the number of IP packets addressed to the interface that were dropped.
snVrrpVirRtr2RxPortMismatchCnts brcdIp.1.2.12.5.1.1.16 Syntax: Counter32	Read-only	Shows the number of packets received that did not match the configuration for the receiving interface.
snVrrpVirRtr2RxNumOfIpMismatchCnts brcdIp.1.2.12.5.1.1.17 Syntax: Counter32	Read-only	Shows the number of packets received that did not match the configured IP addresses.
snVrrpVirRtr2RxIpMismatchCnts brcdIp.1.2.12.5.1.1.18 Syntax: Counter32	Read-only	Shows the number of VRRP IP addresses received that did not match the VRRP or VRRP-E addresses.
snVrrpVirRtr2RxHelloIntMismatchCnts brcdIp.1.2.12.5.1.1.19 Syntax: Counter32	Read-only	Shows the number of packets received that did not match the configured hello interval.
snVrrpVirRtr2RxPriorityZeroFromMasterCnts brcdIp.1.2.12.5.1.1.20 Syntax: Counter32	Read-only	Shows the count of the virtual router interfaces that received priority zero from the master.
snVrrpVirRtr2RxHigherPriorityCnts brcdIp.1.2.12.5.1.1.21 Syntax: Counter32	Read-only	Shows the number of packets received by the interface that had a higher backup priority for the VRID than this interface's backup priority for the VRID.
snVrrpVirRtr2TransToMasterStateCnts brcdIp.1.2.12.5.1.1.22 Syntax: Counter32	Read-only	Shows the number of times this interface has changed from the master state to the backup state for the VRID.

Name, OID, and syntax	Access	Description
snVrrpVirRtr2TransToBackupStateCnts brcdIp.1.2.12.5.1.1.23 Syntax: Counter32	Read-only	Shows the number of times this interface has changed from the master state to the backup state.
snVrrpVirRtr2CurrDeadInt brcdIp.1.2.12.5.1.1.24 Syntax: Integer32	Read-only	Shows the current dead interval in increments of 100 milliseconds for the virtual router. This is the time period that a backup waits for a hello message from the master before determining that the master is no longer active. If the master does not send a hello message before the dead interval expires, the backups negotiate (compare priorities) to select a new master for the VRID.
snVrrpVirRtr2TrackPortList brcdIp.1.2.12.5.1.1.25 Syntax: Octet String	Read-write	Specifies the router's physical track port membership. The membership includes physical ports and virtual ports whose state is to be monitored. Each port index is an ifIndex. If there are four or more consecutive ifIndexes, then the encoding and decoding scheme is range-based, as follows: • Each range prefix with 0000 (2 octets) is not a valid ifIndex. • The first two octets in a set of four octets indicate the beginning of the range. The next two octets show the end of the range. • IfIndexes that are not in a range are displayed as they are. For example, you may see the following lists: • Port list: 0001..0005 0015 0032..0047 0001..0005 and 0032..0047 show ranges of ifindexes; whereas, 0015 is one ifindex • Port list in PDU: 0000 0001 0005 000f 0000 0020 002f The list contains ifindexes not in a range. If this object is configured, then the preference level of this interface will be adjusted dynamically depending on the state of the track port. The interface's preference level is reduced by the value of preference level parameter when the track port states first changes from up to down. When the track port returns to the up state, the interface's preference level is increased by the amount specified by the preference level.
snVrrpVirRtr2AdvertiseBackup brcdIp.1.2.12.5.1.1.26 Syntax: Integer	Read-write	Indicates if the ability for this backup to advertise itself to the current master is enabled: • disabled(0) • enabled(1) Default: disabled(0}
snVrrpVirRtr2MasterIpAddr brcdIp.1.2.12.5.1.1.27 Syntax: IpAddress	Read-only	Shows the master's real or virtual (primary) IP address. This IP address is listed as the source in VRRP and VRRP-E advertisement that was last received by this virtual router.

Name, OID, and syntax	Access	Description
snVrrpVirRtr2IpAddrCount brcdIp.1.2.12.5.1.1.28 Syntax: Integer	Read-only	Shows the number of IP addresses that are associated with this virtual router. This number is equal to the number of rows in the vrrpAssoIpAddrTable of the standard MIB that corresponds to a given ifindex and VRID pair.
snVrrpVirRtr2VirtualMacAddr brcdIp.1.2.12.5.1.1.29 Syntax: MAC address	Read-only	Shows the virtual MAC address of the virtual router.

MCT MIB Definition

- MCT global MIB object.....307

MCT global MIB object

The following table lists the global MIB object of the MCT table.

Name, OID, and syntax	Access	Description
brcdMctL2Forward brcdIp.1.1.12.1.1.1 Syntax: EnabledStatus	Read-write	The global cluster Layer 2 forward state of the system. The STP packets coming from the MCT VLANs is dropped when the object is set to the disabled(2) state.

VSRP MIB Definition

- Global VSRP objects....309
- VSRP interface table....309
- VSRP virtual router table....310

Global VSRP objects

The following table contains the global VSRP objects. Use the **router vsrp** and **snmp-server enable traps vsrp** CLI commands for information on global VSRP objects.

NOTE
Only one of the virtual router protocols can be enabled at any one time.

Name, OID, and syntax	Access	Description
snVsrpGroupOperModeVsrp brcdIp.1.1.3.21.1.1 Syntax: Integer	Read-write	Indicates if VSRP is enabled or disabled on this system: • disabled(0) • enabled(1) Default: enabled(1)
snVsrpIfStateChangeTrap brcdIp.1.1.3.21.1.2 Syntax: Integer	Read-write	Indicates whether the SNMP agent process is permitted to generate VSRP interface state change traps: • disabled(0) • enabled(1) Default: enabled(1)
snVsrpIfMaxNumVridPerIntf brcdIp.1.1.3.21.1.3 Syntax: Integer32	Read-only	Indicates the maximum number of VRIDs that an interface can have.
snVsrpIfMaxNumVridPerSystem brcdIp.1.1.3.21.1.4 Syntax: Integer32	Read-only	Indicates the maximum number of VRIDs that a system can have.
snVsrpClearVrrpStat brcdIp.1.1.3.21.1.5 Syntax: Integer	Read-write	Clears the VSRP statistics: • normal(0) • clear(1)

VSRP interface table

The following table contains objects used to configure VSRP interfaces. The following objects are equivalent to the **vsrp auth-type** CLI command.

NOTE
Make sure that Global VSRP objects on page 309 is set to enable(1).

Name, OID, and syntax	Access	Description
snVsrpIfTable brcdIp.1.1.3.21.2.1	None	The VSRP interface table.
snVsrpIfVlanId brcdIp.1.1.3.21.2.1.1.1 Syntax: Integer32	Read-only	VLAN ID used to index the entries in this table.
snVsrpIfAuthType brcdIp.1.1.3.21.2.1.1.2 Syntax: Integer	Read-write	Indicates the authorization type used to verify access to the interface: • noAuth(0) • simpleTextPasswd(1) • ipAuthHeader(2)
snVsrpIfAuthPassword brcdIp.1.1.3.21.2.1.1.3 Syntax: Octet String	Read-write	The simple text password is allowed only if the VSRP interface table is simpleTextPasswd(1) and the size should be greater than zero. This object can contain 0 to 8 octets and if the value is noAuth then zero length string is returned.

VSRP virtual router table

The VSRP virtual router table describes the configuration of the VSRP virtual router. The following objects are equivalent to the **vsrp vrid** and **show vsrp** CLI commands.

Name, OID, and syntax	Access	Description
snVsrpVirRtrTable brcdIp.1.1.3.21.3.1	None	The VSRP virtual router table.
snVsrpVirRtrVlanId brcdIp.1.1.3.21.3.1.1.1 Syntax: Integer32	Read-only	VLAN index of the VSRP router.
snVsrpVirRtrId brcdIp.1.1.3.21.3.1.1.2 Syntax: Integer	Read-only	Shows a virtual router ID for the interface.
snVsrpVirRtrOwnership brcdIp.1.1.3.21.3.1.1.3 Syntax: Integer	Read-write	Indicates the owner of the VSRP router interface. The owner or master router owns the IP addresses associated with the VRID: • incomplete(0) - No IP address has been assigned to this interface. • owner(1) - This does not apply to VSRP. • backup(2) - The backup router is the owner of the interface. This is the only value that can be assigned to a VSRP router interface.
snVsrpVirRtrCfgPriority brcdIp.1.1.3.21.3.1.1.4 Syntax: Integer	Read-write	Indicates the preferability of a router for becoming the active router for the interface. A higher number indicates a higher priority. If two or more devices are tied with the highest priority,

Name, OID, and syntax	Access	Description
		the backup interface with the highest IP address becomes the active router for the VRID. This object can be set only if VSRP virtual router table is set to backup(2). Valid values: 8 - 255 Default: 100
snVsrpVirRtrTrackPriority brcdIp.1.1.3.21.3.1.1.5 Syntax: Integer	Read-write	Indicates the amount by which the default track priority is reduced when a tracked interface goes down. The higher the number, the higher the priority. After this object is configured, the VSRP virtual router table object of this interface will be adjusted dynamically with this track priority the first time the track port states changes from up to down. Valid values: 1 - 254
snVsrpVirRtrCurrPriority brcdIp.1.1.3.21.3.1.1.6 Syntax: Integer	Read-only	The current VSRP priority of this Layer 3 Switch for the VRID. The current priority can differ from the configured priority for the following reasons: • The VRID is still in the initialization stage and has not become a master or backup. In this case, the current priority is 0. • The VRID is configured with track ports and the link on a tracked interface has gone down. A higher number indicates a higher priority. This object is adjusted dynamically when the tracked port first changes from up to down. Valid values: 1 - 254
snVsrpVirRtrHelloInt brcdIp.1.1.3.21.3.1.1.7 Syntax: Integer	Read-write	Shows the number of seconds between hello advertisements sent from the master and the backup. Valid values: 1 - 84 Default: 1 second **NOTE** This object cannot be combined with either the snVsrpVirRtrDeadInt or snVsrpVirRtrHoldDownInt objects in one SNMP set request.
snVsrpVirRtrDeadInt brcdIp.1.1.3.21.3.1.1.8 Syntax: Integer	Read-write	Shows the number of seconds a Backup waits for a hello message from the master for the VRID before determining that the master is no longer active. If the master does not send a hello messages before the dead interval expires and the backups negotiate (compare priorities) to select a new master . Valid values: 1 - 84 Default: 3 seconds

Name, OID, and syntax	Access	Description
		NOTE This object cannot be combined with the snVsrpVirRtrHelloInt object in one SNMP set request.
snVsrpVirRtrPreemptMode brcdIp.1.1.3.21.3.1.1.9 Syntax: Integer	Read-write	Enables or disables preemption. When preemption is enabled, a higher priority backup router preempts a lower priority master. • disabled(0) • enabled(1) Default: enabled(1)
snVsrpVirRtrState brcdIp.1.1.3.21.3.1.1.10 Syntax: Integer	Read-only	Specifies the virtual router's interface state: • init(0) - Initialization state • master(1) - Master state • backup(2) - Backup state
snVsrpVirRtrIpAddrMask brcdIp.1.1.3.21.3.1.1.11 Syntax: Octet String	Read-write	The numbers of IP addresses for this virtual router of this interface. This object is for Layer 3 VSRP. Valid values: Up to 64 octets
snVsrpVirRtrActivate brcdIp.1.1.3.21.3.1.1.12 Syntax: Integer	Read-write	Indicates if a VRRP or VRRP-E router has been activated. • disabled(0) - The router has not been activated. • enabled(1) - The router has been activated.
snVsrpVirRtrTrackPortList brcdIp.1.1.3.21.3.1.1.13 Syntax: Octet String	Read-write	Specifies the router's physical track port membership. The membership includes physical port s and virtual ports whose state is to be monitored. Each port index is an ifIndex. If there are four or more consecutive ifIndexes, then the encoding and decoding scheme is range-based, as follows: • Each range prefix with 0000 (2 octets) is not a valid ifIndex. • The first two octets in a set of four octets indicate the beginning of the range. The next two octets show the end of the range. • Ifindexes that are not in a range are displayed as individual indexes. For example, you may see the following lists: • Port list: 0001..0005 0015 0032..0047 0001..0005 and 0032..0047 show ranges of ifindexes; whereas, 0015 is one ifindex • Port list in PDU: 0000 0001 0005 000f 0000 0020 002f The list contains ifindexes not in a range. If this object is configured, then the preference level of this interface will be adjusted dynamically

Name, OID, and syntax	Access	Description
		depending on the state of the track port. The interface's preference level is reduced by the value of preference level parameter when the track port states first changes from up to down. When the track port returns to the up state, the interface's preference level is increased by the amount specified by the preference level.
snVsrpVirRtrAdvertiseBackup brcdIp.1.1.3.21.3.1.1.14 Syntax: Integer	Read-write	Indicates if the ability for this backup to advertise itself to the current master is enabled: • disabled(0) • enabled(1) Default: disabled(0)
snVsrpVirRtrHoldDownInt brcdIp.1.1.3.21.3.1.1.15 Syntax: Integer	Read-write	The amount of time a backup that has sent a hello packet announcing its intent to become master waits before beginning to forward traffic for the VRID. The hold-down interval prevents Layer 2 loops from occurring during rapid failover of VSRP. The interval can be from 1 through 84 seconds. Default: 2 seconds NOTE This object cannot be combined with the snVsrpVirRtrHelloInt object in one SNMP set request.
snVsrpVirRtrInitTtl brcdIp.1.1.3.21.3.1.1.16 Syntax: Integer	Read-write	Indicates the time-to-live (TTL) value in the hello packets. TTL is the maximum number of hops a VSRP hello packet can traverse before being dropped. TTL in a packet helps regulate the distance that a hello packet can travel. It prevents the flooding of VSRP hello packets in the network. Valid values: 1 - 255 seconds Default: 1 second
snVsrpVirRtrIncPortList brcdIp.1.1.3.21.3.1.1.17 Syntax: Octet String	Read-write	Groups all free ports of a VLAN into their control ports.
snVsrpVirRtrSave brcdIp.1.1.3.21.3.1.1.18 Syntax: Integer	Read-write	Sets VSRP to save current parameters value: • disabled(0) • enabled(1) Default: disabled(0)
snVrrpVirRtrBackupInt brcdIp.1.1.3.21.3.1.1.19 Syntax: Integer	Read-write	Indicates the time interval when backup routers send hello message advertisements. Valid values: 60 - 3600 seconds Default: 60 seconds
snVsrpVirRtrRowStatus brcdIp.1.1.3.21.3.1.1.20 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Delete the row. • create(4) - Create a new row.

Name, OID, and syntax	Access	Description
		• modify(5) - Modify an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snVsrpVirRtrRxArpPktDropCnts brcdIp.1.1.3.21.3.1.1.21 Syntax: Counter32	Read-only	The received VSRP ARP packet drop counts.
snVsrpVirRtrRxIpPktDropCnts brcdIp.1.1.3.21.3.1.1.22 Syntax: Counter32	Read-only	The received VSRP IP packet drop counts.
snVsrpVirRtrRxPortMismatchCnts brcdIp.1.1.3.21.3.1.1.23 Syntax: Counter32	Read-only	The received VSRP port mismatching counts.
snVsrpVirRtrRxNumOfIpMismatchCnts brcdIp.1.1.3.21.3.1.1.24 Syntax: Counter32	Read-only	Shows the received number of mismatched IP addresses for VSRP.
snVsrpVirRtrRxIpMismatchCnts brcdIp.1.1.3.21.3.1.1.25 Syntax: Counter32	Read-only	Shows the number of received VSRP IP addresses that are mismatched.
snVsrpVirRtrRxHelloIntMismatchCnts brcdIp.1.1.3.21.3.1.1.26 Syntax: Counter32	Read-only	Shows the number of the virtual router interfaces with hello intervals that are mismatched.
snVsrpVirRtrRxPriorityZeroFromMasterCnts brcdIp.1.1.3.21.3.1.1.27 Syntax: Counter32	Read-only	Shows the number of advertisements with priority of zero received from the master.
snVsrpVirRtrRxHigherPriorityCnts brcdIp.1.1.3.21.3.1.1.28 Syntax: Counter32	Read-only	The counts of the virtual router interfaces with higher priority.
snVsrpVirRtrTransToMasterStateCnts brcdIp.1.1.3.21.3.1.1.29 Syntax: Counter32	Read-only	Shows the number of times this interface has changed from the master state to the backup state for the VRID.
snVsrpVirRtrTransToBackupStateCnts brcdIp.1.1.3.21.3.1.1.30 Syntax: Counter32	Read-only	Shows the number of times this interface has changed from the master state to the backup state.
snVsrpVirRtrCurrDeadInt brcdIp.1.1.3.21.3.1.1.31 Syntax: Integer32	Read-only	Shows the current dead intervals in increments of 100 milliseconds for the virtual router. This is the time period that a backup waits for a hello message from the master before determining that the master is no longer active. If the master does not send a hello message before the dead interval expires and the backups negotiate (compare priorities) to select a new master.
snVsrpVirRtrCurHelloInt	Read-only	Shows the current backup router hello interval.

Name, OID, and syntax	Access	Description
brcdIp.1.1.3.21.3.1.1.32 Syntax: Integer		
snVsrpVirRtrCurHoldDownInt brcdIp.1.1.3.21.3.1.1.33 Syntax: Integer	Read-only	Shows the current value of the hold-down interval. Valid values: 1 - 84
snVsrpVirRtrCurInitTtl brcdIp.1.1.3.21.3.1.1.34 Syntax: Integer	Read-only	Shows the current TTL value. Valid values: 1 - 255
snVsrpVirRtrHelloMacAddress brcdIp.1.1.3.21.3.1.1.35 Syntax: MAC address	Read-only	Shows the hello MAC address.
snVsrpVirRtrMasterIpAddress brcdIp.1.1.3.21.3.1.1.36 Syntax: IpAddress	Read-only	Shows the master router's real or virtual (primary) IP address. This is the IP address listed as the source in VSRP advertisement, which is last received by this virtual router.

ARP MIB Definition

- Global ARP statistics.....317

Global ARP statistics

The following MIB objects display statistics for Address Resolution Protocol (ARP).

Name, OID, and syntax	Access	Description
snArpStatsTotalReceived brcdIp.1.1.3.22.1.1 Syntax: Counter32	Read-only	The total number of ARP packets received from the interfaces, including those received in error.
snArpStatsRequestReceived brcdIp.1.1.3.22.1.2 Syntax: Counter32	Read-only	The total number of input ARP request packets received from the interfaces.
snArpStatsRequestSent brcdIp.1.1.3.22.1.3 Syntax: Counter32	Read-only	The total number of output ARP request packets sent from the interfaces.
snArpStatsRepliesSent brcdIp.1.1.3.22.1.4 Syntax: Counter32	Read-only	The total number of output ARP reply packets sent from the interfaces.
snArpStatsPendingDrop brcdIp.1.1.3.22.1.5 Syntax: Counter32	Read-only	The total number of ARP pending packets discarded.
snArpStatsInvalidSource brcdIp.1.1.3.22.1.6 Syntax: Counter32	Read-only	The total number of ARP packets received with invalid sender protocol address.
snArpStatsInvalidDestination brcdIp.1.1.3.22.1.7 Syntax: Counter32	Read-only	The total number of ARP packets received with invalid destination protocol address.

IP MIB Definition

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Global router MIB

The following table contains a global MIB object covering the switching properties of the Layer 3 Switch, regardless of routing protocol.

Name, OID, and syntax	Access	Description
snGblRtRouteOnly brcdIp.1.2.8.1.1 Syntax: Integer	Read-write	Determines if the Layer 3 Switch will route or switch packets: • disabled(0) - Router will first route the packets. If it cannot route them, it will switch the packets. • enabled(1) - Router will only route the packets; it will not switch them.

IP general group

The following table contains the general objects for the IP group.

Name, OID, and syntax	Access	Description
snRtClearArpCache brcdIp.1.2.2.1.1 Syntax: ClearStatus **NOTE** This object is not supported on the Brocade FastIron series devices.	Read-write	Clears learned Address Resolution Protocol (ARP) entries but does not remove any static ARP entries: • normal(0) - Do not clear learned entries. • clear(1) - Clear learned entries.
snRtClearIpCache brcdIp.1.2.2.1.2 Syntax: ClearStatus	Read-write	Clears the entries in the IP forwarding cache table: • normal(0) - Do not clear entries. • clear(1) - Clear entries.
snRtClearIpRoute brcdIp.1.2.2.1.3 Syntax: ClearStatus	Read-write	Clears the IP route tables: • normal(0) - Do not clear entries. • clear(1) - Clear entries.
snRtBootpServer brcdIp.1.2.2.1.4	Read-write	Shows the IP address of the bootp server to which bootp packets must be relayed.

Name, OID, and syntax	Access	Description
Syntax: IpAddress		
snRtBootpRelayMax brcdIp.1.2.2.1.5 Syntax: Integer	Read-write	Specifies the maximum number of hops the bootp packet should travel. Valid values: Up to 15 hops
snRtArpAge brcdIp.1.2.2.1.6 Syntax: Integer	Read-write	Specifies the number of minutes that an ARP entry can be valid without having it to be relearned. Valid values: Up to 240 minutes. A value of zero (0) means that the entry will not age out.
snRtIpIrdpEnable brcdIp.1.2.2.1.7 Syntax: Integer	Read-write	Indicates if router advertisement is enabled on this device: • disabled(0) • enabled(1)
snRtIpLoadShare brcdIp.1.2.2.1.8 Syntax: Integer	Read-write	Indicates if more than one route is enabled to share the loads: • disabled(0) • enabled(1)
snRtIpProxyArp brcdIp.1.2.2.1.9 Syntax: Integer	Read-write	Indicates if the proxy ARP function is enabled: • disabled(0) • enabled(1)
snRtIpRarp brcdIp.1.2.2.1.10 Syntax: Integer	Read-write	Indicates if the RARP server is enabled: • disabled(0) • enabled(1)
snRtIpTtl brcdIp.1.2.2.1.11 Syntax: Integer	Read-write	Indicates the time-to-live (TTL) value that will be used in the IP header of an IP packet that was generated by this device. Valid values: 1 - 255
snRtIpSetAllPortConfig brcdIp.1.2.2.1.12 Syntax: Integer32	Read-write	Shows the index number of a row in IP interface port configuration table on page 328, such as IP interface port configuration table on page 328. All the writeable data from that row will be copied to all appropriate rows in all IPinterface port configuration table. **NOTE** Prior to setting this object, make sure that the row identified in this object contains a value for all its objects; otherwise, the current data of the row will be used to set the entire IP interface configuration table.
snRtIpFwdCacheMaxEntries brcdIp.1.2.2.1.13 Syntax: Integer32	Read-only	Shows the maximum number of entries in the IP forwarding cache table.
snRtIpFwdCacheCurEntries brcdIp.1.2.2.1.14 Syntax: Integer32	Read-only	Shows the current number of entries in the IP forwarding cache table.
snRtIpMaxStaticRouteEntries brcdIp.1.2.2.1.15	Read-only	Shows the maximum number of entries in the IP static route table.

Name, OID, and syntax	Access	Description
Syntax: Integer		
snRtIpDirBcastFwd brcdIp.1.2.2.1.16 Syntax: Integer	Read-write	Indicates if the directed broadcast forwarding feature is enabled: • disabled(0) • enabled(1)
snRtIpLoadShareNumOfPaths brcdIp.1.2.2.1.17 Syntax: Integer32	Read-write	Specifies the number of routes to be used to share the load.
snRtIpLoadShareMaxPaths brcdIp.1.2.2.1.18 Syntax: Integer32	Read-only	Indicates the maximum number of routes that can be configured to share the load.
snRtIpLoadShareMinPaths brcdIp.1.2.2.1.19 Syntax: Integer32	Read-only	Indicates the minimum number of routes that can be configured to share the load.
snRtIpProtocolRouterId brcdIp.1.2.2.1.20 Syntax: IpAddress	Read-write	Shows the router ID for all Internet Protocols.
snRtIpSourceRoute brcdIp.1.2.2.1.21 Syntax: Integer	Read-write	Indicates if strict source routing is enabled to drop source routed packets: • disabled(0) • enabled(1)

IP static route table

NOTE
The following table is not supported only on the Brocade FCX, Brocade ICX 6610, Brocade ICX 6430, Brocade ICX 6450, Brocade ICX 7250, Brocade ICX 7450, and Brocade ICX 7750 devices.

The IP static route table contains a list of static routes. These routes can be one of the following types:

- Standard - The static route consists of the destination network address and network mask, plus the IP address of the next-hop gateway.
- Interface-based - The static route consists of the destination network address and network mask, plus the Layer 3 Switch interface through which you want the Layer 3 Switch to send traffic for the route. Typically, this type of static route is directly attached to the destination networks.
- Null - The static route consists of the destination network address and network mask, plus the “null0” parameter. Typically, the null route is configured as a backup route for discarding traffic if the primary route is unavailable.

The IP static route table also serves as the default route table.

NOTE
SNMP support for IP static route MIB table is limited only to IPv4 and not supported on IPv6. Operations such as SNMP GET, SNMP WALK, and SNMP SET are supported.

NOTE
The following MIB table OIDs support only the default VRF and non-default VRF is not supported.

NOTE
The snRtIpStaticRouteIndex OID is not supported on the Brocade FastIron devices.

Name, OID, and syntax	Access	Description
snRtIpStaticRouteTable brcdIp.1.2.2.2	None	IP static route table.
snRtIpStaticRouteIndex brcdIp.1.2.2.2.1.1 Syntax: Integer32	Read-only	The table index for a static route entry.
snRtIpStaticRouteDest brcdIp.1.2.2.2.1.2 Syntax: IpAddress	Read-write	Shows the destination IP address of the default route. The address 0.0.0.0 is the IP address of the default router. NOTE The OID value of the snRtIpStaticRouteDest must be same as the snRtIpStaticRouteDest index value used to create the row. Index and index value must be the same. SNMPSET value must be a valid IP address.
snRtIpStaticRouteMask brcdIp.1.2.2.2.1.3 Syntax: IpAddress	Read-write	Shows the subnet mask of the default router destination IP address. The subnet mask of the default router is 0.0.0.0. The OID value of the snRtIpStaticRouteMask must be same as the snRtIpStaticRouteMask index value used to create the row. Index and index value must be the same. SNMPSET value must be a valid IP address
snRtIpStaticRouteNextHop brcdIp.1.2.2.2.1.4 Syntax: IpAddress	Read-write	Shows the IP address of the next-hop router (gateway) for the route. SNMPSET value must be a valid IP address.
snRtIpStaticRouteMetric brcdIp.1.2.2.2.1.5 Syntax: Integer32	Read-write	Shows the metrics to next-hop router.
snRtIpStaticRouteRowStatus brcdIp.1.2.2.2.1.6 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Delete the row. • create(4) - Create a new row.
snRtIpStaticRouteDistance brcdIp.1.2.2.2.1.7 Syntax: Integer	Read-write	Specifies the administrative distance of the route. When comparing equal routes to a destination, the Layer 3 Switch prefers lower administrative distances over higher ones.

IP filter table

An IP filter is an access policy that determines whether the device forwards or drops IP packets. A filter consists of source and destination IP information and the action to take when a packet matches the values in the filter.

The following objects define IP filters.

Name, OID, and syntax	Access	Description
snRtIpFilterTable brcdIp.1.2.2.3	None	The IP filter table.
snRtIpFilterIndex brcdIp.1.2.2.3.1.1 Syntax: Integer32	Read-only	Shows the index for an entry in the IP filter table.
snRtIpFilterAction brcdIp.1.2.2.3.1.2 Syntax: Integer	Read-write	Determines the action to be taken if the IP packet matches this filter: • deny(0) • permit(1) • qosEnabled(2) When you configure an IP access policy, the device denies all IP packets by default unless you explicitly permit them. Thus, if you want the device to permit all IP packets except the ones that you filter out, you must configure the last IP access policy to permit all IP packets.
snRtIpFilterProtocol brcdIp.1.2.2.3.1.3 Syntax: Integer	Read-write	Specifies the transport protocol that you can filter. Only the traffic for the transport protocol selected will be allowed: • all(0) - All traffic of the following transport protocols listed is permitted. • ICMP(1) • IGMP(2) • IGRP(88) • OSPF(89) • TCP(6) • UDP(17) In addition, if you filter TCP or UDP, you can also specify a particular application port (such as “HTTP” or “80”) or a logical expression consisting of an operator and port names or numbers.
snRtIpFilterSourceIp brcdIp.1.2.2.3.1.4 Syntax: IpAddress	Read-write	Shows the source IP address. The policy will be applied to packets that come from this IP address.
snRtIpFilterSourceMask brcdIp.1.2.2.3.1.5 Syntax: IpAddress	Read-write	Shows the source IP subnet mask. The policy will be applied to packets that come from this subnet mask.
snRtIpFilterDestIp brcdIp.1.2.2.3.1.6 Syntax: IpAddress	Read-write	Shows the destination IP address. The IP access policy will be applied to packets that are going to this IP address.
snRtIpFilterDestMask brcdIp.1.2.2.3.1.7 Syntax: IpAddress	Read-write	Shows the destination IP subnet mask. The IP access policy will be applied to packets that are going to this subnet mask.
snRtIpFilterOperator brcdIp.1.2.2.3.1.8 Syntax: Integer	Read-write	Applies only if the value of the IP filter table object is TCP or UDP.

Name, OID, and syntax	Access	Description
		It specifies the type of comparison to be performed to TCP and UDP packets: • greater(1) - The policy applies to TCP or UDP port numbers that are greater than the value of the IP filter table object. • equal(2) - The policy applies to TCP or UDP port numbers that are equal to the value of the IP filter table object. • less(3) - The policy applies to TCP or UDP port numbers that are less than the value of the IP filter table object. • notEqual(4) - The policy applies to all TCP or UDP port numbers except to those that are equal to the value of the IP filter table object.
snRtIpFilterOperand brcdIp.1.2.2.3.1.9 Syntax: Integer	Read-write	Applies only if the value of the IP filter table object is TCP or UDP. Specifies the TCP or UDP port number that will be used in this filter. Valid values: 0 - 65535. 0 means that this object is not applicable.
snRtIpFilterRowStatus brcdIp.1.2.2.3.1.10 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Delete the row. • create(4) - Create a new row. • modify(5) - Modify an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snRtIpFilterEstablished brcdIp.1.2.2.3.1.11 Syntax: Integer	Read-write	Applies only to TCP packets. Indicates if the filtering of established TCP packets is enabled for packets that have the ACK or RESET flag on: • disabled(0) • enabled(1)
snRtIpFilterQosPriority brcdIp.1.2.2.3.1.12 Syntax: Integer	Read-write	The router Layer 4 QoS Priority values are: • low(0) - lower priority • high(1) - higher priority The Priority values are: • level0(0) - Lower priority • level1(1) • level2(2) • level3(3), • level4(4)

Name, OID, and syntax	Access	Description
		• level5(5) • level6(6) • level7(7) - Higher priority

RARP table

The Reverse Address Resolution Protocol (RARP) provides a simple mechanism for directly-attached IP hosts to boot over the network. RARP allows an IP host that does not have a means of storing its IP address across power cycles or software reloads to query a directly-attached router for an IP address.

RARP is enabled by default. However, there must be a static RARP entry for each host that will use the Layer 3 Switch for booting. The following table contains the objects that define each RARP entry.

Name, OID, and syntax	Access	Description
snRtIpRarpTable brcdIp.1.2.2.4	None	IP RARP table.
snRtIpRarpIndex brcdIp.1.2.2.4.1.1 Syntax: Integer	Read-only	An index for an entry in the RARP table. There can be up to 16 entries.
snRtIpRarpMac brcdIp.1.2.2.4.1.2 Syntax: OCTET STRING	Read-write	Shows the MAC address of the RARP client.
snRtIpRarpIp brcdIp.1.2.2.4.1.3 Syntax: IpAddress	Read-write	Shows the IP address for a RARP client.
snRtIpRarpRowStatus brcdIp.1.2.2.4.1.4 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Delete the row. • create(4) - Create a new row. • modify(5) - Modify an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

Static ARP table

The Address Resolution Protocol (ARP) is a standard IP protocol that enables an IP Layer 3 Switch to obtain the MAC address of another device's interface when the Layer 3 Switch knows the IP address of the interface. ARP is enabled by default and cannot be disabled.

The static ARP table in a Layer 3 Switch contains entries that are useful in cases where you want to preconfigure an entry for a device that is not connected to the Layer 3 Switch, or you want to prevent a particular entry from aging out. The software removes a dynamic

entry from the ARP cache if the ARP aging interval expires before the entry is refreshed. Static entries do not age out, regardless of whether or not the device receives an ARP request from the device that has the entry's address.

Name, OID, and syntax	Access	Description
snRtStaticArpTable brcdIp.1.2.2.5	None	IP static ARP table.
snRtStaticArpIndex brcdIp.1.2.2.5.1.1 Syntax: Integer	Read-only	An index for a static ARP entry. There can be up to 16 entries.
snRtStaticArpIp brcdIp.1.2.2.5.1.2 Syntax: IpAddress	Read-write	Shows the IP address of a static ARP entry.
snRtStatkicArpMac brcdIp.1.2.2.5.1.3 Syntax: OCTET STRING	Read-write	Specifies the MAC address of a static ARP entry.
snRtStaticArpPort brcdIp.1.2.2.5.1.4 Syntax: PortIndex	Read-write	Specifies the port number attached to the device that has the MAC address of the entry. The value of this object is from 1 through 42.
snRtStaticArpRowStatus brcdIp.1.2.2.5.1.5 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Delete the row. • create(4) - Create a new row. • modify(5) - Modify an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

IP interface port address table

The IP interface port address table shows the port IP address and its port type.

Name, OID, and syntax	Access	Description
snRtIpPortAddrTable brcdIp.1.2.2.6	None	IP port address table.
snRtIpPortAddrPortIndex brcdIp.1.2.2.6.1.1 Syntax: PortIndex	Read-only	The index of the port address entry. The value of this object is from 1 through 42.
snRtIpPortAddress brcdIp.1.2.2.6.1.2 Syntax: IpAddress	Read-only	Specifies the port IP address.
snRtIpPortSubnetMask brcdIp.1.2.2.6.1.3 Syntax: IpAddress	Read-write	Specifies the port IP address subnet mask.

Name, OID, and syntax	Access	Description
snRtIpPortAddrType brcdIp.1.2.2.6.1.4 Syntax: Integer	Read-write	Shows the port type of the entry: • primary(1) • secondary(2) Default: primary(1)
snRtIpPortRowStatus brcdIp.1.2.2.6.1.5 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Delete the row. • create(4) - Create a new row. • modify(5) - Modify an existing row. If the row exists, then a set with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

IP interface port access table

The following table determines if the port is for incoming or outgoing traffic and the filter used on the interface.

Name, OID, and syntax	Access	Description
snRtIpPortAccessTable brcdIp.1.2.2.7	None	IP port access table.
snRtIpPortAccessPortIndex brcdIp.1.2.2.7.1.1 Syntax: PortIndex	Read-only	The index for an entry in the IP port access table. The value of this object is from 1 through 42.
snRtIpPortAccessDirection brcdIp.1.2.2.7.1.2 Syntax: Integer	Read-only	Specifies if the port is for incoming or outgoing traffic: • in(1) • out(2)
snRtIpPortAccessFilters brcdIp.1.2.2.7.1.3 Syntax: Octet String	Read-write	Each octet represents a filter number.
snRtIpPortAccessRowStatus brcdIp.1.2.2.7.1.4 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Delete the row. • create(4) - Create a new row. • modify(5) - Modify an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

Port configuration tables

The following table define the size, encapsulation format, and cost of the packet that will be transmitted through a port.

IP interface port configuration table

Name, OID, and syntax	Access	Description
snRtIpPortConfigTable brcdIp.1.2.2.8	None	The IP port configuration table.
snRtIpPortConfigPortIndex brcdIp.1.2.2.8.1.1 Syntax: PortIndex	Read-only	An index for an entry in the IP port configuration table. The value of this object is from 1 through 42.
snRtIpPortMtu brcdIp.1.2.2.8.1.2 Syntax: Integer	Read-write	Indicates the maximum size of IP packets that will be transmitted on the port.
snRtIpPortEncap brcdIp.1.2.2.8.1.3 Syntax: Integer	Read-write	Shows the encapsulation format that will be used on the IP frame transmitted on the port: • ethernet(1) - Ethernet • snap(2) - ATM and Ethernet • hdlc(3) - POS • ppp(4) - POS
snRtIpPortMetric brcdIp.1.2.2.8.1.4 Syntax: Integer	Read-write	Specifies the metric or cost the router adds to the route. Valid values: 1 - 15 Default: 1
snRtIpPortDirBcastFwd brcdIp.1.2.2.8.1.5 Syntax: Integer	Read-write	Indicates if the directed broadcast forwarding feature is enabled. A directed broadcast is a packet containing all ones (or in some cases, all zeros) in the host portion of the destination IP address. When a router forwards such a broadcast, it sends a copy of the packet out each of its enabled IP interfaces: • disabled(0) • enabled(1) Default: enabled(1)

IP interface address table

Name, OID, and syntax	Access	Description
snRtIpPortIfAddrTable brcdIp.1.2.2.18	None	IP port interface address table.
snRtIpPortIfAddrInterfaceIndex brcdIp.1.2.2.18.1.1 Syntax: InterfaceIndex	Read-only	The interface index for port address entry.
snRtIpPortIfAddress brcdIp.1.2.2.18.1.2 Syntax: IpAddress	Read-only	The port IP address.

Name, OID, and syntax	Access	Description
snRtIpPortIfSubnetMask brcdIp.1.2.2.18.1.3 Syntax: IpAddress	Read-write	The port IP address subnet mask.
snRtIpPortIfAddrType brcdIp.1.2.2.18.1.4 Syntax: Integer	Read-write	The port IP address type.
snRtIpPortIfRowStatus brcdIp.1.2.2.18.1.5 Syntax: RowStatus	Read-write	To create or delete a port address entry.

IP interface port access table

The following table determines if the port is for incoming or outgoing traffic and the filter used on the interface.

Name, OID, and syntax	Access	Description
snRtIpPortIfAccessTable brcdIp.1.2.2.19	None	IP port if access table.
snRtIpPortIfAccessInterfaceIndex brcdIp.1.2.2.19.1.1 Syntax: InterfaceIndex	Read-only	The interface index for port access entry.
snRtIpPortIfAccessDirection brcdIp.1.2.2.19.1.2 Syntax: Integer	Read-only	The incoming or outgoing check.
snRtIpPortIfAccessFilters brcdIp.1.2.2.19.1.3 Syntax: OCTET STRING	Read-write	The first octet correspond to the first filter number and so on.
snRtIpPortIfAccessRowStatus brcdIp.1.2.2.19.1.4 Syntax: RowStatus	Read-write	To create or delete a port access entry.

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ECMP MIB objects

The SNMP Equal-Cost Multi-Path (ECMP) MIB object is used to configure ECMP for IPv6 using SNMP. ECMP enables the router to balance traffic to a specific destination across multiple equal-cost paths.

To use these objects, perform the following steps.

1. Enable ECMP for RIP using the snRtIpRipEcmpEnable MIB object.

   IP load sharing is enabled by default. However, ECMP must be enabled for RIP IP load sharing.
2. Enable IPv6 load sharing using the fdryIpv6LoadShare MIB object.

   IPv6 load sharing is enabled by default. If it needs to be enabled, set fdryIpv6LoadShare to 1.
3. Configure the maximum number of load sharing paths for IPv6 using the fdryIpv6LoadShareNumOfPaths MIB object.

Name, OID, and syntax	Access	Description
fdryIpv6LoadShare brcdIp.1.2.17.1.1.1 Syntax: RtrStatus	Read-write	This object directs the IPv6 traffic to distribute the traffic load to IPv6 routes if more than one IPv6 route is available: • 0 — Disables IPv6 load sharing. • 1 — Enables IPv6 load sharing.
fdryIpv6LoadShareNumOfPaths brcdIp.1.2.17.1.1.2 Syntax: Unsigned32	Read-write	Enter the number of IPv6 routes to be used to share a load. Enter a value from 2 through 6.

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BGP4 general variables

The BGP4 implementation complies with RFC 4273. The BGP4 implementation also supports the following RFCs:

- RFC 1745 (OSPF Interactions)
- RFC 1965 (BGP4 Confederations)
- RFC 1997 (BGP Communities Attributes)
- RFC 2385 (TCP MD5 Signature Option)
- RFC 2439 (Route Flap Dampening)
- RFC 2796 (Route Reflection)
- RFC 2842 (Capability Advertisement)

The BGP4 objects apply globally to a device's BGP4 process.

Name, OID, and syntax	Access	Description
snBgp4Gen brcdIp.1.2.11.1	None	
snBgp4GenAlwaysCompareMed brcdIp.1.2.11.1.1 Syntax: Integer	Read-write	Indicates if the comparison of the Multi-Exit Discriminator (MED) for paths from neighbors in different autonomous systems is enabled: • disabled(0) • enabled(1)
snBgp4GenAutoSummary brcdIp.1.2.11.1.2	Read-write	Indicates if subnet routes are automatically summarized: • disabled(0)

Name, OID, and syntax	Access	Description
Syntax: Integer		• enabled(1)
snBgp4GenDefaultLocalPreference brcdIp.1.2.11.1.3 Syntax: Integer32	Read-write	Sets the default local preference attribute. When the router uses the BGP4 algorithm to select a route to send to the IP route table, one of the parameters the algorithm uses is the local preference. Local preference is an attribute that indicates a degree of preference for a route relative to other routes. BGP4 neighbors can send the local preference value as an attribute of a route in an Update message. Local preference applies only to routes within the local autonomous system (AS). BGP4 routers can exchange local preference information with neighbors who are also in the local AS; however, BGP4 routers do not exchange local preference information with neighbors in remote autonomous systems. Valid values: 0 - 4294967295 Default: 100
snBgp4GenDefaultInfoOriginate brcdIp.1.2.11.1.4 Syntax: Integer	Read-write	Indicates if the default Information Originate is enabled: • disabled(0) • enabled(1) By default, the router does not originate and advertise a default route using BGP4. A BGP4 default route is the IP address 0.0.0.0 and the route prefix 0 or network mask 0.0.0.0. For example, 0.0.0.0/0 is a default route. Layer 3 Switches check for the existence of an IGP route with 0.0.0.0/0 in the IP route table before creating a local BGP route for 0.0.0.0/0.
snBgp4GenFastExternalFallover brcdIp.1.2.11.1.5 Syntax: Integer	Read-write	Indicates whether or not automatic resetting of BGP sessions of any directly adjacent sessions is enabled, if the links used to reach them go down: • disabled(0) • enabled(1)
snBgp4GenNextBootNeighbors brcdIp.1.2.11.1.6 Syntax: Integer32	Read-write	The next boot-configured number of neighbors in a BGP peer group. The minimum value of this object is the value of the BGP4 general variables object. Its maximum value is the value of the BGP4 general variables object.
snBgp4GenNextBootRoutes brcdIp.1.2.11.1.7 Syntax: Integer32	Read-write	The next boot-configured number of routes. The minimum value of this MIB is BGP4 general variables. The maximum value of this MIB is BGP4 general variables.
snBgp4GenSynchronization brcdIp.1.2.11.1.8 Syntax: Integer	Read-write	Enables or disables the synchronization between BGP and your IGP: • disabled(0) • enabled(1)
snBgp4GenKeepAliveTime brcdIp.1.2.11.1.9	Read-write	Indicates how often the device sends keepalive messages.

Name, OID, and syntax	Access	Description
Syntax: Integer		Valid values: 1 - 65535 seconds Default: 60 seconds
snBgp4GenHoldTime brcdIp.1.2.11.1.10 Syntax: Integer	Read-write	Determines how many seconds the device will wait for a keepalive or update message from a BGP4 neighbor before deciding that the neighbor is dead. Valid values: 1 - 65535 seconds Default: 180 seconds
snBgp4GenRouterId brcdIp.1.2.11.1.11 Syntax: IpAddress	Read-write	Indicates the BGP router IP address.
snBgp4GenTableMap brcdIp.1.2.11.1.12 Syntax: OCTET STRING	Read-write	Defines the route map name. Each character of the name is represented by one octet. Valid values: Up to 32 octets.
snBgp4GenDefaultMetric brcdIp.1.2.11.1.14 Syntax: Integer32	Read-write	Indicates the default metric values for the BGP4. The Layer 3 Switches can redistribute directly connected routes, static IP routes, RIP routes, and OSPF routes into BGP4. The MED (metric) is a global parameter that specifies the cost that will be applied to all routes by default when they are redistributed into BGP4. Valid values: 0 - 4294967295
snBgp4GenMaxNeighbors brcdIp.1.2.11.1.15 Syntax: Integer32	Read-only	Shows the maximum number of neighbors that can be configured in a BGP peer group.
snBgp4GenMinNeighbors brcdIp.1.2.11.1.16 Syntax: Integer32	Read-only	Shows the minimum number of neighbors that can be configured in a BGP peer group.
snBgp4GenMaxRoutes brcdIp.1.2.11.1.17 Syntax: Integer32	Read-only	Shows the maximum number of configured routes.
snBgp4GenMinRoutes brcdIp.1.2.11.1.18 Syntax: Integer32	Read-only	Shows the minimum number of configured routes.
snBgp4GenMaxAddrFilters brcdIp.1.2.11.1.19 Syntax: Integer32	Read-only	Shows the maximum number of configured BGP4 address filters.
snBgp4GenMaxAggregateAddresses brcdIp.1.2.11.1.20 Syntax: Integer32	Read-only	Shows the maximum number of configured BGP4 aggregate addresses.
snBgp4GenMaxAsPathFilters brcdIp.1.2.11.1.21 Syntax: Integer32	Read-only	Shows the maximum number of configured BGP4 AS-Path filters.
snBgp4GenMaxCommunityFilters brcdIp.1.2.11.1.22 Syntax: Integer32	Read-only	Shows the maximum number of configured BGP4 community filters.

Name, OID, and syntax	Access	Description
snBgp4GenMaxNetworks brcdIp.1.2.11.1.23 Syntax: Integer32	Read-only	Shows the maximum number of configured BGP4 networks.
snBgp4GenMaxRouteMapFilters brcdIp.1.2.11.1.24 Syntax: Integer32	Read-only	Shows the maximum number of configured BGP4 route map filters.
snBgp4GenNeighPrefixMinValue brcdIp.1.2.11.1.25 Syntax: Integer32	Read-only	Shows the minimum configured value of the BGP4 neighbor prefix.
snBgp4GenOperNeighbors brcdIp.1.2.11.1.26	Read-only	Shows the current operational maximum number of neighbors configured for a BGP group.
snBgp4GenOperRoutes brcdIp.1.2.11.1.27 Syntax: Integer32	Read-only	Shows the current operational number of routes.
snBgp4GenRoutesInstalled brcdIp.1.2.11.1.29 Syntax: Integer32	Read-only	Shows the BGP4 installed routes.
snBgp4GenAsPathInstalled brcdIp.1.2.11.1.30 Syntax: Integer32	Read-only	Shows the BGP4 installed AS-Path.
snBgp4ExternalDistance brcdIp.1.2.11.1.31 Syntax: Integer	Read-write	Determines the administrative distance for BGP external routes. Default: 200
snBgp4InternalDistance brcdIp.1.2.11.1.32 Syntax: Integer	Read-write	Determines the administrative distance for BGP internal routes. Default: 200
snBgp4LocalDistance brcdIp.1.2.11.1.33 Syntax: Integer	Read-write	Determines the administrative distance for BGP local routes. Default: 200
snBgp4OperNumOfAttributes brcdIp.1.2.11.1.34 Syntax: Integer32	Read-only	Shows the operational number of attribute entries.
snBgp4NextBootMaxAttributes brcdIp.1.2.11.1.35 Syntax: Integer	Read-write	Defines the next boot maximum attribute entries. Default: 10000 (which means to reset to the default)
snBgp4ClusterId brcdIp.1.2.11.1.36 Syntax: Integer32	Read-write	Defines a cluster ID which is represented by 4-unsigned-byte integers (0..0xFFFFFFFF). 0 means to reset to the default.
snBgp4ClientToClientReflection brcdIp.1.2.11.1.37 Syntax: Integer	Read-write	Indicates if the client-to-client reflection in BGP4 is enabled: • disabled(0) • enabled(1)
snBgp4GenTotalNeighbors brcdIp.1.2.11.1.38 Syntax: Integer32	Read-only	Shows the current total number of neighbors running in a BGP group.

Name, OID, and syntax	Access	Description
snBgp4GenMaxPaths brcdIp.1.2.11.1.39 Syntax: Integer	Read-write	Indicates the maximum number of configured paths.
snBgp4GenConfedId brcdIp.1.2.11.1.40 Syntax: Integer	Read-write	Determines the BGP4 confederation ID. This ID identifies the confederation to BGP routers outside the confederation. A confederation is a BGP4 AS that has been subdivided into multiple, smaller autonomous systems. Subdividing an AS into smaller autonomous systems simplifies administration and reduces BGP-related traffic, thus reducing the complexity of the Interior Border Gateway Protocol (IBGP) mesh among the BGP routers in the AS. The confederation ID is the AS ID.
snBgp4GenConfedPeers brcdIp.1.2.11.1.41 Syntax: OCTET STRING	Read-write	Specifies the sub-AS numbers that are members of the confederation. There is a maximum of 50 peers. This is a number from 1 to 0xFFFF. It is represented by two octets.
snBgp4GenDampening brcdIp.1.2.11.1.42 Syntax: Integer	Read-write	Specifies the dampening of BGP4 in the device: • none(0) - BGP4 dampening is off. • parameters(1) - Parameters are configurable. • routemap(2) - The route map is configurable.
snBgp4GenDampenHalfLife brcdIp.1.2.11.1.43 Syntax: Integer	Read-write	Specifies the number of minutes after which the route's penalty becomes half its value.
snBgp4GenDampenReuse brcdIp.1.2.11.1.44 Syntax: Integer	Read-write	Specifies how low a route's penalty must be before the route becomes eligible for use again after being suppressed.
snBgp4GenDampenSuppress brcdIp.1.2.11.1.45 Syntax: Integer	Read-write	Specifies how high a route's penalty can be before the Layer 3 Switch suppresses the route.
snBgp4GenDampenMaxSuppress brcdIp.1.2.11.1.46 Syntax: Integer	Read-write	Specifies the maximum number of minutes that a route can be suppressed regardless of how unstable it is.
snBgp4GenDampenMap brcdIp.1.2.11.1.47 Syntax: OCTET STRING	Read-write	Specifies the name of the route map that will be used to redirect traffic. The name is an octet string. Each character is represented by one octet. Valid values: Up to 32 octets.
snBgp4GenDefaultMetric1 brcdIp.1.2.11.1.49 Syntax: Unsigned32	Read-write	Specifies to set the default metric values for the BGP4 protocol.
snBgp4GenDefaultLocalPreference1 brcdIp.1.2.11.1.50	Read-write	Specifies to set the default local preference attribute.

Name, OID, and syntax	Access	Description
Syntax: Unsigned32		

BGP4 address filter table

You can configure the router to explicitly permit or deny specific IP addresses received in updates from BGP4 neighbors by defining IP address filters. The router permits all IP addresses by default. You can define up to 100 IP address filters for BGP4:

- If you want **permit** to remain the default behavior, define individual filters to deny specific IP addresses.
- If you want to change the default behavior to **deny** , define individual filters to permit specific IP addresses.

NOTE
Once you define a filter, the default action for addresses that do not match a filter is **deny** . To change the default action to **permit** , configure the last filter as **permitanyany** .

Address filters can be referred to by a BGP neighbor's distribute list number as well as by match statements in a route map.

Name, OID, and syntax	Access	Description
snBgp4AddrFilterTable brcdIp.1.2.11.2.1	None	The BGP4 address filter table.
snBgp4AddrFilterIndex brcdIp.1.2.11.2.1.1.1 Syntax: Integer32	Read-only	The table index for a filter entry.
snBgp4AddrFilterAction brcdIp.1.2.11.2.1.1.2 Syntax: Integer	Read-write	Indicates what the device will do if the BGP address matches this filter: • deny(0) • permit(1)
snBgp4AddrFilterSourceIp brcdIp.1.2.11.2.1.1.3 Syntax: IpAddress	Read-write	Specifies the source IP address.
snBgp4AddrFilterSourceMask brcdIp.1.2.11.2.1.1.4 Syntax: IpAddress	Read-write	Specifies the source IP subnet mask.
snBgp4AddrFilterDestIp brcdIp.1.2.11.2.1.1.5 Syntax: IpAddress	Read-write	Specifies the destination IP address.
snBgp4AddrFilterDestMask brcdIp.1.2.11.2.1.1.6 Syntax: IpAddress	Read-write	Specifies the destination IP subnet mask.
snBgp4AddrFilterRowStatus brcdIp.1.2.11.2.1.1.7 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately.

Name, OID, and syntax	Access	Description
		The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

BGP4 aggregate address table

By default, the Layer 3 Switch advertises individual routes for all the networks. The aggregation feature allows you to configure the Layer 3 Switch to aggregate routes in a range of networks into a single Classless Inter-Domain Routing (CIDR) number.

Name, OID, and syntax	Access	Description
snBgp4AggregateAddrTable brcdIp.1.2.11.3.1	None	The BGP4 aggregate address table.
snBgp4AggregateAddrIp brcdIp.1.2.11.3.1.1.1 Syntax: IpAddress	Read-only	Shows the aggregate address IP address. Specify 0 for the host portion and for the network portion that differs among the networks in the aggregate. For example, to aggregate 10.0.1.0, 10.0.2.0, and 10.0.3.0, enter the IP address 10.0.0.0 and the network mask 255.255.0.0 in the next object.
snBgp4AggregateAddrMask brcdIp.1.2.11.3.1.1.2 Syntax: IpAddress	Read-only	Shows the aggregate address IP subnet mask.
snBgp4AggregateAddrOption brcdIp.1.2.11.3.1.1.3 Syntax: Integer	Read-only	Specifies the type of aggregate address option that is being used: • address(1) - Adds an address. This is the default option. • asSet(2) - Causes the router to aggregate AS-Path information for all the routes in the aggregate address into a single AS-Path. • summaryOnly(3) - Prevents the router from advertising more specific routes contained within the aggregate route. • suppressMap(4) - Prevents the more specific routes contained in the specified route map from being advertised. • advertiseMap(5) - Configures the router to advertise the more specific routes in the specified route map. • attributeMap(6) - Configures the router to set attributes for the aggregate routes based on the specified route map.
snBgp4AggregateAddrMap brcdIp.1.2.11.3.1.1.4 Syntax: OCTET STRING	Read-write	Specifies the name of the route map to be used if the BGP4 aggregate address table object is set to suppressMap(4), advertiseMap(5), or attributeMap(6).

Name, OID, and syntax	Access	Description
		The value of this object is an octet string. Each character in the address map name is represented by one octet. There can be up to 32 octets in this object.
snBgp4AggregateAddrRowStatus brcdIp.1.2.11.3.1.1.5 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

BGP4 AS-Path filter table

A list of the other autonomous systems through which a route passes. BGP4 routers can use the AS-Path to detect and eliminate routing loops.

Name, OID, and syntax	Access	Description
snBgp4AsPathFilterTable brcdIp.1.2.11.4.1	None	The BGP4 AS-Path filter table.
snBgp4AsPathFilterIndex brcdIp.1.2.11.4.1.1.1 Syntax: Integer32	Read-only	The table index for a filter entry.
snBgp4AsPathFilterAction brcdIp.1.2.11.4.1.1.2 Syntax: Integer	Read-write	Specifies what the device will do if the BGP address matches this filter: • deny(0) • permit(1)
snBgp4AsPathFilterRegExpression brcdIp.1.2.11.4.1.1.3 Syntax: OCTET STRING	Read-write	Shows the AS in the filter that is using a regular expression. Each character of the regular expression string is represented by one octet. Valid values: Up to 256 octets
snBgp4AsPathFilterRowStatus brcdIp.1.2.11.4.1.1.4 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative.

Name, OID, and syntax	Access	Description
		• valid(2) - Row exists and is valid.

BGP4 community filter table

You can filter routes received from BGP4 neighbors based on community names.

Name, OID, and syntax	Access	Description
snBgp4CommunityFilterTable brcdIp.1.2.11.5.1	None	The BGP4 community filter table.
snBgp4CommunityFilterIndex brcdIp.1.2.11.5.1.1.1 Syntax: Integer32	Read-only	The table index for a filter entry.
snBgp4CommunityFilterAction brcdIp.1.2.11.5.1.1.2 Syntax: Integer	Read-write	Specifies what the device will do if the BGP address matches this filter: • deny(0) • permit(1)
snBgp4CommunityFilterCommNum brcdIp.1.2.11.5.1.1.3 Syntax: OCTET STRING	Read-write	Identifies the filter's number. This is a number from 1 through 0xFFFFFFFF. There can be up to 20 filters. Each integer is represented by four octets.
snBgp4CommunityFilterInternet brcdIp.1.2.11.5.1.1.4 Syntax: Integer	Read-write	Indicates if Internet Community is enabled: • disabled(0) • enabled(1)
snBgp4CommunityFilterNoAdvertise brcdIp.1.2.11.5.1.1.5 Syntax: Integer	Read-write	Checks the route to see if it has the keyword "NO_ADVERTISE". If the route has the keyword, it will not be advertised to EBGP peers: • false(0) • true(1)
snBgp4CommunityFilterNoExport brcdIp.1.2.11.5.1.1.6 Syntax: Integer	Read-write	Checks the route to see if it has the keyword "NO_EXPORT". If the route has the keyword, it will not be advertised to EBGP peers outside the local AS: • false(0) • true(1)
snBgp4CommunityFilterRowStatus brcdIp.1.2.11.5.1.1.7 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

Name, OID, and syntax	Access	Description
snBgp4CommunityFilterLocalAs brcdIp.1.2.11.5.1.1.8 Syntax: Integer	Read-write	Checks the route to see if it has the keyword "LOCAL_AS". If the route has the keyword, the community applies only to confederations. The device will advertises the route only within the sub-AS: • false(0) • true(1)

BGP4 neighbor general configuration table

BGP4 does not contain a peer discovery process. You must indicate the neighbor's IP address for each of the router's BGP4 neighbors (peers), as well as the AS each neighbor is in. Neighbors that are in different autonomous systems communicate using EBGP. Neighbors within the same AS communicate using IBGP.

Name, OID, and syntax	Access	Description
snBgp4NeighGenCfgTable brcdIp.1.2.11.6.1	None	The BGP4 neighborhood general configuration table.
snBgp4NeighGenCfgNeighIp brcdIp.1.2.11.6.1.1.1 Syntax: IpAddress	Read-only	Shows the IP address for a neighbor entry.
snBgp4NeighGenCfgAdvertlevel brcdIp.1.2.11.6.1.1.2 Syntax: Integer	Read-write	Specifies the minimum delay (in seconds) between messages to the specified neighbor. Valid values: 0 - 600 Defaults: • 30 for EBGP neighbors (neighbors in other autonomous systems) • 5 for IBGP neighbors (neighbors in the same AS).
snBgp4NeighGenCfgDefOriginate brcdIp.1.2.11.6.1.1.3 Syntax: Integer	Read-write	Indicates if the default originate for this neighbor is enabled: • disabled(0) • enabled(1) If enabled, the device sends the default route 0.0.0.0 to the neighbor.
snBgp4NeighGenCfgEbgpMultihop brcdIp.1.2.11.6.1.1.4 Syntax: Integer	Read-write	Indicates if the EBGP multihop for this neighbor is enabled. • disabled(0) • enabled(1) If enabled, the neighbor is more than one hop away and that the session type with the neighbor is thus EBGP multihop. Default: disabled(0)
snBgp4NeighGenCfgMaxPrefix brcdIp.1.2.11.6.1.1.5 Syntax: Integer32	Read-write	Specifies the maximum number of IP network prefixes (routes) that can be learned from the specified neighbor or peer group. You can specify a value from 0 through 4294967295. Default: 0 (unlimited)

Name, OID, and syntax	Access	Description
		The minimum value of the maximum prefix is defined by the BGP4 general variables on page 333 object. The maximum value of the maximum prefix is defined by the BGP4 general variables on page 333 object.
snBgp4NeighGenCfgNextHopSelf brcdIp.1.2.11.6.1.1.6 Syntax: Integer	Read-write	Indicates if the option that allows the router to list itself as the next hop in the updates sent to the specified neighbor is enabled: • disabled(0) • enabled(1) Default: disabled(0)
snBgp4NeighGenCfgRemoteAs brcdIp.1.2.11.6.1.1.7 Syntax: Integer	Read-write	Specifies the AS that the remote neighbor is in. Valid values: 1 - 65535 Default: No default
snBgp4NeighGenCfgSendComm brcdIp.1.2.11.6.1.1.8 Syntax: Integer	Read-write	Indicates if the option to send community attributes in updates to specified neighbors is enabled: • disabled(0) • enabled(1) Default: disabled(0)
snBgp4NeighGenCfgWeight brcdIp.1.2.11.6.1.1.9 Syntax: Integer	Read-write	Assigns a weight to a neighbor connection. BGP4 prefers larger weights over smaller weights. Valid values: 0 - 65535 Default: 0
snBgp4NeighGenCfgWeightFilterList brcdIp.1.2.11.6.1.1.10 Syntax: OCTET STRING	Read-write	Specifies a weight that the device applies to routes received from the neighbor that match the AS-Path filter or ACL. Valid values: 1 - 0xFFFF. Each integer is represented by two octets.
snBgp4NeighGenCfgRowStatus brcdIp.1.2.11.6.1.1.11 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snBgp4NeighGenCfgUpdateSrcLpbIntf brcdIp.1.2.11.6.1.1.12 Syntax: Integer	Read-write	Specifies the loopback interface number for TCP connections. Valid values: 0 - 8 Generally, loopback interfaces are used for links to IBGP neighbors, which often are multiple

Name, OID, and syntax	Access	Description
		hops away, rather than to EBGP neighbors. Zero interface means to restore the interface assignment to the closest interface, which is called the best local address.
snBgp4NeighGenCfgRouteRefClient brcdIp.1.2.11.6.1.1.13 Syntax: Integer	Read-write	Indicates if the option to allow this neighbor to be a router reflector client is enabled: • disabled(0) • enabled(1)
snBgp4NeighGenCfgRemovePrivateAs brcdIp.1.2.11.6.1.1.14 Syntax: Integer	Read-write	Specifies if the option to remove private AS numbers from update messages that routers sent to this neighbor is enabled: • disabled(0) • enabled(1) If enabled, the router will remove AS numbers 64512 - 65535 (the well-known BGP4 private AS numbers) from the AS-Path attribute in UPDATE messages the device sends to the neighbor. Default: disabled(0)
snBgp4NeighGenCfgEbgpMultihopTtl brcdIp.1.2.11.6.1.1.15 Syntax: Integer	Read-write	Specifies the time-to-live (TTL) for the neighbor. Valid values: 0 - 255. Default: 0. If you leave the EBGP TTL value set to 0, the software uses the IP TTL value.
snBgp4NeighGenCfgShutdown brcdIp.1.2.11.6.1.1.16 Syntax: Integer	Read-write	Indicates if BGP4 neighbor shutdown is enabled: • disabled(0) • enabled(1) If enabled, the device shuts down the session with this neighbor. Shutting down the session allows you to completely configure the neighbor and save the configuration without actually establishing a session with the neighbor. Default: disabled(0)
snBgp4NeighGenCfgKeepAliveTime brcdIp.1.2.11.6.1.1.17 Syntax: Integer	Read-write	Indicates how often the device sends keep alive messages. This object overrides the global settings for the Keepalive Time. Valid values: 0 - 65535 seconds
snBgp4NeighGenCfgHoldTime brcdIp.1.2.11.6.1.1.18 Syntax: Integer	Read-write	Determines how many seconds the device will wait for a keepalive or update message from a BGP4 neighbor before deciding that the neighbor is dead. This object overrides the global settings for Hold Time. Valid values: 0 or 3 - 65535 seconds (1 and 2 seconds are not allowed). If you set the Hold Time to 0, the router waits indefinitely for messages from a neighbor.
snBgp4NeighGenCfgDefOrigMap brcdIp.1.2.11.6.1.1.19	Read-write	Indicates the name of the default route map. This is an octet string. Each character is represented by one octet.

Name, OID, and syntax	Access	Description
Syntax: OCTET STRING		Valid values: Up to 32 octets
snBgp4NeighGenCfgDesc brcdIp.1.2.11.6.1.1.20 Syntax: OCTET STRING	Read-write	Specifies the name for the neighbor. Valid values: Up to 80 octets
snBgp4NeighGenCfgPass brcdIp.1.2.11.6.1.1.21 Syntax: OCTET STRING	Read-write	Specifies an MD5 password for securing sessions between the device and its neighbor. Valid values: Up to 80 octets

BGP4 neighbor distribute group table

The following table lists the BGP4 neighbor distribute group table MIB objects.

Name, OID, and syntax	Access	Description
snBgp4NeighDistGroupTable brcdIp.1.2.11.7.1	None	The BGP4 neighbor distribute group table.
snBgp4NeighDistGroupNeighIp brcdIp.1.2.11.7.1.1.1 Syntax: IpAddress	Read-only	Shows the IP address for this entry.
snBgp4NeighDistGroupDir brcdIp.1.2.11.7.1.1.2 Syntax: Integer	Read-only	Indicates if the access list is applied to incoming or outgoing advertisements: • out(0) • in(1)
snBgp4NeighDistGroupAccessList brcdIp.1.2.11.7.1.1.3 Syntax: OCTET STRING	Read-write	Indicates the access list that will be applied to advertisements. This is a number from 1 through 0xFFFF. Each integer is represented by two octets.
snBgp4NeighDistGroupRowStatus brcdIp.1.2.11.7.1.1.4 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snBgp4NeighDistGroupInFilterList brcdIp.1.2.11.7.1.1.5 Syntax: OCTET STRING	Read-write	Indicates the group filter list that will be applied to incoming advertisements. This is number from 1 through 0xFFFF. The incoming and outgoing list can have a mximum of 16 entries each. Each integer is represented by two octets.
snBgp4NeighDistGroupOutFilterList brcdIp.1.2.11.7.1.1.6	Read-write	Indicates the group filter list that will be applied to outgoing advertisements.

Name, OID, and syntax	Access	Description
Syntax: OCTET STRING		This is number from 1 through 0xFFFF. The incoming and outgoing list can have a mximum of 16 entries each. Each integer is represented by two octets.
snBgp4NeighDistGroupInIpAccessList brcdIp.1.2.11.7.1.1.7 Syntax: OCTET STRING	Read-write	Indicates the access list that will be applied to incoming advertisements. This is number from 1 through 0xFFFF. The incoming and outgoing list can have a mximum of 16 entries each. Each integer is represented by two octets.
snBgp4NeighDistGroupOutIpAccessList brcdIp.1.2.11.7.1.1.8 Syntax: OCTET STRING	Read-write	Indicates the access list that will be applied to outgoing advertisements. This is number from 1 through 0xFFFF. The incoming and outgoing list can have a mximum of 16 entries each. Each integer is represented by two octets.
snBgp4NeighDistGroupInPrefixList brcdIp.1.2.11.7.1.1.9 Syntax: OCTET STRING	Read-write	Specifies the prefix name list of incoming advertisements. Valid values: Up to 32 octets
snBgp4NeighDistGroupOutPrefixList brcdIp.1.2.11.7.1.1.10 Syntax: OCTET STRING	Read-write	Specifies the prefix name list of outgoing advertisements. Valid values: Up to 32 octets

BGP4 neighbor filter group table

The BGP4 neighbor filter group table controls the routes that the device learns or advertises.

Name, OID, and syntax	Access	Description
snBgp4NeighFilterGroupTable brcdIp.1.2.11.8.1	None	The BGP4 neighbor filter group table.
snBgp4NeighFilterGroupNeighIp brcdIp.1.2.11.8.1.1.1 Syntax: IpAddress	Read-only	Shows the IP address for a neighbor entry.
snBgp4NeighFilterGroupDir brcdIp.1.2.11.8.1.1.2 Syntax: Integer	Read-only	Shows the direction of advertisements to which the access list is applied: • out(0) - Outgoing • in(1) - Incoming
snBgp4NeighFilterGroupAccessList brcdIp.1.2.11.8.1.1.3 Syntax: OCTET STRING	Read-write	Identifies the access list that is being used to filter a neighbor group. This is a number from 1 through 0xFFFF. The incoming and outgoing list can have a mximum of 16 entries each. This integer is represented by two octets.
snBgp4NeighFilterGroupRowStatus brcdIp.1.2.11.8.1.1.4 Syntax: IpAddress	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row.

Name, OID, and syntax	Access	Description
		If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snBgp4NeighFilterGroupInFilterList brcdIp.1.2.11.8.1.1.5 Syntax: OCTET STRING	Read-write	Identifies the filter list that is being used to filter incoming routes from a neighbor group. This is a number from 1 through 0xFFFF. The incoming and outgoing list can have a mximum of 16 entries each. This integer is represented by two octets.
snBgp4NeighFilterGroupOutFilterList brcdIp.1.2.11.8.1.1.6 Syntax: OCTET STRING	Read-write	Identifies the filter list that is being used to filter outgoing routes from a neighbor group. This is a number from 1 through 0xFFFF. The incoming and outgoing list can have a mximum of 16 entries each. This integer is represented by two octets.
snBgp4NeighFilterGroupInAsPathAccessList brcdIp.1.2.11.8.1.1.7 Syntax: OCTET STRING	Read-write	Identifies the AS-Path list that is being used to filter incoming routes from a neighbor group. This is a number from 1 through 0xFFFF. The incoming and outgoing list can have a mximum of 16 entries each. This integer is represented by two octets.
snBgp4NeighFilterGroupOutAsPathAccessList brcdIp.1.2.11.8.1.1.8 Syntax: OCTET STRING	Read-write	Identifies the AS-Path list that is being used to filter outgoing routes from a neighbor group. This is a number from 1 through 0xFFFF. The incoming and outgoing list can have a mximum of 16 entries each. This integer is represented by two octets.
snBgp4NeighFilterGroupWeight brcdIp.1.2.11.8.1.1.9 Syntax: Integer	Read-write	Assigns a weight to a neighbor filter. Valid values: 0 - 65535
snBgp4NeighFilterGroupWeightAccessList brcdIp.1.2.11.8.1.1.10 Syntax: OCTET STRING	Read-write	This is a number from 1 through 0xFFFF. The incoming and outgoing list can have a mximum of 16 entries each. This integer is represented by two octets.

BGP4 neighbor route map table

A route map can be one of the parameters to be advertised by the BGP4 network. The Layer 3 Switch can use the route map to set or change BGP4 attributes when creating a local BGP4 route.

Name, OID, and syntax	Access	Description
snBgp4NeighRouteMapTable brcdIp.1.2.11.9.1	None	The BGP4 neighbor route map table.
snBgp4NeighRouteMapNeighIp brcdIp.1.2.11.9.1.1.1	Read-only	Shows the IP address for a neighbor entry.

Name, OID, and syntax	Access	Description
Syntax: IpAddress		
snBgp4NeighRouteMapDir brcdIp.1.2.11.9.1.1.2 Syntax: Integer	Read-only	Indicates the direction of the advertisement to which the access list is applied: • out(0) • in(1)
snBgp4NeighRouteMapMapName brcdIp.1.2.11.9.1.1.3 Syntax: OCTET STRING	Read-write	Specifies the name of the route map you want to use. The value of this object is an octet string. Each character of the name is represented by one octet. There can be up to 32 octets in this object.
snBgp4NeighRouteMapRowStatus brcdIp.1.2.11.9.1.1.4 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

BGP4 network table

The BGP4 network table shows the weight used for the network.

Name, OID, and syntax	Access	Description
snBgp4NetworkTable brcdIp.1.2.11.10.1	None	The BGP4 network table.
snBgp4NetworkIp brcdIp.1.2.11.10.1.1.1 Syntax: IpAddress	Read-only	Shows the IP address for a network entry.
snBgp4NetworkSubnetMask brcdIp.1.2.11.10.1.1.2 Syntax: IpAddress	Read-only	Shows the subnet mask for a network entry.
snBgp4NetworkWeight brcdIp.1.2.11.10.1.1.3 Syntax: Integer	Read-write	Shows the weight of the neighbor connection. Valid values: 0 - 65535
snBgp4NetworkBackdoor brcdIp.1.2.11.10.1.1.4 Syntax: Integer	Read-write	Indicates if the backdoor option is enabled for this network: • disabled(0) • enabled(1) The backdoor option changes the administrative distance of the route to this network from the EBGP administrative distance (20 by default) to the Local BGP weight (200 by default). The

Name, OID, and syntax	Access	Description
		route is tagged as a backdoor route. Use this option when you want the router to prefer IGP routes such as RIP or OSPF routes over the EBGP route for the network.
snBgp4NetworkRowStatus brcdIp.1.2.11.10.1.1.5 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

BGP4 redistribution of routes table

The BGP4 redistribution of routes table contains configurations that could be imported into the BGP4 domain. Each entry specifies a particular RIP, OSPF, or static route that will be imported into the BGP4 domain.

Name, OID, and syntax	Access	Description
snBgp4RedisTable brcdIp.1.2.11.11.1	None	The BGP4 redistribution of routes table.
snBgp4RedisProtocol brcdIp.1.2.11.11.1.1.1 Syntax: Integer	Read-only	Shows the type of route that was imported into the BGP4 domain: • rip(1) - RIP • ospf(2) - OSPF • static(3) - Static • connected(4) - Connected • isis(5) - IS-IS
snBgp4RedisMetric brcdIp.1.2.11.11.1.1.2 Syntax: Integer32	Read-write	Indicates the metric used.
snBgp4RedisRouteMap brcdIp.1.2.11.11.1.1.3 Syntax: OCTET STRING	Read-write	Indicates the name of the route map used. Each character is represented by one octet. Valid values: Up to 32 octets
snBgp4RedisWeight brcdIp.1.2.11.11.1.1.4 Syntax: Integer	Read-write	Specifies the weight assigned to this entry.
snBgp4RedisMatchInternal brcdIp.1.2.11.11.1.1.5 Syntax: Integer	Read-write	Applies only to the OSPF protocol: • disabled(0) • enabled(1)
snBgp4RedisMatchExternal1 brcdIp.1.2.11.11.1.1.6	Read-write	Applies only to the OSPF protocol: • disabled(0)

Name, OID, and syntax	Access	Description
Syntax: Integer		• enabled(1)
snBgp4RedisMatchExternal2 brcdIp.1.2.11.11.1.1.7 Syntax: Integer	Read-write	Applies only to the OSPF protocol: • disabled(0) • enabled(1)
snBgp4RedisRowStatus brcdIp.1.2.11.11.1.1.8 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

BGP4 route map filter table

A route map is a named set of match conditions and parameter settings that a Layer 3 Switch can use to modify route attributes and to control redistribution of routes.

BGP4 allows you to include the redistribution filters as part of a route map. A route map examines and modifies route information exchanged between BGP4 and RIP or OSPF.

Name, OID, and syntax	Access	Description
snBgp4RouteMapFilterTable brcdIp.1.2.11.12.1	None	The BGP4 route map filter table.
snBgp4RouteMapFilterMapName brcdIp.1.2.11.12.1.1.1 Syntax: OCTET STRING	Read-only	Shows the route map's name. The value of this object contains an octet string. Each character is represented by one octet. There can be up to 32 octets in this object.
snBgp4RouteMapFilterSequenceNum brcdIp.1.2.11.12.1.1.2 Syntax: Integer32	Read-only	Shows the sequence number for this particular route map.
snBgp4RouteMapFilterAction brcdIp.1.2.11.12.1.1.3 Syntax: Integer	Read-write	Informs the device what to do if the BGP address matches this entry: • deny(0) • permit(1)
snBgp4RouteMapFilterRowStatus brcdIp.1.2.11.12.1.1.4 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately.

Name, OID, and syntax	Access	Description
		The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

BGP4 route map match table

The following table lists the BGP4 route map match table MIB objects.

Name, OID, and syntax	Access	Description
snBgp4RouteMapMatchTable brcdIp.1.2.11.13.1	None	The BGP4 route map match table.
snBgp4RouteMapMatchMapName brcdIp.1.2.11.13.1.1.1 Syntax: OCTET STRING	Read-only	Shows the name of the route map to be matched. The value of this object is an octet string. Each character of the name is represented by one octet. There can be up to 32 octets in this object.
snBgp4RouteMapMatchSequenceNum brcdIp.1.2.11.13.1.1.2 Syntax: Integer32	Read-only	Shows the sequence number for this particular route map. Routes are matched to the route map in ascending numerical order. Matching stops once a match is found.
snBgp4RouteMapMatchAsPathFilter brcdIp.1.2.11.13.1.1.3 Syntax: OCTET STRING	Read-write	Identifies the AS-Path list number that this route must match. This is a number from 1 through 0xFFFF. The incoming and outgoing list can have a maximum of 10 entries each. Each number consists of two octets.
snBgp4RouteMapMatchCommunityFilter brcdIp.1.2.11.13.1.1.4 Syntax: OCTET STRING	Read-write	Identifies the community filter number that this route must match. This is a number from 1 through 0xFFFF. The incoming and outgoing list can have a maximum of 10 entries each. Each number consists of two octets.
snBgp4RouteMapMatchAddressFilter brcdIp.1.2.11.13.1.1.5 Syntax: OCTET STRING	Read-write	Identifies the address filter number that this route must match. This is a number from 1 through 0xFFFF. The incoming and outgoing list can have a maximum of 10 entries each. Each number consists of two octets. There can be a total of 20 octets in this object.
snBgp4RouteMapMatchMetric brcdIp.1.2.11.13.1.1.6 Syntax: Integer32	Read-write	Compares the route's MED (metric) to this value. There can be up to 20 octets in this object.
snBgp4RouteMapMatchNextHopList brcdIp.1.2.11.13.1.1.7 Syntax: OCTET STRING	Read-write	Compares the IP address of the route's next hop to the IP address filters in this route. This is a number from 1 - 0xFFFF, represented by two octets. The incoming and outgoing list

Name, OID, and syntax	Access	Description
		can have a maximum of 16 entries each. There can be a total of 32 octets in this object.
snBgp4RouteMapMatchRouteType brcdIp.1.2.11.13.1.1.8 Syntax: Integer	Read-write	Determines the OSPF route type to match: • none(0) • external(1) • externalType1(2) • externalType2(3) • internal(4) • local(5) Currently only externalType1(2), externalType2(3), and internal(4) are supported for SNMP-SET.
snBgp4RouteMapMatchTagList brcdIp.1.2.11.13.1.1.9 Syntax: OCTET STRING	Read-write	Identifies the community tag access list that this route must match. This is a number represented by an octet strings. There can be up to 32 octets in this object.
snBgp4RouteMapMatchRowMask brcdIp.1.2.11.13.1.1.10 Syntax: Integer32	Read-write	This object is used together with the MIB objects above in the same VARBIND to set and reset any MIBs in the table. The bit number is referred to the snBgp4RouteMapMatchEntry number of each row in the table: • The bit is ON - Means set • The bit is OFF - Means reset
snBgp4RouteMapMatchAsPathAccessList brcdIp.1.2.11.13.1.1.11 Syntax: OCTET STRING	Read-write	Indicates which BGP AS-Path access list this route must match. This is an integer from 1 through 0xFFFFFFFF, consisting of five sets of four octets.
snBgp4RouteMapMatchCommunityList brcdIp.1.2.11.13.1.1.12 Syntax: OCTET STRING	Read-write	Indicates which BGP community access list this route must match. This is an integer from 1 through 0xFFFFFFFF, consisting of five sets of four octets.
snBgp4RouteMapMatchAddressAccessList brcdIp.1.2.11.13.1.1.13 Syntax: OCTET STRING	Read-write	Indicates which BGP address access list this route must match. This is an integer from 1 through 0xFFFFFFFF, consisting of five sets of two octets.
snBgp4RouteMapMatchAddressPrefixList brcdIp.1.2.11.13.1.1.14 Syntax: OCTET STRING	Read-write	Indicates the prefix list that must match a BGP address access list. Valid values: Up to 170 octets.
snBgp4RouteMapMatchNextHopAccessList brcdIp.1.2.11.13.1.1.15 Syntax: OCTET STRING	Read-write	Indicates the ID of the next-hop router that this route must match. This is an integer from 1 through 0xFFFFFFFF, consisting of five integers. Each integer has two octets.
snBgp4RouteMapMatchNextHopPrefixList brcdIp.1.2.11.13.1.1.16 Syntax: OCTET STRING	Read-write	Indicates the prefix list of the next-hop router that this route must match. Valid values: Up to 170 octets.

BGP4 route map set table

The BGP4 route map set table describes the route map set MIB objects.

Name, OID, and syntax	Access	Description
snBgp4RouteMapSetTable brcdIp.1.2.11.14.1	None	The BGP4 route map set table.
snBgp4RouteMapSetMapName brcdIp.1.2.11.14.1.1.1 Syntax: OCTET STRING	Read-only	An octet string of the route map name; each character of the name is represented by one octet.
snBgp4RouteMapSetSequenceNum brcdIp.1.2.11.14.1.1.2 Syntax: Integer32	Read-only	A sequence number for this particular route map.
snBgp4RouteMapSetAsPathType brcdIp.1.2.11.14.1.1.3 Syntax: Integer	Read-write	Modifies an autonomous system path for BGP routes: • tag(0) - Converts the tag of a route into an autonomous system path. • prepend(1) - Appends the string from snBgp4RouteMapSetAsPathString to the AS-Path of the route that is matched by the route map.
snBgp4RouteMapSetAsPathString brcdIp.1.2.11.14.1.1.4 Syntax: OCTET STRING	Read-write	This AS-Path string is used only if snBgp4RouteMapSetAsPathCmd was sent together with the value set to prepend(1).
snBgp4RouteMapSetAutoTag brcdIp.1.2.11.14.1.1.5 Syntax: Integer	Read-write	Enables or disables the automatic tag for BGP routes.
snBgp4RouteMapSetCommunityType brcdIp.1.2.11.14.1.1.6 Syntax: Integer	Read-write	Sets the BGP communities attribute: • None - No other community attributes are allowed. • Nums - Allows community attributes.
snBgp4RouteMapSetCommunityNum brcdIp.1.2.11.14.1.1.7 Syntax: Integer	Read-write	This number is used only if snBgp4RouteMapSetCommunityCmd was sent together with the value set to number(0).
snBgp4RouteMapSetCommunityAdditive brcdIp.1.2.11.14.1.1.8 Syntax: Integer	Read-write	Adds the community to the existing communities.
snBgp4RouteMapSetLocalPreference brcdIp.1.2.11.14.1.1.9 Syntax: Integer	Read-write	Modifies a local preference for BGP routes.
snBgp4RouteMapSetMetric brcdIp.1.2.11.14.1.1.10 Syntax: Integer32	Read-write	Modifies a metric for BGP routes.
snBgp4RouteMapSetNextHop brcdIp.1.2.11.14.1.1.11 Syntax: IpAddress	Read-write	Modifies the IP address of the next hop for BGP routes.
snBgp4RouteMapSetOrigin brcdIp.1.2.11.14.1.1.12	Read-write	Sets the BGP origin code.

Name, OID, and syntax	Access	Description
Syntax: Integer		
snBgp4RouteMapSetTag brcdIp.1.2.11.14.1.1.13 Syntax: Integer	Read-write	Specifies the tag for BGP routes.
snBgp4RouteMapSetWeight brcdIp.1.2.11.14.1.1.14 Syntax: Integer	Read-write	Specifies the BGP weight for the routing table.
snBgp4RouteMapSetRowMask brcdIp.1.2.11.14.1.1.15 Syntax: Integer	Read-write	This object is used together with the MIBs in the same VARBIND to set and reset any MIBs in the table.
snBgp4RouteMapSetCommunityNums brcdIp.1.2.11.14.1.1.16 Syntax: OCTET STRING	Read-write	The community number is from 1 through 0xFFFFFFFF. The incoming and outgoing list can have a maximum of 6 entries each. This integer number is represented by four octets.
snBgp4RouteMapSetDampenHalfLife brcdIp.1.2.11.14.1.1.17 Syntax: Integer	Read-write	The BGP4 route map dampening half life.
snBgp4RouteMapSetDampenReuse brcdIp.1.2.11.14.1.1.18 Syntax: Integer	Read-write	The BGP4 route map dampening reuse.
snBgp4RouteMapSetDampenSuppress brcdIp.1.2.11.14.1.1.19 Syntax: Integer	Read-write	The BGP4 route map dampening suppress.
snBgp4RouteMapSetDampenMaxSuppress brcdIp.1.2.11.14.1.1.20 Syntax: Integer	Read-write	The BGP4 route map dampening maximum suppress time.

BGP4 neighbor operational status table

The BGP4 neighbor operational status table shows the state of a neighbor and statistics about the messages sent and received.

Name, OID, and syntax	Access	Description
snBgp4NeighOperStatusTable brcdIp.1.2.11.15.1	None	The BGP4 neighbor operational status table.
snBgp4NeighOperStatusIndex brcdIp.1.2.11.15.1.1.1 Syntax: Integer32	Read-only	The index for the entry. Each entry represents a neighbor.
snBgp4NeighOperStatusIp brcdIp.1.2.11.15.1.1.2 Syntax: IpAddress	Read-only	Shows the IP address of the neighbor.
snBgp4NeighOperStatusRemoteAs brcdIp.1.2.11.15.1.1.3 Syntax: Integer32	Read-only	Shows the AS that the neighbor is in.

Name, OID, and syntax	Access	Description
snBgp4NeighOperStatusBgpType brcdIp.1.2.11.15.1.1.4 Syntax: Integer	Read-only	Shows the type of BGP used by this entry: • ebgp(0) - The neighbor is in another AS. • ibgp(1) - The neighbor is in the same AS.
snBgp4NeighOperStatusState brcdIp.1.2.11.15.1.1.5 Syntax: Integer	Read-only	Shows the state of this neighbor: • noState(0) • idle(1) - BGP4 process is waiting to be started. Usually, enabling BGP4 or establishing a neighbor session starts the BGP4 process. A minus sign (-) indicates that the session has gone down and the software is clearing or removing routes. • connect(2) - BGP4 is waiting for the connection process for the TCP neighbor session to be completed. • active(3) - BGP4 is waiting for a TCP connection from the neighbor. • openSent(4) - BGP4 is waiting for an OPEN message from the neighbor. • openConfirm(5) - BGP4 has received an OPEN message from the neighbor and is now waiting for either a KEEPALIVE or NOTIFICATION message. If the router receives a KEEPALIVE message from the neighbor, the state changes to established(6). If the message is a NOTIFICATION, the state changes to idle(1). • established(6) - BGP4 is ready to exchange UPDATE messages with the neighbor. NOTE If there is more BGP data in the TCP receiver queue, a plus sign (+) is also displayed.
snBgp4NeighOperStatusKeepAliveTime brcdIp.1.2.11.15.1.1.6 Syntax: Integer	Read-only	Specifies how often this router sends keepalive messages to the neighbor.
snBgp4NeighOperStatusHoldTime brcdIp.1.2.11.15.1.1.7 Syntax: Integer32	Read-only	Specifies how many seconds the router will wait for a keepalive or update message from a BGP4 neighbor before deciding that the neighbor is dead.
snBgp4NeighOperStatusAdvertlevel brcdIp.1.2.11.15.1.1.8 Syntax: Integer32	Read-only	Shows the minimum interval between the sending of BGP routing updates.
snBgp4NeighOperStatusKeepAliveTxCounts brcdIp.1.2.11.15.1.1.9 Syntax: Integer32	Read-only	Shows the number of keepalive message sent.

Name, OID, and syntax	Access	Description
snBgp4NeighOperStatusKeepAliveRxCounts brcdIp.1.2.11.15.1.1.10 Syntax: Counter32	Read-only	Shows the number of keepalive message received.
snBgp4NeighOperStatusUpdateTxCounts brcdIp.1.2.11.15.1.1.11 Syntax: Counter32	Read-only	Shows the number of updated messages sent.
snBgp4NeighOperStatusUpdateRxCounts brcdIp.1.2.11.15.1.1.12 Syntax: Counter32	Read-only	Shows the number of updated messages received.
snBgp4NeighOperStatusNotifTxCounts brcdIp.1.2.11.15.1.1.13 Syntax: Counter32	Read-only	Shows the number of notification messages sent.
snBgp4NeighOperStatusNotifRxCounts brcdIp.1.2.11.15.1.1.14 Syntax: Counter32	Read-only	Shows the number of notification messages received.
snBgp4NeighOperStatusOpenTxCounts brcdIp.1.2.11.15.1.1.15 Syntax: Counter32	Read-only	Shows the number of open messages sent.
snBgp4NeighOperStatusOpenRxCounts brcdIp.1.2.11.15.1.1.16 Syntax: Counter32	Read-only	Shows the number of open messages received.

BGP4 router operational status table

The following table lists the BGP4 router operational status table MIB objects.

Name, OID, and syntax	Access	Description
snBgp4RouteOperStatusTable brcdIp.1.2.11.16.1	None	The BGP4 router operational status table.
snBgp4RouteOperStatusIndex brcdIp.1.2.11.16.1.1.1 Syntax: Integer32	Read-only	The index for a route entry.
snBgp4RouteOperStatusIp brcdIp.1.2.11.16.1.1.2 Syntax: IpAddress	Read-only	Shows the IP address of the route.
snBgp4RouteOperStatusSubnetMask brcdIp.1.2.11.16.1.1.3 Syntax: IpAddress	Read-only	Shows the IP subnet mask of the route.
snBgp4RouteOperStatusNextHop brcdIp.1.2.11.16.1.1.4 Syntax: IpAddress	Read-only	Shows the IP address of the next hop in the route.
snBgp4RouteOperStatusMetric brcdIp.1.2.11.16.1.1.5 Syntax: Integer	Read-only	Shows the value of the route's MED attribute.

Name, OID, and syntax	Access	Description
snBgp4RouteOperStatusLocalPreference brcdIp.1.2.11.16.1.1.6 Syntax: Integer32	Read-only	Shows the degree of preference for this route relative to other routes in the local AS. When the BGP4 algorithm compares routes on the basis of local preferences, the route with the higher local preference is chosen. The preference can have a value from 0 through 4294967295.
snBgp4RouteOperStatusWeight brcdIp.1.2.11.16.1.1.7 Syntax: Integer32	Read-only	The value that this router associates with routes from a specific neighbor. For example, if the router receives routes to the same destination from two BGP4 neighbors, the router prefers the route from the neighbor with the larger weight.
snBgp4RouteOperStatusOrigin brcdIp.1.2.11.16.1.1.8 Syntax: Integer	Read-only	Shows the route's origin: • igp(0) - Routes with this set of attributes came to BGP through IGP. • egp(1) - Routes with this set of attributes came to BGP through EGP. • incomplete(2) - Routes came from an origin other than IGP or EGP. For example, they may have been redistributed from OSPF or RIP.
snBgp4RouteOperStatusStatus brcdIp.1.2.11.16.1.1.9 Syntax: Integer32	Read-only	Shows the route's status. The value of this object is a bit array, a packed bit string. The following shows the meaning of each bit. A bit position may be set to 0 - FALSE or 1 - TRUE: Bit position Meaning 6 - 31 reserved 5 aggregate route for multiple networks 4 best route to destination 3 internal, learned through BGP4 2 local, originated on this device 1 suppressed, suppressed during aggregation and thus is not advertised to neighbors 0 valid
snBgp4RouteOperStatusRouteTag brcdIp.1.2.11.16.1.1.10 Syntax: Integer32	Read-only	Sets the route's tag. This can be a value from 0 through 4294967295. This object applies only to routes redistributed into OSPF
snBgp4RouteOperStatusCommunityList brcdIp.1.2.11.16.1.1.11 Syntax: OCTET STRING	Read-only	Shows the communities the route is in. A community is represented by 4 octets. The community list, could have some well-known numbers such as: • BGP_COMMUNITY_ATTRIBUTE_NO_EXPORT0xFFFFFF01 • BGP_COMMUNITY_ATTRIBUTE_NO_ADVERTISE0xFFFFFF02 If the community list is a NULL string (empty list), then the community is INTERNET, which is

Name, OID, and syntax	Access	Description
		represented by a number from 1 through 0xFFFFFFFF.
snBgp4RouteOperStatusAsPathList brcdIp.1.2.11.16.1.1.12 Syntax: OCTET STRING	Read-only	Shows the AS-Path list of this route. Valid values: 1 - 0xFFFF. This integer is represented by two octets.

BGP4 neighbor summary table

The BGP4 neighbor summary table shows statistics for the router's BGP4 neighbors.

Name, OID, and syntax	Access	Description
snBgp4NeighborSummaryTable brcdIp.1.2.11.17.1	None	The BGP4 neighbor summary table.
snBgp4NeighborSummaryIndex brcdIp.1.2.11.17.1.1.1 Syntax: Integer32	Read-only	The index for a route entry.
snBgp4NeighborSummaryIp brcdIp.1.2.11.17.1.1.2 Syntax: IpAddress	Read-only	Shows the IP address of the neighbor.
snBgp4NeighborSummaryState brcdIp.1.2.11.17.1.1.3 Syntax: Integer	Read-only	Shows the state of the BGP4 process during the current session with the neighbor: • noState(0) • idle(1) - The BGP4 process is waiting to be started. Usually, enabling BGP4 or establishing a neighbor session starts the BGP4 process. A minus sign (-) indicates that the session has gone down and the software is clearing or removing routes. • connect(2) - Waiting for the connection process for the TCP neighbor session to be completed. • active(3) - BGP4 is waiting for a TCP connection from the neighbor. • openSent(4) - BGP4 is waiting for an OPEN message from the neighbor. • openConfirm(5) - BGP4 has received an OPEN message from the neighbor and is now waiting for either a KEEPALIVE or NOTIFICATION message. If the router receives a KEEPALIVE message from the neighbor, the state changes to established(6). If the message is a NOTIFICATION, the state changes to idle(1). • established(6) - BGP4 is ready to exchange UPDATE messages with the neighbor.

Name, OID, and syntax	Access	Description
		NOTE If there is more BGP data in the TCP receiver queue, a plus sign (+) is also displayed.
snBgp4NeighborSummaryStateChgTime brcdIp.1.2.11.17.1.1.4 Syntax: Integer32	Read-only	Shows the number of times the state of this neighbor has changed. If the state frequently changes between CONNECT and ACTIVE, there may be a problem with the TCP connection.
snBgp4NeighborSummaryRouteReceived brcdIp.1.2.11.17.1.1.5 Syntax: Integer32	Read-only	Shows the number of routes received from the neighbor during the current BGP4 session.
snBgp4NeighborSummaryRouteInstalled brcdIp.1.2.11.17.1.1.6 Syntax: Integer32	Read-only	Indicates how many of the received routes were accepted and installed in the BGP4 route table.

BGP4 attribute entries table

The BGP4 attribute entries table contains the sets of BGP4 attributes stored in the router's memory. Each set of attributes is unique and can be associated with one or more routes.

Name, OID, and syntax	Access	Description
snBgp4AttributeTable brcdIp.1.2.11.18.1	None	The BGP4 attribute entries table.
snBgp4AttributeIndex brcdIp.1.2.11.18.1.1.1 Syntax: Integer32	Read-only	Shows the index for a route entry.
snBgp4AttributeNextHop brcdIp.1.2.11.18.1.1.2 Syntax: Integer	Read-only	Shows the IP address of the next-hop router for routes that have this set of attributes.
snBgp4AttributeMetric brcdIp.1.2.11.18.1.1.3 Syntax: Integer32	Read-only	Shows the cost of the route entry.
snBgp4AttributeOrigin brcdIp.1.2.11.18.1.1.4 Syntax: Integer	Read-only	Shows the origin of this route: • igp(0) - Routes with this set of attributes came to BGP through IGP. • egp(1) - Routes with this set of attributes came to BGP through EGP. • incomplete(2) - Routes came from an origin other than IGP or EGP. For example, they may have been redistributed from OSPF or RIP.
snBgp4AttributeAggregatorAs brcdIp.1.2.11.18.1.1.5 Syntax: Integer32	Read-only	Shows the aggregator AS number for an attribute entry. The AS in which the network information in the attribute set was aggregated. This value applies only to aggregated routes and is otherwise 0.

Name, OID, and syntax	Access	Description
snBgp4AttributeRouterId brcdIp.1.2.11.18.1.1.6 Syntax: Integer	Read-only	Shows the ID of the device that originated this aggregator.
snBgp4AttributeAtomicAggregatePresent brcdIp.1.2.11.18.1.1.7 Syntax: Integer	Read-only	Shows if this aggregation has resulted in information loss: • false(0) - No information loss. • true(1) - Information has been lost.
snBgp4AttributeLocalPreference brcdIp.1.2.11.18.1.1.8 Syntax: Integer32	Read-only	Shows the degree of preference for routes that use this set of attributes, relative to other routes in the local AS.
snBgp4AttributeCommunityList brcdIp.1.2.11.18.1.1.9 Syntax: OCTET STRING	Read-only	Shows the community list of this attribute entry. A community is represented by four octets. The community list, could have some well-known numbers such as: • BGP_COMMUNITY_ATTRIBUTE_NO_EXPORT0xFFFFFF01 • BGP_COMMUNITY_ATTRIBUTE_NO_ADVERTISE0xFFFFFF02 If the community list is a NULL string (empty list), then the community is INTERNET, which is represented by a number from 1 through 0xFFFFFFFF.
snBgp4AttributeAsPathList brcdIp.1.2.11.18.1.1.10 Syntax: OCTET STRING	Read-only	Shows the ASs through which routes with this set of attributes have passed. The local AS is shown in parentheses. This is a number from 1 through 0xFFFF. This integer number is represented by two octets.
snBgp4AttributeOriginator brcdIp.1.2.11.18.1.1.11 Syntax: IpAddress	Read-only	Shows the originator of the route in a route reflector environment.
snBgp4AttributeClusterList brcdIp.1.2.11.18.1.1.12 Syntax: OCTET STRING	Read-only	Shows the route reflector clusters through which this set of attributes has passed. The list is a group of cluster IDs. Each ID is an IP address represented by four octets.

BGP4 clear neighbor command table

The following table lists the BGP4 clear neighbor command table MIB objects.

Name, OID, and syntax	Access	Description
snBgp4ClearNeighborCmdTable brcdIp.1.2.11.19.1	None	The BGP4 clear neighbor command table.
snBgp4ClearNeighborCmdIp brcdIp.1.2.11.19.1.1.1 Syntax: IpAddress	Read-only	Shows the IP address of a neighbor entry. If the IP address is 255.255.255.255, then the entry applies to all neighbors.
snBgp4ClearNeighborCmdElement brcdIp.1.2.11.19.1.1.2	Read-write	Indicates what will be cleared: • valid(0) - Received in SNMP-GET.

Name, OID, and syntax	Access	Description
Syntax: Integer		• lastPacketWithError(1) - Clears the buffer containing the first 400 bytes of the last BGP4 packet that contained an error. • notificationErrors(2) - Clears the buffer containing the last NOTIFICATION message sent or received. • softOutbound(3) - Updates all outbound routes by applying the new or changed filters, but sends only the existing routes affected by the new or changed filters to the neighbor. • traffic(4) - Clears the BGP4 message counters for all neighbors (the default) or a neighbor. • neighbor(5) - Clears the BGP4 message counter for all neighbors within a peer group.

BGP4 neighbor prefix group table

The following table lists the BGP4 neighbor prefix group table MIB objects.

Name, OID, and syntax	Access	Description
snBgp4NeighPrefixGroupTable brcdIp.1.2.11.20.1	None	The BGP4 neighbor prefix group table.
snBgp4NeighPrefixGroupNeighIp brcdIp.1.2.11.20.1.1.1 Syntax: IpAddress	Read-only	Shows the neighbor's IP address.
snBgp4NeighPrefixGroupDir brcdIp.1.2.11.20.1.1.2 Syntax: Integer	Read-only	Shows the direction of the advertisement to which this filter will be applied: • outgoing(0) - Applied to routes that will be transmitted to the neighbor. • incoming(1) - Applied to routes received from the neighbor.
snBgp4NeighPrefixGroupInAccessList brcdIp.1.2.11.20.1.1.3 Syntax: OCTET STRING	Read-write	If the BGP4 neighbor prefix group table object is set to incoming(1), this object shows the name of the prefix list for incoming routes. There can be up to 32 octets in this object.
snBgp4NeighPrefixGroupOutAccessList brcdIp.1.2.11.20.1.1.4 Syntax: OCTET STRING	Read-write	If the BGP4 neighbor prefix group table object is set outgoing(0), this object shows the name of the prefix list for outgoing routes. There can be up to 32 octets in this object.
snBgp4NeighPrefixGroupRowStatus brcdIp.1.2.11.20.1.1.5 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row.

Name, OID, and syntax	Access	Description
		If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

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OSPF general objects

The Open Shortest Path First (OSPF) general objects provide information about the OSPF process. and they apply globally to the routers.

Name, OID, and syntax	Access	Description
snOspfGen brcdIp.1.2.4.1	None	
snOspfRouterId brcdIp.1.2.4.1.1 Syntax: RouterID	Read-write	Shows the IP address of the Autonomous System Boundary Router (ASBR). Conventionally, this ID defaults to the IP address of one of the routers to ensure uniqueness in the network. This object contains a 32-bit integer.
snOspfAdminStat brcdIp.1.2.4.1.2 Syntax: Integer	Read-write	Specifies the state of the OSPF in the router: • disabled(0) - OSPF is disabled on all interfaces. • enabled(1) - OSPF is active on at least one interface.
snOspfASBdrRtrStatus brcdIp.1.2.4.1.3 Syntax: TruthVal	Read-write	Indicates if this router is an Autonomous System Boundary Router: • false(0) • true(1)
snOspfRedisMode brcdIp.1.2.4.1.4 Syntax: Integer	Read-write	Specifies if OSPF redistribution has been enabled on this router: • disabled(0) - OSPF redistribution is disabled. • enabled(1) - OSPF redistribution is active.
snOspfDefaultOspfMetricValue brcdIp.1.2.4.1.5 Syntax: Integer	Read-write	Shows the cost of using a default OSPF metric value on this route. Valid values: 1 - 65535

Name, OID, and syntax	Access	Description
snOspfExternLSACount brcdIp.1.2.4.1.6 Syntax: Gauge32	Read-only	The number of external link-state advertisements in the link-state database.
snOspfExternLSACksumSum brcdIp.1.2.4.1.7 Syntax: Integer32	Read-only	Indicates the 32-bit unsigned sum of the link-state (LS) checksums of the external link-state advertisements (LSA) contained in the link-state database. This sum can be used to determine if there has been a change in a router's link-state database and to compare the link-state database of two routers.
snOspfOriginateNewLSAs brcdIp.1.2.4.1.8 Syntax: Counter	Read-only	Shows the number of new link-state advertisements that have been originated by the router. This number increments each time the router originates a new LSA.
snOspfRxNewLSAs brcdIp.1.2.4.1.9 Syntax: Counter32	Read-only	Shows the number of link-state advertisements received by the router. This number does not include newer instantiations of self-originated link-state advertisements.
snOspfOspfRedisMetricType brcdIp.1.2.4.1.10 Syntax: Integer	Read-write	Indicates the type of route: • type1(1) - External Type 1 (comparable value) intra-area and inter-area routes. It is an OSPF metric plus the external metric. • type2(2) - External Type 2 (non-comparable value) routes. It is the external metric.
snOspfExtLsdbLimit brcdIp.1.2.4.1.11 Syntax: Integer32	Read-write	Provides compliance with RFC 1765 in the handling of OSPF external link-state database (LSDB) overflow. Specifies the maximum number of non-default AS-external-LSAs entries that can be stored in the link-state database. When the number of non-default AS-external-LSAs in a router's link-state database reaches ospfExtLsdbLimit, the router enters overflow state.The router never holds more than ospfExtLsdbLimit non-default AS-external-LSAs in its database. OspfExtLsdbLimit must be set identically in all routers attached to the OSPF backbone and any regular OSPF area. OSPF stub areas and NSSAs are excluded. Valid values: 1 - 2000. NOTE There is no limit, if the value is -1.
snOspfExitOverflowInterval brcdIp.1.2.4.1.12 Syntax: Integer	Read-write	Specifies the number of seconds that a router will attempt to leave the overflow state. This value allows the router to again originate non-default AS-external-LSAs. If this object is set to 0, the router will not leave the overflow state until it is restarted. Valid values: 0 - 86400 seconds

Name, OID, and syntax	Access	Description
snOspfRfc1583Compatibility brcdIp.1.2.4.1.13 Syntax: Integer	Read-write	Specifies if the OSPF route is compatible with RFC 1583 or RFC 2178: • disabled(0) - Compatible with RFC 2178. • enabled(1) - Compatible with RFC 1583.
snOspfRouterIdFormat brcdIp.1.2.4.1.14 Syntax: Integer	Read-write	Specifies the format of how the router ID will be entered in the OSPF general objects object: • integer(0) - Integer • ipAddress(1) - IP address
snOspfDistance brcdIp.1.2.4.1.15 Syntax: Integer	Read-write	Determines the OSPF administrative distance area. The value is zero is the distance is not set. Valid values: 1 - 255 Default: 110
snOspfDistanceIntra brcdIp.1.2.4.1.16 Syntax: Integer	Read-write	Determines the OSPF administrative distance for intra-area routes. Valid values: 1 - 255 Default: 110
snOspfDistanceInter brcdIp.1.2.4.1.17 Syntax: Integer	Read-write	Determines the OSPF administrative distance for inter-area routes. Valid values: 1 - 255 Default: 110
snOspfDistanceExternal brcdIp.1.2.4.1.18 Syntax: Integer	Read-write	Determines the OSPF administrative distance for external routes. Valid values: 1 - 255 Default: 110

OSPF area table

The OSPF area data structure contains information that describes the various OSPF areas. The interfaces and virtual links are configured as parts of these areas. Area 0.0.0.0, by definition, is the Backbone Area.

Name, OID, and syntax	Access	Description
snOspfAreaTable brcdIp.1.2.4.2.1	None	The OSPF area table.
snOspfAreaId brcdIp.1.2.4.2.1.1.1 Syntax: AreaID	Read-only	Specifies the address of the area. This address identifies the router, independent of its IP address. Area ID 0.0.0.0 is used for the OSPF backbone. The format used for this ID is specified by the OSPF area table object.
snOspfImportASExtern brcdIp.1.2.4.2.1.1.2 Syntax: Integer32	Read-write	Indicates the type of OSPF area that this router supports: • 0 - Stub area. OSPF routers within a stub area cannot send or receive external LSAs. In addition, OSPF routers in a stub area must use a default route to the area's Area Border

Name, OID, and syntax	Access	Description
		Router (ABR) or Autonomous System Boundary Router (ASBR) to send traffic out of the area. • 1 - Normal area. OSPF routers within a normal area can send and receive external link-state advertisements. • 2 - NSSA area. ASBR of an NSSA can import external route information into the area.
snOspfStubMetric brcdIp.1.2.4.2.1.1.3 Syntax: BigMetric	Read-write	The metric value applied at the default type of service (ospfMetric). By default, this equals the least metric at the type of service among the interfaces to other areas. This object exists only if the value of snOspfAreaSummary is snOspfAreaSummary(2); Otherwise, an SNMP_GET or GET_NEXT attempt of this object will return NO_SUCH_NAME.
snOspfAreaRowStatus brcdIp.1.2.4.2.1.1.4 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snOspfAreaIdFormat brcdIp.1.2.4.2.1.1.5 Syntax: Integer	Read-write	Specifies the format of the area ID entered in the OSPF interface configuration table on page 367 object: • integer(0) - Integer • ipAddress(1) - IP address

Area range table

The area range allows you to assign an aggregate value to a range of IP addresses. This aggregate value becomes the address that is advertised instead of all the individual addresses it represents being advertised. The area range table contains the aggregate value of the ranges of IP addresses that are configured to be propagated from an OSPF area.

Name, OID, and syntax	Access	Description
snOspfAreaRangeTable brcdIp.1.2.4.3.1	None	The area range table.
snOspfAreaRangeAreaID brcdIp.1.2.4.3.1.1.1 Syntax: AreaID	Read-only	Specifies the ID of the area where the address range can be found. The Area range table object determines the format of this object.
snOspfAreaRangeNet brcdIp.1.2.4.3.1.1.2	Read-only	Specifies the IP address of the net or subnet indicated by the range.

Name, OID, and syntax	Access	Description
Syntax: IpAddress		
snOspfAreaRangeMask brcdIp.1.2.4.3.1.1.3 Syntax: IpAddress	Read-write	Specifies the subnet mask that pertains to the net or subnet.
snOspfAreaRangeRowStatus brcdIp.1.2.4.3.1.1.4 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snOspfAreaRangeAreaIdFormat brcdIp.1.2.4.3.1.1.5 Syntax: Integer	Read-only	Specifies the format of how area ID will be entered in the Area range table object: • integer(0) - Integer • ipAddress(1) - IP Address

OSPF interface configuration tables

The OSPF interface table augments the ifTable with OSPF-specific information. The following table is deprecated by OSPF interface 2 configuration table on page 370 (snOspfIf2Table).

OSPF interface configuration table

Name, OID, and syntax	Access	Description
snOspfIfTable brcdIp.1.2.4.4.1	None	The OSPF interface configuration table.
snOspfIfPort brcdIp.1.2.4.4.1.1.1 Syntax: Integer32	Read-only	The physical router port of this OSPF interface.
snOspfIfAreaId brcdIp.1.2.4.4.1.1.2 Syntax: AreaID	Read-write	Specifies the address of the area in a 32-bit integer. This address uniquely identifies the area to which the interface connects. Area ID 0.0.0.0 is used for the OSPF backbone. Default:'00000000'h, which is equal to 0.0.0.0 .
snOspfIfAdminStat brcdIp.1.2.4.4.1.1.3 Syntax: Integer	Read-write	Indicates if neighbor relationships may be formed on this interface: • disabled(0) - The interface is external to OSPF. • enabled(1) - Neighbor relationships may be formed on the interface, which

Name, OID, and syntax	Access	Description
		will be advertised as an internal route to an area. Default: enabled(1)
snOspfIfRtrPriority brcdIp.1.2.4.4.1.1.4 Syntax: DesignatedRouterPriority	Read-write	Specifies the priority of this interface. This object is used in the designated router election algorithm for multi-access networks. Valid values: 0 - 255. A value of 0 signifies that the router is not eligible to become the designated router on this particular network. If two or more routers have the same priority value, then the router with the highest router ID becomes the designated router. The router with the next highest router ID becomes the backup designated router.
snOspfIfTransitDelay brcdIp.1.2.4.4.1.1.5 Syntax: UpToMaxAge	Read-write	Shows the time it takes to transmit link-state update packets on this interface. Valid values: 0 - 3600 seconds Default: 1 second
snOspfIfRetransInterval brcdIp.1.2.4.4.1.1.6 Syntax: UpToMaxAge	Read-write	Specifies the number of seconds between link-state advertisement retransmissions, for adjacencies belonging to this interface. This value is also used when retransmitting database description and link-state request packets. Values values: 0 - 3600 seconds Default: 5 seconds
snOspfIfHelloInterval brcdIp.1.2.4.4.1.1.7 Syntax: HelloRange	Read-write	Specifies the number of seconds the router waits before it sends the next hello packet on this interface. This value must be the same for all routers attached to a common network Valid values: 1 - 65535 seconds (up to 'FFFF'h) Default: 10 seconds
snOspfIfRtrDeadInterval brcdIp.1.2.4.4.1.1.8 Syntax: PositiveInteger	Read-write	Specifies the number of seconds that neighbor routers wait for a router's hello packets before they declare that the router is down. This should be a multiple of the hello interval. This value must be the same for all routers attached to a common network. Valid values: 1 - 2147483647 seconds Default: 40 seconds
snOspfIfAuthType brcdIp.1.2.4.4.1.1.9 Syntax: Integer	Read-write	Specifies the authentication type for an interface. Valid values: • none(0) • simplePassword(1) • md5(2) • reserved for specification by IANA(> 2) Additional authentication types may be assigned locally on a per interface basis, up to 255. Default: none(0)

Name, OID, and syntax	Access	Description
snOspfIfAuthKey brcdIp.1.2.4.4.1.1.10 Syntax: Octet String	Read-write	Indicates the authentication key: • If the authentication type selected is a simple password, then this object requires an alphanumeric password. If the value is shorter than eight octets, the agent will left-adjust and zero-fill the key to equal eight octets. The simple password setting takes effect immediately. All OSPF packets transmitted on the interface contain this password. Any OSPF packet received on the interface is checked for this password. If the password is not present, then the packet is dropped. The password can be up to eight characters long. • If the authentication type is MD5, then a key ID and an MD5 key are required. The key ID is a number from 1 through 255 and identifies the MD5 key that is being used. The MD5 key can be up to 16 alphanumeric characters long. Default:'0000000000000000'h, which is equal to 0.0.0.0.0.0.0.0. When read, OSPF interface configuration table always returns a blank.
snOspfIfMetricValue brcdIp.1.2.4.4.1.1.11 Syntax: Integer	Read-write	Specifies the cost of using this type of service (TOS) on this interface. The default value of the TOS 0 Metric is equal to 10^8 divided by the ifSpeed.
snOspfIfRowStatus brcdIp.1.2.4.4.1.1.12 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snOspfIfMd5AuthKeyId brcdIp.1.2.4.4.1.1.13 Syntax: Integer	Read-write	Specifies the ID of the MD5 authentication key. If the OSPF virtual interface table on page 374 object is set to MD5, this object identifies the algorithm and secret key used to create the message digest appended to the OSPF packet. Key identifiers are unique per interface (or equivalently, per subnet). The value of this object must be a number from 1 through 255.
snOspfIfMd5AuthKey brcdIp.1.2.4.4.1.1.14	Read-write	Specifies the MD5 authentication key. If the OSPF virtual interface table on page 374 object is set to MD5, the value of this object is

Name, OID, and syntax	Access	Description
Syntax: Octet String		encrypted and included in each OSPF packet transmitted. The agent will left-adjust and zero-fill the key to equal 16 octets. When read, snOspfIfMd5AuthKey always returns a blank.
snOspfIfMd5ActivationWaitTime brcdIp.1.2.4.4.1.1.15 Syntax: Integer	Read-write	Determines when a newly configured MD5 authentication key is valid. This parameter provides a graceful transition from one MD5 key to another without disturbing the network. All new packets transmitted after the key activation wait time interval use the newly configured MD5 key. OSPF packets that contain the old MD5 key are accepted for up to five minutes after the new MD5 key is in operation. The range for the key activation wait time is from 0 through 14400 seconds. Default: 300 seconds
snOspfIfAreaIdFormat brcdIp.1.2.4.4.1.1.16 Syntax: Integer	Read-only	Specifies the format of how Area ID will be entered in the OSPF interface configuration table object: • integer(0) - Integer • ipAddress(1) - IP Address
snOspfIfPassiveMode brcdIp.1.2.4.4.1.1.17 Syntax: Integer	Read-write	Indicates if passive mode is enabled on this interface: • disabled(0) • enabled(1)
snOspfIfDatabaseFilterAllOut brcdIp.1.2.4.4.1.1.18 Syntax: Integer	Read-write	Determines if the filtering of an outgoing OSPF LSA on this interface is enabled: • disabled(0) - Filtering is disabled. • enabled(1) - Filtering is enabled.
snOspfIfMtuIgnore brcdIp.1.2.4.4.1.1.19 Syntax: Integer	Read-write	Determines if the MTU detection mode of this interface is enabled: • disabled(0) - MTU detection mode is disabled. • enabled(1) - MTU detection mode is enabled.
snOspfIfNetworkP2mp brcdIp.1.2.4.4.1.1.20 Syntax: Integer	Read-write	Determines if the P2MP mode of this interface is enabled: • disabled(0) - P2MP mode is disabled. • enabled(1) - P2MP mode is enabled.

OSPF interface 2 configuration table

The following table replaces snOspfIfTable and snOspfIf2Port is an ifIndex of the table.

Name, OID, and syntax	Access	Description
snOspfIf2Table brcdIp.1.2.4.4.2	None	The OSPF interface table describes the interfaces from the viewpoint of OSPF.

Name, OID, and syntax	Access	Description
		Determines if the P2MP mode of this interface is enabled: • disabled(0) - P2MP mode is disabled. • enabled(1) - P2MP mode is enabled.
snOspfIf2Port brcdIp.1.2.4.4.2.1.1 Syntax: Integer32	Read-only	The physical router port of this OSPF interface.
snOspfIf2AreaId brcdIp.1.2.4.4.2.1.2 Syntax: AreaID	Read-write	Specifies the address of the area in a 32-bit integer. This address uniquely identifies the area to which the interface connects. Area ID 0.0.0.0 is used for the OSPF backbone. Default: '00000000'h, which is equal to 0.0.0.0
snOspfIf2AdminStat brcdIp.1.2.4.4.2.1.3 Syntax: Integer	Read-write	Indicates if neighbor relationships may be formed on this interface: • disabled(0) - The interface is external to OSPF. • enabled(1) - Neighbor relationships may be formed on the interface, which will be advertised as an internal route to an area. Default: enabled(1)
snOspfIf2RtrPriority brcdIp.1.2.4.4.2.1.4 Syntax: DesignatedRouterPriority	Read-write	Specifies the priority of this interface. This object is used in the designated router election algorithm for multi-access networks. Valid values: 0 - 255. A value of 0 signifies that the router is not eligible to become the designated router on this particular network. If two or more routers have the same priority value, then the router with the highest router ID becomes the designated router. The router with the next highest router ID becomes the backup designated router.
snOspfIf2TransitDelay brcdIp.1.2.4.4.2.1.5 Syntax: UpToMaxAge	Read-write	Shows the time it takes to transmit link-state update packets on this interface. Valid values: 0 - 3600 seconds Default: 1 second
snOspfIf2RetransInterval brcdIp.1.2.4.4.2.1.6 Syntax: UpToMaxAge	Read-write	Specifies the number of seconds between link-state advertisement retransmissions, for adjacencies belonging to this interface. This value is also used when retransmitting database description and link-state request packets. Valid values: 0 - 3600 seconds Default: 5 seconds
snOspfIf2HelloInterval brcdIp.1.2.4.4.2.1.7 Syntax: HelloRange	Read-write	Specifies the number of seconds that router waits before it sends the next hello packet on this interface. This value must be the same for all routers attached to a common network. Valid values: 1 - 65535 seconds (up to 'FFFF'h) Default: 10 seconds

Name, OID, and syntax	Access	Description
snOspfIf2RtrDeadInterval brcdIp.1.2.4.4.2.1.8 Syntax: PositiveInteger	Read-write	Specifies the number of seconds that neighbor routers wait for a router's hello packets before they declare that the router is down. This should be a multiple of the hello interval. This value must be the same for all routers attached to a common network. Valid values: 1 - 2147483647 seconds Default: 40 seconds
snOspfIf2AuthType brcdIp.1.2.4.4.2.1.9 Syntax: Integer	Read-write	Specifies the authentication type for an interface. Valid values: • none(0) • simplePassword(1) • md5(2) • reserved for specification by IANA(> 2) Additional authentication types may be assigned locally on a per-interface basis. The value of this object can be up to 255. Default: none(0)
snOspfIf2AuthKey brcdIp.1.2.4.4.2.1.10 Syntax: Octet String	Read-write	Indicates the authentication key: • If the authentication type selected is a simple password, then this object requires an alphanumeric password. If the value is shorter than eight octets, the agent will left-adjust and zero-fill the key to equal eight octets. The simple password setting takes effect immediately. All OSPF packets transmitted on the interface contain this password. Any OSPF packet received on the interface is checked for this password. If the password is not present, then the packet is dropped. The password can be up to eight characters long. • If the authentication type is MD5, then a key ID and an MD5 key are required. The key ID is a number from 1 through 255 and identifies the MD5 key that is being used. The MD5 key can be up to 16 alphanumeric characters long. Valid values: Up to eight octets Default: '0000000000000000'h, which is equal to 0.0.0.0.0.0.0.0 When read, OSPF interface 2 configuration table always returns a blank.
snOspfIf2MetricValue brcdIp.1.2.4.4.2.1.11 Syntax: Integer	Read-write	Specifies the cost of using this type of service (TOS) on this interface. The default value of the TOS 0 Metric is equal to 10^8 divided by the ifSpeed. Valid values: 0 - 65535

Name, OID, and syntax	Access	Description
snOspfIf2RowStatus brcdIp.1.2.4.4.2.1.12 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snOspfIf2Md5AuthKeyId brcdIp.1.2.4.4.2.1.13 Syntax: Integer	Read-write	Specifies the ID of the MD5 authentication key. If the OSPF virtual interface table on page 374 object is set to MD5, this object identifies the algorithm and secret key used to create the message digest appended to the OSPF packet. Key identifiers are unique per interface (or equivalently, per subnet). The value of this object must be a number from 1 through 255.
snOspfIf2Md5AuthKey brcdIp.1.2.4.4.2.1.14 Syntax: Octet String	Read-write	Specifies the MD5 authentication key. If the OSPF virtual interface table on page 374 object is set to MD5, the value of this object is encrypted and included in each OSPF packet transmitted. The agent will left-adjust and zero-fill the key to equal 16 octets. When read, OSPF interface 2 configuration table always returns a blank. Valid values: Up to 16 octets.
snOspfIf2Md5ActivationWaitTime brcdIp.1.2.4.4.2.1.15 Syntax: Integer	Read-write	Determines when a newly configured MD5 authentication key is valid. This parameter provides a graceful transition from one MD5 key to another without disturbing the network. All new packets transmitted after the key activation wait time interval use the newly configured MD5 key. OSPF packets that contain the old MD5 key are accepted for up to five minutes after the new MD5 key is in operation. The range for the key activation wait time is from 0 through 14400 seconds. Default: 300 seconds
snOspfIf2AreaIdFormat brcdIp.1.2.4.4.2.1.16 Syntax: Integer	Read-only	Specifies the format of how Area ID will be entered in the OSPF interface configuration table on page 367 object: • integer(0) - Integer • ipAddress(1) - IP Address
snOspfIf2PassiveMode brcdIp.1.2.4.4.2.1.17 Syntax: Integer	Read-write	Indicates if passive mode is enabled on this interface: • disabled(0)

Name, OID, and syntax	Access	Description
		• enabled(1)
snOspfIf2DatabaseFilterAllOut brcdIp.1.2.4.4.2.1.18 Syntax: Integer	Read-write	Determines if the filtering of an outgoing OSPF LSA on this interface is enabled: • disabled(0) - Filtering is disabled. • enabled(1) - Filtering is enabled.
snOspfIf2MtuIgnore brcdIp.1.2.4.4.2.1.19 Syntax: Integer	Read-write	Determines if the MTU detection mode of this interface is enabled: • disabled(0) - MTU detection mode is disabled. • enabled(1) - MTU detection mode is enabled.
snOspfIf2NetworkP2mp brcdIp.1.2.4.4.2.1.20 Syntax: Integer	Read-write	Determines if the P2MP mode of this interface is enabled: • disabled(0) - P2MP mode is disabled. • enabled(1) - P2MP mode is enabled.
snOspfIf2NetworkP2pt brcdIp.1.2.4.4.2.1.21 Syntax: Integer	Read-write	This object enables and disables OSPF point-to-point mode on an interface: • disabled(0) - Disables the feature. • enabled(1) - Enables the feature.
snOspfIf2NetworkNonBroadcast brcdIp.1.2.4.4.2.1.22 Syntax: Integer	Read-write	This object enables or disables non-broadcast mode of this interface.

OSPF virtual interface table

The OSPF virtual interface table describes the virtual links that the OSPF process is configured to carry.

References:

- RFC 1583 "OSPF Version 2", section C.4 Virtual link parameters
- RFC 1583 "OSPF Version 2", section 9 The Interface Data Structure

Name, OID, and syntax	Access	Description
snOspfVirtIfTable brcdIp.1.2.4.5.1	None	The OSPF virtual interface table.
snOspfVirtIfAreaID brcdIp.1.2.4.5.1.1.1 Syntax: AreaID	Read-only	Specifies the ID of the transit area that the virtual link traverses. A value of 0.0.0.0 is not valid.
snOspfVirtIfNeighbor brcdIp.1.2.4.5.1.1.2 Syntax: RouterID	Read-only	Shows the IP address of the ID of the router that is serving as the virtual neighbor.
snOspfVirtIfTransitDelay brcdIp.1.2.4.5.1.1.3 Syntax: UpToMaxAge	Read-write	Shows the time it takes to transmit link-state update packets on this interface. Valid values: 0 - 3600 seconds Default: 1 second
snOspfVirtIfRetransInterval brcdIp.1.2.4.5.1.1.4	Read-write	Specifies the interval between the retransmission of link-state advertisements to router adjacencies for this interface.

Name, OID, and syntax	Access	Description
Syntax: UpToMaxAge		Valid values: 0 - 3600 seconds Default: 5 seconds This value is also used when retransmitting database description and link-state request packets. This value should be greater than the expected roundtrip time.
snOspfVirtIfHelloInterval brcdIp.1.2.4.5.1.1.5 Syntax: HelloRange	Read-write	Specifies the number of seconds that router waits before it sends the next hello packet on this interface. This value must be the same for all routers attached to a common network. Valid values: 1 - 65535 seconds Default: 10 seconds This value must be the same for the virtual neighbor.
snOspfVirtIfRtrDeadInterval brcdIp.1.2.4.5.1.1.6 Syntax: PositiveInteger	Read-write	Specifies the number of seconds that neighbor routers wait for a router's hello packets before they declare that the router is down. This should be a multiple of the hello interval. This value must be the same for the virtual neighbor. Default: 60 seconds
snOspfVirtIfAuthType brcdIp.1.2.4.5.1.1.7 Syntax: Integer	Read-write	Specifies the authentication type for an interface. Valid values: • none(0) • simplePassword(1) • md5(2) • reserved for specification by IANA(> 2) Additional authentication types may be assigned locally on a per-interface basis. Default: none(0)
snOspfVirtIfAuthKey brcdIp.1.2.4.5.1.1.8 Syntax: Octet String	Read-write	Specifies the authentication key: • If the authentication type selected is simple password, then this object requires an alphanumeric password. If the value is shorter than eight octets, the agent will left-adjust and zero-fill the key to equal eight octets. The simple password setting takes effect immediately. All OSPF packets transmitted on the interface contain this password. Any OSPF packet received on the interface is checked for this password. If the password is not present, then the packet is dropped. The password can be up to eight characters long. • If the authentication type is MD5, then a key ID and an MD5 key are required. The key ID is a number from 1 through 255 and identifies the MD5 key that is being used. The MD5 key can be up to 16 alphanumeric characters long.

Name, OID, and syntax	Access	Description
		When read, OSPF interface configuration table on page 367 always returns a blank. Default: 0000000000000000'h, which is 0.0.0.0.0.0.0.0
snOspfVirtIfRowStatus brcdIp.1.2.4.5.1.1.9 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snOspfVirtIfMd5AuthKeyId brcdIp.1.2.4.5.1.1.10 Syntax: Integer	Read-write	Specifies the ID of the MD5 authentication key. This object identifies the algorithm and secret key used to create the message digest appended to the OSPF packet. Key identifiers are unique per interface. If the OSPF virtual interface table object is set to MD5, the value of this object must be a number from 1 through 255.
snOspfVirtIfMd5AuthKey brcdIp.1.2.4.5.1.1.11 Syntax: Octet String	Read-write	Specifies the MD5 authentication key. The value of this object is encrypted and included in each OSPF packet transmitted. If the value of this object is shorter than 16 octets, the agent will left-adjust and zero-fill the key to equal 16 octets. When read, snOspfIfMd5AuthKey always returns a blank.
snOspfVirtIfMd5ActivationWaitTime brcdIp.1.2.4.5.1.1.12 Syntax: Integer	Read-write	Determines when a newly configured MD5 authentication key is valid. This parameter provides a graceful transition from one MD5 key to another without disturbing the network. All new packets transmitted after the key activation wait time interval use the newly configured MD5 key. OSPF packets that contain the old MD5 key are accepted for up to five minutes after the new MD5 key is in operation. Valid values: 0 - 14400 seconds Default: 300 seconds
snOspfVirtIfAreaIdFormat brcdIp.1.2.4.5.1.1.13 Syntax: Integer	Read-only	Specifies the format of how area ID is entered in the OSPF virtual interface table object: • integer(0) - Integer. • ipAddress(1) - IP address.

OSPF redistribution of routes table

The OSPF redistribution of routes table contains a list of routes that will be used to decide whether a particular RIP or static route is to be imported into an OSPF domain. Routes will be imported if the parameter "Import Route into OSPF" is enabled. They will be imported as external type 2 routes.

Name, OID, and syntax	Access	Description
snOspfRedisTable brcdIp.1.2.4.6.1	None	The OSPF redistribution of routes table contains a list of routes that could be imported into the OSPF domain.
snOspfRedisIndex brcdIp.1.2.4.6.1.1.1 Syntax: Integer	Read-only	An ID identifying this destination route. There can be up to 64 entries for this object.
snOspfRedisIpAddress brcdIp.1.2.4.6.1.1.2 Syntax: IpAddress	Read-write	Shows the destination IP address that is associated with this particular route.
snOspfRedisMask brcdIp.1.2.4.6.1.1.3 Syntax: IpAddress	Read-write	Shows the subnet mask of this route.
snOspfRedisAction brcdIp.1.2.4.6.1.1.4 Syntax: Integer	Read-write	Specifies what action to be taken if the route matches this entry: • noImport(0) - Do not import the route into the OSPF domain. • import(1) - Import the route into the OSPF domain as an external type 2 route.
snOspfRedisProtocol brcdIp.1.2.4.6.1.1.5 Syntax: Integer	Read-write	Specifies how routes are imported into the OSPF domain: • rip(1) - The RIP route. • all(2) - All protocol route. • static(3) - The static route. • bgp(4) - The BGP route. • connected(5) - The connected route. • isis(6) - The IS-IS route.
snOspfRedisSetOspfMetric brcdIp.1.2.4.6.1.1.6 Syntax: Integer	Read-write	The value indicates whether the route metric matches the OSPF metric field: • disabled(0) - The route metric does not match the OSPF metric field. • enabled(1) - The route metric matches the OSPF metric field.
snOspfRedisOspfMetricValue brcdIp.1.2.4.6.1.1.7 Syntax: Integer	Read-write	Specifies the cost of using this Type of Service (TOS) on this interface. Valid values: 0 - 65535.
snOspfRedisMatchRipMetric brcdIp.1.2.4.6.1.1.8 Syntax: Integer	Read-write	The value indicates whether the route metric matches the RIP metric field: • disabled(0) - The route metric does not match the RIP metric field. • enabled(1) - The route metric matches the RIP metric field.
snOspfRedisRipMetricValue	Read-write	Specifies the cost of using RIP on this interface.

Name, OID, and syntax	Access	Description
brcdIp.1.2.4.6.1.1.9 Syntax: Integer		Valid values: 1 - 15 hops
snOspfRedisRowStatus brcdIp.1.2.4.6.1.1.10 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

OSPF neighbor table

The OSPF neighbor table describes non-virtual neighbors in the locality of the router.

References:

- RFC 1583 “OSPF Version 2”, section 10 The Neighbor Data Structure
- RFC 1583 “OSPF Version 2”, section 12.1.2 Options

Name, OID, and syntax	Access	Description
snOspfNbrTable brcdIp.1.2.4.7.1	None	A table of non-virtual neighbor information.
snOspfNbrEntryIndex brcdIp.1.2.4.7.1.1.1 Syntax: Integer32	Read-only	The table entry index of this neighbor.
snOspfNbrPort brcdIp.1.2.4.7.1.1.2 Syntax: Integer32	Read-only	Shows the physical port ID of this neighbor.
snOspfNbrIpAddr brcdIp.1.2.4.7.1.1.3 Syntax: IpAddress	Read-only	Shows the IP address of this neighbor.
snOspfNbrIndex brcdIp.1.2.4.7.1.1.4 Syntax: Integer32	Read-only	Contains an index of each neighbor's port and IP address.
snOspfNbrRtrId brcdIp.1.2.4.7.1.1.5 Syntax: RouterID	Read-only	Specifies the IP address of the neighboring router in the autonomous system. The value of this object is a 32-bit integer. Default: '00000000'h, which is equal to 0.0.0.0
snOspfNbrOptions brcdIp.1.2.4.7.1.1.6 Syntax: Integer32	Read-only	The bit mask that is set corresponding to the neighbor's options field: • Bit 0 - The system will operate on Type of Service metrics other than

Name, OID, and syntax	Access	Description
		TOS 0. The neighbor will ignore all metrics except for the TOS 0 metric. • Bit 1 - The associated area accepts and operates on external information; it is a stub area. • Bit 2 - The system is capable of routing IP Multicast datagrams. It implements the multicast extensions to OSPF. • Bit 3 - The associated area is an NSSA. These areas are capable of carrying type 7 external advertisements, which are translated into type 5 external advertisements at NSSA borders. Default: Bit 0
snOspfNbrPriority brcdIp.1.2.4.7.1.1.7 Syntax: DesignatedRouterPriority32	Read-only	Specifies the priority of this interface. This object is used in the designated router election algorithm for multi-access networks. Valid values: 0 - 255 Default: 1. A value of 0 signifies that the router is not eligible to become the designated router on this particular network. If two or more routers have the same priority value, then the router with the highest router ID becomes the designated router. The router with the next highest router ID becomes the backup designated router.
snOspfNbrState brcdIp.1.2.4.7.1.1.8 Syntax: Integer	Read-only	Shows the state of the communication between the Layer 3 Switch and the neighbor: • down(1) - There has been no recent information received from the neighbor. • attempt(2) - This state is only valid for neighbors attached to non-broadcast networks. It indicates that no recent information has been received from the neighbor. • init(3) - A hello packet has recently been seen from the neighbor. However, bidirectional communication has not yet been established with the neighbor. (The router itself did not appear in the neighbor's hello packet.) All neighbors in this state (or higher) are listed in the hello packets sent from the associated interface. • twoWay(4) - Communication between the two routers is bidirectional. This is the most advanced state before beginning adjacency establishment. The Designated Router and Backup Designated Router are selected from the set of neighbors in the two-way state or greater.

Name, OID, and syntax	Access	Description
		• exchangeStart(5) - The first step in creating an adjacency between the two neighboring routers. The goal of this step is to decide which router is the master, and to decide upon the initial Database Description (DD) sequence number. Neighbor communications in this state or greater are called adjacencies. • exchange(6) - The router is describing its entire link-state database by sending DD packets to the neighbor. Each DD packet has a DD sequence number, and is explicitly acknowledged. Only one DD packet can be outstanding at any time. In this state, link-state request packets can also be sent asking for the neighbor's more recent advertisements. All adjacencies that are in the exchange state or greater are used by the flooding procedure. In fact, these adjacencies are fully capable of transmitting and receiving all types of OSPF routing protocol packets. • loading(7) - Link-state request packets are sent to the neighbor asking for the more recent advertisements that have been discovered (but not yet received) in the exchange state. • full(8) - The neighboring routers are fully adjacent. These adjacencies will now appear in router links and network link advertisements. Default: down(1)
snOspfNbrEvents brcdIp.1.2.4.7.1.1.9 Syntax: Counter	Read-only	Shows the number of times this neighbor's state has changed state, or the number of times an error occurred.
snOspfNbrLsRetransQLen brcdIp.1.2.4.7.1.1.10 Syntax: Gauge32	Read-only	Specifies the interval between the retransmission of link-state advertisements to router adjacencies for this interface. The range is from 0 through 3600 seconds. Default: 5 seconds

OSPF virtual neighbor table

The OSPF virtual neighbor table describes all virtual neighbors. Because virtual links are configured in the virtual interface table, this table is read-only.

Reference: RFC 1583 "OSPF Version 2", section 15 Virtual Links.

Name, OID, and syntax	Access	Description
snOspfVirtNbrTable brcdIp.1.2.4.8.1	None	The OSPF virtual neighbor table.
snOspfVirtNbrEntryIndex brcdIp.1.2.4.8.1.1.1 Syntax: Integer32	Read-only	The ID of an entry in the OSPF virtual neighbor table.
snOspfVirtNbrArea brcdIp.1.2.4.8.1.1.2 Syntax: AreaID	Read-only	Shows the ID of the transit area. The format is defined in the OSPF virtual neighbor table object.
snOspfVirtNbrRtrId brcdIp.1.2.4.8.1.1.3 Syntax: RouterID	Read-only	Identifies the IP address of the neighboring router in the autonomous system (AS). This is a 32-bit integer.
snOspfVirtNbrIpAddr brcdIp.1.2.4.8.1.1.4 Syntax: IpAddress	Read-only	Shows the IP address of this virtual neighbor.
snOspfVirtNbrOptions brcdIp.1.2.4.8.1.1.5 Syntax: Integer32	Read-only	Shows a bit map that corresponds to the neighbor's options field. Thus, Bit 1, if set, indicates that the neighbor supports Type of Service routing; if zero, no metrics other than TOS 0 are in use by the neighbor.
snOspfVirtNbrState brcdIp.1.2.4.8.1.1.6 Syntax: Integer	Read-only	Shows the state of the communication between the Layer 3 Switch and the virtual neighbor: • down(1) - There has been no recent information received from the neighbor. • attempt(2) - This state is only valid for neighbors attached to non-broadcast networks. It indicates that no recent information has been received from the neighbor. • init(3) - A hello packet has recently been seen from the neighbor. However, bidirectional communication has not yet been established with the neighbor. (The router itself did not appear in the neighbor's hello packet.) All neighbors in this state (or higher) are listed in the hello packets sent from the associated interface. • twoWay(4) - Communication between the two routers is bidirectional. This is the most advanced state before beginning adjacency establishment. The Designated Router and Backup Designated Router are selected from the set of neighbors in the two-way state or greater. • exchangeStart(5) - The first step in creating an adjacency between the two neighboring routers. The goal of this step is to decide which router is the master, and to decide upon the initial DD sequence number. Neighbor communications in this state or greater are called adjacencies.

Name, OID, and syntax	Access	Description
		• exchange(6) - The router is describing its entire link-state database by sending DD packets to the neighbor. Each DD packet has a DD sequence number, and is explicitly acknowledged. Only one DD packet can be outstanding at any time. In this state, link-state request packets can also be sent asking for the neighbor's more recent advertisements. All adjacencies in the exchange state or greater are used by the flooding procedure. In fact, these adjacencies are fully capable of transmitting and receiving all types of OSPF routing protocol packets. • loading(7) - Link-state request packets are sent to the neighbor asking for the more recent advertisements that have been discovered (but not yet received) in the exchange state. • full(8) - The neighboring routers are fully adjacent. These adjacencies will now appear in router links and network link advertisements.
snOspfVirtNbrEvents brcdIp.1.2.4.8.1.1.7 Syntax: Counter32	Read-only	Shows the number of times the state of this virtual link has changed or an error has occurred.
snOspfVirtNbrLSRetransQLen brcdIp.1.2.4.8.1.1.8 Syntax: Gauge32	Read-only	Shows the current length of the retransmission queue.
snOspfVirtNbrAreaIdFormat brcdIp.1.2.4.8.1.1.9 Syntax: Integer	Read-only	Specifies the format of how Area ID will be entered in the OSPF virtual neighbor table object: • integer(0) - Integer • ipAddress(1) - IP address

OSPF link-state database

The OSPF link-state database contains the link-state advertisement from all the areas to which the device is attached.

Reference: RFC 1583 "OSPF Version 2", section 12 Link State Advertisements.

Name, OID, and syntax	Access	Description
snOspfLsdbTable brcdIp.1.2.4.9.1	None	The OSPF process's link-state database.
snOspfLsdbEntryIndex brcdIp.1.2.4.9.1.1.1 Syntax: Integer32	Read-only	The ID of the entry in the link-state database.
snOspfLsdbAreaId brcdIp.1.2.4.9.1.1.2	Read-only	Shows the area from which the LSA was received. The value is in a 32-bit format.

Name, OID, and syntax	Access	Description
Syntax: AreaID		
snOspfLsdbType brcdIp.1.2.4.9.1.1.3 Syntax: Integer	Read-only	Specifies the type of the link-state advertisement. Each link-state type has a separate advertisement format: • routerLink(1) • networkLink(2) • summaryLink(3) • asSummaryLink(4)
snOspfLsdbLsId brcdIp.1.2.4.9.1.1.4 Syntax: IpAddress	Read-only	Specifies the link-state ID. This ID is an LS type-specific field containing either a router ID or an IP address. It identifies the piece of the routing domain that is being described by the advertisement.
snOspfLsdbRouterId brcdIp.1.2.4.9.1.1.5 Syntax: RouterID	Read-only	Identifies the originating router in the autonomous system. This information is in a 32-bit number. The format is determined by the OSPF link-state database object. **NOTE** OSPF sequence number is a 32-bit signed integer. It starts with the value '80000001'h or -'7FFFFFFF'h, and increments until '7FFFFFFF'h. Thus, a typical sequence number will be more negative than a negative number.
snOspfLsdbSequence brcdIp.1.2.4.9.1.1.6 Syntax: Integer32	Read-only	Shows the sequence number of this entry. The OSPF neighbor that sent the LSA stamps the LSA with a sequence number to enable the Layer 3 Switch and other OSPF routers to determine which LSA for a given route is the most recent. This object can be used to detect old and duplicate link-state advertisements. The higher the sequence number, the more recent the advertisement.
snOspfLsdbAge brcdIp.1.2.4.9.1.1.7 Syntax: Integer32	Read-only	Shows the age of the link-state advertisement in seconds.
snOspfLsdbChecksum brcdIp.1.2.4.9.1.1.8 Syntax: Integer32	Read-only	Indicates the checksum for the LSA packet. The checksum is based on all the fields in the packet except the age field. The Layer 3 Switch uses the checksum to verify that the packet is not corrupted.
snOspfLsdbAdvertisement brcdIp.1.2.4.9.1.1.9 Syntax: Octet String	Read-only	Shows the data in the link-state advertisement, including its header in octets. Reference: RFC 1583 "OSPF Version 2", section Section 12 Link State Advertisements
snOspfLsdbAreaIdFormat brcdIp.1.2.4.9.1.1.10 Syntax: Integer	Read-only	Specifies the format of how RouterId will be entered in the OSPF link-state database object: • integer(0) - Integer • ipAddress(1) - IP address

OSPF link-state database (external)

The following table is identical to the OSPF LSDB table in format, but contains only external link-state advertisements. The purpose is to allow external LSAs to be displayed once for the router rather than once in each non-stub area.

Name, OID, and syntax	Access	Description
snOspfExtLsdbTable brcdIp.1.2.4.10.1	None	The link-state external database table.
snOspfExtLsdbEntryIndex brcdIp.1.2.4.10.1.1.1 Syntax: Integer32	Read-only	The table entry index of this link-state database.
snOspfExtLsdbType brcdIp.1.2.4.10.1.1.2 Syntax: Integer	Read-only	Shows the type of the link-state advertisement. Each link-state type has a separate advertisement format.
snOspfExtLsdbLsId brcdIp.1.2.4.10.1.1.3 Syntax: Integer	Read-only	Specifies the external link-state ID. This ID is an LS type-specific field containing either a router ID or an IP address. It identifies the piece of the routing domain that is being described by the advertisement.
snOspfExtLsdbRouterId brcdIp.1.2.4.10.1.1.4 Syntax: Integer	Read-only	Identifies the originating router in the autonomous system. This information is in a 32-bit number. **NOTE** OSPF Sequence Number is a 32-bit signed integer. It starts with the value '80000001'h, or -'7FFFFFFF'h. It increments until '7FFFFFFF'h Thus, a typical sequence number will be more negative.
snOspfExtLsdbSequence brcdIp.1.2.4.10.1.1.5 Syntax: Integer32	Read-only	Shows the sequence number of this entry. The OSPF neighbor that sent the LSA stamps it with a sequence number to enable the Layer 3 Switch and other OSPF routers to determine which LSA for a given route is the most recent. This object can be used to detect old and duplicate link-state advertisements. The higher the sequence number, the more recent the advertisement.
snOspfExtLsdbAge brcdIp.1.2.4.10.1.1.6 Syntax: Integer32	Read-only	Shows the age of the link-state advertisement in seconds.
snOspfExtLsdbChecksum brcdIp.1.2.4.10.1.1.7 Syntax: Integer32	Read-only	Indicates the checksum for the LSA packet. The checksum is based on all the fields in the packet except the age field. The Layer 3 Switch uses the checksum to verify that the packet is not corrupted.
snOspfExtLsdbAdvertisement brcdIp.1.2.4.10.1.1.8 Syntax: Octet String	Read-only	Shows the data in the link-state advertisement, including its header in octets. There can be up to 36 octets in this object.

OSPF area status table

The OSPF area status data structure contains information regarding the configured parameters and cumulative statistics of the router's attached areas. The interfaces and virtual links are configured as part of these areas. Area 0.0.0.0 is the Backbone Area.

Reference: RFC 1583 "OSPF Version 2", section 6 The Area Data Structure.

Name, OID, and syntax	Access	Description
snOspfAreaStatusTable brcdIp.1.2.4.11.1	None	The OSPF area status table.
snOspfAreaStatusEntryIndex brcdIp.1.2.4.11.1.1.1 Syntax: Integer32	Read-only	The ID of an entry in the OSPF area status table.
snOspfAreaStatusAreaId brcdIp.1.2.4.11.1.1.2 Syntax: AreaID	Read-only	Specifies the ID of an area. The format of this 32-bit integer is determined by the value of the OSPF area status table object. Area ID 0.0.0.0 is used for the OSPF backbone.
snOspfAreaStatusImportASExtern brcdIp.1.2.4.11.1.1.3 Syntax: Integer32	Read-only	The area's support for importing AS external link-state advertisements. Default: 1
snOspfAreaStatusStubMetric brcdIp.1.2.4.11.1.1.4 Syntax: BigMetric	Read-only	The metric value applied at the default type of service (ospfMetric). By default, this equals the least metric at the type of service among the interfaces to other areas. This object exists only if the value of snOspfAreaSummary is snOspfAreaSummary(2); otherwise, an SNMP_GET or GET_NEXT attempt of this object will return NO_SUCH_NAME.
snOspfAreaStatusSpfRuns brcdIp.1.2.4.11.1.1.5 Syntax: Counter32	Read-only	Shows the number of times that the intra-area route table has been recalculated using this area's link-state database.
snOspfAreaStatusAreaBdrRtrCount brcdIp.1.2.4.11.1.1.6 Syntax: Gauge32	Read-only	Shows the number of area border routers that are reachable within this area. This is initially zero, the default, and is calculated in each shortest path first (SPF) pass.
snOspfAreaStatusASBdrRtrCount brcdIp.1.2.4.11.1.1.7 Syntax: Gauge32	Read-only	Shows the total number of Autonomous System border routers that are reachable within this area. This is initially zero, the default, and is calculated in each SPF pass.
snOspfAreaStatusLSACount brcdIp.1.2.4.11.1.1.8 Syntax: Gauge32	Read-only	Shows the total number of link-state advertisements in this area's link-state database, excluding AS external LSAs. Default: 0
snOspfAreaStatusLSACksumSum brcdIp.1.2.4.11.1.1.9 Syntax: Integer32	Read-only	Shows the total link-state advertisements of area's link-state database. This number is a 32-bit unsigned sum of the LS checksums, excluding external (LS type 5) link-state advertisements. The value can be used to determine if there has been a change in a router's link-state database, and to compare the link-state database of two routers. Default: 0

Name, OID, and syntax	Access	Description
snOspfAreaStatusAreaIdFormat brcdIp.1.2.4.11.1.1.10 Syntax: Integer	Read-only	Specifies the format of how Area ID will be entered in the OSPF area status table object: • integer(0) - Integer. • ipAddress(1) - IP address.

OSPF interface status table

The OSPF interface status table describes the interfaces from the viewpoint of OSPF. It augments the ifStatusTable with OSPF-specific information.

Name, OID, and syntax	Access	Description
snOspfIfStatusTable brcdIp.1.2.4.12.1	None	The OSPF interface status table.
snOspfIfStatusEntryIndex brcdIp.1.2.4.12.1.1.1 Syntax: Integer32	Read-only	The ID of an entry in the OSPF interface status table.
snOspfIfStatusPort brcdIp.1.2.4.12.1.1.2 Syntax: Integer32	Read-only	Shows the ID of the physical router port of this OSPF interface.
snOspfIfStatusIpAddress brcdIp.1.2.4.12.1.1.3 Syntax: IpAddress	Read-only	Shows the IP address of this OSPF interface.
snOspfIfStatusAreaId brcdIp.1.2.4.12.1.1.4 Syntax: AreaID	Read-only	Identifies the area to which the interface connects. This ID is a 32-bit integer. Area ID 0.0.0.0 (in the '00000000'h format) is used for the OSPF backbone. The format of this ID is determined by the value of the OSPF interface status table object.
snOspfIfStatusType brcdIp.1.2.4.12.1.1.5 Syntax: Integer	Read-only	Identifies the OSPF interface type. (By way of a default, this field may be derived from the corresponding value of ifType.) • broadcast(1) - For broadcast LANs such as Ethernet and IEEE 802.5. • nbma(2) - For X.25, Frame Relay, and similar technologies. • pointToPoint(3) - For point-to-point interfaces.
snOspfIfStatusAdminStat brcdIp.1.2.4.12.1.1.6 Syntax: Integer	Read-only	Shows if OSPF has been enabled to form neighbor relationships on the interface: • disabled(0) - The interface is external to OSPF. • enabled(1) - OSPF has been enabled to form neighbor relationships and the interface will be advertised as an internal route to some area.
snOspfIfStatusRtrPriority brcdIp.1.2.4.12.1.1.7 Syntax: DesignatedRouterPriority	Read-only	Specifies the priority of this interface. This object is used in the designated router election algorithm for multi-access networks.

Name, OID, and syntax	Access	Description
		Valid values: 0 - 255 Default: 1. A value of 0 means that the router is not eligible to become the designated router on this particular network. If two or more routers have the same priority value, then the router with the highest router ID becomes the designated router. The router with the next highest router ID becomes the backup designated router.
snOspfIfStatusTransitDelay brcdIp.1.2.4.12.1.1.8 Syntax: UpToMaxAge	Read-only	Shows the time it takes to transmit link-state update packets on this interface. Valid values: 0 - 3600 seconds Default: 1 second
snOspfIfStatusRetransInterval brcdIp.1.2.4.12.1.1.9 Syntax: UpToMaxAge	Read-only	Shows the number of seconds between retransmissions of link-state advertisements, to adjacencies that belong to this interface. This value is also used when retransmitting database description and link-state request packets. Valid values: 0 - 3600 seconds Default: 5 seconds
snOspfIfStatusHelloInterval brcdIp.1.2.4.12.1.1.10 Syntax: HelloRange	Read-only	Specifies the number of seconds that router waits before it sends the next hello packet on this interface. This value must be the same for all routers attached to a common network. Valid values: 1 - 65535 seconds Default: 10 seconds
snOspfIfStatusRtrDeadInterval brcdIp.1.2.4.12.1.1.11 Syntax: PositiveInteger	Read-only	Specifies the number of seconds that neighbor routers wait for a router's hello packets before they declare that the router is down. This should be a multiple of the hello interval and must be the same for all routers attached to a common network. Default: 40 seconds
snOspfIfStatusState brcdIp.1.2.4.12.1.1.12 Syntax: Integer	Read-only	Shows the OSPF interface state: • down(1) • loopback(2) • waiting(3) • pointToPoint(4) • designatedRouter(5) • backupDesignatedRouter(6) • otherDesignatedRouter(7) Default: down(1)
snOspfIfStatusDesignatedRouter brcdIp.1.2.4.12.1.1.13 Syntax: IpAddress	Read-only	Shows the IP address of the designated router. Default: '00000000'h, which is equal to 0.0.0.0
snOspfIfStatusBackupDesignatedRouter brcdIp.1.2.4.12.1.1.14 Syntax: IpAddress	Read-only	Shows the IP address of the backup router. Default: '00000000'h, which is equal to 0.0.0.0

Name, OID, and syntax	Access	Description
snOspfIfStatusEvents brcdIp.1.2.4.12.1.1.15 Syntax: Counter32	Read-only	Shows the following: • The number of times that the state of this OSPF interface has changed • The number of times an error has occurred
snOspfIfStatusAuthType brcdIp.1.2.4.12.1.1.16 Syntax: Integer32	Read-only	Specifies the authentication type for an interface. Valid values: • none(0) • simplePassword(1) • md5(2) • reserved for specification by IANA(> 2) Additional authentication types may be assigned locally on a per-interface basis. Default: none(0)
snOspfIfStatusAuthKey brcdIp.1.2.4.12.1.1.17 Syntax: Octet String	Read-only	Indicates the area's authentication key: • If the authentication type selected is a simple password, then this object requires an alphanumeric password. If the value is shorter than eight octets, the agent will left-adjust and zero-fill the key to equal eight octets. The simple password setting takes effect immediately. All OSPF packets transmitted on the interface contain this password. Any OSPF packet received on the interface is checked for this password. If the password is not present, then the packet is dropped. The password can be up to eight characters long. • If the authentication type is MD5, then a key ID and an MD5 key are required. The key ID is a number from 1 through 255 and identifies the MD5 key that is being used. The MD5 key can be up to 16 alphanumeric characters long. When read, OSPF interface configuration table on page 367 always returns a blank. Default: '0000000000000000'h, which is 0.0.0.0.0.0.0.0
snOspfIfStatusMetricValue brcdIp.1.2.4.12.1.1.18 Syntax: Integer	Read-only	Specifies the cost of using this TOS on this interface. The default value of the TOS 0 Metric is 10^8 or ifSpeed. Valid values: 0 - 65535
snOspfIfStatusMd5AuthKeyId brcdIp.1.2.4.12.1.1.19 Syntax: Integer	Read-only	Specifies the ID of the MD5 authentication key. This object identifies the algorithm and secret key used to create the message digest appended to the OSPF packet. Key identifiers are unique per interface. If the OSPF virtual interface table on page 374 object is set to MD5, the value of this object must be a number from 1 through 255.

Name, OID, and syntax	Access	Description
snOspfIfStatusMd5AuthKey brcdIp.1.2.4.12.1.1.20 Syntax: Octet String	Read-only	Specifies the MD5 authentication key. The value of this object is encrypted and included in each OSPF packet transmitted. If the value of this object is shorter than 16 octets, the agent will left-adjust and zero-fill the key to equal 16 octets. When read, snOspfIfMd5AuthKey always returns a blank.
snOspfIfStatusMd5ActivationWaitTime brcdIp.1.2.4.12.1.1.21 Syntax: Integer	Read-only	Determines when a newly configured MD5 authentication key is valid. This parameter provides a graceful transition from one MD5 key to another without disturbing the network. All new packets transmitted after the key activation wait time interval use the newly configured MD5 key. OSPF packets that contain the old MD5 key are accepted for up to five minutes after the new MD5 key is in operation. The range for the key activation wait time is from 0 through 14400 seconds.
snOspfIfStatusAreaIdFormat brcdIp.1.2.4.12.1.1.22 Syntax: Integer	Read-only	Specifies the format of how Area ID will be entered in the OSPF interface status table object: • integer(0) - Integer. • ipAddress(1) - IP address

OSPF virtual interface status table

The OSPF virtual interface status table contains information about this router's virtual interfaces.

Reference: RFC 1583 "OSPF Version 2", section C.4 Virtual link parameters.

Name, OID, and syntax	Access	Description
snOspfVirtIfStatusTable brcdIp.1.2.4.13.1	None	The OSPF virtual interface status table.
snOspfVirtIfStatusEntryIndex brcdIp.1.2.4.13.1.1.1 Syntax: Integer32	Read-only	The ID of the entry in this table.
snOspfVirtIfStatusAreaID brcdIp.1.2.4.13.1.1.2 Syntax: AreaID	Read-only	Shows the ID of the transit area that the virtual link traverses. The value of this object cannot be 0.0.0.0. The format of this object is determined by the value of the OSPF virtual interface status table object.
snOspfVirtIfStatusNeighbor brcdIp.1.2.4.13.1.1.3 Syntax: RouterID	Read-only	Shows the ID or IP address of the router that is serving as the virtual neighbor.
snOspfVirtIfStatusTransitDelay brcdIp.1.2.4.13.1.1.4 Syntax: UpToMaxAge	Read-only	Shows the time it takes to transmit link-state update packets on this interface. Valid values: 0 - 3600 seconds Default: 1 second

Name, OID, and syntax	Access	Description
snOspfVirtIfStatusRetransInterval brcdIp.1.2.4.13.1.1.5 Syntax: UpToMaxAge	Read-only	Specifies the interval between the retransmission of link-state advertisements to router adjacencies for this interface. Valid values: 0 - 3600 seconds Default: 5 seconds
snOspfVirtIfStatusHelloInterval brcdIp.1.2.4.13.1.1.6 Syntax: HelloRange	Read-only	Specifies the number of seconds that the router waits before it sends the next hello packet on this interface. This value must be the same for all routers attached to a common network. Valid values: 1 - 65535 seconds Default: 10 seconds
snOspfVirtIfStatusRtrDeadInterval brcdIp.1.2.4.13.1.1.7 Syntax: PositiveInteger	Read-only	Specifies the number of seconds that neighbor routers wait for a router's hello packets before they declare that the router is down. This should be a multiple of the hello interval. This value must be the same for all routers attached to a common network. Default: 60 seconds
snOspfVirtIfStatusState brcdIp.1.2.4.13.1.1.8 Syntax: Integer	Read-only	Shows the state of the OSPF virtual interface: • down(1) • pointToPoint(4) Default: down(1)
snOspfVirtIfStatusEvents brcdIp.1.2.4.13.1.1.9 Syntax: Counter32	Read-only	Shows the following: • The number of times that the state of this OSPF interface has changed • The number of times an error has occurred
snOspfVirtIfStatusAuthType brcdIp.1.2.4.13.1.1.10 Syntax: Integer32	Read-only	Specifies the authentication type for an interface. Valid values: • none(0) • simplePassword(1) • reserved for specification by IANA(> 1) Additional authentication types may be assigned locally on a per-interface basis. Default: none(0)
snOspfVirtIfStatusAuthKey brcdIp.1.2.4.13.1.1.11 Syntax: Octet String	Read-only	Specifies the authentication key: • If the authentication type selected is a simple password, then this object requires an alphanumeric password. If the value is shorter than eight octets, the agent will left-adjust and zero-fill the key to equal eight octets. The simple password setting takes effect immediately. All OSPF packets transmitted on the interface contain this password. Any OSPF packet received on the interface is checked for this password. If the password is not present,

Name, OID, and syntax	Access	Description
		then the packet is dropped. The password can be up to eight characters long. • If the authentication type is MD5, then a key ID and an MD5 key are required. The key ID is a number from 1 through 255 and identifies the MD5 key that is being used. The MD5 key can be up to 16 alphanumeric characters long. When read, OSPF interface configuration table on page 367 always returns a blank. Default: '0000000000000000'h, which is 0.0.0.0.0.0.0.0
snOspfVirtIfStatusMd5AuthKeyId brcdIp.1.2.4.13.1.1.12 Syntax: Integer	Read-only	Specifies the ID of the MD5 authentication key. This object identifies the algorithm and secret key used to create the message digest appended to the OSPF packet. Key identifiers are unique per interface. If the OSPF virtual interface table on page 374 object is set to MD5, the value of this object must be a number from 1 through 255.
snOspfVirtIfStatusMd5AuthKey brcdIp.1.2.4.13.1.1.13 Syntax: Octet String	Read-only	Specifies the MD5 authentication key. The value of this object is encrypted and included in each OSPF packet transmitted. If the value of this object is shorter than 16 octets, the agent will left-adjust and zero-fill the key to equal 16 octets. When read, snOspfIfMd5AuthKey always returns a blank.
snOspfVirtIfStatusMd5ActivationWaitTime brcdIp.1.2.4.13.1.1.14 Syntax: Integer	Read-only	Determines when a newly configured MD5 authentication key is valid. This parameter provides a graceful transition from one MD5 key to another without disturbing the network. All new packets transmitted after the key activation wait time interval use the newly configured MD5 key. OSPF packets that contain the old MD5 key are accepted for up to five minutes after the new MD5 key is in operation. The range for the key activation wait time is from 0 through 14400 seconds.
snOspfVirtIfStatusAreaIdFormat brcdIp.1.2.4.13.1.1.15 Syntax: Integer	Read-only	Specifies the format of how Area ID will be entered in the OSPF virtual interface status table object: • integer(0) - Integer • ipAddress(1) - IP address

OSPF routing information table

The OSPF routing information table contains information on the OSPF Area Border Router (ABR) or Autonomous System Boundary Router (ASBR) routing.

Name, OID, and syntax	Access	Description
snOspfRoutingInfoTable brcdIp.1.2.4.14.1	None	The OSPF routing information table.
snOspfRoutingInfoIndex brcdIp.1.2.4.14.1.1.1 Syntax: Integer32	Read-only	The ID of an entry in this table.
snOspfRoutingInfoRouterID brcdIp.1.2.4.14.1.1.2 Syntax: RouterID	Read-only	Shows the ID or IP address of the destination router.
snOspfRoutingInfoRouterType brcdIp.1.2.4.14.1.1.3 Syntax: Integer	Read-only	Shows what router type the destination router is: • abr(1) - Area Border Router • asbr(2) - Autonomous System Border Router • abrANDasbr(3) - Area Border and Autonomous System Border Router
snOspfRoutingInfoNextHopRouterID brcdIp.1.2.4.14.1.1.4 Syntax: RouterID	Read-only	Shows the ID or IP address of the next-hop destination router.
snOspfRoutingInfoOutgoingInterface brcdIp.1.2.4.14.1.1.5 Syntax: Integer32	Read-only	Shows the outgoing interface of the destination router.

Trap support objects

The following table contains the support objects for the OSPF traps.

Name, OID, and syntax	Access	Description
snOspfSetTrap brcdIp.1.2.4.15.1 Syntax: Octet String	Read-write	Indicates if specific OSPF traps are enabled. The four octets serves as a bit map for the trap events defined by the OSPF traps. A value of 1 in the bit field indicates that the trap is enabled. The right-most bit (least significant) represents Trap 0.
snOspfConfigErrorType brcdIp.1.2.4.15.2 Syntax: Integer	Read-only	Indicates the potential types of configuration conflicts used by the ospfConfigError and ospfConfigVirtError traps: • badVersion(1) • areaMismatch(2) • unknownNbmaNbr(3) - Router is eligible. • unknownVirtualNbr(4) • authTypeMismatch(5) • authFailure(6) • netMaskMismatch(7) • helloIntervalMismatch(8) • deadIntervalMismatch(9) • optionMismatch(10)}

Name, OID, and syntax	Access	Description
snOspfPacketType brcdIp.1.2.4.15.3 Syntax: Integer	Read-only	Indicates the OSPF packet type in the trap: • hello(1) • dbDescript(2) • lsReq(3) • lsUpdate(4) • lsAck(5)}
snOspfPacketSrc brcdIp.1.2.4.15.4 Syntax: IpAddress	Read-only	Shows the IP address of an inbound packet that cannot be identified by a neighbor instance.
snOspfTrapsGenerationMode brcdIp.1.2.4.15.5 Syntax: RtrStatus	Read-write	Indicates if this router has been enabled to generate OSPF traps: • disabled(0) - OSPF traps cannot be generated by this router, even if the Trap support objects object is set to generate traps. • enabled(1) - OSPF traps can be generated by the router. This object provides global control on the generation of traps.

Broadcast Forwarding Group

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- UDP broadcast forwarding port table....395
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General UDP broadcast forwarding group

Name, OID, and syntax	Access	Description
snRtUdpBcastFwdEnable brcdIp.1.2.2.9 Syntax: RtrStatus	Read-write	Indicates if the UDP broadcast forwarding feature is enabled: • disabled(0) - When this object is set to disabled, entries in the UDP broadcast forwarding port table are deleted. • enabled(1) - When UDP broadcast forwarding is enabled, default entries are added to the UDP broadcast forwarding port table. Default: enabled(1)

UDP broadcast forwarding port table

The following table contains a list of UDP port numbers for which forwarding UDP broadcast is enabled.

Name, OID, and syntax	Access	Description
snRtUdpBcastFwdPortTable brcdIp.1.2.2.9.2.1	None	The UDP broadcast forwarding port table.
snRtUdpBcastFwdPortIndex brcdIp.1.2.2.9.2.1.1.1 Syntax: Integer	Read-only	The index of an entry in the UDP broadcast forwarding port table. There can be up to 20 entries.
snRtUdpBcastFwdPortNumber brcdIp.1.2.2.9.2.1.1.2 Syntax: Integer	Read-write	Shows the port number for which the UDP broadcast forwarding feature has been enabled. Possible port numbers are: • port(68) - bootpc • port(67) - bootps • port(9) - discard • port(53) - dns • port(90) - dnsix • port(7) - echo • port(434) - mobile-ip • port(138) - netbios-dgm • port(137) - netbios-ns • port(123) - ntp • port(65) - tacacs • port(517) - talk

Name, OID, and syntax	Access	Description
		• port(37) - time • port(69) - tftp Other application port numbers can also be specified.
snRtUdpBcastFwdPortRowStatus brcdIp.1.2.2.9.2.1.1.3 Syntax: RowStatus	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the rows • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

UDP helper table

A UDP helper table contains addresses that are used to forward a client's broadcast request for a UDP application when the client and server are on different networks. There can be up to four helper addresses on each interface. Helper addresses can be configured on an Ethernet port or a virtual interface.

Name, OID, and syntax	Access	Description
snRtUdpHelperTable brcdIp.1.2.2.9.3.1	None	The UDP helper table.
snRtUdpHelperPortIndex brcdIp.1.2.2.9.3.1.1.1 Syntax: PortIndex	Read-only	Indicates the port index for a UDP helper address. The value of this object is from 1 through 42.
snRtUdpHelperIndex brcdIp.1.2.2.9.3.1.1.2 Syntax: Integer	Read-only	An index in the UDP helper table for this entry. Valid values: 1- 4
snRtUdpHelperAddrType brcdIp.1.2.2.9.3.1.1.3 Syntax: IpAddress	Read-write	Indicates if the address is unicast or subnet broadcast address. Valid values: • unicast(1) • broadcast(2)
snRtUdpHelperAddr brcdIp.1.2.2.9.3.1.1.4 Syntax: IpAddress	Read-write	Shows the IP address of the UDP helper. UDP packets will be forwarded to this address. It can be a helper address or a subnet broadcast address, but it cannot be 255.255.255.255 or 0.0.0.0.
snRtUdpHelperRowStatus brcdIp.1.2.2.9.3.1.1.5 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row.

Name, OID, and syntax	Access	Description
		If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

Router IP MIB Definition

- IP RIP general group....399
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IP RIP general group

The Routing Information Protocol (RIP) is an IP route exchange protocol that uses a distance vector (a number representing distance) to measure the cost of a given route. The cost is a distance vector because the cost often is equivalent to the number of hops between the Layer 3 Switch and the destination network.

A Layer 3 Switch can receive multiple paths to a destination. A RIP route can have a maximum cost of 15.

Name, OID, and syntax	Access	Description
snRtIpRipEnable brcdIp.1.2.3.1.1 Syntax: Integer	Read-write	Indicates if IP RIP routing is enabled: • disabled(0) • enabled(1) Default: disabled(0)
snRtIpRipUpdateTime brcdIp.1.2.3.1.2 Syntax: Integer	Read-write	Specifies the RIP update interval in seconds. Valid values: 1 - 21845 seconds
snRtIpRipRedisEnable brcdIp.1.2.3.1.3 Syntax: Integer **NOTE** This object is not supported on the Brocade FastIron devices.	Read-write	Indicates if redistribution of static routes from the IP route table into RIP is enabled: • disabled(0) • enabled(1) Default: disabled(0)
snRtIpRipRedisDefMetric brcdIp.1.2.3.1.4 Syntax: Integer	Read-write	Shows the default metric to be used when static routes are redistributed to RIP. Valid values: 1 - 15
snRtIpRipSetAllPortConfig brcdIp.1.2.3.1.5 Syntax: Integer32 **NOTE** This object is not supported on the Brocade FastIron devices.	Read-write	The value of this object is a number corresponding to a row in the GUID-6809A0A5-55FD-437C-87EF-2BEF6BB53C80 object of GUID-6809A0A5-55FD-437C-87EF-2BEF6BB53C80. The values of the GUID-6809A0A5-55FD-437C-87EF-2BEF6BB53C80 and GUID-6809A0A5-55FD-437C-87EF-2BEF6BB53C80 objects will be written to that row. **NOTE** Before setting this object, all the intended data of t row of the table must be set. Otherwise, the curren the row will be used to set the entire GUID-6809A0A5-55FD-437C-87EF-2BEF6E The previous setting will be overwritten by the new

Name, OID, and syntax	Access	Description
snRtIpRipGblFiltList brcdIp.1.2.3.1.6 Syntax: OCTET STRING **NOTE** This object is not supported on the Brocade FastIron devices.	Read-write	An IP RIP global filter list. Each octet contains a filter ID number that forms a group of filters. A valid entry in GUID-4617F268-9D2D-4D0E-9637-E7DCDD320C38 with the corresponding filter ID number in the GUID-4617F268-9D2D-4D0E-9637-E7DCDD320C38 object must be created before a filter list is initialized. Valid values: 1 - 64 octets
snRtIpRipFiltOnAllPort brcdIp.1.2.3.1.7 Syntax: Integer **NOTE** This object is not supported on the Brocade FastIron devices.	Read-write	Applies the IP RIP global filter object IP RIP general group to all interfaces. This object is used to add and delete all RIP filter lists to and from all interfaces. Prior to sending this command, IP RIP general group must contain the correct filter list. The following values can be written: • deleteAllInBound(2) - Delete all in-bound filter lists from all ports. • deleteAllOutBound(3) - Delete all out-bound filter lists from all ports. • addAllInBound(4) - Add all in-bound filter lists to all ports. • addAllOutBound(5) - Add all out-bound filter lists to all ports. If a set operation failed, then a SET with value of (2) or (3) returns the error code "GenError". If the operation succeeded, then entries in this filter list are deleted immediately. The following value is returned on reads: • valid(1) - Set operation is done and is valid.
snRtIpRipDistance brcdIp.1.2.3.1.8 Syntax: Integer	Read-write	Shows the administrative distance of this filter. Valid values: 1 - 255
snRtIpRipEcmpEnable brcdIp.1.2.3.1.9 Syntax: RtrStatus **NOTE** This object is not supported on the Brocade FastIron devices.	Read-write	Enables or disables ECMP for IP RIP: • 0 - Disables ECMP • 1 - Enables ECMP

IP RIP redistribution table

The IP RIP redistribution table contains routes where RIP routes are redistributed. RIP can redistribute routes from other routing protocols such as OSPF and BGP4 into RIP. A redistributed route means that a Layer 3 Switch learns through another protocol, and then distributes into RIP.

Name, OID, and syntax	Access	Description
snRtIpRipRedisTable brcdIp.1.2.3.3	None	The IP RIP redistribution table.
snRtIpRipRedisIndex brcdIp.1.2.3.3.1.1 Syntax: Integer	Read-only	The table index for a IP RIP redistribution entry. There can be up to 64 entries in this table.
snRtIpRipRedisAction brcdIp.1.2.3.3.1.2 Syntax: Integer **NOTE** This object is not supported on the Brocade FastIron devices.	Read-write	Indicates what to do if routes match this IP RIP redistribution entry. • deny(0) • permit(1)
snRtIpRipRedisProtocol brcdIp.1.2.3.3.1.3 Syntax: Integer	Read-write	Indicates which protocol is to be distributed: • other(1) - Cannot be used for SNMP-SET. • all(2) • static(3) • ospf(4) • bgp(5) • isis(6)
snRtIpRipRedisIp brcdIp.1.2.3.3.1.4 Syntax: IpAddress **NOTE** This object is not supported on the Brocade FastIron devices.	Read-write	Shows the IP address of the IP route to be distributed. The address 0.0.0.0 means that all routes will be distributed.
snRtIpRipRedisMask brcdIp.1.2.3.3.1.5 Syntax: IpAddress **NOTE** This object is not supported on the Brocade FastIron devices.	Read-write	Shows the IP subnet mask of the IP route to be distributed.
snRtIpRipRedisMatchMetric brcdIp.1.2.3.3.1.6 Syntax: Integer **NOTE** This object is not supported on the Brocade FastIron devices.	Read-write	Specifies the metric of the route to be matched to determine the redistribution. Valid values: 0 - 65535. A value of 0 means that any metric value will be matched.
snRtIpRipRedisSetMetric brcdIp.1.2.3.3.1.7 Syntax: Integer	Read-write	Specifies the new metric of the route to be advertised. Valid values: 0 - 15. A value of 0 indicates that the default metric will be used.
snRtIpRipRedisRowStatus brcdIp.1.2.3.3.1.8 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row.

Name, OID, and syntax	Access	Description
		• modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snRtIpRipRedisRouteMapName brcdIp.1.2.3.3.1.9 Syntax: DisplayString	Read-write	Indicates the name of the route map used for this redistribution entry.

IP RIP neighbor filter table

The IP RIP neighbor filter table specifies the routers from which a router will receive RIP routes. By default, RIP routes will be learned from all neighbors.

Name, OID, and syntax	Access	Description
snRtIpRipNbrFilterTable brcdIp.1.2.3.5	None	The IP RIP neighbor filter table.
snRtIpRipNbrFilterId brcdIp.1.2.3.5.1.1 Syntax: Integer	Read-only	Indicates the ID of this entry in the table. There can be up to 64 entries in this table.
snRtIpRipNbrFilterAction brcdIp.1.2.3.5.1.2 Syntax: Integer	Read-write	Indicates what action to take if the source IP address in a packet matches the source IP address in this filter. The IP address to be matched is defined by the IP RIP neighbor filter table object: • deny(0) • permit(1)
snRtIpRipNbrFilterSourceIp brcdIp.1.2.3.5.1.3 Syntax: IpAddress	Read-write	Shows the source IP address that needs to be matched by the RIP packet. An IP address of 0.0.0.0 always matches any source IP addresses in any IP RIP packets.
snRtIpRipNbrFilterRowStatus brcdIp.1.2.3.5.1.4 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

PIM MIB Definition

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Common PIM objects

NOTE

The following section describes the Protocol Independent Multicast (PIM) MIB objects that are supported on the IP MIB.

The following table presents objects that are common to all PIM interfaces.

Name, OID, and syntax	Access	Description
snPimMIBObjects brcdIp.1.2.9.1	None	
snPimEnable brcdIp.1.2.9.1.1 Syntax: RtrStatus	Read-write	Determines if PIM is enabled on this Layer 3 Switch: • disabled(0) • enabled(1) Default: disabled(0) The remaining objects apply only if this object is set to enabled(1).
snPimNeighborRouterTimeout brcdIp.1.2.9.1.2 Syntax: Integer	Read-write	Specifies the number of seconds the PIM Layer 3 Switch waits before it considers a neighbor to be absent. Absence of PIM hello messages from a neighboring Layer 3 Switch indicates that a neighbor is not present. Valid values: 3 - 65535 seconds Default: 180 seconds
snPimHelloTime brcdIp.1.2.9.1.3 Syntax: Integer	Read-write	Specifies the number of seconds that periodic hellos are sent out on PIM interfaces. Layer 3 Switches use hello messages to inform neighboring Layer 3 Switches of their presence. Valid values: 10 - 3600 seconds Default: 60 seconds
snPimPruneTime brcdIp.1.2.9.1.4 Syntax: Integer	Read-write	Specifies the number of seconds that a PIM Layer 3 Switch will maintain a prune state for a forwarding entry. The first multicast that the Layer 3 Switch receives from an interface is forwarded to all other PIM interfaces on the Layer 3 Switch. If there is no presence of groups on that interface, the leaf node sends a prune message upstream and stores a prune state. This prune state travels up the tree and installs a prune state.

Name, OID, and syntax	Access	Description
		A prune state is maintained until the prune timer expires or a graft message is received for the forwarding entry. Valid values: 60 - 3600 seconds Default: 60 seconds
snPimGraftRetransmitTime brcdIp.1.2.9.1.5 Syntax: Integer	Read-write	Specifies the number of seconds between the transmission of graft messages. A graft message is sent by a Layer 3 Switch to cancel a prune state. When a Layer 3 Switch receives a graft message, the Layer 3 Switch responds with a Graft ACK (acknowledge) message. If this Graft ACK message is lost, the Layer 3 Switch that sent the graft message will resend it. • Valid values: 2 - 10 seconds • Default: 3 seconds
snPimInactivityTime brcdIp.1.2.9.1.6 Syntax: Integer	Read-write	Defines how long a forwarding entry can remain unused before the Layer 3 Switch deletes it. The Layer 3 Switch deletes a forwarding entry if the entry is not used to send multicast packets. This object is used only to keep the forwarding entries for the active sessions. Valid values: 10 - 3600 seconds Default: 180 seconds

PIM virtual interface table

The PIM virtual interface table lists the PIM virtual interfaces on a Layer 3 Switch.

NOTE
The following PIM neighbor table is not supported on the Brocade FastIron devices.

Name, OID, and syntax	Access	Description
snPimVInterfaceTable brcdIp.1.2.9.1.7	None	The PIM virtual interface table.
snPimVInterfaceVifIndex brcdIp.1.2.9.1.7.1.1 Syntax: Integer	Read-only	The ifIndex value of this PIM virtual interface. There can be up to 48 entries. Valid values: 1 - 48
snPimVInterfaceType brcdIp.1.2.9.1.7.1.2 Syntax: Integer	Read-write	Indicates the type of PIM virtual interface the row represents: • tunnel(1) • subnet(2) or a physical interface
snPimVInterfaceLocalAddress brcdIp.1.2.9.1.7.1.3 Syntax: IpAddress	Read-write	Indicates the IP address of the local end of the interface being configured. IP tunneling must also be enabled and defined on the destination Layer 3 Switch interface.

Name, OID, and syntax	Access	Description
snPimVInterfaceLocalSubnetMask brcdIp.1.2.9.1.7.1.4 Syntax: IpAddress	Read-only	Shows the network mask for the IP address of the PIM virtual interface. For a tunnel, this should be 0.0.0.0.
snPimVInterfaceRemoteAddress brcdIp.1.2.9.1.7.1.5 Syntax: IpAddress	Read-write	Shows the IP address of the remote end of this PIM virtual interface.
snPimVInterfaceDR brcdIp.1.2.9.1.7.1.6 Syntax: IpAddress	Read-only	Defines the designated Layer 3 Switch on this PIM virtual interface. For point-to-point interfaces, this object has the value 0.0.0.0.
snPimVInterfaceTtlThreshold brcdIp.1.2.9.1.7.1.7 Syntax: Integer	Read-write	Determines the minimum time-to-live (TTL) value to forward the packets out of this interface. Valid values: 1 - 31 Default: 1
snPimVInterfaceStatus brcdIp.1.2.9.1.7.1.8 Syntax: Integer	Read-write	Controls the management of the table rows. The following valuescan be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.
snPimVInterfaceMode brcdIp.1.2.9.1.7.1.9 Syntax: Integer	Read-write	Shows the configured mode of this PIM interface: • dense(1) - Traffic is initially flooded to all PIM interface neighbors. Branches that do not want the data are pruned. • sparse(2) - PIM interface neighbors must join the multicast group if they want to receive the traffic. Default: dense(1)

PIM neighbor table

The PIM neighbor table is a conceptual table that lists the PIM neighbors of the Layer 3 Switch.

NOTE

The following PIM neighbor table is not supported on the Brocade FastIron devices.

Name, OID, and syntax	Access	Description
snPimNeighborTable brcdIp.1.2.9.1.8	None	The PIM neighbor table.
snPimNeighborEntryIndex brcdIp.1.2.9.1.8.1.1 Syntax: Integer32	Read-only	The table entry index.

Name, OID, and syntax	Access	Description
snPimNeighborVifIndex brcdIp.1.2.9.1.8.1.2 Syntax: Integer32	Read-only	Shows the value of VifIndex for the virtual interface used to reach this PIM neighbor.
snPimNeighborAddress brcdIp.1.2.9.1.8.1.3 Syntax: IpAddress	Read-only	Shows the IP address of this PIM neighbor.
snPimNeighborUpTime brcdIp.1.2.9.1.8.1.4 Syntax: Time ticks	Read-only	Indicates the last time this PIM neighbor became a neighbor of the local Layer 3 Switch.
snPimNeighborExpiryTime brcdIp.1.2.9.1.8.1.5 Syntax: Time ticks	Read-only	Displays the time remaining before this PIM neighbor will be aged out.

PIM virtual interface statistics table

The PIM virtual interface statistics table lists the PIM virtual interface statistical counters of the Layer 3 Switch.

NOTE
The following PIM neighbor table is not supported on the Brocade FastIron devices.

Name, OID, and syntax	Access	Description
snPimVIfStatTable brcdIp.1.2.9.1.9	None	The PIM virtual interface statistics table.
snPimVIfStatVifIndex brcdIp.1.2.9.1.9.1.1 Syntax: Integer	Read-only	The ifIndex value of this PIM virtual interface. There can be 32 entries. Valid values: 1 - 32
snPimVIfStatInJoinPkts brcdIp.1.2.9.1.9.1.2 Syntax: Counter32	Read-only	Shows the number of join and prune messages sent or received on the interface. NOTE Unlike PIM Dense, PIM Sparse uses the same messages for joins and prunes.
snPimVIfStatOutJoinPkts brcdIp.1.2.9.1.9.1.3 Syntax: Counter32	Read-only	Indicates the number of join packets that have been sent on the PIM virtual interface.
snPimVIfStatDiscardJoinPkts brcdIp.1.2.9.1.9.1.4 Syntax: Counter32	Read-only	Shows the number of join packets that have been discarded by the PIM virtual interface.
snPimVIfStatInPrunePkts brcdIp.1.2.9.1.9.1.5 Syntax: Counter32	Read-only	Shows the number of prune packets that have arrived on the PIM virtual interface.
snPimVIfStatOutPrunePkts brcdIp.1.2.9.1.9.1.6 Syntax: Counter32	Read-only	Shows the number of prune packets that have been sent on the PIM virtual interface.
snPimVIfStatDiscardPrunePkts brcdIp.1.2.9.1.9.1.7	Read-only	Shows the number of prune packets that have been discarded by the PIM virtual interface.

Name, OID, and syntax	Access	Description
Syntax: Counter32		
snPimVlfStatInAssertPkts brcdIp.1.2.9.1.9.1.8 Syntax: Counter32	Read-only	Shows the number of assert packets that have arrived on the PIM virtual interface.
snPimVlfStatOutAssertPkts brcdIp.1.2.9.1.9.1.9 Syntax: Counter32	Read-only	Shows the number of assert packets that have been sent on the PIM virtual interface.
snPimVlfStatDiscardAssertPkts brcdIp.1.2.9.1.9.1.10 Syntax: Counter32	Read-only	Shows the number of assert packets that have been discarded by the PIM virtual interface.
snPimVlfStatInHelloPkts brcdIp.1.2.9.1.9.1.11 Syntax: Counter32	Read-only	Shows the number of hello packets that have arrived on the PIM virtual interface.
snPimVlfStatOutHelloPkts brcdIp.1.2.9.1.9.1.12 Syntax: Counter32	Read-only	Shows the number of hello packets that have been sent on the PIM virtual interface.
snPimVlfStatDiscardHelloPkts brcdIp.1.2.9.1.9.1.13 Syntax: Counter32	Read-only	Shows the number of hello packets that have been discarded by the PIM virtual interface.
snPimVlfStatInGraftPkts brcdIp.1.2.9.1.9.1.14 Syntax: Counter32	Read-only	Shows the number of graft packets that have arrived on the PIM virtual interface.
snPimVlfStatOutGraftPkts brcdIp.1.2.9.1.9.1.15 Syntax: Counter32	Read-only	Shows the number of graft packets that have been sent on the PIM virtual interface.
snPimVlfStatDiscardGraftPkts brcdIp.1.2.9.1.9.1.16 Syntax: Counter32	Read-only	Shows the number of graft packets that have been discarded by the PIM virtual interface.
snPimVlfStatInGraftAckPkts brcdIp.1.2.9.1.9.1.17 Syntax: Counter32	Read-only	Shows the number of graft acknowledge packets that have arrived on the PIM virtual interface.
snPimVlfStatOutGraftAckPkts brcdIp.1.2.9.1.9.1.18 Syntax: Counter32	Read-only	Shows the number of graft acknowledge packets that have been sent on the PIM virtual interface.
snPimVlfStatDiscardGraftAckPkts brcdIp.1.2.9.1.9.1.19 Syntax: Counter32	Read-only	Shows the number of graft acknowledge packets that have been discarded by the PIM virtual interface.

PIM-SM

The following tables are available for the PIM Sparse feature.

NOTE
The following PIM neighbor table is not supported on the Brocade FastIron devices.

Name, OID, and syntax	Access	Description
snPimJoinPruneInterval brcdIp.1.2.9.2.1 Syntax: Integer	Read-write	The default interval in seconds at which periodic PIM Sparse join and prune messages are to be sent. These messages inform other PIM Sparse Layer 3 Switches about clients who want to become receivers (join) or stop being receivers (prune) for PIM Sparse groups. Valid values: 10 - 3600 seconds Default: 60 seconds

PIM Sparse: candidate BSR table

The candidate Bootstrap Router (BSR) table contains information about BSRs that are candidates to become the active BSR for the domain. The BSR distributes Rendezvous Point (RP) information to the other PIM Sparse routers within the domain. Each PIM Sparse domain has one active BSR. For redundancy, you can configure ports on multiple routers as candidate BSRs. The PIM Sparse protocol uses an election process to select one of the candidate BSRs as the active BSR for the domain. The BSR with the highest BSR priority is elected. If the priorities result in a tie, the candidate BSR interface with the highest IP address is elected.

Name, OID, and syntax	Access	Description
snPimCandidateBSRTable brcdIp.1.2.9.2.2	None	The candidate bootstrap router (BSR) table.
snPimCandidateBSRPortID brcdIp.1.2.9.2.2.1.1 Syntax: Integer32	Read-write	Identifies the IP address of the PIM interface: • Bit 0 to bit 7 - Port number • Bit 8 to bit 11 - Slot number
snPimCandidateBSRIPAddress brcdIp.1.2.9.2.2.1.2 Syntax: IpAddress	Read-only	Shows the unicast IP address of the candidate BSR.
snPimCandidateBSRHashMaskLen brcdIp.1.2.9.2.2.1.3 Syntax: Integer	Read-write	Indicates the hash mask value for this Layer 3 Switch as a candidate bootstrap router. Valid values: 1 - 32
snPimCandidateBSRPreference brcdIp.1.2.9.2.2.1.4 Syntax: Integer	Read-write	Indicates the preference value for this Layer 3 Switch as a candidate bootstrap router. Valid values: 0 - 255 Default: 100

PIM RP set table

The PIM RP set table contains information about candidate Rendezvous Points (RPs) for IP multicast groups. When the local Layer 3 Switch is the BSR, this information is obtained from the advertisements received from the candidate-RP. When the local Layer 3 Switch is not the BSR, this information is obtained from the received RP-Set messages.

Name, OID, and syntax	Access	Description
snPimRPSetTable brcdIp.1.2.9.2.3	None	The PIM RP set table.

Name, OID, and syntax	Access	Description
snPimRPSetGroupAddress brcdIp.1.2.9.2.3.1.1 Syntax: IpAddress	Read-only	Shows the IP multicast group address. This object plus snPimRPSetMask forms the group prefix for the Ccandidate-RP.
snPimRPSetMask brcdIp.1.2.9.2.3.1.2 Syntax: IpAddress	Read-only	Shows the IP multicast group address mask. This object plus snPimRPSetGroupAddress forms the group prefix for the candidate-RP.
snPimRPSetIPAddress brcdIp.1.2.9.2.3.1.3 Syntax: IpAddress	Read-only	Shows the IP address of the candidate-RP.
snPimRPSetHoldTime brcdIp.1.2.9.2.3.1.4 Syntax: Integer	Read-only	Shows the holdtime, in seconds, of a candidate-RP. If the local router is not the BSR, this value is 0. Valid values: 0 - 255

PIM RP candidate table

The PIM RP candidate table lists the IP multicast groups for which the local router is to advertise itself as a candidate-RP. If this table is empty, the local router will advertise itself as a candidate-RP for all groups. The snPimEnable object must be "enabled" before this table is read or written.

Name, OID, and syntax	Access	Description
snPimCandidateRPTable brcdIp.1.2.9.2.4	None	The PIM RP candidate table.
snPimCandidateRPGroupAddress brcdIp.1.2.9.2.4.1.1 Syntax: IpAddress	Read-only	Shows the IP multicast group address mask. This object combined with snPimCandidateRPMask forms the group prefix for which the local router will advertise itself as a candidate-RP.
snPimCandidateRPMask brcdIp.1.2.9.2.4.1.2 Syntax: IpAddress	Read-only	Shows the multicast group address mask. This object combined with snPimCandidateRPGroupAddress forms the group prefix for which the local router will advertise itself as a candidate-RP.
snPimCandidateRPIPAddress brcdIp.1.2.9.2.4.1.3 Syntax: IpAddress	Read-write	Indicates the unicast IP address of the interface that will be advertised as a candidate-RP.
snPimCandidateRPRowStatus brcdIp.1.2.9.2.4.1.4 Syntax: Integer	Read-write	Controls the management of the table rows. The following values can be written: • delete(3) - Deletes the row. • create(4) - Creates a new row. • modify(5) - Modifies an existing row. If the row exists, then a SET with a value of create(4) returns a "bad value" error. Deleted rows are removed from the table immediately. The following values can be returned on reads: • noSuch(0) - No such row. • invalid(1) - Row is inoperative. • valid(2) - Row exists and is valid.

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Global IPSec MIB objects

The following MIB objects display the objects supported for IPSec tunnels.

NOTE
The objects in the following table are supported only on the Brocade ICX 7450 devices.

Name, OID, and syntax	Access	Description
brcdIPSecSPIValue brcdIp.1.1.15.1.1.1 Syntax: Unsigned32	accessible-for-notify	Specifies a 4-byte field at the beginning of Encapsulating Security Payload Packet.
brcdIPSecSequenceNumber brcdIp.1.1.15.1.1.2 Syntax: Unsigned32	accessible-for-notify	Denotes the ESP sequence number used for anti-replay check for the IPSec packets. **NOTE** This object is not supported on the Brocade ICX 7450 device.
brcdIKEMessageType brcdIp.1.1.15.1.1.3 Syntax: Unsigned32	accessible-for-notify	Specifies the type of notification message. Only IKE_SA_INIT(34), IKE_AUTH(35), CREATE_CHILD_SA(36) and INFORMATIONAL(37) are currently supported as per RFC5996.
brcdIKEPayloadType brcdIp.1.1.15.1.1.4 Syntax: Unsigned32	accessible-for-notify	Specifies the type of IKE payload. As per RFC5996 current valid values are {0, 32 to 48}.
brcdIPSecSlotNumber brcdIp.1.1.15.1.1.5 Syntax: Unsigned32	accessible-for-notify	Indicates the Slot ID of the LP.
brcdIPSecUnitNumber brcdIp.1.1.15.1.1.6 Syntax: Unsigned32	accessible-for-notify	Indicates the unit number.
brcdIPSecVRFValue brcdIp.1.1.15.1.1.7 Syntax: Unsigned32	accessible-for-notify	Indicates the VRF value.
brcdIPSecSessionState brcdIp.1.1.15.1.1.8 Syntax: DisplayString	accessible-for-notify	Indicates the state of IPsec/IKE session.
brcdIPSecModuleState brcdIp.1.1.15.1.1.9 Syntax: DisplayString	accessible-for-notify	Indicates the state of IPsec module.

IPSec notifications

By default, IPSec (ESP) and IKEv2 notifications are enabled. To disable notification, issue the **no snmp-server enable traps ipsec** and **no snmp-server enable traps ikev2** commands at the device CLI.

The following traps are generated for the IPSec objects supported only on the Brocade ICX 7450 devices.

Trap name and number	Varbinds	Severity	Description and trap message
brcdIPSecInvalidSANotification brcdIp.1.1.15.1.0.1	spdIPSourceType, spdIPSourceAddress, spdIPDestinationType, spdIPDestinationAddress, brcdIPSecSPIValue	Informational	The SNMP trap that is generated when no valid security association exists for a session. Sample format: Brocade trap: No IPsec SA Found for Received Packet with Source <source-address> Destination <destination-address> SPI <SPI-ID> **NOTE** This notification is not supported on the Brocade ICX 7450 device.
brcdIPSecFragmentedPacketNotification brcdIp.1.1.15.1.0.2	spdIPSourceType, spdIPSourceAddress, spdIPDestinationType, spdIPDestinationAddress, brcdIPSecSPIValue	Informational	The SNMP trap that is generated when a packet offered to ESP for processing appears to be an IP fragment, the OFFSET field is non-zero or the MORE FRAGMENTS flag is set. Sample format: Brocade trap: Received Fragmented Packet with Source <source address> Destination <destination address> SPI <SPI-ID> **NOTE** This notification is not supported on the Brocade ICX 7450 device.
brcdIPSecSequenceOverflowNotification brcdIp.1.1.15.1.0.3	spdIPSourceType, spdIPSourceAddress, spdIPDestinationType, spdIPDestinationAddress, brcdIPSecSPIValue	Informational	The SNMP trap that is generated when there is an attempt to transmit a packet that result in sequence number overflow. Sample format: Brocade trap:Sequence Number Overflow When Trying to Send Packet with SPI <SPI-ID> Source <source-address> Destination <destination address> . **NOTE** This notification is not supported on the Brocade ICX 7450 device.

Trap name and number	Varbinds	Severity	Description and trap message
brcdIPSecFailedAntiReplay CheckNotification brcdIp.1.1.15.1.0.4	spdIPSourceType, spdIPSourceAddress, spdIPDestinationType, spdIPDestinationAddress, brcdIPSecSPIValue,brcdIPSecSequenceNumber	Informational	The SNMP trap that is generated when the received packet fails the anti-replay checks. Sample format: Brocade trap: Anti-Replay Check Failed for Received Packet with Source <source-address> Destination <destination-address> SPI <SPI-ID> Sequence Number <sequence-number> **NOTE** This notification is not supported on the Brocade ICX 7450 device.
brcdIPSecFailedIntegrity CheckNotification brcdIp.1.1.15.1.0.5	spdIPSourceType, spdIPSourceAddress, spdIPDestinationType, spdIPDestinationAddress, brcdIPSecSPIValue,brcdIPSecSequenceNumber	Informational	The SNMP trap that is generated when the received packet fails the integrity check. Sample format: Brocade trap: Integrity Check Failed for Received Packet with Source <source-address> Destination <destination-address> SPI <SPI-ID> Sequence Number <sequence-number>. **NOTE** This notification is not supported on the Brocade ICX 7450 device.
brcdIPSecDeencapsulation FailedNotification brcdIp.1.1.15.1.0.6	spdIPSourceType, spdIPSourceAddress, spdIPDestinationType, spdIPDestinationAddress, brcdIPSecSPIValue, brcdIPSecSequenceNumber	Informational	The SNMP trap that is generated when the deencapsulation of received packet failed. Sample format: Brocade trap: Deencapsulation Failed for Received Packet with Source <source-address> Destination <destination-address> SPI <SPI-ID> Sequence Number <sequence-number>. **NOTE** This notification is not supported on the Brocade ICX 7450 device.
brcdIPSecLengthErrorNotification brcdIp.1.1.15.1.0.7	spdIPSourceType, spdIPSourceAddress, spdIPDestinationType, spdIPDestinationAddress, brcdIPSecSPIValue	Informational	The SNMP trap that is generated when the check on IP packet length fails for the received packet. The SPI value is always zero for this trap. Sample format:

Trap name and number	Varbinds	Severity	Description and trap message
			Brocade trap: Length Error Detected for Received Packet with SPI <SPI-ID> Source <source-address> Destination <destination-address>. **NOTE** This notification is not supported on the Brocade ICX 7450 device.
brcdIKEInvalidMsgTypeNotification brcdIp.1.1.15.1.0.8	spdIPSourceType, spdIPSourceAddress, spdIPDestinationType, spdIPDestinationAddress, brcdIPSecSPIValue, brcdIKEMessageType	Informational	The SNMP trap that is generated when an invalid IKE message Type is received. Sample format: Brocade trap: IKEv2: Invalid Message Type Received with Source <source-address> Destination <destination-address> SPI <SPI-ID> MessageType <x>. Where <x> is the value of unsupported message type in IKEv2 packet. It is UINT8 value. The value will not be one of the following (from RFC 5996): • IKE_SA_INIT - 34 • IKE_AUTH - 35 • CREATE_CHILD_SA - 36 • INFORMATIONAL - 37 **NOTE** This notification is not supported on the Brocade ICX 7450 device.
brcdIKEInvalidPayloadNotification brcdIp.1.1.15.1.0.9	spdIPSourceType, spdIPSourceAddress, spdIPDestinationType, spdIPDestinationAddress, brcdIPSecSPIValue,brcdIKEPayloadType	Informational	The SNMP trap that is generated when an invalid IKE payload is received. Sample format: Brocade `trap: IKEv2: Invalid Payload Type Received with Source <source-address> Destination address type <type> Destination <destination-address> SPI <SPI-ID> PayloadType <x>.` Where <x> is the value of unsupported payload type in IKEv2 packet. It is UINT8 value.

Trap name and number	Varbinds	Severity	Description and trap message
			The value will not be 0, and 32 - 42 that are current valid payload type. **NOTE** This notification is not supported on the Brocade ICX 7450 device.
brcdIKEMaxPeerReachedNotification brcdIp.1.1.15.1.0.10	brcdIPSecSlotNumber	Warning	The SNMP trap that is generated when maximum IKE peer limit is reached a LP. Sample format: Brocade trap: IKEv2: Maximum IKE Peers Limit Reached on LP <n>. **NOTE** This notification is not supported on the Brocade ICX 7450 device.
brcdIKERecoveredMaxPeer LimitNotification brcdIp.1.1.15.1.0.11	brcdIPSecSlotNumber	Warning	The SNMP trap that is generated when the system recovers from the maximum IKE peer limit condition on a LP. Sample format: Brocade trap: IKEv2: Recovered from Maximum IKE Peers Limit Condition on LP <n>. **NOTE** This notification is not supported on the Brocade ICX 7450 device.
brcdIPSecSessionNotification brcdIp.1.1.15.1.0.12	brcdIPSecSessionState, spdIPSourceType, spdIPSourceAddress, spdIPDestinationType, spdIPDestinationAddress, brcdIPsecVRFValue, brcdIPSecSPIValue, spdPacketDirection	Informational	The SNMP trap that is generated when IPsec session state is changed. **NOTE** This notification is supported only on the Brocade ICX 7450 device.
brcdIKESessionNotification brcdIp.1.1.15.1.0.13	brcdIPSecSessionState, spdIPSourceType, spdIPSourceAddress, spdIPDestinationType, spdIPDestinationAddress, brcdIPsecVRFValue, brcdIPSecSPIValue	Informational	The SNMP trap that is generated when IKEv2 session state is changed. **NOTE** This notification is supported only on the Brocade ICX 7450 device.

Trap name and number	Varbinds	Severity	Description and trap message
brcdIPSecModuleNotification brcdIp.1.1.15.1.0.14	brcdIPSecSlotNumber, brcdIPSecUnitNumber, brcdIPSecModuleState	Informational	The SNMP trap that is generated when IPsec module state is changed. **NOTE** This notification is supported only on the Brocade ICX 7450 device.
brcdIKEMaxPeerReachedStacking Notification brcdIp.1.1.15.1.0.15		Warning	The SNMP trap that is generated when maximum IKE peer limit is reached. **NOTE** This notification is supported only on the Brocade ICX 7450 device.
brcdIKERecoveredMaxPeerLimit StackingNotification brcdIp.1.1.15.1.0.16		Warning	The SNMP trap that is generated when the system recovers from the maximum IKE peer limit condition. **NOTE** This notification is supported only on the Brocade ICX 7450 device.

Counters support for IPSec

The following table lists the MIB counters supported for IPSec.

Object name	Object identifier	Access/Description
ifInOctets	1.3.6.1.2.1.2.2.1.10	Read-only
ifInUcastPkts	1.3.6.1.2.1.2.2.1.11	Read-only
ifOutOctets	1.3.6.1.2.1.2.2.1.16	Read-only
ifOutUcastPkts	1.3.6.1.2.1.2.2.1.17	Read-only
ifHCInOctets	1.3.6.1.2.1.31.1.1.1.6	Read-only
ifHCInUcastPkts	1.3.6.1.2.1.31.1.1.1.7	Read-only
ifHCOutOctets	1.3.6.1.2.1.31.1.1.1.10	Read-only
ifHCOutUcastPkts	1.3.6.1.2.1.31.1.1.1.11	Read-only

The following MIB objects or tables are updated to extend support for IPSec.

Object name	Object Identifier	Description
tunnelIfSecurity	1.3.6.1.2.1.10.131.1.1.1.1.5	Read-only. Returns ipsec(2) value for IPSec tunnels.
Counters support for IPSec	1.3.6.1.2.1.153.1.2	This table maps policies (groupings) onto an endpoint (interface). A new row is added for ipsec tunnel policy to an endpoint mapping. The "spdEndGroupName" is formed by vrf_id,

Object name	Object Identifier	Description
		tunnel_id, dir, ip protocol name, spi value, authentication algorithm, and encryption algorithm. **show ipsec sa** and **show ipsec policy** commands can be used to see the corresponding entries from CLI.
Counters support for IPSec	1.3.6.1.2.1.153.1.3	This table contains a list of rules and/or subgroups contained within a given policy group. A new row is added to this table for each rule (or subgroup or a subgroup of rules) within a policy group for ipsec tunnel. The "spdGroupContComponentName" is formed by vrf_id, tunnel_id, dir, and priority. **show ipsec sa** and **show ipsec policy** commands can be used to see the corresponding entries from CLI.
Counters support for IPSec	1.3.6.1.2.1.153.1.4	This table defines a rule by associating a filter or a set of filters to an action to be executed. A new row is added to this table for each spdRuleDefName that is the administrative assigned name of the rule referred to by the spdGroupContComponentName. The "spdRuleDefDescription" is formed by vrf_id, tunnel_id, dir, and priority. **show ipsec sa** and **show ipsec policy** commands can be used to see the corresponding entries from CLI.

Brocade Entity OID MIB Definition

- Brocade Entity MIBs..... 420

Brocade Entity MIBs

Defined these MIB objects for assigning vendor type OIDs to various physical entities (Chassis, Power supply, Fan, sensor, various types of modules, port etc.). The following table objects are supported on the Brocade FastIron devices.

Object groups	Object Identifier
brcdEntityOIDMIB	brcdIp.1.17
brcdEntityOIDMIBObjects	brcdIp.1.17.1
brcdEntityOIDOther	brcdIp.1.17.1.1
brcdEntityOIDUnknown	brcdIp.1.17.1.2

Chassis OID assignments

Object group	Object Identifier
brcdEntityOIDChassis	brcdIp.1.17.1.3
brcdEntityOIDChassisUnknown	brcdIp.1.17.1.3.1
brcdEntityOIDChassisICX7250Family	brcdIp.1.17.1.3.7
brcdEntityOIDChassisICX725024	brcdIp.1.17.1.3.7.1
brcdEntityOIDChassisICX725024HPOE	brcdIp.1.17.1.3.7.2
brcdEntityOIDChassisICX725024G	brcdIp.1.17.1.3.7.3
brcdEntityOIDChassisICX725048	brcdIp.1.17.1.3.7.4
brcdEntityOIDChassisICX725048HPOE	brcdIp.1.17.1.3.7.5
brcdEntityOIDChassisICX7450Family	brcdIp.1.17.1.3.8
brcdEntityOIDChassisICX745024	brcdIp.1.17.1.3.8.1
brcdEntityOIDChassisICX745024HPOE	brcdIp.1.17.1.3.8.2
brcdEntityOIDChassisICX745032ZP	brcdIp.1.17.1.3.8.3
brcdEntityOIDChassisICX745048	brcdIp.1.17.1.3.8.4
brcdEntityOIDChassisICX745048HPOE	brcdIp.1.17.1.3.8.5
brcdEntityOIDChassisICX745048F	brcdIp.1.17.1.3.8.6
brcdEntityOIDChassisICX7750Family	brcdIp.1.17.1.3.9
brcdEntityOIDChassisICX775048C	brcdIp.1.17.1.3.9.1
brcdEntityOIDChassisICX775048F	brcdIp.1.17.1.3.9.2
brcdEntityOIDChassisICX775026Q	brcdIp.1.17.1.3.9.3
brcdEntityOIDChassisICX7150Family	brcdIp.1.17.1.3.10
brcdEntityOIDChassisICX715024	brcdIp.1.17.1.3.10.1
brcdEntityOIDChassisICX715024POE	brcdIp.1.17.1.3.10.2
brcdEntityOIDChassisICX715048	brcdIp.1.17.1.3.10.3
brcdEntityOIDChassisICX715048POE	brcdIp.1.17.1.3.10.4
brcdEntityOIDChassisICX715048POEF	brcdIp.1.17.1.3.10.5
brcdEntityOIDChassisICX7150C12POE	brcdIp.1.17.1.3.10.6
brcdEntityOIDChassisICX715048ZP	brcdIp.1.17.1.3.10.7
brcdEntityOIDBackplane	brcdIp.1.17.1.4

Object group	Object Identifier
brcdEntityOIDBackplaneUnknown	brcdIp.1.17.1.4.1
brcdEntityOIDContainer	brcdIp.1.17.1.5
brcdEntityOIDContainerUnknown	brcdIp.1.17.1.5.1
brcdEntityOIDContainerPowerSupply	brcdIp.1.17.1.5.2
brcdEntityOIDContainerFanTray	brcdIp.1.17.1.5.3
brcdEntityOIDContainerMgmtModuleSlot	brcdIp.1.17.1.5.4
brcdEntityOIDContainerSwitchFabricModuleSlot	brcdIp.1.17.1.5.5
brcdEntityOIDContainerIntfModuleSlot	brcdIp.1.17.1.5.6
brcdEntityOIDPowerSupply	brcdIp.1.17.1.6
brcdEntityOIDPowerSupplyUnknown	brcdIp.1.17.1.6.1
brcdEntityOIDPowerSupplyAC500W	brcdIp.1.17.1.6.2
brcdEntityOIDPowerSupplyDC500W	brcdIp.1.17.1.6.3
brcdEntityOIDPowerSupplyAC1200W	brcdIp.1.17.1.6.4
brcdEntityOIDPowerSupplyDC1200W	brcdIp.1.17.1.6.5
brcdEntityOIDPowerSupplyAC1200WA	brcdIp.1.17.1.6.6
brcdEntityOIDPowerSupplyDC1200WA	brcdIp.1.17.1.6.7
brcdEntityOIDPowerSupplyAC1800W	brcdIp.1.17.1.6.8
brcdEntityOIDPowerSupplyDC1800W	brcdIp.1.17.1.6.9
brcdEntityOIDPowerSupplyAC2100W	brcdIp.1.17.1.6.10
brcdEntityOIDPowerSupplyDC2100W	brcdIp.1.17.1.6.11
brcdEntityOIDPowerSupplyAC2400W	brcdIp.1.17.1.6.12
brcdEntityOIDPowerSupplyDC2400W	brcdIp.1.17.1.6.13
brcdEntityOIDPowerSupplyAC3000W	brcdIp.1.17.1.6.14
brcdEntityOIDPowerSupplyDC3000W	brcdIp.1.17.1.6.15
brcdEntityOIDPowerSupplyACPOE	brcdIp.1.17.1.6.16
brcdEntityOIDPowerSupplyACRegular	brcdIp.1.17.1.6.17
brcdEntityOIDPowerSupplyDCPOE	brcdIp.1.17.1.6.18
brcdEntityOIDPowerSupplyDCRegular	brcdIp.1.17.1.6.19
brcdEntityOIDFan	brcdIp.1.17.1.7
brcdEntityOIDFanUnknown	brcdIp.1.17.1.7.1
brcdEntityOIDChassisFanTray	brcdIp.1.17.1.7.2
brcdEntityOIDChassisFan	brcdIp.1.17.1.7.3
brcdEntityOIDSensor	brcdIp.1.17.1.8
brcdEntityOIDSensorUnknown	brcdIp.1.17.1.8.1
brcdEntityOIDSensorChipTemp	brcdIp.1.17.1.8.2
brcdEntityOIDSensorModuleTemp	brcdIp.1.17.1.8.3
brcdEntityOIDModule	brcdIp.1.17.1.9
brcdEntityOIDModuleUnknown	brcdIp.1.17.1.9.1
brcdEntityOIDModuleMgmt	brcdIp.1.17.1.9.2
brcdEntityOIDModuleMgmtUnknown	brcdIp.1.17.1.9.2.1
brcdEntityOIDModuleMgmtIcx7250Family	brcdIp.1.17.1.9.2.4

Object group	Object Identifier
brcdEntityOIDModuleMgmtIcx7250624BaseModule	brcdIp.1.17.1.9.2.4.1
brcdEntityOIDModuleMgmtIcx7250648BaseModule	brcdIp.1.17.1.9.2.4.2
brcdEntityOIDModuleMgmtIcx7250624GBaseModule	brcdIp.1.17.1.9.2.4.3
brcdEntityOIDModuleMgmtIcx7250624PoeBaseModule	brcdIp.1.17.1.9.2.4.4
brcdEntityOIDModuleMgmtIcx7250648PoeBaseModule	brcdIp.1.17.1.9.2.4.5
brcdEntityOIDModuleMgmtIcx7450Family	brcdIp.1.17.1.9.2.5
brcdEntityOIDModuleMgmtIcx7450624BaseModule	brcdIp.1.17.1.9.2.5.1
brcdEntityOIDModuleMgmtIcx7450648BaseModule	brcdIp.1.17.1.9.2.5.2
brcdEntityOIDModuleMgmtIcx7450648FBaseModule	brcdIp.1.17.1.9.2.5.3
brcdEntityOIDModuleMgmtIcx7450624PoeBaseModule	brcdIp.1.17.1.9.2.5.4
brcdEntityOIDModuleMgmtIcx7450648PoeBaseModule	brcdIp.1.17.1.9.2.5.5
brcdEntityOIDModuleMgmtIcx7450632ZPBaseModule	brcdIp.1.17.1.9.2.5.6
brcdEntityOIDModuleMgmtIcx7750Family	brcdIp.1.17.1.9.2.6
brcdEntityOIDModuleMgmtIcx775048CBaseModule	brcdIp.1.17.1.9.2.6.1
brcdEntityOIDModuleMgmtIcx775048FBaseModule	brcdIp.1.17.1.9.2.6.2
brcdEntityOIDModuleMgmtIcx775026QBaseModule	brcdIp.1.17.1.9.2.6.3
brcdEntityOIDModuleMgmtIcx7150Family	brcdIp.1.17.1.9.2.7
brcdEntityOIDModuleMgmtIcx7150624BaseModule	brcdIp.1.17.1.9.2.7.1
brcdEntityOIDModuleMgmtIcx7150648BaseModule	brcdIp.1.17.1.9.2.7.2
brcdEntityOIDModuleMgmtIcx7150624PoeBaseModule	brcdIp.1.17.1.9.2.7.3
brcdEntityOIDModuleMgmtIcx7150648PoeBaseModule	brcdIp.1.17.1.9.2.7.4
brcdEntityOIDModuleMgmtIcx7150648PoeFBaseModule	brcdIp.1.17.1.9.2.7.5
brcdEntityOIDModuleMgmtIcx7150612CPoeBaseModule	brcdIp.1.17.1.9.2.7.6
brcdEntityOIDModuleMgmtIcx7150648ZPBaseModule	brcdIp.1.17.1.9.2.7.7
brcdEntityOIDModuleSfm	brcdIp.1.17.1.9.3
brcdEntityOIDModuleSfmUnknown	brcdIp.1.17.1.9.3.1
brcdEntityOIDModuleOptics	brcdIp.1.17.1.9.5
brcdEntityOIDModuleOpticsUnknown	brcdIp.1.17.1.9.5.1
brcdEntityOIDModuleOpticsSFP	brcdIp.1.17.1.9.5.2
brcdEntityOIDModuleOpticsSFPP	brcdIp.1.17.1.9.5.3
brcdEntityOIDModuleOpticsXFP	brcdIp.1.17.1.9.5.4
brcdEntityOIDModuleOpticsCFP	brcdIp.1.17.1.9.5.5
brcdEntityOIDModuleOpticsQSFPP	brcdIp.1.17.1.9.5.6
brcdEntityOIDModuleOpticsCFP2	brcdIp.1.17.1.9.5.7
brcdEntityOIDModuleOpticsGBIC	brcdIp.1.17.1.9.5.8
brcdEntityOIDModuleService	brcdIp.1.17.1.9.6
brcdEntityOIDModuleServiceUnknown	brcdIp.1.17.1.9.6.1
brcdEntityOIDModuleServiceIcx7250Family	brcdIp.1.17.1.9.6.2
brcdEntityOIDModuleServiceIcx7250sfpplus8Port80gModule	brcdIp.1.17.1.9.6.2.1
brcdEntityOIDModuleServiceIcx7250sfpplus4Port4gModule	brcdIp.1.17.1.9.6.2.2

Object group	Object Identifier
brcdEntityOIDModuleServiceIcx7450Family	brcdIp.1.17.1.9.6.3
brcdEntityOIDModuleServiceIcx7400sfpplus4Port40gModule	brcdIp.1.17.1.9.6.3.1
brcdEntityOIDModuleServiceIcx7400copper4Port40gModule	brcdIp.1.17.1.9.6.3.2
brcdEntityOIDModuleServiceIcx7400sfp4Port4gModule	brcdIp.1.17.1.9.6.3.3
brcdEntityOIDModuleServiceIcx7400qsfpplus1Port40gModule	brcdIp.1.17.1.9.6.3.4
brcdEntityOIDModuleServiceIcx7400ServiceModule	brcdIp.1.17.1.9.6.3.5
brcdEntityOIDModuleServiceIcx7750Family	brcdIp.1.17.1.9.6.4
brcdEntityOIDModuleServiceIcx7750QSFP6port40gModule	brcdIp.1.17.1.9.6.4.1
brcdEntityOIDModuleServiceIcx77506Q6port40gModule	brcdIp.1.17.1.9.6.4.2
brcdEntityOIDModuleServiceIcx7150Family	brcdIp.1.17.1.9.6.5
brcdEntityOIDModuleServiceIcx7150sfpplus2Port20gModule	brcdIp.1.17.1.9.6.5.1
brcdEntityOIDModuleServiceIcx7150sfpplus4Port40gModule	brcdIp.1.17.1.9.6.5.2
brcdEntityOIDModuleServiceIcx7150gc2Port2gModule	brcdIp.1.17.1.9.6.5.3
brcdEntityOIDModuleServiceIcx7150sfpplus8Port80gModule	brcdIp.1.17.1.9.6.5.4
brcdEntityOIDPort	brcdIp.1.17.1.10
brcdEntityOIDPortUnknown	brcdIp.1.17.1.10.1
brcdEntityOIDPortMgmtSerial	brcdIp.1.17.1.10.2
brcdEntityOIDPortMgmtEth	brcdIp.1.17.1.10.3
brcdEntityOIDPort100BaseTx	brcdIp.1.17.1.10.4
brcdEntityOIDPort100BaseFx	brcdIp.1.17.1.10.5
brcdEntityOIDPortGigBaseTx	brcdIp.1.17.1.10.6
brcdEntityOIDPortGigBaseFx	brcdIp.1.17.1.10.7
brcdEntityOIDPort10GigBaseFx	brcdIp.1.17.1.10.8
brcdEntityOIDPort40GigBaseFx	brcdIp.1.17.1.10.9
brcdEntityOIDPort100GigBaseFx	brcdIp.1.17.1.10.10
brcdEntityOIDPort10GigBaseTx	brcdIp.1.17.1.10.11
brcdEntityOIDPort2.5GigBaseTx	brcdIp.1.17.1.10.12
brcdEntityOIDPort40GigBaseTx	brcdIp.1.17.1.10.13
brcdEntityOIDStack	brcdIp.1.17.1.11
brcdEntityOIDStackUnknown	brcdIp.1.17.1.11.1
brcdEntityOIDStackICXStackFamily	brcdIp.1.17.1.11.2
brcdEntityOIDStackICXStackIcx7250	brcdIp.1.17.1.11.2.1
brcdEntityOIDStackICXStackIcx7450	brcdIp.1.17.1.11.2.2
brcdEntityOIDStackICXStackIcx7750	brcdIp.1.17.1.11.2.3
brcdEntityOIDStackICXStackIcx7150	brcdIp.1.17.1.11.2.4
brcdEntityOIDStackICXSPXFamily	brcdIp.1.17.1.11.3
brcdEntityOIDStackICXSPX	brcdIp.1.17.1.11.3.1
brcdEntityOIDCpu	brcdIp.1.17.1.12
brcdEntityOIDCpuUnknown	brcdIp.1.17.1.12.1
brcdEntityOIDCpuPPC7447A	brcdIp.1.17.1.12.2
brcdEntityOIDCpuPPC7448	brcdIp.1.17.1.12.3

Object group	Object Identifier
brcdEntityOIDCpuPPC7451	brcdIp.1.17.1.12.4
brcdEntityOIDCpuPPC7455	brcdIp.1.17.1.12.5
brcdEntityOIDCpuPPC7457	brcdIp.1.17.1.12.6
brcdEntityOIDCpuPPC8541	brcdIp.1.17.1.12.7
brcdEntityOIDCpuPPC8541E	brcdIp.1.17.1.12.8
brcdEntityOIDCpuPPC8544	brcdIp.1.17.1.12.9
brcdEntityOIDCpuPPC8544E	brcdIp.1.17.1.12.10
brcdEntityOIDCpuPPC8572	brcdIp.1.17.1.12.11
brcdEntityOIDCpuPPC8572E	brcdIp.1.17.1.12.12

History

Release version	History
08.0.50	This MIB was introduced.
08.0.60	Introduced ICX 7150 Entity OIDs.

QoS Profile Group

- QoS profile table....425
- QoS bind table....425
- DOS attack statistics....426
- Authorization and accounting....426

QoS profile table

The following table contains the configuration of QoS profile groups.

Name, OID, and syntax	Access	Description
snQosProfileTable brcdIp.1.1.3.14.1	None	The QoS profile table.
snQosProfileIndex brcdIp.1.1.3.14.1.1.1 Syntax: Integer	Read-only	The table index of the QoS Profile. There can be up to four profiles in this table.
snQosProfileName brcdIp.1.1.3.14.1.1.2 Syntax: DisplayString	Read-write	Shows the name of the QoS profile. Valid values: Up to 32 characters
snQosProfileRequestedBandwidth brcdIp.1.1.3.14.1.1.3 Syntax: Integer	Read-write	Shows the requested bandwidth for the QoS profile.
snQosProfileCalculatedBandwidth brcdIp.1.1.3.14.1.1.4 Syntax: Integer	Read-only	Shows the calculated bandwidth of the QoS profile.

QoS bind table

The following table binds 802.1p tags to the entries in the QoS profile table.

Name, OID, and syntax	Access	Description
snQosBindTable brcdIp.1.1.3.14.2	None	The QoS bind table.
snQosBindIndex brcdIp.1.1.3.14.2.1.1 Syntax: Integer	Read-only	The table index of the QoS Bind.
snQosBindPriority brcdIp.1.1.3.14.2.1.2 Syntax: Integer32	Read-only	Shows the QoS bind priority.
snQosBindProfileIndex brcdIp.1.1.3.14.2.1.3 Syntax: Integer	Read-write	An index that serves as a pointer to the index of the QoS profile table on page 425.

DOS attack statistics

The following objects provide denial of service (DOS) attack statistics through SNMP.

Name, OID, and syntax	Access	Description
snDosAttackICMPDropCount brcdIp.1.1.3.14.3.1.1 Syntax: Counter32	Read-only	Provides the contents of the ICMP drop counter.
snDosAttackICMPBlockCount brcdIp.1.1.3.14.3.1.2 Syntax: Counter32	Read-only	Provides the contents of the ICMP block counter.
snDosAttackSYNDropCount brcdIp.1.1.3.14.3.1.3 Syntax: Counter32	Read-only	Provides the contents of the SYN drop counter.
snDosAttackSYNBlockCount brcdIp.1.1.3.14.3.1.4 Syntax: Counter32	Read-only	Provides the contents of the SYN block counter.

Authorization and accounting

The following objects are for authorization and accounting functions.

Name, OID, and syntax	Access	Description
snAuthorizationCommand Methods brcdIp.1.1.3.15.2.1 Syntax: Octet String	Read-write	Specifies the sequence of authorization methods. This object can have zero to three octets. Each octet represents a method to authorize the user command. Each octet has the following value: • radius(2) - Authorize by the requesting RADIUS server • tacplus(5) - Authorize by the requesting TACACS+ server • none(6) - Skip authorization Setting a zero length octet string invalidates all previous authorization methods.
snAuthorizationCommandLevel brcdIp.1.1.3.15.2.2 Syntax: IpAddress	Read-write	Specifies the commands that must be authorized. Any command that is equal to or less than the selected level will be authorized: • level(0) - Privilege level 0 • level(4) - Privilege level 4 • level(5) - Privilege level 5
snAuthorizationExec brcdIp.1.1.3.15.2.3 Syntax: Octet String	Read-write	Shows the sequence of authorization methods for EXEC programs. This object can have zero to three octets. Each octet represents a method for Telnet or SSH

Name, OID, and syntax	Access	Description
		login authorization. Each octet can have one of the following values: • radius(2) - Send EXEC authorization request to the RADIUS server . • tacplus(5) - Send EXEC authorization request to the TACACS+ server . • none(6) - No EXEC authorization method. Setting a zero length octet string invalidates all authorization methods.
snAccountingCommandMethods brcdIp.1.1.3.15.3.1 Syntax: Octet String	Read-write	Shows a sequence of accounting methods. This object can have zero to three octets. Each octet represents an accounting method. Each octet can have one of the following values: • radius(2) - Send accounting information to the RADIUS server. • tacplus(5) - Send accounting information to the TACACS+ server. • none(6) - No accounting method. Setting a zero length octet string invalidates all authorization methods.
snAccountingCommandLevel brcdIp.1.1.3.15.3.2 Syntax: Integer	Read-write	Specifies the commands that need to be accounted for. Any command that is equal to or less than the selected level will be accounted for: • level(0) - Privilege level 0 • level(4) - Privilege level 4 • level(5) - Privilege level 5
snAccountingExec brcdIp.1.1.3.15.3.3 Syntax: Octet String	Read-write	Shows the sequence of accounting methods for EXEC programs. This object can have zero to three octets. Each octet represents a method for Telnet or SSH login accounting. Each octet can have one of the following values: • radius(2) - Send accounting information to the RADIUS server. • tacplus(5) - Send accounting information to the TACACS+ server. • none(6) - No accounting method. Setting a zero length octet string invalidates all authorization methods.
snAccountingSystem brcdIp.1.1.3.15.3.4 Syntax: Octet String	Read-write	A sequence of accounting methods. This object can have zero to three octets. Each octet represents a method to account for the system-related events. Each octet has the following values: • radius(2) - Send accounting information to the RADIUS server. • tacplus(5) - Send accounting information to the TACACS+ server. • none(6) - No accounting method.

Name, OID, and syntax	Access	Description
		Setting a zero length octet string invalidates all previous accounting methods.

CAR MIB Definition

- CAR port table 429
- Rate limit counter table 430
- Rate limit counter index table 431
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- VLAN CAR objects 433

CAR port table

The Common Access Rate (CAR) port table shows the definitions of CAR objects. This table is indexed by the CAR port table, CAR port table, and CAR port table objects.

Name, OID, and syntax	Access	Description
snPortCARTable brcdIp.1.1.3.16.1.1	None	The CAR port table.
snPortCARifIndex brcdIp.1.1.3.16.1.1.1.1 Syntax: Integer	Read-only	Shows the ifIndex value for this rate limit entry.
snPortCARDirection brcdIp.1.1.3.16.1.1.1.2 Syntax: Integer	Read-only	Specifies the transmission direction of the rate-limit object: • input(0) - For inbound traffic. • output(1) - For outbound traffic.
snPortCARRowIndex brcdIp.1.1.3.16.1.1.1.3 Syntax: Integer	Read-only	Shows the table index for rate limit objects. Rows are numbered in sequential order. When a row is added, it is assigned the next sequential number. When a row is deleted, the row is skipped.
snPortCARType brcdIp.1.1.3.16.1.1.1.4 Syntax: RateLimitType	Read-only	Shows the type of traffic to which the rate limit is applied: • standardAcc(1) - Traffic matches standard access list. • quickAcc(2) - Traffic matches the rate-limit access list. • all(3) - All traffic.
snPortCARAccIdx brcdIp.1.1.3.16.1.1.1.5 Syntax: Integer32	Read-only	Indicates the index to the access list if the rate limit type is one of the following: • standardAcc(1) - Traffic matches standard access list. • quickAcc(2) - Traffic matches the rate-limit access list.
snPortCARRate brcdIp.1.1.3.16.1.1.1.6 Syntax: Integer32	Read-only	Shows the committed access rate for the long-term average transmission rate in bits per second. Traffic that falls under this rate always conforms to this rate.
snPortCARLimit brcdIp.1.1.3.16.1.1.1.7 Syntax: Integer32	Read-only	Shows the normal burst size in bytes. Normal burst size is the number of bytes that are guaranteed to be transported by the network at the average rate under normal conditions during the committed time interval.

Name, OID, and syntax	Access	Description
snPortCARExtLimit brcdIp.1.1.3.16.1.1.1.8 Syntax: Integer32	Read-only	Shows the extended burst limit in bytes. The extended burst limit determines how large traffic bursts can be before all the traffic exceeds the rate limit.
snPortCARConformAction brcdIp.1.1.3.16.1.1.1.9 Syntax: Integer	Read-only	Indicates what happens to packets when the traffic is within the rate limit: • continue(1) - Continue to evaluate the subsequent rate limits. • drop(2) - Drop the packet. • precedCont(3) - Rewrite the IP precedence and allow it after evaluated by subsequent rate limits. • precedXmit(4) - Rewrite the IP precedence and transmit the packet. • xmit(5) - Transmit the packet.
snPortCARExceedAction brcdIp.1.1.3.16.1.1.1.10 Syntax: Integer	Read-only	Indicates what happens to packets when the traffic exceeds the rate limit: • continue(1) - Continue to evaluate the subsequent rate limits. • drop(2) - Drop the packet. • precedCont(3) - Rewrite the IP precedence and allow it after evaluated by subsequent rate limits. • precedXmit(4) - Rewrite the IP precedence and transmit the packet. • xmit(5) - Transmit the packet.
snPortCARStatSwitchedPkts brcdIp.1.1.3.16.1.1.1.11 Syntax: Counter64	Read-only	Indicates the number of packets permitted by this rate limit.
snPortCARStatSwitchedBytes brcdIp.1.1.3.16.1.1.1.12 Syntax: Counter64	Read-only	Indicates the number of bytes permitted by this interface.
snPortCARStatFilteredPkts brcdIp.1.1.3.16.1.1.1.13 Syntax: Counter64	Read-only	Indicates the number of packets that exceeded this rate limit.
snPortCARStatFilteredBytes brcdIp.1.1.3.16.1.1.1.14 Syntax: Counter64	Read-only	Indicates the number of bytes that exceeded this rate limit.
snPortCARStatCurBurst brcdIp.1.1.3.16.1.1.1.15 Syntax: Gauge32	Read-only	Shows the current burst size of received packets.

Rate limit counter table

The following table shows rate limit counter entries.

Name, OID, and syntax	Access	Description
agRateLimitCounterTable	None	The rate limit counter table.

Name, OID, and syntax	Access	Description
brcdIp.1.1.3.16.1.2		
agRateLimitCounterFwdedOctets brcdIp.1.1.3.16.1.2.1.1 Syntax: Counter64	Read-only	The forwarded octet count for this rate limit entry.
agRateLimitCounterDroppedOctets brcdIp.1.1.3.16.1.2.1.2 Syntax: Counter64	Read-only	The dropped octet count for this rate limit entry.
agRateLimitCounterReMarkedOctets brcdIp.1.1.3.16.1.2.1.3 Syntax: Counter64	Read-only	The remarked octet count for this rate limit entry.
agRateLimitCounterTotalOctets brcdIp.1.1.3.16.1.2.1.4 Syntax: Counter64	Read-only	The total octet count for this rate limit entry.

Rate limit counter index table

The following table objects map each rowindexes of rate limit counter table entries to their corresponding ACL or VLAN or VLAN Group ID.

Name, OID, and syntax	Access	Description
agRateLimitCounterIndexTable brcdIp.1.1.3.16.1.3	None	The rate limit counter index table.
agRateLimitCounterIndexRowIndex brcdIp.1.1.3.16.1.3.1.1 Syntax: Integer	Read-only	The table index for rate limit objects. It increases as the rate limit entries are added and skips the number when a row is deleted. Valid values: 1— 2147483647
agRateLimitCounterIndexDirection brcdIp.1.1.3.16.1.3.1.2 Syntax: PacketSource	Read-only	The input or output transmission direction for the rate limit object. • input (0) — For inbound traffic • output(1) — For outbound traffic
agRateLimitCounterIndexACLID brcdIp. 1.1.3.16.1.3.1.3 Syntax: Integer32	Read-only	The corresponding ACL ID to match the row index of the rate limit counter table.
agRateLimitCounterIndexVLANID brcdIp.1.1.3.16.1.3.1.4 Syntax: Integer32	Read-only	The corresponding VLAN ID to match the row index of the rate limit counter table.
agRateLimitCounterIndexVLANGroupID brcdIp. 1.1.3.16.1.3.1.5 Syntax: Integer32	Read-only	The corresponding VLAN Group ID to match the row index of the rate limit counter table.
agRateLimitCounterIndexMACAddress brcdIp. 1.1.3.16.1.3.1.6 Syntax: MAC address	Read-only	The corresponding MAC Address for Source MAC-based rate limit to match the row index of the rate limit counter table.

BUM rate limit counter table

The following table displays the objects supported for BUM rate limit counters.

Name, OID, and syntax	Access	Description
agRateLimitBUMCounterTable brcdIp.1.1.3.16.1.4	None	The table displays: 1 - The number of bytes dropped due to BUM rate-limit on the port, based on configured packet type and VLANID. 2 - Committed Burst Size(CBS) in bits. 3 - Committed Information Rate(CIR) in bits. 4 - Alert low level threshold in bits. 5 - Alert high level threshold in bits. 6 - Shutdown timeout in minutes. The following three parameters are used as the index: • Ifindex • VLANID • Packet-Type
agRateLimitBUMCounterIfindex brcdIp.1.1.3.16.1.4.1.1 Syntax: InterfaceIndex	None	Ifindex, a count that uniquely identifies the ports in the chassis. Valid values ranges from 1 through 2048.
agRateLimitBUMCounterVLANID brcdIp.1.1.3.16.1.4.1.2 Syntax: Integer32	None	An ID that is used to represent the corresponding VLAN in the chassis. Valid values ranges from 1 through 4096. **NOTE** Port-based BUM rate limit uses 4096.
agRateLimitBUMCounterPacketType brcdIp.1.1.3.16.1.4.1.3 Syntax: BUMPacketType	None	Used to represent the type of the packet. For example: U(1), M(2), UM(3), B(4), BU(5), BM(6), BUM(7), U?Unknown-Unicast, B?Broadcast-Broadcast, or M?Multicast-Multicast.
agRateLimitBUMCounterDroppedOctets brcdIp.1.1.3.16.1.4.1.4 Syntax: Counter64	Read-only	A count used to represent the number of bytes dropped due to BUM rate-limit in bytes.
agRateLimitBUMCounterCBS brcdIp.1.1.3.16.1.4.1.5 Syntax: Counter64	Read-only	A count used to represent the Committed Burst Size in bits.
agRateLimitBUMCounterCIR brcdIp.1.1.3.16.1.4.1.6 Syntax: Counter64	Read-only	A count used to represent the Committed Information Rate in bits.
agRateLimitBUMCounterAlertLowLevelThreshold brcdIp.1.1.3.16.1.4.1.7 Syntax: Counter64	Read-only	A count used to represent the configured lower threshold level in bits, to generate the Alert.
agRateLimitBUMCounterAlertHighLevelThreshold brcdIp.1.1.3.16.1.4.1.8 Syntax: Counter64	Read-only	A count used to represent the configured Higher threshold level in bits, to generate the Alert.

Name, OID, and syntax	Access	Description
agRateLimitBUMCounterShutdownTimeout brcdIp.1.1.3.16.1.4.1.9 Syntax: Counter64	Read-only	A count used to represent the Timeout value in terms of minutes that is the time interval after which the shutdown port is enabled.
agRateLimitBUMcounterIncludeControl brcdIp.1.1.3.16.1.4.1.10 Syntax: Enumeration	Read-only	TRUE(1) and FALSE(2) to represent if the option is enabled or disabled.

VLAN CAR objects

The objects in the following table contain the rate limit configuration for VLANs. This table is indexed by the VLAN CAR objects, VLAN CAR objects, and VLAN CAR objects objects.

Name, OID, and syntax	Access	Description
snVLanCARTable brcdIp.1.1.3.17.1.1	None	The VLAN rate limit table.
snVLanCARVLanId brcdIp.1.1.3.17.1.1.1.1 Syntax: Integer	Read-only	Shows the VLAN ID. VLAN ID is one of the indices of this table. Each VLAN ID can have a membership of multiple ports. Valid values: 1 - 4095
snVLanCARDirection brcdIp.1.1.3.17.1.1.1.2 Syntax: Integer	Read-only	Specifies the transmission direction of the rate-limit object: • input(0) - For inbound traffic. • output(1) - For outbound traffic.
snVLanCARRowIndex brcdIp.1.1.3.17.1.1.1.3 Syntax: Integer	Read-only	Shows the table index for rate limit objects for the VLAN. Rows are numbered in sequential order. When a row is added, it is assigned the next sequential number. When a row is deleted, the row is skipped.
snVLanCARType brcdIp.1.1.3.17.1.1.1.4 Syntax: Integer	Read-only	Shows the type of traffic to which the rate limit is applied: • standardAcc(1) - Traffic matches standard access list. • quickAcc(2) - Traffic matches the rate limit access list. • all(3) - All traffic.
snVLanCARAccIdx brcdIp.1.1.3.17.1.1.1.5 Syntax: Integer32	Read-only	Indicates the index to the access list if the rate limit type is one of the following: • standardAcc(1) - Traffic matches standard access list. • quickAcc(2) - Traffic matches the rate limit access list.
snVLanCARRate brcdIp.1.1.3.17.1.1.1.6 Syntax: Integer32	Read-only	Shows the committed access rate for long-term average transmission for this VLAN in bits per second. Traffic that falls under this rate always conforms to this rate.
snVLanCARLimit brcdIp.1.1.3.17.1.1.1.7 Syntax: Integer32	Read-only	Shows the normal burst size in bytes. Normal burst size is the number of bytes that are guaranteed to be transported by the network at

Name, OID, and syntax	Access	Description
		the average rate under normal conditions during the committed time interval.
snVLanCARExtLimit brcdIp.1.1.3.17.1.1.1.8 Syntax: Integer32	Read-only	Shows the extended burst limit in bytes. The extended burst limit determines how large traffic bursts can be before all the traffic exceeds the rate limit.
snVLanCARConformAction brcdIp.1.1.3.17.1.1.1.9 Syntax: Integer	Read-only	Indicates what happens to packets when the traffic is within the rate limit: • continue(1) - Continue to evaluate the subsequent rate limits. • drop(2) - Drop the packet. • precedCont(3) - Rewrite the IP precedence and allow it after evaluated by subsequent rate limits. • precedXmit(4) - Rewrite the IP precedence and transmit the packet. • xmit(5) - Transmit the packet.
snVLanCARExceedAction brcdIp.1.1.3.17.1.1.1.10 Syntax: Integer	Read-only	Indicates what happens to packets when the traffic exceeds the rate limit: • continue(1) - Continue to evaluate the subsequent rate limits. • drop(2) - Drop the packet. • precedCont(3) - Rewrite the IP precedence and allow it after evaluated by subsequent rate limits. • precedXmit(4) - Rewrite the IP precedence and transmit the packet. • xmit(5) - Transmit the packet.
snVLanCARStatSwitchedPkts brcdIp.1.1.3.17.1.1.1.11 Syntax: Counter64	Read-only	Indicates the number of packets permitted by this rate limit.
snVLanCARStatSwitchedBytes brcdIp.1.1.3.17.1.1.1.12 Syntax: Counter64	Read-only	Indicates the number of bytes permitted by this interface.
snVLanCARStatFilteredPkts brcdIp.1.1.3.17.1.1.1.13 Syntax: Counter64	Read-only	Indicates the number of packets that exceeded this rate limit.
snVLanCARStatFilteredBytes brcdIp.1.1.3.17.1.1.1.14 Syntax: Counter64	Read-only	Indicates the number of bytes that exceeded this rate limit.
snVLanCARStatCurBurst brcdIp.1.1.3.17.1.1.1.15 Syntax: Gauge32	Read-only	Shows the current burst size of received packets.

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LAG group table

The fdryLinkAggregationGroupTable object replaces the **snLinkAggregationGroupTable objects** .

NOTE
SNMPSET request for the table always return hashbased and ignores the trunktype parameter.

NOTE
For the Brocade FastIron devices, LAG group table obsoletes LAG group table.

Name, OID, and syntax	Access	Description
fdryLinkAggregationGroupTable brcdIp.1.1.3.33.1.1	None	The Link Aggregation Group (LAG) table.
fdryLinkAggregationGroupName brcdIp.1.1.3.33.1.1.1.1 Syntax: DisplayString	None	Displays the name of a LAG.
fdryLinkAggregationGroupType brcdIp.1.1.3.33.1.1.1.2 Syntax: Integer	Read-create	Displays the LAG type.
fdryLinkAggregationGroupAdminStatus brcdIp.1.1.3.33.1.1.1.3 Syntax: Integer	Read-create	Displays the desired deployed state of this LAG entry. NOTE This is not the operational status. Refer to ifTable for the operational status. • deploy(1)—Deploy the LAG and set to LACP active if a dynamic LAG. • deployPassive(2)—Deploy the LAG and set to LACP passive if a dynamic LAG. • undeploy(3)—Undeploy the LAG if no more than two ports are enabled. • undeployForced(4)—Undeploy the LAG regardless of the number of ports enabled. • Other(5)—FI products will not support LAG deploy option. NOTE Other(5) status is a write-only value. In particular, a row cannot be deployed until the corresponding instances of fdryLinkAggregationGroupIfList have been set.

Name, OID, and syntax	Access	Description
fdryLinkAggregationGroupIfList brcdIp.1.1.3.33.1.1.1.4 Syntax: Octet String	Read-create	Displays a list of interface indices which are the port memberships of a trunk group. Each interface index is a 32-bit integer in big-endian order. **NOTE** This object accepts a 32-bit integer only.
fdryLinkAggregationGroupPrimaryPort brcdIp.1.1.3.33.1.1.1.5 Syntax: InterfaceIndexOrZero	Read-create	Displays the primary port for the Link Aggregation Group. This must be set before deploying the Link Aggregation Group unless this is a keepalive Link Aggregation Group. Zero is returned for primary ports that are not set. **NOTE** This object is not used in FI products starting from the FI 8.0.61 release onwards.
fdryLinkAggregationGroupTrunkType brcdIp.1.1.3.33.1.1.1.6 Syntax: Integer	Read-create	Displays the trunk connection type, which specifies the scheme of load-sharing among the trunk ports.
fdryLinkAggregationGroupTrunkThreshold brcdIp.1.1.3.33.1.1.1.7 Syntax: Unsigned32	Read-create	Displays the number of up ports needed to keep the trunk up. **NOTE** This object is not applicable to keepalive LAGs.
fdryLinkAggregationGroupLacpTimeout brcdIp.1.1.3.33.1.1.1.8 Syntax: Integer	Read-create	Displays the LACP timeout value this LACP LAG will use. Applicable for dynamic and keepalive LAGs only.
fdryLinkAggregationGroupIfIndex brcdIp.1.1.3.29.2.1.1.9 Syntax: InterfaceIndex	Read-only	After a LAG is deployed, this object displays information for the LAG entry in the ifTable. Use the variabe to access the entry in the ifTable and ifXTable. Zero(0) is returned for LAGs that have not been deployed.
fdryLinkAggregationGroupPortCount brcdIp.1.1.3.33.1.1.1.10 Syntax: Unsigned32	Read-only	Displays the number of member ports that belong to this LAG.
fdryLinkAggregationGroupRowStatus brcdIp.1.1.3.33.1.1.1.11 Syntax: RowStatus	Read-create	Displays the status of this conceptual row. createAndWait(5) is not supported. To create a row in this table, a manager must set this object to createAndGo(4) together with the setting of fdryLinkAggregationGroupType. After that, the row status becomes active(1) regardless of whether or not the LAG entry is deployed. To deploy the LAG entry, set the corresponding instance of fdryLinkAggregationGroupAdminStatus to deployActive or deployPassive.
fdryLinkAggregationGroupId brcdIp.1.1.3.33.1.1.1.12 Syntax: Unsigned 32	Read-write	The numeric identifier assigned to this LAG.

Name, OID, and syntax	Access	Description
fdryLinkAggregationGroupLacpMode brcdIp.1.1.3.33.1.1.1.13 Syntax: Unsigned 32	Read-write	The LACP mode value that the specified LAG will use. This value is applicable to dynamic and keepalive LAGs only. • 0—LACP mode not supported. • 1—LACP mode is active. • 2—LACP mode is passive. NOTE The LACP mode value is 0 for static lag LACP mode.
fdryLinkAggregationGroupLagMac brcdIp.1.1.3.33.1.1.1.14 Syntax: MAC address	Read-write	Indicates the MAC address assigned to a LAG interface. The format of the MAC address is HHHH.HHHH.HHHH.

LAG LACP port table

The following table list the MIB objects of the LAG Link Aggregation Control Protocol (LACP) port table.

NOTE
The following table is supported only on the Brocade ICX devices.

Name, OID, and syntax	Access	Description
fdryLinkAggregationGroupLacpPortTable brcdIp.1.1.3.33.3.1	None	Table contains Link Aggregation control information about every LACP port associated with the device. A row is created in the table for each physical port.
fdryLinkAggregationGroupLacpPortAdminStatus brcdIp.1.1.3.33.3.1.1.1 Syntax: Integer	Read-only	The current admin state of the interface. The testing(3) state indicates that no operational packets can be passed. Valid values: • up(1) -- Ready to pass packets • down(2) • testing(3) -- In some test mode
fdryLinkAggregationGroupLacpPortLinkStatus brcdIp.1.1.3.33.3.1.1.2 Syntax: Integer	Read-only	The current operational state of the interface. The testing(3) state indicates that no operational packets can be passed. Valid values: • up(1) -- Ready to pass packets • down(2) • testing(3) -- In some test mode
fdryLinkAggregationGroupLacpPortLacpStatus brcdIp.1.1.3.33.3.1.1.3 Syntax: Integer	Read-only	The current LACP state of the interface. Valid values: • operation(1) • down(2) • blocked(3) • inactive(4) • pexforceup(5)
fdryLinkAggregationGroupLacpPortLacpSysID	Read-only	The LACP system ID of the LAG.

Name, OID, and syntax	Access	Description
brcdIp.1.1.3.33.3.1.1.4 Syntax: Physical address		
fdryLinkAggregationGroupLacpPortLacpKey brcdIp.1.1.3.33.3.1.1.5 Syntax: Integer	Read-only	The LACP key ID of the interface.
fdryLinkAggregationGroupLacpPortLacpRemoteSysID brcdIp.1.1.3.33.3.1.1.6 Syntax: Physical address	Read-only	The LACP remote system ID of the LAG.
fdryLinkAggregationGroupLacpPortLacpRemoteKey brcdIp.1.1.3.33.3.1.1.7 Syntax: Integer	Read-only	The LACP remote key ID of the interface.

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Route map configuration table

The following table contains MIB objects of the route map entries.

Name, OID, and syntax	Access	Description
brcdRouteMapTable brcdIp.1.1.3.39.1.1.1	None	The route map entries configuration table.
brcdRouteMapName brcdIp.1.1.3.39.1.1.1.1.1 Syntax: DisplayString	None	Identifies the route map on the Brocade devices.
brcdRouteMapSequence brcdIp.1.1.3.39.1.1.1.1.2 Syntax: Unsigned32	None	Identifies the sequence to insert or delete from the existing route map entry.
brcdRouteMapAction brcdIp.1.1.3.39.1.1.1.1.3 Syntax: Action	Read-create	Identifies the action to be taken for the route map entry: • deny(0) • permit(1)
brcdRouteMapRuleName brcdIp.1.1.3.39.1.1.1.1.4 Syntax: DisplayString	Read-create	Identifies the path name for the route map. A maximum of 127 characters is allowed.
brcdRouteMapRowStatus brcdIp.1.1.3.39.1.1.1.1.5 Syntax: RowStatus	Read-create	The following options are supported: • active(1)—To return GET and GET-NEXT requests. • createAndGo(4)—To add a new row. • destroy(6)—To remove a row. The other values in the enumeration are not supported.

Route map match configuration table

The following table contains MIB objects of the route map match configuration table.

Name, OID, and syntax	Access	Description
brcdRouteMapMatchTable brcdIp.1.1.3.39.1.1.2	None	The route map match clause configuration table.

Name, OID, and syntax	Access	Description
brcdRouteMapMatchSequence brcdIp.1.1.3.39.1.1.2.1.1 Syntax: Integer32	None	Identifies the position in the table where the match rule is added. • If the brcdRouteMapMatchRowStatus is set to createAndGo(4), then a row is inserted if there is no match rule present at the brcdRouteMapMatchIndex position. • If any rule is present, then it must be of same kind. If not, then the SET request fails. The application obtains the value for the object in the last row and uses the next value to insert a new row in the table.
brcdRouteMapMatchType brcdIp.1.1.3.39.1.1.2.1.2 Syntax: Integer	None	A pair of brcdRouteMapMatchType and brcdRouteMapMatchValue objects specifies a particular match clause.
brcdRouteMapMatchValue brcdIp.1.1.3.39.1.1.2.1.3 Syntax: DisplayString	Read-create	Specifies the value corresponding to the brcdRouteMapMatchType object. A maximum of 255 characters is allowed. The following values are supported: • matchAsPath(1)—Identifies one or more BGP AS-Paths to be matched. The list of AS-Path names is separated by one or more spaces. • matchBgpCommunityName(2)—Identifies one or more BGP community ACL names to be matched. The list of BGP community ACL names is separated by one or more spaces. • matchBgpCommunityNameExact(3)—Identifies one or more BGP community ACL names to be matched (exact matches only). The list of BGP community ACL names are separated by one or more spaces. • matchBgpExtCommunityNumber(4)—Identifies one or more BGP community list numbers to be matched. The list of BGP community list numbers is separated by one or more spaces. • matchInterfaces(5)—Identifies the list of IfIndices to be matched in the route map. The value 0 matches to the null0 interface. Each IfIndex is a 32-bit integer in big-endian order. One or more interface IfIndices are specified by separating each IfIndex with one or more spaces. • matchIpv4AddressAclNames(6)—Matches the IPv4 address of the route. Identifies the list of IPv4 standard or extended ACL names to be matched. The value is the list of ACL names separated by one or more spaces. • matchIpv4AddressAclNumbers(7)—Matches the IPv4 address of the route. Identifies the list of IPv4 ACL numbers to be matched. The value is the list of ACL numbers separated by one or more spaces. • matchIpv4AddressPrefixList(8)—Matches the IPv4 address of the route. Identifies the list of IPv4 prefix-lists to be matched. The value is the list of IPv4 prefix-list names separated by one or more spaces.

Name, OID, and syntax	Access	Description
		• matchIpv4NextHopAclNames(9)—Matches the next hop IPv4 address of the route. Identifies the list of IPv4 standard or extended ACL names to be matched. The value is the list of ACL names separated by one or more spaces. • matchIpv4NextHopAclNumbers(10)—Matches the next hop IPv4 address of the route. Identifies the list of IPv4 ACL numbers to be matched. The value is the list of ACL numbers separated by one or more spaces. • matchIpv4NextHopPrefixList(11)—Matches the next hop IPv4 address of the route. Identifies the list of IPv4 prefix-lists to be matched. The value is the list of IPv4 prefix-list names separated by one or more spaces. • matchIpv4RouteSourceAclNames(12)—Matches the advertising source IPv4 address of the route. Identifies the list of IPv4 standard or extended ACL names to be matched. The value is the list of ACL names separated by one or more spaces. • matchIpv4RouteSourceAclNumbers(13)—Matches the advertising source IPv4 address of the route. Identifies the list of IPv4 ACL numbers to be matched. The value is the list of ACL numbers separated by one or more spaces. • matchIpv4RouteSourcePrefixList(14)—Matches the advertising source IPv4 address of the route. Identifies the list of IPv4 prefix-lists to be matched. The value is the list of IPv4 prefix-list names separated by one or more spaces. • matchIpv6AddressAclNames(15)—Matches the IPv6 address of the route. Identifies the list of IPv6 ACL names to be matched. The value is the list of ACL names separated by one or more spaces. • matchIpv6AddressPrefixList(16)—Matches the IPv6 address of the route. Identifies the list of IPv6 prefix-lists to be matched. The value is the list of IPv6 prefix-list names separated by one or more spaces. • matchIpv6NextHopPrefixList(17)—Matches the next hop IPv6 address of the route. Identifies the list of IPv6 prefix-lists to be matched. The value is the list of IPv6 prefix-list names separated by one or more spaces. • matchIpv6RouteSourcePrefixList(18)—Matches the advertising source IPv6 address of the route. Identifies the list of IPv6 prefix-lists to be matched. The value is the list of IPv6 prefix-list names separated by one or more spaces. • matchMetric(19)—Specifies the route metric used to match. The value is a string representation of the decimal metric. The SNMP agent does ASCII to integer conversion before using the value.

Name, OID, and syntax	Access	Description
		• matchRoutingProtocol(20)—Specifies the routing protocol used to match. The value is a string representation of one of the following decimal values: static-BGP(1), iBGP(2), eBGP(3), non-staticBGP(4), isisLevel1(5), isisLevel2(6), isis(7), rip(8), and static(9). The other values are not supported. The SNMP agent does ASCII to integer conversion before using the value. • matchRouteType(21)—Specifies the route type used to match. The value is a string representation of one of the following decimal values: ospfExternalType1(2), ospfExternalType2(3), ospfInternal(4), isisLevel1(5), or isisLevel2(6). The other values are not supported. The SNMP agent does ASCII to integer conversion before using the value. • matchTags(22)—Specifies a list of tag values matched (string representation of decimal values). Each tag value is separated by one or more spaces. There cannot be more than 16 values.
brcdRouteMapMatchCliString brcdIp.1.1.3.39.1.1.2.1.4 Syntax: DisplayString	Read-only	Represents an equivalent CLI route map match command for a pair of brcdRouteMapMatchType and brcdRouteMapMatchValue objects.
brcdRouteMapMatchRowStatus Syntax: RowStatus brcdIp.1.1.3.39.1.1.2.1.5	Read-create	The following options are supported: • active(1)—To return GET and GET-NEXT requests. • createAndGo(4)—To add a new row. • destroy(6)—To remove a row. The other values in the enumeration are not supported.

Route map set configuration table

The following table contains MIB objects of the route map set configuration table.

Name, OID, and syntax	Access	Description
brcdRouteMapSetTable brcdIp.1.1.3.39.1.1.3	None	The route map set clause configuration table for a given route map.
brcdRouteMapSetSequence brcdIp.1.1.3.39.1.1.3.1.1 Syntax: Integer32	None	Identifies the position in the table where the match rule is added. • If the brcdRouteMapSetRowStatus object is set to the createAndGo(4) value, and if there is no match rule present at the brcdRouteMapSetIndex position, then a row is inserted. • If a match rule is present, it must be of same kind. If not, then the SET request fails. The application obtains the value for the object in the last row and uses the next value to insert a new row in the table.

Name, OID, and syntax	Access	Description
brcdRouteMapSetType brcdIp.1.1.3.39.1.1.3.1.2 Syntax: Integer	None	A pair of brcdRouteMapSetType and brcdRouteMapSetValue objects specify a particular set clause.
brcdRouteMapSetValue brcdIp.1.1.3.39.1.1.3.1.3 Syntax: DisplayString	Read-create	Specifies the value corresponding to the brcdRouteMapSetType object. The following values are supported: • setAsPath(1)—Identifies the prefix string for the BGP AS-Path attribute. The value is a string representation of the BGP Autonomous System (AS) number to be appended with the AS-Path. If the value specified is a string instead of the AS-Path number, then the value is set as an AS-Path attribute. • setAutomaticTag(2)—Specifies that the route map tag is computed automatically. The value is a string representation of a truth value 0 or 1. The value 0 is used to mark its deletion. • setDeleteCommunityList(3)—Specifies the name of the BGP community list set for deletion. • setCommunityNumber(4)—Specifies the BGP community number that is added. The format is either "AA:NN" or *community number* . • setCommunityFlag(5)—Specifies that the BGP community number in the setCommunityNumber value has behaviors similar to noExport(1), noAdvertise(2), localAs(3), and additive(4). For additive(4), the number is followed by the community number in either "AA:NN" or *community number* format. The value is a string representation of one of the decimal values. • setDampening(6)—Consists of 4 values separated by a space. – The first value specifies the string representation of the decimal value for the BGP route flap dampening. It must be enabled with half-time in minutes for the penalty. Valid values range from 1 through 45 minutes. Default value is 15 minutes. – The second value relates to the first value and specifies the string representation of the decimal value to start reusing a BGP route. Valid values range from 1 through 20000. Default value is 750, with each flap penalty at 1000.

Name, OID, and syntax	Access	Description
		– The third value relates to the first value and specifies the string representation of the decimal value to start suppressing a BGP route. Valid values range from 1 through 20000. Default value is 2000, with each flap penalty at 1000. – The fourth value relates to the first value and specifies the string representation of maximum duration in minutes to suppress a stable route. Valid values range from 1 through 255. The default value is 40 minutes. The default value is used if a value is not provided. • setDistance(7)—Specifies the string representation of admin distance set for matching OSPF routes. • setExtCommunityRT(8)—Specifies one or moreVPN extended community attributes (separated by a space). Each VPN community is formatted as "ASN:nn". • setExtCommunityRTAdditive(9)—This value relates to the setExtCommunityRT value and specifies that the VPN communities earlier must be added to the existing extended community. • setExtCommunitySOO(10)—Specifies the site-of-origin VPN extended community attributes. The VPN community is formatted as "ASN:nn". • setOutputInterfaces(11)—Identifies the list of output IfIndices. The value 0 matches to the null0 interface. Each IfIndex is a 32-bit integer in big-endian order. One or more interface IfIndices can be specified by separating each IfIndex by one or more spaces. If the ifIndex is not null0, then the preserve VLAN flag is mandatory and that is always implicitly set. • setNextHopIpv4Addr(12)—Identifies the string representation of the next hop IPv4 address without the preserve VLAN flag. • setNextHopIpv4AddrWithPreserveVlan(13)—Identifies the string representation of the next hop IPv4 address with the preserve VLAN flag. • setNextHopIpv6Addr(14)—Identifies the string representation of the next hop IPv6 address without the preserve VLAN flag.

Name, OID, and syntax	Access	Description
		• setNextHopIpv6AddrWithPreserveVlan(15)—Identifies the string representation of the next hop IPv6 address with the preserve VLAN flag. • setNextHopIpPeerAddr(16)—Specifies the string representation of a truth value. The object gets deleted when the value is set to 0 (zero). Identifies the next hop of a BGP IPv4 peer address. • setIsisLevel(17)—Identifies the level to which to import the IS-IS route. The value is a string representation of one of the following decimal values: level1(1), level2(2), or level1or2(3). • setLocalPreference(18)—Identifies the BGP local preference path attribute value to be set. The value is a string representation of the decimal preference value. • setMetricType(19)—Specifies the route metric type for the destination routing protocol. The value is a string representation of one of the following values: internal(1), external(2), type1(3), or type2(4). • setMetric(20)—Specifies the metric value set for the destination routing protocol. The value is a string representation of the following values: – *n* : Metric value – *+n* : Add *n* to metric – *-n* : Subtract *n* to metric – None : remove metric value • setNextHopFloodVlan(21)—Specifies the next hop VLAN without the preserve VLAN to be set. The value is a string representation of the VLAN ID (1 through 4090). • setNextHopFloodVlanPreserveVlan(22)—Specifies the next hop VLAN with the preserve VLAN to be set. The value is a string representation of the VLAN ID (1 through 4090). • setNextHopFloodVlanOutgoingDa(23)—Specifies the next hop VLAN with the outgoing destination address flag set. The value is a string representation of the VLAN ID (1 through 4090) followed with a MAC address. • setNextHopIpTunnel(24)—Specifies the next hop IP tunnel that is configured for configured GRE tunnels. The value is a string representation of the decimal tunnel ID.

Name, OID, and syntax	Access	Description
		• setNextHopLsp(25)—Specifies the next hop LSP name. • setBgpOrigin(26)—Specifies the BGP origin code. The value is a string representation of the igp(1) and incomplete(2) decimal values. • setTag(27)—Specifies the string representation of the decimal tag value for the destination routing protocol. • setWeight(28)—Specifies the string representation of the decimal value for BGP weight for the routing table.
brcdRouteMapSetCliString brcdIp.1.1.3.39.1.1.3.1.4 Syntax: DisplayString	Read-only	Represents an equivalent CLI route map set command for a pair of brcdRouteMapSetType and brcdRouteMapSetValue objects.
brcdRouteMapSetRowStatus brcdIp.1.1.3.39.1.1.3.1.5 Syntax: RowStatus	Read-create	The following options are supported: • active(1)—To return GET and GET-NEXT requests. • createAndGo(4)—To add a new row. • destroy(6)—To remove a row. The other values in the enumeration are not supported.

Route map bind table

The following table contains MIB objects of the route map bind entries.

Name, OID, and syntax	Access	Description
brcdRouteMapBindTable brcdIp.1.1.3.39.1.1.4	None	The table contains the bindings for the route map entries to the interfaces. Only one route map can be bound to a given interface. Attempting to bind a second route map to the same interface returns an error.
brcdRouteMapBindIfIndex brcdIp.1.1.3.39.1.1.4.1.1 Syntax: InterfaceIndex	None	Identifies an interface to bind a route map. The interface can only be a physical or virtual type.
brcdRouteMapBindIpType brcdIp.1.1.3.39.1.1.4.1.2 Syntax: InetAddressType	None	Identifies an IP type for the bind. The route map can be bound only to an IPv4 or IPv6 policy.
brcdRouteMapBindMapName brcdIp.1.1.3.39.1.1.4.1.3 Syntax: DisplayString	Read-create	Identifies the route map name.
brcdRouteMapBindRowStatus brcdIp.1.1.3.39.1.1.4.1.4 Syntax: RowStatus	Read-create	The following options are supported: • active(1)—To return GET and GET-NEXT requests. • createAndGo(4)—To add a new row. • destroy(6)—To remove a row.

Name, OID, and syntax	Access	Description
		The other values in the enumeration are not supported.

Route map rule display table

The following table contains MIB objects of the route map rule display entries. Use the **show telemetry rule-name** command to display entries.

NOTE
This is a read-only table.

Name, OID, and syntax	Access	Description
brcdRMapRuleDisplayTable brcdIp.1.1.3.39.1.2.1	None	The table contains various route map rule entries. A route map rule instance (map and sequence number) contains only one rule name and the same rule name is applied to multiple route maps.
brcdRMapRuleDisplayRuleName brcdIp.1.1.3.39.1.2.1.1.1 Syntax: DisplayString	None	Identifies the rule name.
brcdRMapRuleDisplayRouteMapName brcdIp.1.1.3.39.1.2.1.1.2 Syntax: DisplayString	None	Identifies the route map containing the rule.
brcdRMapRuleDisplaySequence brcdIp.1.1.3.39.1.2.1.1.3 Syntax: Unsigned32	None	Identifies the instance sequence number.
brcdRMapRuleDisplayIpType brcdIp.1.1.3.39.1.2.1.1.4 Syntax: InetAddressType	None	Identifies the IP type for the rule display: • 1 - IPv4, or • 2 - IPv6 A row is present if the corresponding IPv4 or IPv6 match ACL filter is present.
brcdRMapRuleDisplayInputInterfaceList brcdIp.1.1.3.39.1.2.1.1.5 Syntax: DisplayString	Read-only	A list of space-separated interface indices is the port membership of the rule. An asterisk (*) indicates that the path is configured but disabled.
brcdRMapRuleDisplayAclMatchFilter brcdIp.1.1.3.39.1.2.1.1.6 Syntax: DisplayString	Read-only	A list of space-separated ACL match filter names or numbers used in the rule. NOTE Any instances of route maps that are not bound, and have no IPv4 or IPv6 match ACL filter (brcdRMapRuleDisplayAclMatchFilter), are not displayed in the brcdRMapRuleDisplay table.
brcdRMapRuleDisplayOutputVlan brcdIp.1.1.3.39.1.2.1.1.7	Read-only	Identifies the next hop flood VLAN selected by the interface card. Returns an empty string if there is no value.

Name, OID, and syntax	Access	Description
Syntax: DisplayString		
brcdRMapRuleDisplayOutputPort brcdIp.1.1.3.39.1.2.1.1.8 Syntax: DisplayString	Read-only	Identifies the selected (by the interface card) egress interface. Returns an empty value if there is no value.
brcdRMapRuleDisplayOutputIPAddress brcdIp.1.1.3.39.1.2.1.1.9 Syntax: DisplayString	Read-only	Identifies the selected IPv4 or IPv6 next hop address. Returns an empty value if there is no value.

Switch Port Extender MIB Definition

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SPX global scalar MIB objects

The following Switch Port Extender (SPX) global scalar objects are supported on the Brocade ICX 7250, Brocade ICX 7450, or Brocade ICX 7750 devices depending on the roll of CB or PR in an SPX system.

Name, OID, and syntax	Access	Description
brcdSPXGlobalConfigCBState brcdIp.1.1.3.40.1.1 Syntax: Integer	Read-write	Configures Control Bridge (CB) state for 802.1BR on the global level. The SET operation is allowed only on the CB device. • none - reserved state • enable - 802.1BR is enabled on CB • disable - 802.1BR is disabled on CB
brcdSPXGlobalConfigPEState brcdIp.1.1.3.40.1.2 Syntax: Integer	Read-write	Configures Port Extender (PE) state for 802.1BR on the global level. The SET operation is allowed only on the PE standalone device. • none - reserved state • enable - 802.1BR is enabled on PE • disable - 802.1BR is disabled on PE NOTE Enabling or disabling of PE takes effect once the configuration is saved and the system is reloaded.
brcdSPXGlobalConfigZeroTouchEnable brcdIp.1.1.3.40.1.3 Syntax: Integer	Read-write	Configures CB Zero Touch for 802.1BR on the global level. The Zero Touch discovers new PE-capable units, assigns them IDs, defines SPX-ports/lags, and finally converts them to PE mode to join the SPX system. The SET operation is allowed only on the CB devices. • None - reserved state; Zero touch is not enabled on CB. The default state is none. • enabled - Zero touch is enabled on CB.

Name, OID, and syntax	Access	Description
brcdSPXGlobalConfigZeroTouchDeny brcdIp.1.1.3.40.1.4 Syntax: Integer	Read-write	Configures CB Zero Touch for 802.1BR on the global level. The Zero Touch feature discovers new PE capable units, assigns them IDs, defines SPX-ports/lags, and finally converts them to PE mode to join the SPX system. The SET operation is allowed on CB or PE-standalone devices. • none - neutral; receives packets only. The default state is none. • deny - Zero touch is disabled and the device will not be discovered by zero-touch and spx secure-setup on other CB units.
brcdSPXGlobalConfigAllowPEMovement brcdIp.1.1.3.40.1.5 Syntax: Integer	Read-write	Configures CB allow PE movement for 802.1BR on the global level. It allows the user to move PE unit without changing its unit ID. The SET operation is allowed only on the CB device or PE-standalone device. • none - reserved state; PE movement state is disable. The default state is none. • enabled - PE movement state is enabled on a device.

SPX configuration unit table

The following table MIB objects display CB and PE units in an SPX system and configures SPX-related information for each PE unit. The following table objects are supported only on the Brocade ICX 7250 and Brocade ICX 7750 devices.

Name, OID, and syntax	Access	Description
brcdSPXConfigUnitTable brcdIp.1.1.3.40.2.1	Not-accessible	802.1BR SPX configuration unit table.
brcdSPXConfigUnitIndex brcdIp.1.1.3.40.2.1.1.1 Syntax: Integer32	Not-accessible	The SPX unit ID. CB unit ID is from 1 through 16 and PE unit ID is from 17 through 56.
brcdSPXConfigUnitPEName brcdIp.1.1.3.40.2.1.1.2 Syntax: DisplayString	Read-write	A name description of PE unit.
brcdSPXConfigUnitPESPXPort1 brcdIp.1.1.3.40.2.1.1.3 Syntax: InterfaceIndexOrZero	Read-write	The first PE SPX port on PE unit. It returns 0 if SPX port does not exist.
brcdSPXConfigUnitPESPXPort2 brcdIp.1.1.3.40.2.1.1.4 Syntax: InterfaceIndexOrZero	Read-write	The second PE SPX port on PE unit. It returns 0 if SPX port does not exist.

Name, OID, and syntax	Access	Description
brcdSPXConfigUnitPESPXLag1 brcdIp.1.1.3.40.2.1.1.5 Syntax: OctetString	Read-write	A list of interface indices that are the port membership of a SPX LAG group on PE. Each interface index is a 32-bit integer in an big-endian order. It returns NULL if PE SPX LAG does not exist.
brcdSPXConfigUnitPESPXLag2 brcdIp.1.1.3.40.2.1.1.6 Syntax: OctetString	Read-write	A list of interface indices that are the port membership of a SPX LAG group on PE. Each interface index is a 32-bit integer in an big-endian order. It returns NULL if PE SPX LAG does not exist.
brcdSPXConfigUnitRowStatus brcdIp.1.1.3.40.2.1.1.7 Syntax: Integer	Read-write	This object is used to delete row in the table and controls if they are used. The following values can be written: • delete(3) - deletes the row if the row exists, then a SET request with value of create(4) returns error wrongValue. Read-only mode returns the following values: • noSuchName - no such row • other(1) - some other cases • valid(2) - the row exists and is valid
brcdSPXConfigUnitType brcdIp.1.1.3.40.2.1.1.8 Syntax: DisplayString	Read-only	A description of the configured or active system type for each unit.
brcdSPXConfigUnitState brcdIp.1.1.3.40.2.1.1.9 Syntax: Integer	Read-only	A state for each unit.

SPX operation unit table

The following table MIB objects display SPX-related information for each operational CB and PE units. The following table objects are supported only on the Brocade ICX 7250 and Brocade ICX 7750 devices.

Name, OID, and syntax	Access	Description
brcdSPXOperUnitTable brcdIp.1.1.3.40.2.2	Not-accessible	The 802.1BR SPX operation unit table.
brcdSPXOperUnitIndex brcdIp.1.1.3.40.2.2.1.1 Syntax: Integer32	Not-accessible	The SPX unit ID. CB unit ID is from 1 through 16 and PE unit ID is from 17 through 56.
brcdSPXOperUnitType brcdIp.1.1.3.40.2.2.1.2 Syntax: DisplayString	Read-only	The description of the configured or active system type for each unit.
brcdSPXOperUnitRole brcdIp.1.1.3.40.2.2.1.3 Syntax: Integer	Read-only	The role for each unit. • other(1) • active(2) • standby(3)

Name, OID, and syntax	Access	Description
		• member(4) • standalone(5) • spxPe (6)
brcdSPXOperUnitMac brcdIp.1.1.3.40.2.2.1.4 Syntax: MacAddress	Read-only	The MAC address for each unit.
brcdSPXOperUnitPriority brcdIp.1.1.3.40.2.2.1.5 Syntax: Integer32	Read-only	The priority in active or backup selection on CB units. PE unit does not have priority, and 0 as default value. Valid values: 0 through 255
brcdSPXOperUnitState brcdIp.1.1.3.40.2.2.1.6 Syntax: Integer	Read-only	The state for each unit. • local(1) • remote(2) • reserved(3) • empty(4)
brcdSPXOperUnitDescription brcdIp.1.1.3.40.2.2.1.7 Syntax: DisplayString	Read-only	Describes the CB stacking or PE joining state for each unit.
brcdSPXOperUnitImgVer brcdIp.1.1.3.40.2.2.1.8 Syntax: DisplayString	Read-only	The running software image version.
brcdSPXOperUnitBuildlVer brcdIp.1.1.3.40.2.2.1.9 Syntax: DisplayString	Read-only	The running software build version.

SPX configuration CB SPX port table

The following table MIB objects display and configure CB SPX ports for CB units. The following table objects are supported only on the Brocade ICX 7250 and Brocade ICX 7750 devices.

Name, OID, and syntax	Access	Description
brcdSPXCBSPXPortTable brcdIp.1.1.3.40.2.3	Not-accessible	The SPX configuration CB SPX port table.
brcdSPXCBSPXPortPort brcdIp.1.1.3.40.2.3.1.1 Syntax: Integer32	Not-accessible	The IfIndex for the configured CB SPX port. CB unit can have multiple SPX ports per unit.
brcdSPXCBSPXPortPEGroup brcdIp.1.1.3.40.2.3.1.2 Syntax: DisplayString	Read-write	The name of IfIndex for the configured CB SPX port. It is an optional field.

Name, OID, and syntax	Access	Description
brcdSPXCBSPXPortRowStatus brcdIp.1.1.3.40.2.3.1.3 Syntax: Integer	Read-write	This object is used to delete row in the table and to control if they are used. The following values can be written: • delete(3) - deletes the row • create(4) - creates a new row If the row exists, then a SET with value of create(4) returns an error 'wrongValue'. The following values can be returned on reads: • noSuchName - no such row • other(1) - some other cases • valid(2) - the row exists and is valid

SPX configuration CB SPX LAG table

The following table MIB objects display and configure CB SPX LAGs for CB units. The following table objects are supported only on the Brocade ICX 7250 and Brocade ICX 7750 devices.

Name, OID, and syntax	Access	Description
brcdSPXCBSPXLagTable brcdIp.1.1.3.40.2.4	Not-accessible	The SPX configuration CB SPX LAG table.
b rcdSPXCBSPXLagPrimaryPort brcdIp.1.1.3.40.2.4.1.1 Syntax: InterfaceIndexOrZero	Not-accessible	The LAG primary port for the configured CB SPX LAG. This primary port is the smallest port in the CB SPX LAG group. CB unit can have multiple SPX LAGs per unit.
brcdSPXCBSPXLagLagIflist brcdIp.1.1.3.40.2.4.1.2 Syntax: OctetString	Read-write	A list of interface indices, which are the port membership of a SPX LAG group on CB. Each interface index is a 32-bit integer in an big-endian order. It returns NULL if CB SPX LAG does not exist.
brcdSPXCBSPXLagPEGroup brcdIp.1.1.3.40.2.4.1.3 Syntax: DisplayString	Read-write	The name of SPX LAG for the configured CB SPX LAG. It is an optional field.
brcdSPXCBSPXLagRowStatus brcdIp.1.1.3.40.2.4.1.4 Syntax: Integer	Read-write	This object is used to delete row in the table and to control if they are used. The following values can be written: • delete(3) - deletes the row • create(4) - creates a new row If the row exists, then a SET with value of create(4) returns an error 'wrongValue'. The following values can be returned on reads: • noSuchName - no such row • other(1) - some other cases • valid(2) - the row exists and is valid

SPX PE group table

The following table MIB objects display CB SPX port and all PE units attached to the SPX port and an SPX port on other end if it is a ring topology. The following table objects are supported only on the Brocade ICX 7250 and Brocade ICX 7750 devices.

Name, OID, and syntax	Access	Description
brcdSPXPEGroupTable brcdIp.1.1.3.40.2.5	Not-accessible	SPX CB SPX port and PE group table.
brcdSPXPEGroupCBSPXPort brcdIp.1.1.3.40.2.5.1.1 Syntax: InterfaceIndexOrZero	Not-accessible	The IfIndex for the CB SPX port, which is connected to a group of PE units.
brcdSPXPEGroupPEGroup brcdIp.1.1.3.40.2.5.1.2 Syntax: DisplayString	Read-only	The name of IfIndex for the configured CB SPX port. It is an optional field.
brcdSPXPEGroupPEIdList brcdIp.1.1.3.40.2.5.1.3 Syntax: OctetString	Read-only	A list of PE unit ID indices, which are attached to a CB SPX port. Each PE ID is a 32-bit integer in an big-endian order.
brcdSPXPEGroupCBSPXEndPort brcdIp.1.1.3.40.2.5.1.4 Syntax: InterfaceIndexOrZero	Read-only	The IfIndex for the CB SPX port, which is connected to a group of PE units. This CB SPX port is at other end if it is a ring topology. It returns 0 if it is a chain topology.

ISSU MIB Definition

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In service Software upgrade (ISSU) MIB objects are supported on the Brocade ICX 7250, Brocade ICX 7450, and Brocade ICX 7750 devices.

Stack ISSU Global Scalar Objects

Name, OID, and syntax	Access	Description
brcdStackISSUGlobalUpgradeOption brcdIp.1.1.3.41.1.1 Syntax: Integer	Read-write	Configures the system upgrade option to initiate stack upgrade process using primary or secondary image. The SET operation is allowed only on the active unit in stacking system or 802.1BR (SPX) system. • none - reserve state. The default is none state. • primary - system upgrade process using primary image • secondary - system upgrade process using secondary image • primaryOnErrorReloadPrimary - system upgrade process using primary image, reloads from primary if upgrade fails • primaryOnErrorReloadSecondary - system upgrade process using primary image, reloads from secondary if upgrade fails • secondaryOnErrorReloadPrimary - system upgrade process using secondary image, reloads from primary if upgrade fails • secondaryOnErrorReloadSecondary - system upgrade process using secondary image, reloads from secondary if upgrade fails • abort - aborts upgrade process. A reload is required to bring the stack back to the working condition after abort is issued.
brcdStackISSUGlobalUpgradeStatus brcdIp.1.1.3.41.1.2 Syntax: Integer	Read-only	The state of upgrade process for a stacking or SPX system. The default state is in notUpgrading state.
brcdStackISSUGlobalisSystemReady brcdIp.1.1.3.41.1.3 Syntax: Integer	Read-only	The per-upgrade state of a stacking or SPX system. The system must be in ready state before the upgrade process starts and the process validates the following aspects: • Topology is Ring - Yes • Standby Present - Yes • Standby ready for upgrade - Yes • Flash use in progress - No • Secure Setup in progress - No • ISSU in progress or aborted - No • Election pending - No • Election in progress - No • Reload pending - No • CPU utilization high - No • All units in ready state - Yes • Primary Image is upgrade compatible - Yes • Secondary Image is upgrade compatible - Yes • Startup config and Running Config Same - Yes • Boot option present in running config - No • User in Config mode - No If one of the above validation fails, then the system is not ready for stack upgrade.

Name, OID, and syntax	Access	Description
brcdStackISSUGlobalUpgradeError brcdIp.1.1.3.41.1.4 Syntax: DisplayString	Read-only	The error message occurs during the system upgrade process on a stacking or SPX system. Before or after ISSU process, the OID will return the value as "System is not in Stack ISSU mode". During ISSU, the value is null string, which means system has no error or is in no-upgrade state.

History

Release version	History
8.0.50	This MIB was introduced.

Stack ISSU status unit table

The table objects used to display upgrade status or other stacking-related information for each unit. The table is accessible after reload once the ISSU is complete.

Name, OID, and syntax	Access	Description
brcdStackISSUStatusUnitTable brcdIp.1.1.3.41.2.1	Not-accessible	The Stack ISSU status unit table.
brcdStackISSUStatusUnitIndex brcdIp.1.1.3.41.2.1.1 Syntax: Integer32	Not-accessible	The unit ID. If it is a SPX system, CB unit ID is from 1 through 16 and the PE unit ID is from 17 through 56.
brcdStackISSUStatusUnitSequence brcdIp.1.1.3.41.2.1.2 Syntax: Integer32	Read-only	The sequence of stack upgrade in a stacking or SPX system. If unit is PE, the sequence number is the same as attached to the CB unit in a SPX system. The default is 0, which means system is in no-upgrade state.
brcdStackISSUStatusUnitType brcdIp.1.1.3.41.2.1.3 Syntax: DisplayString	Read-only	A description of the system type for each unit.
brcdStackISSUStatusUnitRole brcdIp.1.1.3.41.2.1.4 Syntax: Integer	Read-only	A role for each unit.
brcdStackISSUStatusUnitStatus brcdIp.1.1.3.41.2.1.5 Syntax: Integer	Read-only	The status of upgrade for each unit. The default is in notUpgraded state.

History

Release version	History
8.0.50	This MIB was introduced.

Stack ISSU SNMP traps

Trap name and number	Varbinds	Severity	Description and trap message
snTrapStackISSUSystemCompleted brcdIp.0.215	snAgGblTrapMessage	Notifications	The SNMP trap is generated when system completed stack upgrade process.
snTrapStackISSUSystemFailed brcdIp.0.216	snTrapStackISSUSystemFailed	Alerts	The SNMP trap is generated when system failed stack upgrade process.
snTrapStackISSUUnitCompleted brcdIp.0.217	snChasUnitIndex, snAgGblTrapMessage	Notifications	The SNMP trap is generated when unit completed upgrade process.
snTrapStackISSUUnitFailed brcdIp.0.218	snChasUnitIndex, snAgGblTrapMessage	Alerts	The SNMP trap is generated when unit failed upgrade process.
snTrapStackISSUSystemStart brcdIp.0.219	snAgGblTrapMessage	Notifications	The SNMP trap is generated when system starts ISSU stack upgrade process.

History

Release version	History
8.0.50	This MIB was introduced.

BFD MIB Definition

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BFD session table

The following table specifies information about the Bidirectional Forwarding Detection (BFD) session.

Name, OID, and syntax	Access	Description
bfdSessTable brcdIp.3.3.1.1.2	None	Describes the BFD sessions.
bfdSessIndex brcdIp.3.3.1.1.2.1.1 Syntax: BfdSessIndexTC	None	Contains an index used to represent a unique BFD session on this device.
bfdSessApplicationId brcdIp.3.3.1.1.2.1.2 Syntax: Unsigned32	Read-only	Contains an index used to indicate a local application which owns or maintains this BFD session. For instance, the MPLS VPN process may maintain a subset of the total number of BFD sessions. This application ID provides a convenient way to segregate sessions by the applications which maintain them.
bfdSessDiscriminator brcdIp.3.3.1.1.2.1.3 Syntax: Unsigned32	Read-only	Specifies the local discriminator for this BFD session, used to uniquely identify it.
bfdSessRemoteDiscr brcdIp.3.3.1.1.2.1.4 Syntax: Unsigned32	Read-only	Specifies the session discriminator chosen by the remote system for this BFD session.
bfdSessUdpPort brcdIp.3.3.1.1.2.1.5 Syntax: InetPortNumber	Read-only	The UDP port for BFD. Default: The well-known value for this port.
bfdSessState brcdIp.3.3.1.1.2.1.6 Syntax: Integer	Read-only	The perceived state of the BFD session: • adminDown(1) • down(2) - BFD session is down. • init(3) - BFD session is initializing. • up(4) - BFD session is up.
bfdSessRemoteHeardFlag brcdIp.3.3.1.1.2.1.7 Syntax: TruthValue	Read-only	Status of BFD packet reception from the remote system: • true(1) - The local device is actively receiving BFD packets from the remote device. • false(0) - Either the local device has not received BFD packets recently (within the detection time) or the local device is attempting to tear down the BFD session.

Name, OID, and syntax	Access	Description
bfdSessDiag brcdIp.3.3.1.1.2.1.8 Syntax: Unsigned32	Accessible-for-notify	A diagnostic code specifying the local system's reason for the last transition of the session from up(1) to some other state. The following values are applicable in the implementation of this MIB object: • No Diagnostic(1) • Control Detection Time Expired(2) • Echo Failed(3) • Neighbor Signaled Session Down(4) • Forwarding Plan Reset(5) • Path Down(6) • Concatenated Path Down(7) • Admin Down(8) • Reverse Concatenated Path Down(9) Each notification uses one of the following varbinds: • bfdSessUp - High range value • bfdSessDown - Low range value
bfdSessOperMode brcdIp.3.3.1.1.2.1.9 Syntax: Integer	Read-only	Specifies the current operating mode of the BFD session: • asyncModeWEchoFun(1) • asynchModeWOEchoFun(2) • demandModeWEchoFunction(3) • demandModeWOEchoFunction(4)
bfdSessDemandModeDesiredFlag brcdIp.3.3.1.1.2.1.10 Syntax: TruthValue	Read-only	Indicates if the device uses the demand mode: • true(1) - The device will use demand mode. • false(0) - The device will use demand mode.
bfdSessEchoFuncModeDesiredFlag brcdIp.3.3.1.1.2.1.11 Syntax: TruthValue	Read-only	Indicates if the device uses Echo mode: • true(1) - The device will use Echo mode. • false(0) - The device will use Echo mode.
bfdSessControPlanIndepFlag brcdIp.3.3.1.1.2.1.12 Syntax: TruthValue	Read-only	Indicates if the device can continue to function when there is a disruption of the control plane: • true(1) - The local system BFD implementation is independent of the control plane. • false(0) - The local system BFD implementation is dependent on the control plane.
bfdSessAddrType brcdIp.3.3.1.1.2.1.13 Syntax: InetAddressType	Read-only	The IP address type of the interface associated with this BFD session: • unknown(0) - Allowed only when the outgoing interface is of the type point-to-point, or when the BFD session is not associated with a specific interface. • ipv4(1) - IP address is IPv4.

Name, OID, and syntax	Access	Description
		• ipv6(2) - IP address is IPv6.
bfdSessAddr brcdIp.3.3.1.1.2.1.14 Syntax: InetAddress	Read-only	The IP address of the interface associated with this BFD session. Also used to enable BFD on a specific interface. The value is set to zero when the BFD session is not associated with a specific interface.
bfdSessDesiredMinTxInterval brcdIp.3.3.1.1.2.1.15 Syntax: Unsigned32	Read-only	Specifies the minimum interval, in microseconds, that the local system would like to use when transmitting BFD Control packets.
bfdSessReqMinRxInterval brcdIp.3.3.1.1.2.1.16 Syntax: Unsigned32	Read-only	Specifies the minimum interval, in microseconds, between received BFD Control packets the local system is capable of supporting.
bfdSessReqMinEchoRxInterval brcdIp.3.3.1.1.2.1.17 Syntax: BfdInterval	Read-only	Specifies the minimum interval, in microseconds, between received BFD Echo packets that this system is capable of supporting.
bfdSessDetectMult brcdIp.3.3.1.1.2.1.18 Syntax: Unsigned32	Read-only	Specifies the Detect time multiplier.
bfdSessStorType brcdIp.3.3.1.1.2.1.19 Syntax: StorageType	Read-only	Indicates the storage type for this object. Conceptual rows having the value "permanent" need not allow write-access to any columnar objects in the row.
bfdSessRowStatus brcdIp.3.3.1.1.2.1.20 Syntax: RowStatus	Read-only	Creates, modifies, or deletes a row in this table. When a row in this table has a row in the active(1) state, no objects in this row can be modified except bfdSessRowStatus and bfdSessStorageType.
bfdSessAuthPressFlag brcdIp.3.3.1.1.2.1.21 Syntax: TruthValue	Read-only	Indicates if the device wants the BFD sessions to be authenticated: • true(1) - BFD sessions will be authenticated. • false(0) - BFD sessions will not be authenticated.
bfdSessAuthenticationType brcdIp.3.3.1.1.2.1.22 Syntax: Integer	Read-only	Indicates the authentication type used for this BFD session, if BFD sessions are authenticated: • simplePassword(1) • keyedMD5(2) • meticulousKeyedMD5(3) • keyedSHA1(4) • meticulousKeyedSHA1(5)

BFD session performance table

This table specifies the performance counters for BFD sessions.

Name, OID, and syntax	Access	Description
bfdSessPerfTable	None	The BFD session performance table.

Name, OID, and syntax	Access	Description
brcdIp.3.3.1.1.3		
bfdSessPerfPktIn brcdIp.3.3.1.1.3.1.1 Syntax: Counter32	Read-only	The total number of BFD messages received for this BFD session.
bfdSessPerfPktOut brcdIp.3.3.1.1.3.1.2 Syntax: Counter32	Read-only	The total number of BFD messages sent for this BFD session.
bfdSessPerfUpTime brcdIp.3.3.1.1.3.1.3 Syntax: TimeStamp	Read-only	The value of sysUpTime on the most recent occasion at which the session came up. If no such up event exists, this object contains a zero value.
bfdSessPerfLastSessDownTime brcdIp.3.3.1.1.3.1.4 Syntax: TimeStamp	Read-only	The value of sysUpTime on the most recent occasion at which the last time communication was lost with the neighbor. If no such down event exists, this object contains a zero value.
bfdSessPerfLastCommLostDiag brcdIp.3.3.1.1.3.1.5 Syntax: BfdDiag	Read-only	The BFD diag code for the last time communication was lost with the neighbor. If no such down event exists, this object contains a zero value.
bfdSessPerfSessUpCount brcdIp.3.3.1.1.3.1.6 Syntax: Counter32	Read-only	The number of times this session has gone into the up state since the router last rebooted.
bfdSessPerfDiscTime brcdIp.3.3.1.1.3.1.7 Syntax: TimeStamp	Read-only	The value of sysUpTime on the most recent occasion at which any one or more of the session counters suffered a discontinuity. The relevant counters are the specific instances associated with this BFD session of any Counter32 object contained in BfdSessPerf Table. If no such discontinuities have occurred since the last re-initialization of the local management subsystem, then this object contains a zero value.
bfdSessPerfPktInHC brcdIp.3.3.1.1.3.1.8 Syntax: Counter64	Read-only	This value represents the total number of BFD messages received for this BFD session. It must be equal to the least significant 32 bits of bfdSessPerfPktIn if bfdSessPerfPktInHC is supported according to the rules spelled out in RFC 2863.
bfdSessPerfPktOutHC brcdIp.3.3.1.1.3.1.9 Syntax: Counter64	Read-only	This value represents the total number of BFD messages transmitted for this BFD session. It must be equal to the least significant 32 bits of bfdSessPerfPktIn if bfdSessPerfPktOutHC is supported according to the rules spelled out in RFC 2863.

BFD session mapping table

The BFD session mapping table maps the complex indexing of the BFD sessions to the flat BFDIndex used in the BfdSessionTable.

Name, OID, and syntax	Access	Description
BfdSessMapTable	None	The BFD session mapping table.

Name, OID, and syntax	Access	Description
brcdIp.3.3.1.1.4		**NOTE** If the value of the bfdSessAddr (an OID) has more that 111 sub-identifiers, then OIDs of column instances in this table will have more than 128 sub-identifiers and cannot be accessed using SNMPv1, SNMPv2c, or SNMPv3.
bfdSessMapBfdIndex brcdIp.3.3.1.1.4.1.1 Syntax: Unsigned32	Read-only	Specifies the BFD index referred to by the indexes of this row. In essence, a mapping is provided between these indexes and the BFD session table.

BFD scalar objects

The following table presents the BHFD scalar objects that are supported.

Name, OID, and syntax	Access	Description
bfdAdminStatus brcdIp.3.3.1.1.1.1 Syntax: Integer	Read-only	The global administrative status of BFD in this router: • enabled(1) - BFD process is active on at least one interface. • disabled(2) - BFD is disabled on all interfaces. Default: enabled(1)
bfdSessNotificationsEnable brcdIp.3.3.1.1.1.4 Syntax: TruthValue	Read-write	Indicates if notification messages are sent when BFD sessions are up and when they are down: • true(1) - Notification messages are sent. • false(2) - Notifications messages are not sent. Default: false(2)

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Objects to enable or disable standard traps

NOTE
By default, all the traps are enabled.

The following objects from RFC 1213 are the standard objects that are supported in the IP MIB. They are used to set SNMP traps.

Name, OID, and syntax	Access	Description
snmpInTraps 1.3.6.1.2.1.11.19	Read-only	Shows the total number of SNMP trap PDUs that have been accepted and processed by SNMP.
snmpOutTraps 1.3.6.1.2.1.11.29	Read-only	Shows the total number of SNMP trap PDUs that have been generated by SNMP.
snmpEnableAuthenTraps 1.3.6.1.2.1.11.30	Read-write	Indicates if the SNMP agent process is permitted to generate authentication failure traps. The value of this object overrides any configuration information. This objects provides a way to disable all authentication failure traps. NOTE It is strongly recommended that this object to be stored in the nonvolatile memory so that it remains constant between re-initializations of the network management system.
lldpRemTablesChange 1.0.8802.1.1.2.1.4.1	None	An lldpRemTablesChange notification is sent when the value of lldpStatsRemTableLastChangeTime changes. It can be used by an NMS to trigger LLDP remote systems table maintenance polls. NOTE Transmission of lldpRemTablesChange notifications is throttled by the agent, as specified by the lldpNotificationInterval object.
lldpXMedTopologyChangeDetected 1.0.8802.1.1.2.1.5.4795.0.1	None	Allows a device to transfer information related to topology changes to management applications in an asynchronous manner. Specifically, this enables notification of the fact that a new remote device was connected to the local port of an LLDP-MED network connectivity device, or that a remote device was removed from the local port. The purpose of this notification is efficient, near-real-time transmission of information regarding moves and changes to the management applications. Information carried

Name, OID, and syntax	Access	Description
		by the list of objects (varbind) contained in the notification allows the receiving management application to uniquely identify the local port where the topology change occurred, as well as the device capability of the remote endpoint device that was attached to or removed from the port.

Standard traps

This section describes the supported standard traps.

System status traps

Brocade supports the following traps from RFC 1215 and RFC 2863.

Trap name and number	Varbind	Description
coldStart 1.3.6.1.6.3.1.1.5.1	None	Indicates that the sending protocol entity is reinitializing itself; the agent's configuration or the protocol entity implementation may be altered.
warmStart 1.3.6.1.6.3.1.1.5.2	None	Indicates that the sending protocol entity is reinitializing itself; however, the agent configuration or the protocol entity implementation is not altered.
linkDown 1.3.6.1.6.3.1.1.5.3	ifEntry.ifIndex, ifEntry.ifDescr, ifEntry.ifAdminStatus, ifEntry.ifOperStatus, ifXEntry.ifAlias	A linkDown trap signifies that the SNMP entity acting in an agent role, has detected that the ifOperStatus object for one of its communication links is about to enter the down state from some other state (but not from the notPresent state). This other state is indicated by the included value of ifOperStatus.
linkUp 1.3.6.1.6.3.1.1.5.4	ifEntry.ifIndex, ifEntry.ifDescr, ifEntry.ifAdminStatus, ifEntry.ifOperStatus, ifXEntry.ifAlias	A linkUp trap signifies that the SNMP entity acting in an agent role, has detected that the ifOperStatus object for one of its communication links left the down state and transitioned into some other state (but not into the notPresent state). This other state is indicated by the included value of ifOperStatus.
NOTE Regarding linkUp and linkDown traps: Brocade FastIron release supports a maximum of 64 ports per module; thus, the ifIndex for the release ranges from 1 through 64 for Slot 1, from 65 through 128 for Slot2, and so on. Thus for Slot 2/Port 1, the value of the ifIndex of the port in Brocade FastIron release is 65.		
authenticationFailure 1.3.6.1.6.3.1.1.5.5	None	Indicates that the sending protocol entity is the addressee of a protocol message that is not properly authenticated. While implementations of SNMP must be capable of generating this trap, they must also be capable of suppressing the emission of such traps through an implementation-specific mechanism.

Traps for STP

Brocade supports the following traps for Spanning Tree Protocol (STP) from RFC 1493.

Trap name and number	Description
newRoot 1.3.6.1.2.1.17.0.1	Indicates that the sending agent has become the new root of the Spanning Tree. The trap is sent by a bridge soon after its election as the new root, for example, upon expiration of the Topology Change Timer immediately subsequent to its election.
topologyChange 1.3.6.1.2.1.17.0.2	Sent by a bridge when any of its configured ports transitions from the Learning state to the Forwarding state, or from the Forwarding state to the Blocking state. The trap is not sent if a newRoot trap is sent for the same transition.

Traps for alarms

Brocade supports the following traps for alarms from RFC 1757.

Trap name and number	Description
alarmRisingThreshold 1.3.6.1.2.1.16.3.1.1.7	A threshold for the sampled statistic. This object generates an event when the current sampled value is greater than or equal to this threshold, and the value at the last sampling interval was less than this threshold. This object also generates an event if the first sample after this entry becomes valid is greater than or equal to this threshold and the associated alarmStartupAlarm is equal to risingAlarm(1) or risingOrFallingAlarm(3). After a rising event is generated, another such event will not be generated until the sampled value falls below this threshold and reaches the alarmFallingThreshold.
alarmFallingThreshold 1.3.6.1.2.1.16.3.1.1.8	A threshold for the sampled statistic. This object generates an event when the current sampled value is less than or equal to this threshold, and the value at the last sampling interval was greater than this threshold. This object also generates an event if the first sample after this entry becomes valid is less than or equal to this threshold and the associated alarmStartupAlarm is equal to fallingAlarm(2) or risingOrFallingAlarm(3). After a falling event is generated, another such event will not be generated until the sampled value rises above this threshold and reaches the alarmRisingThreshold.

Pseudo wire traps

The following are the PW traps.

Additional MPLS-related traps are listed in GUID-0DDCFC7F-7533-4FB9-8273-1576F965A2B0, and GUID-1088C061-D6A8-40A1-A1D6-A039FF0897E5.

Trap name and number	Supported?	Varbind	Description
pwDown brcdIp.3.1.2.0.1	Yes	pwOperStatus (for start of range) pwOperStatus (for end of range) fdryPWServiceType	This notification is generated when the pwOperStatus object for one or more contiguous entries in pwTable are about to enter the down(2) state from some other state. The included values of pwOperStatus must all be set equal to this down(2) state.

Trap name and number	Supported?	Varbind	Description
pwUp brcdIp.3.1.2.0.2	Yes	pwOperStatus (for start of range) pwOperStatus (for end of range) fdryPWServiceType	This notification is generated when the pwOperStatus object for one or more contiguous entries in pwTable are about to enter the up(1) state from some other state.
pwDeleted brcdIp.3.1.2.0.3	Yes	pwID pwPeerAddrType pwPeerAddr fdryPWServiceType pwName	This notification is generated when the PW has been deleted. **NOTE** The pwname varbind is an extension added by Brocade; it is not a part of the Draft PW MIB Version 11.

MPLS Layer 3 VPN traps

The following table lists the MPLS Layer 3 VPN traps.

Trap name	Supported?	Varbind	Description
mplsL3VpnVrfUp 1.3.6.1.2.1.10.166.11.0.1	Yes	mplsL3VpnIfConfRowStatus, mplsL3VpnVrfOperStatus	Generated when ifOperStatus of any interface within the VRF changes to the up state.
mplsL3VpnVrfDown 1.3.6.1.2.1.10.166.11.0.2	Yes	mplsL3VpnIfConfRowStatus, mplsL3VpnVrfOperStatus	Generated when ifOperStatus of any interface within the VRF changes to the down state.
mplsL3VpnVrfRouteMidThreshExceeded 1.3.6.1.2.1.10.166.11.0.3	No	mplsL3VpnVrfPerfCurrNumRoutes, mplsL3VpnVrfConfMidRteThresh	This notification is generated when the number of routes contained by the specified VRF exceeds the value indicated by mplsL3VpnVrfMidRouteThreshold. A single notification must be generated when this threshold is exceeded, and no other notifications of this type should be issued until the value of mplsL3VpnVrfPerfCurrNumRoutes has fallen below that of mplsL3VpnVrfConfMidRteThresh.
mplsL3VpnVrfNumVrfRouteMaxThreshExceeded 1.3.6.1.2.1.10.166.11.0.4	No	mplsL3VpnVrfPerfCurrNumRoutes, mplsL3VpnVrfConfHighRteThresh	This notification is generated when the number of routes contained by the specified VRF exceeds or attempts to exceed the maximum allowed value as indicated by mplsL3VpnVrfMaxRouteThreshold. In cases where mplsL3VpnVrfConfHighRteThresh is set to the same value as mplsL3VpnVrfConfMaxRoutes, mplsL3VpnVrfConfHighRteThresh need not be exceeded; rather, just reached for this notification to be issued. Note that the mplsL3VpnVrfConfRteMxThrshTime object denotes the interval at which this notification will be reissued after the maximum value has been exceeded (or reached if mplsL3VpnVrfConfMaxRoutes and mplsL3VpnVrfConfHighRteThresh are equal) and the initial notification has been issued. This value is intended to prevent continuous generation of notifications by an agent in the event that routes are continually added to a VRF after it has reached its maximum value. The default value is 0 minutes. If this value is set to 0, the agent should only issue a single notification at the time that the maximum threshold has been reached, and should

Trap name	Supported?	Varbind	Description
			not issue any more notifications until the value of routes has fallen below the configured threshold value.
mplsL3VpnNumVrfSecIllglLblThrshExcd 1.3.6.1.2.1.10.166.11.0.5	No	mplsL3VpnVrfSecIllegalLblVltns	This notification is generated when the number of illegal label violations on a VRF as indicated by mplsL3VpnVrfSecIllegalLblVltns has exceeded mplsL3VpnIllLblRcvThrsh. The threshold is not included in the varbind here because the value of mplsL3VpnVrfSecIllegalLblVltns should be one greater than the threshold at the time this notification is issued.
mplsL3VpnNumVrfRouteMaxThreshCleared 1.3.6.1.2.1.10.166.11.0.6	No	mplsL3VpnVrfPerfCurrNumRoutes, mplsL3VpnVrfConfHighRteThresh	This notification is generated only after the number of routes contained by the specified VRF exceeds or attempts to exceed the maximum allowed value as indicated by mplsVrfMaxRouteThreshold, and then falls below this value. The notification informs the operator that the error condition has been cleared without the operator having to query the device. Note that the mplsL3VpnVrfConfRteMxThrshTime object denotes the interval at which the mplsNumVrfRouteMaxThreshExceeded notification will be reissued after the maximum value has been exceeded (or reached if mplsL3VpnVrfConfMaxRoutes and mplsL3VpnVrfConfHighRteThresh are equal) and the initial notification has been issued. Thus, the generation of this notification should also be emitted with this same frequency (assuming that the error condition is cleared). Specifically, if the error condition is reached and cleared several times during the period of time specified in mplsL3VpnVrfConfRteMxThrshTime, only a single notification is issued to indicate the first instance of the error condition as well as the first time the error condition is cleared. This behavior is intended to prevent continuous generation of notifications by an agent in the event that routes. This notification is generated only after the number of routes contained by the specified VRF exceeds or attempts to exceed the maximum allowed value as indicated by mplsVrfMaxRouteThreshold, and then falls below this value. The default value is 0. If this value is set to 0, the agent should issue a notification whenever the maximum threshold has been cleared.

Proprietary traps

This section presents the proprietary traps supported on devices running proprietary software.

> **NOTE**
> The traps in the proprietary MIBs include the following lines in their description:--#TYPE "Brocade Trap: Power Supply Failure"--#SUMMARY "Power supply fails, error status %d."--#ARGUMENTS { 0 }--#SEVERITY MINOR--#STATE OPERATIONAL

General traps

The table below lists the general traps generated by devices. Refer to the previous sections in this chapter to determine if traps for a feature must be enabled (for example, OSPF traps must be enabled) .

Trap name and number	Varbinds	Severity	Description and trap message
snTrapChasPwrSupply brcdIp.0.1 **NOTE** This object has been replaced by General traps and General traps	snChasPwrSupplyStatus	Minor	The power supply failed or is not operating normally. The value is a packed bit string; the power supply statuses are encoded into four bits (a nibble). The following shows the meaning of each bit: (Bit 0 is the least significant bit.) **Bit position and meaning** 4 to 31- Reserved 3 - Power Supply 2 DC (0=bad, 1=good). 2 - Power Supply 1 DC (0=bad, 1=good). 1 - Power Supply 2 present status (0-present, 1-not present). 0 - Power Supply 1 present status (0-present, 1-not present). **Sample trap message:** `Power supply fails, error status <snChasPwrSupplyStatus>`
snTrapLockedAddressViolation brcdIp.0.2	snSwViolatorPortNumber snSwViolatorMacAddress	Minor	The number of source MAC addresses received from a port is greater than the maximum number of addresses configured for that port. **Sample trap message:** `Lock address violation on Port <snSwViolatorPortNumber> with MAC Address <snSwViolatorMacAddress>`
snTrapModuleInserted brcdIp.0.28	snAgentBrdIndex	Informational	A module was inserted into the chassis while the system is running. **Sample trap message:** `Module <snAgentBrdIndex> was inserted to the chassis during system running`
snTrapModuleRemoved brcdIp.0.29	snAgentBrdIndex	Informational	A module was removed from the chassis while the system is running. **Sample trap message:** `Module <snAgentBrdIndex> was removed from the chassis during system running`
snTrapChasPwrSupplyFailed brcdIp.0.30	snChasPwrSupplyIndex snChasPwrSupplyDescription	Minor	A power supply in the device failed. **Sample trap message:** `Power supply <snChasPwrSupplyIndex> {<snChasPwrSupplyDescription>) failed`
snTrapChasFanFailed brcdIp.0.31	snChasFanIndex snChasFanDescription	Minor	A fan in the device failed. **Sample trap message:** `Fan <snChasFanIndex> (<snChasFanDescription>) failed`
snTrapLockedAddressViolation2 brcdIp.0.32	snAgGblTrapMessage	Minor	The number of source MAC addresses received from a port is greater than the maximum number of addresses configured for that port. **Sample trap message:** `Locked address violation at interface Ethernet <port>, address <mac>`

Trap name and number	Varbinds	Severity	Description and trap message
snTrapMgmtModuleRedunStateChange brcdIp.0.35	snAgGblTrapMessage	Warning	The management module changed its redundancy state. **Sample trap message:** `Management module at slot <slot-num> state changed from <old-state> to <new-state>`
snTrapTemperatureWarning brcdIp.0.36	snAgGblTrapMessage	Critical	The actual temperature reading is above the warning temperature threshold. **Sample trap message:** `Temperature <actual-temp> C degrees, warning level <warning-temp> C degrees, shutdown level <shutdown-temp> C degrees`
snTrapAccessListDeny brcdIp.0.37	snAgGblTrapMessage	Warning	A packet was denied by an access list. **Sample trap message: (for RIP):** `rip filter list <id> in rip denied <IP>, <n> event(s)`
snTrapMacFilterDeny brcdIp.0.38	snAgGblTrapMessage	Warning	A packet was denied by a MAC address filter. **Sample trap message:** `mac filter group denied packets on port <n> src macaddr <mac>, <n> packets`
snTrapDuplicateIp brcdIp.0.56		Major	A duplicate IP address was detected. **Sample trap message:** `Duplicate IP address detect.`
snTrapNoBmFreeQueue brcdIp.0.61		Warning	There are no free queues available in the buffer manager. **Sample trap message:** `Slot <slot-num> {M1|M2|M3|M4|M5|MiniG} Free Queue decreases less than the desirable values 3 consecutive times.`
snTrapSmcDmaDrop brcdIp.0.62		Informational	An SMC DMA packet has been dropped. **Sample trap message:** `Slot <slot-num> SMC <dma-id> DMA Drop Counter is <drop-count>.`
snTrapSmcBpDrop brcdIp.0.63		Informational	An SMC BackPlane packet has been dropped. **Sample trap message:** `Slot <slot-num> BP <dma-id> DMA Drop Counter is <drop-count>.`
snTrapBmWriteSeqDrop brcdIp.0.64		Informational	A BM write-sequence packet has been dropped. **Sample trap message:** `Slot <slot-num> Write Sequence Drop <drop-count> within 30 seconds.`
snTrapRunningConfigChanged brcdIp.0.73	snAgGblTrapMessage	Informational	The running configuration has been changed. **Sample trap message:** `Running-config was changed from telnet.`
snTrapStartupConfigChanged brcdIp.0.74	snAgGblTrapMessage	Informational	The startup configuration has been changed. **Sample trap message:**

Trap name and number	Varbinds	Severity	Description and trap message
			`Startup-config was changed from console.`
snTrapUserLogin brcdIp.0.75	snAgGblTrapMessage	Informational	A user logged in to a device. **Sample trap message:** `<user1> login to USER EXEC mode.`
snTrapUserLogout brcdIp.0.76	snAgGblTrapMessage	Informational	A user logged out of a device. **Sample trap message:** `<user1> logout from USER EXEC mode.`
snTrapChasPwrSupplyOK brcdIp.0.81	snChasPwrSupplyIndex, snChasPwrSupplyDescription	Notification	The SNMP trap that is generated when a power supply operational status changes from failure to normal **Sample trap message:** `Power supply <device> OK`
snTrapClientLoginReject brcdIp.0.110	snAgGblTrapMessage	Informational	A login by a Telnet or SSH client failed. **Sample trap message:** `telnet|SSH access [by <username>] from src IP <ip>, src MAC <mac> rejected, <n> attempt(s)`
snTrapLocalUserConfigChange brcdIp.0.111	snAgGblTrapMessage	Informational	The configuration of a local user account has been changed. **Sample trap message:** `user <name> added|deleted|modified from console|telnet|ssh|web|snmp`
snTrapVlanConfigChange brcdIp.0.112	snAgGblTrapMessage	Informational	A VLAN configuration has been changed. **FSample trap message:** `vlan <vlan-id> added|deleted|modified from console|telnet|ssh|web|snmp session`
snTrapAclConfigChange brcdIp.0.113	snAgGblTrapMessage	Informational	An ACL configuration has been changed. **Sample trap message:** `ACL <acl-id> added|deleted|modified from console|telnet|ssh|web|snmp session`
snTrapMacFilterConfigChange brcdIp.0.114	snAgGblTrapMessage	Informational	A MAC filter configuration has been changed. **Sample trap message:** `MAC Filter <added|deleted> from console|telnet|ssh|web|snmp session (filter id=<id>, src mac=<mac>|any, dst mac=<mac>|any)`
snTrapSNMPConfigChange brcdIp.0.115	snAgGblTrapMessage	Informational	SNMP configuration has been changed. **Sample trap message:** `[read-only community|read-writecommunity|contact|location|user|group|view|engineId|trap host] "<value>"deleted|added|modified from console|telnet|ssh|web|snmp session` NOTE A contact, location, user, group, view, trap host name may be displayed for <value>.
snTrapSyslogConfigChange brcdIp.0.116	snAgGblTrapMessage	Informational	Syslog configuration has been changed. **Sample trap message:**

Trap name and number	Varbinds	Severity	Description and trap message

			`Syslog server <ip-address> deleted|added|modified from console|telnet|ssh|web|snmp`
			or
			`Syslog operation enabled|disabled from console| telnet|ssh|web|snmp`

snTrapPasswordConfigChange brcdIp.0.117	snAgGblTrapMessage	Informational	The enable or line password has been changed.
			Sample trap message:
			`Enable <super|port-config|read-only> password deleted|added|modified from console|telnet|ssh| web|snmp`
			`or`
			`Line password deleted|added|modified from console|telnet|ssh|web|snmp`

snTrapServerStatusChange brcdIp.0.118	snAgGblTrapMessage	Informational	SNMP trap server has been enabled or disabled. **Sample trap message:** `SSH|Telnet server enabled|disabled from console| telnet|ssh|web|snmp session [by <user> <username>]`
snTrapPortPriorityChange brcdIp.0.122	snAgGblTrapMessage	Informational	This trap is generated when a port's priority is changed. **Sample trap message:** `Port <port-number> priority changed to <new-priority>`
snTrapDot1xSecurityViolation brcdIp.0.131	snAgGblTrapMessage	Alert	This trap is generated when a malicious MAC address is detected.
snTrapDot1xPortLinkChange brcdIp.0.132	snAgGblTrapMessage	Notification	This trap is generated when a software port link status is changed to up or down.
snTrapDot1xPortControlChange brcdIp.0.133	snAgGblTrapMessage	Notification	This trap is generated when software port control status is changed to authorize or unauthorize.
snTrapDot1xVlanIdChange brcdIp.0.134	snAgGblTrapMessage	Notification	This trap is generated when VLAN ID of a port is changed.
snTrapDot1xFilterSetupFailure brcdIp.0.135	snAgGblTrapMessage	Notification	This trap is generated when software failed to setup a filter to a MAC address of a port.
snTrapDot1xError brcdIp.0.136	snAgGblTrapMessage	Debugging	This trap is generated when software detects system error.

snTrapPortConfigChange brcdIp.0.137	snAgGblTrapMessage	Informational	This trap is generated when interface configuration is changed.
			The following are the additional traps generated with the reason when the GRE tunnel interface is down:
			• **admin down**
			`PORT: tn1 disabled by user from console session.`
			• **delete**
			`PORT: tn1, removed ip address xx.xx.x.x by user from console session.`
			• **IP address remove**
			`PORT: tn1 down due to tunnel ip address removed.`
			• **source down**

Trap name and number	Varbinds	Severity	Description and trap message

			`PORT: tn1 down due to tunnel source interface down.`
			• **destination route not found**
			`PORT: tn1 down due to tunnel no destination route.`
			• **keepalive down**
			`PORT: tn1 down due to GRE keepalive.`
			• **recursive routing down**
			`PORT: tn1 down due to GRE recursive routing.`
			The following trap is generated when the GRE tunnel interface is UP and running.
			• **Tunnel UP Trap**
			`PORT: tn1 enabled by user from console session.`

snTrapChasFanNormal brcdIp.0.149	snChasFanIndex snChasFanDescription	Minor	The status of a fan has changed from fail to normal. **Sample trap message:** `Fan <snChasFanIndex> (<snChasFanDescription>) ok`
snTrapLACPLinkStateChange brcdIp.0.155	ifIndex, snAgGblTrapMessage	Notification	This trap is generated when LACP port changes its state.
snTrapPBRConfigChanged brcdIp.0.173	snAgGblTrapMessage	Alert	This trap is generated when a Policy Based Routing (PBR) routemap is bound or unbound either globally or to an interface..
snTrapSysmaxReverted brcdIp.0.178	snAgGblTrapMessage	Warning	This trap is generated when the revertible sysmax elements are reverted during the card bringup if they cannot be accomodated in the available memory.
snTrapSysmaxLeftLowMem brcdIp.0.179	snAgGblTrapMessage	Warning	This trap is generated when that the configured sysmax set can leave less than 10% available memory free during bootup.
snTrapSysMemoryLowThreshold brcdIp.0.180	snAgGblTrapMessage	Warning	This trap is generated when the available dynamic memory in a card is below 5% of the installed physical memory.
snTrapSysMemoryOutThreshold brcdIp.0.181	snAgGblTrapMessage	Warning	This trap is generated when the dynamic memory fails to be allocated in a system.
snTrapLinkOAMLinkDown brcdIp.0.182	ifIndex, snAgGblTrapMessage	Notification	This trap is generated when Link-OAM port link status is changed to down.
snTrapLinkOAMLinkUp brcdIp.0.183	ifIndex, snAgGblTrapMessage	Notification	This trap is generated when Link-OAM port link status is changed to up.
snTrapLinkOAMLoopbackEntered brcdIp.0.185	ifIndex, dot3OamLoopbackStatus, snAgGblTrapMessage	Notification	This trap is generated when Link-OAM port has entered the loopback mode. The link is not useful for data transfer any more.
snTrapLinkOAMLoopbackCleared brcdIp.0.186	ifIndex, dot3OamLoopbackStatus, snAgGblTrapMessage	Notification	This trap is generated when Link-OAM port has cleared the loopback mode.

MAC-based VLAN traps

The following table contains MAC-based VLAN traps.

Trap name and number	Varbinds	Severity	Description and trap message
snTrapMacAuthVlanIdChange brcdIp.0.138	snAgGblTrapMessage	Notification	VLAN ID of a port has changed.
snTrapMacBasedVlanEnabled brcdIp.0.147	snAgGblTrapMessage	Notification	MAC-based VLAN is enabled. **Sample trap message:** `SNTrapMacBasedVlanEnabled: Mac Based Vlan Enabled on port <port id>.`
snTrapMacBasedVlanDisabled brcdIp.0.148	snAgGblTrapMessage	Notification	MAC-based VLAN is disabled. **Sample trap message:** `SNTrapMacBasedVlanDisabled : Mac Based Vlan Disabled on port <port id>.`

snTrapMacMoveThresholdRate brcdIp.0.197	snAgGblTrapMessage	Notification	The SNMP notification is generated when MAC movement is exceeding the certain threshold for a sampling interval is detected.
			Sample trap message:
			`Mac-Move threshold-rate: MAC address <mac> moved from interface <port-id> to interface <port-id> for vlan <vlan-id>,`
			`<move-count> times exceeding the threshold rate <threshold-rate> for a sampling interval <interval> seconds`

snTrapMacMoveIntervalHistory brcdIp.0.198	snAgGblTrapMessage	Notification	The SNMP notification is generated for every user configured interval, summarizing the moves in the interval. Sample trap message: `Mac-Move Interval-History: <#macs> macs moved in last <interval> seconds. Total number of mac moves in the interval is <#moves>`

VRRP traps

The following table contains VRRP trap that can be used only by the devices that support VRRP.

Trap name and number	Varbinds	Severity	Description and trap message
snTrapVrrpIfStateChange brcdIp.0.34	snAgGblTrapMessage	Warning	A VRRP routing device changed state from master to backup or vice versa.

Trap name and number	Varbinds	Severity	Description and trap message
			Sample trap message: `VRRP intf state changed, intf <port>, vrid <id>, state <new-state>.`

VSRP traps

The following traps can be used by the devices that support VSRP.

Trap name and number	Varbinds	Severity	Description
snTrapVsrpStateChange brcdIp.0.83	snAgGblTrapMessage	Informational	A VSRP routing device changed its state.
snTrapVsrpCamError brcdIp.0.84	snAgGblTrapMessage	Informational	A VSRP CAM error has occurred.

OSPF traps

NOTE

You must configure the **log adjacency** command under the "router ospf" mode to see traps for the following objects: ospfIfStateChange trap ospfNbrStateChange trap ospfVirtIfStateChange trap ospfVirtNbrStateChange trap

Trap name and number	Varbinds	Severity	Description and trap message
snTrapOspfIfStateChange 1.3.6.1.2.1.14.16.2.3	snOspfRouterId (The originator of the trap) snOspfIfStatusIpAddress snOspfIfStatusState (The new state)	Informational	There has been a change in the state of a non-virtual OSPF interface. This trap should be generated when the interface state regresses (for example, goes from Dr to Down) or progresses to a terminal state (for example, Point-to-Point, DR Other, Dr, or Backup). NOTE You must configure the **log adjacency** command under the "router ospf" mode to see traps. **Sample trap message:** `OSPF router id <snOspfRouterId>, interface <snOspfIfStatusIpAddress> state changed to <snOspfIfStatusState>.`
snTrapOspfVirtIfStateChange 1.3.6.1.2.1.14.16.2.4	snOspfRouterId (The originator of the trap) snOspfVirtIfStatusAreaID snOspfVirtIfStatusNeighbor	Informational	There has been a change in the state of an OSPF virtual interface. This trap should be generated when the interface state regresses (for example, goes from Point-to-Point to Down) or progresses to a

Trap name and number	Varbinds	Severity	Description and trap message
	snOspfVirtIfStatusState (The new state)		terminal state (for example, Point-to-Point). **NOTE** You must configure the **log adjacency** command under the "router ospf" mode to see traps. **Sample trap message:** `OSPF router id <snOspfRouterId>, virtual interface area id <snOspfVirtIfStatusAreaID> neighbor <snOspfVirtIfStatusNeighbor> state changed to <snOspfVirtIfStatusState>.`
snOspfNbrStateChange 1.3.6.1.2.1.14.16.2.5	snOspfRouterId (The originator of the trap) snOspfNbrIpAddr snOspfNbrRtrId snOspfNbrState (The new state)	Informational	There has been a change in the state of a non-virtual OSPF neighbor. This trap should be generated when a neighbor state regresses (for example, goes from Attempt or Full to 1-Way or Down) or progresses to a terminal state (for example, 2-Way or Full). When an neighbor transitions from or to Full on non-broadcast multi-access and broadcast networks, the trap should be generated by the designated router. A designated router transitioning to Down will be noted by ospfIfStateChange. **NOTE** You must configure the **log adjacency** command under the "router ospf" mode to see traps. **Sample trap message:** `OSPF router id <snOspfRouterId> neighbor area <snOspfNbrIpAddr>,neighbor router id <snOspfNbrRtrId> state changed to <snOspfNbrState>.`
snOspfVirtNbrStateChange 1.3.6.1.2.1.14.16.2.6	snOspfRouterId (The originator of the trap) snOspfVirtNbrArea snOspfVirtNbrRtrId snOspfVirtNbrState (The new state)	Informational	There has been a change in the state of an OSPF virtual neighbor. This trap should be generated when the neighbor state regresses (for example, goes from Attempt or Full to 1-Way or Down) or progresses to a terminal state (for example, Full).

Trap name and number	Varbinds	Severity	Description and trap message
			NOTE You must configure the **log adjacency** command under the "router ospf" mode to see traps. **Sample trap message:** `OSPF router id <snOspfRouterId> virtual neighbor area <snOspfVirtNbrArea>, virtual neighbor router id <snOspfVirtNbrRtrId> state changed to <snOspfVirtNbrState>.`
snOspfIfConfigError 1.3.6.1.2.1.14.16.2.7	snOspfRouterId (The originator of the trap) snOspfIfStatusIpAddress snOspfPacketSrc (The source IP address) snOspfConfigErrorType (Type of error) snOspfPacketType	Major	A packet has been received on a non-virtual interface from a router whose configuration parameters conflict with this router's configuration parameters. **NOTE** The optionMismatch event should cause a trap only if it prevents an adjacency from forming. **Sample trap message:** `Configuration error type <snOspfConfigErrorType> with packet type <snOspfPacketType> has been received on interface <snOspfIfStatusIpAddress>, router id <snOspfRouterId> from <snOspfPacketSrc>.`
snOspfVirtIfConfigError 1.3.6.1.2.1.14.16.2.8	snOspfRouterId (The originator of the trap) snOspfVirtIfStatusAreaID snOspfVirtIfStatusNeighbor snOspfConfigErrorType (Type of error) snOspfPacketType	Major	A packet has been received on a virtual interface from a router whose configuration parameters conflict with this router's configuration parameters. **NOTE** The optionMismatch event should cause a trap only if it prevents an adjacency from forming. **Sample trap message:** `Configuration error type <snOspfConfigErrorType> with packet type <snOspfPacketType> has been received on virtual interface area id <snOspfVirtIfStatusAreaID>`

Trap name and number	Varbinds	Severity	Description and trap message
			, router id <snOspfRouterId> from neighbor <snOspfVirtIfStatusNeighbor>.
snOspfIfAuthFailure 1.3.6.1.2.1.14.16.2.9	snOspfRouterId (The originator of the trap) snOspfIfStatusIpAddress snOspfPacketSrc (The source IP address) snOspfConfigErrorType (authTypeMismatch or authFailure snOspfPacketType	Minor	A packet has been received on a non-virtual interface from a router whose authentication key or authentication type conflicts with this router's authentication key or authentication type. **Sample trap message:** OSPF authentication failed. Router ID <snOspfRouterId>, Interface <snOspfIfStatusIpAddress>, packet src <snOspfPacketSrc>, error type <snOspfConfigErrorType> and packet type <snOspfPacketType>.
snOspfVirtIfAuthFailure 1.3.6.1.2.1.14.16.2.10	snOspfRouterId (The originator of the trap) snOspfVirtIfStatusAreaID snOspfVirtIfStatusNeighbor snOspfConfigErrorType (authTypeMismatch or authFailure) snOspfPacketType	Minor	A packet has been received on a virtual interface from a router whose authentication key or authentication type conflicts with this router's authentication key or authentication type. **Sample trap message:** OSPF authentication failed. Router ID <snOspfRouterId>, virtual interface <snOspfVirtIfStatusAreaID>, Neigbor <snOspfVirtIfStatusNeighbor>, Error type <snOspfConfigErrorType> and packet type <snOspfPacketType>.
snOspfIfRxBadPacket 1.3.6.1.2.1.14.16.2.11	snOspfRouterId (The originator of the trap) snOspfIfStatusIpAddress snOspfPacketSrc (The source IP address) snOspfPacketType	Warning	An OSPF packet has been received on a non-virtual interface that cannot be parsed. **Sample trap message:** OSPF Router Id <snOspfRouterId>, interface <snOspfIfStatusIpAddress> receive bad packet (type <snOspfPacketType>) from <snOspfPacketSrc>.
snOspfVirtIfRxBadPacket 1.3.6.1.2.1.14.16.2.12	snOspfRouterId (The originator of the trap)	Warning	An OSPF packet has been received on a virtual interface that cannot be parsed.

Trap name and number	Varbinds	Severity	Description and trap message
	snOspfVirtIfStatusAreaID snOspfVirtIfStatusNeighbor snOspfPacketType		**Sample trap message:** `OSPF router id <snOspfRouterId>, virtual interface <snOspfVirtIfStatusAreaID> received bad packet (type <snOspfPacketType>) from neighbor <snOspfVirtIfStatusNeighbor>.`
snOspfTxRetransmit 1.3.6.1.2.1.14.16.2.13	snOspfRouterId (The originator of the trap) snOspfIfStatusIpAddress snOspfNbrRtrId (Destination) snOspfPacketType snOspfLsdbType snOspfLsdbLsId snOspfLsdbRouterId	Warning	An OSPF packet has been retransmitted on a non-virtual interface. All packets that may be retransmitted are associated with an LSDB entry. The LS type, LS ID, and Router ID are used to identify the LSDB entry. **Sample trap message:** `OSPF router id <snOspfRouterId> interface <snOspfIfStatusIpAddress> retransmitted packet type <snOspfPacketType>,LSDB type <snOspfLsdbType>, LSDB LS ID <snOspfLsdbLsId> and LSDB router id <snOspfLsdbRouterId> to Neighbor router id <snOspfNbrRtrId>.`
ospfVirtIfTxRetransmit 1.3.6.1.2.1.14.16.2.14	snOspfRouterId (The originator of the trap) snOspfVirtIfStatusAreaID snOspfVirtIfStatusNeighbor snOspfPacketType snOspfLsdbType snOspfLsdbLsId snOspfLsdbRouterId	Warning	An OSPF packet has been retransmitted on a virtual interface. All packets that may be retransmitted are associated with an LSDB entry. The LS type, LS ID, and Router ID are used to identify the LSDB entry. **Sample trap message:** `OSPF router id <snOspfRouterId>, virtual interface area id snOspfVirtIfStatusAreaID> retransmitted packet type <snOspfPacketType>,LSDB type <snOspfLsdbType>, LSDB LS ID <snOspfLsdbLsId> and LSDB router id <snOspfLsdbRouterId> to Neighbor <snOspfVirtIfStatusNeighbor>.`
snOspfOriginateLsa 1.3.6.1.2.1.14.16.2.15	snOspfRouterId (The originator of the trap) snOspfLsdbAreaId (0.0.0.0 for AS Externals)	Informational	This router originated a new LSA. This trap should not be invoked for simple refreshes of LSAs (which happens every 30 minutes), but

Trap name and number	Varbinds	Severity	Description and trap message
	snOspfLsdbType snOspfLsdbLsId snOspfLsdbRouterId		instead will only be invoked when an LSA is re-originated due to a topology change. Additionally, this trap does not include LSAs that are being flushed because they have reached MaxAge **Sample trap message:** `New LSA (area id <snOspfLsdbAreaId>, type <snOspfLsdbType>, LS Id <snOspfLsdbLsId> and router id <snOspfLsdbRouterId>) has been originated by router id <snOspfRouterId>.`
snOspfMaxAgeLsa 1.3.6.1.2.1.14.16.2.16	snOspfRouterId (The originator of the trap) snOspfLsdbAreaId (0.0.0.0 for AS Externals) snOspfLsdbType snOspfLsdbLsId snOspfLsdbRouterId	Warning	One of the LSAs in the router's link-state database has aged to MaxAge. **Sample trap message:** `The LSA (area id <snOspfLsdbAreaId>, type <snOspfLsdbType>, LS Id <snOspfLsdbLsId> and router id <snOspfLsdbRouterId>) in router id <snOspfRouterId> link-state database has aged to maximum age.`
snOspfLsdbOverflow 1.3.6.1.2.1.14.16.2.17	snOspfRouterId (The originator of the trap) snOspfExtLsdbLimit	Warning	The number of LSAs in the router's link-state database has exceeded the ospfExtLsdbLimit. **Sample trap message:** `The number of LSAs in the OSPF router id <snOspfRouterId> link-state database has exceeded <snOspfExtLsdbLimit>.`
snOspfLsdbApproachingOverflow 1.3.6.1.2.1.14.16.2.18	snOspfRouterId (The originator of the trap) snOspfExtLsdbLimit	Informational	The number of LSAs in the router's link-state database has exceeded 90 percent of the ospfExtLsdbLimit. **Sample trap message:** `The number of LSAs in the OSPF router id <snOspfRouterId> link-state database has exceeded ninety percent of <snOspfExtLsdbLimit>.`

Layer 4 traps

The following table presents the traps that can be generated for Layer 4 functionality.

Trap name and number	Varbinds	Severity	Description and trap message
snTrapL4Max SessionLimit Reached brcdIp.0.19	snL4MaxSession Limit	Warning	The maximum number of connections has been reached. **Sample trap message:** `SLB maximum number of connections <snL4MaxSessionLimit> has been reached.`
snTrapL4TcpSyn LimitReached brcdIp.0.20	snL4TcpSynLimit	Warning	The TCP SYN limits have been reached. **Sample trap message:** `SLB TCP Syn limits <snL4TcpSynLimit> have been reached.`
snTrapL4RealServer Up brcdIp.0.21	snL4TrapRealSer verIP snL4TrapRealSer verName	Informational	The load balancing real server is up. **Sample trap message:** `SLB real server <snL4TrapRealServerIP> <snL4TrapRealServerName> is up.`
snTrapL4RealServer Down brcdIp.0.22	snL4TrapRealSer verIP snL4TrapRealSer verName	Informational	The load balancing real server is down. **Sample trap message:** `SLB real server <snL4TrapRealServerIP> <snL4TrapRealServerName> is down.`
snTrapL4RealServer PortUp brcdIp.0.23	snL4TrapRealSer verIP snL4TrapRealSer verName snL4TrapRealSer verPort	Informational	The load balancing real server TCP port is up. **Sample trap message:** `SLB real server port <snL4TrapRealServerIP> <snL4TrapRealServerName> <snL4TrapRealServerPort> is up`
snTrapL4RealServer PortDown brcdIp.0.24	snL4TrapRealSer verIP snL4TrapRealSer verName snL4TrapRealSer verPort	Informational	The load balancing real server TCP port is down. **Sample trap message:** `SLB real server port <snL4TrapRealServerIP> <snL4TrapRealServerName> <snL4TrapRealServerPort> is.`
snTrapL4RealServer MaxConnectionLimit Reached brcdIp.0.25	snL4TrapRealSer verIP snL4TrapRealSer verName snL4TrapRealSer verCurConnections	Warning	The real server reached its maximum number of connections. **Sample trap message:** `SLB real server <snL4TrapRealServerIP> <snL4TrapRealServerName> maximum connection <snL4TrapRealServerCurConnections> has been reached.`
snTrapL4Become Standby brcdIp.0.26		Warning	The Server Load Balancing switch changed its state from active to standby. **Sample trap message:** `SLB changes state from active to standby.`
snTrapL4Become Active brcdIp.0.27		Warning	The Server Load Balancing switch changed its state from standby to active. **Sample trap message:**

Trap name and number	Varbinds	Severity	Description and trap message
			`SLB changes state from standby to active.`
snTrapL4Gslb RemoteUp brcdIp.0.39	snAgGblTrapMes sage	Warning	The connection to the remote ServerIron is up. **Sample trap message:** `L4 gslb connection to site <name> SI <agent IP> <SI name> is up`
snTrapL4Gslb RemoteDown brcdIp.0.40	snAgGblTrapMes sage	Warning	The connection to the remote ServerIron is down. **Sample trap message:** `L4 gslb connection to site <name> SI <agent IP> <SI name> is down`
snTrapL4Gslb RemoteControllerUp brcdIp.0.41	snAgGblTrapMes sage	Warning	The connection to the GSLB ServerIron is up. **Sample trap message:** `L4 gslb connection to gslb SI <IP> is up`
snTrapL4Gslb RemoteControllerDown brcdIp.0.42	snAgGblTrapMes sage	Warning	The connection to the GSLB ServerIron is down. **Sample trap message:** `L4 gslb connection to gslb SI <IP> is down`
snTrapL4Gslb HealthCheckIpUp brcdIp.0.43	snAgGblTrapMes sage	Warning	The GSLB health check for an address changed from the down to the active state. **Sample trap message:** `L4 gslb health-check <IP> of <subname>.<zonename> status changed to up`
snTrapL4Gslb HealthCheckIpDown brcdIp.0.44	snAgGblTrapMes sage	Warning	The GSLB health check for an address changed from the active to the down state. **Sample trap message:** `L4 gslb health-check <IP> of <subname>.<zonename> status changed to down`
snTrajjjpL4Gslb HealthCheckIpPort Up brcdIp.0.45	snAgGblTrapMes sage	Warning	A port for a health check address is up. **Sample trap message:** `L4 gslb health-check <IP> of <subname>.<zonename> port <server-port> is up`
snTrapL4Gslb HealthCheckIpPort Down brcdIp.0.46	snAgGblTrapMes sage	Warning	A port for a health check address is down. **Sample trap message:** `L4 gslb health-check <IP> of <subname>.<zonename> port <server-port> is down`
snTrapL4Firewall BecomeStandby brcdIp.0.47		Major	The Server Load Balancing switch firewall changed its state from active to standby. **Sample trap message:** `firewall group #<group> become standby`

Trap name and number	Varbinds	Severity	Description and trap message
snTrapL4Firewall BecomeActive brcdIp.0.48		Major	The Server Load Balancing switch firewall changed its state from standby to active. **Sample trap message:** `firewall group #<group> become active`
snTrapL4Firewall PathUp brcdIp.0.49		Minor	The Server Load Balancing switch firewall path is up. **Sample trap message:** `firewall path up target <IP> nexthop <IP> path <num> port <num>`
snTrapL4Firewall PathDown brcdIp.0.50		Minor	The Server Load Balancing switch firewall path is down. **Sample trap message:** `Firewall path down target <IP> nexthop <IP> path <num> port <num>`
snTrapL4Content Verification brcdIp.0.55		Informational	The HTTP match list pattern has been found. **Sample trap message:** `HTTP match-list pattern is found.`
snTrapL4RealServer ResponseTime LowerLimit brcdIp.0.67	snAgGblTrapMes sage	Warning	The real server average response time exceeded the lower threshold. **Sample trap message:** `Port <port-num> on server <server-name>: <IP>: Avg response time <num> has exceeded lower threshold`
snTrapL4RealServer ResponseTime UpperLimit brcdIp.0.68	snAgGblTrapMes sage	Warning	The real server average response time exceeded the upper threshold. **Sample trap message:** `Port <port-num> on server <server-name>: <IP>: Avg response time <num> has exceeded upper threshold; Bringing down the port...`
snTrapL4TcpAttack RateExceedMax brcdIp.0.69	snAgGblTrapMes sage	Critical	The TCP attack rate exceeds the configured maximum TCP attack rate. **Sample trap message:** `L4 TCP Attack Rate Exceed Max`
snTrapL4TcpAttack RateExceed Threshold brcdIp.0.70	snAgGblTrapMes sage	Warning	The TCP attack rate exceeds 80 percent of the configured maximum. **Sample trap message:** L4 TCP Attack Rate Exceed Threshold
snTrapL4Connection RateExceedMax brcdIp.0.71	snAgGblTrapMes sage	Critical	The Layer 4 connection rate exceeds the configured maximum. **Sample trap message:** `L4 Connection Rate Exceed Max`
snTrapL4Connection RateExceed Threshold brcdIp.0.72	snAgGblTrapMes sage	Warning	The Layer 4 connection rate exceeds 80 percent of the configured maximum. **Sample trap message:** `L4 Connection Rate Exceed Threshold`

ICMP traps

The following traps are generated for ICMP functionalities.

Trap name and number	Varbinds	Severity	Description and trap message
snTrapIcmpLocalExceedBurst brcdIp.0.51	snAgGblTrapMessage	Warning	Incoming ICMP exceeded the maximum local burst packets. **Sample trap message:** `Local ICMP exceeds <num> burst packets, stopping for <num> seconds!!`
snTrapIcmpTransitExceedBurst brcdIp.0.52	snAgGblTrapMessage	Warning	Transit ICMP exceeded the maximum transit burst packets. **Sample trap message:** `Transit ICMP in interface <port-num> exceeds <num> burst packets, stopping for <num> seconds!!`

TCP traps

The following traps are generated for TCP functionalities.

Trap name and number	Varbinds	Severity	Description and trap message
snTrapTcpLocalExceedBurst brcdIp.0.53	snAgGblTrapMessage	Warning	Incoming TCP exceeded the maximum local burst packets. **Sample trap message:** `Local TCP exceeds <num> burst packets, stopping for <num> seconds!!`

snTrapTcpTransitExceedBurst
brcdIp.0.54
	snAgGblTrapMessage	Warning	Transit TCP exceeded the maximum transit burst packets.
			Sample trap message:
			`Transit TCP in interface <port-num> exceeds <num> burst packets, stopping for <num> seconds!!`
			Sample trap message:
			`Locked address violation at <port-name> <port-num>, address <mac>`

BGP traps

The following table contains BGP traps that are obsolete and has been replaced with the BGP4v2 notifications.

Trap name and number	Varbinds	Severity	Description and trap message
snTrapBgpPeerUp brcdIp.0.65	snAgGblTrapMessage	Informational	The Border Gateway Protocol (BGP) peer is up.

Trap name and number	Varbinds	Severity	Description and trap message
			Sample trap message: `BGP Peer <IP> UP(ESTABLISHED)`
snTrapBgpPeerDown brcdIp.0.66	snAgGblTrapMessage	Informational	The BGP peer is down. **Sample trap message:** `BGP Peer <IP> DOWN (<reason-string>)\n`

Port security traps

The port security feature enables a device to learn a limited number of "secure" MAC addresses on an interface. The interface forwards only those packets with source MAC addresses that match the secure addresses. The following traps are generated, if the interface receives MAC addresses that are included in its secure MAC list.

NOTE

The following traps apply to ports that have the port security feature enabled.

Trap name and number	Varbinds	Severity	Description and trap message
snTrapPortSecurityViolation brcdIp.0.77	snAgGblTrapMessage	Minor	Packets from an unknown MAC address are dropped. **Sample trap message:** Brocade `Trap: Port Security Violation`
snTrapPortSecurityShutdown brcdIp.0.78	snAgGblTrapMessage	Minor	The port is disabled for the amount of time configured using the **violation shutdown** *<minutes>* port security CLI command. **Sample trap message:** Brocade `Trap: Port Security Violation Cause Shutdown`

MRP traps

The following traps are generated for MRP functionalities.

Trap name and number	Varbinds	Severity	Description
snTrapMrpStateChange brcdIp.0.79	snAgGblTrapMessage	Informational	An MRP state occurred.
snTrapMrpCamError brcdIp.0.80	snAgGblTrapMessage	Warning	An MRP CAM error occurred.

BPDU guard and root guard traps

The following are the traps for BPDU guard and root guard.

Trap name and number	Varbinds	Severity	Description and trap message
snTrapStpRootGuardDetect brcdIp.0.150	ifIndex, snVLanByPortCfgVLanId, snAgGblTrapMessage	Notification	The SNMP trap that is generated when a Root-Guarded port receives a superior BPDU. **Sample trap message:** Brocade `Trap: Stp root guard detect`
snTrapStpRootGuardExpire brcdIp.0.151	ifIndex, snVLanByPortCfgVLanId, snAgGblTrapMessage	Notification	The SNMP trap that is generated when a port's Root-Guard expires. **Sample trap message:** Brocade `Trap: Stp root guard expire`
snTrapStpBPDUGuardDetect brcdIp.0.152	ifIndex, snVLanByPortCfgVLanId, snAgGblTrapMessage	Notification	The SNMP trap that is generated when a BPDU-guarded is disabled because it received a BPDU. **Sample trap message:** Brocade `Trap: STP BPDU guard`
snTrapMstpBPDUGuardDetect brcdIp.0.153	ifIndex, snAgGblTrapMessage	Notification	The SNMP trap that is generated when a BPDU-guarded port receiveds a BPDU. **Sample trap message:** Brocade `Trap: MSTP BPDU guard.`
snTrapErrorDisableAction brcdIp.0.154	ifIndex, snAgGblTrapMessage	Notification	The SNMP trap that is generated when an interface error-disable is hit or recovery times out. **Sample trap message:** Brocade `Trap: Error-disable hit or recovery times out.`
snTrapStpRootGuardExpire brcdIp.0.160	ifIndex, snVLanByPortCfgVLanId, snAgGblTrapMessage	Notification	The SNMP trap that is generated when a port is re-enabled after it has been disabled because it received a BPDU packet and BPDU Guard is enabled. **Sample trap message:** Brocade `Trap: STP BPDU Guard Expire.`
snTrapPortLoopDetection brcdIp.0.161	ifIndex, snVLanByPortCfgVLanId, snAgGblTrapMessage	Notification	The SNMP notification is generated when a port loop is detected. **Sample trap message:** Brocade `Trap: LOOP DETECTION: VLAN <id>, port <slot>/<port> detect, putting into err-disable state`
snTrapSTPRootGuard Violation brcdIp.0.1204	snAgGblTrapMessage	Notification	The SNMP trap that is generated when STP Root Guard Violation occurs on a port.

Trap name and number	Varbinds	Severity	Description and trap message
			Sample trap message: Brocade `Trap: STP Root Guard Violation`
snTrapRSTPRootGuard Violation brcdIp.0.1205	snAgGblTrapMessage	Notification	The SNMP trap that is generated when RSTP Root Guard Violation occurs on a port. **Sample trap message:** Brocade `Trap: RSTP Root Guard Violation`

Traps for optics

Trap name and number	Varbinds	Severity	Description and trap message
snTrapOpticalMonitoringWarning brcdIp.0.1003	snAgGblTrapMessage	Warning	A warning occurred during optical monitoring. **Sample trap message:** `Latched high Temperature alarm, port <slot>/<port>`
snTrapOpticalMonitoringAlarm brcdIp.0.1004	snAgGblTrapMessage	Alerts	An alarm occurred during optical monitoring due to a low temperature in the device. **Sample trap message:** `Latched low Temperature alarm, port <slot>/<port>`

snTrapOpticalMonitoringError brcdIp.0.1005	snAgGblTrapMessage	Informational	An error occurred during optical monitoring.
			Samples trap message:
			`OPTICAL MONITORING: sys_create_timer failed, slot <n>, port mask <portmask>`
			`OPTICAL MONITORING: sys_set_timer failed, slot <n>, port mask <portmask>`
			`OPTICAL MONITORING: THRESHOLDS READ FAILED, port <slot>/<port>`
			`OPTICAL MONITORING: AUX AD TYPE READ FAILED, port <slot>/<port>"`
			`OPTICAL MONITORING: INT UNMASK ALL WRITE FAILED, port <slot>/<port>`
			`OPTICAL MONITORING: INT MASK WRITE FAILED, port <slot>/<port>`

Trap name and number	Varbinds	Severity	Description and trap message

			`OPTICAL MONITORING: OPTICAL INT MASK WRITE FAILED, port <slot>/<port>`
			`OPTICAL MONITORING: port <slot>/<port>: sys_create_timer failed`
			`OPTICAL MONITORING: port <slot>/<port>: sys_create_timer2 failed`
			`OPTICAL MONITORING: port <slot>/<port>: sys_set_timer failed`
			`OPTICAL MONITORING: port <slot>/<port>, failed to get latched flags(<n>)`
			`OPTICAL MONITORING: port <slot>/<port>: sys_set_timer1 failed`

snTrapXfpSfpNotFoundryOptics brcdIp.0.1018	snAgGblTrapMessage	Alerts	The SNMP trap that is generated if the optics vendor is not from Brocade.

Traps for stacking

The following table has traps for stacking.

Trap name and number	Varbinds	Severity	Description and trap message
snTrapStackingMasterElected brcdIp.0.163	snChasUnitIndex, snAgGblTrapMessage	Minor	The SNMP trap that is generated when a unit is elected as the Master unit for the stacking system. **Sample trap message:** `Stack unit <unitNumber> has been elected as ACTIVE unit of the stack system`
snTrapStackingUnitAdded brcdIp.0.164	snChasUnitIndex, snAgGblTrapMessage	Minor	The SNMP trap that is generated when a unit has been added to the stacking system. **Sample trap message:** `Stack: Stack unit <unitNumber> has been added to the stack system`
snTrapStackingUnitDeleted brcdIp.0.165	snChasUnitIndex, snAgGblTrapMessage	Minor	The SNMP trap that is generated when a unit has been deleted from the stacking system. **Sample trap message:** `Stack: Stack unit <unitNumber> has been deleted to the stack system`

Trap name and number	Varbinds	Severity	Description and trap message
snTrapStackingChasPwrSupplyOK brcdIp.0.166	snChasUnitIndex, snChasPwrSupplyIndex, snAgGblTrapMessage	Minor	The SNMP trap that is generated when a power supply operational status changed from failure to normal for a stacking system. **Sample trap message:** `System: Stack unit <unitNumber> Power supply <snChasPwrSupplyIndex> is up`
snTrapStackingChasPwrSupplyFailed brcdIp.0.167	snChasUnitIndex, snChasPwrSupplyIndex, snAgGblTrapMessage	Minor	The SNMP trap that is generated when a power supply operational status changed from normal to failure for a stacking system. **Sample trap message:** `System: Stack unit <unitNumber> Power supply <snChasPwrSupplyIndex> is down`
snTrapStackingChasFanNormal brcdIp.0.168	snChasUnitIndex, snChasFanIndex, snChasFanDescription	Minor	The SNMP trap that is generated when a fan operational status changed from failure to normal for a stacking system. **Sample trap message:** `System: Stack unit <unitNumber> Fan <snChasFanIndex> (<snChasFanDescription>), ok`
snTrapStackingChasFanFailed brcdIp.0.169	snChasUnitIndex, snChasFanIndex, snChasFanDescription	Minor	The SNMP trap that is generated when a fan fails to operate normally for a stacking system. **Sample trap message:** `System: Stack unit <unitNumber> Fan <snChasFanIndex> (<snChasFanDescription>), failed`
snTrapStackingManagementMAC Changed brcdIp.0.170	snAgGblTrapMessage	Minor	The SNMP trap that is generated when the managemnet MAC address of a stacking system has been changed. **Sample trap message:** `System: Management MAC address changed to <mac_address>`
snTrapStackingTemperatureWarning brcdIp.0.171	snChasUnitIndex, snAgGblTrapMessage	Minor	The SNMP trap that is generated when the actual temperature reading is above the warning temperature threshold for a stack sytem. **Sample trap message:**

Trap name and number	Varbinds	Severity	Description and trap message
			`System: Stack unit <unitNumber> Temperature <actual-temp> C degrees, warning level <warning-temp> C degrees, shutdown level <shutdown-temp> C degrees`
snTrapStackingStandbyElected brcdIp.0.196	snChasUnitIndex, snAgGblTrapMessage	Minor	The SNMP trap that is generated when a unit is elected as Standby unit for the stacking system.
snTrapStackingMixedModeChanged brcdIp.0.199	snStackingGlobalMixedMode, snAgGblTrapMessage	Notification	The SNMP trap that is generated when a stacking system mode is changed. Sample trap message: `The stacking system is changed to Mixed Stacking mode`
snTrapSysMonErrorDetect brcdIp.0.200	snAgGblTrapMessage	Warning	The SNMP notification is generated when SYSMON detects internal error. Sample trap message: Brocade `Trap: SYSMON error Detection`
snTrapStpDesignatedGuardDetect brcdIp.0.203	ifIndex, snVLanByPortCfgVLanId, snAgGblTrapMessage	Notification	The SNMP trap is generated when VLAN ports Designated-Guard is detected.
snTrapStpDesignatedGuard Disable brcdIp.0.204	ifIndex, snVLanByPortCfgVLanId, snAgGblTrapMessage	Notification	The SNMP trap is generated when VLAN ports Designated-Guard is disabled.
snTrapLicenseNNLLTrialNotify brcdIp.0.205	snAgGblTrapMessage	Notification	The SNMP trap is generated when a non-node locked licensed feature is enabled with a non-node locked license installed. **Format:** Stack *<stack_id>*: Use of the *<feature_name>* feature requires a license to be purchased and installed within *<day>* days.
snTrapLicenseNNLLTrialExpiry brcdIp.0.206	snAgGblTrapMessage	Notification	The SNMP trap is generated when a non-node locked licensed feature is enabled after 30-44 days with a non-node locked license installed. **Format**: Stack *<stack_id>:* The *<feature_name>* feature has been activated for *<day>* days.
snTrapLicenseNNLLNonCompliant brcdIp.0.207	snAgGblTrapMessage	Warning	The SNMP trap is generated when a non-node locked licensed feature is enabled after 45+ days with a non-node locked license installed or deleted if any of the associated features are still enabled. **Format**: Stack *<stack_id>:* `THIS UNIT IS NOT COMPLIANT`. A license for *<feature_name>* feature

Trap name and number	Varbinds	Severity	Description and trap message
			must be purchased and installed or the feature *<feature_name>* must be deactivated to become compliant with the terms and conditions of use.
snTrapLicenseNNLLDelete brcdIp.0.208	snAgGblTrapMessage	Warning	The SNMP trap is generated when a non-node locked licensed feature is enabled after a non-node locked license is deleted. **Format**: Stack *<stack_id>:* The *<license_name>* license has been deleted on this unit and is available for redeployment on another unit in accordance with the terms and conditions of use. All features associated to this license must be disabled.
snTrapStackingShowStack Connect brcdIp.0.209	snAgGblTrapMessage	Notification	The SNMP trap is generated when the background diagnosis detects the connection errors to notify the user to check the connections in a stacking system. **Format**: `Background diagnosis detects connection errors. Please use show stack conn to view detailed connections.`
snTrapStackingStandByChanged Standalone brcdIp.0.210	snChasUnitIndex, snAgGblTrapMessage	Notification	The SNMP trap is generated when a unit is changed from Standby to Standalone when the active unit is down.
snTrapBroadcastlimit brcdIp.0.211	snAgGblTrapMessage	Informational	The SNMP trap is generated after reached the Broadcast limit.
snTrapMulticastlimit brcdIp.0.212	snAgGblTrapMessage	Informational	The SNMP trap is generated after reached the Multicast limit.
snTrapUnicastlimit brcdIp.0.213	snAgGblTrapMessage	Informational	The SNMP trap is generated after reached the Unknown Unicast limit.
snTrapPsuFanStateChange brcdIp.0.214	snAgGblTrapMessage	Informational	The SNMP trap is generated when the PSU fan status changed.
snTrapStackISSUSystemCompleted brcdIp.0.215	snAgGblTrapMessage	Notification	The SNMP trap is generated when system completed stack upgrade process.
snTrapStackISSUSystemFailed brcdIp.0.216	snAgGblTrapMessage	Alerts	The SNMP trap is generated when system failed stack upgrade process.
snTrapStackISSUUnitCompleted brcdIp.0.217	snChasUnitIndex, snAgGblTrapMessage	Notification	The SNMP trap is generated when unit completed upgrade process. **Format**: Stack: stack unit *<unit_id>* completed upgrade
snTrapStackISSUUnitFailed brcdIp.0.218	snChasUnitIndex, snAgGblTrapMessage	Alerts	The SNMP trap is generated when unit failed upgrade process.

Trap name and number	Varbinds	Severity	Description and trap message
			Format: Stack: system upgrade failed, stack unit *<unit_id>* is in failure state
snTrapStackISSUSystemStart brcdIp.0.219	snAgGblTrapMessage	Notification	The SNMP trap is generated when system starts stack upgrade process. **Format**: Stack: system upgrade started and most of user interfaces are blocked
snTrapStackingIgnoreShutdown TemperatureThresholdEnabled brcdIp.0.220	snChasUnitIndex snAgGblTrapMessage	Alerts	The SNMP trap is generated when Ignore Shutdown Temperature Threshold is enabled for a stack unit.
snTrapStackingIgnoreShutdown TemperatureThresholdDisabled brcdIp.0.221	snChasUnitIndex snAgGblTrapMessage	Alerts	"The SNMP trap is generated when Ignore Shutdown Temperature Threshold is disabled for a stack unit.
snTrapGlobalBattleShortModeEnabled brcdIp.0.222	snAgGblTrapMessage	Alerts	The SNMP trap is generated when battleshort mode is enabled at global level.
snTrapGlobalBattleShortModeDisabled brcdIp.0.223	snAgGblTrapMessage	Alerts	The SNMP trap is generated when battleshort mode is disabled at global level.
snTrapStackSAULicenseChange brcdIp.0.224	snChasUnitIndex, snAgGblTrapMessage	Notification	The SNMP trap is generated when upgrade license is changed.

LAG LACP MAC notification

The following MAC notification is generated for the LAG LACP port table supported on the Brocade ICX devices.

Trap name and number	Varbinds	Severity	Description and trap message
snTrapMacNotification brcdIp.0.201	snAgGblTrapMessage	Notifications	The SNMP notification is generated when MAC events are detected. Format: `MAC-Event:MAC:<mac>-VLAN:<vlan-id>-PORT:<port-id>-ACT:<action>::MAC:<mac>-VLAN:<vlan-id>-PORT:<port-id>-ACT:<action>:: .....MAC:<mac>-VLAN:<vlan-id>-PORT:<port-id>-ACT:<action>::` Actions: • 1 - MAC addition • 2 - MAC deletion • 3 - Removes all MACs • 4 - Removes MAC from a port • 5 - Removes MAC from a VLAN

Trap name and number	Varbinds	Severity	Description and trap message
			• 6 - Removes MAC from a VLAN on a port **NOTE** The notification supports all versions of SNMP (SNMPv1, SNMPv2, and SNMPv3).

snTrapMacEventBufferFull
brcdIp.0.202
	snAgGblTrapMessage	Warning	The SNMP notification is generated when MAC event buffer full is detected.
			
			Format:
			
			`MAC-Event: The Buffer is full, FDB table walk is required`
			
			`#TYPE "` Brocade `Trap: MAC event buffer full detection"`

Trap specific to FWS

The following trap is supported on the FastIron devices.

Trap name and number	Varbinds	Severity	Description and trap message
snTrapNoFreeTcamEntry brcdIp.0.162	snAgGblTrapMessage	Alerts	The SNMP trap that is generated when the system is running out of TCAM spaces allocated for routing entries. **Sample trap message:** `System: No free TCAM entry. System will be unstable`

Software licensing traps

The following traps apply to devices that support software licensing.

Trap name and number	Varbinds	Severity	Description
snTrapLicenseAdded brcdIp.0.187	snAgGblTrapMessage, snChasUnitIndex	Notification	The SNMP trap is generated when a new license is added to the system.
snTrapLicenseRemoved brcdIp.0.188	snAgGblTrapMessage, snChasUnitIndex	Notification	The SNMP trap is generated when a license is removed from the system.
snTrapLicenseExpires brcdIp.0.189	snAgGblTrapMessage, snChasUnitIndex	Notification	The SNMP trap that is generated when a trial license is about to expire. This trap is generated daily for the last 3 days of the license, and every 2 hours on the day when the license expires.

Trap name and number	Varbinds	Severity	Description
snTrapLicenseExpired brcdIp.0.190	snAgGblTrapMessage, snChasUnitIndex	Notification	The SNMP trap that is generated when a trial license has expired.