Extreme SLX-OS
NETCONF Operations Guide, 20.7.2

Supporting ExtremeRouting and ExtremeSwitching
SLX 9740, SLX 9640, SLX 9540, SLX 9250, SLX 9150,
Extreme 8820, Extreme 8720, and Extreme 8520

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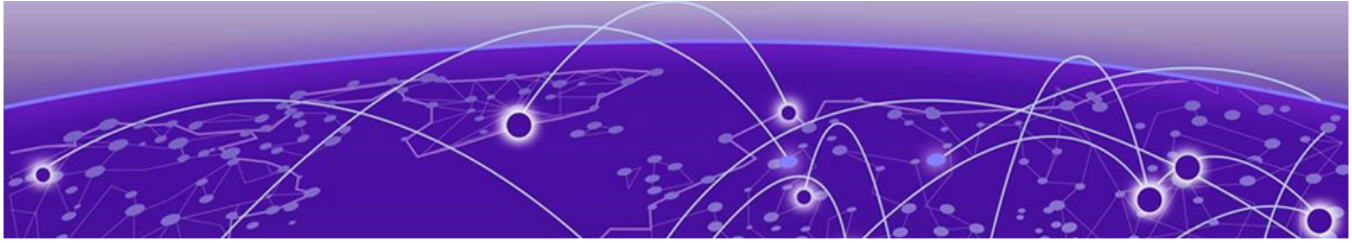

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Preface

Read the following topics to learn about:

- The meanings of text formats used in this document.
- Where you can find additional information and help.
- How to reach us with questions and comments.

Text Conventions

Unless otherwise noted, information in this document applies to all supported environments for the products in question. Exceptions, like command keywords associated with a specific software version, are identified in the text.

When a feature, function, or operation pertains to a specific hardware product, the product name is used. When features, functions, and operations are the same across an entire product family, such as Extreme Networks switches or routers, the product is referred to as *the switch* or *the router*.

Table 1: Notes and warnings

Icon	Notice type	Alerts you to...
	Tip	Helpful tips and notices for using the product
	Note	Useful information or instructions
	Important	Important features or instructions
	Caution	Risk of personal injury, system damage, or loss of data
	Warning	Risk of severe personal injury

Table 2: Text

Convention	Description
`screen displays`	This typeface indicates command syntax, or represents information as it is displayed on the screen.
The words *enter* and *type*	When you see the word *enter* in this guide, you must type something, and then press the Return or Enter key. Do not press the Return or Enter key when an instruction simply says *type*.
Key names	Key names are written in boldface, for example **Ctrl** or **Esc**. If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: Press **Ctrl**+**Alt**+**Del**
Words in italicized type	Italics emphasize a point or denote new terms at the place where they are defined in the text. Italics are also used when referring to publication titles.
NEW!	New information. In a PDF, this is searchable text.

Table 3: Command syntax

Convention	Description
bold text	Bold text indicates command names, keywords, and command options.
italic text	Italic text indicates variable content.
`[ ]`	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.
x | **y**	A vertical bar separates mutually exclusive elements.
< >	Nonprinting characters, such as passwords, are enclosed in angle brackets.
...	Repeat the previous element, for example, *member*[*member*...].
\	In command examples, the backslash indicates a “soft” line break. When a backslash separates two lines of a command input, enter the entire command at the prompt without the backslash.

Documentation and Training

Find Extreme Networks product information at the following locations:

Current Product Documentation
Release Notes
Hardware and Software Compatibility for Extreme Networks products
Extreme Optics Compatibility
Other Resources such as articles, white papers, and case studies

Open Source Declarations

Some software files have been licensed under certain open source licenses. Information is available on the Open Source Declaration page.

Training

Extreme Networks offers product training courses, both online and in person, as well as specialized certifications. For details, visit the Extreme Networks Training page.

Help and Support

If you require assistance, contact Extreme Networks using one of the following methods:

Extreme Portal

Search the GTAC (Global Technical Assistance Center) knowledge base; manage support cases and service contracts; download software; and obtain product licensing, training, and certifications.

The Hub

A forum for Extreme Networks customers to connect with one another, answer questions, and share ideas and feedback. This community is monitored by Extreme Networks employees, but is not intended to replace specific guidance from GTAC.

Call GTAC

For immediate support: (800) 998 2408 (toll-free in U.S. and Canada) or 1 (408) 579 2800. For the support phone number in your country, visit www.extremenetworks.com/support/contact.

Before contacting Extreme Networks for technical support, have the following information ready:

- Your Extreme Networks service contract number, or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any actions already taken to resolve the problem
- A description of your network environment (such as layout, cable type, other relevant environmental information)
- Network load at the time of trouble (if known)
- The device history (for example, if you have returned the device before, or if this is a recurring problem)
- Any related RMA (Return Material Authorization) numbers

Subscribe to Product Announcements

You can subscribe to email notifications for product and software release announcements, Field Notices, and Vulnerability Notices.

1. Go to The Hub.
2. In the list of categories, expand the **Product Announcements** list.
3. Select a product for which you would like to receive notifications.
4. Select **Subscribe**.
5. To select additional products, return to the **Product Announcements** list and repeat steps 3 and 4.

You can modify your product selections or unsubscribe at any time.

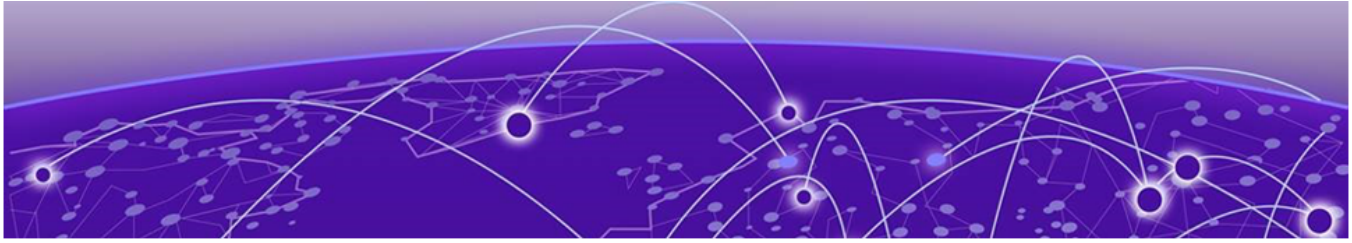
Send Feedback

The User Enablement team at Extreme Networks has made every effort to ensure that this document is accurate, complete, and easy to use. We strive to improve our documentation to help you in your work, so we want to hear from you. We welcome all feedback, but we especially want to know about:

- Content errors, or confusing or conflicting information.
- Improvements that would help you find relevant information.
- Broken links or usability issues.

To send feedback, email us at Product-Documentation@extremenetworks.com.

Provide as much detail as possible including the publication title, topic heading, and page number (if applicable), along with your comments and suggestions for improvement.



About This Document

What's New in this Document on page 37
Supported Hardware on page 37

What's New in this Document

This document is released with the SLX-OS 20.7.2 release.

The following NETCONFs were added or modified in this release.

- `/router/bgp/address-family/l2vpn/evpn/import/vpnv4/unicast/uniform-path-propagation`
- `/router/bgp/address-family/vpnv4/unicast/import/l2vpn/evpn/uniform-path-propagate`

For additional information, refer to the *Extreme SLX-OS Release Notes* for this version.

Supported Hardware

For instances in which a topic or part of a topic applies to some devices but not to others, the topic specifically identifies the devices.

SLX-OS 20.7.2 supports the following hardware platforms.

- Extreme 8820
- Extreme 8720
- Extreme 8520
- ExtremeSwitching SLX 9540
- ExtremeSwitching SLX 9250
- ExtremeSwitching SLX 9150

- ExtremeRouting SLX 9740
- ExtremeRouting SLX 9640

Note

All configurations and software features that are applicable to SLX 9150 and SLX 9250 devices are also applicable for the Extreme 8520 and Extreme 8720 devices respectively.

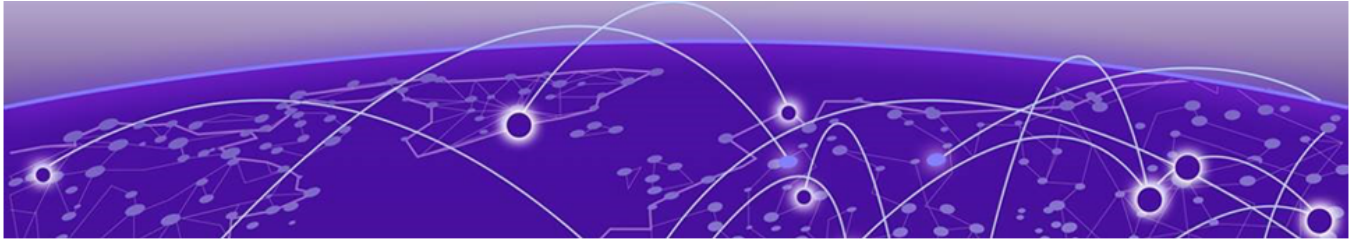
All configurations and software features that are applicable to SLX 9740 devices are also applicable for the Extreme 8820 devices.

The "Measured Boot with Remote Attestation" feature is only applicable to the Extreme 8520, Extreme 8720, and Extreme 8820 devices. It is not supported on the SLX 9150 and SLX 9250 devices.

Note

Although many software and hardware configurations are tested and supported for this release, documenting all possible configurations and scenarios is beyond this document's scope.

For information about other releases, see the documentation for those releases.



NETCONF Overview

NETCONF and YANG on page 39
NETCONF in client/server architecture on page 40
RPC request on page 40
RPC reply on page 40
RPC and error handling on page 41
SSH subsystem on page 41
RFC references on page 41

NETCONF and YANG

Extreme SLX-OS provides support for the Network Configuration Protocol (NETCONF) and the YANG data modeling language. Using Extensible Markup Language (XML) constructs, the NETCONF protocol provides the ability to manipulate configuration data and view state data modeled in YANG. NETCONF uses a client/server architecture in which remote procedure calls (RPCs) manipulate the modeled data across a secure transport, such as Secure Shell version 2 (SSHv2).

NETCONF provides mechanisms through which you can perform the following operations:

- Manage network devices
- Retrieve configuration data and operational state data
- Upload and manipulate configurations

NETCONF can be partitioned conceptually into four layers.

- A layer which contains all the configuration and notification data. This can be considered Layer 1.
- A layer which defines a set of protocols that can be used to edit and fetch the data contained in Layer 1. This can be considered Layer 2.
- A layer which provides the required mechanisms used to encode the calls (RPCs) and notifications that are fetched using Layer 2. This can be considered Layer 3.
- A transport layer which provides secure and reliable transport of communications between the NETCONF Server and NETCONF client. This can be considered Layer 4.

NETCONF in client/server architecture

The NETCONF protocol uses RPCs to facilitate communication between the client (NETCONF Manager or application) and the server (NETCONF Agent or managed device).

The NETCONF client encodes an RPC request in XML and sends it to the server using a secure, connection-oriented session. The server responds with a reply encoded in XML.

The communication between the client and server consists of a series of alternating request and reply messages. NETCONF peers use <rpc> and <rpc-reply> elements to provide transport protocol-independent framing of NETCONF requests and responses. The NETCONF server processes these RPC requests sequentially in the order in which they are received.

RPC request

The <rpc> element is used for enclosing a NETCONF request sent from the client to the server.

Every <rpc> element contains a mandatory attribute, the *message-id*. This attribute has a unique value for every RPC request, and is used to associate and reconcile every RPC request with its corresponding response. The *message-id* value is a monotonically increasing integer string. The maximum length of this string is 4095 characters. If the *message-id* is not present in the RPC request, the server rejects the request by returning an <rpc-error> with an <error-tag> element set to “missing-attribute”.

If there are any additional attributes present in the RPC request, the NETCONF server returns them unmodified in the corresponding RPC reply.

RPC reply

An <rpc-reply> element is sent in response to every RPC request.

The <rpc-reply> element contains the mandatory attribute *message-id* copied from the corresponding RPC request, along with any additional attributes that are present in the original RPC request.

For those <get> or <get-config> requests that are successfully processed, the response data is encoded as the content of the <rpc-reply> element.

For those <edit-config> or <close-session> requests that are successfully processed, the <ok> element is encoded as the content of the <rpc-reply> element.

For unsuccessful RPC requests, one or more <rpc-error> elements are encoded within the <rpc-reply> element.

RPC and error handling

When an RPC request fails, an <rpc-error> element is enclosed within the <rpc-reply> element and sent to the client.

The <rpc-error> element indicates the first detected error.

The server is not required to detect or report multiple errors. If the server detects multiple errors, then the order of the error detection and reporting is at the discretion of the server.

SSH subsystem

A NETCONF client must use Secure Shell Version 2 (SSHv2) as the network transport protocol to connect to the NETCONF server. Only the SSHv2 is supported.

To run NETCONF over SSHv2, the client establishes a connection using the SSHv2, on port 830, to the NETCONF server. The client and server exchange keys over SSHv2 for message integrity and encryption.

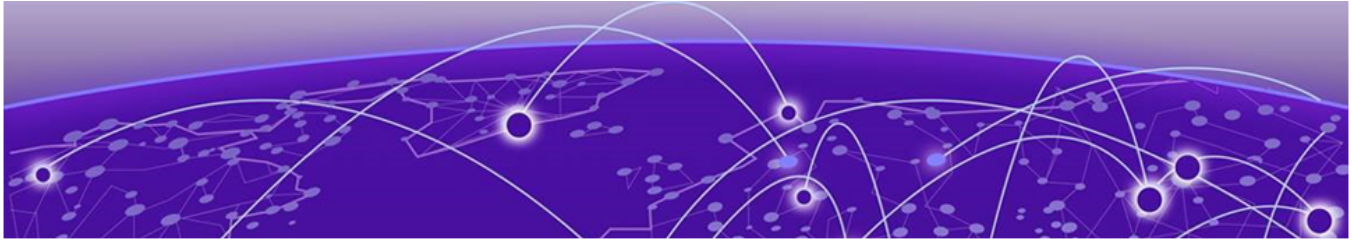
The SSHv2 client invokes the *ssh-userauth* service to authenticate the user. All currently supported SSH user authentication methods such as *public-key*, *password*, and *keyboard-interactive authentication* are supported for a NETCONF session also. If SSH user authentication is disabled, the user is allowed full access.

On successful user authentication, the client invokes the *ssh-connection* service, also known as the SSH connection protocol. After the SSH session is established, the NETCONF client invokes NETCONF as an SSH subsystem called *netconf*.

RFC references

For details about NETCONF and YANG as defined by the Internet Engineering Task Force (IETF), refer to the following documents:

- RFC 6241, “NETCONF Configuration Protocol.”
- RFC 4742 “Using the NETCONF Configuration Protocol over Secure Shell (SSH).”
- RFC 6020, “YANG - A Data Modeling Language for the Network Configuration Protocol (NETCONF)”
- RFC 6021, “Common YANG Data Types”



Using NETCONF

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Establishing a NETCONF session

Up to 16 concurrent sessions can be established with a NETCONF server. A session times out if it is idle for 30 minutes.

Each NETCONF session begins with a handshake in which the NETCONF server and the client specify the NETCONF capabilities they support. The following sections describe the message exchange on starting a NETCONF session.

Hello messages exchange

After establishing a secure transport connection, both the NETCONF server and client send a <hello> element simultaneously to announce their capabilities and session identifier.

The NETCONF server must include the <session-id> element in the <hello> element. The <session-id> element contains the unique session value for the NETCONF session. If the client receives the <hello> element without the <session-id>, the client aborts the NETCONF session by closing the underlying SSH session.

The NETCONF client must not include the <session-id> element in the <hello> element. If the server receives the <hello> element with the <session-id>, the server aborts the NETCONF session by closing the underlying SSH session.

The NETCONF client must include a valid xmlns attribute in the <hello> element. If the server receives the <hello> element without a valid xmlns attribute, the server aborts the NETCONF session by closing the underlying SSH session.

The NETCONF client must include a base capability. The server receiving the <hello> element without a NETCONF base capability aborts the NETCONF session by closing the underlying SSH session.

The server receiving an <rpc> element without first receiving a <hello> element aborts the NETCONF session by closing the underlying SSH session.

The following example shows a <hello> element from the NETCONF server.

```
<hello xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <capabilities>
        <capability>urn:ietf:params:netconf:base:1.0</capability>
        <capability>urn:ietf:params:netconf:capability:writable-running:1.0    </
capability>
        <capability>urn:ietf:params:netconf:capability:startup:1.0</capability>
        <capability>urn:ietf:params:netconf:capability:xpath:1.0</capability>
        <capability>urn:ietf:params:netconf:capability:validate:1.0</capability>
        <capability>http://tail-f.com/ns/netconf/actions/1.0</capability>
        <capability>http://tail-f.com/ns/aaa/1.1?revision=2010-06-17&module=tailfaaa</
capability>
        <capability>urn:brocade.com:mgmt:brocade-aaa?revision=2010-10-21&module=brocade-
aaa</capability>
        <capability>urn:brocade.com:mgmt:brocade-aaa-ext?
revision=2010-09-21&module=brocade-aaa-ext</capability>
        <capability>urn:brocade.com:mgmt:brocade-cdp?revision=2010-08-17&module=brocade-
cdp</capability>
        <capability>urn:brocade.com:mgmt:brocade-cee-map?
revision=2011-04-18&module=brocade-cee-map</capability>
        <capability>urn:brocade.com:mgmt:brocade-chassis?
revision=2011-04-11&module=brocade-chassis</capability>
    </capabilities>
    (output truncated)
    <session-id>4</session-id>
</hello>
```

The following example shows a <hello> element from the NETCONF client.

```
 <CODE EXAMPLE NEEDED >
```

Server capabilities

NETCONF capability is a set of protocol extensions that supplements the base NETCONF specification. Capabilities are identified with unique Uniform Resource Identifiers (URI).

Capabilities augment the base operations of the NETCONF server, describing both the additional operations and the contents allowed inside the operations. To support a capability, the NETCONF server must support all its dependent capabilities.

The following capabilities are supported on SLX-OS switches:

- Base capability—The set of operations and contents that any NETCONF implementation must support. The URI for the base capability is urn:ietf:param:xml:ns:netconf:base:1.0. Both the NETCONF client and server must support the base capability.
- Writable-running capability—Indicates that the device supports <edit-config> and <copy-config> operations where the <running> configuration is the target. The URI is urn:ietf:params:netconf:capability:writable-running:1.0.
- Startup capability—Supports separate datastores for the running and startup configuration. Operations performed on the running-config datastore do not affect the startup configuration until a <copy-config> operation is performed to explicitly

copy the running configuration to the startup configuration. The URI for the startup capability is urn:ietf:params:netconf:capability:startup:1.0.

- Xpath capability—Supports XPath expressions in <filter> elements. <filter> elements are used in <get> and <get-config> operations to limit the scope of the retrieved data. The URI for the xpath capability is urn:ietf:params:netconf:capability:xpath:1.0.
- Validate capability—Allows validation to be performed on a configuration. The URI for the validate capability is urn:ietf:params:netconf:capability:validate:1.0.
- Actions capability—Allows operations to be performed on the datastore using the custom action mechanism for features that are supported by this mechanism in the YANG code. Refer to “Using the custom action mechanism” on page 17 for details. The URI for the actions capability is http://tail-f.com/ns/netconf/actions/1.0.
- tailf-aaa capability—Supports proprietary authentication, authorization, and accounting (AAA). The URI for the tailf-aaa capability is http://tail-f.com/ns/aaa/1.1?revision=2010-06-17&module=tailf-aaa.
- Extreme proprietary capabilities—A set of capabilities that support Extreme SLX-OS features. Each capability references a namespace containing instance data. Each namespace corresponds to a file containing the YANG module that models the data. For example, the brocade-cee-map capability at URI urn:extreme.com:mgmt:extreme-cee-map?revision=2018-11-10&module=extreme-cee-map provides support for the features modeled in the brocade-cee-map module.

For an overview of each YANG module and structural details, refer to the Extreme SLX-OS YANG Reference Manual. For element definitions, refer to the specific YANG file .

Important
The Candidate Configuration capability and Confirmed Commit capability are not supported.

Client capabilities

A NETCONF client must support the base capability.

In addition, Extreme recommends that the client specify the identification capability with URI *http://tail-f.com/ns/netconf/identification/1.0* while establishing a session with the server. This capability provides client information to the server, including the vendor, product name, and version of the client application in addition to user information. Server administrators can subsequently gather information about who is accessing the server using the **`show netconf client-capabilities`** command or the *<get-netconf-client-capabilities>* custom RPC.

The following example shows a <hello> element from a NETCONF client with the client's capabilities advertised to the server.

```
<hello xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <capabilities>
        <capability>urn:ietf:params:netconf:base:1.0</capability>
        <capability>http://tail-f.com/ns/netconf/identification/1.0?vendor=extreme&amp;
            product=bna&amp;version=3.0&amp;client-identity=adminUser</capability>
```

```
    </capabilities>
</hello>
```

Connecting to the NETCONF server

A secured SSH connection between the NETCONF Client and the SLX-OS device must have been established before you can connect to the NETCONF server on the SLX-OS device.

NETCONF being a client/server protocol, requires that the client and the server exchange their capabilities. Exchanging capabilities ensures that the two devices are using the same protocols and are able to understand each other's requests.

Use these steps to create and exchange *<Hello>* messages between the NETCONF client and the NETCONF server.

1. Connect to the NETCONF server using the **ssh** command. Pass the port number, on which the NETCONF subsystem can be found, along with the *-p* parameter and the sub-system to invoke, in this case NETCONF, with the *-s* parameter.

```
ssh admin@10.10.99.99 -p 830 -s netconf

<hello xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
<capabilities>
    <capability>urn:ietf:params:netconf:base:1.0</capability>
    <capability>urn:ietf:params:netconf:base:1.1</capability>
    <capability>urn:ietf:params:netconf:capability:writable-running:1.0</capability>
    <capability>urn:ietf:params:netconf:capability:startup:1.0</capability>
    <capability>urn:ietf:params:netconf:capability:xpath:1.0</capability>
    <capability>urn:ietf:params:netconf:capability:validate:1.0</capability>
    <capability>urn:ietf:params:netconf:capability:validate:1.1</capability>
    <capability>http://tail-f.com/ns/netconf/actions/1.0</capability>
    <capability>http://tail-f.com/ns/netconf/extensions</capability>
    <capability>urn:ietf:params:netconf:capability:with-defaults:1.0?basic-
mode=explicit&
        also-supported=report-all-tagged</capability>
    <capability>urn:ietf:params:xml:ns:yang:ietf-netconf-with-defaults?
revision=2011-06-01&
        module=ietf-netconf-with-defaults</capability>
    <capability>urn:ietf:params:netconf:capability:yang-library:1.0?
revision=2016-06-21&
        module-set-id=8c12f1d15233efcda7e579aedb76bf32</capability>
    <capability>http://extremenetworks.com/yang/extreme-bmc?module=extreme-bmc&
        revision=2022-12-15</capability>
    <capability>http://extremenetworks.com/yang/extreme-config-mgmt?module=extreme-
config-mgmt&
        revision=2022-11-13</capability>
    <capability>http://extremenetworks.com/yang/extreme-gNMI?module=extreme-gNMI&
        revision=2020-02-07</capability>

    ######################################
    ##### removed other capabilities #####
    ######################################

    <capability>urn:brocade.com:mgmt:brocade-xstp?module=brocade-xstp&
        revision=2018-05-23</capability>
    <capability>urn:brocade.com:mgmt:brocade-xstp-ext?module=brocade-xstp-ext&
        revision=2018-05-23</capability>
    <capability>urn:brocade.com:mgmt:certutil?module=brocade-certutil&
        revision=2018-05-23</capability>
    <capability>urn:ietf:params:xml:ns:yang:iana-crypt-hash?module=iana-crypt-hash&
```

```
        revision=2014-08-06&
        features=crypt-hash-sha-512,crypt-hash-sha-256,crypt-hash-md5</capability>
    <capability>urn:ietf:params:xml:ns:yang:ietf-inet-types?module=ietf-inet-types&
        revision=2013-07-15</capability>
    <capability>urn:ietf:params:xml:ns:yang:ietf-netconf-monitoring?module=ietf-
netconf-monitoring&
        revision=2010-10-04</capability>
    <capability>urn:ietf:params:xml:ns:yang:ietf-netconf-notifications?module=ietf-
netconf-notifications&
        revision=2012-02-06</capability>
    <capability>urn:ietf:params:xml:ns:yang:ietf-restconf-monitoring?module=ietf-
restconf-monitoring&
        revision=2016-08-15</capability>
    <capability>urn:ietf:params:xml:ns:yang:ietf-yang-library?module=ietf-yang-library&
        revision=2016-06-21</capability>
    <capability>urn:ietf:params:xml:ns:yang:ietf-yang-types?module=ietf-yang-types&
        revision=2013-07-15</capability>
</capabilities>
<session-id>10</session-id>
</hello>]]>]]>
```

As soon as the connection is established, the server replies with its capabilities.

2. The client sends its capabilities in another *Hello* message.

```
<?xml version="1.0" encoding="UTF-8"?>
<hello xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <capabilities>
    <capability>urn:ietf:params:netconf:base:1.0</capability>
  </capabilities>
</hello>]]>]]>
```

With this message the client and server agree upon the version of NETCONF to use for communication. The client might also send other capabilities that it can support. The server uses this information when communicating with the client.

The client must, at the least, send the supported NETCONF version number in its *hello* message.

3. To test the connection, use the following XML to retrieve the clock information from the Server.

```
<nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0"
    nc:message-id="3">
   <show-clock xmlns="urn:brocade.com:mgmt:brocade-clock"></show-clock>
</nc:rpc>]]>]]>
```

4. The following is the reply from the NETCONF server for the above test query.

```
<?xml version="1.0" encoding="UTF-8"?>
    <rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="3"
        xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0">
        <clock-time xmlns='urn:brocade.com:mgmt:brocade-clock'>
            <current-time>2024-02-15T17:24:10+00:00</current-time>
            <timezone>Asia/Kolkata</timezone>
        </clock-time>
    </rpc-reply>]]>]]>
```

Retrieving configuration data

You can retrieve configuration data using either the <get-config> or <get> RPC. RFC 4741, NETCONF Configuration Protocol, specifies that the <get-config> RPC returns only

configuration data while the <get> RPC returns configuration data and operational state data.

In the Extreme implementation, the <get> RPC does not return operational state data; Extreme instead provides a set of Custom RPCs and actions for returning operational state data. In the Extreme implementation, the <get-config> and <get> operations are essentially the same. This document will typically refer to the <get-config> operation, though <get> can be used to perform the same operation.

The following example shows a client message that issues the <get-config> operation in its most basic form. It retrieves the entire running configuration.

```
<?xml version="1.0" encoding="UTF-8"?>
<rpc message-id="200" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <get-config>
        <source>
            <running/>
        </source>
    </get-config>
</rpc>
```

Such a request, however, typically results in an unwanted or unmanageable amount of output. To restrict the output to the portion of the configuration you want, Extreme supports two types of filtering: subtree filtering and xpath filtering.

For complete details about subtree filtering and xpath filtering, refer to the RFC 4741, The NETCONF Protocol. The following sections provide some examples.

Subtree filtering

Subtree filtering defines a point in the configuration hierarchy that limits the returned configuration data.

Only data at this point and the subtrees below it are returned. For example, to retrieve the loopback configuration for all loopback interfaces configured on the device, use the following filter. This operation returns all configuration data for all loop ports on the managed device.

```
<?xml version="1.0" ?>
<rpc message-id="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <get-config>
        <source>
            <running/>
        </source>
        <filter type="subtree">
            <routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
                <interface xmlns="urn:brocade.com:mgmt:brocade-interface">
                    <loopback xmlns="urn:brocade.com:mgmt:brocade-intf-loopback">
                        <id>1</id>
                    </loopback>
                </interface>
            </routing-system>
        </filter>
    </get-config>
</rpc>
```

The purpose of each filter element is as follows:

- The <filter> element tag contains a type statement that identifies the filter type as a subtree filter.
- The <interface> element constrains the output to the interface configuration in the urn:brocade.com:mgmt:brocade-interface namespace.
- The <loopback> element further constrains the output to the information under the <loopback> node. Used in this way, <loopback> is termed a containment node.

To further restrict the output and retrieve loopback configuration data for only one specific loopback interface, use the following filter. In this example, the <id> element is termed a content match node; the filter returns the values of all loopback attributes for the specified port.

```
<?xml version="1.0" ?>
<rpc message-id="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <get-config>
        <source>
            <running/>
        </source>
        <filter type="subtree">
            <routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
                <interface xmlns="urn:brocade.com:mgmt:brocade-interface">
                    <loopback xmlns="urn:brocade.com:mgmt:brocade-intf-loopback">
                        <id>1</id>
                        <vrf/>
                    </loopback>
                </interface>
            </routing-system>
        </filter>
    </get-config>
</rpc>
```

If all you want to know is the setting of one specific loopback port attribute, such as the name of VRF, use a filter such as the following. In this case, <vrf> suppresses the inclusion of all its sibling nodes. It is termed a selection node.

```
<?xml version="1.0" ?>
<rpc message-id="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <get-config>
        <source>
            <running/>
        </source>
        <filter type="subtree">
            <routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
                <interface xmlns="urn:brocade.com:mgmt:brocade-interface">
                    <loopback xmlns="urn:brocade.com:mgmt:brocade-intf-loopback">
                        <id>1</id>
                        <vrf>
                            <forwarding/>
                        </vrf>
                    </loopback>
                </interface>
            </routing-system>
        </filter>
    </get-config>
</rpc>
```

The following example retrieves the configuration for the loopback interface.

```
<?xml version="1.0" ?>
<rpc message-id="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <get-config>
        <source>
            <running/>
        </source>
        <filter type="subtree">
            <routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
                <interface xmlns="urn:brocade.com:mgmt:brocade-interface">
                    <loopback xmlns="urn:brocade.com:mgmt:brocade-intf-loopback">
                        <id>1</id>
                        <shutdown/>
                    </loopback>
                </interface>
            </routing-system>
        </filter>
    </get-config>
</rpc>
```

xpath filtering

Sometimes the data element that qualifies the information you want is at a lower level in the data hierarchy than the information you need.

For example, if you want to return a list of interfaces that are bound to a CoS-to-CoS mutation QoS map, the element to be used for the selection criteria (<cos-mutation>name</cos-mutation>) resides at a lower level in the hierarchy than the information to be retrieved (the interface name), as shown in the following representation of the QoS map structure. In such cases, you must use an xpath filter and not a subtree filter.

```
| +--rw ethernet [name]
+--rw name                          interface-type
.
.
.
+--rw qos:qos
+--rw qos:default-cos?              int32
+--rw qos:cos-mutation?              map-name-type
+--rw qos:cos-traffic-class?    map-name-type
+--rw qos:dscp-mutation?        map-name-type
```

The following example returns the interface names to which the CoS-to-CoS mutation QoS map named “test” is bound. In this case, the map named “test” is bound to interfaces 2/5 and 2/6. The <filter> element tag specifies that the filter type is xpath and also specifies the data path and selection criteria.

```
<?xml version="1.0" encoding="UTF-8"?>
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="205">
    <get-config>
        <source>
            <running></running>
        </source>
            <filter type="xpath" select="/interface/ethernet/qos[cos-mutation='test']"></
filter>
    </get-config>
</rpc>
```

```
<rpc-reply
xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"xmlns="urn:ietf:params:xml:ns:netconf:base:
1.0" message-id="205">
    <data>
        <interface xmlns="urn:brocade.com:mgmt:brocade-interface">
            <ethernet>
                <name>0/5</name>
                <qos xmlns="urn:brocade.com:mgmt:brocade-qos">
                    <default-cos>0</default-cos>
                    <cos-mutation>test</cos-mutation>
                </qos>
            </ethernet>
            <ethernet>
                <name>0/6</name>
                <qos xmlns="urn:brocade.com:mgmt:brocade-qos">
                    <default-cos>0</default-cos>
                    <cos-mutation>test</cos-mutation>
                </qos>
            </ethernet>
        </interface>
    </data>
</rpc-reply>
```

Retrieving operational data

In the Extreme SLX-OS implementation of NETCONF, two mechanisms are used for retrieving operational data: Extreme custom RPCs and custom actions.

Custom RPC and action support is added to some of the YANG modules to support the return of specific operational data.

For a complete list of the Extreme Custom RPCs and actions, and their locations, refer to the *Extreme SLX-OS YANG Reference Manual*.

Extreme SLX-OS does not support retrieving operational data using the standard <get> RPC.

Using custom RPCs

If an RPC is defined in a YANG module, you can use that RPC to return the associated namespace information defined in its output elements.

For example, to return information about port-profiles to which interfaces are applied, you can use the <get-port-profile-for-intf> RPC defined in the brocade-port-profile-ext.yang file.

The following example shows the <rpc> message and reply. The <get-port-profile-for-intf> element contains an xmlns attribute that identifies the corresponding namespace.

Refer to the *Extreme SLX-OS YANG Reference Manual* for a list of Custom RPCs, a brief description of their function, and their location.

Retrieving operational data with pagination

Some RPCs return operational data that consists of lists of entities. For example, an RPC might return detailed information about every interface. For these kinds of applications, to make the output manageable, pagination is supported by providing a <has-more> element in the output of the RPC.

The following example shows how the <has-more> element works to provide pagination for the <get-vlan-brief> RPC. In the input, you can request information about a specific VLAN, or about all VLANs by not providing an input parameter. If you request input about all VLANs, you will first receive information about the VLAN with the lowest VLAN ID. You can then check the <has-more> element in the output to determine whether information is available for additional VLANs. If <has-more> is true, use the value returned in <last-vlan-id> as the <last-rcvd--vlan-id> input parameter to the next call to <get-vlan-brief>. The <get-vlan-brief> RPC then returns the next available VLAN. Continue until <has-more> returns false.

```
+---x get-vlan-brief
    +--ro input
    | +--ro (request-type)?
    | +--:(get-request)
    | | +--ro vlan-id? interface:vlan-type
    | +--:(get-next-request)
    | +--ro last-rcvd-vlan-id? interface:vlan-type
    +--ro output
      +--ro vlan [vlan-id]
    | +--ro vlan-id interface:vlan-type
    | +--ro vlan-type? enumeration
    | +--ro vlan-name? string
    | +--ro vlan-state? enumeration
    | +--ro interface [interface-type interface-name]
    | +--ro interface-type enumeration
    | +--ro interface-name union
    | +--ro tag? enumeration
    +--ro last-vlan-id? interface:vlan-type
    +--ro has-more? boolean
```

The following example uses the <get-interface-brief> RPC to return information about the first VLAN. In this case, the first VLAN is VLAN 20.

```
<rpc message-id="207" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <get-vlan-brief xmlns="urn:brocade.com:mgmt:brocade-interface-ext">
    </get-vlan-brief>
</rpc>

<rpc-reply message-id="207" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <vlan xmlns="urn:brocade.com:mgmt:brocade-interface-ext">
        <vlanid>20</vlanid>
        <vlan-type>static</vlan-type>
        <vlan-name>vlan-20</vlan-name>
        <vlan-state>active</valan-state>
        <interface>
            <interface-type>ethernet</interface-type>
            <interfce-name>2/5</interface-name>
            <tag>tagged</tag>
        </interface>
    </vlan>
    <last-vlan-id>20</last-vlan-id>
    <has-more>true</has-more>
</rpc-reply>
```

The <has-more> field is true, so use the value returned in <last-vlan-id> as the <last-rcvd-vlan-id> in the next call to <get-vlan-brief> to return information about the next VLAN.

```
<rpc message-id="208" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <get-vlan-brief xmlns="urn:brocade.com:mgmt:brocade-interface-ext">
        <last-rcvd-vlan-id>20</last-rcvd-vlan-id>
    </get-vlan-brief>
</rpc>

<rpc-reply message-id="208" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <vlan xmlns="urn:brocade.com:mgmt:brocade-interface-ext">
        <vlanid>30</vlanid>
        <vlan-type>static</vlan-type>
        <vlan-name>vlan-30</vlan-name>
        <vlan-state>active</valan-state>
        <interface>
            <interface-type>ethernet</interface-type>
            <interfce-name>2/5</interface-name>
            <tag>tagged</tag>
        </interface>
    </vlan>
    <last-vlan-id>30</last-vlan-id>
    <has-more>false</has-more>
</rpc-reply>
```

If the <has-more> field returns false, no more VLAN data can be retrieved.

Using the custom action mechanism

An action is a proprietary mechanism used for implementing operations that do not affect the configuration datastore. Several implementations of actions exist in the Extreme SLX-OS implementation for retrieving operational information.

The following structure is defined in the extreme-zone.yang module for displaying operational data related to zoning.

```
<nc:rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="10">
    <nca:action xmlns:nca="http://tail-f.com/ns/netconf/actions/1.0">
        nca:data>
         <show xmlns="urn:brocade.com:mgmt:brocade-common-def">
            <license xmlns="urn:brocade.com:mgmt:brocade-license">
               <id></id>
            </license>
         </show>
      </nca:data>
    </nca:action>
</nc:rpc>

<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="10">
   <data>
      <show xmlns="urn:brocade.com:mgmt:brocade-common-def">
         <license xmlns="urn:brocade.com:mgmt:brocade-license">
            <id>
               <licenseid-list>
                  <license-id>10:00:F4:6E:95:9F:2E:F0</license-id>
               </licenseid-list>
            </id>
         </license>
      </show>
```

```
   </data>
</rpc-reply>
```

For a list of available actions and their locations, refer to the *Extreme SLX-OS YANG Reference Manual*.

Editing the configuration

All configuration editing is done using the merge or delete operations of the <edit-config> RPC. The create and replace operations are not supported.

Refer to RFC 4741, The NETCONF Protocol, for details about these operations.

Note
Every NETCONF <edit-config> request should have a one-to-one mapping with a Extreme SLX-OS CLI command. You cannot combine two CLI operations into one NETCONF request.

The following example of the default merge operation adds a static address to the MAC address table. The operation is performed on the running configuration and configures the <mac-address-table> node in the urn:brocade.com:mgmt:brocade-mac-address-table namespace.

```
<?xml version="1.0" encoding="UTF-8"?>
<rpc message-id="210" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <edit-config>
        <target>
            <running/>
        </target>
        <config>
            <mac-address-table xmlns="urn:brocade.com:mgmt:brocade-mac-address-table">
                <static>
                    <mac-address>0011.2222.3333</mac-address>
                    <forward>forward</forward>
                    <interface-type>ethernet</interface-type>
                    <interface-name>2/5</interface-name>
                    <vlan>vlan</vlan>
                    <vlanid>100</vlanid>
                </static>
            </mac-address-table>
        </config>
    </edit-config>
</rpc>

<rpc-reply message-id="210" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <ok/>
</rpc-reply>
```

The delete operation is used to remove or disable part of the configuration. The following example disables MSTP on the managed device.

```
<?xml version="1.0" encoding="UTF-8"?>
<rpc message-id="211" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <edit-config>
        <target>
            <running/>
        </target>
        <config>
            <protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
```

```
                <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
                    <mstp xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
Operation="delete"/>
                </spanning-tree>
            </protocol>
        </config>
    </edit-config>
</rpc>

<rpc-reply message-id="211" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <ok/>
</rpc-reply>
```

Managing the configuration

Extreme SLX-OS provides the custom <bna-config-cmd> PRC for performing any of the following operations:

- Copy the *running-config* file to a remote file.
- Copy a remote file to the *running-config* file.

Some simple examples are provided here. Refer to the *Extreme SLX-OS Administrator's Guide* for the following related information:

- General configuration management concepts
- Details and recommendations about how to apply these operations in a modular chassis or a Extreme VCS Fabric or a IP Fabric
- How to perform management configuration using the Extreme SLX-OS command line interface (CLI)

To monitor the progress of the copy operation, issue the <bna-config-cmd-status> custom RPC. Provide the session-ID returned by the corresponding <bna-config-cmd> as the input parameter.

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="212">
    <bna-config-cmd-status xmlns="urn:brocade.com:mgmt:brocade-ras">
        <session-id>5</session-id>
    </bna-config-cmd-status>
</rpc>

<rpc-reply message-id="212" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <status xmlns="urn:brocade.com:mgmt:brocade-ras">completed</status>
</rpc-reply>
```

To archive or back up the *running-config* file, specify <running/> as the <src> parameter, and the URL of the archive as the <dest> parameter. The following example archives the running-config file.

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="212">
    <bna-config-cmd xmlns="urn:brocade.com:mgmt:brocade-ras">
        <src>running-config</src>
        <dest>https://user@brocade.com:passphrase/cfg/archiveMay7.txt</dest>
    </bna-config-cmd>
</rpc>

<rpc-reply message-id="212" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <session-id xmlns="urn:brocade.com:mgmt:brocade-ras">6</session-id>
    <status xmlns="urn:brocade.com:mgmt:brocade-ras">in-progress</status>
</rpc-reply>
```

To restore an archived configuration, specify the archive URL as the <source> parameter and <running/> as the <target>.

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="212">
    <bna-config-cmd xmlns="urn:brocade.com:mgmt:brocade-ras">
        <src>https://user@brocade.com:passphrase/cfg/archiveMay7.txt</src>
        <dest>running-config</dest>
    </bna-config-cmd>
</rpc>

<rpc-reply message-id="212" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <session-id xmlns="urn:brocade.com:mgmt:brocade-ras">6</session-id>
    <status xmlns="urn:brocade.com:mgmt:brocade-ras">in-progress</status>
</rpc-reply>
```

Disconnecting from a NETCONF session

To disconnect from a NETCONF session, issue the standard <close-session> RPC.

This operation causes the server to release any resources associated with the session and gracefully close any associated connections.

```
<rpc message-id="215" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <close-session/>
</rpc>

<rpc-reply message-id="215" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <ok/>
</rpc-reply>
```

The <kill-session> RPC is also supported. Issuing <kill-session> aborts all operations and closes the session.

Basic switch management with NETCONF overview

Connecting to the switch through an SSH session on page 56

This chapter provides procedures for performing some basic switch operations using the NETCONF interface.

Refer to the *Extreme SLX-OS Administrator's Guide* for the following related information:

- Conceptual and overview information
- Using DHCP Automatic Deployment (DAD)
- Procedures for configuring the Ethernet management interface
- Basic switch configuration using the Extreme SLX-OS command line interface (CLI)

Using the NETCONF interface, you can perform the following basic switch configuration operations described in this chapter:

- Use the <edit-config> RPC to set host attributes, configure a switch banner, enable or disable first failure data capture (FFDC), and configure logging.
- Use custom actions to enable or disable a chassis, reboot a switch, obtain slot and module status, and upload supportSave data.
- Use the <show-raslog> custom RPC to return RASlog messages.

Switch management parameters described in this chapter are defined mostly in the brocade-ras, brocade-linecard-management, and brocade-chassis YANG modules. For structural maps of these YANG modules, refer to the *Extreme SLX-OS YANG Reference Manual*. For definitions and explanations of parameters, refer to the corresponding.yang file.

Connecting to the switch through an SSH session

For NETCONF operations, you must connect to the device using SSH.

1. Connect through a serial port to the device
2. Verify that the network interface of the device is configured and that it is connected to the IP network through the RJ-45 Ethernet port.
3. Log off from the serial port of the device.
4. From a management station, open an SSH connection using the management IP address of the device to which you want to connect.

5. Enter the account user name at the login prompt.
6. Enter the password.

   Extreme recommends that you change the default account password when you log in for the first time. For more information on changing the default password, refer to the Extreme SLX Hardware Installation Guide.
7. Verify that the login was successful.

   The prompt displays the host name followed by a pound sign (#).

```
login as: admin
admin@10.20.49.112's password:******

Welcome to the Extreme SLX-OS Software
admin connected from 10.1.1.1 using console on F115
```

Sample use cases for SLX-OS NETCONF

STP overview on page 58
VRF configuration on page 61

This chapter discusses common use cases for the Extreme SLX-OS NETCONF.

Note
The information provided in this chapter may not cover the end-to-end configuration. Refer to the *Extreme SLX-OS User Guide* for the complete set of configuration tasks.

STP overview

A network topology of bridges typically contains redundant connections to provide alternate paths in case of link failures. However, because there is no concept of TTL in Ethernet frames, this could result in the permanent circulation of frames if there are loops in the network. To prevent loops, a spanning tree connecting all the bridges is formed in real time.

The redundant ports are put in a blocking (nonforwarding) state. They are enabled when required. In order to build a spanning tree for the bridge topology, the bridges must exchange control frames (BPDUs - Bridge Protocol Data Units). The protocols define the semantics of the BPDUs and the required state machine. The first Spanning Tree Protocol (STP) became part of the IEEE 802.1d standard.

The STP interface states for every Layer 2 interface running STP are as follows:

- *Blocking* - The interface does not forward frames.
- *Listening* - The interface is identified by the spanning tree as one that should participate in frame forwarding. This is a transitional state after the blocking state.
- *Learning* - The interface prepares to participate in frame forwarding.
- *Forwarding* - The interface forwards frames.
- *Disabled* - The interface is not participating in spanning tree because of a shutdown port, no link on the port, or no spanning tree instance running on the port.

A port participating in spanning tree moves through these states:

- From initialization to blocking
- From blocking to listening or to disabled
- From listening to learning or to disabled

- From learning to forwarding, blocking, or disabled
- From forwarding to disabled

Configuring STP

The process for configuring STP is as follows:

1. Enable STP using the below NETCONF statement.

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp”>
        <stp></stp>
    </spanning-tree>
</protocol>
```

2. Designate the root switch by using the bridge-priority command. The range is 0 through 61440 and the priority values can be set only in increments of 4096.

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <stp>
            <bridge-priority>32768</bridge-priority>
        </stp>
    </spanningtree>
</protocol>
```

3. Enable port fast on switch ports by using the **`spanning-tree portfast`** command.

Note
Note the following conditions:

- Port fast only needs to be enabled on ports that connect to workstations or PCs. Repeat these commands for every port connected to workstations or PCs. Do not enable port fast on ports that connect to other switches.
- If BPDUs are received on a port fast enabled interface, the interface loses the edge port status unless it receives a shut/no shut.
- Enabling port fast on ports can cause temporary bridging loops, in both trunking and nontrunking mode.

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/5</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <portfast>
                <portfastbasic></portfastbasic>
            </portfast>
        </spanning-tree>
    </ethernet>
</interface>
```

Configuring RSTP

The process for configuring RSTP is as follows.

1. Enable RSTP by using the global **protocol spanning-tree** command.

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rstp></rstp>
    </spanning-tree>
</protocol>
```

2. Designate the root switch by using the **bridge-priority** command. The range is 0 through 61440 and the priority values can be set only in increments of 4096.

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rstp>
            <bridge-priority>32768</bridge-priority>
        </rstp>
    </spanning-tree>
</protocol>
```

3. Configure the bridge forward delay value to set the time an interface spends in each of the listening and learning states.

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rstp>
            <forward-delay>30</forward-delay>
        </rstp>
    </spanning-tree>
</protocol>
```

4. Configure the bridge maximum aging time value to set the interval time in seconds between messages that the spanning tree receives from the interface.

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rstp>
            <max-age>40</max-age>
        </rstp>
    </spanning-tree>
</protocol>
```

5. Enable the error-disable-timeout timer.

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rstp>
            <error-disable-timeout>
                <enable></enable>
            </error-disable-timeout>
        </rstp>
    </spanning-tree>
</protocol>
```

6. Configure the error-disable-timeout interval value to set the timeout for errors on an interface.

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rstp>
            <error-disable-timeout>
                <interval>500</interval>
            </error-disable-timeout>
        </rstp>
```

```
    </spanning-tree>
</protocol>
```

VRF configuration

VRF (Virtual Routing and Forwarding) is a technology that controls information flow within a network by isolating the traffic by partitioning the network into different logical VRF domains.

Every VRF-capable router supports one routing table for each VRF instance. Each VRF-capable router can function as a group of multiple virtual routers on the same physical router. VRF, in conjunction with virtual private network (VPN) solutions, guarantees privacy of information and isolation of traffic within its logical VRF domain.

This chapter provides procedures and examples for configuring VRF using the NETCONF interface.

Using the NETCONF interface, you can perform the following VRF configuration operations:

- Use the *<edit-config>* remote procedure call (RPC) to activate and deactivate VRF globally, set global VRF parameters, activate and deactivate VRF on a port, and to set interface parameters on a specific port.
- Use the <get-config> RPC to verify all or part of the VRF configuration.

VRF parameters are defined in the *brocade-vrf* YANG module. For a structural map of the YANG module, refer to the *Extreme SLX-OS YANG Reference Manual*. For definitions and explanations of all VRF parameters, refer to the *brocade-vrf.yang file*.

Configuring VRF

This chapter provides procedures and examples for configuring VRF using the NETCONF interface.

1. Configure VRF "red".

```
<vrf xmlns="urn:brocade.com:mgmt:brocade-vrf">
        <vrf-name>red</vrf-name>
    </vrf>
```

2. Enable the IPv4 or IPv6 address-family support to configure a variety of VRF unicast routing options.

   The below example shows how to enable IPv4 address-family support

```
<vrf xmlns="urn:brocade.com:mgmt:brocade-vrf">
        <vrf-name>Red</vrf-name>
        <address-family>
            <ip>
                <unicast></unicast>
            </ip>
        </address-family>
    </vrf>
```

3. Configure the maximum number of routes to be used for the VRF

```
<vrf xmlns="urn:brocade.com:mgmt:brocade-vrf">
        <vrf-name>red</vrf-name>
        <address-family>
```

```
            <ip>
                <unicast>
                    <max-route>200</max-route>
                </unicast>
            </ip>
        </address-family>
    </vrf>
```

4. Enable the Open Shortest Path First (OSPF) routing protocol over virtual forward and routing (VRF).

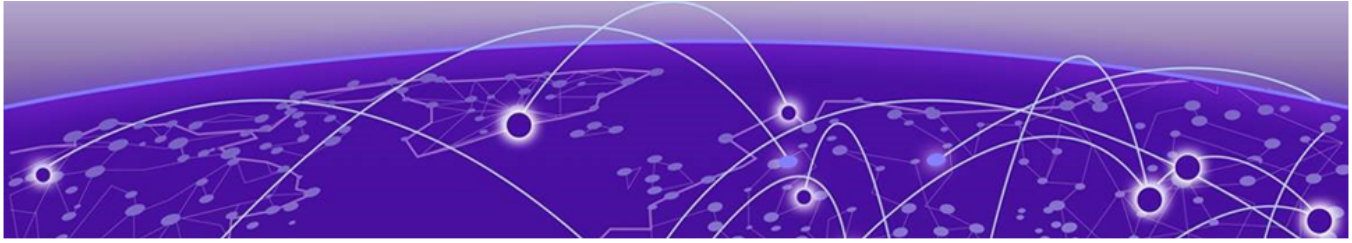
```
<router>
        <ospf xmlns="urn:brocade.com:mgmt:brocade-ospf”>
            <vrf>red</vrf>
        </ospf>
    </router>
```

5. Assign it to an area

```
<router>
        <ospf xmlns="urn:brocade.com:mgmt:brocade-ospfv3">
            <vrf>red</vrf>
            <area>
                <area-id>0</area-id>
            </area>
        </ospf>
    </router>
```

6. Bind the interface to the VRF instance

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
        <ve>
            <name>1</name>
            <vrf xmlns="urn:brocade.com:mgmt:brocade-ip-config">
                <forwarding>red</forwarding>
            </vrf>
        </ve>
    </interface>
```



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aaa

Configures AAA authentication, accounting, and administration.

Usage

```
<aaa-config xmlns="urn:brocade.com:mgmt:brocade-aaa">
    <aaa>
```

```
        <authentication>
            <login>
                <first/>
                <second/>
            </login>
        </authentication>
        <accounting>
            <exec>
                <defaultacc>
                    <start-stop>
                        <server-type/>
                    </start-stop>
                </defaultacc>
            </exec>
            <commands>
                <defaultacc>
                    <start-stop>
                        <server-type/>
                    </start-stop>
                </defaultacc>
            </exec>
            </commands>
        </accounting>
        <authorization>
            <command>
                <firstauthor/>
                <secondauthor/>
            </command>
        </authorization>
    </aaa>
</aaa-config>
```

aaa/accounting

Configures login or command accounting; either commands or login information are forwarded to accounting servers.

Usage

```
<aaa-config xmlns="urn:brocade.com:mgmt:brocade-aaa">
    <aaa>
        <accounting/>
    </aaa>
</aaa-config>
```

aaa/authentication

Configures the AAA login sequence.

Usage

```
<aaa-config xmlns="urn:brocade.com:mgmt:brocade-aaa">
    <aaa>
        <authentication>
            <login>
                <first>local</first>
            </login>
        </authentication>
    </aaa>
</aaa-config>
```

Parameters

first

Specifies the type of server that will be used for authentication, authorization, and accounting (AAA) on the switch. The local server is the default. Specify one of the following options:

default

Specifies the default mode (local server). Authenticates the user against the local database only. If the password does not match or the user is not defined, the login fails

ldap

Specifies the Lightweight Directory Access Protocol (LDAP) servers

local

Specifies to use the local switch database if prior authentication methods are inactive

local-auth-failback

Specifies to use the local switch database if prior authentication methods are not active or if authentication fails

local

Specifies the local switch database

radius

Specifies the RADIUS servers

local

Specifies to use the local switch database if prior authentication methods are inactive

local-auth-failback

Specifies to use the local switch database if prior authentication methods are not active or if authentication fails.

tacacs+

Specifies the TACACS+ servers

local

Specifies to use the local switch database if prior authentication methods are inactive

local-auth-failback

Specifies to use the local switch database if prior authentication methods are not active or if authentication fails

aaa/authentication/login

Configures the AAA login sequence.

Usage

```
<aaa-config xmlns="urn:brocade.com:mgmt:brocade-aaa">
    <aaa>
        <authentication>
            <login/>
        </authentication>
    </aaa>
</aaa-config>
```

Parameters

authentication

Specifies the authentication, authorization, and accounting (AAA) on the switch.

aaa/authentication/login/first

Configures the primary source of authentication.

Usage

```
<aaa-config xmlns="urn:brocade.com:mgmt:brocade-aaa">
    <aaa>
        <authentication>
            <login>
                <first>
                    {default | ldap | local | radius | tacacs+ | oauth2}
                </first>
            </login>
        </authentication>
    </aaa>
</aaa-config>
```

Parameters

authentication

Specifies authentication.

login

Specifies login.

first

Specifies the primary source of authentication.

default

The default login mode, which is the *local server.*.

ldap

Use LDAP server for authentication.

local

Use the local server for authentication.

oauth2

Use OAuth2 token for authentication.

radius

Use RADIUS server for authentication.

tacacs+

Use TACACS+ server for authentication.

aaa/authentication/login/second

Configures the secondary fallback source of authentication.

Usage

```
<aaa-config xmlns="urn:brocade.com:mgmt:brocade-aaa">
    <aaa>
        <authentication>
            <login>
                <second>
                    {local | local-auth-fallback | radius-auth-fallback |
                    tacacs+-auth-fallback | oauth2-auth-fallback |
                    ldap-auth-fallback}
                </second>
            </login>
        </authentication>
    </aaa>
</aaa-config>
```

Parameters

authentication

Specifies authentication.

login

Specifies login.

second

Specifies the secondary fallback source for authentication. Can be one of the following fallback mechanisms.

local

Use the local device database for authentication if the previous authentication fails for any reason.

local-auth-fallback

Use the local device database for authentication if the primary authentication fails for any reason. When this is configured as the second authentication method, the tertiary fallback configuration has no affect.

ldap-auth-fallback

Use the LDAP for authentication if the primary authentication fails for any reason.

oauth2-auth-fallback

Use the OAuth2 token for authentication if the primary authentication fails for any reason.

radius-auth-fallback

Use the RADIUS server for authentication if the primary authentication fails for any reason.

tacacs+-auth-fallback

Use the TACACS+ server for authentication if the primary authentication fails for any reason.

aaa/authentication/login/third

Configures the tertiary source of authentication.

Usage

```
<aaa-config xmlns="urn:brocade.com:mgmt:brocade-aaa">
    <aaa>
        <authentication>
            <login>
                <third>
                    {local-auth-fallback}
                </third>
            </login>
        </authentication>
    </aaa>
</aaa-config>
```

Parameters

authentication

Specifies authentication.

login

Specifies login.

third

Specifies tertiary source. The only available option is *local-auth-fallback*. This setting has no effect if the secondary fallback authentication is configured to *local-auth-fallback*.

aaa/username

Configures a username and password for AAA login.

Usage

```
<username xmlns="urn:brocade.com:mgmt:brocade-aaa">
    <name>user-name</name>
    <user-password/>user-password</user-password>
    <encryption-level>[0|7|10]</encryption-level>
    <role>account-role</role/>
    <desc>description</desc>
    <enable/>[true|false]<enable/>
    <expire>[never|YYYY-MM-DD]</expire>
    <access-time>HHMM</access-time>
    <end-time>HHMM<end-time>
    <acct-inactivity-expiry-period>[1-180 days]</acct-inactivity-expiry-period>
    <acct-inactivity-warning-period>[1-120 days]</acct-inactivity-warning-period>
</username>
```

aaa/username/desc

Adds describes for the username.

Usage

```
<username xmlns="urn:brocade.com:mgmt:brocade-aaa">
    <name>{req_val}</name>
    <desc/>
</username>
```

Parameters

name

Specifies the username.

aaa/username/encryption-level

Configures the encryption level for a username.

Usage

```
<username xmlns="urn:brocade.com:mgmt:brocade-aaa">
    <name>{req_val}</name>
    <encryption-level/>
</username>
```

Parameters

name

Specifies the username.

aaa/username/role

Configures the role of the user.

Usage

```
<username xmlns="urn:brocade.com:mgmt:brocade-aaa">
    <name>{req_val}</name>
    <role/>
</username>
```

Parameters

name

Specifies the username.

acl-policy

Configures, modifies, or retrieves the ACL configuration.

Usage

```
<acl-policy xmlns="urn:brocade.com:mgmt:brocade-acl-policy">
    <global-acl-policy-conf-cmds/>
</acl-policy>
```

Parameters

global-acl-policy-conf-cmds

Enters the global ACL policy commands mode.

acl-policy/allow-conflicting-rules

Allows conflicting rules in an ACL table.

Usage

```
<acl-policy xmlns="urn:brocade.com:mgmt:brocade-acl-policy">
    <global-acl-policy-conf-cmds>
        <allow-conflicting-rules/>
    </global-acl-policy-conf-cmds>
</acl-policy>
```

Parameters

global-acl-policy-conf-cmds

Enters the global ACL policy commands mode.

allow-conflicting-rules

Allows conflicting rules in an ACL table.

acl-policy/allow-duplicate-rules

Allows duplicate rules in an ACL table..

Usage

```
<acl-policy xmlns="urn:brocade.com:mgmt:brocade-acl-policy">
    <global-acl-policy-conf-cmds>
        <allow-duplicate-rules/>
    </global-acl-policy-conf-cmds>
</acl-policy>
```

Parameters

global-acl-policy-conf-cmds

Enters the global ACL policy commands mode.

arp

Configures, modifies, or retrieves Address Resolution Protocol (ARP).

Usage

```
<arp-entry xmlns="urn:brocade.com:mgmt:brocade-arp">
    <arp-ip-address>{req_val}</arp-ip-address>
</arp-entry>
```

Parameters

arp-ip-address

The IP adress of the ARP entry.

bridge-domain

Configures a bridge domain.

Usage

```
<bridge-domain xmlns="urn:brocade.com:mgmt:brocade-bridge-domain">
    <bridge-domain-id>{req_val}</bridge-domain-id>
    <bridge-domain-type>{req_val}</bridge-domain-type>
</bridge-domain>
```

Parameters

bridge-domain-id

Specifies the bridge domian ID.

bridge-domain-type

Specifies the bridge domain type..

peer

Specifies the peer.

Specifies the peer IP address.

load-balance

Specifies load-balance.

bridge-domain/(bridge-domain-id)/(bridge-domain-type)/bpdu-drop-enable

Enables the Bridge Protocol Data Units (BPDU)-drop feature.

Usage

```
<bridge-domain xmlns="urn:brocade.com:mgmt:brocade-bridge-domain">
    <bridge-domain-id>{req_val}</bridge-domain-id>
    <bridge-domain-type>{req_val}</bridge-domain-type>
    <bpdu-drop-enable/>
</bridge-domain>
```

Parameters

bridge-domain-id

Specifies the bridge-domain ID.

bridge-domain-type

Specifies the bridge domain type.

bpdu-drop-enable

Enables the BPDU drop.

bridge-domain/(bridge-domain-id)/(bridge-domain-type)/logical-interface

Configures the logical interface.

Usage

```
<bridge-domain xmlns="urn:brocade.com:mgmt:brocade-bridge-domain">
    <bridge-domain-id>{req_val}</bridge-domain-id>
    <bridge-domain-type>{req_val}</bridge-domain-type>
    <logical-interface>
        <port-channel>
            <pc-lif-bind-id>{req_val}</pc-lif-bind-id>
        </port-channel>
    </logical-interface>
</bridge-domain>
```

Parameters

port-channel

Specifies Port Channel as the logical interface.

pc-lif-bind-id

Specifies the Port Channel LIF bind ID.

bridge-domain/(bridge-domain-id)/(bridge-domain-type)/local-switching

Configures local switching.

Usage

```
<bridge-domain xmlns="urn:brocade.com:mgmt:brocade-bridge-domain">
    <bridge-domain-id>{req_val}</bridge-domain-id>
    <bridge-domain-type>{req_val}</bridge-domain-type>
    <local-switching/>
</bridge-domain>
```

Parameters

bridge-domain-id

Specifies the bridge-domain ID.

bridge-domain-type

Specifies the bridge domain type.

local-switching

Configures local switching.

bridge-domain/(bridge-domain-id)/(bridge-domain-type)/peer/(peer-ip)/cos

Sets the cos value in the range 0 to 7.

Usage

```
<bridge-domain xmlns="urn:brocade.com:mgmt:brocade-bridge-domain">
    <bridge-domain-id>{req_val}</bridge-domain-id>
    <bridge-domain-type>{req_val}</bridge-domain-type>
    <peer>
        <peer-ip>{req_val}</peer-ip>
        <cos/>
    </peer>
</bridge-domain>
```

Parameters

cos

Specifies the CoS. The range is from 0 through 7.

bridge-domain-id/(bridge-domain-type)/peer/(peer-ip)/load-balance

Retrieves load-balancing details.

Usage

```
<bridge-domain xmlns="urn:brocade.com:mgmt:brocade-bridge-domain">
    <bridge-domain-id>{req_val}</bridge-domain-id>
    <bridge-domain-type>{req_val}</bridge-domain-type>
    <peer>
        <peer-ip>{req_val}</peer-ip>
        <load-balance/>
    </peer>
</bridge-domain>
```

Parameters

peer

Specifies the peer.

peer-ip

Specifies the peer IP address.

load-balance

Specifies load balance.

bridge-domain/(bridge-domain-id)/(bridge-domain-type)/peer/(peer-ip)/lsp

Configures label-switched paths (LSPs).

Usage

```
<bridge-domain xmlns="urn:brocade.com:mgmt:brocade-bridge-domain">
    <bridge-domain-id>{req_val}</bridge-domain-id>
    <bridge-domain-type>{req_val}</bridge-domain-type>
    <peer>
        <peer-ip>{req_val}</peer-ip>
        <lsp/>
    </peer>
</bridge-domain>
```

Parameters

bridge-domain-id

Specifies the bridge domain ID.

bridge-domain-id

Specifies the bridge domain type.

peer

Specifies the peer.

peer-ip

Specifies the peer IP address.

lsp

Specifies the LSP.

bridge-domain/(bridge-domain-id)/(bridge-domain-type)/pw-profile

Sets the Pw-profile name.

Usage

```
<bridge-domain xmlns="urn:brocade.com:mgmt:brocade-bridge-domain">
    <bridge-domain-id>{req_val}</bridge-domain-id>
    <bridge-domain-type>{req_val}</bridge-domain-type>
    <pw-profile-name/>
</bridge-domain>
```

bridge-domain/(bridge-domain-id)/(bridge-domain-type)/statistics

Configures statistics for a bridge domain?

Usage

```
<bridge-domain xmlns="urn:brocade.com:mgmt:brocade-bridge-domain">
    <bridge-domain-id>{req_val}</bridge-domain-id>
    <bridge-domain-type>{req_val}</bridge-domain-type>
    <statistics/>
</bridge-domain>
```

bridge-domain/(bridge-domain-id)/(bridge-domain-type)/vc-id

Configures the VC ID for the bridge domain.

Usage

```
<bridge-domain xmlns="urn:brocade.com:mgmt:brocade-bridge-domain">
    <bridge-domain-id>{req_val}</bridge-domain-id>
    <bridge-domain-type>{req_val}</bridge-domain-type>
    <vc-id-num/>
</bridge-domain>
```

Parameters

vc-id-num

Specifies the VC ID.

bridge-domain-type

Specifies the bridge domain type.

chassis

Configures, modifies, or retrieves the IP address of the virtual chassis.

Usage

```
<hide-virtual-ip-holder xmlns="urn:brocade.com:mgmt:brocade-chassis">
    <chassis>
    <virtual-ip>    10.1.1.1<virtual-ip/>
    </chassis>
</hide-virtual-ip-holder>
```

Parameters

virtual-ip

The IP address of the virtual chassis.

chassis/virtual-ip

Configures the chassis the virtual IPv4 address.

Usage

```
<hide-virtual-ip-holder xmlns="urn:brocade.com:mgmt:brocade-chassis">
    <chassis>
        <virtual-ip/>
    </chassis>
</hide-virtual-ip-holder>
```

Parameters

virtual-ip

Specifies the IP address of the virtual chassis.

chassis/virtual-ipv6

Configures the chassis the virtual IPv4 address.

Usage

```
<hide-virtual-ip-holder xmlns="urn:brocade.com:mgmt:brocade-chassis">
    <chassis>
        <virtual-ipv6/>
    </chassis>
</hide-virtual-ip-holder>
```

Parameters

virtual-ipv6

Specifies the IPv6 address of the virtual chassis.

clock

Configures, modifies, or retrieves the system time zone.

Usage

```
<clock-sa xmlns="urn:brocade.com:mgmt:brocade-clock">
    <clock/>
</clock-sa>
```

clock/time-zone

Configures, modifies, or retrieves the system time zone.

Usage

```
<clock-sa xmlns="urn:brocade.com:mgmt:brocade-clock">
    <clock>
        <timezone/>
    </clock>
</clock-sa>
```

Parameters

timezone

Specifies the time zone.

cluster/{cluster-name}/

Configures, retrieves, and modifies Multi-Chassis Trunking (MCT) cluster.

Usage

```
<cluster xmlns="urn:brocade.com:mgmt:brocade-mct">
    <cluster-name>{req_val}</cluster-name>
    <cluster-id>{req_val}</cluster-id>
</cluster>
```

Parameters

cluster-name

Specifies the MCT cluster name .

cluster-id

Specifies the MCT cluster ID.

config-drift-track/off

Disables configuration drift tracking for the current session.

Usage

```
<config-drift-track xmlns="http://extremenetworks.com/yang/extreme-config-mgmt">
  <off/>
</config-drift-track>
```

Parameters

off

Switches off configuration drift detection for the current session.

config-drift-track/values

Fetches the configuration drift values for current session.

Usage

```
<config-drift-track xmlns="http://extremenetworks.com/yang/extreme-config-mgmt">
  <values/>
</config-drift-track>
```

Parameters

values

Fetches the Config Drift Timestamp (as number of seconds from EPOCH) and the Config Drift Counter values for the SLX device. The return values are enclosed in the responses *drift-ts* and *drift-counter* respectively.

config-drift-track/status

Displays Configuration Drift Tracking status for the current session.

Usage

```
<config-drift-track xmlns="http://extremenetworks.com/yang/extreme-config-mgmt">
  <status/>
</config-drift-track>
```

Parameters

status

Displays Config Drift Tracking status for the current session. The current status is enclosed in the response *status*.

crypto-sa/crypto

Configures the certificate expiry SNMP alarms. Four (4) severities of alarms can be configured with individual trigger duration. The four alarm severities are *info*, *minor*, *major*, and *critical*. The durations value can be configured between 1-90 days.

Usage

```
 <rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="101">
   <get-config>
     <source>
        <running/>
          </source>
           <filter type="subtree">
              <crypto-sa xmlns="urn:brocade.com:mgmt:brocade-crypto">
                <crypto/>
              </crypto-sa>
           </filter>
    </get-config>
 </rpc>
```

```
<rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="2"
        xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <edit-config>
        <target>
           <running/>
        </target>
       <config>
        <crypto-sa xmlns="urn:brocade.com:mgmt:brocade-crypto">
            <crypto>
               <cert>
                 <expiry-level>
                   <level>critical</level>
                   <period>48</period>
                 </expiry-level>
               </cert>
            </crypto>
        </crypto-sa>
       </config>
    </edit-config>
</rpc>]]>]]>
```

Parameters

level *severity-level*

Sets the severity level to configure. Severity level can be one of:

- info
- minor
- major
- critical

period *notification-period*

Sets the duration, in days, when this notification type is to be generated. Enter a value in the range 1-90 days. For example, for the notification type *info* where the

notification-period is set to 90 days, this notification type (info) will start getting generated for certificates expiring within the next 90 days.

dai

Manages the IP access list.

Usage

```
<dai-config xmlns="urn:brocade.com:mgmt:brocade-dai">
    <arp/>
</dai-config>
```

Parameters

arp

Specifies the ARP.

dai/arp/access-list

Manages the IP access list.

Usage

```
<dai-config xmlns="urn:brocade.com:mgmt:brocade-dai">
    <arp>
        <access-list>
            <acl-name>{req_val}</acl-name>
        </access-list>
    </arp>
</dai-config>
```

Parameters

acl-name

Specifies the access control list (ACL) name.

delay-link-event

Manages the delay link event (DLE).

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>{req_val}</name>
        <delay-link-event xmlns="urn:brocade.com:mgmt:brocade-dle">
            <delay-link operation="delete"/>
        </delay-link-event>
    </ethernet>
</interface>
```

Parameters

ethernet

Specifies the Physical ethernet interface.

name

Specifies the inetafce name.

dot1x

Configures, retrieves, and modifies 802.1X authentication.

Usage

```
<dot1x xmlns="urn:brocade.com:mgmt:brocade-dot1x">
    <test>
        <timeout/>
    </test>
</dot1x>
```

Parameters

test timeout

The readiness test interval value in seconds. Valid values range from 1 through 65535. The default readiness test interval is 10 seconds.

dot1x/test

Configures the 802.1X readiness test timeout.

Usage

```
<dot1x xmlns="urn:brocade.com:mgmt:brocade-dot1x">
    <test>
        <timeout>20</timeout>
    </test>
</dot1x>
```

Parameters

timeout

Specifies the interval value in seconds. The value can range from 1 through 65535

dot3ah

Manages the Link OAM Protocol.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
               <link-oam xmlns="urn:brocade.com:mgmt:brocade-dot3ah"/>
            </protocol>
```

Parameters

protocol

Specifies the protocol.

event-handler

Creates an event-handler profile.

Usage

```
<event-handler xmlns="urn:brocade.com:mgmt:brocade-event-handler">
    <event-handler-list>
        <name>{req_val}</name>
    </event-handler-list>
</event-handler>
```

Parameters

name

Specifies the name of the event-handler profile. The value can range from 1 through 32 characters. The first character must be alphabetic.

event-handler/{event-handler-name}/action

Creates or accesses an event-handler profile, which can execute a Python script when a specified trigger occurs.

Usage

```
<event-handler xmlns="urn:brocade.com:mgmt:brocade-event-handler">
    <activate>
        <name>
            <name>{req_val}</name>
            <action-timeout/>
        </name>
    </activate>
</event-handler>
```

Parameters

name

Specifies the name of the event-handler profile.

get-tpvm-detail

Displays the details for the TPVM instance.

Usage

```
<nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="26">
   <get-tpvm-detail xmlns="urn:brocade.com:mgmt:brocade-tpvm"></get-tpvm-detail>
</nc:rpc>
```

Response

The response received for this RPC call is

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="26">
   <tpvm xmlns="urn:brocade.com:mgmt:brocade-tpvm">
      <version>4.5.3</version>
      <tpvm-state>tpvm-running</tpvm-state>
      <additional-status>normal</additional-status>
      <auto-boot-enabled></auto-boot-enabled>
      <allow-pwless-enabled></allow-pwless-enabled>
      <password>$6$46FdvUhqJpioLaMQ$DRaG8a8KrOA7TaqjWuvEth5TUgzL1jMOqRgpqddxkGgjU0</
password>
      <hostname>NHnode</hostname>
      <timezone>Asia/Kolkata</timezone>
      <ldap>
         <host></host>
         <port>0</port>
         <basedn></basedn>
         <rootdn></rootdn>
         <rootdnpw></rootdnpw>
      </ldap>
      <dns>
         <primary>10.10.10.10</primary>
```

```
         <secondary>10.10.10.11</secondary>
         <domain>corp.extremenetworks.com</domain>
      </dns>
      <ntp>
         <server>10.20.10.11</server>
      </ntp>
      <trusted-peer>
         <sudo-user></sudo-user>
         <peer-password></peer-password>
      </trusted-peer>
      <interface>
         <interface-name>management</interface-name>
         <ipv4-address>10.20.20.18/24</ipv4-address>
         <gateway>10.20.20.1</gateway>
         <ipv6-address>ff00::10:f66f:66ff:feed:f80f/64</ipv6-address>
      </interface>
   </tpvm>
</rpc-reply>]]>]]>
```

hardware

Configures, modifies, or retrieves the hardware management configuration.

Usage

```
<hardware xmlns="urn:brocade.com:mgmt:brocade-hardware">
    <connector>
        <name>{req_val}</name>
        <breakout>
            <cage-mode/>
        </breakout>
    </connector>
</hardware>
```

Parameters

connector *name*

Specifies the hadrware connnector name.

breakout *name*

Specifies breakout and enters cage-mode.

interface/{interface-type}/{interface-name}/ethernet-segment/advertise

Applies the AC-influenced-DF-election setting on the specified interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <ethernet-segment>
            <advertise>
                <capability>
                    <ac-influenced-df-election/>
                </capability>
            </advertise>
        </ethernet-segment>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name.

ac-influenced-df-election

Enables the capability of setting up AC influenced DF election.

interface/{interface-type}/{interface-name}/ip/access-group

Applies rules specified in an access control list (ACL) to traffic entering or exiting an interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <ip-acl-interface xmlns="urn:brocade.com:mgmt:brocade-ip-access-list">
            <ip>
                <access-group>
                    <ip-access-list>acl11</ip-access-list>
                    <ip-direction>in</ip-direction>
                    <traffic-type>routed</traffic-type>
                </access-group>
            </ip>
        </ip-acl-interface>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name.

ip-access-list

Specifies the ACL name

ip-direction

Specifies the IP direction.

in

Specifies the ACL binding direction as ingress.

out

Specifies the ACL binding direction as egress.

traffic-type

This is an optional parameter/key. Available option is *routed* and when enabled, allows ACL filtering only on routed traffic. This parameter is only supported when ACL is applied to the inbound traffic on a Layer 3 sub-interface such as the VE interface.

interface/{interface-type}/{interface-name}/ip/arp-aging-timeout

Configures how long an ARP entry stays in cache before the cache refreshes.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <ip>
            <ip-config xmlns="urn:brocade.com:mgmt:brocade-ip-config">
                <arp-aging-timeout>220</arp-aging-timeout>
            </ip-config>
        </ip>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name.

arp-aging-timeout

Determines how long an ARP entry stays in cache. The timeout value can range from 0 through 240 minutes.

interface/{interface-type}/{interface-name}/ip/dhcp/relay/gateway

Configures the IP DHCP Relay on a Layer 3 gateway interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <ip>
            <interface-te-dhcp-conf xmlns="urn:brocade.com:mgmt:brocade-dhcp">
                <dhcp>
                    <relay>
                        <gateway>1.1.1.1</gateway>
                    </relay>
                </dhcp>
            </interface-te-dhcp-conf>
        </ip>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

gateway

Specifies the IPv4 gateway address of the DHCP server where the DHCP client requests are to be forwarded

interface/{interface-type}/{interface-name}/ip/igmp/immediate-leave

Removes a group from the IGMP table immediately following receipt of a Leave Group request.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <ip>
            <igmp-phy-intf-cfg xmlns="urn:brocade.com:mgmt:brocade-igmp">
                <igmp>
                    <immediate-leave></immediate-leave>
                </igmp>
            </igmp-phy-intf-cfg>
        </ip>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

immediate-leave

Enables immediate leave processing

interface/{interface-type}/{interface-name}/ip/igmp/last-member-query-count

Sets the last-member query count.

Usage

```
<interface-vlan xmlns="urn:brocade.com:mgmt:brocade-interface">
    <interface>
        <vlan>
            <name>1</name>
            <ip>
                <igmp xmlns="urn:brocade.com:mgmt:brocade-igmp-snooping">
                    <last-member-query-count>3</last-member-query-count>
                </igmp>
            </ip>
        </vlan>
    </interface>
</interface-vlan>
```

Parameters

name

Specifies the interface name

last-member-query-count

Specifies the last member query count value. The value can range from 2 through 10. The default value is 2

interface/{interface-type}/{interface-name}/ip/igmp/last-member-query-interval

Configures last member query interval.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <ip>
            <igmp-phy-intf-cfg xmlns="urn:brocade.com:mgmt:brocade-igmp">
                <igmp>
                    <last-member-query-interval>1500</last-member-query-interval>
                </igmp>
            </igmp-phy-intf-cfg>
        </ip>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

last-member-query-interval

Specifies last member query interval in milliseconds. The interval can range from 100 through 25500. The default value is 1000 milliseconds

interface/{interface-type}/{interface-name}/ip/igmp/query-interval

Configures the query interval for a VLAN. The query interval is the amount of time between IGMP query messages sent by the switch.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <ip>
            <igmp-phy-intf-cfg xmlns="urn:brocade.com:mgmt:brocade-igmp">
                <igmp>
                    <query-interval>150</query-interval>
                </igmp>
            </igmp-phy-intf-cfg>
        </ip>
    </tethernet>
</interface>
```

Parameters

name

Specifies the interface name.

query-interval

Specifies the response time in seconds. The interval can range from 1 through 18000 seconds. The default value is 125 seconds.

interface/{interface-type}/{interface-name}/ip/igmp/query-max-response-time

Configures the maximum response time for IGMP queries

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <ip>
            <igmp-phy-intf-cfg xmlns="urn:brocade.com:mgmt:brocade-igmp">
                <igmp>
                    <query-max-response-time>15</query-max-response-time>
                </igmp>
            </igmp-phy-intf-cfg>
        </ip>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name.

query-max-response-time

Specifies IGMP query max response time in seconds. The response time can range from 1 through 25 seconds. By default, the response time is set to 10 seconds.

interface/{interface-type}/{interface-name}/ip/igmp/robustness-variable

Configures the robustness variable.

Usage

```
<interface-vlan xmlns="urn:brocade.com:mgmt:brocade-interface">
    <interface>
        <vlan>
            <name>1</name>
            <ip>
                <igmp xmlns="urn:brocade.com:mgmt:brocade-igmp-snooping">
                    <robustness-variable>3</robustness-variable>
                </igmp>
            </ip>
        </vlan>
    </interface>
</interface-vlan>
```

Parameters

name

Specifies the interface name.

robustness-variable

Specifies the robustness value. The value can range from 2 through 10. The default value is 2.

interface/{interface-type}/{interface-name}/ip/igmp/startup-query-count

Configures the start up query count.

Usage

```
<interface-vlan xmlns="urn:brocade.com:mgmt:brocade-interface">
    <interface>
        <vlan>
            <name>1</name>
            <ip>
                <igmp>
                    <startup-query-count>3</startup-query-count>
                </igmp>
            </ip>
        </vlan>
    </interface>
</interface-vlan>
```

Parameters

name

Specifies the interface name.

startup-query-count

Specifies the startup query count value. The value can range from 1 through 10. The default value is 2.

interface/{interface-type}/{interface-name}/ip/igmp/startup-query-interval

Configures the start up query interval.

Usage

```
<interface-vlan xmlns="urn:brocade.com:mgmt:brocade-interface">
    <interface>
        <vlan>
            <name>1</name>
            <ip>
                <igmp xmlns="urn:brocade.com:mgmt:brocade-igmp-snooping">
                    <startup-query-interval>10</startup-query-interval>
                </igmp>
            </ip>
        </vlan>
    </interface>
</interface-vlan>
```

Parameters

name

Specifies the interface name.

startup-query-interval

Specifies the start up query interval value. The value can range from 1 through 450. The default value is 1.

interface/{interface-type}/{interface-name}/ip/pim/dr-priority

Configures the designated router (DR) priority of a protocol Independent Multicast (PIM) enabled interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <ip>
            <pim-intf-phy-cont xmlns="urn:brocade.com:mgmt:brocade-pim">
                <pim-int-cmd>
                    <pim>
                        <dr-priority>1</dr-priority>
                    </pim>
                </pim-int-cmd>
            </pim-intf-phy-cont>
        </ip>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

dr-priority

Specifies the DR priority value. The value can range from 0 through 65535. The default value is 1

interface/{interface-type}/{interface-name}/ip/pim/neighbor-filter

By default, directly connected routers under protocol-independent multicast (PIM) form neighborship with one another. Using this command, you can block specified routers from neighborship.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <ip>
            <pim-intf-phy-cont xmlns="urn:brocade.com:mgmt:brocade-pim">
                <pim-int-cmd>
                    <pim>
                        <dr-priority>1</dr-priority>
                    </pim>
                </pim-int-cmd>
            </pim-intf-phy-cont>
        </ip>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name.

neighbor-filter

Specifies the name of a prefix list defined by the ip prefix-list command. Permitted values are between 1 and 63 characters. Although the first character must be alphabetic, the others can be alphanumeric, underscores (_), or minus signs (-).

interface/{interface-type}/{interface-name}/ip/pim-sparse

Enables Protocol Independent Multicast Sparse Mode.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <ip>
            <pim-intf-phy-cont xmlns="urn:brocade.com:mgmt:brocade-pim">
                <pim-int-cmd>
                    <pim-sparse></pim-sparse>
                </pim-int-cmd>
            </pim-intf-phy-cont>
        </ip>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name.

pim-sparse

Enables PIM sparse mode.

interface/{interface-type}/{interface-name}/ip/policy

Enables policy-based routing (PBR) on any Layer 3 interface after ACLs and route map entries are configured.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <ip-pbr-interface xmlns="urn:brocade.com:mgmt:brocade-ip-policy">
            <ip>
                <policy>
                    <route-map>
                        <route-map-name>map1</route-map-name>
                    </route-map>
                </policy>
            </ip>
        </ip-pbr-interface>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

route-map-name

Specifies the name of the route-map

interface/{interface-type}/{interface-name}/ip/proxy-arp

Enables proxy ARP on an interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <ip>
            <ip-config xmlns="urn:brocade.com:mgmt:brocade-ip-config">
                <proxy-arp></proxy-arp>
            </ip-config>
        </ip>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name.

proxy-arp

Enables proxy ARP.

interface/{interface-type}/{interface-name}/ip/router/isis

Configures the Intermediate System-to-Intermediate System (IS-IS) routing at the interface level.

Usage

```
<router xmlns="urn:brocade.com:mgmt:brocade-isis" xmlns:y="http://brocade.com/ns/rest"
y:self="/rest/
config/running/interface/Ve/101/ip/router">
<isis>true</isis>
</router>
</interface>
```

interface/{interface-type}/{interfacename}/ipv6/router/isis

Configures the IS-IS routing protocol.

Usage

```
<router xmlns="urn:brocade.com:mgmt:brocade-isis" xmlns:y="http://brocade.com/ns/rest"
y:self="/rest/
config/running/interface/Ve/101/ipv6/router">
<isis>true</isis>
</router>
</interface>
```

interface/{interface-type}/{interface-name}/isis

Configures the Intermediate System-to-Intermediate System (IS-IS) routing at the interface level.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">1
    <ethernet>
        <name>{req_val}</name>
        <ip>
            <intf-router-isis xmlns="urn:brocade.com:mgmt:brocade-isis"/>
        </ip>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name.

ip

Specifies the IP address.

ethernet

Specifies the physical Ethernet interface.

interface/{interface-type}/{interface-name}/link-error-disable

Configures port link dampening (PLD).

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
                <ethernet>
                    <name>{req_val}</name>
                    <link-error-disable xmlns="urn:brocade.com:mgmt:brocade-pld">
                        <wait-time-in-sec/>
                    </link-error-disable>
                </ethernet>
            </interface>
```

Parameters

ethernet

Specifies Ethernet interface.

name

Specifies the interface name.

link-error-disable-entry

Specifies the link error disable entry.

wait-time-in-sec

Specifies the wait time.

interface/{interface-type}/{interface-name}/link-fault-signaling

Configures, retrieves, and modifies Link Fault Signaling (LFS).

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
                <ethernet>
                    <name>{req_val}</name>
                    <link-fault-signaling xmlns="urn:brocade.com:mgmt:brocade-lfs">
                        <tx/>
                    </link-fault-signaling>
                </ethernet>
            </interface>
```

Parameters

ethernet

Specifies Ethernet interface.

name

Specifies the interface name.

tx

Specifies the tx direction.

interface/{interface-type}/{interface-name}/ipv6/access-group

Applies rules specified in an IPv6 access control list (ACL) to traffic entering or exiting an interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/1</name>
        <ipv6>
            <access-group xmlns="urn:brocade.com:mgmt:brocade-ipv6-access-list">
                <ipv6-access-list>acl12</ipv6-access-list>
                <ip-direction>in</ip-direction>
                <traffic-type>routed</traffic-type>
            </access-group>
        </ipv6>
    </ethernet>
</interface>
```

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ve>
        <name>10</name>
        <ipv6>
            <access-group xmlns="urn:brocade.com:mgmt:brocade-ipv6-access-list">
                <ipv6-access-list>acl12</ipv6-access-list>
                <ip-direction>in</ip-direction>
                <traffic-type>routed</traffic-type>
            </access-group>
        </ipv6>
    </ve>
</interface>
```

Parameters

name

Specifies the interface name

ipv6-access-list

Specifies the name of the standard or extended IP access list

ip-direction

Specifies the binding direction

ingress

Ingress direction

egress

Egress direction

traffic-type

Specifies the traffic type

routed

Filter only routed traffic. This parameter is only valid for VE interfaces.

interface/{interface-type}/{interface-name}/ipv6/dhcp/relay/address

Configures the IPv6 DHCP Relay on a Layer 3 interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/2</name>
        <ipv6>
            <interface-phy-dhcp-conf xmlns="urn:brocade.com:mgmt:brocade-dhcpv6">
                <dhcp>
                    <relay>
                        <servers>
                            <relay-ip-addr>2001:db8::12d:1300</relay-ip-addr>
                            <use-vrf>mgmt-vrf</use-vrf>
                            <interface>
                                <interface-type>ethernet</interface-type>
                                <interface-name>1/2</interface-name>
                            </interface>
                        </servers>
                    </relay>
                </dhcp>
            </interface-phy-dhcp-conf>
        </ipv6>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

relay-ip-addr

Specifies the IPv6 address of the DHCP server where the DHCP client requests are to be forwarded

use-vrf

Use this option if the VRF where the DHCP server is located is different from the VRF of the interface where the client is connected. Specifies the VRF name

interface-type

The type of interface, such as Ethernet or Ve interface.

interface-name

The interface number

interface/{interface-type}/{interface-name}/ipv6/nd/broadcast-mac-trap

Enables the trap for all the IPv6 packets with broadcast mac.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/1</name>
        <ipv6>
            <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                <ipv6-intf-cmds>
                    <nd>
                        <broadcast-mac-trap></broadcast-mac-trap>
                    </nd>
                </ipv6-intf-cmds>
            </ipv6-nd-ra>
        </ipv6>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

broadcast-mac-trap

Enables the trap for all the IPv6 packets with broadcast mac

interface/{interface-type}/{interface-name}/ipv6/nd/cache

Configures the time interval after which the IPv6 Neighbor Discovery cache is deleted or refreshed.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/1</name>
        <ipv6>
            <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                <ipv6-intf-cmds>
                    <nd>
                        <cache>
                            <expire>14000</expire>
                        </cache>
                    </nd>
                </ipv6-intf-cmds>
            </ipv6-nd-ra>
        </ipv6>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

expire

Specifies the time interval in minutes. The interval can range from 1 through 240 minutes. The default value is 240 minutes

interface/{interface-type}/{interface-name}/ipv6/nd/dad

Configures the number of IPv6 Neighbor Discovery Neighbor Solicitation (NS) messages to be sent as part of duplicate address detection (DAD).

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/0/1</name>
        <ipv6>
            <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                <ipv6-intf-cmds>
                    <nd>
                        <dad>
                            <attempts>3</attempts>
                            <time>2</time>
                        </dad>
                    </nd>
                </ipv6-intf-cmds>
            </ipv6-nd-ra>
        </ipv6>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

attempts

Specifies the number of solicitations. The value can range from 0 through 10. By default, the value is set to 2.

time

Specifies the time in seconds. The value can range from 1 through 5. The default value is 1

interface/{interface-type}/{interface-name}/ipv6/nd/hoplimit

Configures the number of hops to be advertised in IPv6 Neighbor Discovery Router Advertisement (RA) messages.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/1</name>
        <ipv6>
            <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                <ipv6-intf-cmds>
                    <nd>
                        <hoplimit>65</hoplimit>
                    </nd>
                </ipv6-intf-cmds>
            </ipv6-nd-ra>
        </ipv6>
    <ethernet>
</interface>
```

Parameters

name

Specifies the interface name

hoplimit

Specifies the number of hops to be advertised. The number can range from 0 through 255. The default value is 64

interface/{interface-type}/{interface-name}/ipv6/nd/managed-config-flag

In IPv6 Neighbor Discovery, indicates to hosts on a local link that they must use the stateful autoconfiguration feature to obtain IPv6 addresses for their interfaces.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/1</name>
        <ipv6>
            <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                <ipv6-intf-cmds>
                    <nd>
                        <managed-config-flag></managed-config-flag>
                    </nd>
                </ipv6-intf-cmds>
            </ipv6-nd-ra>
        </ipv6>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

managed-config-flag

Indicates to hosts on a local link that they must use the stateful autoconfiguration feature to obtain IPv6 addresses for their interfaces

interface/{interface-type}/{interface-name}/ipv6/nd/mtu

Sets the size of the maximum transmission unit (MTU) that is advertised in Neighhbor Discovery Router Advertisement (RA) messages.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/</name>
        <ipv6>
            <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                <ipv6-intf-cmds>
                    <nd>
                        <mtu>1550</mtu>
                    </nd>
                </ipv6-intf-cmds>
            </ipv6-nd-ra>
        </ipv6>
    </ethernet>
</interface>
```

Parameters

name

Specifies the name of the interface

mtu

Specifies the size, in bytes, of the MTU that is advertised. The value can range from 1280 through 65535. The default value is 1500

interface/{interface-type}/{interface-name}/ipv6/nd/ns-interval

Configures the interval for address resolution between IPv6 Neighbor Discovery Neighbor Solicitation (NS) messages.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/1</name>
        <ipv6>
            <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                <ipv6-intf-cmds>
                    <nd>
                        <ns-interval>2</ns-interval>
                    </nd>
                </ipv6-intf-cmds>
            </ipv6-nd-ra>
        </ipv6>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

ns-interval

Specifies the number of seconds between neighbor solicitation messages. The value can range from 1 through 5 seconds. The default value is 1 second

interface/{interface-type}/{interface-name}/ipv6/nd/other-config-flag

In IPv6 Neighbor Discovery, indicates to hosts on a local link that they can use the stateful autoconfiguration feature to obtain configuration settings other than IPv6 address information for their interfaces.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/1</name>
        <ipv6>
            <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                <ipv6-intf-cmds>
                    <nd>
                        <other-config-flag></other-config-flag>
                    </nd>
                </ipv6-intf-cmds>
            </ipv6-nd-ra>
        </ipv6>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

other-config-flag

indicates to hosts on a local link that they can use the stateful autoconfiguration feature to obtain configuration settings other than IPv6 address information for their interfaces

interface/{interface-type}/{interface-name}/ipv6/nd/prefix

Configures which IPv6 prefixes are included in IPv6 Neighbor Discovery Router Advertisement (RA) messages.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/1</name>
        <ipv6>
            <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                <ipv6-intf-cmds>
                    <nd>
                        <prefix>
                            <prefix-ipv6-address>2001:db8:12d:1300::/64</prefix-ipv6-
address>
                            <lifetime>
                                <no-advertise></no-advertise>
                            </lifetime>
                        </prefix>
                    </nd>
                </ipv6-intf-cmds>
            </ipv6-nd-ra>
        </ipv6>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

prefix-ipv6-address

Specifies the IPv6 prefix in hexadecimal with 16-bit values between colons

no-advertise

Specifies no advertisement.

interface/{interface-type}/{interface-name}/ipv6/nd/ra-interval

Configures the maximum interval range and minimum interval at which IPv6 Neighbor Discovery Router Advertisement (RA) messages are sent.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/1</name>
        <ipv6>
            <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                <ipv6-intf-cmds>
                    <nd>
                        <ra-interval>
                            <max-interval>650</max-interval>
                            <min>250</min>
                        </ra-interval>
                    </nd>
                </ipv6-intf-cmds>
            </ipv6-nd-ra>
        </ipv6>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

max-interval

Specifies the maximum interval range in seconds. The interval can range from 4 through 1800 seconds. The default interval is set from 200 through 600, with messages sent randomly within that interval

min

Specifies the minimum interval in seconds. The interval can range from 0 through 1800. The default interval is set to 200 seconds

interface/{interface-type}/{interface-name}/ipv6/nd/ra-lifetime

Configures the amount of time in IPv6 Neighbor Discovery that a router is considered a valid default router.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/1</name>
        <ipv6>
            <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                <ipv6-intf-cmds>
                    <nd>
                        <ra-lifetime>2000</ra-lifetime>
                    </nd>
                </ipv6-intf-cmds>
            </ipv6-nd-ra>
        </ipv6>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

ra-lifetime

Specifies the time in seconds. The time can range from 0 through 9000. The defaut value is 1800

interface/{interface-type}/{interface-name}/ipv6/nd/reachable-time

Configures the amount of time in IPv6 Neighbor Discovery that a device considers a remove IPv6 node reachable.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/1</name>
        <ipv6>
            <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                <ipv6-intf-cmds>
                    <nd>
                        <reachable-time>1</reachable-time>
                    </nd>
                </ipv6-intf-cmds>
            </ipv6-nd-ra>
        </ipv6>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

reachable-time

Specifies the time in milliseconds. The value can range from 0 through 3600000 milliseconds. The defaut time is set to 0

interface/{interface-type}/{interface-name}/ipv6/nd/retrans-timer

Configures the time advertised between IPv6 Neighbor Discovery Neighbor Solicitation (NS) messages.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/1</name>
        <ipv6>
            <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                <ipv6-intf-cmds>
                    <nd>
                        <retrans-timer>1</retrans-timer>
                    </nd>
                </ipv6-intf-cmds>
            </ipv6-nd-ra>
        </ipv6>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

retrans-timer

Specifies the interval in milliseconds, at which NS messages are sent. The interval can range from 0 through 4294967295. The default interval is set to 0

interface/{interface-type}/{interface-name}/ipv6/nd/suppress-ra

Disables the sending of ICMPv6 Router Advertisement (RA) messages, including those sent in response to a solicitation as well as MTUs.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/1</name>
        <ipv6>
            <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                <ipv6-intf-cmds>
                    <nd>
                        <suppress-ra>
                            <suppress-ra-all></suppress-ra-all>
                        </suppress-ra>
                    </nd>
                </ipv6-intf-cmds>
            </ipv6-nd-ra>
        </ipv6>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

suppress-ra

Disables the sending of ICMPv6 Router Advertisement (RA) messages

all

Disables the sending of all RA messages, including those sent in response to a solicitation

mtu

Disables the sending of MTUs in RA messages

interface/{interface-type}/{interface-name}/ipv6/ra-dns-server

Configures, modifies, or retrieves the Domain Name System (DNS) server address and the lifetime multiplier information to IPv6 hosts in the Router Advertisement (RA) message.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
                <ethernet>
                    <name>{req_val}</name>
                    <ipv6>
                        <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                            <ipv6-intf-cmds>
                                <nd>
                                    <ra-dns-server>
                                        <dns-server-prefix>{req_val}</dns-server-prefix>
                                    </ra-dns-server>
                                </nd>
                            </ipv6-intf-cmds>
                        </ipv6-nd-ra>
                    </ipv6>
                </ethernet>
            </interface>
```

Parameters

ethernet

Specifies Ethernet interface.

name

Specifies the interface name.

ipv6

Specifies IPv6 address.

nd

Specifies the neighbor discovery protocol.

dns-server-prefix

Specifies the prefix of the DNS server.

interface/{interface-type}/{interface-name}/ra-dns-server/hoplimit

Configures the number of hops to be advertised in IPv6 neighbor discovery router advertisement (RA) messages.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
                <ethernet>
                    <name>{req_val}</name>
                    <ipv6>
                        <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                            <ipv6-intf-cmds>
                                <nd>
                                    <hoplimit/>
                                </nd>
                            </ipv6-intf-cmds>
                        </ipv6-nd-ra>
                    </ipv6>
                </ethernet>
            </interface>
```

Parameters

ethernet

Specifies Ethernet interface.

name

Specifies the interface name.

ipv6

Specifies IPv6 address.

number

Specifies the number of hops to be advertised.

interface/{interface-type}/{interface-name}/ra-dns-server/mtu

Sets the size of the maximum transmission unit (MTU) that is advertised in Neighbor Discovery Router Advertisement (RA) messages.

Usage

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
                <interface xmlns="urn:brocade.com:mgmt:brocade-interface">
                    <ve>
                        <name>{req_val}</name>
                        <ipv6 xmlns="urn:brocade.com:mgmt:brocade-ipv6-config">
                            <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                                <ipv6-intf-cmds>
                                    <nd>
                                        <mtu/>
                                    </nd>
                                </ipv6-intf-cmds>
                            </ipv6-nd-ra>
                        </ipv6>
                    </ve>
                </interface>
            </routing-system>
```

Parameters

ve

Specifies virtual Ethernet interface.

name

Specifies the interface name.

ipv6

Specifies IPv6 address.

mtu *number*

Specifies the size, in bytes, of the MTU that is advertised.

interface/{interface-type}/{interface-name}/ra-dns-server/other-config-flag

In IPv6 Neighbor Discovery, indicates to hosts on a local link that they can use the stateful autoconfiguration feature to obtain configuration settings other than IPv6 address information for their interfaces.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
                    <ve>
                        <name>{req_val}</name>
                        <ipv6 xmlns="urn:brocade.com:mgmt:brocade-ipv6-config">
                            <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                                <ipv6-intf-cmds>
                                    <nd>
                                        <other-config-flag/>
                                    </nd>
                                </ipv6-intf-cmds>
                            </ipv6-nd-ra>
                        </ipv6>
                    </ve>
                </interface>
```

Parameters

ve

Specifies virtual Ethernet interface.

name

Specifies the interface name.

ipv6

Specifies IPv6 address.

interface/{interface-type}/{interface-name}/ipv6/ra-domain-name

Configures the domain name of the Domain Name System (DNS) suffix and the lifetime multiplier information to IPv6 hosts in the Router Advertisement (RA) message.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
                <ethernet>
                    <name>{req_val}</name>
                    <ipv6>
                        <ipv6-nd-ra xmlns="urn:brocade.com:mgmt:brocade-ipv6-nd-ra">
                            <ipv6-intf-cmds>
                                <nd>
                                    <ra-domain-name>
                                        <domain-name-string>{req_val}</domain-name-string>
                                        <domain-name-lifetime-multiplier/>
                                    </ra-domain-name>
                                </nd>
                            </ipv6-intf-cmds>
                        </ipv6-nd-ra>
                    </ipv6>
                </ethernet>
            </interface>
```

Parameters

ethernet

Specifies Ethernet interface.

name

Specifies the interface name.

ipv6

Specifies IPv6.

ra-domain-name

Specifies the RA domain name.

domain-name-string

Specifies the domain name.

domain-name-lifetime-multiplier

Specifies domain name option and lifetime multiplier for DNS search list option.

interface/{interface-type}/{interface-name}/lldp/dcbx-version

Specifies which version of the Data Center Bridging Exchange (DCBX) protocol to use.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
            <dcbx-version>cee</dcbx-version>
        </lldp>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

dcbx-version

Specifies the version

auto

Auto-adjusts the DCBX protocol version. This is the default setting

cee

Uses the Converged Enhanced Ethernet (CEE) DCBX version.

interface/{interface-type}/{interface-name}/lldp/disable

Disables the Link Layer Discovery Protocol (LLDP) on the interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
            <disable></disable>
        </lldp>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

disable

Disables the Link Layer Discovery Protocol (LLDP) on the interface

interface/{interface-type}/{interface-name}/lldp/iscsi-priority

Configures the priority that will be advertised in the DCBX iSCSI TLV for a specified interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
            <iscsi-priority>3</iscsi-priority>
        </lldp>
    <ethernet>
</interface>
```

Parameters

name

Specifies the interface name

iscsi-priority

Specifies the priority value. The value can range from 0 through 7

interface/{interface-type}/{interface-name}/lldp/profile

Applies a Link Layer Discovery Protocol (LLDP) profile to an interface

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
            <profile>profile1</profile>
        </lldp>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

profile

Specifies the profile name

interface/{interface-type}/{interface-name}/isis/reverse-metric

Configures the reverse metric value on a single IS-IS interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
                <ethernet>
                    <name>{req_val}</name>
                    <interface-eth-isis-conf xmlns="urn:brocade.com:mgmt:brocade-isis">
                        <intf-isis>
                            <interface-isis>
                                <interface-reverse-metric/>
                            </interface-isis>
                        </intf-isis>
                    </interface-eth-isis-conf>
                </ethernet>
            </interface>
```

Parameters

ethernet

Specifies the physical Ethernet interface.

name

Specifies the interafce name.

intf-isis

Specifies the ISIS interface.

interface-reverse-metric

Specifies interface reverse metric.

interface/{interface-type}/{interface-name}/isis/priority

Determines the priority of the interface for being elected as a designated IS.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
                <ethernet>
                    <name>{req_val}</name>
                    <interface-eth-isis-conf xmlns="urn:brocade.com:mgmt:brocade-isis">
                        <intf-isis>
                            <interface-isis>
                                <interface-priority/>
                            </interface-isis>
                        </intf-isis>
                    </interface-eth-isis-conf>
                </ethernet>
            </interface>
```

Parameters

ethernet

Specifies the physical Ethernet interface.

name

Specifies the name of Ethernet interface.

intf-isis

Specifies the ISIS inteface.

interface/{interface-type}/{interface-name}/isis/point-to-point

Configures the network type for the IS-IS interface as point-to-point.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>{req_val}</name>
        <interface-eth-isis-conf xmlns="urn:brocade.com:mgmt:brocade-isis">
            <intf-isis>
                <interface-isis>
                    <interface-point-to-point/>
                </interface-isis>
            </intf-isis>
        </interface-eth-isis-conf>
    </ethernet>
</interface>
```

Parameters

ethernet

Specifies the physical Ethernet interface.

name

Specifies the ISIS interface name.

intf-isis

Configures the ISIS interface.

interface/{interface-type}/{interface-name}/isis/passive

Disables adjacency formation and advertisements on an IS-IS interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>{req_val}</name>
        <interface-eth-isis-conf xmlns="urn:brocade.com:mgmt:brocade-isis">
            <intf-isis>
                <interface-isis>
                    <interface-passive/>
                </interface-isis>
            </intf-isis>
        </interface-eth-isis-conf>
    </ethernet>
</interface>
```

Parameters

ethernet

Specifies the physical Ethernet interface.

name

Specifies the ISIS interface name.

intf-isis

Configures the ISIS interface.

interface/{interface-type}/{interface-name}/isis/ipv6-metric

Configures the metric value for an interface under IPv6 IS-IS MT.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>{req_val}</name>
        <interface-eth-isis-conf xmlns="urn:brocade.com:mgmt:brocade-isis">
            <intf-isis>
                <interface-isis>
                    <interface-ipv6>
                        <interface-ipv6-metric>
                            <interface-ipv6-metric-level>{req_val}</interface-ipv6-metric-
level>
                        </interface-ipv6-metric>
                    </interface-ipv6>
                </interface-isis>
            </intf-isis>
        </interface-eth-isis-conf>
    </ethernet>
```

Parameters

ethernet

Specifies the physical Ethernet interface.

name

Specifies the ISIS interface name.

intf-isis

Configures the ISIS interface.

interface-ipv6

Specifeis the IPv6 ISIS interface.

interface-ipv6-metric

Specifeis the IPv6 ISIS interface metric.

interface-ipv6-metric-level

Specifeis the metric level for the ISIS IPv6 interface .

interface/{interface-type}/{interface-name}/isis/ldp-sync

Enables synchronization with IS-IS for an interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>{req_val}</name>
        <interface-eth-isis-conf xmlns="urn:brocade.com:mgmt:brocade-isis">
            <intf-isis>
                <interface-isis>
                    <interface-ldp-sync/>
                </interface-isis>
            </intf-isis>
        </interface-eth-isis-conf>
    </ethernet>
</interface>
```

Parameters

ethernet

Specifies the physical Ethernet interface.

name

Specifies the ISIS interface name.

intf-isis

Configures the ISIS interface.

interface/{interface-type}/{interface-name}/isis/ipv6-metric

Configures the metric value for an interface under IPv6 IS-IS MT.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>{req_val}</name>
        <interface-eth-isis-conf xmlns="urn:brocade.com:mgmt:brocade-isis">
            <intf-isis>
                <interface-isis>
                    <interface-ipv6>
                        <interface-ipv6-metric>
                            <interface-ipv6-metric-level>{req_val}</interface-ipv6-metric-
level>
                        </interface-ipv6-metric>
                    </interface-ipv6>
                </interface-isis>
            </intf-isis>
        </interface-eth-isis-conf>
    </ethernet>
```

Parameters

ethernet

Specifies the physical Ethernet interface.

name

Specifies the ISIS interface name.

intf-isis

Configures the ISIS interface.

interface-ipv6

Specifeis the IPv6 ISIS interface.

interface-ipv6-metric

Specifeis the IPv6 ISIS interface metric.

interface-ipv6-metric-level

Specifeis the metric level for the ISIS IPv6 interface .

interface/{interface-type}/{interface-name}/isis/hello-multiplier

Specifies the number of IS-IS hello packets a neighbor must miss before a device declares adjacency as down.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>{req_val}</name>
        <interface-eth-isis-conf xmlns="urn:brocade.com:mgmt:brocade-isis">
            <intf-isis>
                <interface-isis>
                    <interface-hello-multiplier>
                        <interface-hello-multiplier-level>{req_val}</interface-hello-
multiplier-level>
                    </interface-hello-multiplier>
                </interface-isis>
            </intf-isis>
        </interface-eth-isis-conf>
    </ethernet>
</interface>
```

Parameters

ethernet

Specifies the physical Ethernet interface.

name

Specifies the interafce name.

intf-isis

Specifies the ISIS interface.

interface-hello-multiplier

Specifies interface hello multiplier.

interface-hello-multiplier-level

Specifies the hello interval multipler level .

interface/{interface-type}/{interface-name}/isis/hello-interval

Specifies how often an IS-IS interface sends hello messages to its IS-IS neighbors.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>{req_val}</name>
        <interface-eth-isis-conf xmlns="urn:brocade.com:mgmt:brocade-isis">
            <intf-isis>
                <interface-isis>
                    <interface-hello-interval>
                        <interface-hello-interval-level>{req_val}</interface-hello-
interval-level>
                    </interface-hello-interval>
                </interface-isis>
            </intf-isis>
        </interface-eth-isis-conf>
    </ethernet>
</interface>
```

Parameters

ethernet

Specifies the physical Ethernet interface.

name

Specifies the interafce name.

intf-isis

Specifies the ISIS interface.

interface-hello-interval

Specifies interface hello interval.

interface-hello-interval-level

Specifies the hello interva hello interval level.

interface/{interface-type}/{interface-name}/isis/hello-padding

Re-enables IS-IS hello padding at the interface level.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>{req_val}</name>
        <interface-eth-isis-conf xmlns="urn:brocade.com:mgmt:brocade-isis">
            <intf-isis>
                <interface-isis>
                    <interface-hello>
                        <interface-hello-padding/>
                    </interface-hello>
                </interface-isis>
            </intf-isis>
        </interface-eth-isis-conf>
    </ethernet>
</interface>
```

Parameters

ethernet

Specifies the physical Ethernet interface.

name

Specifies the interafce name.

intf-isis

Specifies the ISIS interface.

interface-hello

Specifies inteface hello.

interface/{interface-type}/{interface-name}/isis/circuit-type

Configures the type of adjacency used for an IS-IS interface.

Usage

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <interface xmlns="urn:brocade.com:mgmt:brocade-interface">
        <loopback xmlns="urn:brocade.com:mgmt:brocade-intf-loopback">
            <id>{req_val}</id>
            <intf-isis xmlns="urn:brocade.com:mgmt:brocade-isis">
                <interface-isis>
                    <circuit-type/>
                </interface-isis>
            </intf-isis>
        </loopback>
    </interface>
```

Parameters

id

Spcufiers the ID.

interface-isis

Configures the ISIS interface.

circuit-type

Specifies the circuit type.

interface/{interface-type}/{interface-name}/isis/auth-mode

Specifies the type of authentication used for an IS-IS interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
                <ethernet>
                    <name>{req_val}</name>
                    <interface-eth-isis-conf xmlns="urn:brocade.com:mgmt:brocade-isis">
                        <intf-isis>
                            <interface-isis>
                                <interface-auth-mode/>
                            </interface-isis>
                        </intf-isis>
                    </interface-eth-isis-conf>
                </ethernet>
            </interface>
```

Parameters

ethernet

Specifies the physical Ethernet interface.

name

Specifies the interface name.

ainterface-auth-mode

Specifies the authorization mode.

interface/{interface-type}/{interface-name}/isis/auth-key

Configures an authentication key for a specified IS-IS interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>{req_val}</name>
        <interface-eth-isis-conf xmlns="urn:brocade.com:mgmt:brocade-isis">
            <intf-isis>
                <interface-isis>
                    <interface-auth-key>
                        <interface-auth-key-level>{req_val}</interface-auth-key-level>
                    </interface-auth-key>
                </interface-isis>
            </intf-isis>
        </interface-eth-isis-conf>
    </ethernet>
</interface>
```

Parameters

ethernet

Specifies the physical Ethernet interface.

name

Specifies the interface name.

interface-isis

Specfies the ISIS interafce.

interface-auth-key

Configures the ISIS interface authorization key.

interface-auth-key-level

Specfies the authorization key level for the ISIS interface.

interface/{interface-type}/{interface-name}/isis/auth-check

Enables authentication checking for an IS-IS interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>{req_val}</name>
        <interface-eth-isis-conf xmlns="urn:brocade.com:mgmt:brocade-isis">
            <intf-isis>
                <interface-isis>
                    <auth-check/>
                </interface-isis>
            </intf-isis>
        </interface-eth-isis-conf>
    </ethernet>
</interface>
```

Parameters

ethernet

Specifies the physical Ethernet interface.

name

Specifies the interface name.

interface-isis

Specfies the ISIS interafce.

auth-check-level1

Specfies the authorization check level 1.

interface-auth-check-level1-disable

Disables the interface authorization check level 1.

auth-check-level2

Specfies the authorization check level 2.

interface-auth-check-level2-disable

Disables the interface authorization check level 2.

interface/{interface-type}/{interface-name}/link-oam-interface

Configures the Link OAM protocol on an Ethernet interface.

Usage

```
interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>{req_val}</name>
        <link-oam-interface xmlns="urn:brocade.com:mgmt:brocade-dot3ah">
            <enable/>
        </link-oam-interface>
    </ethernet>
</interface>
```

interface/{interface-type}/{interface-name}/link-oam/link-fault/action

Sets action for a Link Fault event .

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>{req_val}</name>
        <link-oam-interface xmlns="urn:brocade.com:mgmt:brocade-dot3ah">
            <remote-failure>
                <link-fault>
                    <link-fault-action/>
                </link-fault>
            </remote-failure>
        </link-oam-interface>
    </ethernet>
</interface>
```

interface/{interface-type}/{interface-name}/link-oam-interface/allow-loopback

Enables or disables loopback.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
     <ethernet>
         <name>{req_val}</name>
         <link-oam-interface xmlns="urn:brocade.com:mgmt:brocade-dot3ah">
             <allow-loopback/>
         </link-oam-interface>
     </ethernet>
 </interface>
```

interface/{interface-type}/{interface-name}/qos/cos-mutation

Enables applying a COS Mutation map to a physical interface. This command is supported for Ethernet and Port-Channel interfaces.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>0/5</name>
        <qos xmlns="urn:brocade.com:mgmt:brocade-qos-mls">
            <cos-mutation>
                <cos-mutation-map-name/>
            </cos-mutation>
        </qos>
    </ethernet>
</interface>
```

Parameters

cos-mutation-map-name

The COS Mutation map to be applied to this interface.

interface/{interface-type}/{interface-name}/qos/trust/trust-dscp

Enables trust DSCP for Switchport interfaces. This command is supported for Ethernet and Port-Channel interfaces.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>0/5</name>
        <qos xmlns="urn:brocade.com:mgmt:brocade-qos-mls">
            <trust>
                <trust-dscp/>
            </trust>
        </qos>
    </ethernet>
</interface>
```

Parameters

None

interface/{interface-type}/{interface-name}/qos/remark/remark-dscp

Enables remark DSCP for Switchport interfaces. This command is supported for Ethernet and Port-Channel interfaces.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>0/5</name>
        <qos xmlns="urn:brocade.com:mgmt:brocade-qos-mls">
            <remark>
                <remark-dscp/>
            </remark>
        </qos>
    </ethernet>
</interface>
```

Parameters

None

interface/{interface-type}/{interface-name}/rmon/collection/history

Collects Ethernet group statistics for later retrieval

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <rmon xmlns="urn:brocade.com:mgmt:brocade-rmon">
            <collection>
                <history-control-entry>
                    <history-control-index>25</history-control-index>
                    <history-control-buckets-requested>10</history-control-buckets-
requested>
                    <history-control-interval>2000</history-control-interval>
                    <history-control-owner>admin</history-control-owner>
                </history-control-entry>
            </collection>
        </rmon>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name.

history-control-index

Specifies the RMON collection control index value. The value can range from 1 through 65535.

history-control-buckets-requested

Specifies the maximum number of buckets for the RMON collection history. The value can range from 1 through 65535.

history-control-interval

Specifies the alarm sample interval in seconds. The value can range from 1 through 3600. The default value is 1800.

history-control-owner

Specifies the identity of the owner. The maximum number of characters is 15.

interface/{interface-type}/{interface-name}/rmon/collection/stats

Collects Ethernet group statistics n a specific interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <rmon xmlns="urn:brocade.com:mgmt:brocade-rmon">
            <collection>
                <history-control-entry>
                    <history-control-index>25</history-control-index>
                    <history-control-buckets-requested>10</history-control-buckets-
requested>
                    <history-control-interval>2000</history-control-interval>
                    <history-control-owner>admin</history-control-owner>
                </history-control-entry>
            </collection>
        </rmon>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

ether-stats-index

Specifies the RMON collection control index value. The value can range from 1 through 65535

ether-stats-owner

Specifies the identity of the owner

interface/{interface-type}/{interface-name}/sflow/enable

Enables sFlow on an interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <sflow xmlns="urn:brocade.com:mgmt:brocade-sflow">
            <enable></enable>
        </sflow>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name.

enable

Enables sFlow on the interface.

interface/{interface-type}/{interface-name}/sflow/polling-interval

Configures the polling interval globally.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <sflow xmlns="urn:brocade.com:mgmt:brocade-sflow">
            <polling-interval>25</polling-interval>
        </sflow>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name.

polling-interval

Specifies the polling interval in seconds. The value can range from 1 through 65535 seconds.

interface/{interface-type}/{interface-name}/sflow/sample-rate

Sets the default sampling rate for an interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <sflow xmlns="urn:brocade.com:mgmt:brocade-sflow">
            <sample-rate>33300</sample-rate>
        </sflow>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

sample-rate

The default value is 2048 packets for all platforms.

The valid sample rates are:

- 1 - 16000000 - for SLX 9740 and Extreme 8820
- 1 - 100000 - for all other platforms

interface/{interface-type}/{interface-name}/spanning-tree/autoedge

Enables automatic edge detection.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <autoedge></autoedge>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name.

autoedge

Enables automatic edge detection.

interface/{interface-type}/{interface-name}/spanning-tree/bpdu-mac

Sets the MAC address of the Bridge Protocol Data Unit (BPDU).

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <bpdu-mac>0304.0800.0700</bpdu-mac>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

bpdu-mac

Specifies the MAC address of the Bridge Protocol Data Unit
0100.0ccc.cccd

Cisco Control Mac

0304.0800.0700

Extreme Control Mac

interface/{interface-type}/{interface-name}/spanning-tree/cost

Changes an interface's spanning-tree port path cost.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <cost>10000</cost>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name.

cost

Specifies the path cost for the Spanning Tree Protocol (STP) calculations. The value can range from 1 through 200000000.

interface/{interface-type}/{interface-name}/spanning-tree/edgeport

Enables the edge port on an interface to allow the interface to quickly transition to the forwarding state.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <edgeport>
                <edgeportbasic></edgeportbasic>
            </edgeport>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name.

edgeportbasic

Enables the edge port on an interface.

interface/{interface-type}/{interface-name}/spanning-tree/edgeport/bpdu-filter

Sets the edge port Bridge Protocol Data Unit (BPDU) filter for the port.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <edgeport>
                <bpdu-filter></bpdu-filter>
            </edgeport>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

bpdu-filter

Sets the edge port Bridge Protocol Data Unit (BPDU) filter for the port

interface/{interface-type}/{interface-name}/spanning-tree/edgeport/bpdu-guard

Guards the port against the reception of BPDUs.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>22/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <edgeport>
                <bpdu-guard></bpdu-guard>
            </edgeport>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name.

bpdu-guard

Guards the port against the reception of BPDUs.

interface/{interface-type}/{interface-name}/spanning-tree/guard/root

Enables the guard root to restrict which interface is allowed to be the spanning-tree root port or the path-to-the-root for the switch.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <guard>
                <root></root>
            </guard>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

root

Enables the guard root

interface/{interface-type}/{interface-name}/spanning-tree/hello-time

Configures the hello-time in seconds on the interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <hello-time>5</hello-time>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

hello-time

Sets the interval between the hello Bridge Protocol Data Units (BPDUs) sent by the root switch configuration messages. The value can range from 1 through 10.

interface/{interface-type}/{interface-name}/spanning-tree/instance/priority

Sets restrictions for the port of particular MSTP instances.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <instance>
                <id>5</id>
                <priority>240</priority>
            </instance>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

id

Specifies the MSTP instance. The value can range from 1 through 32

priority

Specifies the port priority for a bridge in increments of 16. The value can range from 0 through 240

interface/{interface-type}/{interface-name}/spanning-tree/instance/cost

Configures the path-cost for a port.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <instance>
                <id>5</id>
                <cost>60</cost>
            </instance>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

id

Specifies the MSTP instance. The value can range from 1 through 32

cost

Specifies the path-cost for a port. The value can range from 1 through 20000000

interface/{interface-type}/{interface-name}/spanning-tree/instance/restricted-role

Specifies to restrict the role of a port.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <instance>
                <id>5</id>
                <restricted-role></restricted-role>
            </instance>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

id

Specifies the MSTP instance. The value can range from 1 through 32

restricted-role

Specifies to restrict the role of a port

interface/{interface-type}/{interface-name}/spanning-tree/instance/restricted-tcn

Specifies to restrict the propagation of the topology change notifications from a port.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <instance>
                <id>5</id>
                <restricted-tcn></restricted-tcn>
            </instance>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

id

Specifies the MSTP instance. The value can range from 1 through 32

restricted-tcn

Specifies to restrict the propagation of the topology change notifications from a port

interface/{interface-type}/{interface-name}/spanning-tree/link-type

Enables and disables the rapid transition for the Spanning Tree Protocol (STP).

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <link-type>shared</link-type>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

link-type

Enables and disables the rapid transition
point-to-point

Enables rapid transition

shared

Disables rapid transition

interface/{interface-type}/{interface-name}/spanning-tree/peer-switch

When the Peer-Switch feature is enabled on a Cisco vPC domain, it broadcasts the same BPDUs from both vPC primary and secondary nodes to peer devices. But a VCS on a VLAG assumes that any logical interface receives only one BPDU from any of its member ports, so when it receives the two BPDUs from a Cisco vPC domain it creates a churn of VLAG mastership, and this increases the CPU load on a Extreme VDX. To avoid these problem, BDPUs received on the VLAG non-master are dropped. When the Peer-Switch functionality is enabled and the the VLAG Master is selected, BPDUs received on VLAG Non-Master are dropped unless there is a change in the status of the VLAG Master.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <peer-switch></peer-switch>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

peer-switch

Enables the Peer-Switch functionality on a portchannel

interface/{interface-type}/{interface-name}/spanning-tree/portfast

Enables the Port Fast feature on an interface to allow the interface to quickly transition to forwarding state.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>22/0/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <portfast>
                <portfastbasic></portfastbasic>
            </portfast>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

interface/{interface-type}/{interface-name}/spanning-tree/portfast/bpdu-filter

Sets the Port Fast BPDU filter for the port.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <portfast>
                <bpdu-filter></bpdu-filter>
            </portfast>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

bpdu-filter

Sets the Port Fast BPDU filter for the port

interface/{interface-type}/{interface-name}/spanning-tree/portfast/bpdu-guard

Guards the port against the reception of BPDUs.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>22/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <portfast>
                <bpdu-guard></bpdu-guard>
            </portfast>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

bpdu-guard

Guards the port against the reception of BPDUs

interface/{interface-type}/{interface-name}/spanning-tree/priority

Changes an interface's spanning-tree port priority.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <priority>32</priority>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

priority

Specifies the interface priority for the spanning tree. The value can range from 0 through 240. Port priority is in increments of 16

interface/{interface-type}/{interface-name}/spanning-tree/restricted-role

Restricts the role of the port from becoming a root port.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <restricted-role></restricted-role>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

restricted-role

Restricts the role of the port from becoming a root port

interface/{interface-type}/{interface-name}/spanning-tree/restricted-tcn

Restricts the Topology Change Notification (TCN) Bridge Protocol Data Units (BPDUs) sent on the port.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <restricted-tcn></restricted-tcn>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

restricted-tcn

Restricts the Topology Change Notification

interface/{interface-type}/{interface-name}/spanning-tree/shutdown

Disables spanning tree on the interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <shutdown></shutdown>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

shutdown

Disables spanning tree on the interface

interface/{interface-type}/{interface-name}/spanning-tree/vlan

Configures the VLAN identifier for the spanning tree interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
            <vlan>
                <id>200</id>
                <cost>10000</cost>
            </vlan>
        </spanning-tree>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

id

Specifies the VLAN identifier for the spanning tree interface

cost

Specifies cost.

interface/{interface-type}/{interface-name}/storm-control/ingress

Limits ingress traffic on a specified interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/5</name>
        <storm-control xmlns="urn:brocade.com:mgmt:brocade-bum-storm-control">
            <ingress>
                <protocol-type>broadcast</protocol-type>
                <rate-format>limit-bps</rate-format>
                <rate-bps>100</rate-bps>
                <rate-percent>458632240</rate-percent>
                <bum-action>monitor</bum-action>
            </ingress>
        </storm-control>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

protocol-type

Specifies the protocol type

broadcast

Specifies that the command will operate on broadcast traffic only

unknown-unicast

Specifies that the command will operate on unknown-unicast traffic only

multicast

Specifies that the command will operate on multicast traffic only

rate-format

Specfies the rate format

limit-bps

Specifies that the value given to the rate parameter is in bits per second

limit-percent

Specifies that the value given to the rate parameter is in percentage of capacity of the interface

rate-bps

Specifies the amount of traffic allowed, either in bits per second or a percentage of the capacity of the interface, depending on which parameter was chosen with the rate

monitor

Specifies that, if a rate limit is reached within a five-second sampling period, a log message gets sent

shutdown

Specifies that, if a rate limit is exceeded within a five-second sampling period, the interface will be shut down

interface/{interface-type}/{interface-name}/switchport

Puts the interface in Layer 2 mode and sets the switching characteristics of the Layer 2 interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2//1</name>
        <switchport></switchport>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

switchport

Enables switching characteristics of the Layer 2 interface

interface/{interface-type}/{interface-name}/switchport/access

Sets the Layer 2 interface as access.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>2/1</name>
        <switchport>
            <access>
                <accessvlan>20</accessvlan>
            </access>
        </switchport>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

accessvlan

Specifies the VLAN ID

interface/{interface-type}/{interface-name}/switchport/mode

Sets the mode of the Layer 2 interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/0/2</name>
        <switchport>
            <port-security>
                <oui>1122.2233.3322</oui>
            </port-security>
        </switchport>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

vlan-mode

Sets the mode

access

Sets the Layer 2 interface as access. Access mode assigns the port to a VLAN

trunk

Sets the Layer 2 interface as trunk. Trunk mode makes the port linkable to other switches and routers

interface/{interface-type}/{interface-name}/switchport/mode/private-vlan

Sets the private VLAN (PVLAN) mode of the Layer 2 interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/2</name>
        <switchport>
            <mode>
                <pvlan>trunk</pvlan>
            </mode>
        </switchport>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

pvlan

Sets the private VLAN mode

host

Sets the port mode to host (community or isolated) mode. It accepts the untagged or priority tagged packet, and the outgoing packet is untagged

promiscuous

Sets the port mode to promiscuous mode

trunk

Sets the port mode to PVLAN trunk port. This port can carry multiple VLANs. The outgoing packets carry all VLANs, except for native VLANs

trunk host

Sets the port mode to host (community or isolated) mode. The trunk operand means the outgoing packet will be tagged "accept"

trunk promiscuous

Sets the trunk to promiscuous mode

interface/{interface-type}/{interface-name}/switchport/mode/trunk-no-default-native

Configures a port to trunk mode without the implicit creation of default native VLAN 1 in a Virtual Fabrics context.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/2</name>
        <switchport>
            <mode>
                <trunk-no-default-native></trunk-no-default-native>
            </mode>
        </switchport>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

trunk-no-default-native

Enables a port to trunk mode

interface/{interface-type}/{interface-name}/switchport/port-security

Enables port security on an interface port.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/2</name>
        <switchport>
            <port-security></port-security>
        </switchport>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

port-security

Enables port security

interface/{interface-type}/{interface-name}/switchport/port-security/mac-address

Configures the MAC address option for port security on an interface port.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/2</name>
        <switchport>
            <port-security>
                <port-secutiry-mac-address>
                    <mac-address>1122.2233.3322</mac-address>
                    <port-sec-vlan>1</port-sec-vlan>
                </port-secutiry-mac-address>
            </port-security>
        </switchport>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

mac-address

Specifies the MAC address-based VLAN classifier rule used to map to a specific VLAN

port-sec-vlan

Specifies a VLAN

interface/{interface-type}/{interface-name}/switchport/port-security/max

Configures the maximum number of MAC addresses used for port security on an interface port.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/2</name>
        <switchport>
            <port-security>
                <port-sec-max>12</port-sec-max>
            </port-security>
        </switchport>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

port-sec-max

Specifies the maximum number of secure MAC addresses. The value can range is from 1 through 8192

interface/{interface-type}/{interface-name}/switchport/port-security/oui

Configures an Organizationally Unique Identifier (OUI) MAC address for port security on an interface port. All other addresses are ignored.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/2</name>
        <switchport>
            <port-security>
                <oui>1122.2233.3322</oui>
            </port-security>
        </switchport>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

oui

Specifies the OUI MAC address from which to accept vendor traffic, in the format xxxx.xxxx.xxxx

interface/{interface-type}/{interface-name}/switchport/port-security/shutdown-time

Configures the shutdown-time option for port security on an interface port.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/2</name>
        <switchport>
            <port-security>
                <shutdown-time>15</shutdown-time>
            </port-security>
        </switchport>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

shutdown-time

Specifies the amount of time to shut down the interface port, in minutes. The value can range from 1 through 15

interface/{interface-type}/{interface-name}/switchport/port-security/sticky

Converts dynamic MAC addresses to sticky secure MAC addresses.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/0/2</name>
        <switchport>
            <port-security>
                <sticky>
                    <sticky-flag></sticky-flag>
                    <port-secutiry-mac-address>
                        <mac-address>1122.2255.5544</mac-address>
                        <port-sec-vlan>100</port-sec-vlan>
                    </port-secutiry-mac-address>
                </sticky>
            </port-security>
        </switchport>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

mac-address

Specifies the MAC address-based VLAN classifier rule used to map to a specific VLAN

port-sec-vlan

Specifies a VLAN ID

interface/{interface-type}/{interface-name}/switchport/port-security/violation

Configures the violation response options for port security on an interface.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
    <ethernet>
        <name>1/2</name>
        <switchport>
            <port-security>
                <port-sec-violation>restrict</port-sec-violation>
            </port-security>
        </switchport>
    </ethernet>
</interface>
```

Parameters

name

Specifies the interface name

port-sec-violation

Specifies the violation response

restrict

Drops packets with unknown source addresses until you remove a sufficient number of secure MAC addresses to drop below the maximum value

shutdown

Puts the interface into the error-disabled state for a predetermined amount of time

ip/access-list/extended

Configures extended IP access list.

Usage

```
<ip-acl xmlns="urn:brocade.com:mgmt:brocade-ip-access-list">
    <ip>
        <access-list>
            <extended>
                <name>acl5</name>
            </extended>
        </access-list>
    </ip>
</ip-acl>
```

Parameters

name

Specifies the access list name.

ip/access-list/extended/{acl-name}/seq

Configures the sequence number.

Usage

```
<ip-acl xmlns="urn:brocade.com:mgmt:brocade-ip-access-list">
    <ip>
        <access-list>
            <extended>
                <name>acl5</name>
                <hide-ip-acl-ext>
                    <seq>
                        <seq-id>14</seq-id>
                        <action>deny</action>
                        <protocol-type>ip</protocol-type>
                        <src-host-any-sip>any</src-host-any-sip>
                        <dst-host-any-dip>host</dst-host-any-dip>
                        <dst-host-ip>1.1.1.1</dst-host-ip>
                        <vlan>1</vlan>
                        <count></count>
                        <log></log>
                    </seq>
                </hide-ip-acl-ext>
            </extended>
        </access-list>
    </ip>
</ip-acl>
```

Parameters

name

Access list name

seq-id

Specifies the sequence number for the rule

action

Specifies the action to be performed. The following actions can be performed.

deny

Drops traffic.

hard-drop

Forces to drop traffic.

permit

Allows traffic.

protocol-type

The type of protocol used.

src-host-any-sip

Specifies any source host IP address.

dst-host-any-dip

Specifies any destination host IP address.

dst-host-ip

Specifies the destination host IP address.

vlan

VLAN interface numbe.

count

Enables the counting of the packets matching the rule.

log

Packets matching the filter are sent to the CPU and a corresponding log entry is generated by enabling the logging mechanism. This parameter is only available with permit and deny.

ip/access-list/standard

Configures a standard IP access list.

Usage

```
<ip-acl xmlns="urn:brocade.com:mgmt:brocade-ip-access-list">
    <ip>
        <access-list>
            <standard>
                <name>acl20</name>
                <remark>include-all-DHCP-servers</remark>
            </standard>
        </access-list>
    </ip>
</ip-acl>
```

Parameters

name

Specifies the access list name.

remark

A meaningful, human readable description to the IP access list definition. Maximum length 256 characters.

ip/access-list/standard/{acl-name}/seq

Configures sequence number.

Usage

```
<ip-acl xmlns="urn:brocade.com:mgmt:brocade-ip-access-list">
    <ip>
        <access-list>
            <standard>
                <name>acl20</name>
                <hide-ip-acl-std>
                    <seq>
                        <seq-id>20</seq-id>
                        <action>permit</action>
                        <src-host-any-sip>host</src-host-any-sip>
                        <src-host-ip>1.1.1.1</src-host-ip>
                        <count></count>
                        <log></log>
                    </seq>
                </hide-ip-acl-std>
            </standard>
        </access-list>
    </ip>
</ip-acl>
```

Parameters

name

Accesses the list name.

seq-id

Specifies the sequence number for the rule.

action

Specifies the action to be performed. The following actions can be performed.

deny

Drops traffic.

hard-drop

Forces to drop traffic.

permit

Allows traffic.

src-host-any-sip

Specifies any source host IP address.

src-host-ip

Specifies the source host IP address.

count

Enables the counting of the packets matching the rule.

log

Packets matching the filter are sent to the CPU and a corresponding log entry is generated by enabling the logging mechanism. This parameter is only available with permit and deny.

ip/dhcp/relay/servers

Configures DHCP relay servers.

Usage

```
<ip xmlns="urn:brocade.com:mgmt:brocade-ip-config">
    <interface-ve-dhcp-conf xmlns="urn:brocade.com:mgmt:brocade-dhcp">
        <dhcp>
            <relay>
                <servers>
                    <relay-ip-addr>{req_val}</relay-ip-addr>
                    <server-vrf-name>{req_val}</server-vrf-name>
                </servers>
            </relay>
        </dhcp>
    </interface-ve-dhcp-conf>
</ip>
```

Parameters

relay-ip-addr

Specifies the IP address of the relay server.

server-vrf-name

Specifies the VRF name of the server.

ip/route

Configures IPv4 static routes.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
  <edit-config>
   <target>
     <running></running>
   </target>
   <config>
    <vrf xmlns="urn:brocade.com:mgmt:brocade-vrf">
       <vrf-name>VR391</vrf-name>
       <address-family>
          <ip>
            <unicast>
            <ip xmlns="urn:brocade.com:mgmt:brocade-rtm">
             <route>
             <static-route-nh>
             <static-route-dest>41.1.1.1/32</static-route-dest>
             <static-route-next-hop>40.91.15.4</static-route-next-hop>
               <route-attributes>
               <distance>30</distance>
               <route_name>name2</route_name>
               </route-attributes>
             </static-route-nh>
             </route>
            </ip>
          </unicast>
       </ip>
      </address-family>
      </vrf>
    </config>
  </edit-config>
</rpc>
```

ipv6/access-list/extended

Configure IPv6 extended access list.

Usage

```
<ipv6-acl xmlns="urn:brocade.com:mgmt:brocade-ipv6-access-list">
    <ipv6>
        <access-list>
            <extended>
                <name>acl14</name>
            </extended>
        </access-list>
    </ipv6>
</ipv6-acl>
```

Parameters

name

Specifies the list name.

ipv6/access-list/extended/{acl-name}/seq

Configures the sequence number.

Usage

```
<ipv6-acl xmlns="urn:brocade.com:mgmt:brocade-ipv6-access-list">
    <ipv6>
        <access-list>
            <extended>
                <name>acl14</name>
                <seq>
                    <seq-id>14</seq-id>
                    <action>deny</action>
                    <protocol-type>ipv6</protocol-type>
                    <src-host-any-sip>any</src-host-any-sip>
                    <dst-host-any-dip>host</dst-host-any-dip>
                    <dst-host-ip>2004:384d::24:23</dst-host-ip>
                    <vlan>1</vlan>
                    <count></count>
                    <log></log>
                </seq>
            </extended>
        </access-list>
    </ipv6>
</ipv6-acl>
```

Parameters

name

Specifies the access list name.

seq-id

Specifies the sequence number for the rule.

action

Specifies the action to be performed. The following actions can be performed.

deny

Drops traffic.

hard-drop

Forces to drop traffic.

permit

Allows traffic.

protocol-type

Specifies the type of protocol used.

src-host-any-sip

Specifies any source host IP address.

dst-host-any-dip

Specifies any destination host IP address.

dst-host-ip

Specifies the destination host IP address.

vlan

VLAN interface number

count

Enables the counting of the packets matching the rule.

log

Packets matching the filter are sent to the CPU and a corresponding log entry is generated by enabling the logging mechanism. This parameter is only available with permit and deny.

ipv6/access-list/standard

Configures IPv6 standard access list.

Usage

```
<ipv6-acl xmlns="urn:brocade.com:mgmt:brocade-ipv6-access-list">
    <ipv6>
        <access-list>
            <standard>
                <name>acl24</name>
                <remark>IPv6-access-list</remark>
            </standard>
        </access-list>
    </ipv6>
</ipv6-acl>
```

Parameters

name

Specifies the access list name.

remark

A meaningful, human readable description to the IP access list definition. Maximum length 256 characters.

ipv6/access-list/standard/{acl-name}/seq

Configures the sequence number.

Usage

```
<ipv6-acl xmlns="urn:brocade.com:mgmt:brocade-ipv6-access-list">
    <ipv6>
        <access-list>
            <standard>
                <name>acl24</name>
                <seq>
                    <seq-id>24</seq-id>
                    <action>permit</action>
                    <src-host-any-sip>any</src-host-any-sip>
                    <count></count>
                    <log></log>
                </seq>
            </standard>
        </access-list>
    </ipv6>
</ipv6-acl>
```

Parameters

name

Specifies the access list name.

seq-id

Specifies the sequence number for the rule.

action

Specifies the action to be performed. The following actions can be performed.

deny

Drops traffic.

hard-drop

Forces to drop traffic.

permit

Allows traffic.

src-host-any-sip

Specifies any source host IP address.

count

Enables the counting of the packets matching the rule.

log

Packets matching the filter are sent to the CPU and a corresponding log entry is generated by enabling the logging mechanism. This parameter is only available with permit and deny.

ipv6/route

Configures the IPv6 static routes.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
  <edit-config>
   <target>
    <running>
    </running>
   </target>
      <config>
       <vrf xmlns="urn:brocade.com:mgmt:brocade-vrf">
          <vrf-name>vrf1</vrf-name>
              <address-family>
                 <ipv6>
                      <unicast>
                         <ipv6 xmlns="urn:brocade.com:mgmt:brocade-ipv6-rtm">
                            <route>
                             <static-route-oif>
                             <static-route-dest>2001:db8:2:3::/64</static-route-dest>
                             <static-route-oif-type>port-channel</static-route-oif-type>
                             <static-route-oif-name>1</static-route-oif-name>
                             <route-attributes>
                                 <route_name>namenetconfoif</route_name>
                                 <distance>40</distance>
                             </route-attributes>
                             </static-route-oif>
                            </route>
                          </ipv6>
                      </unicast>
                </ipv6>
              </address-family>
          </vrf>
     </config>
</edit-config>
</rpc>
```

lvtep/broadcast-local-bias

Enables and disables broadcasting of local Broadcast, Unicast, and Multicast traffic over LVTEP.

Usage

```
<lvtep xmlns="urn:brocade.com:mgmt:brocade-mct">
    <broadcast-local-bias/>
</lvtep>
```

```
<lvtep xmlns="urn:brocade.com:mgmt:brocade-mct">
    <broadcast-local-bias operation="delete"/>
</lvtep>
```

Parameters

operation

Sets the operation to be performed. The only supported value is *Delete*. When this parameter is configured as *Delete* it deletes the LVTEP local bias configuration.

mac/access-list/extended/{acl-name}/seq

Configures the sequence number

Usage

```
<mac xmlns="urn:brocade.com:mgmt:brocade-mac-access-list">
    <access-list>
        <extended>
            <name>acl21</name>
            <hide-mac-acl-ext>
                <seq>
                    <seq-id>25</seq-id>
                    <action>hard-drop</action>
                    <source>0011.1122.2233</source>
                    <src-mac-addr-mask>1212.2323.3131</src-mac-addr-mask>
                    <dst>any</dst>
                    <ethertype>arp</ethertype>
                    <vlan>1</vlan>
                    <count></count>
                    <log></log>
                </seq>
            </hide-mac-acl-ext>
        </extended>
    </access-list>
</mac>
```

Parameters

name

Specifies the access list name.

seq-id

Specifies the sequence ID.

action

Displays all rules with the specified action. The following actions are allowed.

deny

Drops traffic.

hard-drop

Forces to drop traffic.

permit

Allows traffic.

source

Specifies the source details.

src-mac-addr-mask

Specifies the source MAC address mask.

dst

Specifies details on the destination

ethertype

Filters extended ACLs traffic based on ethertype.

vlan

Specifies the VLAN number.

count

Displays the count of forwarding entries.

log

Specifies log.

mac/access-list/standard

Configures standard MAC access-list.

Usage

```
<mac xmlns="urn:brocade.com:mgmt:brocade-mac-access-list">
    <access-list>
        <standard>
            <name>acl25</name>
        </standard>
    </access-list>
</mac>
```

Parameters

name

Specifies the access list name.

mac/access-list/standard/{acl-name}/seq

Configures the sequence number.

Usage

```
<mac xmlns="urn:brocade.com:mgmt:brocade-mac-access-list">
    <access-list>
        <standard>
            <name>acl25</name>
            <hide-mac-acl-std>
                <seq>
                    <seq-id>21</seq-id>
                    <action>permit</action>
                    <source>0011.1122.2233</source>
                    <src-mac-addr-mask>0101.0202.0303</src-mac-addr-mask>
                    <count></count>
                    <log></log>
                </seq>
            </hide-mac-acl-std>
        </standard>
    </access-list>
</mac>
```

Parameters

name

Specifies the access list name.

seq-id

Specifies the sequence ID.

action

Displays all rules with the specified action. The following actions are allowed.

deny

Drops traffic.

hard-drop

Forces to drop traffic.

permit

Allows traffic.

source

Specifies the source details.

src-mac-addr-mask

Specifies the source MAC address mask.

count

Displays the count of forwarding entries.

log

Spcies log.

mac-address-table/aging-time

Configures mac-address-table aging time.

Usage

```
<mac-address-table xmlns="urn:brocade.com:mgmt:brocade-mac-address-table">
    <aging-time>
        <legacy-time-out>350</legacy-time-out>
    </aging-time>
</mac-address-table>
```

Parameters

legacy-time-out

Specifies the aging time in seconds. The value can range from 60 through 100000 seconds.

management-security

Usage

```
<management-security xmlns="urn:brocade.com:mgmt:brocade-crypto">
    <ssl-profile>
        <server>
            <tls>
                <min-version>1.2</min-version>
            </tls>
        </server>
        <client>
            <tls>
                <min-version>1.3</min-version>
            </tls>
        </client>
    </ssl-profile>
</management-security>
```

Parameters

ssl-profile

Indicates the SSL profile being configured. SSL profile can be *Server* or *Client*. The same device can also be configured as both a *Server* and a *Client*.

server

Configures the server side TLS version. This version is used when the device acts as a Server.

client

Configures the client side TLS version. This version is used when the device act as a Client.

tls

Indicates that TLS version is being configured.

min-version

Configures the minimum supported TLS version.

next-hop-recursion

Enables recursive next-hop resolution for PBR route-maps.

Usage

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
  <route-map xmlns="urn:brocade.com:mgmt:brocade-ip-policy">
    <name>r1</name>
    <action-rm>permit</action-rm>
    <instance>10>/instance>
    <content>
      <next-hop-recursion/>
    </content>
  </route-map>
</routing-system>
```

ntp/authentication-key

Configures NTP authentication key parameters.

Usage

```
<ntp xmlns="urn:brocade.com:mgmt:brocade-ntp">
    <authentication-key>
        <keyid>650</keyid>
        <sha1>sha1</sha1>
        <encryption-level>0</encryption-level>
    </authentication-key>
</ntp>
```

Parameters

keyid

Specifies authentication key ID. The value can range from 65535

encryption-type

Specifies the encryption type. Two types of encryption are allowed:

sha1

SHA1 encryption

md5

MD5 encrytion

encryption-level

Specifies the encrytion level. There are two encryption levels

0

Stores the key in clear-text format

ntp/disable

Disables the NTP server/client mode.

Usage

```
<ntp xmlns="urn:brocade.com:mgmt:brocade-ntp">
                <disable/>
            </ntp>>
```

Parameters

serve

If this keyword is specified, then NTP will not serve the time to downstream devices. This keyword disables the NTP server mode functionalities.If this keyword is not specified, then both NTP client mode and NTP server mode functionalities will be disabled.

ntp/master

Configures the device as an authoritative NTP Server.

Usage

```
<ntp xmlns="urn:brocade.com:mgmt:brocade-ntp">
                <master/>
            </ntp>
```

Parameters

startum*number*

The NTP stratum number.

ntp/peer

Configures the NTP peers and specify the peers to synchronize the system clock.

Usage

```
<ntp xmlns="urn:brocade.com:mgmt:brocade-ntp">
                <peer>
                    <peer-ip>%req_val%</peer-ip>
                    <peer-maxpoll/>
                </peer>
```

Parameters

ipv4 address | ipv6 address

IPv4 or IPv6 address of the NTP peer.

use-vrf name

Use VRF name to synchronize the time with server. If this option is not specified, it defaults to **mgmt-vrf**.

key

The symmetric key ID. By default, no symmetric key is configured. The range is 1 to 65,534.

version*3 | 4*

The NTP version supported by peer. If this option is not specified, then defaults to 4.

minpoll*interval*

The shortest polling interval. The range is 4 to 17. Default is 6. The interval argument is power of 2: 3=8s, 4=16s, 5=32s, 6=64s, 7=128s, 8=256s, 9=512s etc.

maxpoll*interval*

The longest polling interval. The range is 4 to 17. Default is 10. The interval argument is power of 2: 3=8s, 4=16s, 5=32s, 6=64s, 7=128s, 8=256s, 9=512s etc.

ntp/server

Configures Network Time Protocol (NTP) server IP address.

Usage

```
<ntp xmlns="urn:brocade.com:mgmt:brocade-ntp">
    <server>
        <ip>1.1.1.1</ip>
        <key>1</key>
    </server>
</ntp>
```

Parameters

ip

NTP server IPv4 or IPv6 IP address.

key

Key from the key list to be associated with the specified server. The value can range from 1 through 65535.

ntp/source-ip

Configures the source IP to be used for Network Time Protocol (NTP).

Usage

```
<ntp xmlns="urn:brocade.com:mgmt:brocade-ntp">
         <source-ip>mm-ip</source-ip>
         <server>
            <ip>10.20.192.71</ip>
            <source-interface-type>loopback</source-interface-type>
            <source-interface-number>34</source-interface-number>
         </server>
      </ntp>
```

Parameters

source-ip

Specifies the source IP to be used for NTP. The following source IP can be configured.

chassis-ip

Uses chassis IP as source address.

mm-ip

Uses local MM IP as source address.

ntp/trusted-key

configures additional subset of trusted key-IDs which can be used for NTP and client authentication.

Usage

```
<ntp xmlns="urn:brocade.com:mgmt:brocade-ntp">
                <trusted-key/>
            </ntp>
```

Parameters

key-id-1key-id-2key-id-n

List of authentication keys.

overlay-gateway

Configures overlay gateway instances.

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>og1</name>
</overlay-gateway>
```

Parameters

name

Overlay Gateway name.

overlay-gateway/{gateway-name}/activate

Activates the Overlay Gateway instance.

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>og1</name>
    <activate></activate>
</overlay-gateway>
```

Parameters

name

Specifies the Overlay Gateway name.

activate

Activates the overlay gateway instance.

overlay-gateway/{gateway-name}/attach/vlan

Configures VLAN attachment for this gateway.

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>og1</name>
    <attach>
        <vlan>
            <vid>1</vid>
            <mac>0011.1122.2233</mac>
        </vlan>
    </attach>
</overlay-gateway>
```

Parameters

vid

Specifies the range of VLAN ids to add.

mac

Specifies MAC address in HHHH.HHHH.HHHH format.

overlay-gateway/{gateway-name}/enable

Enables per VLAN statistics.

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>og1</name>
    <enable>
        <statistics>
            <stats-direction>both</stats-direction>
            <vlan-action>add</vlan-action>
            <vlan-list>1</vlan-list>
        </statistics>
    </enable>
</overlay-gateway>
```

Parameters

stats-direction

Specifies the flow direction. The flow direction can be set to any one of the following.

both

Both transmitted and received packets.

rx

Received pacvkets.

tx

Transmitted packets.

vlan-action

Specifies the actrion. Two actions are allowed.

add

Specifes the VLANs to add.

remove

Specifies the VLANs to remove.

vlan-list

Specifies the range of VLAN IDs.

overlay-gateway/{gateway-name}/ip/access-group

Configures IPv4 access-group for the Overlay Gateway.

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>og1</name>
    <access-lists>
        <ipv4>
            <in>
                <ipv4-acl-in-name>acl4</ipv4-acl-in-name>
                <ipv4-acl-in-dir></ipv4-acl-in-dir>
            </in>
        </ipv4>
    </access-lists>
</overlay-gateway>
```

Parameters

ipv4-acl-in-name

Specifies the access list name.

ipv4-acl-in-dir

Configures IPv4 access group in ingress direction.

overlay-gateway/{gateway-name}/ip/interface/loopback

Configures Loopback interface for the Overlay Gateway

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>og1</name>
    <ip>
        <interface>
            <loopback>
                <loopback-id>1</loopback-id>
            </loopback>
        </interface>
    </ip>
</overlay-gateway>
```

Parameters

loopback-id

Specifies loopback port number.

overlay-gateway/{gateway-name}/ip/interface/ve/{ve-id}/fabric-virtual-gateway

Uses Fabric-Virtual-Gateway IP address.

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>og1</name>
    <ip>
        <interface>
            <ve>
                <ve-id>1</ve-id>
                <fabric-virtual-gateway></fabric-virtual-gateway>
            </ve>
        </interface>
    </ip>
</overlay-gateway>
```

Parameters

ve-id

Specifies VE interface number.

fabric-virtual-gateway

Enables use of Fabric-Virtual-Gateway IP address.

overlay-gateway/{gateway-name}/ip/interface/ve/{ve-id}/vrrp-extended-group

Configures virtual router

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>og1</name>
    <ip>
        <interface>
            <ve>
                <ve-id>1</ve-id>
                <vrrp-extended-group>1</vrrp-extended-group>
            </ve>
        </interface>
    </ip>
</overlay-gateway>
```

Parameters

ve-id

Specifies VE interface number.

vrrp-extended-group

Specifies Virtual Router Indentifier. The value can range from 1 through 255.

overlay-gateway/{gateway-name}/ipv6/access-group

Configures IPv6 access-group for the Overlay Gateway.

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>og1</name>
    <access-lists>
        <ipv6>
            <in>
                <ipv6-acl-in-name>acl12</ipv6-acl-in-name>
                <ipv6-acl-in-dir></ipv6-acl-in-dir>
            </in>
        </ipv6>
    </access-lists>
</overlay-gateway>
```

Parameters

ipv6-acl-in-name

Specifies IPv6 access group name.

ipv6-acl-in-dir

Configures IPv6 access group in ingress direction.

overlay-gateway/{gateway-name}/mac

Configures MAC access-group for the Overlay Gateway.

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>og1</name>
    <access-lists>
        <mac>
            <in>
                <mac-acl-in-name>acl10</mac-acl-in-name>
                <mac-acl-in-dir></mac-acl-in-dir>
            </in>
        </mac>
    </access-lists>
</overlay-gateway>
```

Parameters

mac-acl-in-name

Specifies the name of the MAC access list.

mac-acl-in-dir

Configures MAC access-group in ingress direction.

overlay-gateway/{gateway-name}/map

Configures the VLAN to VNI mappings for the Overlay Gateway.

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>gateway2</name>
    <map>
        <vlan>
            <vni>
                <auto/>
            </vni>
        </vlan>
    </map>
</overlay-gateway>
```

Parameters

vlan

Specifies the VLAN.

vni

Specifies the VNI.

auto

Specifies automatic mapping.

overlay-gateway/{gateway-name}/monitor

Configures SPAN for the tunnels of this gateway.

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>name1</name>
    <monitor>
        <session>1</session>
        <direction>both</direction>
        <remote-endpoint>any</remote-endpoint>
        <vlan-add-remove>add</vlan-add-remove>
        <vlan-range>5,14-17</vlan-range>
    </monitor>
</overlay-gateway>
```

Parameters

session

Specifies session number.

direction

Specifies flow direction. Flow direction can be set to the followin.g

both

Both transmitted and received packets.

rx

Received packets.

tx

Transmitted packets.

remote-endpoint

Specifies tunnel destination end point address. The destination end point address can be set to.

<A.B.C.D>

Specifies IP address of specific tunnel end point.

any

Specifies all tunnel end points.

vlan-add-remove

Adds or removes target VLAN IDs.

vlan-range

Specifies range of VLAN IDs to add or remove.

overlay-gateway/{gateway-name}/sflow

Configures SFLOW for the tunnels of this gateway.

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>og1</name>
    <sflow>
        <sflow-profile-name>sflow1</sflow-profile-name>
        <sflow-remote-endpoint>any</sflow-remote-endpoint>
        <sflow-vlan-action>add</sflow-vlan-action>
        <sflow-vlan-range>100</sflow-vlan-range>
    </sflow>
</overlay-gateway>
```

Parameters

sflow-profile-name

Specifies Sflow profile name.

sflow-remote-endpoint

Specifies tunnel destination end point address. The destination end point address can be set to.

<A.B.C.D>

Specifies IP address of specific tunnel end point.

any

Specifies all tunnel end points.

sflow-vlan-action

Specifies the action on target VLAN IDs. There are two action.

add

Specifies target VLAN IDs to add.

remove

Specifies taarget VLAN IDs to remove.

sflow-vlan-range

Specified the range of VLAN IDs to add or remove.

overlay-gateway/{gateway-name}/site

Configures remote extension site.

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>og1</name>
    <site>
        <name>site1</name>
    </site>
</overlay-gateway>
```

Parameters

name

Specifies the site name.

overlay-gateway/{gateway-name}/site/{site-name}/bfd

Creates BFD session for the tunnels to the remote site.

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>og1</name>
    <site>
        <name>site1</name>
        <bfd>
            <params>
                <interval>
                    <min-tx>110</min-tx>
                    <min-rx>330</min-rx>
                    <multiplier>3</multiplier>
                </interval>
            </params>
        </bfd>
    </site>
</overlay-gateway>
```

Parameters

name

Specifies the site name

min-tx

Specifies BFD desired minimum transmit interval in milliseconds. The value can range from 100 through 30000. The default value is 100.

min-rx

Specifies BFD desired minimum receive interval in milliseconds. The value can range from 300 through 30000. The default value is 300.

multiplier

Specifies BFD detection time multiplier. The value can range from 3 through 50. The default value is 3.

overlay-gateway/{gateway-name}/site/{site-name}/extend

Configures Layer2 domains to be extended towards this site.

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>gateway2</name>
    <site>
        <name>sanjose</name>
        <extend>
            <vlan>
                <add>1-10</add>
            </vlan>
        </extend>
    </site>
</overlay-gateway>
```

Parameters

name

Specifies site name.

add

Specifies VLAN IDs to add.

remove

Specifies VLAN IDs to remove.

overlay-gateway/{gateway-name}/site/{site-name}/ip

Configures tunnel destination IP address.

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>gateway2</name>
    <site>
        <name>sanjose</name>
        <tunnel-dst>
            <address>10.10.10.1</address>
        </tunnel-dst>
    </site>
</overlay-gateway>
```

Parameters

name

Specifies site name.

address

Specifies tunnel destination IP address.

overlay-gateway/{gateway-name}/site/{site-name}/mac-learning/protocol/bgp

By default, MAC address learning is enabled on VXLAN Layer 2 extension tunnels. Use this command to delegate the responsibility for MAC learning on a tunnel to the Layer 3 control-plane protocol, such as BGP EVPN.

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>overlaygateway1</name>
    <site>
        <name>site1</name>
        <mac-learning>
            <protocol>bgp</protocol>
        </mac-learning>
    </site>
</overlay-gateway>
```

Parameters

name

Specifies the site name.

protocol

Specifies control plane MAC learning protocol.

bgp

Sets BGP-EVPN based MAC learning

overlay-gateway/{gateway-name}/site/{site-name}/shutdown

Disables tunnel to the remote site.

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>gateway2</name>
    <site>
        <name>sanjose</name>
        <shutdown></shutdown>
    </site>
</overlay-gateway>
```

Parameters

name

Specifies the name of the site.

shutdown

Disables tunnels to the remote site.

overlay-gateway/{gateway-name}/type

pecifies whether a VXLAN overlay gateway uses NSX Controller or OpenStack integration, or Layer 2 extension.

Usage

```
<overlay-gateway xmlns="urn:brocade.com:mgmt:brocade-tunnels">
    <name>overlaygateway1</name>
    <gw-type>hardware-vtep</gw-type>
</overlay-gateway>
```

Parameters

name

Specifies the overlay gateway name

gw-type

Specifies the type of Overlay Gateway. There are two types of Overlay Gateway
hardware-vtep

Specifies NSX Controller/OpenStack integration

layer2-extension

Specifies Layer 2 extension

password-attributes/expiry-alert-level

Configures password expiry notification settings for user accounts.

Usage

```
<password-attributes xmlns="urn:brocade.com:mgmt:brocade-aaa">
    <expiry-alert-level>
        <critical>2</critical>
        <major>5</major>
        <minor>10</minor>
        <info>15</info>
    </expiry-alert-level>
</password-attributes>
```

protocol/cfm

Configures the CFM protocol.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
                <cfm xmlns="urn:brocade.com:mgmt:brocade-dot1ag">
                    <domain-name>
                        <domain-name>{req_val}</domain-name>
                        <ma-name>
                            <ma-name>{req_val}</ma-name>
                            <cfm-ma-sub-commands>
                                <mep>
                                    <mep-id>{req_val}</mep-id>
                                </mep>
                            </cfm-ma-sub-commands>
                        </ma-name>
                    </domain-name>
                </cfm>
            </protocol>
```

Parameters

domain-name

Specifies the maintenance domain name.

ma-name

Specifies the maintenance association name.

mep-id

Specifies maintenance endpoint ID.

protocol/link-oam

Configures the Link OAM protocol.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
                <link-oam xmlns="urn:brocade.com:mgmt:brocade-dot3ah">
                    <shutdown/>
                </link-oam>
            </protocol>
```

protocol/lldp/advertise/dcbx-fcoe-app-tlv

Enables IEEE data centre bridging exchange FCoE Application TLV.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <advertise>
            <dcbx-fcoe-app-tlv></dcbx-fcoe-app-tlv>
        </advertise>
    </lldp>
</protocol>
```

Parameters

dcbx-fcoe-app-tlv

Enables IEEE data centre bridging exchange FCoE Application TLV.

protocol/lldp/advertise/dcbx-fcoe-logical-link-tlv

Enables IEEE data centre bridging exchange FCoE logical link TLV.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <advertise>
            <dcbx-fcoe-logical-link-tlv></dcbx-fcoe-logical-link-tlv>
        </advertise>
    </lldp>
</protocol>
```

Parameters

dcbx-fcoe-logical-link-tlv

Enables IEEE data centre bridging exchange FCoE logical link TLV.

protocol/lldp/advertise/dcbx-iscsi-app-tlv

Enables IEEE data centre bridging exchange iSCSI application TLV.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <advertise>
            <dcbx-iscsi-app-tlv></dcbx-iscsi-app-tlv>
        </advertise>
    </lldp>
</protocol>
```

Parameters

dcbx-iscsi-app-tlv

Enables IEEE data centre bridging exchange iSCSI application TLV.

protocol/lldp/advertise/dcbx-tlv

Enables IEEE data centre bridging exchange TLV.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <advertise>
            <dcbx-tlv></dcbx-tlv>
        </advertise>
    </lldp>
</protocol>
```

Parameters

dcbx-tlv

Enables IEEE data centre bridging exchange TLV.

protocol/lldp/advertise/dot1-tlv

Enables IEEE 802.1 organizationally specific TLV.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <advertise>
            <dot1-tlv></dot1-tlv>
        </advertise>
    </lldp>
</protocol>
```

Parameters

dot1-tlv

Enables IEEE 802.1 organizationally specific TLV.

protocol/lldp/advertise/dot3-tlv

Enables IEEE 802.3 organizationally specific TLV.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <advertise>
            <dot3-tlv></dot3-tlv>
        </advertise>
    </lldp>
</protocol>
```

Parameters

dot3-tlv

Enables IEEE 802.3 organizationally specific TLV.

protocol/lldp/advertise/optional-tlv

Enables the optional TLVs.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <advertise>
            <optional-tlv>
                <management-address></management-address>
                <port-description></port-description>
                <system-capabilities></system-capabilities>
                <adv-tlv-system-description></adv-tlv-system-description>
                <adv-tlv-system-name></adv-tlv-system-name>
            </optional-tlv>
        </advertise>
    </lldp>
</protocol>
```

Parameters

management-address

Enables management address TLV.

port-description

Enables port description TLV.

system-capabilities

Enables system capabilities TLV.

adv-tlv-system-description

Specifies the system description .

adv-tlv-system-name

Specifies the system name .

protocol/lldp/description

Configures user description for LLDP.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <description>lldpconfig</description>
    </lldp>
</protocol>
```

Parameters

description

Specifies user description for LLDP.

protocol/lldp/disable

Disable LLDP configuration.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <disable></disable>
    </lldp>
</protocol>
```

Parameters

disable

Disables LLDP configuration.

protocol/lldp/hello

Configures the hello transmit interval.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <hello>35</hello>
    </lldp>
</protocol>
```

Parameters

hello

Specifies the hello transmit interval. The value can range from 4 through 180 seconds.

protocol/lldp/iscsi-priority

Configures the Ethernet priority to advertise for iSCSI.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <iscsi-priority>3</iscsi-priority>
    </lldp>
</protocol>
```

Parameters

iscsi-priority

Specifies the iSCSI Ethernet priority value. The value can range from 0 through 7.

protocol/lldp/mode

Configures the LLDP mode.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <mode>rx</mode>
    </lldp>
</protocol>
```

Parameters

mode

Specifies the LLDP mode.

rx

LLDP receive only mode.

tx

LLDP transmit only mode.

protocol/lldp/multiplier

Configures the timeout multiplier.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <multiplier>3</multiplier>
    </lldp>
</protocol>
```

Parameters

multiplier

Specifies the timeout multiplier value. The value can range from 2 through 10.

protocol/lldp/profile/{profile-name}/advertise

Applies a Link Layer Discovery Protocol (LLDP) profile to an interface.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <profile>
            <profile-name>profile1</profile-name>
            <advertise>
                <dcbx-tlv></dcbx-tlv>
            </advertise>
        </profile>
    </lldp>
</protocol>
```

Parameters

profile-name

Specifies the profile name.

advertise

Specifies the advertise TLV configuration.

dcbx-fcoe-app-tlv

Advertises application Type, Length, Values (TLVs) to ensure interoperability of traffic over the Data Center Bridging eXchange protocol (DCBX), which runs over LLDP to negotiate an FCoE application TLV.

dcbx-fcoe-logical-link-tlv

Advertises to any attached device the FCoE status of the logical link.

dcbx-iscsi-app-tlv

Advertises the iSCSI traffic configuration parameters for Type, Length, Values (TLV) values.

dcbx-tlv

Advertises to any attached device mandatory Data Center Bridging eXchange protocol (DCBX) Type, Length, Values (TLV) values.

dot1-tlv

Advertises to any attached device IEEE 802.1 organizationally specific Type, Length, Values (TLV) values.

dot3-tlv

Advertises to any attached device IEEE 802.3 organizationally specific Type, Length, Values (TLV) values.

optional-tlv

Advertises the optional Type, Length, and Values (TLV) values.

protocol/lldp/profile/{profile-name}/hello

Sets the interval between LLDP hello messages.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <profile>
            <profile-name>profile1</profile-name>
            <hello>100</hello>
        </profile>
    </lldp>
</protocol>
```

Parameters

profile-name

Specifies the profile naem.

hello

Specifies the interval between hello messages. The value can range from 4 through 180 seconds. The default interval is 30 seconds.

protocol/lldp/profile/{profile-name}/mode

Sets the LLDP mode on the switch.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <profile>
            <profile-name>profile1</profile-name>
            <mode>rx</mode>
        </profile>
    </lldp>
</protocol>
```

Parameters

profile-name

Specifies the profile name.

mode

Specifies the LLDP mode on the switch.

tx

Specifies to enable only the transmit mode.

rx

Specifies to enable only the receive mode.

protocol/lldp/profile/{profile-name}/multiplier

Sets the number of consecutive misses of hello messages before LLDP declares the neighbor as dead.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <profile>
            <profile-name>profile1</profile-name>
            <multiplier>2</multiplier>
        </profile>
    </lldp>
</protocol>
```

Parameters

profile-name

Specifies the profile name

multiplier

Specifies a multiplier value to use. The values can range from 2 through 10. The default value is 4.

protocol/lldp/system-description

Configures the system description.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <system-description>Extreme-VDX-VCS 1</system-description>
    </lldp>
</protocol>
```

Parameters

system-description

Specifies the system description.

protocol/lldp/system-name

Configures the system name.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <lldp xmlns="urn:brocade.com:mgmt:brocade-lldp">
        <system-name>client</system-name>
    </lldp>
</protocol>
```

Parameters

system-name

Specifies the system-name.

protocol/spanning-tree/mstp/bridge-priority

Configures bridge priority commands for multiple spanning tree protocol.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <mstp>
            <bridge-priority>32768</bridge-priority>
        </mstp>
    </spanning-tree>
</protocol>
```

Parameters

bridge-priority

Specifies the bridge priority. The value can range from 0 through 61440 and bridge priority must be set in increments of 4096.

protocol/spanning-tree/mstp/cisco-interoperability

Configures Cisco interoperability.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <mstp>
            <cisco-interoperability>disable</cisco-interoperability>
        </mstp>
    </spanning-tree>
</protocol>
```

Parameters

cisco-interoperability

Enables or disables cisco interoperability.

disable

Disables cisco interoperability.

enable

Enables cisco interoperability.

protocol/spanning-tree/mstp/description

Configures spanning tree description.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <mstp>
            <description>mstpsan</description>
        </mstp>
    </spanning-tree>
</protocol>
```

Parameters

description

Specifies spanning tree description.

protocol/spanning-tree/mstp/error-disable-timeout/enable

Enables timeout for the port to be enabled back.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <mstp>
            <error-disable-timeout>
                <enable></enable>
            </error-disable-timeout>
        </mstp>
    </spanning-tree>
</protocol>
```

Parameters

enable

Enables timeout for the port to be enabled back.

protocol/spanning-tree/mstp/error-disable-timeout/interval

Configures time interval after which port will be enabled.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <mstp>
            <error-disable-timeout>
                <interval>350</interval>
            </error-disable-timeout>
        </mstp>
    </spanning-tree>
</protocol>
```

Parameters

interval

Specifies time interval after which port will be enabled. The value can range from 10 through 1000000 seconds.

protocol/spanning-tree/mstp/forward-delay

Configures the forward delay time for the spanning tree.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <mstp>
            <forward-delay>20</forward-delay>
        </mstp>
    </spanning-tree>
</protocol>
```

Parameters

forward-delay

Specifies forward delay time. The delay tiem can range from 4 through 30 seconds. The default delay time is set to 15 seconds.

protocol/spanning-tree/mstp/hello-time

Configures the hello time interval for the spanning tree.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <mstp>
            <hello-time>3</hello-time>
        </mstp>
    </spanning-tree>
</protocol>
```

Parameters

hello-time

Sopecifies the hello time. The hello time can range from 1 through 20 seconds. The default hello time is set to 2 seconds.

protocol/spanning-tree/mstp/instance/priority

Configures bridge priority for the common instance.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <mstp>
            <instance>
                <id>1</id>
                <priority>4096</priority>
            </instance>
        </mstp>
    </spanning-tree>
</protocol>
```

Parameters

id

Specifies MSTP instance Id. The value can range from 1 through 31.

priority

Specifies the bridge priority. The value can range from 0 through 61440.

protocol/spanning-tree/mstp/instance/vlan

Configures VLAN for MSTP.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <mstp>
            <instance>
                <id>1</id>
                <vlan>1</vlan>
            </instance>
        </mstp>
    </spanning-tree>
</protocol>
```

Parameters

id

Specifies MSTP instance ID.

vlan

Specifies VLAN.

protocol/spanning-tree/mstp/max-age

Configures the max age for the spanning tree.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <mstp>
            <max-age>25</max-age>
        </mstp>
    </spanning-tree>
</protocol>
```

Parameters

max-age

Specifies the maximum time to listen for root bridge in seconds. The value can range from 6 through 40 seconds. The default time is set to 20. seconds.

protocol/spanning-tree/mstp/max-hops

Configures the maximum hops the BPDU will be valid for.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <mstp>
            <max-hops>25</max-hops>
        </mstp>
    </spanning-tree>
</protocol>
```

Parameters

max-hops

Specifies the maximum hops the BPDU will be valid for. The value can range from 1 through 40.

protocol/spanning-tree/mstp/port-channel

Controls port channel behavior for spanning tree

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <mstp>
            <port-channel>
                <path-cost>standard</path-cost>
            </port-channel>
        </mstp>
    </spanning-tree>
</protocol>
```

Parameters

path-cost

Sets the path cost behavior.

custom

Custom behavior - pathcost will change according to bandwidth.

standard

Standard behavior - pathcost will not change according to bandwidth.

protocol/spanning-tree/mstp/region

Sets the MST region.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <mstp>
            <region>region1</region>
        </mstp>
    </spanning-tree>
</protocol>
```

Parameters

region

Specifies the name of the region.

protocol/spanning-tree/mstp/revision

Sets the revision number.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <mstp>
            <revision>1</revision>
        </mstp>
    </spanning-tree>
</protocol>
```

Parameters

revision

Specifies the revision number. The value can range from 0 through 255.

protocol/spanning-tree/mstp/shutdown

Disables the Multiple Spanning Tree Protocol (MSTP) globally.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <mstp>
            <shutdown></shutdown>
        </mstp>
    </spanning-tree>
</protocol>
```

Parameters

shutdown

Shuts down the spanning tree protocol.

protocol/spanning-tree/mstp/transmit-holdcount

Configures transmit hold count of the bridge.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <mstp>
            <transmit-holdcount>7</transmit-holdcount>
        </mstp>
    </spanning-tree>
</protocol>
```

Parameters

transmit-holdcount

Specifies the transmit hold count. The value can range from 1 through 10.

protocol/spanning-tree/pvst/bridge-priority

Configures bridge priority for PVST Spanning-tree.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <pvst>
            <bridge-priority>32768</bridge-priority>
        </pvst>
    </spanning-tree>
</protocol>
```

Parameters

bridge-priority

Specifies the bridge priority. Valid values range from 0 through 61440 in increments of 4096.

protocol/spanning-tree/pvst/description

Configures the PVST spanning-tree description.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <pvst>
            <description>pvstspan</description>
        </pvst>
    </spanning-tree>
</protocol>
```

Parameters

decsription

Specifies the PVST spanning-tree description.

protocol/spanning-tree/pvst/error-disable-timeout/enable

Enables the timeout mechanism for the port to be enabled back.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <pvst>
            <error-disable-timeout>
                <enable></enable>
            </error-disable-timeout>
        </pvst>
    </spanning-tree>
</protocol>
```

Parameters

enable

Enables timeout for PVST spanning tree.

protocol/spanning-tree/pvst/error-disable-timeout/interval

Configures interval after which port shall be enabled.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <pvst>
            <error-disable-timeout>
                <interval>350</interval>
            </error-disable-timeout>
        </pvst>
    </spanning-tree>
</protocol>
```

Parameters

interval

Specifies the time for the interface to time out. The interval can range from 10 through 1000000 seconds. Ther default interval is 300 seconds.

protocol/spanning-tree/pvst/forward-delay

Specifies the time an interface spends in each of the listening and learning states.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <pvst>
            <forward-delay>20</forward-delay>
        </pvst>
    </spanning-tree>
</protocol>
```

Parameters

forward-delay

Specifies the time that an interface spends in the Spanning Tree Protocol (STP) learning and listening states. Valid values range from 4 through 30 seconds. The default value is 15 seconds.

protocol/spanning-tree/pvst/hello-time

Sets the interval between the hello Bridge Protocol Data Units (BPDUs) sent on an interface.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <pvst>
            <hello-time>3</hello-time>
        </pvst>
    </spanning-tree>
</protocol>
```

Parameters

hello-time

Specifies the time interval between the hello BPDUs sent on an interface. The value can range from 1through 10 seconds. The default value is 2 seconds.

protocol/spanning-tree/pvst/max-age

Sets the interval time in seconds between messages that the PVST spanning tree receives from the interface.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <pvst>
            <max-age>25</max-age>
        </pvst>
    </spanning-tree>
</protocol>
```

Parameters

max-age

Specifies the PVST Spanning Tree Protocol interface maximum age. The value can range from 6 through 40. The default value is 20 seconds.

protocol/spanning-tree/pvst/port-channel

Sets the path-cost behavior.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <pvst>
            <port-channel>
                <path-cost>standard</path-cost>
            </port-channel>
        </pvst>
    </spanning-tree>
</protocol>
```

Parameters

path-cost

Sets the path cost behaviour
custom

Specifies to use the custom behavior, which sets the path-cost changes according to the port-channel's bandwidth.

standard

Specifies to use the standard behavior, which sets that the path-cost does not change according to port-channel's bandwidth.

protocol/spanning-tree/pvst/shutdown

Disables the Rapid Spanning Tree Protocol (RSTP) globally.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <pvst>
            <shutdown></shutdown>
        </pvst>
    </spanning-tree>
</protocol>
```

Parameters

shutdown

Disables the Rapid Spanning Tree Protocol (RSTP) globally.

protocol/spanning-tree/pvst/vlan/forward-delay

Configures the forward-delay for PVST spanning tree

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <pvst>
            <vlan>
                <id>1</id>
                <forward-delay>20</forward-delay>
            </vlan>
        </pvst>
    </spanning-tree>
</protocol>
```

Parameters

forward-delay

Specifies the forward delay time in seconds. The value can range from 4 to 30 seconds. The default value is 15 seconds.

protocol/spanning-tree/pvst/vlan/hello-time

Configures the hello interval for the PVST spanning tree.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <pvst>
            <vlan>
                <id>1</id>
                <hello-time>3</hello-time>
            </vlan>
        </pvst>
    </spanning-tree>
</protocol>
```

Parameters

id

Specifies the VLAN ID.

hello-time

Specifies the hello interval. The interval can range from 4 to 30 seconds. The default value is 2 seconds.

protocol/spanning-tree/pvst/vlan/max-age

Configures the max-age for the PVST spanning tree.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <pvst>
            <vlan>
                <id>1</id>
                <max-age>25</max-age>
            </vlan>
        </pvst>
    </spanning-tree>
</protocol>
```

Parameters

id

Specifies the VLAN ID.

max-age

Specifies the max-age for the PVST spanning tree.

protocol/spanning-tree/pvst/vlan/priority

Configures the bridge priority.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <pvst>
            <vlan>
                <id>1</id>
                <priority>4096</priority>
            </vlan>
        </pvst>
    </spanning-tree>
</protocol>
```

Parameters

id

Specifies the VLAN ID.

priority

Specifies the bridge priortity in increments of 4096.

protocol/spanning-tree/rpvst/bridge-priority

Specifies the bridge priority for the common instance.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rpvst>
            <bridge-priority>32768</bridge-priority>
        </rpvst>
    </spanning-tree>
</protocol>
```

Parameters

bridge-priority

Specifies the bridge priority. The values can range from 0 through 61440 in increments of 4096. The default value is 32768.

protocol/spanning-tree/rpvst/description

Configures the RPVST Spanning tree description.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rpvst>
            <description>rpvstspan</description>
        </rpvst>
    </spanning-tree>
</protocol>
```

Parameters

decription

Specifies the RPVST Spanning tree description.

protocol/spanning-tree/rpvst/error-disable-timeout/enable

Enables the timer to bring the interface out of the error-disabled state.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rpvst>
            <error-disable-timeout>
                <enable></enable>
            </error-disable-timeout>
        </rpvst>
    </spanning-tree>
</protocol>
```

Parameters

enable

Enables the timer to bring the interface out of the error-disabled state.

protocol/spanning-tree/rpvst/error-disable-timeout/interval

Configures the timeout for errors on an interface.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rpvst>
            <error-disable-timeout>
                <interval>400</interval>
            </error-disable-timeout>
        </rpvst>
    </spanning-tree>
</protocol>
```

Parameters

interval

Specifies the time for the interface to time out. The value can range from 10 through 1000000 seconds. The default value is 300 seconds.

protocol/spanning-tree/rpvst/forward-delay

Specifies the time an interface spends in each of the listening and learning states.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rpvst>
            <forward-delay>20</forward-delay>
        </rpvst>
    </spanning-tree>
</protocol>
```

Parameters

forward-delay

Specifies the time that an interface spends in the RPVST Spanning Tree Protocol (STP) learning and listening states. Valid values range from 4 through 30 seconds. The default value is 15 seconds.

protocol/spanning-tree/rpvst/hello-time

Sets the interval between the hello Bridge Protocol Data Units (BPDUs) sent on an interface.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rpvst>
            <hello-time>3</hello-time>
        </rpvst>
    </spanning-tree>
</protocol>
```

Parameters

hello-time

Specifies the time interval between the hello BPDUs sent on an interface. The value can range from 1 through 10 seconds. The default value is 2 seconds.

protocol/spanning-tree/rpvst/max-age

Sets the interval time in seconds between messages that the spanning tree receives from the interface.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rpvst>
            <max-age>35</max-age>
        </rpvst>
    </spanning-tree>
</protocol>
```

Parameters

max-age

Configures the Spanning Tree Protocol interface maximum age. The valid value can range from 6 through 40. The default value is 20 seconds.

protocol/spanning-tree/rpvst/port-channel

Sets the path-cost behavior.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rpvst>
            <port-channel>
                <path-cost>standard</path-cost>
            </port-channel>
        </rpvst>
    </spanning-tree>
</protocol>
```

Parameters

path-cost

Sets the path cost priority.
custom

Specifies to use the custom behavior, which sets the path-cost changes according to the port-channel's bandwidth.

standard

Specifies to use the standard behavior, which sets that the path-cost does not change according to port-channel's bandwidth.

protocol/spanning-tree/rpvst/shutdown

Disables the Rapid PVST(RPVST) globally.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rpvst>
            <shutdown></shutdown>
        </rpvst>
    </spanning-tree>
</protocol>
```

Parameters

shutdown

Disables the Rapid PVST(RPVST) globally.

protocol/spanning-tree/rpvst/transmit-holdcount

Configures the maximum number of Bridge Protocol Data Units (BPDUs) transmitted per second for the R-PVST+.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rpvst>
            <transmit-holdcount>5</transmit-holdcount>
        </rpvst>
    </spanning-tree>
</protocol>
```

Parameters

transmit-holdcount

Specifies the number of BPDUs than can be sent before pausing for 1 second. The value can range from 1 through 10. The default value is 6 units.

protocol/spanning-tree/rpvst/vlan/forward-delay

Configures the forward-delay for RPVST spanning tree.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rpvst>
            <vlan>
                <id>1</id>
                <forward-delay>20</forward-delay>
            </vlan>
        </rpvst>
    </spanning-tree>
</protocol>
```

Parameters

id

Specifies the VLAN ID.

forward-delay

Specifies the forward delay time in seconds. The value can range from 4 to 30 seconds. The default value is 15 seconds.

protocol/spanning-tree/rpvst/vlan/hello-time

Configures the hello interval for the RPVST spanning tree.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rpvst>
            <vlan>
                <id>1</id>
                <hello-time>3</hello-time>
            </vlan>
        </rpvst>
    </spanning-tree>
</protocol>
```

Parameters

id

Specifies the VLAN ID.

hello-time

Specifies the hello interval. The interval can range from 4 to 30 seconds. The default value is 2 seconds.

protocol/spanning-tree/rpvst/vlan/max-age

Configures the max-age for the RPVST spanning tree.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rpvst>
            <vlan>
                <id>1</id>
                <max-age>25</max-age>
            </vlan>
        </rpvst>
    </spanning-tree>
</protocol>
```

Parameters

id

Specifies the VLAN ID.

max-age

Specifies the max-age for the RPVST spanning tree.

protocol/spanning-tree/rpvst/vlan/priority

Configures the bridge priority.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rpvst>
            <vlan>
                <id>1</id>
                <priority>4096</priority>
            </vlan>
        </rpvst>
    </spanning-tree>
</protocol>
```

Parameters

id

Specifies the VLAN ID

priority

Specifies the bridge priortity in increments of 4096. The value can range from.

protocol/spanning-tree/rstp/bridge-priority

Specifies the bridge priority for the common instance.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rstp>
            <bridge-priority>32768</bridge-priority>
        </rstp>
    </spanning-tree>
</protocol>
```

Parameters

bridge-priority

Specifies the bridge priority. The values can range from 0 through 61440 in increments of 4096. The default value is 32768.

protocol/spanning-tree/rstp/description

Configures the Rapid Spanning tree (RSTP) description.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rstp>
            <description>rstpspan</description>
        </rstp>
    </spanning-tree>
</protocol>
```

Parameters

description

Specifies the RPVST Spanning tree description.

protocol/spanning-tree/rstp/error-disable-timeout/enable

Enables the timer to bring the interface out of the error-disabled state.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rstp>
            <error-disable-timeout>
                <enable></enable>
            </error-disable-timeout>
        </rstp>
    </spanning-tree>
</protocol>
```

Parameters

enable

Enables the timer to bring the interface out of the error-disabled state.

protocol/spanning-tree/rstp/error-disable-timeout/interval

Configures the timeout for errors on an interface.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rstp>
            <error-disable-timeout>
                <interval>500</interval>
            </error-disable-timeout>
        </rstp>
    </spanning-tree>
</protocol>
```

Parameters

interval

Specifies the time for the interface to time out. The value can range from 10 through 1000000 seconds. The default value is 300 seconds.

protocol/spanning-tree/rstp/forward-delay

Specifies the time an interface spends in each of the listening and learning states.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rstp>
            <forward-delay>30</forward-delay>
        </rstp>
    </spanning-tree>
</protocol>
```

Parameters

forward-delay

Specifies the time that an interface spends in the RPVST Spanning Tree Protocol (STP) learning and listening states. Valid values range from 4 through 30 seconds. The default value is 15 seconds.

protocol/spanning-tree/rstp/hello-time

Sets the interval between the hello Bridge Protocol Data Units (BPDUs) sent on an interface.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rstp>
            <hello-time>4</hello-time>
        </rstp>
    </spanning-tree>
</protocol>
```

Parameters

hello-time

Specifies the time interval between the hello BPDUs sent on an interface. The value can range from 1 through 10 seconds. The default value is 2 seconds.

protocol/spanning-tree/rstp/max-age

Sets the interval time in seconds between messages that the spanning tree receives from the interface.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rstp>
            <max-age>40</max-age>
        </rstp>
    </spanning-tree>
</protocol>
```

Parameters

max-age

Specifies the Rapid Spanning Tree Protocol interface maximum age. The valid value can range from 6 through 40. The default value is 20 seconds.

protocol/spanning-tree/rstp/port-channel

Sets the path-cost behavior.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rpvst>
            <port-channel>
                <path-cost>standard</path-cost>
            </port-channel>
        </rpvst>
    </spanning-tree>
</protocol>
```

Parameters

path-cost

Sets the path cost priority
custom

Specifies to use the custom behavior, which sets the path-cost changes according to the port-channel's bandwidth .

standard

Specifies to use the standard behavior, which sets that the path-cost does not change according to port-channel's bandwidth.

protocol/spanning-tree/rstp/shutdown

Disables the Rapid Spanning Tree Protocol (RSTP) globally.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rstp>
            <shutdown></shutdown>
        </rstp>
    </spanning-tree>
</protocol>
```

Parameters

shutdown

Disables the Rapid Spanning Tree Protocol (RSTP) globally.

protocol/spanning-tree/rstp/transmit-holdcount

Configures the maximum number of Bridge Protocol Data Units (BPDUs) transmitted per second for the RSTP.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rpvst>
            <transmit-holdcount>5</transmit-holdcount>
        </rpvst>
    </spanning-tree>
</protocol>
```

Parameters

transmit-holdcount

Specifies the number of BPDUs than can be sent before pausing for 1 second. The value can range from 1 through 10. The default value is 6 units.

protocol/spanning-tree/stp/bridge-priority

Specifies the bridge priority for the common instance.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <stp>
            <bridge-priority>32768</bridge-priority>
        </stp>
    </spanning-tree>
</protocol>
```

Parameters

bridge-priority

Specifies the bridge priority. The values can range from 0 through 61440 in increments of 4096. The default value is 32768.

protocol/spanning-tree/stp/description

Configures the STP Spanning tree description.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <stp>
            <description>stpspan</description>
        </stp>
    </spanning-tree>
</protocol>
```

Parameters

description

Specifies the STP Spanning tree description.

protocol/spanning-tree/stp/error-disable-timeout/enable

Enables the timer to bring the interface out of the error-disabled state.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <stp>
            <error-disable-timeout>
                <enable></enable>
            </error-disable-timeout>
        </stp>
    </spanning-tree>
</protocol>
```

Parameters

enable

Enables the timer to bring the interface out of the error-disabled state.

protocol/spanning-tree/stp/error-disable-timeout/interval

Configures the timeout for errors on an interface.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <rstp>
            <error-disable-timeout>
                <interval>550</interval>
            </error-disable-timeout>
        </rstp>
    </spanning-tree>
</protocol>
```

Parameters

interval

Specifies the time for the interface to time out. The value can range from 10 through 1000000 seconds. The default value is 300 seconds.

protocol/spanning-tree/stp/forward-delay

Specifies the time an interface spends in each of the listening and learning states.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <stp>
            <forward-delay>30</forward-delay>
        </stp>
    </spanning-tree>
</protocol>
```

Parameters

forward-delay

Specifies the time that an interface spends in the RPVST Spanning Tree Protocol (STP) learning and listening states. Valid values range from 4 through 30 seconds. The default value is 15 seconds.

protocol/spanning-tree/stp/hello-time

Sets the interval between the hello Bridge Protocol Data Units (BPDUs) sent on an interface.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <stp>
            <hello-time>5</hello-time>
        </stp>
    </spanning-tree>
</protocol>
```

Parameters

hello-time

Specifies the time interval between the hello BPDUs sent on an interface. The value can range from 1 through 10 seconds. The default value is 2 seconds.

protocol/spanning-tree/stp/max-age

Sets the interval time in seconds between messages that the spanning tree receives from the interface.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <stp>
            <max-age>40</max-age>
        </stp>
    </spanning-tree>
</protocol>
```

Parameters

max-age

Specifies the Rapid Spanning Tree Protocol interface maximum age. The valid value can range from 6 through 40. The default value is 20 seconds.

protocol/spanning-tree/stp/port-channel

Sets the path-cost behavior.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <stp>
            <port-channel>
                <path-cost>standard</path-cost>
            </port-channel>
        </stp>
    </spanning-tree>
</protocol>
```

Parameters

path-cost

Sets the path cost priority
custom

Specifies to use the custom behavior, which sets the path-cost changes according to the port-channel's bandwidth.

standard

Specifies to use the standard behavior, which sets that the path-cost does not change according to port-channel's bandwidth.

protocol/spanning-tree/stp/shutdown

Disables the STP Spanning Tree Protocol globally.

Usage

```
<protocol xmlns="urn:brocade.com:mgmt:brocade-interface">
    <spanning-tree xmlns="urn:brocade.com:mgmt:brocade-xstp">
        <stp>
            <shutdown></shutdown>
        </stp>
    </spanning-tree>
</protocol>
```

Parameters

shutdown

Disables the STP Spanning Tree Protocol globally.

qos-mpls

Configures, retrieves, and modifies MPLS Quality of Service (QoS).

Usage

```
<qos-mpls xmlns="urn:brocade.com:mgmt:brocade-qos-mpls">
    <map>
        <exp-traffic-class>
            <exp-traffic-class-map-name>{req_val}</exp-traffic-class-map-name>
        </exp-traffic-class>
    </map>
</qos-mpls>
```

Parameters

map

Specifies the map.

exp-traffic-class

The EXP traffic class value. Valid values range from 0 through 7.

exp-traffic-class-map-name

The EXP traffic class map name.

qos/map/cos-mutation

Creates and modifies a QoS CoS Mutation map.

Usage

```
<qos xmlns="urn:brocade.com:mgmt:brocade-qos-mls">
    <map>
        <cos-mutation>
            <name>test-cos-mut-map-1</name>
            <cos-to-cos-mappings>
                <from-cos>1</from-cos>
                <to>
                    <to-cos>1</to-cos>
                </to>
            </cos-to-cos-mappings>
        </cos-mutation>
    </map>
</qos>
```

Parameters

map

Specifies the map.

cos-mutation

Specifies that the map type is CoS Mutation map.

name *cos-mutation-map-name*

The name assigned to this CoS Mutation map.

cos-to-cos-mapping

Indicates that this is a cos-to-cos mapping entry.

from-cos *from-cos-value*

Indicates that the assigned value is for the incoming packet's CoS value.

to *to-cos-value*

Indicates the CoS value to be assigned to the outgoing packet.

radius-server

Configures a RADIUS server for AAA.

Usage

```
<radius-server xmlns="urn:brocade.com:mgmt:brocade-aaa">
    <host>
        <hostname>1.1.1.1</hostname>
        <auth-port>1812</auth-port>
        <protocol>chap</protocol>
        <key>Yf0BKEhsc83gp+kIoGMQ/g==</key>
        <encryption-level>7</encryption-level>
        <retries>6</retries>
        <timeout>10</timeout>
    </host>
</radius-server>
```

Parameters

hostname

Specifies the domain name or the IP address of this radius server

auth-port

Specifies UDP authentication port. The value can range from 1 through 65535. The default value is 1812

protocol

Specifies the authentication protocol to be used. Three protocol options are available

key

Specifies the secret shared with this server. The secret entered overrides the default secret

encryption-level

Specifies the encryption level. Encrytion level can be set to
0

Stores the key in clear text format

7

Stores the key in encrypted format

retries

Specifies number of retries for this server connection. The value can range from 0 through 100. The default number of retries is set to 5

timeout

Specifies the wait time for this server to respond. The value can range from 1 through 60 seconds. The default value is 5 seconds

ras

Collects data for SupportSave.

Usage

```
<copy xmlns="urn:brocade.com:mgmt:brocade-ras">
  <support>
   <scp>
     <user>{req_val}</user>
      <host>{req_val}</host>
      <directory>{req_val}</directory>
      <password>{req_val}</password>
      <timeout>{req_val}</timeout>
     </scp>
  </support>
```

Parameters

support

Specifies support.

scp

Specifies secure copy (SCP).

user

Specifies the username.

host

Specifies the IP address of the host.

directory

Specifies the directory.

password

Specifies the password.

timeout

Specifies the value for timeout.

rbridge-lag/lag

Configures the various Local Aggregation Group (LAG) settings.

Usage

```
<load-balance-lag xmlns="urn:brocade.com:mgmt:brocade-rbridge-lag">
    <lag>
        <hash>
            <bos>
                <start/>
                <skip/>
            </bos>
            <hdr-count>
                {count}
            </hdr-count>
            <hdr-start>
                <fwd/>
                <term/>
            </hdr-start>
            <normalize/>
            <pwctrlword/>
            <rotate>
                {rotate-number}
            </rotate>
            <speculate-mpls>
                <enable/>
                <inner-eth/>
                <inner-ip-raw/>
                <inner-ip-tag/>
                <inner-ipv6-raw/>
                <inner-ipv6-tag/>
            </speculate-mpls>
            <srcport/>
        </hash>
    </lag>
<load-balance-lag>
```

Parameters

bos

Ignore the entire MPLS label stack and pick only the BOS label for hashing.
skip

Start hash from the label following the BOS label.

start

Start hash from the BOS label. (Default).

hdr-count *count*

Specifies the number of headers to be considered for LAG hashing. Vaues range between 1 and 3. The default value is 3.

hdr-start

Specifies the location to start picking up headers for key generation.
fwd

Start from the inner header. Inner header is used for forwarding the packet. (Default)

term

Start from the outer header. Outer header is the header below the forwarding header and is the last terminated header.

normalize

Configures using the same hash in both directions. Disabled by default.

pwctrlword

Configures including the PW control word in hashing. Disabled by default.

rotate *rotate-number*

Specifies the hashing randomness value. Values range between 0 and 15. The default value is 3.

speculate-mpls

Enable Speculate MPLS or Ethernet/IP.

enable

Enable Speculative MPLS.

inner-eth

Enable inner ETH hash for L2VPN.

inner-ip-raw

Enable inner IPv4 header hash for L2VPN raw mode.

inner-ip-tag

Enable inner IPv4 header hash for L2VPN tag mode.

inner-ipv6-raw

Enable inner IPv6 header hash for L2VPN raw mode.

inner-ipv6-tag

Enable inner IPv6 header hash for L2VPN tag mode.

srcport

Include the source port in hashing configuration. Source port is not included by default.

Support Matrix

The following table list the support of the LAG Hash configurations on various SLX-OS devices.

Table 4: Support Matrix

Command	Supported In	Not Supported In
lag hash bos	• SLX 9540 • SLX 9640	All other platforms
lag hash hdr-count	• SLX 9150 • SLX 9250 • SLX 9540 • SLX 9640 • Extreme 8520 • Extreme 8720	• SLX 9740 • Extreme 8820
lag hash hdr-start	• SLX 9150 • SLX 9250 • SLX 9540 • SLX 9640 • Extreme 8520 • Extreme 8720	• SLX 9740 • Extreme 8820
lag hash normalize	• SLX 9540 • SLX 9640 • SLX 9740 • Extreme 8820	All other platforms
lag hash pwctrlword	• SLX 9540 • SLX 9640	All other platforms
lag hash rotate	• SLX 9540 • SLX 9640 • SLX 9740 • Extreme 8820	All other platforms
lag hash speculate-mpls	• SLX 9540 • SLX 9640	All other platforms
lag hash srcport	• SLX 9150 • SLX 9250 • SLX 9540 • SLX 9640 • Extreme 8520 • Extreme 8720	• SLX 9740 • Extreme 8820

rbridge-lag/load-balance

Configures the various Load Balancing Hash settings.

Usage

```
<load-balance-lag xmlns="urn:brocade.com:mgmt:brocade-rbridge-lag">
    <load-balance>
        <hash>
            <ethernet>
                <sa-mac/>
                <da-mac/>
                <vlan/>
                <etype/>
                <smac-dmac/>
            </ethernet>
            <ip>
                <src-l4-port/>
                <dst-l4-port/>
                <src-ip/>
                <dst-ip/>
                <protocol/>
                <sip-dip/>
            </ip>
            <ipv6>
                <ipv6-src-l4-port/>
                <ipv6-dst-l4-port/>
                <ipv6-src-ip/>
                <ipv6-dst-ip/>
                <ipv6-next-hdr/>
                <sipv6-dipv6/>
            </ipv6>
            <l4>
                <src-dst-port/>
            </l4>
            <mpls>
                <label1>
                <label2>
                <label3>
                <all-labels/>
            </mpls>
        </hash>
    </load-balance>
<load-balance-lag>
```

Parameters

ethernet

Configures the various ethernet hash settings.

da-mac

Specifies Layer 2 Destination Mac Address.

etype

Specifies the *etype* option.

sa-mac

Specifies Layer 2 Source Mac Address.

vlan

Specifies the VLAN option.

smac-dmac

Specifies the source and destination MACs of the inner and outer headers.

ip

Configures the various IP hash settings.

dst-ip

Specifies the destination IP address.

dst-l4-port

Specifies the destination Layer 4 port.

protocol

Specifies the IP Protocol.

sip-dip

Specifies the IPv4 Source IP and IPv4 Destination IP addresses of the inner and outer headers.

src-ip

Specifies the source IP address.

src-l4-port

Specifies the source's Layer 4 port.

ipv6

Configures the various IPv6 hash settings.

ipv6-dst-ip

Specifies the destination IPv6 address.

ipv6-dst-l4-port

Specifies the destination IPv6 Layer 4 port.

ipv6-next-hdr

Specifies the next IPv6 header.

sipv6-dipv6

Specifies IPv6 Source IP and IPv6 Destination IP addresses.

ipv6-src-ip

Specifies the source IPv6 address.

ipv6-src-l4-port

Specifies the source IPv6 Layer 4 port.

l4

Configures the Layer 4 hash settings.

src-dst-port

Specifies the Layer 4 source and destination ports.

mpls

Configures the MPLS hash settings. (Not supported for SLX 9150 or SLX 9250 devices)

label1

Specifies MPLS label 1.

label2

Specifies MPLS label 2.

label3

Specifies MPLS label 3.

`all-labels`

Specifies all MPLS labels.

Support Matrix

The following table list the support of the Load Balancing Hash configurations on various SLX-OS devices.

Table 5: Support Matrix

Command	Supported In	Not Supported In
• load-balance hash ethernet etype • load-balance hash ethernet vlan	• All platforms	None
• load-balance hash ethernet da-mac • load-balance hash ethernet sa-mac	• Extreme 8720 • Extreme 8520 • SLX 9640 • SLX 9540 • SLX 9250 • SLX 9150	• Extreme 8820 • SLX 9740
• load-balance hash ethernet smac-dmac	• Extreme 8820 • SLX 9740	All other platforms
• load-balance hash ip protocol	• All platforms	None
• load-balance hash ip dst-ip • load-balance hash ip dst-l4-port • load-balance hash ip src-ip • load-balance hash ip src-l4-port	• Extreme 8720 • Extreme 8520 • SLX 9640 • SLX 9540 • SLX 9250 • SLX 9150	• Extreme 8820 • SLX 9740
• load-balance hash ip sip-dip	• Extreme 8820 • SLX 9740	All other platforms
• load-balance hash ipv6 ipv6-next-hdr	• All platforms	None

Table 5: Support Matrix (continued)

Command	Supported In	Not Supported In
• load-balance hash ipv6 ipv6-dst-ip • load-balance hash ipv6 ipv6-dst-l4-port • load-balance hash ipv6 ipv6-src-ip • load-balance hash ipv6 ipv6-src-l4-port	• Extreme 8720 • Extreme 8520 • SLX 9640 • SLX 9540 • SLX 9250 • SLX 9150	• Extreme 8820 • SLX 9740
• load-balance hash ipv6 sipv6-dipv6	• Extreme 8820 • SLX 9740	All other platforms
• load-balance hash l4 src-dst-port	• Extreme 8820 • SLX 9740	All other platforms
• load-balance hash mpls label1 • load-balance hash mpls label2 • load-balance hash mpls label3	• SLX 9540 • SLX 9640	All other platforms
• load-balance hash mpls all-labels	• Extreme 8820 • SLX 9740	All other platforms

rmon/alarm

Configures Remote Monitoring Protocol (RMON) alarm.

Usage

```
<rmon xmlns="urn:brocade.com:mgmt:brocade-rmon">
    <alarm-entry>
        <alarm-index>5</alarm-index>
        <snmp-oid>1.3.6.1.2.1.16.1.1.1.5.65535</snmp-oid>
        <alarm-interval>30</alarm-interval>
        <alarm-sample>absolute</alarm-sample>
        <alarm-rising-threshold>195</alarm-rising-threshold>
        <alarm-rising-event-index>25</alarm-rising-event-index>
        <alarm-falling-threshold>95</alarm-falling-threshold>
        <alarm-falling-event-index>27</alarm-falling-event-index>
        <alarm-owner>john_smith</alarm-owner>
    </alarm-entry>
</rmon>
```

Parameters

alarm-index

Specifies the alarm index. The value can range from 1 through 65535.

snmp-oid

Specifies sampling object SNMP OID.

alarm-interval

Specifies alarm interval. The interval can range from 1 through 2147483648 seconds.

alarm-sample

Specifies alarm sample type.
absolute

Sample type absolute.

delta

Sample type delta.

alarm-rising-threshold

Specifies alarm rising threshold value. The value can range from 0 through 4294967295.

alarm-rising-event-index

Specifies event index for rising threshold. The value can range from 1 through 65535.

alarm-falling-threshold

Specifies alarm falling threshold value. The value can range from 0 through 4294967295.

alarm-falling-event-index

Specifies event index for falling threshold. The value can range from 1 through 65535.

alarm-owner

Specifies the owner identity.

rmon/event

Configures Remote Monitoring Protocol (RMON) event.

Usage

```
<rmon xmlns="urn:brocade.com:mgmt:brocade-rmon">
    <event-entry>
        <event-index>23</event-index>
        <event-description>event1</event-description>
        <log></log>
        <event-community>default</event-community>
        <event-owner>owner1</event-owner>
    </event-entry>
</rmon>
```

Parameters

event-index

Specifies event index. The value can range from 1 through 65535.

event-description

Specifies event description.

log

Logs the event.

event-community

Sends traps for the event.

event-owner

Specifies owner name.

/router/bgp/address-family/ipv6/unicast/{vrf-name}/neighbor/{ipv4-neighbor-address}/additional-paths/activate

Activates the inheritance of *additional-paths* capability from the address family for a specific peer in a BGP address family.

Usage

Default VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <router>
        <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
            <address-family>
                <ipv6>
                    <ipv6-unicast>
                        <default-vrf>
                            <neighbor>
                                <af-ipv6u-ipv4-attr-holder>
                                    <af-ipv6u-ipv4-neighbor>
                                        <af-ipv4-neighbor-address>
                                            2.2.2.2
                                        </af-ipv4-neighbor-address>
                                        <activate/>
                                    </af-ipv6u-ipv4-neighbor>
                                </af-ipv6u-ipv4-attr-holder>
                            </neighbor>
                        </default-vrf>
                    </ipv6-unicast>
                </ipv6>
            </address-family>
        </router-bgp>
    </router>
</routing-system>
```

User Defined VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <router>
        <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
            <address-family>
                <ipv6>
                    <ipv6-unicast>
                        <af-ipv6-vrf>
                            <af-ipv6-vrf-name>red</af-ipv6-vrf-name>
                            <neighbor>
                                <af-ipv6u-vrf-ipv4-attr-holder>
                                    <af-ipv6u-ipv4-neighbor>
                                        <af-ipv4-neighbor-address>
                                            2.2.2.2
                                        </af-ipv4-neighbor-address>
                                        <activate/>
                                    </af-ipv6u-ipv4-neighbor>
                                </af-ipv6u-vrf-ipv4-attr-holder>
                            </neighbor>
                        </af-ipv6-vrf>
                    </ipv6-unicast>
                </ipv6>
            </address-family>
        </router-bgp>
```

```
    </router>
</routing-system>
```

Parameters

af-ipv4-neighbor-address

The IP address of the BGP peer through which the device can exchange IPv6 BGP routes over IPv4 session.

af-ipv6-vrf-name

The user defined VRF to use.

/router/bgp/address-family/ipv6/unicast/{vrf-name}/neighbor/{ipv4-neighbor-address}/additional-paths/advertise

Usage

Default VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <router>
        <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
            <address-family>
                <ipv6>
                    <ipv6-unicast>
                        <default-vrf>
                            <neighbor>
                                <af-ipv6u-ipv4-attr-holder>
                                    <af-ipv6u-ipv4-neighbor>
                                        <af-ipv4-neighbor-address>
                                            2.2.2.2
                                        </af-ipv4-neighbor-address>
                                        <additional-paths>
                                            <addpath-advertise>
                                                <addpath-adv-best>
                                                    4
                                                </addpath-adv-best>
                                                <addpath-adv-groupbest/>
                                                <addpath-adv-all/>
                                            </addpath-advertise>
                                        </additional-paths>
                                    </af-ipv6u-ipv4-neighbor>
                                </af-ipv6u-ipv4-attr-holder>
                            </neighbor>
                        </default-vrf>
                    </ipv6-unicast>
                </ipv6>
            </address-family>
        </router-bgp>
    </router>
</routing-system>
```

User defined VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <router>
        <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
            <address-family>
                <ipv6>
                    <ipv6-unicast>
                        <af-ipv6-vrf>
                            <af-ipv6-vrf-name>red</af-ipv6-vrf-name>
                            <neighbor>
                                <af-ipv6u-vrf-ipv4-attr-holder>
                                    <af-ipv6u-ipv4-neighbor>
                                        <af-ipv4-neighbor-address>
                                            2.2.2.2
                                        </af-ipv4-neighbor-address>
                                        <additional-paths>
                                            <addpath-advertise>
                                                <addpath-adv-best>
                                                    4
                                                </addpath-adv-best>
```

```
                                                    <addpath-adv-groupbest/>
                                                    <addpath-adv-all/>
                                                <addpath-advertise>
                                            </additional-paths>
                                        </af-ipv6u-ipv4-neighbor>
                                    </af-ipv6u-vrf-ipv4-attr-holder>
                                </neighbor>
                            </af-ipv6-vrf>
                        </ipv6-unicast>
                    </ipv6>
                </address-family>
            </router-bgp>
        </router>
</routing-system>
```

Parameters

af-ipv4-neighbor-address

The IP address of the BGP peer through which the device can exchange IPv6 BGP routes over IPv4 session.

af-ipv6-vrf-name

The user defined VRF to use.

addpath-adv-best

Specifies the number of best paths allowed for selection as additional paths. This value can be in the range 2-16.

addpath-adv-groupbest

Specifies the number of best paths allowed for selection as additional paths. This value can be in the range 2-16.

addpath-adv-groupbest

Enables all group-best paths to be eligible for selection as additional paths. Only those routes with a rank less than or equal to 16 are considered eligible. Routes with ranks greater than 16 are not eligible for selection as additional paths even if they are considered group-best.

addpath-adv-all

Enables all routes to be eligible for selection as additional paths. A maximum of 16 routes are allowed at any time.

/router/bgp/address-family/ipv6/unicast/{vrf-name}/neighbor/{ipv4-neighbor-address}/allowas-in

Usage

Default VRF:

```
 <routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <router>
        <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
            <address-family>
                <ipv6>
                    <ipv6-unicast>
                        <default-vrf>
                            <neighbor>
                                <af-ipv6u-ipv4-attr-holder>
                                    <af-ipv6u-ipv4-neighbor>
                                        <af-ipv4-neighbor-address>
                                            2.2.2.2
                                        </af-ipv4-neighbor-address>
                                        <allowas-in>
                                            2
                                        </allowas-in>
                                    </af-ipv6u-ipv4-neighbor>
                                </af-ipv6u-ipv4-attr-holder>
                            </neighbor>
                        </default-vrf>
                    </ipv6-unicast>
                </ipv6>
            </address-family>
        </router-bgp>
    </router>
</routing-system>
```

User defined VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <router>
        <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
            <address-family>
                <ipv6>
                    <ipv6-unicast>
                        <af-ipv6-vrf>
                            <af-ipv6-vrf-name>red</af-ipv6-vrf-name>
                            <neighbor>
                                <af-ipv6u-vrf-ipv4-attr-holder>
                                    <af-ipv6u-ipv4-neighbor>
                                        <af-ipv4-neighbor-address>
                                            2.2.2.2
                                        </af-ipv4-neighbor-address>
                                        <allowas-in>
                                            2
                                        </allowas-in>
                                    </af-ipv6u-ipv4-neighbor>
                                </af-ipv6u-vrf-ipv4-attr-holder>
                            </neighbor>
                        </af-ipv6-vrf>
                    </ipv6-unicast>
                </ipv6>
            </address-family>
        </router-bgp>
```

```
    </router>
</routing-system>
```

Parameters

af-ipv4-neighbor-address

The IP address of the BGP peer through which the device can exchange IPv6 BGP routes over IPv4 session.

af-ipv6-vrf-name

The user defined VRF to use.

allowas-in

Disables the AS_PATH check of the routes learned from the AS. Specifies the number of times that the AS path of a received route may contain the recipient BGP speaker's AS number and still be accepted. Valid values are 1 through 10.

/router/bgp/address-family/ipv6/unicast/{vrf-name}/neighbor/{ipv4-neighbor-address}/capability

Advertises Outbound Route Filter (ORF) capabilities to peer routers. You can configure this capability for TX, RX, or Both directions.

Usage

Default VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <router>
        <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
            <address-family>
                <ipv6>
                    <ipv6-unicast>
                        <default-vrf>
                            <neighbor>
                                <af-ipv6u-ipv4-attr-holder>
                                    <af-ipv6u-ipv4-neighbor>
                                        <af-ipv4-neighbor-address>
                                            2.2.2.2
                                        </af-ipv4-neighbor-address>
                                        <af-neighbor-capability>
                                            <orf>
                                                <prefixlist>
                                                    <prefixlist-status/>
                                                    <prefixlist-send/>
                                                    <prefixlist-receive/>
                                                </prefixlist>
                                            </orf>
                                        </af-neighbor-capability>
                                    </af-ipv6u-ipv4-neighbor>
                                </af-ipv6u-ipv4-attr-holder>
                            </neighbor>
                        </default-vrf>
                    </ipv6-unicast>
                </ipv6>
            </address-family>
        </router-bgp>
    </router>
</routing-system>
```

User defined VRF

```
 <routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <router>
        <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
            <address-family>
                <ipv6>
                    <ipv6-unicast>
                        <af-ipv6-vrf>
                            <af-ipv6-vrf-name>red</af-ipv6-vrf-name>
                            <neighbor>
                                <af-ipv6u-vrf-ipv4-attr-holder>
                                    <af-ipv6u-ipv4-neighbor>
                                        <af-ipv4-neighbor-address>
                                            2.2.2.2
                                        </af-ipv4-neighbor-address>
                                        <af-neighbor-capability>
                                            <orf>
                                                <prefixlist>
```

```
                                                    <prefixlist-status/>
                                                    <prefixlist-send/>
                                                    <prefixlist-receive/>
                                                </prefixlist>
                                            </orf>
                                        </af-neighbor-capability>
                                    </af-ipv6u-ipv4-neighbor>
                                </af-ipv6u-vrf-ipv4-attr-holder>
                            </neighbor>
                        </af-ipv6-vrf>
                    </ipv6-unicast>
                </ipv6>
            </address-family>
        </router-bgp>
    </router>
</routing-system>
```

Parameters

af-ipv4-neighbor-address

The IP address of the BGP peer through which the device can exchange IPv6 BGP routes over IPv4 session.

af-ipv6-vrf-name

The user defined VRF to use.

af-neighbor-capability

Sets the neighbour capability parameter.

orf

Configures the ORF capability

prefixlist

Pass

- *prefixlist-send* to enable ORF prefix list capability in the *Send* mode.
- *prefixlist-receive* to enable ORF prefix list capability in the *Receive* mode.
- Send both *prefixlist-send* and *prefixlist-receive* to enable in both modes.
- Send *prefixlist-status* to view the current configuration.

/router/bgp/address-family/ipv6/unicast/{vrf-name}/neighbor/{ipv4-neighbor-address}/additional-paths/disable

Deactivates the inheritance of *additional-paths* capability from the address family for a specific peer in a BGP address family.

Usage

Default VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <router>
        <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
            <address-family>
                <ipv6>
                    <ipv6-unicast>
                        <default-vrf>
                            <neighbor>
                                <af-ipv6u-ipv4-attr-holder>
                                    <af-ipv6u-ipv4-neighbor>
                                        <af-ipv4-neighbor-address>
                                            2.2.2.2
                                        </af-ipv4-neighbor-address>
                                        <additional-paths>
                                            <addpath-disable/>
                                        </additional-paths>
                                    </af-ipv6u-ipv4-neighbor>
                                </af-ipv6u-ipv4-attr-holder>
                            </neighbor>
                        </default-vrf>
                    </ipv6-unicast>
                </ipv6>
            </address-family>
        </router-bgp>
    </router>
</routing-system>
```

User defined VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <router>
        <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
            <address-family>
                <ipv6>
                    <ipv6-unicast>
                        <default-vrf>
                            <neighbor>
                                <af-ipv6u-ipv4-attr-holder>
                                    <af-ipv6u-ipv4-neighbor>
                                        <af-ipv4-neighbor-address>
                                            2.2.2.2
                                        </af-ipv4-neighbor-address>
                                        <additional-paths>
                                            <addpath-disable/>
                                        </additional-paths>
                                    </af-ipv6u-ipv4-neighbor>
                                </af-ipv6u-ipv4-attr-holder>
                            </neighbor>
                        </default-vrf>
                    </ipv6-unicast>
                </ipv6>
            </address-family>
```

```
        </router-bgp>
    </router>
</routing-system>
```

/router/bgp/address-family/ipv6/unicast/{vrf-name}/neighbor/{ipv4-neighbor-address}/default-originate

Configures the BGP device to send the default route *::/0* to a BGP neighbor and also provide the Route Map that can be applied to any default-originated route.

Usage

Default VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <address-family>
               <ipv6>
                   <ipv6-unicast>
                       <default-vrf>
                           <neighbor>
                               <af-ipv6u-ipv4-attr-holder>
                                   <af-ipv6u-ipv4-neighbor>
                                       <af-ipv4-neighbor-address>
                                           2.2.2.2
                                       </af-ipv4-neighbor-address>
                                       <default-originate>
                                           <default-originate-route-map>
                                               map1
                                           </default-originate-route-map>
                                       </default-originate>
                                   </af-ipv6u-ipv4-neighbor>
                               </af-ipv6u-ipv4-attr-holder>
                           </neighbor>
                       </default-vrf>
                   </ipv6-unicast>
               </ipv6>
           </address-family>
       </router-bgp>
   </router>
</routing-system>
```

User defined VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <address-family>
               <ipv6>
                   <ipv6-unicast>
                       <af-ipv6-vrf>
                           <af-ipv6-vrf-name>red</af-ipv6-vrf-name>
                           <neighbor>
                               <af-ipv6u-vrf-ipv4-attr-holder>
                                   <af-ipv6u-ipv4-neighbor>
                                       <af-ipv4-neighbor-address>
                                           2.2.2.2
                                       </af-ipv4-neighbor-address>
                                       <default-originate>
                                           <default-originate-route-map>
                                               map1
                                           </default-originate-route-map>
                                       </default-originate>
                                   </af-ipv6u-ipv4-neighbor>
                               </af-ipv6u-vrf-ipv4-attr-holder>
```

```
                            </neighbor>
                        </af-ipv6-vrf>
                    </ipv6-unicast>
                </ipv6>
            </address-family>
        </router-bgp>
    </router>
</routing-system>
```

Parameters

af-ipv4-neighbor-address

The IP address of the BGP peer through which the device can exchange IPv6 BGP routes over IPv4 session.

af-ipv6-vrf-name

The user defined VRF to use.

default-originate

Enables sending the default route *::/0* to a BGP neighbor.

default-originate-route-map

Sets the Route Map to be applied to any default originated route.

/router/bgp/address-family/ipv6/unicast/{vrf-name}/neighbor/{ipv4-neighbor-address}/enable-peer-as-check

Enables the outbound AS_PATH check function to prevent a sending BGP peer from sharing routes with an AS path that contains the AS number of the receiving BGP peer.

Usage

Default VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <address-family>
               <ipv6>
                   <ipv6-unicast>
                       <default-vrf>
                           <neighbor>
                               <af-ipv6u-ipv4-attr-holder>
                                   <af-ipv6u-ipv4-neighbor>
                                       <af-ipv4-neighbor-address>
                                           2.2.2.2
                                       </af-ipv4-neighbor-address>
                                       <enable-peer-as-check/>
                                   </af-ipv6u-ipv4-neighbor>
                               </af-ipv6u-ipv4-attr-holder>
                           </neighbor>
                       </default-vrf>
                   </ipv6-unicast>
               </ipv6>
           </address-family>
       </router-bgp>
   </router>
</routing-system>
```

User defined VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <address-family>
               <ipv6>
                   <ipv6-unicast>
                       <af-ipv6-vrf>
                           <af-ipv6-vrf-name>red</af-ipv6-vrf-name>
                           <neighbor>
                               <af-ipv6u-vrf-ipv4-attr-holder>
                                   <af-ipv6u-ipv4-neighbor>
                                       <af-ipv4-neighbor-address>
                                           2.2.2.2
                                       </af-ipv4-neighbor-address>
                                       <enable-peer-as-check/>
                                   </af-ipv6u-ipv4-neighbor>
                               </af-ipv6u-vrf-ipv4-attr-holder>
                           </neighbor>
                       </af-ipv6-vrf>
                   </ipv6-unicast>
               </ipv6>
           </address-family>
       </router-bgp>
```

```
    </router>
</routing-system>
```

Parameters

af-ipv4-neighbor-address

The IP address of the BGP peer through which the device can exchange IPv6 BGP routes over IPv4 session.

af-ipv6-vrf-name

The user defined VRF to use.

enable-peer-as-check

Enables the outbound AS_PATH check that prevents a sending BGP peer from sharing routes with an AS path that contains the AS number of the receiving BGP peer.

/router/bgp/address-family/ipv6/unicast/{vrf-name}/neighbor/{ipv4-neighbor-address}/filter-list

Specifies a filter list to be applied to updates received from or sent to the specified BGP peer.

Usage

Default VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <address-family>
               <ipv6>
                   <ipv6-unicast>
                       <default-vrf>
                           <neighbor>
                               <af-ipv6u-ipv4-attr-holder>
                                   <af-ipv6u-ipv4-neighbor>
                                       <af-ipv4-neighbor-address>
                                           2.2.2.2
                                       </af-ipv4-neighbor-address>
                                       <filter-list>
                                           <direction-in>
                                               <filter-list-direction-in-acl-name>
                                                   flin
                                               </filter-list-direction-in-acl-name>
                                               <filter-list-name-direction-in/>
                                           </direction-in>
                                           <direction-out>
                                               <filter-list-direction-out-acl-name>
                                                   flout
                                               </filter-list-direction-out-acl-name>
                                               <filter-list-name-direction-out/>
                                           </direction-out>
                                       </filter-list>
                                   </af-ipv6u-ipv4-neighbor>
                               </af-ipv6u-ipv4-attr-holder>
                           </neighbor>
                       </default-vrf>
                   </ipv6-unicast>
               </ipv6>
           </address-family>
       </router-bgp>
   </router>
</routing-system>
```

User defined VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <address-family>
               <ipv6>
                   <ipv6-unicast>
                       <af-ipv6-vrf>
                           <af-ipv6-vrf-name>red</af-ipv6-vrf-name>
                           <neighbor>
                               <af-ipv6u-vrf-ipv4-attr-holder>
                                   <af-ipv6u-ipv4-neighbor>
                                       <af-ipv4-neighbor-address>
```

```
                                        2.2.2.2
                                    </af-ipv4-neighbor-address>
                                    <filter-list>
                                        <direction-in>
                                            <filter-list-direction-in-acl-name>
                                                flin
                                            </filter-list-direction-in-acl-name>
                                            <filter-list-name-direction-in/>
                                        </direction-in>
                                        <direction-out>
                                            <filter-list-direction-out-acl-name>
                                                flout
                                            </filter-list-direction-out-acl-name>
                                            <filter-list-name-direction-out/>
                                        </direction-out>
                                    </filter-list>
                                </af-ipv6u-ipv4-neighbor>
                            </af-ipv6u-vrf-ipv4-attr-holder>
                        </neighbor>
                    </af-ipv6-vrf>
                </ipv6-unicast>
            </ipv6>
        </address-family>
    </router-bgp>
</router>
</routing-system>
```

Parameters

af-ipv4-neighbor-address

The IP address of the BGP peer through which the device can exchange IPv6 BGP routes over IPv4 session.

af-ipv6-vrf-name

The user defined VRF to use.

direction-in

Applies the filter to the incoming routes.

filter-list-direction-in-acl-name

Applies the filter within this parameter to incoming routes.

filter-list-name-direction-in

Filter incoming routes

direction-out

Applies the filter to the outgoing routes.

filter-list-direction-out-acl-name

Applies the filter within this parameter to outgoing routes.

filter-list-name-direction-out

Filter outgoing routes.

/router/bgp/address-family/ipv6/unicast/{vrf-name}/neighbor/{ipv4-neighbor-address}/maximum-prefix

Configures the maximum number of IP routes that can be learned from the specified neighbor.

Usage

Default VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <address-family>
               <ipv6>
                   <ipv6-unicast>
                       <default-vrf>
                           <neighbor>
                               <af-ipv6u-ipv4-attr-holder>
                                   <af-ipv6u-ipv4-neighbor>
                                       <af-ipv4-neighbor-address>
                                           2.2.2.2
                                       </af-ipv4-neighbor-address>
                                       <maximum-prefix>
                                           <max-prefix-limit>
                                               2000
                                           </max-prefix-limit>
                                           <threshold-holder>
                                               <threshold>
                                                   90
                                               </threshold>
                                               <teardown/>
                                           </threshold-holder>
                                       </maximum-prefix>
                                   </af-ipv6u-ipv4-neighbor>
                               </af-ipv6u-ipv4-attr-holder>
                           </neighbor>
                       </default-vrf>
                   </ipv6-unicast>
               </ipv6>
           </address-family>
       </router-bgp>
   </router>
</routing-system>
```

User defined VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <address-family>
               <ipv6>
                   <ipv6-unicast>
                       <af-ipv6-vrf>
                           <af-ipv6-vrf-name>red</af-ipv6-vrf-name>
                           <neighbor>
                               <af-ipv6u-vrf-ipv4-attr-holder>
                                   <af-ipv6u-ipv4-neighbor>
                                       <af-ipv4-neighbor-address>
                                           2.2.2.2
                                       </af-ipv4-neighbor-address>
                                       <maximum-prefix>
```

```
                                            <max-prefix-limit>
                                                2000
                                            </max-prefix-limit>
                                            <threshold-holder>
                                                <threshold>
                                                    90
                                                </threshold>
                                                <teardown/>
                                            </threshold-holder>
                                        </maximum-prefix>
                                    </af-ipv6u-ipv4-neighbor>
                                </af-ipv6u-vrf-ipv4-attr-holder>
                            </neighbor>
                        </af-ipv6-vrf>
                    </ipv6-unicast>
                </ipv6>
            </address-family>
        </router-bgp>
    </router>
</routing-system>
```

Parameters

af-ipv4-neighbor-address

The IP address of the BGP peer through which the device can exchange IPv6 BGP routes over IPv4 session.

af-ipv6-vrf-name

The user defined VRF to use.

maximum-prefix-limit

The maximum number of routes that can be learnt from the BGP neighbor.

threshold

The threshold, as a percent of the *maximum-prefix-limit* value, when reached, causes a SYSLOG event to be generated.

teardown

Tears down the neighbor session if the maximum number of IP prefixes is exceeded.

restart-interval

After a session is torn down, this value controls the duration after which the session is restarted. Range is 1-65535 minutes.

/router/bgp/address-family/ipv6/unicast/{vrf-name}/neighbor/{ipv4-neighbor-address}/prefix-list

Filters outgoing and incoming route updates to/from a particular BGP neighbor using the IP address and mask length defined in an assigned prefix-list.

Usage

Default VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <address-family>
               <ipv6>
                   <ipv6-unicast>
                       <default-vrf>
                           <neighbor>
                               <af-ipv6u-ipv4-attr-holder>
                                   <af-ipv6u-ipv4-neighbor>
                                       <af-ipv4-neighbor-address>
                                           2.2.2.2
                                       </af-ipv4-neighbor-address>
                                       <prefix-list>
                                           <direction-in>
                                               <prefix-list-direction-in-prefix-name>
                                                   plin
                                               </prefix-list-direction-in-prefix-name>
                                               <prefix-list-direction-in/>
                                           </direction-in>
                                           <direction-out>
                                               <prefix-list-direction-out-prefix-name>
                                                   plout
                                               </prefix-list-direction-out-prefix-name>
                                               <prefix-list-direction-out/>
                                           </direction-out>
                                       </prefix-list>
                                   </af-ipv6u-ipv4-neighbor>
                               </af-ipv6u-ipv4-attr-holder>
                           </neighbor>
                       </default-vrf>
                   </ipv6-unicast>
               </ipv6>
           </address-family>
       </router-bgp>
   </router>
</routing-system>
```

User defined VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <address-family>
               <ipv6>
                   <ipv6-unicast>
                       <af-ipv6-vrf>
                           <af-ipv6-vrf-name>red</af-ipv6-vrf-name>
                           <neighbor>
                               <af-ipv6u-vrf-ipv4-attr-holder>
                                   <af-ipv6u-ipv4-neighbor>
                                       <af-ipv4-neighbor-address>
```

```
                                        2.2.2.2
                                    </af-ipv4-neighbor-address>
                                    <prefix-list>
                                        <direction-in>
                                            <prefix-list-direction-in-prefix-name>
                                                plin
                                            </prefix-list-direction-in-prefix-name>
                                            <prefix-list-direction-in/>
                                        </direction-in>
                                        <direction-out>
                                            <prefix-list-direction-out-prefix-name>
                                                plout
                                            </prefix-list-direction-out-prefix-name>
                                            <prefix-list-direction-out/>
                                        </direction-out>
                                    </prefix-list>
                                </af-ipv6u-ipv4-neighbor>
                            </af-ipv6u-vrf-ipv4-attr-holder>
                        </neighbor>
                    </af-ipv6-vrf>
                </ipv6-unicast>
            </ipv6>
        </address-family>
    </router-bgp>
</router>
</routing-system>
```

Parameters

af-ipv4-neighbor-address

The IP address of the BGP peer through which the device can exchange IPv6 BGP routes over IPv4 session.

af-ipv6-vrf-name

The user defined VRF to use.

direction-in

Applies the prefix filter to the incoming routes.

prefix-list-direction-in-prefix-name

Applies the prefix filter within this parameter to incoming routes.

prefix-list-direction-in

Filter incoming routes.

direction-out

Applies the prefix filter to the outgoing routes.

prefix-list-direction-out-prefix-name

Applies the prefix filter within this parameter to outgoing routes.

prefix-list-direction-out

Filter outgoing routes.

/router/bgp/address-family/ipv6/unicast/{vrf-name}/neighbor/{ipv4-neighbor-address}/route-map

Usage

Default VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <router>
        <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
            <address-family>
                <ipv6>
                    <ipv6-unicast>
                        <default-vrf>
                            <neighbor>
                                <af-ipv6u-ipv4-attr-holder>
                                    <af-ipv6u-ipv4-neighbor>
                                        <af-ipv4-neighbor-address>
                                            2.2.2.2
                                        </af-ipv4-neighbor-address>
                                        <neighbor-route-map>
                                            <neighbor-route-map-direction-in>
                                                <neighbor-route-map-name-direction-in>
                                                    rmap1
                                                </neighbor-route-map-name-direction-in>
                                            </neighbor-route-map-direction-in>
                                            <neighbor-route-map-direction-out>
                                                <neighbor-route-map-name-direction-out>
                                                    rmap1
                                                </neighbor-route-map-name-direction-out>
                                            </neighbor-route-map-direction-out>
                                        </neighbor-route-map>
                                    </af-ipv6u-ipv4-neighbor>
                                </af-ipv6u-ipv4-attr-holder>
                            </neighbor>
                        </default-vrf>
                    </ipv6-unicast>
                </ipv6>
            </address-family>
        </router-bgp>
    </router>
</routing-system>
```

User defined VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <router>
        <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
            <address-family>
                <ipv6>
                    <ipv6-unicast>
                        <af-ipv6-vrf>
                            <af-ipv6-vrf-name>red</af-ipv6-vrf-name>
                            <neighbor>
                                <af-ipv6u-vrf-ipv4-attr-holder>
                                    <af-ipv6u-ipv4-neighbor>
                                        <af-ipv4-neighbor-address>
                                            2.2.2.2
                                        </af-ipv4-neighbor-address>
                                        <neighbor-route-map>
```

```
                                            <neighbor-route-map-direction-in>
                                                <neighbor-route-map-name-direction-in>
                                                    rmap1
                                                </neighbor-route-map-name-direction-in>
                                            </neighbor-route-map-direction-in>
                                            <neighbor-route-map-direction-out>
                                                <neighbor-route-map-name-direction-out>
                                                    rmap1
                                                </neighbor-route-map-name-direction-out>
                                            </neighbor-route-map-direction-out>
                                        </neighbor-route-map>
                                    </af-ipv6u-ipv4-neighbor>
                                </af-ipv6u-vrf-ipv4-attr-holder>
                            </neighbor>
                        </af-ipv6-vrf>
                    </ipv6-unicast>
                </ipv6>
            </address-family>
        </router-bgp>
    </router>
</routing-system>
```

Parameters

af-ipv4-neighbor-address

The IP address of the BGP peer through which the device can exchange IPv6 BGP routes over IPv4 session.

af-ipv6-vrf-name

The user defined VRF to use.

neighbor-route-map-direction-in

Applies the route map to the incoming routes.

neighbor-route-map-name-direction-in

Applies the route map within this parameter to incoming routes.

neighbor-route-map-direction-out

Applies the route map to the outgoing routes.

neighbor-route-map-name-direction-out

Applies the route map within this parameter to outgoing routes.

/router/bgp/address-family/ipv6/unicast/{vrf-name}/neighbor/{ipv4-neighbor-address}/route-reflector-client

Configures a BGP Peer as a route reflector client.

Usage

Default VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <address-family>
               <ipv6>
                   <ipv6-unicast>
                       <default-vrf>
                           <neighbor>
                               <af-ipv6u-ipv4-attr-holder>
                                   <af-ipv6u-ipv4-neighbor>
                                       <af-ipv4-neighbor-address>
                                           2.2.2.2
                                       </af-ipv4-neighbor-address>
                                       <route-reflector-client/>
                                   </af-ipv6u-ipv4-neighbor>
                               </af-ipv6u-ipv4-attr-holder>
                           </neighbor>
                       </default-vrf>
                   </ipv6-unicast>
               </ipv6>
           </address-family>
       </router-bgp>
   </router>
</routing-system>
```

User defined VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <address-family>
               <ipv6>
                   <ipv6-unicast>
                       <af-ipv6-vrf>
                           <af-ipv6-vrf-name>red</af-ipv6-vrf-name>
                           <neighbor>
                               <af-ipv6u-vrf-ipv4-attr-holder>
                                   <af-ipv6u-ipv4-neighbor>
                                       <af-ipv4-neighbor-address>
                                           2.2.2.2
                                       </af-ipv4-neighbor-address>
                                       <route-reflector-client/>
                                   </af-ipv6u-ipv4-neighbor>
                               </af-ipv6u-vrf-ipv4-attr-holder>
                           </neighbor>
                       </af-ipv6-vrf>
                   </ipv6-unicast>
               </ipv6>
           </address-family>
       </router-bgp>
   </router>
</routing-system>
```

Parameters

af-ipv4-neighbor-address

The IP address of the BGP peer through which the device can exchange IPv6 BGP routes over IPv4 session.

af-ipv6-vrf-name

The user defined VRF to use.

route-reflector-client

Configures a BGP neighbor as a route reflector client.

/router/bgp/address-family/ipv6/unicast/{vrf-name}/neighbor/{ipv4-neighbor-address}/send-community

Sends the community attribute in updates to the specified BGP neighbor.

Usage

Default VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <address-family>
               <ipv6>
                   <ipv6-unicast>
                       <default-vrf>
                           <neighbor>
                               <af-ipv6u-ipv4-attr-holder>
                                   <af-ipv6u-ipv4-neighbor>
                                       <af-ipv4-neighbor-address>
                                           2.2.2.2
                                       </af-ipv4-neighbor-address>
                                       <send-community>
                                           <standard/>
                                           <extended/>
                                       </send-community>
                                   </af-ipv6u-ipv4-neighbor>
                               </af-ipv6u-ipv4-attr-holder>
                           </neighbor>
                       </default-vrf>
                   </ipv6-unicast>
               </ipv6>
           </address-family>
       </router-bgp>
   </router>
</routing-system>
```

User defined VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <address-family>
               <ipv6>
                   <ipv6-unicast>
                       <af-ipv6-vrf>
                           <af-ipv6-vrf-name>red</af-ipv6-vrf-name>
                           <neighbor>
                               <af-ipv6u-vrf-ipv4-attr-holder>
                                   <af-ipv6u-ipv4-neighbor>
                                       <af-ipv4-neighbor-address>
                                           2.2.2.2
                                       </af-ipv4-neighbor-address>
                                       <send-community>
                                           <standard/>
                                           <extended/>
                                       </send-community>
                                   </af-ipv6u-ipv4-neighbor>
                               </af-ipv6u-vrf-ipv4-attr-holder>
                           </neighbor>
                       </af-ipv6-vrf>
                   </ipv6-unicast>
```

```
                </ipv6>
            </address-family>
        </router-bgp>
    </router>
</routing-system>
```

Parameters

af-ipv4-neighbor-address

The IP address of the BGP peer through which the device can exchange IPv6 BGP routes over IPv4 session.

af-ipv6-vrf-name

The user defined VRF to use.

send-community

Pass

- *all* to send all Community attributes.
- *extended* to send the Extended community attribute.
- *large* to send the Large community attribute.
- *standard* to send the Standard community attribute.

/router/bgp/address-family/ipv6/unicast/{vrf-name}/neighbor/{ipv4-neighbor-address}/additional-paths/txrx

Usage

Default VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <router>
        <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
            <address-family>
                <ipv6>
                    <ipv6-unicast>
                        <default-vrf>
                            <neighbor>
                                <af-ipv6u-ipv4-attr-holder>
                                    <af-ipv6u-ipv4-neighbor>
                                        <af-ipv4-neighbor-address>
                                            2.2.2.2
                                        </af-ipv4-neighbor-address>
                                        <additional-paths>
                                            <addpath-txrx>
                                                <addpath-send/>
                                                <addpath-receive/>
                                            </addpath-txrx>
                                        </additional-paths>
                                    </af-ipv6u-ipv4-neighbor>
                                </af-ipv6u-ipv4-attr-holder>
                            </neighbor>
                        </default-vrf>
                    </ipv6-unicast>
                </ipv6>
            </address-family>
        </router-bgp>
    </router>
</routing-system>
```

User defined VRF:

```
 <routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <router>
        <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
            <address-family>
                <ipv6>
                    <ipv6-unicast>
                        <af-ipv6-vrf>
                            <af-ipv6-vrf-name>red</af-ipv6-vrf-name>
                            <neighbor>
                                <af-ipv6u-vrf-ipv4-attr-holder>
                                    <af-ipv6u-ipv4-neighbor>
                                        <af-ipv4-neighbor-address>
                                            2.2.2.2
                                        </af-ipv4-neighbor-address>
                                        <additional-paths>
                                            <addpath-txrx>
                                                <addpath-send/>
                                                <addpath-receive/>
                                            </addpath-txrx>
                                        </additional-paths>
                                    </af-ipv6u-ipv4-neighbor>
                                </af-ipv6u-vrf-ipv4-attr-holder>
```

```
                            </neighbor>
                        </af-ipv6-vrf>
                    </ipv6-unicast>
                </ipv6>
            </address-family>
        </router-bgp>
    </router>
</routing-system>
```

Parameters

af-ipv4-neighbor-address

The IP address of the BGP peer through which the device can exchange IPv6 BGP routes over IPv4 session.

af-ipv6-vrf-name

The user defined VRF to use.

addpath-txrx

Pass

- *addpath-send* to enable exchange IPv6 BGP in the *Send* path.
- *addpath-receive* to enable exchange IPv6 BGP in the *Receive* path.
- Send both *addpath-send* and *addpath-receive* to enable in *both* directions.

/router/bgp/address-family/ipv6/unicast/{vrf-name}/neighbor/{ipv4-neighbor-address}/unsuppress-map

Removes route suppression from BGP neighbor routes when those routes have been suppressed because of aggregation. All routes matching the entries in the route map are unsuppressed.

Usage

Default VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <address-family>
               <ipv6>
                   <ipv6-unicast>
                       <default-vrf>
                           <neighbor>
                               <af-ipv6u-ipv4-attr-holder>
                                   <af-ipv6u-ipv4-neighbor>
                                       <af-ipv4-neighbor-address>
                                           2.2.2.2
                                       </af-ipv4-neighbor-address>
                                       <unsuppress-map>
                                           <map-name>
                                               map1
                                           </map-name>
                                       </unsuppress-map>
                                   </af-ipv6u-ipv4-neighbor>
                               </af-ipv6u-ipv4-attr-holder>
                           </neighbor>
                       </default-vrf>
                   </ipv6-unicast>
               </ipv6>
           </address-family>
       </router-bgp>
   </router>
</routing-system>
```

User defined VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <address-family>
               <ipv6>
                   <ipv6-unicast>
                       <af-ipv6-vrf>
                           <af-ipv6-vrf-name>red</af-ipv6-vrf-name>
                           <neighbor>
                               <af-ipv6u-vrf-ipv4-attr-holder>
                                   <af-ipv6u-ipv4-neighbor>
                                       <af-ipv4-neighbor-address>
                                           2.2.2.2
                                       </af-ipv4-neighbor-address>
                                       <unsuppress-map>
                                           <map-name>
                                               map1
                                           </map-name>
                                       </unsuppress-map>
```

```
                                        </af-ipv6u-ipv4-neighbor>
                                    </af-ipv6u-vrf-ipv4-attr-holder>
                                </neighbor>
                            </af-ipv6-vrf>
                        </ipv6-unicast>
                    </ipv6>
                </address-family>
            </router-bgp>
        </router>
</routing-system>
```

Parameters

af-ipv4-neighbor-address

The IP address of the BGP peer through which the device can exchange IPv6 BGP routes over IPv4 session.

af-ipv6-vrf-name

The user defined VRF to use.

unsuppress-map

Sets the route map to be unsuppressed.

/router/bgp/address-family/ipv6/unicast/{vrf-name}/neighbor/{ipv4-neighbor-address}/weight

Specifies a weight that the device will add to routes that are received from the specified BGP neighbor. BGP prefers routes with higher ranks.

Usage

Default VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <address-family>
               <ipv6>
                   <ipv6-unicast>
                       <default-vrf>
                           <neighbor>
                               <af-ipv6u-ipv4-attr-holder>
                                   <af-ipv6u-ipv4-neighbor>
                                       <af-ipv4-neighbor-address>
                                           2.2.2.2
                                       </af-ipv4-neighbor-address>
                                       <af-nei-weight>
                                           400
                                       </af-nei-weight>
                                   </af-ipv6u-ipv4-neighbor>
                               </af-ipv6u-ipv4-attr-holder>
                           </neighbor>
                       </default-vrf>
                   </ipv6-unicast>
               </ipv6>
           </address-family>
       </router-bgp>
   </router>
</routing-system>
```

User defined VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <address-family>
               <ipv6>
                   <ipv6-unicast>
                       <af-ipv6-vrf>
                           <af-ipv6-vrf-name>red</af-ipv6-vrf-name>
                           <neighbor>
                               <af-ipv6u-vrf-ipv4-attr-holder>
                                   <af-ipv6u-ipv4-neighbor>
                                       <af-ipv4-neighbor-address>
                                           2.2.2.2
                                       </af-ipv4-neighbor-address>
                                       <af-nei-weight>
                                           400
                                       </af-nei-weight>
                                   </af-ipv6u-ipv4-neighbor>
                               </af-ipv6u-vrf-ipv4-attr-holder>
                           </neighbor>
                       </af-ipv6-vrf>
                   </ipv6-unicast>
               </ipv6>
```

```
            </address-family>
        </router-bgp>
    </router>
</routing-system>
```

Parameters

af-ipv4-neighbor-address

The IP address of the BGP peer through which the device can exchange IPv6 BGP routes over IPv4 session.

af-ipv6-vrf-name

The user defined VRF to use.

af-nei-weight

Sets the weight to be added to a route received from the BGP neighbor. BGP prefers routes with higher ranks.

/router/bgp/address-family/l2vpn/evpn/import/vpnv4/unicast/uniform-path-propagation

Preserve source path attributes of L3VPN v4 routes when they are propagated to EVPN VxLAN peers.

Usage

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <router>
        <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
            <address-family>
                <l2vpn>
                    <evpn>
                        <import>
                            <vpnv4>
                                <vpnv4-unicast>
                                    <vpnv4-uniform-path-propagation/>
                                </vpnv4-unicast>
                            </vpnv4>
                        </import>
                    </evpn>
                </l2vpn>
            </address-family>
        </router-bgp>
    </router>
</routing-system>
```

Parameters

uniform-path-propagate

Preserve source path attributes of L3VPN v4 routes when they are propagated to EVPN VxLAN peers. The following attributes are preserved:

- All Standard BGP Communities - Preserves all the basic community tags associated with the route.
- Local Preference - Maintains path preferences within the autonomous system.
- Multi-Exit Discriminator (MED) - Retains route selection preferences based on path metrics.
- Extended Communities - Only Route Target (RT) is preserved.

/router/bgp/address-family/vpnv4/unicast/import/l2vpn/evpn/uniform-path-propagate

Preserve source path attributes in EVPN routes when these routes are propagated over VPNv4 session.

Usage

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <router>
        <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
            <address-family>
                <vpnv4>
                    <vpnv4-unicast>
                        <import>
                            <l2vpn>
                                <evpn>
                                    <vpnv4-evpn-uniform-path-propagation/>
                                </evpn>
                            </l2vpn>
                        </import>
                    </vpnv4-unicast>
                </vpnv4>
            </address-family>
        </router-bgp>
    </router>
</routing-system>
```

Parameters

uniform-path-propagate

Preserve source path attributes in EVPN routes when these routes are propagated over VPNv4 session. The following attributes are preserved:

- All Standard BGP Communities - Preserves all the basic community tags associated with the route.
- Local Preference - Maintains path preferences within the autonomous system.
- Multi-Exit Discriminator (MED) - Retains route selection preferences based on path metrics.
- Extended Communities - Only Route Target (RT) is preserved.

/router/bgp/neighbor/neighbor-peer-grp/{peer-group}/update-source

Updates the update-source IPv4 and IPv6 address for BGP peer groups.

Usage

Default VRF:

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
   <router>
       <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
           <router-bgp-attributes>
               <neighbor>
                   <peer-grps>
                       <neighbor-peer-grp>
                           <router-bgp-neighbor-peer-group>
                               peergroup-one
                           </router-bgp-neighbor-peer-group>
                           <peer-group-name/>
                           <remote-as>100</remote-as>
                           <update-source>
                               <sip-ipv4-address> 10.10.10.1 </sip-ipv4-address>
                           </update-source>
                       </neighbor-peer-grp>
                       <neighbor-peer-grp>
                           <router-bgp-neighbor-peer-group>
                               peergroup-two
                           </router-bgp-neighbor-peer-group>
                           <peer-group-name/>
                           <remote-as>100</remote-as>
                           <update-source>
                               <sip-ipv6-address>11:11::2</sip-ipv6-address>
                           </update-source>
                       </neighbor-peer-grp>
                   </peer-grps>
               </neighbor>
           </router-bgp-attributes>
       </router-bgp>
   </router>
</routing-system>
```

/router/bgp/peer-group/ipv6prefix-over-ipv4peer

Enables the exchange of IPv6 routes with BGP neighbors over IPv4 session. This configuration only applies to those BGP neighbors that are members of a peer-group.

Usage

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <router>
        <router-bgp xmlns="urn:brocade.com:mgmt:brocade-bgp">
            <router-bgp-attributes>
                <peer-group>
                    <capability>
                        <ipv6prefix-over-ipv4peer>
                    </capability>
                </peer-group>
            </router-bgp-attributes>
        </router-bgp>
    </router>
</routing-system>
```

Parameters

None

interface/{interface-type}/{interface-name}/isis

Configures the IS-IS protocol.

Usage

```
<interface xmlns="urn:brocade.com:mgmt:brocade-interface">
                <ethernet>
                    <name>{req_val}</name>
                    <ip>
                        <intf-router-isis xmlns="urn:brocade.com:mgmt:brocade-isis">
                            <int-router-isis>
                                <interface-ip-router-isis/>
                            </int-router-isis>
                        </intf-router-isis>
                    </ip>
                </ethernet>
            </interface>
```

Parameters

ethernet

Specifies the Ethernet interface.

name

Specifies the interface name.

int-router-isis

Specifies the ISIS router interface.

router/isis/is-type

Changes the IS-IS level globally.

Usage

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <router>
        <isis xmlns="urn:brocade.com:mgmt:brocade-isis">
            <router-isis-cmds-holder>
                <router-isis-attributes>
                    <is-type/>
                </router-isis-attributes>
            </router-isis-cmds-holder>
        </isis>
    </router>
</routing-system>
```

Parameters

router-isis-attributes

Configures the ISIS router atrributes.

route-map

Configures, retrieves, and modifies route-map instance.

Usage

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
                <route-map xmlns="urn:brocade.com:mgmt:brocade-ip-policy">
                    <name>{req_val}</name>
                    <action-rm>{req_val}</action-rm>
                    <instance>{req_val}</instance>
                </route-map>
            </routing-system>
```

Parameters

name

Specifies route-map name.

action-rm

Specifies the action.

instance

Specifies the route-map instance ID.

router/mpls

Configures the MPLS protocol.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
    <router>
        <mpls/>
    </router>
</mpls-config>
```

router/mpls/ldp

Configures the Label Distribution Protocol (LDP).

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <ldp/>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

ldp-session-ip

Specifies the LDP peer ip address.

ldp-targeted-peer-ip

Specifies the peer IP Address.

load-sharing

Specifies the number of load-sharing paths.

hello-interval-link

In seconds (1-32767, default 5).

hello-interval-target

In seconds (1-32767, default 15).

hello-timeout-link

In seconds (2-65535, default 15).

hello-timeout-target

In seconds (2-65535, default 45).

ka-interval

In seconds (1-65535 default 6).

ka-int-count

In seconds (1-65535 default 6).

ka-timeout

In seconds (1-65535).

filter-fec-in

Apply filtering on inbound FECs.

filter-fec-out

Apply filtering on inbound FECs.

advertise-fec

In seconds (1-65535).

lsr-id

IP address to be used as LSR id for LDP.

filter-fec-out

Apply filtering on outbound FECs.

rx-label-silence-timer

Specifies the receive label silence time (100-60000 ms). The default is 1000.

key

Enables TCP-MD5 authentication.

rx-label-silence-timer

Specifies the receive label silence time (100-60000 ms). The default value is 1000.

max-neighbor-reconnect-time

Specifies the maximum time to wait for neighbor to reconnect (60-300 sec). The default value is 120.

max-neighbor-recovery-time

Specifies the maximum time to wait for neighbor to recover (60-3600 sec). The default value is 120.

reconnect-time

Specifies the session reconnect time (60-300 sec). The default value is 120.

recovery-time

Recovery time (60-3600 sec). The default value is 120.

tx-label-silence-timer

Specifies the transmit label silence timer (100-60000 msec).The default value is 1000.

notification-timer

Specifies the notification timer (100-120000 msec). The default value is 60000.

tunnel-metric

Specifies the LDP tunnel metric value (1-65535; default 0).

label-withdrawal-delay

Specifies the label withdrawal delay. The range is from 0 to 300. The default value is 60.

router/mpls/lsp

Configures the various label-switched path (LSP) parameters.

Usage

```
 <mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
    <router>
        <mpls>
            <mpls-cmds-holder>
                <lsp>
                  <lsp-name>{lsp-name}</lsp-name>
                        <lsp-shortcuts>
                            <lsp-ospf/>
                            <lsp-ignore-lsp-metrics/>
                        </lsp-shortcuts>
                </lsp>
            </mpls-cmds-holder>
        </mpls>
    </router>
</mpls-config>
```

Parameters

lsp-name

The name of this LSP.

lsp-dest-address

The destination IP address of the LSP.

lsp-src-address

The source IP address of the LSP.

lsp-primary-path

lsp-metric

The user assigned metric to this LSP.

lsp-shortcuts

lsp-ospf

Enables support for LSP shortcuts.

lsp-ignore-lsp-metric

Ignores the configured LSP metric.

router/mpls/rsvp

Configures the MPLS RSVP.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy>
                                <rsvp-periodic-flooding-time/>
                            </policy>
                        </mpls-cmds-holder>
                    </mpls>
```

Parameters

policy

Specifies the MPLS policy.

rsvp-periodic-flooding-tim

Specifies the periodic flooding time.

router/mpls/policy

Configures an MPLS policy.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy/>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

policy

Specifies the MPLS policy.

router/mpls/policy/transit-session-accounting

Enables traffic statistics for transit sessions.

Usage

```
mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy>
                                <transit-session-accounting/>
                            </policy>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

policy

Specifies the MPLS policy.

transit-session-accounting

Specifies transit session account.

router/mpls/policy/ingress-tunnel-accounting

Enables traffic statistics for tunnel interfaces.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy>
                                <ingress-tunnel-accounting/>
                            </policy>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>>
```

Parameters

policy

Specifies the MPLS policy.

ingress-tunnel-accounting

Enables traffic statistics for tunnel interfaces

router/mpls/policy/qos-ttl-mode

Configures the MPLS TTL and QOS propagation model.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy>
                                <qos-ttl-mode/>
                            </policy>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
        </filter>
    </get-config>
</rpc>
```

Parameters

policy

Specifies the MPLS policy.

qos-ttl-mode

Configures the MPLS TTL and QOS propagation model.

router/mpls/policy/traffic-engineering/isis

Defines timer value for soft preemption to happen.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy>
                                <traffic-engineering>
                                    <isis-set-level/>
                                </traffic-engineering>
                            </policy>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

policy

Specifies the MPLS policy.

traffic-engineering

Specifies traffic engineering.

isis-set-level

Sets level for ISIS.

router/mpls/policy/soft-preemption/cleanup-timer

Defines timer value for soft preemption to happen.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy>
                                <soft-preemption>
                                    <cleanup-timer/>
                                </soft-preemption>
                            </policy>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

policy

Specifies the MPLS policy.

soft-preemption

Specifies the soft preemption.

cleanup-timer

Specifies the cleanup timer.

router/mpls/policy/cspf-computation-mode/rsvp-periodic-flooding-time

Sets the interval for RSVP TE periodic flooding.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy>
                                <rsvp-periodic-flooding-time/>
                            </policy>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

policy

Specifies the MPLS policy.

rsvp-periodic-flooding-time

Specifies the RSVP periodic flooding time.

cspf-metric-type

Specifies the metric type.

router/mpls/policy/qos-ttl-mode

Configures the MPLS TTL and QOS propagation model.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy>
                                <qos-ttl-mode/>
                            </policy>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
        </filter>
    </get-config>
</rpc>
```

Parameters

policy

Specifies the MPLS policy.

qos-ttl-mode

Configures the MPLS TTL and QOS propagation model.

router/mpls/policy/cspf-computation-mode/rapid-retry

Configures the rapid retry option.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy>
                                <rapid-retry/>
                            </policy>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

policy

Specifies the MPLS policy.

rapid-retry

Specifies rapid retry.

router/mpls/policy/cspf-computation-mode/retry-time

Configures LSP retry time.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy>
                                <retry-time/>
                            </policy>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

router/mpls/policy/cspf-computation-mode/handle-ospf-neighbor-down

Configures MPLS to handle OSPF neighbor down event.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy>
                                <handle-ospf-neighbor-down/>
                            </policy>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

policy

Specifies the MPLS policy.

handle-ospf-neighbor-down

Handles a down OSPF neighbor.

router/mpls/policy/cspf-computation-mode/handle-isis-neighbor-down

Configures MPLS to handle ISIS neighbor down event.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy>
                                <handle-isis-neighbor-down/>
                            </policy>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

policy

Specifies the MPLS policy.

handle-isis-neighbor-down

Handles a down ISIS neighbor.

router/mpls/policy/cspf-computation-mode/cspf-interface-constraint

Uses interface IP address for Constrained Shortest Path First (CSPF) computation.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy>
                                <cspf-interface-constraint/>
                            </policy>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

policy

Specifies the MPLS policy.

cspf-interface-constraint

Specifies CSPF interface contraint.

router/mpls/policy/cspf-computation-mode/add-penalty

Adds penalty of all matching Constrained Shortest Path First (CSPF)-groups to TE metric of TE link.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy>
                                <cspf-group-computation>
                                    <add-penalty/>
                                </cspf-group-computation>
                            </policy>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

policy

Specifies the MPLS policy.

cspf-group-computation

Specifies CSPF group computation.

add-penalty

Adds penalty.

router/mpls/policy/cspf-computation-mode/metric-type

Selects metric type for CSPF computation..

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy>
                                <cspf-computation-mode>
                                    <cspf-metric-type/>
                                </cspf-computation-mode>
                            </policy>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

policy

Specifies the MPLS policy.

cspf-computation-mode

Specifies the CSPF computation mode.

cspf-metric-type

Specifies the metric type.

router/mpls/policy/cspf-computation-mode/ignore-overload-bit

Ignores overload bit during CSPF computation.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy>
                                <cspf-computation-mode>
                                    <ignore-overload-bit/>
                                </cspf-computation-mode>
                            </policy>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

policy

Specifies the MPLS policy.

cspf-computation-mode

Specifies the CSPF computation mode.

ignore-overload-bit

Ignore theoverloa bit.

router/mpls/policy/backup-retry-time

Configures the backup retry time.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy>
                                <backup-retry-time/>
                            </policy>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

policy

Specifies the MPLS policy.

backup-retry-time

Specifies the backup retry time.

router/mpls/cspf-group/(cspf-groupname)/penalty

Configures the CSPF group penalty value.

Usage-DELETE

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
    <router>
        <mpls>
            <mpls-cmds-holder>
                <policy>
                    <cspf-group-computation>
                        <add-penalty/>
                    </cspf-group-computation>
                </policy>
            </mpls-cmds-holder>
        </mpls>
    </router>
</mpls-config>
```

Parameters

policy

Specifies the policy.

router/mpls/lsp-xc-traps/enable

Enables the LSP cross connect up, down, logging, and traps.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <lsp-xc-traps>
                                <lsp-xc-traps-enable/>
                            </lsp-xc-traps>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

lsp-xc-traps

Specifies LSP cross connect traps.

lsp-xc-traps-enable

Enables LSP cross conect traps.

router/mpls/cspf-group/(cspf-groupname)/penalty

Configures the CSPF group penalty value.

Usage-DELETE

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
    <router>
        <mpls>
            <mpls-cmds-holder>
                <policy>
                    <cspf-group-computation>
                        <add-penalty/>
                    </cspf-group-computation>
                </policy>
            </mpls-cmds-holder>
        </mpls>
    </router>
</mpls-config>
```

Parameters

policy

Specifies the policy.

router/mpls/lsp-xc-traps/enable

Enables the LSP cross connect up, down, logging, and traps.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <lsp-xc-traps>
                                <lsp-xc-traps-enable/>
                            </lsp-xc-traps>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

lsp-xc-traps

Specifies LSP cross connect traps.

lsp-xc-traps-enable

Enables LSP cross conect traps.

router/mpls/rsvp

Configures the MPLS RSVP.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <policy>
                                <rsvp-periodic-flooding-time/>
                            </policy>
                        </mpls-cmds-holder>
                    </mpls>
```

Parameters

policy

Specifies the MPLS policy.

rsvp-periodic-flooding-tim

Specifies the periodic flooding time.

router/mpls/rsvp/reliable-messaging/rapid-retry-limit

Configures the maximum number of retries for an unacknowledged message.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <rsvp>
                                <g-reliable-messaging>
                                    <rapid-retry-limit/>
                                </g-reliable-messaging>
                            </rsvp>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

rsvp

Specifies the MPLS Resource Reservation Protocol (RSVP).

g-reliable-messaging

Specifies the group reliable messaging.

bundle-message

Specifies the bundle message.

router/mpls/rsvp/reliable-messaging/rapid-retrans-interval

Configures an interval for an unacknowledged message to be resent.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <rsvp>
                                <g-reliable-messaging>
                                    <rapid-retrans-interval/>
                                </g-reliable-messaging>
                            </rsvp>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
```

Parameters

rsvp

Specifies the MPLS Resource Reservation Protocol (RSVP).

g-reliable-messaging

Specifies group reliable messaging.

rapid-retrans-interval

Specifies interval for rapid retransmission.

router/mpls/rsvp/reliable-messaging/rapid-retrans-decay

Percentage increase in the rapid retransmission interval for each consecutive unacknowledged RSVP message.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <rsvp>
                                <g-reliable-messaging>
                                    <rapid-retrans-decay/>
                                </g-reliable-messaging>
                            </rsvp>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

rsvp

Specifies the MPLS Resource Reservation Protocol (RSVP).

g-reliable-messaging

Specifies group reliable messaging.

rapid-retrans-decay

Specifies rapid retransmission decay.

router/mpls/rsvp/refresh-reduction/bundle-message/bundle-send-delay

Configure the bundle send delay value.

bundle-send-delay

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <rsvp>
                                <g-refresh-reduction>
                                    <bundle-message>
                                        <bundle-send-delay/>
                                    </bundle-message>
                                </g-refresh-reduction>
                            </rsvp>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

rsvp

Specifies the MPLS Resource Reservation Protocol (RSVP).

g-refresh-reduction

Specifies the group refresh reduction value.

bundle-message

Specifies the bundle message.

bundle-send-delay

Specifies the bundle send delay.

router/mpls/rsvp/refresh-multiple

Configures the MPLS RSVP refresh multiple.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <rsvp>
                                <refresh-multiple/>
                            </rsvp>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

rsvp

Specifies the MPLS Resource Reservation Protocol (RSVP).

refresh-muliple

Specifies refresh multiple.

router/mpls/rsvp/refresh-interval

Configures the MPLS RSVP refresh interval.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <rsvp>
                                <refresh-interval/>
                            </rsvp>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

rsvp

Specifies the MPLS Resource Reservation Protocol (RSVP).

refresh-interval

Specifies the refresh interval.

router/mpls/rsvp/g-rsvp-backup-bw-guarantee

Sets up a backup path requesting bandwidth.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <rsvp>
                                <g-rsvp-backup-bw-guarantee/>
                            </rsvp>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

rsvp

Specifies the MPLS Resource Reservation Protocol (RSVP).

g-rsvp-backup-bw-guarantee

Specifies bandwidth gurantee for the group RSVP backup.

router/mpls/rsvp/global-rsvp-hello-acknowledgements

Acknowledges the RSVP hellos on interfaces supporting RSVP hello and not having RSVP sessions.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <rsvp>
                                <global-rsvp-hello-acknowledgements/>
                            </rsvp>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

rsvp

Specifies the MPLS Resource Reservation Protocol (RSVP).

global-rsvp-hello-acknowledgements

Specifies global RSVP hello acknowledgements.

router/mpls/rsvp/global-rsvp-hello/tolerance

Configures the number of unacknowledged RSVP hello requests before timeout.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <rsvp>
                                <global-rsvp-hello>
                                    <global-rsvp-hello-tolerance/>
                                </global-rsvp-hello>
                            </rsvp>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

rsvp

Specifies the MPLS Resource Reservation Protocol (RSVP).

global-rsvp-hello

Specifies the global RSVP hello.

global-rsvp-hello-tolerance

Specifies the tolerance value for global RSVP hello.

router/mpls/rsvp/global-rsvp-hello

Configures the interval between two RSVP hello requests.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <rsvp>
                                <global-rsvp-hello>
                                    <global-rsvp-hello-interval/>
                                </global-rsvp-hello>
                            </rsvp>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

rsvp

Specifies the MPLS Resource Reservation Protocol (RSVP).

global-rsvp-hello

Specifies global RSVP hello

global-rsvp-hello-interval

Specifies the interval for global RSVP hello.

router/mpls/rsvp/refresh-reduction/summary-refresh

Configures the refresh reduction summary refresh feature.

Usage

```
<mpls-config xmlns="urn:brocade.com:mgmt:brocade-mpls">
                <router>
                    <mpls>
                        <mpls-cmds-holder>
                            <rsvp>
                                <g-refresh-reduction>
                                    <summary-refresh/>
                                </g-refresh-reduction>
                            </rsvp>
                        </mpls-cmds-holder>
                    </mpls>
                </router>
            </mpls-config>
```

Parameters

rsvp

Specifies the MPLS Resource Reservation Protocol (RSVP).

summary-refresh

Specifies summary refresh.

routing-system/ip/dhcp/relay/disable-flooding

Configures disabling flooding of IPv4 DHCP Relay packets.

Usage

```
<routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
    <ip>
        <dhcp xmlns="urn:brocade.com:mgmt:brocade-dhcp">
            <relay>
                <disable-flooding/>
            </relay>
        </dhcp>
    </ip>
</routing-system>
```

Parameters

None

show/selinux/status

Displays the current SE Linux configuration for this SLX-OS device.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <action xmlns="http://tail-f.com/ns/netconf/actions/1.0">
        <data>
            <show xmlns="urn:brocade.com:mgmt:brocade-common-def">
                <selinux xmlns="urn:brocade.com:mgmt:brocade-sec-services">
                    <status/>
                </selinux>
            </show>
        </data>
        </action>
</rpc>
]]>]]>
```

Parameters

status

Displays the SE Linux status for this SLX-OS device.

Response

The response received for this RPC call is

```
 <rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <data>
        <show xmlns='urn:brocade.com:mgmt:brocade-common-def'>
            <selinux xmlns='urn:brocade.com:mgmt:brocade-sec-services'>
                <status>
                    <sestatus-output>
                        SELinux status: enabled
```

```
                        SELinuxfs mount: /sys/fs/selinux
                        SELinux root directory: /etc/selinux
                        Loaded policy name: mls
                        Current mode: permissive
                        Mode from config file: enforcing
                        Policy MLS status: enabled
                        Policy deny_unknown status: allowed
                        Memory protection checking: actual (secure)
                        Max kernel policy version: 31
                    </sestatus-output>
                </status>
            </selinux>
        </show>
    </data>
</rpc-reply>
]]>]]>
```

sflow/agent-address

Configures the sFlow agent-ID address..

Usage

```
<sflow xmlns="urn:brocade.com:mgmt:brocade-sflow">
                <agent-address>
                    <agent-interface-name/>
                </agent-address>
            </sflow>
```

Parameters

ipv4

Specifies an agent-address configuration for IPv4 collectors.

ipv6

Specifies an agent-address configuration for IPv6 collectors.

ethernet *slot/plot*

Specifies an Ethernet slot and port..

loopback *loopback-number*

Specifies a loopback interface. Valid values range from 1 through 255.

management *slot*

Specifies a management interface.

ve *ve-inteface*

Specifies a virtual Ethernet (VE) interface. Valid values range from 1 through 4096.

sflow/collector

Configures sFlow collector.

Usage

```
<sflow xmlns="urn:brocade.com:mgmt:brocade-sflow">
    <collector>
        <collector-ip-address>1.1.1.1</collector-ip-address>
        <collector-port-number>50</collector-port-number>
        <use-vrf>mgmt-vrf</use-vrf>
    </collector>
</sflow>
```

Parameters

collector-ip-address

Specifies the IP address of the sFlow collector

collector-port-number

Specifies the port number used by the sFlow collector. The value can range from 1 through 65535

use-vrf

Specifies the VRF to use for sending data to the collector

sflow/enable

Enables sFlow globally.

Usage

```
<sflow xmlns="urn:brocade.com:mgmt:brocade-sflow">
    <enable></enable>
</sflow>
```

Parameters

enable

Enable sFlow globally

sflow/polling-interval

Configures interface counter polling interval.

Usage

```
<sflow xmlns="urn:brocade.com:mgmt:brocade-sflow">
    <polling-interval>25</polling-interval>
</sflow>
```

Parameters

polling-interval

Specifies polling interval value. The value can range from 1 through 65535. The default value is 20

sflow/sample-rate

Configures interface sampling rate.

Usage

```
<sflow xmlns="urn:brocade.com:mgmt:brocade-sflow">
    <sample-rate>2048</sample-rate>
</sflow>
```

Parameters

sample-rate

The default value is 2048 packets for all platforms.

The valid sample rates are:

- 1 - 16000000 - for SLX 9740 and Extreme 8820
- 1 - 100000 - for all other platforms

sflow/source-ip

Configures source IP address to use.

Usage

```
<sflow xmlns="urn:brocade.com:mgmt:brocade-sflow">
    <source-ip>chassis-ip</source-ip>
</sflow>
```

Parameters

source-ip

Specifies the source IP address to use
chassis-ip

Uses chassis IP as source address

mm-ip

Uses local MM IP as source address

sflow/update-destination-mac

Updates the destination MAC address in the sFlow sample for routed packets.

Usage

```
<sflow xmlns="urn:brocade.com:mgmt:brocade-sflow">
    <update-destination-mac/>
</sflow>
```

Parameters

update-destination-mac *operation="delete"*

When no parameter is passed, this function is enabled. When the parameter *operation="delete"* is passed, this function is disabled.

sflow-profile

Configures sflow profile sampling rate.

Usage

```
<sflow-profile xmlns="urn:brocade.com:mgmt:brocade-sflow">
    <profile-name>sflow1</profile-name>
    <profile-sampling-rate>4</profile-sampling-rate>
</sflow-profile>
```

Parameters

profile-name

Specifies Sflow profile name

profile-sampling-rate

Specifies Sflow sampling rate. The value can range from 2 through 8388608

snmp-server/use-vrf/{vrf-name}

Starts or stops SNMP service on the specified VRF.

Usage

```
<snmp-server xmlns="urn:brocade.com:mgmt:brocade-snmp">
    <use-vrf>
        <use-vrf-name>vrf-name</use-vrf-name>
        <shutdown/>
    </use-vrf>
</snmp-server>
```

Parameters

use-vrf-name *vrf-name*

Specifies the VRF name on which to enable/disable SNMP service.

shutdown

Initiates shutdown of SNMP service on the selected VRF.

show-grub-version

Displays the current grub version for this SLX-OS device.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
  <action xmlns="http://tail-f.com/ns/netconf/actions/1.0">
    <data>
      <show xmlns="urn:brocade.com:mgmt:brocade-common-def">
        <update xmlns="urn:brocade.com:mgmt:brocade-firmware">
          <grubversion/>
        </update>
      </show>
    </data>
  </action></rpc>]]>]]>
<?xml version="1.0" encoding="UTF-8"?>
```

Parameters

grubversion

Displays the grub version for this SLX-OS device.

Response

The response received for this RPC call is

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" messageid="1">
  <data>
    <showxmlns='urn:brocade.com:mgmt:brocade-common-def'>
      <update xmlns='urn:brocade.com:mgmt:brocade-firmware'>
        <grubversion>
          <grub-ver>grub_version="2.06"
```

```
          </grub-ver>
        </grubversion>
      </update>
    </show>
  </data>
</rpc-reply>]]>]]>
```

show-onie-version

Displays the current onie version for this SLX-OS device.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
  <action xmlns="http://tail-f.com/ns/netconf/actions/1.0">
    <data>
      <show xmlns="urn:brocade.com:mgmt:brocade-common-def">
        <update xmlns="urn:brocade.com:mgmt:brocade-firmware">
          <onieversion/>
        </update>
      </show>
    </data>
  </action>
</rpc>]]>]]>
<?xml version="1.0" encoding="UTF-8"?><?xml version="1.0" encoding="UTF-8"?>
```

Parameters

onieversion

Displays the onie version for this SLX-OS device.

Response

The response received for this RPC call is

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
  <data>
    <show xmlns='urn:brocade.com:mgmt:brocade-common-def'>
      <update xmlns='urn:brocade.com:mgmt:brocade-firmware'>
        <onieversion>
          <onie-ver>ONIE Version="2020.05.00.07"</onie-ver>
        </onieversion>
      </update>
    </show>
  </data>
</rpc-reply>]]>]]>
```

snmp-server/trap/bfd-std-mib

Configures *Standard MIB* for BFD Traps.

Usage

```
<snmp-server xmlns="urn:brocade.com:mgmt:brocade-snmp">
     <trap>
       <bfd-std-mib/>
     </trap>
</snmp-server>
```

snmp-server/use-vrf/shutdown

Shuts down a user defined VRF.

Usage

```
<snmp-server xmlns="urn:brocade.com:mgmt:brocade-snmp">
    <use-vrf>
            <use-vrf-name>user-vrf-name</use-vrf-name>
        <snmp-vrf-shutdown></snmp-vrf-shutdown>
    </use-vrf>
</snmp-server>
```

system-monitor

Configures, modifies, or retrieves FRU threshold and alert setting.

Usage

```
<system-monitor xmlns="urn:brocade.com:mgmt:brocade-system-monitor">
    <fan>
        <alert>
            <action/>
        </alert>
    </fan>
</system-monitor>
```

```
<system-monitor xmlns="urn:brocade.com:mgmt:brocade-system-monitor">
    <power>
        <threshold/>
    </power>
</system-monitor>
```

Parameters

fan

Specifies the fan.

alert

The fan alert notification.

action

Specifies the action to be taken.

power

Specifies power supply.

thereshold

The power supoply threshold.

system-monitor-mail/fru (email)

Configures e-mail address for FRU alerts.

Usage

```
<system-monitor-mail xmlns="urn:brocade.com:mgmt:brocade-system-monitor">
    <fru>
        <email-list>
            <email>abc@brocade.com</email>
        </email-list>
    </fru>
</system-monitor-mail>
```

Parameters

email

Specifies e-mail address for FRU alerts

system-monitor-mail/fru/enable

Enables FRU e-mail alerts.

Usage

```
<system-monitor-mail xmlns="urn:brocade.com:mgmt:brocade-system-monitor">
    <fru>
        <enable></enable>
    </fru>
</system-monitor-mail>
```

Parameters

enable

Enables FRU e-mail alerts

system-monitor-mail/interface (email)

Configures e-mail address for interface alerts.

Usage

```
<system-monitor-mail xmlns="urn:brocade.com:mgmt:brocade-system-monitor">
    <interface>
        <email-list>
            <email>abc@brocade.com</email>
        </email-list>
    </interface>
</system-monitor-mail>
```

Parameters

email

Specifies e-mail address for interface alerts

system-monitor-mail/interface/enable

Enables interface e-mail alerts.

Usage

```
<system-monitor-mail xmlns="urn:brocade.com:mgmt:brocade-system-monitor">
    <interface>
        <enable></enable>
    </interface>
</system-monitor-mail>
```

Parameters

enable

Enables interface e-mail alerts

system-monitor-mail/relay

Configures relay IP mail settings.

Usage

```
<system-monitor-mail xmlns="urn:brocade.com:mgmt:brocade-system-monitor">
    <relay>
        <host-ip>1.1.1.1</host-ip>
        <domain-name>domain1</domain-name>
    </relay>
</system-monitor-mail>
```

Parameters

host-ip

Specifies host IP address

domain-name

Specifies domain server name

system-monitor-mail/security (email)

Configures e-mail address for security alerts.

Usage

```
<system-monitor-mail xmlns="urn:brocade.com:mgmt:brocade-system-monitor">
    <security>
        <email-list>
            <email>abc@brocade.com</email>
        </email-list>
    </security>
</system-monitor-mail>
```

Parameters

email

Specifies e-mail address for security alerts

system-monitor-mail/security/enable

Enables security e-mail alerts.

Usage

```
<system-monitor-mail xmlns="urn:brocade.com:mgmt:brocade-system-monitor">
    <security>
        <enable></enable>
    </security>
</system-monitor-mail>
```

Parameters

enable

Enables security e-mail alerts

system-monitor-mail/sfp (email)

Configures e-mail address for SFP alerts.

Usage

```
<system-monitor-mail xmlns="urn:brocade.com:mgmt:brocade-system-monitor">
    <sfp>
        <email-list>
            <email>abc@brocade.com</email>
        </email-list>
    </sfp>
</system-monitor-mail>
```

Parameters

email

Specifies e-mail address for SFP alerts

system-monitor-mail/sfp/enable

Enables sfp e-mail alerts.

Usage

```
<system-monitor-mail xmlns="urn:brocade.com:mgmt:brocade-system-monitor">
    <sfp>
        <enable></enable>
    </sfp>
</system-monitor-mail>
```

Parameters

enable

Enables sfp e-mail alerts

system-watermark

Defines system-related information.

Usage

```
<system-config xmlns="urn:brocade.com:mgmt:brocade-system-watermark">
                <interface>
                    <utilization-watermark/>
                </interface>
```

Parameters

interface

Specifies the protocol.

utilization-watermark

Specifies the utilization watermark.

topology-group

Configures topology VLAN group for L2 protocols.

Usage

```
<topology-group xmlns="urn:brocade.com:mgmt:brocade-topology-group">
    <topology-group-id>{req_val}</topology-group-id>
    <member-vlan>
        <member-vlan-add/>
    </member-vlan>
</topology-group>>
```

Parameters

topology-group-id

Specifies topology group ID.

member-valn

Configures member VLANs.

master-vlan

Configures master VLANs.

vlan/{vlan-name}/mac

Configures a MAC access group.

Usage

```
<interface-vlan xmlns="urn:brocade.com:mgmt:brocade-interface">
                <vlan>
                    <name>{req_val}</name>
                    <mac xmlns="urn:brocade.com:mgmt:brocade-mac-access-list">
                        <access-group>
                            <mac-access-list>{req_val}</mac-access-list>
                            <mac-direction>{req_val}</mac-direction>
                            <traffic-type/>
                        </access-group>
                    </mac>
                </vlan>
            </interface-vlan>
```

Parameters

vlan

Specifies vlan.

name

Specifies the VLAN name.

access-group

Specifies the MAC acess- group.

mac-access-list

Specifies the mac-access list.

mac-direction

Specifies the MAC direction.

traffic-type

Specifies the traffic type.

vlan/classifier/group

Configures VLAN classification group commands.

Usage

```
<vlan xmlns="urn:brocade.com:mgmt:brocade-vlan">
    <classifier>
        <group>
            <groupid>2</groupid>
            <oper>add</oper>
            <rule-name>rule</rule-name>
            <ruleid>2</ruleid>
        </group>
    </classifier>
</vlan>
```

Parameters

groupid

Specifies VLAN classifier group ID. The value can range from 1 through 16

oper

Specifies the operation

add

Add rule

delete

Delete rule

rule-name

Specifies VLAN classifier rule name

ruleid

Specifies VLAN classifier rule ID

vlan/classifier/rule/mac

Configures VLAN classification rule commands.

Usage

```
<vlan xmlns="urn:brocade.com:mgmt:brocade-vlan">
    <classifier>
        <rule>
            <ruleid>2</ruleid>
            <mac>
                <address>0011.1122.2233</address>
            </mac>
        </rule>
    </classifier>
</vlan>
```

Parameters

ruleid

Specifies the rule ID. The value can range from 1 through 256

address

Specifies MAC address in HHHH.HHHH.HHHH format

vlan/classifier/rule/proto

Configures the protocol to use for the VLAN classifier rule.

Usage

```
<vlan xmlns="urn:brocade.com:mgmt:brocade-vlan">
    <classifier>
        <rule>
            <ruleid>2</ruleid>
            <proto>
                <proto-val>arp</proto-val>
                <encap>ethv2</encap>
            </proto>
        </rule>
    </classifier>
</vlan>
```

Parameters

ruleid

Specifies the VLAN identification rule. The values can range from 1 through 2556

proto-val

Specifies the protocol to use for the VLAN classifier rule

hex_addr

Specifies an Ethernet hexadecimal value. The value can range from 0x0000 through 0xffff

arp

Specifies to use the Address Resolution Protocol

ip

Specifies to use the Internet Protocol

ipv6

Specifies to use the Internet Protocol version 6

encap

Specifies to encapsulate the Ethernet frames sent for the VLAN classifier rule

ethv2

Specifies to use the Ethernet version 2 encapsulated frames

nosnapllc

Specifies to use the Ethernet version 2 non-SNA frames

snapllc

Specifies to use the Ethernet version 2 with SNA frames

vlan/dot1q

Configures dot1q parameters.

Usage

```
<vlan xmlns="urn:brocade.com:mgmt:brocade-vlan">
    <dot1q>
        <tag>
            <native></native>
        </tag>
    </dot1q>
</vlan>
```

Parameters

native

Enables tagged behavior for native-VLANs

vrf

Configures the virtual rounding and forwarding (VRF).

Usage

```
<vrf xmlns="urn:brocade.com:mgmt:brocade-vrf">
    <vrf-name>{req_val}</vrf-name>
</vrf>
```

Parameters

vrf-name

Specifies the VRF name.

vrf/{vrf-name}/address-family/ipv4/unicast

Configures the IPv4 address family configurations.

Usage

```
<vrf xmlns="urn:brocade.com:mgmt:brocade-vrf">
    <vrf-name>{req_val}</vrf-name>
    <address-family>
        <ip>
            <unicast/>
        </ip>
    </address-family>
</vrf>
```

Parameters

vrf-name

Specifies the VRF name.

address-family

Specifies address family.

ip

Specifies the IP address.

vrf/{vrf-name}/address-family/ipv4/unicast/max-route

Configures IPv4 address family maximum route.

Usage

```
<vrf xmlns="urn:brocade.com:mgmt:brocade-vrf">
    <vrf-name>{req_val}</vrf-name>
    <address-family>
        <ip>
            <unicast>
                <max-route/>
            </unicast>
        </ip>
    </address-family>
</vrf>
```

Parameters

vrf-name

Specifies the VRF name.

address-family

Specifies address family.

ip

Specifies the IP address.

vrf/{vrf-name}/address-family/ipv6/unicast

Configures the IPv6 address family configurations.

Usage

```
<vrf xmlns="urn:brocade.com:mgmt:brocade-vrf">
    <vrf-name>{req_val}</vrf-name>
    <address-family>
        <ipv6>
            <unicast/>
        </ipv6>
    </address-family>
</vrf>
```

Parameters

vrf-name

Specifies the VRF name.

address-family

Specifies address family.

ipv6

Specifies the IP address.

vrf/{vrf-name}/address-family/ipv6/unicast/max-route

Configures IPv6 address family maximum route.

Usage

```
<vrf xmlns="urn:brocade.com:mgmt:brocade-vrf">
    <vrf-name>{req_val}</vrf-name>
    <address-family>
        <ipv6>
            <unicast>
                <max-route/>
            </unicast>
        </ipv6>
    </address-family>
</vrf>
```

Parameters

vrf-name

Specifies the VRF name.

address-family

Specifies address family.

ipv6

Specifies the IP address.

vrf/{vrf-name}/ip/router-id

Configures the IP route details..

Usage

```
<vrf xmlns="urn:brocade.com:mgmt:brocade-vrf">
    <vrf-name>{req_val}</vrf-name>
    <ip>
        <vrf-router-id/>
    </ip>
</vrf>
```

Parameters

vrf-name

Specifies the VRF name.

vrf-router-id

Specifies the VRF router ID..

vxlan-visibility

Configures an overlay transit.

Usage

```
<overlay xmlns="urn:brocade.com:mgmt:brocade-vxlan-visibility>
    <access-list>
        <type>
            <vxlan/>
        </type>
    </access-list>
</overlay>
```

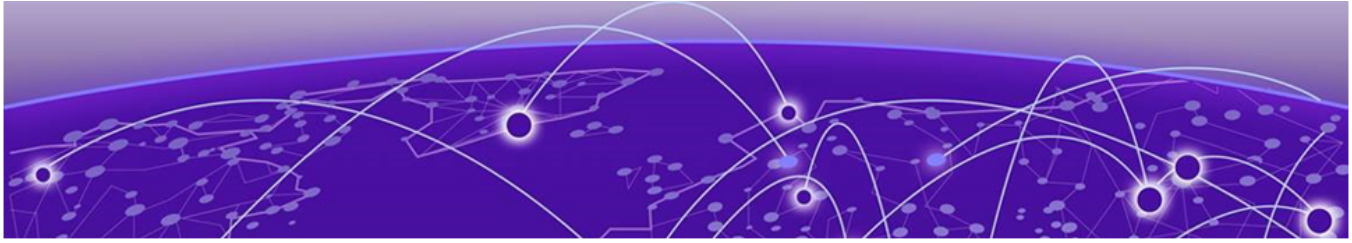
Parameters

access-list

Specifies the access list.

type

Specifies the VXLAN type: extended or standard.



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bna-config-cmd

Copies configuration data to and from the system.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="212">
    <bna-config-cmd xmlns="urn:brocade.com:mgmt:brocade-ras">
        <src>default-config</src>
        <dest>startup-config</dest>
    </bna-config-cmd>
</rpc>

<rpc-reply message-id="212" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <session-id xmlns="urn:brocade.com:mgmt:brocade-ras">5</session-id>
    <status xmlns="urn:brocade.com:mgmt:brocade-ras">in-progress</status>
</rpc-reply>
```

Parameters

session-id

This id is used along with bna-config-cmd-status API to get the status of this operation (inprogress/complete).

status

Displays the status of this operation (inprogress/complete).

bna-config-cmd-status

This RPC displays the status of a previous config-cmd.

Usage

```
nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="8">
   <bna-config-cmd xmlns="urn:brocade.com:mgmt:brocade-ras">
      <src>running-config</src>
      <dest>startup-config</dest>
   </bna-config-cmd>
</nc:rpc>
```

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="8">
   <session-id xmlns="urn:brocade.com:mgmt:brocade-ras">0</session-id>
   <status xmlns="urn:brocade.com:mgmt:brocade-ras">in-progress</status>
</rpc-reply>
```

```
 [2020-01-09 16:39:16] SEND admin@10.20.192.65
<nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="8">
   <bna-config-cmd-status xmlns="urn:brocade.com:mgmt:brocade-ras">
      <session-id>0</session-id>
   </bna-config-cmd-status>
</nc:rpc>

 [2020-01-09 16:39:17] RECV admin@10.20.192.65
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="8">
   <status xmlns="urn:brocade.com:mgmt:brocade-ras">completed</status>
   <status-string xmlns="urn:brocade.com:mgmt:brocade-ras"></status-string>
</rpc-reply
```

Parameters

session-id

This id is that of a previous config-cmd (inprogress/complete) operation.

status

Displays the status of this operation.

brocade-sec-services

Fetches the current SE Linux status.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <action xmlns="http://tail-f.com/ns/netconf/actions/1.0">
        <data>
        <show xmlns="urn:brocade.com:mgmt:brocade-common-def">
             <selinux xmlns="urn:brocade.com:mgmt:brocade-sec-services">
                 <status/>
             </selinux>
          </show>
         </data>
    </action>
  </rpc>
]]>]]>
```

Parameters

status

Fetches the SE Linux Status.

Response

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
  <data>
    <show xmlns='urn:brocade.com:mgmt:brocade-common-def'>
      <selinux xmlns='urn:brocade.com:mgmt:brocade-sec-services'>
        <status>
          <sestatus-output>
            SELinux status: enabled
            SELinuxfs mount: /sys/fs/selinux
            SELinux root directory: /etc/selinux
            Loaded policy name: mls
            Current mode: permissive
            Mode from config file: enforcing
            Policy MLS status: enabled
            Policy deny_unknown status: allowed
            Memory protection checking: actual (secure)
            Max kernel policy version: 31
          </sestatus-output>
        </status>
      </selinux>
     </show>
    </data>
  </rpc-reply>
]]>]]>
```

brocade-ip-policy

Configures IP routing policy.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
      <edit-config>
    <target>
       <running>
    <target>
    <config>
        <routing-system xmlns="urn:brocade.com:mgmt:brocade-common-def">
            <route-map xmlns="urn:brocade.com:mgmt:brocade-ip-policy">
                <name>r1</name>
                    <action-rm>permit</action-rm>
                    <instance>10</instance>
                    <content>
                        <rule-name>route-name-one</rule-name>
                    <content>
                <route-map>
        <routing-system>
    <config>
      <edit-config>
<rpc>]]>]]>
```

brocade-interface

Configures the selected interface's speed.

Usage

```
module brocade-interface
namespace "urn:brocade.com:mgmt:brocade-interface-ext";
<rpc message-id="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <edit-config>
        <target>
            <running/>
        </target>
        <config>
            <interface xmlns="urn:brocade.com:mgmt:brocade-interface">
                <ethernet>
                    <name>0/5</name>
                    <speed>1000-auto-full-duplex</speed>
                </ethernet>
            </interface>
        </config>
    </edit-config>
</rpc>
]]>]]>
<?xml version="1.0" encoding="UTF-8"?>
```

clear-tm-voq-stat-ing-all-egr-all

Usage

```
<nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="9">
   <clear-tm-voq-stat-ing-all-egr-all xmlns="urn:brocade.com:mgmt:brocade-tm-stats"></
clear-tm-voq-stat-ing-all-egr-all>
</nc:rpc>
```

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="9">
   <ok></ok>
</rpc-reply>
```

clear-tm-voq-stat-ing-all-egr-ifname

Clears per port voq statistics on all devices.

Usage

```
<nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="9">
   <clear-tm-voq-stat-ing-all-egr-ifname xmlns="urn:brocade.com:mgmt:brocade-tm-stats"></
clear-tm-voq-stat-ing-all-egr-ifname>
</nc:rpc>
```

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="9">
   <rpc-error>
      <error-type>application</error-type>
```

```
      <error-tag>operation-failed</error-tag>
      <error-severity>error</error-severity>
      <nc:error-path xmlns:tm="urn:brocade.com:mgmt:brocade-tm-stats"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0">
    /nc:rpc/tm:clear-tm-voq-stat-ing-all-egr-ifname
  </nc:error-path>
      <error-message unknown:lang="en">% Error: INTERFACE IS EITHER NOT PRESENT OR NOT
YET ACTIVE</error-message>
      <error-info>
         <bad-element>clear-tm-voq-stat-ing-all-egr-ifname</bad-element>
      </error-info>
   </rpc-error>
</rpc-reply>
```

Parameters

clear-tm-voq-ing-all-egress-port-name

The port name of the cleared voq statistics of the device.

clear-tm-voq-stat-slot-id-egr-all

Clears all voq statistics for the selected slot.

Usage

```
<nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="9">
   <clear-tm-voq-stat-slot-id-egr-all xmlns="urn:brocade.com:mgmt:brocade-tm-stats">
      <slot-id>1</slot-id>
   </clear-tm-voq-stat-slot-id-egr-all>
</nc:rpc>
```

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="9">
   <ok></ok>
</rpc-reply>
```

Parameters

slot-id

The id of the slot whose voq statistics are cleared.

clear-tm-voq-slot-id-egress-port-name

Clears the per port voq statistics for the selected slot.

Usage

```
<nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="9">
   <clear-tm-voq-slot-id-egress-port-name xmlns="urn:brocade.com:mgmt:brocade-tm-stats">
      <slot-id>1</slot-id>
      <clear-tm-voq-slot-egress-port-name></clear-tm-voq-slot-egress-port-name>
```

```
   </clear-tm-voq-slot-id-egress-port-name>
</nc:rpc>
```

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="9">
   <ok></ok>
</rpc-reply>
```

Parameters

slot-id

The id of the slot.

clear-mpls-ldp-statistics

Clears the MPLS LDP control plane statistics.

Usage

```
<clear-mpls-ldp-statistics xmlns=""urn:brocade.com:mgmt:brocade-mpls""/>
```

clear-mpls-lsp

Resets a tunnel and enables it back.

Usage

```
<clear-mpls-lsp xmlns=""urn:brocade.com:mgmt:brocade-mpls"">
      <mpls-clear-lsp-name-in>lspto</mpls-clear-lsp-name-in>
</clear-mpls-lsp>
```

Parameters

mpls-clear-lsp-name-in

Specifies the LSP name.

clear-mpls-rsvp-statistics

Clears the MPLS RSVP control plane statistics.

Usage

```
<clear-mpls-rsvp-statistics xmlns=""urn:brocade.com:mgmt:brocade-mpls""/>
```

clear-mpls-rsvp-statistics-neighbor-address

Clears an RSVP neighbor.

Usage

```
<clear-mpls-rsvp-statistics-neighbor xmlns=""urn:brocade.com:mgmt:brocade-mpls"">
   <clear-mpls-rsvp-statistics-neighbor-address>29.19.1.19</clear-mpls-rsvp-statistics-
neighbor-address>
</clear-mpls-rsvp-statistics-neighbor>
```

Parameters

clear-mpls-rsvp-statistics-neighbor-address

Specifies the RSVP neighbor with the specific IP address.

clear-mpls-rsvp-statistics-neighbor-all

Clears all RSVP neighbors.

Usage

```
<clear-mpls-rsvp-statistics-neighbor xmlns=""urn:brocade.com:mgmt:brocade-mpls"">
   <clear-mpls-rsvp-statistics-neighbor-all>true</clear-mpls-rsvp-statistics-neighbor-all>
</clear-mpls-rsvp-statistics-neighbor>
```

Parameters

clear-mpls-rsvp-statistics-neighbor-all

Clears all MPLS RSVP neighbors.

firmware-commit

This is the firmware commit RPC.

Usage

```
<nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="3">
   <firmware-commit xmlns="urn:brocade.com:mgmt:brocade-firmware">
   </firmware-commit>
</nc:rpc>
```

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="3">
   <result xmlns="urn:brocade.com:mgmt:brocade-firmware">firmwarecommit initiated</result>
</rpc-reply>
```

firmware-restore

Starts firmware restore on the device.

Usage

```
<nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="3">
   <firmware-restore xmlns="urn:brocade.com:mgmt:brocade-firmware">
   </firmware-restore>
</nc:rpc>
```

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="3">
   <result xmlns="urn:brocade.com:mgmt:brocade-firmware">firmwarerestore initiated</
result>
</rpc-reply>
```

fwdl-status

Returns the status of the firmware download operation.

Usage

```
<fwdl-status></fwdl-status>

<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="71">
   <fwdl-state xmlns="urn:brocade.com:mgmt:brocade-firmware">completed</fwdl-state>
   <number-of-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">24</number-of-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>1</index>
      <blade-name>SW/0</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:20:20</date-and-time-info>
      <message>Firmware install begins.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>2</index>
      <blade-name>SW/0</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:23:25</date-and-time-info>
      <message>Firmware install ends.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>3</index>
      <blade-name>SW/1</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:23:25</date-and-time-info>
      <message>Firmware install begins.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>4</index>
      <blade-name>SW/1</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:26:27</date-and-time-info>
      <message>Firmware install ends.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>5</index>
      <blade-name>SW/0</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:26:28</date-and-time-info>
      <message>Firmware starts to swap.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>6</index>
      <blade-name>SW/1</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:26:28</date-and-time-info>
      <message>Firmware starts to swap.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>7</index>
      <blade-name>SW/1</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:26:34</date-and-time-info>
      <message>Firmware is swapped.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
```

```
      <index>8</index>
      <blade-name>SW/0</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:26:36</date-and-time-info>
      <message>Firmware is swapped.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>9</index>
      <blade-name>SW/0</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:26:36</date-and-time-info>
      <message>Firmware is downloaded successfully.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>10</index>
      <blade-name>SW/1</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:26:37</date-and-time-info>
      <message>Firmware is downloaded successfully.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>11</index>
      <blade-name>SW/1</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:34:17</date-and-time-info>
      <message>The DB/filesystem starts shutting down.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>12</index>
      <blade-name>SW/0</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:34:17</date-and-time-info>
      <message>The DB/filesystem starts shutting down.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>13</index>
      <blade-name>SW/1</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:34:35</date-and-time-info>
      <message>The DB/filesystem has been shut down.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>14</index>
      <blade-name>SW/0</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:34:37</date-and-time-info>
      <message>The DB/filesystem has been shut down.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>15</index>
      <blade-name>SW/1</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:34:38</date-and-time-info>
      <message>The blade begins to reboot.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>16</index>
      <blade-name>SW/0</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:34:38</date-and-time-info>
      <message>The blade begins to reboot.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>17</index>
```

```
      <blade-name>SW/1</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:44:23</date-and-time-info>
      <message>The blade is rebooted.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>18</index>
      <blade-name>SW/1</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:44:23</date-and-time-info>
      <message>Firmware commit begins.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>19</index>
      <blade-name>SW/0</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:44:23</date-and-time-info>
      <message>The blade is rebooted.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>20</index>
      <blade-name>SW/0</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:44:23</date-and-time-info>
      <message>Firmware commit begins.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>21</index>
      <blade-name>SW/0</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:48:42</date-and-time-info>
      <message>Firmware commit ends.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>22</index>
      <blade-name>SW/0</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:48:42</date-and-time-info>
      <message>Firmware is downloaded successfully.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>23</index>
      <blade-name>SW/1</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:48:51</date-and-time-info>
      <message>Firmware commit ends.</message>
   </fwdl-entries>
   <fwdl-entries xmlns="urn:brocade.com:mgmt:brocade-firmware">
      <index>24</index>
      <blade-name>SW/1</blade-name>
      <message-id>0</message-id>
      <date-and-time-info>2016-11-29/01:48:51</date-and-time-info>
      <message>Firmware is downloaded successfully.</message>
   </fwdl-entries>
</rpc-reply>
```

Parameters

fwdl-state

Specifies the firmware download state.

number-of-entries

Specifies the number of status entries.

index

Specifies the sequence number for the message.

blade-name

Specifies the name of the blade.

message-id

Specifies the message indentifier.

date-and-time-info

Specifies the date and time of the message. The format is YYYY-MM-DD/HH:MM:SS.SSSS.

message

Displays the textual description of the status.

get-arp

Retrieves the ARP cache information.

Usage

```
<get-arp xmlns="urn:brocade.com:mgmt:brocade-arp"></get-arp>

<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <arp-entry>
        <ip-address>20.0.0.122</ip-address>
        <mac-address>0005.3379.407a</mac-address>
        <interface-type>unknown</interface-type>
        <interface-name></interface-name>
        <is-resolved>true</is-resolved>
        <age>03:16:05</age>
        <entry-type>dynamic</entry-type>
    </arp-entry>
</rpc-reply>
```

Parameters

ip-address

Displays the IP address of the ARP entry.

mac-address

Displays the MAC address of the ARP entry.

interface-type

Displays the interface type.

interface-name

Displays the interface name.

is-resolved

Indicates whether the ARP entry is resolved or not.

age

Displays the age of the ARP entry.

entry-type

Displays the type of the ARP entry.

get-contained-in-ID

Retrieves enclosure related information on embedded platforms.

Usage

```
<get-contained-in-ID xmlns="urn:brocade.com:mgmt:brocade-entity"></get-contained-in-ID>

<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <contained-in-ID>Bay 7</contained-in-ID>
</rpc-reply>
```

Parameters

contained-in-ID

Displays present slot ID of switch.

get-interface-detail

Returns operational details of all the possible interfaces of the managed entity. Use this RPC to discover basic characteristics of all the interfaces in the system. Each sublayer below the internetwork layer of a network interface is considered to be an interface.

Usage

```
<?xml version="1.0" ?>
<hello xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <capabilities>
      <capability>urn:ietf:params:netconf:base:1.0</capability>
  </capabilities>
</hello>
]]>]]>

<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="95d5b8a8-dcb8-4e14-b35c-
d3bb9e1e9f4a">
  <get-interface-detail xmlns="urn:brocade.com:mgmt:brocade-interface-ext"/>
</rpc>]]>]]>

<?xml version="1.0" encoding="UTF-8"?>
  <rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="95d5b8a8-
dcb8-4e14-b35c-d3bb9e1e9f4a">
  <interface xmlns='urn:brocade.com:mgmt:brocade-interface-ext'>
    <interface-type>port-channel</interface-type>
      <interface-name>9</interface-name>
      <port-mode>l3</port-mode>
      <if-name>Port-channel 9</if-name>
      <if-state>down</if-state>
      <line-protocol-state>down</line-protocol-state>
      <line-protocol-state-info> (admin down)</line-protocol-state-info>
      <hardware-type>aggregate</hardware-type>
      <current-hardware-address>00:00:00:00:00:00</current-hardware-address>
      <logical-hardware-address>00:00:00:00:00:00</logical-hardware-address>
      <ifindex>671088649</ifindex>
      <mtu>9216</mtu>
      <ip-mtu>1500</ip-mtu>
      <actual-line-speed>nil</actual-line-speed>
      <configured-line-speed>10Gbps</configured-line-speed>
      <bfd-software-session>false</bfd-software-session>
      <queuing-strategy>fifo</queuing-strategy>
      <ifHCInOctets>0</ifHCInOctets>
      <ifHCInUcastPkts>0</ifHCInUcastPkts>
      <ifHCInMulticastPkts>0</ifHCInMulticastPkts>
      <ifHCInBroadcastPkts>0</ifHCInBroadcastPkts>
      <ifHCInErrors>0</ifHCInErrors>
      <ifHCOutOctets>0</ifHCOutOctets>
      <ifHCOutUcastPkts>0</ifHCOutUcastPkts>
      <ifHCOutMulticastPkts>0</ifHCOutMulticastPkts>
      <ifHCOutBroadcastPkts>0</ifHCOutBroadcastPkts>
      <ifHCOutErrors>0</ifHCOutErrors>
      <fec-mode>RC-FEC</fec-mode>
      <ifFecCorrectedBlock>10</ifFecCorrectedBlock>
      <ifFecUncorrectedBlock>4</ifFecUncorrectedBlock>
  </interface>
  <interface xmlns='urn:brocade.com:mgmt:brocade-interface-ext'>
      <interface-type>ethernet</interface-type>
      <interface-name>0/1</interface-name>
      <port-role>edge</port-role>
      <port-mode>unknown</port-mode>
```

```
      <if-name>Ethernet 0/1</if-name>
      <if-state>up</if-state>
      <line-protocol-state>down</line-protocol-state>
      <line-protocol-state-info> (link protocol down)</line-protocol-state-info>
      <hardware-type>ethernet</hardware-type>
      <current-hardware-address>f0:64:26:f2:c4:0c</current-hardware-address>
      <logical-hardware-address>f0:64:26:f2:c4:0c</logical-hardware-address>
      <media-type>fixed</media-type>
      <wavelength>0</wavelength>
      <ifindex>201334784</ifindex>
      <mtu>9216</mtu>
      <actual-line-speed>nil</actual-line-speed>
      <configured-line-speed>1000-auto-full-duplex</configured-line-speed>
      <line-duplex-state>full</line-duplex-state>
      <bfd-software-session>false</bfd-software-session>
      <queuing-strategy>fifo</queuing-strategy>
      <ifHCInOctets>0</ifHCInOctets>
      <ifHCInUcastPkts>0</ifHCInUcastPkts>
      <ifHCInMulticastPkts>0</ifHCInMulticastPkts>
      <ifHCInBroadcastPkts>0</ifHCInBroadcastPkts>
      <ifHCInErrors>0</ifHCInErrors>
      <ifHCOutOctets>0</ifHCOutOctets>
      <ifHCOutUcastPkts>0</ifHCOutUcastPkts>
      <ifHCOutMulticastPkts>0</ifHCOutMulticastPkts>
      <ifHCOutBroadcastPkts>0</ifHCOutBroadcastPkts>
      <ifHCOutErrors>0</ifHCOutErrors>
      <fec-mode>Disabled</fec-mode>
      <ifFecCorrectedBlock>0</ifFecCorrectedBlock>
      <ifFecUncorrectedBlock>4</ifFecUncorrectedBlock>
  </interface>
  <interface xmlns='urn:brocade.com:mgmt:brocade-interface-ext'>
      <interface-type>ethernet</interface-type>
      <interface-name>0/2</interface-name>
      <port-role>edge</port-role>
      <port-mode>unknown</port-mode>
      <if-name>Ethernet 0/2</if-name>
      <if-state>up</if-state>
      <line-protocol-state>down</line-protocol-state>
      <line-protocol-state-info> (link protocol down)</line-protocol-state-info>
      <hardware-type>ethernet</hardware-type>
      <current-hardware-address>f0:64:26:f2:c4:0d</current-hardware-address>
      <logical-hardware-address>f0:64:26:f2:c4:0d</logical-hardware-address>
      <media-type>fixed</media-type>
      <wavelength>0</wavelength>
      <ifindex>201342976</ifindex>
      <mtu>9216</mtu>
      <actual-line-speed>nil</actual-line-speed>
      <configured-line-speed>1000-master-full-duplex</configured-line-speed>
      <line-duplex-state>full</line-duplex-state>
      <bfd-software-session>false</bfd-software-session>
      <queuing-strategy>fifo</queuing-strategy>
      <ifHCInOctets>0</ifHCInOctets>
      <ifHCInUcastPkts>0</ifHCInUcastPkts>
      <ifHCInMulticastPkts>0</ifHCInMulticastPkts>
      <ifHCInBroadcastPkts>0</ifHCInBroadcastPkts>
      <ifHCInErrors>0</ifHCInErrors>
      <ifHCOutOctets>0</ifHCOutOctets>
      <ifHCOutUcastPkts>0</ifHCOutUcastPkts>
      <ifHCOutMulticastPkts>0</ifHCOutMulticastPkts>
      <ifHCOutBroadcastPkts>0</ifHCOutBroadcastPkts>
      <ifHCOutErrors>0</ifHCOutErrors>
      <fec-mode>Disabled</fec-mode>
      <ifFecCorrectedBlock>0</ifFecCorrectedBlock>
      <ifFecUncorrectedBlock>4</ifFecUncorrectedBlock>
```

```
    </interface>
    <interface xmlns='urn:brocade.com:mgmt:brocade-interface-ext'>
      <interface-type>ethernet</interface-type>
      <interface-name>0/3</interface-name>
      <port-role>edge</port-role>
      <port-mode>unknown</port-mode>
      <if-name>Ethernet 0/3</if-name>
      <if-state>up</if-state>
      <line-protocol-state>down</line-protocol-state>
      <line-protocol-state-info> (link protocol down)</line-protocol-state-info>
      <hardware-type>ethernet</hardware-type>
      <current-hardware-address>f0:64:26:f2:c4:0e</current-hardware-address>
      <logical-hardware-address>f0:64:26:f2:c4:0e</logical-hardware-address>
      <media-type>fixed</media-type>
      <wavelength>0</wavelength>
      <ifindex>201351168</ifindex>
      <mtu>9216</mtu>
      <actual-line-speed>nil</actual-line-speed>
      <configured-line-speed>1000-master-full-duplex</configured-line-speed>
      <line-duplex-state>full</line-duplex-state>
      <bfd-software-session>false</bfd-software-session>
      <queuing-strategy>fifo</queuing-strategy>
      <ifHCInOctets>0</ifHCInOctets>
      <ifHCInUcastPkts>0</ifHCInUcastPkts>
      <ifHCInMulticastPkts>0</ifHCInMulticastPkts>
      <ifHCInBroadcastPkts>0</ifHCInBroadcastPkts>
      <ifHCInErrors>0</ifHCInErrors>
      <ifHCOutOctets>0</ifHCOutOctets>
      <ifHCOutUcastPkts>0</ifHCOutUcastPkts>
      <ifHCOutMulticastPkts>0</ifHCOutMulticastPkts>
      <ifHCOutBroadcastPkts>0</ifHCOutBroadcastPkts>
      <ifHCOutErrors>0</ifHCOutErrors>
      <fec-mode>Disabled</fec-mode>
      <ifFecCorrectedBlock>0</ifFecCorrectedBlock>
      <ifFecUncorrectedBlock>4</ifFecUncorrectedBlock>
    </interface>
    <interface xmlns='urn:brocade.com:mgmt:brocade-interface-ext'>
      <interface-type>ethernet</interface-type>
      <interface-name>0/4</interface-name>
      <port-role>edge</port-role>
      <port-mode>unknown</port-mode>
      <if-name>Ethernet 0/4</if-name>
      <if-state>up</if-state>
      <line-protocol-state>down</line-protocol-state>
      <line-protocol-state-info> (link protocol down)</line-protocol-state-info>
      <hardware-type>ethernet</hardware-type>
      <current-hardware-address>f0:64:26:f2:c4:0f</current-hardware-address>
      <logical-hardware-address>f0:64:26:f2:c4:0f</logical-hardware-address>
      <media-type>fixed</media-type>
      <wavelength>0</wavelength>
      <ifindex>201359360</ifindex>
      <mtu>9216</mtu>
      <actual-line-speed>nil</actual-line-speed>
      <configured-line-speed>1000-master-full-duplex</configured-line-speed>
      <line-duplex-state>full</line-duplex-state>
      <bfd-software-session>false</bfd-software-session>
      <queuing-strategy>fifo</queuing-strategy>
      <ifHCInOctets>0</ifHCInOctets>
      <ifHCInUcastPkts>0</ifHCInUcastPkts>
      <ifHCInMulticastPkts>0</ifHCInMulticastPkts>
      <ifHCInBroadcastPkts>0</ifHCInBroadcastPkts>
      <ifHCInErrors>0</ifHCInErrors>
      <ifHCOutOctets>0</ifHCOutOctets>
      <ifHCOutUcastPkts>0</ifHCOutUcastPkts>
```

```
      <ifHCOutMulticastPkts>0</ifHCOutMulticastPkts>
      <ifHCOutBroadcastPkts>0</ifHCOutBroadcastPkts>
      <ifHCOutErrors>0</ifHCOutErrors>
      <fec-mode>Disabled</fec-mode>
      <ifFecCorrectedBlock>0</ifFecCorrectedBlock>
      <ifFecUncorrectedBlock>4</ifFecUncorrectedBlock>
    </interface>
    <interface xmlns='urn:brocade.com:mgmt:brocade-interface-ext'>
      <interface-type>ethernet</interface-type>
      <interface-name>0/5</interface-name>
      <port-role>edge</port-role>
      <port-mode>unknown</port-mode>
      <if-name>Ethernet 0/5</if-name>
      <if-state>up</if-state>
      <line-protocol-state>down</line-protocol-state>
      <line-protocol-state-info> (link protocol down)</line-protocol-state-info>
      <hardware-type>ethernet</hardware-type>
      <current-hardware-address>f0:64:26:f2:c4:10</current-hardware-address>
      <logical-hardware-address>f0:64:26:f2:c4:10</logical-hardware-address>
      <media-type>fixed</media-type>
      <wavelength>0</wavelength>
      <ifindex>201367552</ifindex>
      <mtu>9216</mtu>
      <actual-line-speed>nil</actual-line-speed>
      <configured-line-speed>1000-master-full-duplex</configured-line-speed>
      <line-duplex-state>full</line-duplex-state>
      <bfd-software-session>false</bfd-software-session>
      <queuing-strategy>fifo</queuing-strategy>
      <ifHCInOctets>0</ifHCInOctets>
      <ifHCInUcastPkts>0</ifHCInUcastPkts>
      <ifHCInMulticastPkts>0</ifHCInMulticastPkts>
      <ifHCInBroadcastPkts>0</ifHCInBroadcastPkts>
      <ifHCInErrors>0</ifHCInErrors>
      <ifHCOutOctets>0</ifHCOutOctets>
      <ifHCOutUcastPkts>0</ifHCOutUcastPkts>
      <ifHCOutMulticastPkts>0</ifHCOutMulticastPkts>
      <ifHCOutBroadcastPkts>0</ifHCOutBroadcastPkts>
      <ifHCOutErrors>0</ifHCOutErrors>
      <fec-mode>Disabled</fec-mode>
      <ifFecCorrectedBlock>0</ifFecCorrectedBlock>
      <ifFecUncorrectedBlock>4</ifFecUncorrectedBlock>
    </interface>

    <-- Other interfaces -->

    <interface-name>0/54</interface-name>
      <port-role>edge</port-role>
      <port-mode>unknown</port-mode>
      <if-name>Ethernet 0/54</if-name>
      <if-state>up</if-state>
      <line-protocol-state>down</line-protocol-state>
      <line-protocol-state-info> (link protocol down)</line-protocol-state-info>
      <hardware-type>ethernet</hardware-type>
      <current-hardware-address>f0:64:26:f2:c4:41</current-hardware-address>
      <logical-hardware-address>f0:64:26:f2:c4:41</logical-hardware-address>
      <ifindex>201769216</ifindex>
      <mtu>9216</mtu>
      <actual-line-speed>nil</actual-line-speed>
      <configured-line-speed>100Gbps</configured-line-speed>
      <line-duplex-state>full</line-duplex-state>
      <bfd-software-session>false</bfd-software-session>
      <queuing-strategy>fifo</queuing-strategy>
      <ifHCInOctets>0</ifHCInOctets>
      <ifHCInUcastPkts>0</ifHCInUcastPkts>
```

```
      <ifHCInMulticastPkts>0</ifHCInMulticastPkts>
      <ifHCInBroadcastPkts>0</ifHCInBroadcastPkts>
      <ifHCInErrors>0</ifHCInErrors>
      <ifHCOutOctets>0</ifHCOutOctets>
      <ifHCOutUcastPkts>0</ifHCOutUcastPkts>
      <ifHCOutMulticastPkts>0</ifHCOutMulticastPkts>
      <ifHCOutBroadcastPkts>0</ifHCOutBroadcastPkts>
      <ifHCOutErrors>0</ifHCOutErrors>
      <fec-mode>Disabled</fec-mode>
      <ifFecCorrectedBlock>0</ifFecCorrectedBlock>
      <ifFecUncorrectedBlock>4</ifFecUncorrectedBlock>
    </interface>
    <has-more xmlns='urn:brocade.com:mgmt:brocade-interface-ext'>false</has-more>
</rpc-reply>]]>]]>
```

Parameters

interface-type

Specifies the interface type.

interface-name

Specifies the nterface name.

port-role

Displays the current role that the particular interface is playing. This is applicable only for physical interfaces.

port-mode

Displays the operational mode of the particular interface. This is applicable only for physical interfaces or port-channel interfaces.

if-name

Displays the interface display name as in MIB-II's ifTable. However interface-name and interface-type values of this instance forms fully qualified name for this interface.

if-state

Displays the current operational state of this interface.

line-protocol-state

Displays the 'Line protocol' state of the interface.

line-protocol-state-info

Displays thwe reason for the current line protocol state of the interface.

hardware-type

Dispalys the hardware type

current-hardware-address

Displays the address of the interface at its protocol sub-layer.

logical-hardware-address

Displays the address of the interface at its protocol sub-layer.

ifindex

Displays a unique value, greater than zero, for each interface.

mtu

Displays the IP MTU value of the interface.

actual-line-speed

Displays the actual line speed of this interface.

configured-line-speed

Displays the administratively configured line speed of the interface.

line-duplex-state

Displays the 'Line duplex state' of the interface.

flow-control

Displays the 'Flow control' for the interface.

queuing-strategy

Displays the 'Queuing strategy' for the interface.

ifHCInOctets

Displays the total number of octets received on the interface, including framing characters.

ifHCInUcastPkts

Displays the The number of packets, delivered by this sub-layer to a higher (sub-)layer, which were not addressed to a multicast or broadcast address at this sub-layer.

ifHCInMulticastPkts

Displays The number of packets, delivered by this sub-layer to a higher (sub-)layer, which were addressed to a multicast address at the sub-layer. For a MAC layer protocol, this includes both Group and Functional addresses.

ifHCInBroadcastPkts

Displays the The number of packets, delivered by the sub-layer to a higher (sub-)layer, which were addressed to a broadcast address at the sub-layer.

ifHCInErrors

For packet-oriented interfaces, the number of inbound packets that contained errors preventing them from being deliverable to a higher-layer protocol.
For character-oriented or fixed-length interfaces, the number of inbound transmission units that contained errors preventing them from being deliverable to a higher-layer protocol.

ifHCOutOctets

Displays the total number of octets transmitted out of the interface, including framing characters

ifHCOutUcastPkts

Displays the total number of packets that higher-level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at the sub-layer, including those that were discarded or not sent.

ifHCOutMulticastPkts

Dispalys the total number of packets that higher-level protocols requested be transmitted, and which were addressed to a multicast address at this sub-layer, including those that were discarded or not sent. For a MAC layer protocol, this includes both Group and Functional addresses.

ifHCOutBroadcastPkts

Displays the total number of packets that higher-level protocols requested be transmitted, and which were addressed to a broadcast address at this sub-layer, including those that were discarded or not sent.

ifHCOutErrors

For packet-oriented interfaces, the number of outbound packets that could not be transmitted because of errors. For character-oriented or fixed-length interfaces, the number of outbound transmission units that could not be transmitted because of errors.

ip-mtu

Displays the IP MTU value of this interface.

line-protocol-exception-info

Displays the 'Exception information' of line protocol.

media-type

Displays the media type.

wavelength

Displays the wavelength of pluggable media.

if-description

Displays the textual string containing information about the interface.

queuing-strategy

Displays the 'Queuing strategy' for this interface.

fec-mode

Displays the current FEC mode of the interface. FEC mode can be *FC-FEC*, *RS-FEC*, or *Disabled*.

ifFecCorrectedBlocks

Displays the number of corrected Blocks. Displays Zero (0) when FEC is *Disabled* or is not supported.

ifFecUncorrectedBlocks

Displays the number of uncorrected Blocks. Displays Zero (0) when FEC is *Disabled* or is not supported.

get-interface-switchport

Returns switch-port or Layer 2 characteristics of all the interfaces in the managed device.

Usage

```
<get-interface-switchport></get-interface-switchport>


<rpc-reply message-id="303" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <switchport xmlns="urn:brocade.com:mgmt:brocade-brocade-interface-ext">
        <interface-name>2/1</interface-name>
        <interface-type>ethernet</interface-type>
        <mode>access</mode>
        <ingress-filter-enabled>true</ingress-filter-enabled>
        <acceptable-frame-type>admit-all</acceptable-frame-type>
        <default-vlan>1</default-vlan>
        <active-vlans>
            <vlanid>1</vlanid>
        </active-vlans>
    </switchport>
</rpc-reply>
```

Parameters

interface-name

Specifies the interface value.

interface-type

Displays the type of the interface.

mode

Displays the mode of the port-channel.

ingress-filter-enabled

Indicates if the 'Ingress filtering' is enabled for the interface.

acceptable-frame-type

The switch-port ingress Frame admission policy - whether only tagged Frames are allowed or all.

default-vlan

Displays 'default vlan' identifier value for this switch-port.

vlanid

Displays the list of active VLAN identifiers.

get-ip-interface

Returns brief details of all interfaces, loopback and VE interface details of particular managed entity.

Usage

```
<get-ip-interface></get-ip-interface>

<rpc-reply message-id="307" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <interface xmlns="urn:brocade.com:mgmt:brocade-interface">
        <interface-type>ethernet</interface-type>
        <interface-name>2/4</interface-name>
        <if-name>ethernet 2/4</if-name>
        <if-state>up</if-state>
        <line-protocol-state>down</line-protocol-state>
        <ip-address>
            <ipv4>unassigned</ipv4>
        </ip-address>
    </interface>
</rpc-reply>
```

Parameters

interface-type

Displays the network interface name in a VCS environment in the format: slot/port .

interface-name

Displays the interface value.

if-name

The interface display name as in MIB-II's ifTable. However interface-name and interface-type values of this instance forms fully qualified name for this interface.

if-state

Displays the current operational state of the interface.

line-protocol-state

Displays the 'Line protocol' state of the interface.

ipv4

Displays the IP address in dotted decimal/Mask (A.B.C.D/M).

get-last-config-update-time

Returns the time stamp of the last configuration change done on the managed device.

Usage

```
<nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="14">
   <get-last-config-update-time xmlns="urn:brocade.com:mgmt:brocade-vcs"></get-last-
config-update-time>
</nc:rpc>

<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="14">
   <last-config-update-time xmlns="urn:brocade.com:mgmt:brocade-vcs">1577432165</last-
config-update-time>
</rpc-reply>
```

Parameters

last-config-update-time

Displays the time stamp of the last configuration change.

get-last-config-update-time-for-xpaths

Returns the time stamp of the last configuration update.

Usage

```
<nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="7">
   <get-last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs"></get-
last-config-update-time-for-xpaths>
</nc:rpc>
```

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="7">
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/</xpath-string>
      <last-config-update-time>1578483090</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/cee-map</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/fcoe/fcoe-fabric-map</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/hardware/flexport/flexport_type</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface-vlan</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
```

```
      <xpath-string>/interface-vlan/interface/ve</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface-vlan/interface/vlan</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/fc-port</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/fortygigabitethernet</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/fortygigabitethernet/channel-group</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/fortygigabitethernet/switchport</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/fortygigabitethernet/vlan</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/gigabitethernet</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/gigabitethernet/channel-group</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/gigabitethernet/switchport</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/gigabitethernet/vlan</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/hundredgigabitethernet</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/hundredgigabitethernet/channel-group</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/hundredgigabitethernet/switchport</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/hundredgigabitethernet/vlan</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/port-channel</xpath-string>
      <last-config-update-time>1578483090</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
```

```
      <xpath-string>/interface/port-channel/switchport</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/port-channel/vlan</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/tengigabitethernet</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/tengigabitethernet/channel-group</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/tengigabitethernet/switchport</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/interface/tengigabitethernet/vlan</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/mac-group</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/mac/access-list</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/port-profile</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/port-profile-global/port-profile</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/protocol/spanning-tree</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/rbridge-id/interface/ve</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
   <last-config-update-time-for-xpaths xmlns="urn:brocade.com:mgmt:brocade-vcs">
      <xpath-string>/snmp-server/agtconfig</xpath-string>
      <last-config-update-time>1578380033</last-config-update-time>
   </last-config-update-time-for-xpaths>
</rpc-reply>
```

Parameters

xpath-strings

Displays the xpath strings.

last-config-update-time

Displays the time of the last.

get-lldp-neighbor-detail

Returns the details of all the neighboring interfaces of the managed entity.

Usage

```
<get-lldp-neighbor-detail></get-lldp-neighbor-detail>


<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="4">
    <lldp-neighbor-detail xmlns="urn:brocade.com:mgmt:brocade-lldp-ext">
        <local-interface-name>ethernet 1/3</local-interface-name>
        <local-interface-ifindex>203448320</local-interface-ifindex>
        <local-interface-mac>0005.3379.6de0</local-interface-mac>
        <remote-interface-name>port1</remote-interface-name>
        <remote-interface-mac>0005.3348.3043</remote-interface-mac>
        <dead-interval>120</dead-interval>
        <remaining-life>114</remaining-life>
        <remote-chassis-id>0005.3348.3043</remote-chassis-id>
        <lldp-pdu-transmitted>16159</lldp-pdu-transmitted>
        <lldp-pdu-received>15846</lldp-pdu-received>
    </lldp-neighbor-detail>
    <has-more xmlns="urn:brocade.com:mgmt:brocade-lldp-ext">false</has-more>
</rpc-reply>
```

Parameters

local-interface-name

Indicates the local interface display name.

local-interface-ifindex

Indicates the local interface index.

local-interface-mac

Indicates the local interface MAC address.

remote-interface-name

Indicates the remote interface display name .

remote-interface-mac

Indicates the remote interface MAC address.

dead-interval

Indicates the dead interval.

remaining-life

Indicates the remaining life period.

remote-chassis-id

Indicates the remote chassis ID.

lldp-pdu-transmitted

Number of LLDP PDUs transmitted from the interface.

lldp-pdu-received

Number of LLDP PDUs received by the interface.

get-mac-acl-for-intf

Returns information about the MAC ACL applied on the specified interfaces.

Usage

```
<get-mac-acl-for-intf></get-mac-acl-for-intf>


<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="2407">
    <get-mac-acl-for-intf xmlns="urn:brocade.com:mgmt:brocade-mac-access-list">
        <interface>
            <interface-type>l2vlan</interface-type>
            <interface-name>50</interface-name>
            <ingress-policy>
                <policy-name>test_02</policy-name>
            </ingress-policy>
            <egress-policy>
                <policy-name>test_01</egress-policy>
            </egress-policy>
        </interface>
    </get-mac-acl-for-intf>
</rpc-reply>
```

Parameters

interface-type

Displays the interface type.

interface-name

Displays the interface name.

policy-name

Displays the MAC ACL policy name.

get-mac-address-table

Returns the MAC address table for a given MAC address.

Usage

```
<get-mac-address-table> <forwarding-interface> <interface-type>ethernet</interface-type>
<interface-name>2/4</interface-name> </forwarding-interface> <mac-type>static</mac-type>
</get-mac-address-table>


<rpc-reply
xmlns=""urn:ietf:params:xml:ns:netconf:base:1.0""xmlns:nc=""urn:ietf:params:xml:ns:netconf
:base:1.0"" message-id=""2"">
       <mac-address-table xmlns=""urn:brocade.com:mgmt:brocade-mac-address-table"">
       <vlanid>10</vlanid>
       <mac-address>00:11:11:11:44:44</mac-address>
       <mac-type>static</mac-type>
       <mac-state>active</mac-state>
       <forwarding-interface>
       <interface-type>ethernet</interface-type>
       <interface-name>2/4</interface-name>
       </forwarding-interface>
      </mac-address-table>
      <has-more xmlns=""urn:brocade.com:mgmt:brocade-mac-address-table"">false</has-more>
      </rpc-reply>
<get-mac-address-table>
       <last-mac-address-details>
       <last-mac-address>00:11:11:82:12:92</last-mac-address>
       <last-vlan-id>10</last-vlan-id>
       <last-mac-type>static</last-mac-type>
       </last-mac-address-details>
       <forwarding-interface-type>ethernet</forwarding-interface-type>
       <forwarding-interface-name>2/4</forwarding-interface-name>
      <mac-address-type>static</mac-address-type>
     </get-mac-address-table>

<rpc-reply
xmlns=""urn:ietf:params:xml:ns:netconf:base:1.0""xmlns:nc=""urn:ietf:params:xml:ns:netconf
:base:1.0"" message-id=""2"">
       <mac-address-table xmlns=""urn:brocade.com:mgmt:brocade-mac-address-table"">
       <vlanid>10</vlanid>
       <mac-address>00:11:11:82:12:92</mac-address>
       <mac-type>static</mac-type>
       <mac-state>active</mac-state>
       <forwarding-interface>
       <interface-type>ethernet</interface-type>
       <interface-name>2/4</interface-name>
       </forwarding-interface>
      </mac-address-table>
      <has-more xmlns=""urn:brocade.com:mgmt:brocade-mac-address-table"">false</has-more>
      </rpc-reply>
```

Parameters

vlanid

Displays the VLAN ID.

mac-address

Displays the MAC address.

mac-type

Displays the MAC type.

mac-state

Displays the MAC state.

interface-type

Displays the interface type.

interface-name

Displays the interface name.

get-maint-mode-status

This RPC is equivalent to the show system config-status CLI and retrieves the maintenance mode status.

Usage

```
<nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="9">
   <get-maint-mode-status xmlns="urn:broadcom.com:mgmt:brocade-system-maintenance"></get-
maint-mode-status>
</nc:rpc>
```

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="9">
   <config-status xmlns="urn:broadcom.com:mgmt:brocade-system-maintenance">enabled</
config-status>
   <overall-status xmlns="urn:broadcom.com:mgmt:brocade-system-maintenance">complete</
overall-status>
   <num-stages xmlns="urn:broadcom.com:mgmt:brocade-system-maintenance">2</num-stages>
   <current-stage xmlns="urn:broadcom.com:mgmt:brocade-system-maintenance">2</current-
stage>
   <max-time xmlns="urn:broadcom.com:mgmt:brocade-system-maintenance">100</max-time>
   <stages xmlns="urn:broadcom.com:mgmt:brocade-system-maintenance">
      <stage>
         <stage-num>1</stage-num>
         <time-taken>0</time-taken>
         <daemons>
            <daemon>
               <daemon-name>bgp</daemon-name>
               <status>complete</status>
            </daemon>
            <daemon>
               <daemon-name>mct</daemon-name>
               <status>complete</status>
            </daemon>
         </daemons>
      </stage>
      <stage>
         <stage-num>2</stage-num>
         <time-taken>0</time-taken>
         <daemons>
            <daemon>
               <daemon-name>bgp</daemon-name>
               <status>complete</status>
            </daemon>
```

```
            <daemon>
               <daemon-name>mct</daemon-name>
               <status>complete</status>
            </daemon>
         </daemons>
      </stage>
   </stages>
</rpc-reply>
```

Parameters

config-status

This is the Maintenance Mode configuration status.

overall-status

This is the overall status of the Maintenance Mode operation.

num-stages

This is the total number of stages involved in entering/exiting the Maintenance Mode.

current-stage

This is the current active state for the operation.

max-time

The maximum time required to enter/exit Maintenance Mode.

container stages

This is the place holder for stages.

stage number

Displays the number of the active state.

time-taken

This is the time taken for this stage in seconds.

container daemons

This denotes the place holder for daemons.

daemon-name

The name of the daemon.

leaf status

This denotes the current status of the daemon.

get-media-detail

Returns the media properties of all the interfaces of the managed entity.

Usage

```
<get-media-detail></get-media-detail>


<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="59">
    <interface xmlns="urn:brocade.com:mgmt:brocade-interface-ext">
        <interface-type>ethernet</interface-type>
        <interface-name>2/5</interface-name>
        <qsfpp>
            <speed>40Gbps</speed>
            <connector>lc</connector>
            <encoding>ieee-802-3ab</encoding>
            <vendor-name>BROCADE         </vendor-name>
            <vendor-oui>00:05:1e</vendor-oui>
            <vendor-pn>57-1000263-01   </vendor-pn>
            <vendor-rev>A </vendor-rev>
            <distance>long-dist</distance>
            <media-form-factor>unknown</media-form-factor>
            <wavelength>26020</wavelength>
            <serial-no>LDF113390001CBS </serial-no>
            <date-code>130928  </date-code>
            <temperature>31</temperature>
            <voltage>3305.7</voltage>
            <current>37.364</current>
            <tx-power>0.0</tx-power>
            <rx-power>2.7</rx-power>
        </qsfpp>
    </interface>
    <interface xmlns="urn:brocade.com:mgmt:brocade-interface-ext">
        <interface-type>ethernet</interface-type>
        <interface-name>2/5</interface-name>
        <sfp>
            <speed>10Gbps</speed>
            <connector>lc</connector>
            <encoding>unknown</encoding>
            <vendor-name>BROCADE</vendor-name>
            <vendor-oui>00:05:1e</vendor-oui>
            <vendor-pn>57-0000076-01</vendor-pn>
            <vendor-rev>A</vendor-rev>
            <distance>unknown</distance>
            <media-form-factor>unknown</media-form-factor>
            <wavelength>1310</wavelength>
            <serial-no>ADF21346000071B </serial-no>
            <date-code>131110</date-code>
            <temperature>36</temperature>
            <voltage>3292.0</voltage>
            <current>38.602</current>
            <tx-power>700.5</tx-power>
            <rx-power>741.6</rx-power>
        </sfp>
    </interface>
</rpc-reply>
```

Parameters

interface-type

Displays the interface type.

interface-name

Displays the interface name.

speed

Specifies the speed.

connector

Specifies the connector.

encoding

Displays the type of encoding used to transmit the data on this interface.

vendor-name

Displays the vendor of the interface.

vendor-oui

Displays the vendor IEEE company ID.

vendor-pn

Displays the vendor part number.

vendor-rev

Displays the vendor revision level.

distance

Displays the SFP distance.

media-form-factor

Displays the media form factor.

wavelength

Displays the wavelength of pluggable media.

serial-no

Displays the serial number.

date-code

Displays the vendor's manufactoring date code.

temperature

Displays the module temperature (degrees C).

voltage

Indicates the supply voltage (Volts).

current

Displays the laser diode drive current (milliAmps).

tx-power

Displays the transmitted optical power (microWatts).

rx-power

Displays the received optical power (microWatts).

get-nameserver-detail

Retrieves the detailed information of the devices stored in the name server database.

Usage

```
<get-nameserver-detail xmlns=""urn:extreme.com:mgmt:extreme-nameserver""></get-nameserver-
detail>

<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <show-nameserver>
        <nameserver-portid>0d0000</nameserver-portid>
        <nameserver-portname>20:00:8C:7C:FF:21:C0:00</nameserver-portname>
        <nameserver-nodename>20:00:8C:7C:FF:21:C0:01</nameserver-nodename>
        <nameserver-cos>3</nameserver-cos>
        <nameserver-scr>0</nameserver-scr>
        <nameserver-fc4s>FCP </nameserver-fc4s>
        <nameserver-portsymb>[7] "13/0/52"</nameserver-portsymb>
        <nameserver-nodesymb>NULL</nameserver-nodesymb>
        <nameserver-fabric-portname>50:02:7F:8C:31:32:30:82</nameserver-fabric-portname>
        <nameserver-permanent-portname>20:00:8C:7C:FF:21:C0:00</nameserver-permanent-
portname>
        <nameserver-devicetype>Physical Target</nameserver-devicetype>
        <nameserver-porttype>N</nameserver-porttype>
        <nameserver-index>130</nameserver-index>
        <nameserver-sharearea>Yes</nameserver-sharearea>
        <nameserver-redirect>No</nameserver-redirect>
        <nameserver-xlatedomain>No</nameserver-xlatedomain>
        <nameserver-connected-via-ag>No</nameserver-connected-via-ag>
        <nameserver-ag-base-device>No</nameserver-ag-base-device>
        <nameserver-real>No</nameserver-real>
        <nameserver-cascaded>No</nameserver-cascaded>
    </show-nameserver>
</rpc-reply>
```

Parameters

nameserver-portid

Displays the list of all Nx_Ports registered in the name server database of this managed device.

nameserver-portname

Displays the Port_Name (WWN) of this Nx_Port.

nameserver-nodename

Displays the Node_Name (WWN) of this Nx_Port.

nameserver-cos

Displays the Fibre Channel Class of service supported by the device.

nameserver-scr

Displays the state change notifications that the device has registered for.

nameserver-fc4s

Displays the Fibre Channel FC4 services supported by the device.

nameserver-portsymb

Displays the user-defined name of this port.

nameserver-nodesymb

Displays the user-defined name of the node of this port.

nameserver-fabric-portname

Displays the Fabric port name (WWN) of this port.

nameserver-permanent-portname

Displays the type and role of the device.

nameserver-devicetype

Displays the type and role of the device.

nameserver-porttype

Displays the Fibre Channel port type.

nameserver-index

Displays the Port index number.

nameserver-sharearea

Indicates whether or not the port utilizes the Extreme shared area method of fibre channel addressing.

nameserver-redirect

Indicates whether or not the device is involved in Extreme frame redirection zoning.

nameserver-xlatedomain

Indicates whether or not the device enters the fabric via a translate domain.

nameserver-connected-via-ag

Indicates whether or not the device enters the fabric via access gateway.

nameserver-ag-base-device

Indicates whether or not the device is a base access gateway device.

nameserver-real

Indicates whether or not the device entered in the fabric via AG is a physical device.

nameserver-cascaded

Indicates whether or not the device enters the fabric via a cascaded AG.

get-netconf-client-capabilities

Returns the vendor information for all NETCONF clients.

Usage

```
<get-netconf-client-capabilities></get-netconf-client-capabilities>

<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="57">
    <session xmlns="urn:extreme.com:mgmt:extreme-netconf-ext">
        <session-id>30</session-id>
        <user-name>admin</user-name>
        <vendor>Extreme</vendor>
        <product>NOS Netconf Client</product>
        <version>0.8 beta</version>
        <identity>sgajaraj</identity>
        <af-type>IPV4</af-type>
        <host-ip>172.22.8.111</host-ip>
        <time>2014-06-04T11:00:35+00:00</time>
    </session>
</rpc-reply>
```

Parameters

session-id

Displays the session ID of the NETCONF client session.

user-name

Displays the login name of the user for the NETCONF client session.

vendor

Displays the vendor name of the NETCONF client session.

product

Displays the product name of the NETCONF client session.

version

Displays the product version of the NETCONF client session.

identity

Displays the identity of the NETCONF client session.

af-type

Specifies the address family type.

host-ip

Displays IP address of NETCONF client session.

time

Displays the login time of NETCONF client session.

get-port-channel-detail

Returns link aggregation control configuration parameters for all the port-channels in the system.

Usage

```
<get-port-channel-detail></get-port-channel-detail>

<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1002">
    <get-port-channel-detail xmlns="urn:brocade.com:mgmt:brocade-lag">
        <lacp>
            <aggregator-id>27</aggregator-id>
            <aggregator-type>standard</aggregator-type>
            <isvlag>false</isvlag>
            <aggregator-mode>none</aggregator-mode>
            <admin-key>0027</admin-key>
            <oper-key>0027</oper-key>
            <actor-system-id>00-05-33-6f-18-18</actor-system-id>
            <partner-system-id>00-05-1e-cd-6e-9f</partner-system-id>
            <system-priority>32768</system-priority>
            <partner-oper-priority>32768</partner-oper-priority>
            <rx-link-count>4</rx-link-count>
            <tx-link-count>4</tx-link-count>
            <individual-agg>0</individial-agg>
            <ready-agg>1</ready-agg>
            <partner-oper-key>0027</partner-oper-key>
            <aggr-member>
                <interface-type>ethernet</interface-type>
                <interface-name>231/0/22</interface-name>
                <actor-port>0xE718160201</actor-port>
                <sync>1</sync>
            </aggr-member>
        </lacp>
        <has-more>true</has-more>
    </get-port-channel-detail>
</rpc-reply>
```

Parameters

aggregator-id

Displays the aggregator ID.

aggregator-type

Displays the aggregator type.

isvlag

Specifies if agreegator is VLAG.

aggregator-mode

Displays aggregator mode.

admin-key

Displays the admin key.

oper-key

Displays the opertional key.

actor-system-id

Displays the actor system ID.

partner-system-id

Displays the partner system ID.

system-priority

Displays the system priority.

partner-oper-priority

Displays the partner operational priority.

rx-link-count

Displays the RX link counter.

tx-link-count

Displays the TX link counter.

individual-agg

Displays the Individual aggregator.

ready-agg

Displays the Ready aggregator.

partner-oper-key

Displays the Partner Opertional key.

interface-type

Displays the interface type .

interface-name

Displays the interface name.

actor-port

Displays the actor port number.

sync

Displays the sync information.

get-portchannel-info-by-intf

This function returns the Link Aggregation Control configuration parameters for a given 'Aggregation Port' in the system.

Usage

```
<nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="1">
   <get-portchannel-info-by-intf xmlns="urn:brocade.com:mgmt:brocade-lag">
      <interface-type>ethernet</interface-type>
      <interface-name>0/13</interface-name>
   </get-portchannel-info-by-intf>
</nc:rpc>
```

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
```

```
   <lacp xmlns="urn:brocade.com:mgmt:brocade-lag">
      <interface-type>ethernet</interface-type>
      <interface-name>0/13</interface-name>
      <actor-port>201433088</actor-port>
      <system-priority>32768</system-priority>
      <actor-system-id>d8:84:66:e9:fb:14</actor-system-id>
      <partner-oper-priority>32768</partner-oper-priority>
      <partner-system-id>76:8e:f8:05:98:00</partner-system-id>
      <actor-priority>32768</actor-priority>
      <admin-key>150</admin-key>
      <oper-key>150</oper-key>
      <receive-machine-state>current</receive-machine-state>
      <periodic-transmission-machine-state>slow-periodic</periodic-transmission-machine-
state>
      <mux-machine-state>collecting-distributing</mux-machine-state>
      <admin-state>activity aggregation defaulted</admin-state>
      <oper-state>activity aggregation synchronization collecting distributing</oper-
state>
      <partner-oper-state>activity aggregation synchronization collecting distributing</
partner-oper-state>
      <partner-oper-port>3082</partner-oper-port>
   </lacp>
</rpc-reply>
```

get-stp-brief-info

Returns Spanning Tree Protocol (STP) information.

Usage

```
<get-stp-brief-info></get-stp-brief-info>

<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="2025">
    <get-stp-brief-info xmlns="urn:brocade.com:mgmt:brocade-xstp-ext">
        <spanning-tree-info>
            <stp-mode>STP</stp-mode>
            <stp>
                <route-bridge>
                    <priority>32768<priority>
                    <bridge-id>22<bridge-id>
                    <hello-time>2<hello-time>
                    <max-age>20</max-age>
                    <forward-delay>15</forward-delay>
                </route-bridge>
                <bridge>
                    <priority>32768</priority>
                            <hello-time>2<hello-time>
                    <max-age>20</max-age>
                    <forward-delay>15</forward-delay>
                    <transmit-hold-count>6</transit-hold-count>
                    <migrate-time>3</migrate-time>
                    <port>
                        <interface-type>ethernet</interface-type>
                        <interface-name>2/5</interface-name>
                        <spanningtree-enabled>true<spanningtree-enabled>
                        (output truncated)
        </spanning-tree-info>
        <has-more>true</has-more>
        <last-instance>
            <instance-id>91</instance-id>
        </last-instance>
    </get-stp-brief-info>
</rpc-reply>
```

Parameters

stp-mode

Displays the type of the Spanning Tree Protocol configured on the switch.

priority

Displays the Bridge priority.

hello-time

Displays the interval between two transmissions of BPDU packets sent by the Root Bridge to tell all other switches that it is indeed the Root Bridge (1 to 10 sec).

max-age

The Max Age may be set to ensure that old information does not endlessly circulate through redundant paths in the network, preventing the effective propagation of new information (6 to 40 sec).

forward-delay

Port on the Switch spends this time in the listening state while moving from the blocking state to the forwarding state (4 to 30 sec).

transmit-hold-count

Displays the transmin hold count.

migrate-time

Displays the migrate time.

interface-type

Displays the interface type.

interface-name

Displays the interface name.

spanningtree-enabled

Displays if the spnanning tree is enabled.

instance-id

Specifies the instance ID.

get-stp-mst-detail

This RPC returns the MSTP details, equivalent to the CLI 'show spanning-tree mst detail.

Usage

```
<nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="24">
   <get-stp-mst-detail xmlns="urn:brocade.com:mgmt:brocade-xstp-ext"></get-stp-mst-detail>
</nc:rpc>
```

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="9">
   <cist xmlns="urn:brocade.com:mgmt:brocade-xstp-ext">
      <cist-root-id>1000.f46e.959f.2ef6</cist-root-id>
      <cist-bridge-id>1000.f46e.959f.2ef6</cist-bridge-id>
      <cist-reg-root-id>1000.f46e.959f.2ef6</cist-reg-root-id>
      <root-forward-delay>15</root-forward-delay>
      <hello-time>2</hello-time>
      <max-age>20</max-age>
      <max-hops>20</max-hops>
      <migrate-time>3</migrate-time>
      <vlans>
         <vlan-id>1</vlan-id>
         <vlan-id>10</vlan-id>
         <vlan-id>13</vlan-id>
         <vlan-id>14</vlan-id>
         <vlan-id>15</vlan-id>
         <vlan-id>16</vlan-id>
         <vlan-id>17</vlan-id>
         <vlan-id>18</vlan-id>
         <vlan-id>19</vlan-id>
         <vlan-id>20</vlan-id>
         <vlan-id>21</vlan-id>
         <vlan-id>22</vlan-id>
         <vlan-id>23</vlan-id>
         <vlan-id>24</vlan-id>
         <vlan-id>25</vlan-id>
```

```
         <vlan-id>26</vlan-id>
         <vlan-id>27</vlan-id>
         <vlan-id>28</vlan-id>
         <vlan-id>29</vlan-id>
         <vlan-id>30</vlan-id>
         <vlan-id>31</vlan-id>
         <vlan-id>32</vlan-id>
         <vlan-id>33</vlan-id>
         <vlan-id>34</vlan-id>
         <vlan-id>35</vlan-id>
         <vlan-id>36</vlan-id>
         <vlan-id>37</vlan-id>
         <vlan-id>38</vlan-id>
         <vlan-id>39</vlan-id>
         <vlan-id>40</vlan-id>
         <vlan-id>41</vlan-id>
         <vlan-id>42</vlan-id>
         <vlan-id>43</vlan-id>
         <vlan-id>44</vlan-id>
         <vlan-id>45</vlan-id>
      </vlans>
   </cist>
   <msti xmlns="urn:brocade.com:mgmt:brocade-xstp-ext">
      <instance-id>2</instance-id>
      <msti-root-id>8002.f46e.959f.2ef6</msti-root-id>
      <msti-bridge-id>8002.f46e.959f.2ef6</msti-bridge-id>
      <msti-bridge-priority>32770</msti-bridge-priority>
      <vlans>
         <vlan-id>11</vlan-id>
      </vlans>
   </msti>
   <msti xmlns="urn:brocade.com:mgmt:brocade-xstp-ext">
      <instance-id>3</instance-id>
      <msti-root-id>8003.f46e.959f.2ef6</msti-root-id>
      <msti-bridge-id>8003.f46e.959f.2ef6</msti-bridge-id>
      <msti-bridge-priority>32771</msti-bridge-priority>
      <vlans>
         <vlan-id>12</vlan-id>
      </vlans>
   </msti>
   <has-more xmlns="urn:brocade.com:mgmt:brocade-xstp-ext">false</has-more>
</rpc-reply>
```

Parameters

session-id

This id is used along with bna-config-cmd-status API to get the status of this operation (inprogress/complete).

status

Displays the status of this operation (inprogress/complete).

get-system-uptime

Returns the time since the managed entity was last reinitialized.

Usage

```
<get-system-uptime></get-system-uptime>


<rpc-reply message-id="307" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <show-system-uptime xmlns="urn:brocade.com:mgmt:brocade-system">
        <days>0</days>
        <hours>5</hours>
        <minutes>53</minutes>
        <seconds>4</seconds>
    </show-system-uptime>
</rpc-reply>
```

Parameters

days

Displays the number of days the managed node is up since its last re-initialization

hours

Displays the number of hours the managed node is up since its last re-initialization

minutes

Displays the number of minutes the managed node is up since its last re-initialization

seconds

Displays the number of seconds the managed node is up since its last re-initialization

get-tunnel-info

Retrieves summary of one or more tunnles from the switch. Output contains tunnel records sorted in the ascending order of the tunnel id. This RPC is equivalent of 'show tunnel brief' CLI.

Usage

```
<nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="8">
   <get-tunnel-info xmlns="urn:brocade.com:mgmt:brocade-tunnels-ext">
   </get-tunnel-info>
</nc:rpc>
```

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="8">
   <tunnel xmlns="urn:brocade.com:mgmt:brocade-tunnels-ext">
      <id>61441</id>
      <mode>vxlan</mode>
      <src-ip>107.107.107.10</src-ip>
```

```
      <dest-ip>107.107.107.2</dest-ip>
      <vrf>default-vrf</vrf>
      <config-src>site-config</config-src>
      <admin-state>up</admin-state>
      <oper-state>up</oper-state>
      <nodes>
         <node-id>1</node-id>
      </nodes>
   </tunnel>
</rpc-reply>
```

get-tunnel-statistics

This RPC retrieves the tunnel statistics - count of bytes and frames transmitted and received. Output records are sorted in ascending order of the tunnel id. This RPC is equivalent of 'show tunnel statistics' CLI.

Usage

```
<nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="8">
   <get-tunnel-statistics xmlns="urn:brocade.com:mgmt:brocade-tunnels-ext">
   </get-tunnel-statistics>
</nc:rpc>
```

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="8">
   <tunnel-stat xmlns="urn:brocade.com:mgmt:brocade-tunnels-ext">
      <id>61441</id>
      <tx-frames>0</tx-frames>
      <tx-bytes>0</tx-bytes>
      <rx-frames>0</rx-frames>
      <rx-bytes>0</rx-bytes>
   </tunnel-stat>
</rpc-reply>
```

get-vlan-brief

Returns operational data for a given VLAN and enumeration of all the interfaces belonging to this VLAN.

Usage

```
<get-vlan-brief></get-vlan-brief>


<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="47">
    <configured-vlans-count xmlns="urn:brocade.com:mgmt:brocade-interface-ext">13</
configured-vlans-count>
    <provisioned-vlans-count xmlns="urn:brocade.com:mgmt:brocade-interface-ext">13</
provisioned-vlans-count>
    <unprovisioned-vlans-count xmlns="urn:brocade.com:mgmt:brocade-interface-ext">0</
unprovisioned-vlans-count>
    <vlan xmlns="urn:brocade.com:mgmt:brocade-interface-ext">
        <vlan-id>1</vlan-id>
        <vlan-type>static</vlan-type>
        <vlan-name>default</vlan-name>
        <vlan-state>members-down</vlan-state>
        <interface>
            <interface-type>unknown</interface-type>
            <interface-name></interface-name>
            <tag>tagged</tag>
            <classification>
                <classification-type>vni</classification-type>
                <classification-value>2</classification-value>
            </classification>
        </interface>
    </vlan>
    <last-vlan-id xmlns="urn:brocade.com:mgmt:brocade-interface-ext">200</last-vlan-id>
    <has-more xmlns="urn:brocade.com:mgmt:brocade-interface-ext">true</has-more>
</rpc-reply>
```

Parameters

configured-vlans-count

Displays the number of VLANs configured.

provisioned-vlans-count

Displays the number of VLANs provisioned.

unprovisioned-vlans-count

Displays the number of VLANs unprovisioned.

vlan-id

Displays the VLAN ID

vlan-type

Displays the VLAN type

vlan-name

Displays the administrative name of the VLAN

vlan-state

Displays the operational state of the VLAN

interface-type

Displays the interface type

interface-name

Displays the interface name

tag

Displays the state of the interface - untagged, tagged, or converged

classification-type

Displays the type of classification

classification-value

Displays the value of the VLAN classification

last-vlan-id

Displays the last VLAN record that has been fetched

mpls-clear-all-ldp-sessions

Clears all LDP sessions.

Usage

```
<clear-mpls-ldp-neighbor xmlns=""urn:brocade.com:mgmt:brocade-mpls"">
   <mpls-clear-all-ldp-sessions>true</mpls-clear-all-ldp-sessions>
</clear-mpls-ldp-neighbor>
```

Parameters

mpls-clear-all-ldp-sessions

Clears all LDP sessions.

mpls-clear-one-ldp-sessions

Clears an LDP session.

Usage

```
<clear-mpls-ldp-neighbor xmlns=""urn:brocade.com:mgmt:brocade-mpls"">
   <mpls-clear-one-ldp-sessions>14.14.14.14</mpls-clear-one-ldp-sessions>
</clear-mpls-ldp-neighbor>
```

Parameters

mpls-clear-one-ldp-sessions

Clears an LDP session with a specific IP address.

mpls-clear-statistics-type

Clears the MPLS statistics of a specific type.

Usage

```
<clear-mpls-statistics xmlns=""urn:brocade.com:mgmt:brocade-mpls"">
   <mpls-clear-statistics-type>3</mpls-clear-statistics-type>
   <tunnel-name>t2</tunnel-name>
</clear-mpls-statistics>
```

Parameters

mpls-clear-statistics-type

Specifies the MPLS statistics type.

tunnel-name

Specifies the tunnel name.

mpls-reopt-lsp

Directs the router to consider configuration changes made to an LSP and to optimize the LSP path based on those changes.

Usage

```
<mpls-reopt-lsp xmlns=""urn:brocade.com:mgmt:brocade-mpls"">
   <mpls-reoptimize-lsp-name-in>reopt1</mpls-reoptimize-lsp-name-in>
</mpls-reopt-lsp>
```

Parameters

mpls-reoptimize-lsp-name-in

Specifies the LSP name.

prefix-independent-convergence-static

reduces the convergence time for the static routes when a failover from the primary static nexthop to the backup static nexthop happens.

Usage

```
<rpc message-id="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <edit-config>
        <target>
            <running/>
        </target>
        <config>
            <prefix-independent-convergence-static xmlns="urn:brocade.com:mgmt:brocade-
rtm"/>
        </config>
    </edit-config>
</rpc>

<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="101"><ok/></rpc-
reply>
```

```
<rpc message-id="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <get-config>
        <source>
            <running/>
        </source>
        <filter type="subtree">
            <prefix-independent-convergence-static xmlns="urn:brocade.com:mgmt:brocade-
rtm"/>
        </filter>
    </get-config>
</rpc>

<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="101"><data><prefix-
independent-convergence-static xmlns="urn:brocade.com:mgmt:brocade-rtm"/></data></rpc-
reply>
```

```
<rpc message-id="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <edit-config>
        <target>
```

```
            <running/>
        </target>
        <config>
            <prefix-independent-convergence-static operation="delete"
xmlns="urn:brocade.com:mgmt:brocade-rtm"/>
        </config>
    </edit-config>
</rpc>

<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="101"><ok/></rpc-
reply>
```

password-policy (TPVM mode)

Configures the password policy parameters for the TPVM default user account. Is also used to configure the password length.

Usage

```
 <rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="20a96bbf-
cfae-43e7-90f6-65e7a23ce7b6">
  <edit-config>
    <target>
      <running/>
    </target>
    <config>
      <tpvm-cfg xmlns="http://extremenetworks.com/yang/extreme-tpvm-config">
        <tpvm>
          <tpvm-instance-id>TPVM</tpvm-instance-id>
          <password-policy>
            <min-length> 9 </min-length>
          </password-policy>
        </tpvm>
      </tpvm-cfg>
    </config>
  </edit-config>
</rpc>]]>]
```

Usage

```
 <rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="20a96bbf-
cfae-43e7-90f6-65e7a23ce7b6">
  <edit-config>
    <target>
      <running/>
    </target>
    <config>
      <tpvm-cfg xmlns="http://extremenetworks.com/yang/extreme-tpvm-config">
        <tpvm>
          <tpvm-instance-id>TPVM</tpvm-instance-id>
          <password-policy>
            <character-restriction>
              <upper> 1 </upper>
              <lower> 2 </lower>
              <numeric> 3 </numeric>
              <special-char> 1 </special-char>
            </character-restriction>
          </password-policy>
        </tpvm>
      </tpvm-cfg>
```

```
    </config>
  </edit-config>
</rpc>]]>]
```

reload

Reloads the switch.

Usage

```
<reload xmlns=""urn:brocade.com:mgmt:brocade-ha""></reload>
```

set-http-application-url

Updates the HTTP application URL.

Usage

```
<set-http-application-url xmlns=""urn:brocade.com:mgmt:brocade-http-redirect"">
    <config-http-app-url>
        <url>www.google.com</url>
        <op-type>1</op-type>
    </config-http-app-url>
</set-http-application-url>

<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <status-code>0</status-code>
    <status-string>Success</status-string>
</rpc-reply>
```

Parameters

status-code

Displays the status code as URL updated successfully - 0, Error not able to update configuration - 1 or Error not able to remove configuration - 2.

status-string

Displays the error in string format.

show-clock

Returns the date, time, and time zone.

Usage

```
<show-clock></show-clock>


<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="7">
    <clock-time xmlns="urn:brocade.com:mgmt:brocade-clock">
        <current-time>2014-06-04T11:03:31+00:00</current-time>
        <timezone>Etc/GMT</timezone>
    </clock-time>
</rpc-reply>
```

Parameters

current-time

Displays the switch date and time

timezone

Displays the region/city or region/state/city

show-ntp

Returns the active NTP server for the Extreme VCS fabric or specified switch.

Usage

```
<show-ntp></show-ntp>


<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="12">
    <node-active-server xmlns="urn:extreme.com:mgmt:extreme-ntp">
        <LOCL>true</LOCL>
    </node-active-server>
</rpc-reply>
```

Parameters

LOCL

Indicates whether the LOCL is true or false

show-raslog

Returns RASlog entries.

Usage

```
<show-raslog></show-raslog>


<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="14">
    <show-all-raslog xmlns="urn:brocade.com:mgmt:brocade-ras-ext">
                <number-of-entries>2842</number-of-entries>
        <raslog-entries>
            <index>8288</index>
            <message-id>NSM-1019</message-id>
            <date-and-time-info>2013/12/07-03:21:17:69</date-and-time-info>
            <severity>informational</severity>
            <log-type>dce</log-type>
            <repeat-count>1</repeat-count>
            <message> Interface Ve 4093 is administratively up.</message>
            <message-flag>unknown</message-flag>
            <switch-or-chassis-name>sw0</switch-or-chassis-name>
        </raslog-entries>
        <raslog-entries>
            <index>13584</index>
            <message-id>SEC-3022</message-id>
            <date-and-time-info>2014/06/03-14:03:52:25</date-and-time-info>
            <severity>informational</severity>
            <log-type>system</log-type>
            <repeat-count>1</repeat-count>
            <message>Event: logout, Status: success, Info: Successful logout by user
[admin].</message>
            <message-flag>unknown</message-flag>
            <switch-or-chassis-name>sw0</switch-or-chassis-name>
        </raslog-entries>
    </show-all-raslog>
</rpc-reply>
```

Parameters

number-of-entries

Displays the number of recent events to be fetched from the RASLOG entries

index

Displays the sequence number for the message

message-id

Displays the message identifier

date-and-time-info

Displays the date and time of the message. The format is: YYYY-MM-DD/HH:MM:SS.SSSS

severity

Displays the severity of the message. Valid values include: INFO, WARNING, ERROR, and CRITICAL

log-type

Specifies if the message is a SYSTEM or DCE log

repeat-count

Displays the number of times the particular event has occurred

message

Displays the textual description of the event

message-flag

Displays the type of the message

switch-or-chassis-name

Displays the switch name for the generator of the message, or chassis

show snmp-server status

Displays the SNMP server status on a VRF.

Usage

```
<rpc message-id="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <action xmlns="http://tail-f.com/ns/netconf/actions/1.0">
        <data>
            <show xmlns="urn:brocade.com:mgmt:brocade-common-def">
                <snmp-server xmlns="urn:brocade.com:mgmt:brocade-snmp">
                    <status/>
                </snmp-server>
            </show>
        </data>
    </action>
</rpc>]]>]]>
```

```
<?xml version="1.0" encoding="UTF-8"?>
    <rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="101">
        <data>
            <show xmlns='urn:brocade.com:mgmt:brocade-common-def'>
                <snmp-server xmlns='urn:brocade.com:mgmt:brocade-snmp'>
                    <status>
                        <server>
                            <vrf>mgmt-vrf</vrf>
                            <status>enabled</status>
                        </server>
                            <server>
                                <vrf>default-vrf</vrf>
                                <status>enabled</status>
                            </server>
                        <server>
                            <vrf>red</vrf>
                            <status>disabled</status>
                        </server>
                    </status>
                </snmp-server>
            </show>
    </data>
</rpc-reply>]]>]]>
```

Parameters

status

In the RPC request, fetches the status of the SNMP server on all VRFs.

server

A container for each of the various VRFs.

vrf

Name of the VRF for which the status is being displayed.

status

The SNMP server status for the VRF as named in the *vrf* tag.

show-support-save-status

This RPC provides information on the status of the recent support save request.

Usage

```
<nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="9">
   <show-support-save-status xmlns="urn:brocade.com:mgmt:brocade-ras-ext"></show-support-
save-status>
</nc:rpc>
```

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="9">
   <show-support-save-status xmlns="urn:brocade.com:mgmt:brocade-ras-ext">
      <status>inProgress</status>
      <message>The Support Save is in progress and has completed 71%.</message>
      <percentage-of-completion>1</percentage-of-completion>
   </show-support-save-status>
</rpc-reply>
```

show-system-info

This RPC shows the system information.

Usage

```
<nc:rpc xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" nc:message-id="6">
   <show-system-info xmlns="urn:brocade.com:mgmt:brocade-ras-ext"></show-system-info>
</nc:rpc>
```

```
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="6">
   <show-system-info xmlns="urn:brocade.com:mgmt:brocade-ras-ext">
      <stack-mac>f4:6e:95:9f:2e:f6</stack-mac>
   </show-system-info>
</rpc-reply>
```

show-system-monitor

Returns system status information.

Usage

```
<show-system-monitor></show-system-monitor>


<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="17">
    <switch-status xmlns="urn:brocade.com:mgmt:brocade-system-monitor-ext">
        <switch-name>sw0</switch-name>
        <switch-ip>10.25.224.18</switch-ip>
        <switch-state>state-marginal</switch-state>
        <switch-state-reason>Switch Status is MARGINAL. Contributors: * Power Supply: 1
bad. (MARGINAL).</switch-state-reason>
        <report-time>2017-04-04T11:10:5711.668484+31:03</report-time>
        <component-status>
            <component-name>Power supplies monitor</component-name>
            <component-state>state-marginal</component-state>
        </component-status>
        <component-status>
            <component-name>Temperatures monitor</component-name>
            <component-state>state-healthy</component-state>
        </component-status>
        <component-status>
            <component-name>Fans monitor</component-name>
            <component-state>state-healthy</component-state>
        </component-status>
    </switch-status>
</rpc-reply>
```

Parameters

switch-name

Displays the name of the switch

switch-ip

Displays the IP address of the switch

switch-state

Displays the switch status based on components

switch-state-reason

Displays the component reason for switch status

report-time

Displays the switch report time stamp

component-name

Displays the component name

component-state

Displays the component status based on thresholds

show threshold-monitor bfd-sessions

Displays the current number of BFD sessions and its related statistics.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <action xmlns="http://tail-f.com/ns/netconf/actions/1.0">
        <data>
            <show xmlns="urn:brocade.com:mgmt:brocade-common-def">
                <threshold xmlns="urn:brocade.com:mgmt:brocade-threshold-monitor-ext">
                    <monitor>
                        <bfd-sessions/>
                    </monitor>
                </threshold>
            </show>
        </data>
    </action>
</rpc>
]]>]]>
```

show threshold-monitor ecmp

Displays the current status of the ECMP Table and its usage statistics.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <action xmlns="http://tail-f.com/ns/netconf/actions/1.0">
        <data>
            <show xmlns="urn:brocade.com:mgmt:brocade-common-def">
                <threshold xmlns="urn:brocade.com:mgmt:brocade-threshold-monitor-ext">
                    <monitor>
                        <ecmp/>
                    </monitor>
                </threshold>
            </show>
        </data>
    </action>
</rpc>
]]>]]>
```

show threshold-monitor host

Displays the current status of the Host Table and its usage statistics.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <action xmlns="http://tail-f.com/ns/netconf/actions/1.0">
        <data>
            <show xmlns="urn:brocade.com:mgmt:brocade-common-def">
                <threshold xmlns="urn:brocade.com:mgmt:brocade-threshold-monitor-ext">
                    <monitor>
                        <host/>
                    </monitor>
                </threshold>
            </show>
        </data>
    </action>
</rpc>
]]>]]>
```

show threshold-monitor lif

Displays the current status of the number of LIFs and its related statistics.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <action xmlns="http://tail-f.com/ns/netconf/actions/1.0">
        <data>
            <show xmlns="urn:brocade.com:mgmt:brocade-common-def">
                <threshold xmlns="urn:brocade.com:mgmt:brocade-threshold-monitor-ext">
                    <monitor>
                        <lif/>
                    </monitor>
                </threshold>
            </show>
        </data>
    </action>
</rpc>
]]>]]>
```

show threshold-monitor mac-table

Displays the current status of the MAC Table and its current statistics.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <action xmlns="http://tail-f.com/ns/netconf/actions/1.0">
        <data>
            <show xmlns="urn:brocade.com:mgmt:brocade-common-def">
                <threshold xmlns="urn:brocade.com:mgmt:brocade-threshold-monitor-ext">
                    <monitor>
                        <mac-table/>
                    </monitor>
                </threshold>
            </show>
        </data>
    </action>
</rpc>
]]>]]>
```

show threshold-monitor nexthop

Displays the current status of the Next Hop Table and its statistics.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <action xmlns="http://tail-f.com/ns/netconf/actions/1.0">
        <data>
            <show xmlns="urn:brocade.com:mgmt:brocade-common-def">
                <threshold xmlns="urn:brocade.com:mgmt:brocade-threshold-monitor-ext">
                    <monitor>
                        <nexthop/>
                    </monitor>
                </threshold>
            </show>
        </data>
    </action>
</rpc>
]]>]]>
```

show threshold-monitor vxlan-tunnels

Displays the current number of open VXLAN Tunnels and their current statistics.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <action xmlns="http://tail-f.com/ns/netconf/actions/1.0">
        <data>
            <show xmlns="urn:brocade.com:mgmt:brocade-common-def">
                <threshold xmlns="urn:brocade.com:mgmt:brocade-threshold-monitor-ext">
                    <monitor>
                        <vxlan-tunnels/>
                    </monitor>
                </threshold>
            </show>
        </data>
    </action>
</rpc>
]]>]]>
```

threshold-monitor acl

Configures monitoring the utilization of finite ACL resources like MAC ACL, IP ACL, and IPv6 ACL.

Usage

To configure MAC Ingress ACL Threshold Monitoring

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <edit-config>
        <target>
            <running/>
        </target>
        <config>
            <threshold-monitor-hidden xmlns="urn:brocade.com:mgmt:brocade-threshold-
monitor">
                <threshold-monitor>
                    <acl>
                        <mac-in>
                            <actions>snmp</actions>
                            <high-limit>93</high-limit>
                            <low-limit>75</low-limit>
                        </mac-in>
                    </acl>
                </threshold-monitor>
            </threshold-monitor-hidden>
        </config>
    </edit-config>
</rpc>
]]>]]>
```

Usage

To configure MAC Egress ACL Threshold Monitoring

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
  <edit-config>
      <target>
          <running/>
      </target>
      <config>
          <threshold-monitor-hidden xmlns="urn:brocade.com:mgmt:brocade-threshold-
monitor">
              <threshold-monitor>
                  <acl>
                      <mac-out>
                          <actions>snmp</actions>
                          <high-limit>95</high-limit>
                          <low-limit>74</low-limit>
                      </mac-out>
                  </acl>
              </threshold-monitor>
          </threshold-monitor-hidden>
      </config>
  </edit-config>
</rpc>
]]>]]>
```

Usage

To configure IP Ingress ACL Threshold Monitoring

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
  <edit-config>
      <target>
          <running/>
      </target>
      <config>
          <threshold-monitor-hidden xmlns="urn:brocade.com:mgmt:brocade-threshold-
monitor">
              <threshold-monitor>
                  <acl>
                      <ip-in>
                          <actions>snmp</actions>
                          <high-limit>97</high-limit>
                          <low-limit>77</low-limit>
                      </ip-in>
                  </acl>
              </threshold-monitor>
          </threshold-monitor-hidden>
      </config>
  </edit-config>
</rpc>
]]>]]>
```

Usage

To configure IP Egress ACL Threshold Monitoring

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
  <edit-config>
      <target>
          <running/>
      </target>
      <config>
          <threshold-monitor-hidden xmlns="urn:brocade.com:mgmt:brocade-threshold-
monitor">
              <threshold-monitor>
                  <acl>
                      <ip-out>
                          <actions>snmp</actions>
                          <high-limit>94</high-limit>
                          <low-limit>78</low-limit>
                      </ip-out>
                  </acl>
              </threshold-monitor>
          </threshold-monitor-hidden>
      </config>
  </edit-config>
</rpc>
]]>]]>
```

Usage

To configure IPv6 Ingress ACL Threshold Monitoring

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
  <edit-config>
      <target>
          <running/>
```

```
      </target>
      <config>
          <threshold-monitor-hidden xmlns="urn:brocade.com:mgmt:brocade-threshold-
monitor">
              <threshold-monitor>
                  <acl>
                      <ipv6-in>
                          <actions>snmp</actions>
                          <high-limit>95</high-limit>
                          <low-limit>76</low-limit>
                      </ipv6-in>
                  </acl>
              </threshold-monitor>
          </threshold-monitor-hidden>
      </config>
  </edit-config>
</rpc>
]]>]]>
```

Usage

To configure IPv6 Egress ACL Threshold Monitoring

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
  <edit-config>
      <target>
          <running/>
      </target>
      <config>
          <threshold-monitor-hidden xmlns="urn:brocade.com:mgmt:brocade-threshold-
monitor">
              <threshold-monitor>
                  <acl>
                      <ipv6-out>
                          <actions>snmp</actions>
                          <high-limit>96</high-limit>
                          <low-limit>74</low-limit>
                      </ipv6-out>
                  </acl>
              </threshold-monitor>
          </threshold-monitor-hidden>
      </config>
  </edit-config>
</rpc>
]]>]]>
```

threshold-monitor bfd-session

Configures monitoring of the number of BFD Session against the maximum number of supported BFD sessions and alerts the user when configured thresholds are exceeded.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <edit-config>
        <target>
            <running/>
        </target>
        <config>
            <threshold-monitor-hidden xmlns="urn:brocade.com:mgmt:brocade-threshold-
monitor">
                <threshold-monitor>
                    <bfd-session>
                        <actions>snmp</actions>
                        <high-limit>85</high-limit>
                        <low-limit>75</low-limit>
                    </bfd-session>
                </threshold-monitor>
            </threshold-monitor-hidden>
        </config>
    </edit-config>
</rpc>
]]>]]>
```

threshold-monitor hardware-resources

Configures the global values for the time interval and number of messages to be generated for the time interval for each of the threshold monitoring parameters.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <edit-config>
        <target>
            <running/>
        </target>
        <config>
            <threshold-monitor-hidden xmlns="urn:brocade.com:mgmt:brocade-threshold-
monitor">
                <threshold-monitor>
                    <hardware-resources>
                        <interval>100</interval>
                        <count>85</count>
                    </hardware-resources>
                </threshold-monitor>
            </threshold-monitor-hidden>
        </config>
    </edit-config>
</rpc>
]]>]]>
```

threshold-monitor ecmp

Configures monitoring of the number of ECMP entries against the maximum number of entries configured in the table and alerts the user when the configured thresholds are exceeded.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <edit-config>
        <target>
            <running/>
        </target>
        <config>
            <threshold-monitor-hidden xmlns="urn:brocade.com:mgmt:brocade-threshold-
monitor">
                <threshold-monitor>
                    <ecmp>
                        <actions>snmp</actions>
                        <high-limit>85</high-limit>
                        <low-limit>75</low-limit>
                    </ecmp>
                </threshold-monitor>
            </threshold-monitor-hidden>
        </config>
    </edit-config>
</rpc>
]]>]]>
```

threshold-monitor host

Configures monitoring of the number of host entries against the maximum number of hosts in the table and alerts the user when configured thresholds are exceeded.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <edit-config>
        <target>
            <running/>
        </target>
        <config>
            <threshold-monitor-hidden xmlns="urn:brocade.com:mgmt:brocade-threshold-
monitor">
                <threshold-monitor>
                    <host>
                        <actions>snmp</actions>
                        <high-limit>85</high-limit>
                        <low-limit>75</low-limit>
                    </host>
                </threshold-monitor>
            </threshold-monitor-hidden>
        </config>
    </edit-config>
</rpc>
]]>]]>
```

threshold-monitor lif

Configures monitoring of the number of LIFs against the maximum number of supported LIFs and alerts the user when configured thresholds are exceeded.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <edit-config>
        <target>
            <running/>
        </target>
        <config>
            <threshold-monitor-hidden xmlns="urn:brocade.com:mgmt:brocade-threshold-
monitor">
                <threshold-monitor>
                    <lif>
                        <actions>snmp</actions>
                        <high-limit>85</high-limit>
                        <low-limit>75</low-limit>
                    </lif>
                </threshold-monitor>
            </threshold-monitor-hidden>
        </config>
    </edit-config>
</rpc>
]]>]]>
```

threshold-monitor mac-table

Configures monitoring of the utilization of available MAC Table resources and alerts the user when configured thresholds are exceeded.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <edit-config>
        <target>
            <running/>
        </target>
        <config>
            <threshold-monitor-hidden xmlns="urn:brocade.com:mgmt:brocade-threshold-
monitor">
                <threshold-monitor>
                    <mac-table>
                        <actions>snmp</actions>
                        <high-limit>85</high-limit>
                        <low-limit>75</low-limit>
                    </mac-table>
                </threshold-monitor>
            </threshold-monitor-hidden>
        </config>
    </edit-config>
</rpc>
]]>]]>
```

threshold-monitor nexthop

Configures monitoring of the number of next hop entries against the maximum number of entries configured in the table and alerts the user when the configured thresholds are exceeded.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <edit-config>
        <target>
            <running/>
        </target>
        <config>
            <threshold-monitor-hidden xmlns="urn:brocade.com:mgmt:brocade-threshold-
monitor">
                <threshold-monitor>
                    <nexthop>
                        <actions>snmp</actions>
                        <high-limit>85</high-limit>
                        <low-limit>75</low-limit>
                    </nexthop>
                </threshold-monitor>
            </threshold-monitor-hidden>
        </config>
    </edit-config>
</rpc>
]]>]]>
```

threshold-monitor route

Configures monitoring of the number of route entries against the maximum number of route entries in the table and alerts the user when configured thresholds are exceeded.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <edit-config>
        <target>
            <running/>
        </target>
        <config>
            <threshold-monitor-hidden xmlns="urn:brocade.com:mgmt:brocade-threshold-
monitor">
                <threshold-monitor>
                    <route>
                        <actions>snmp</actions>
                        <high-limit>85</high-limit>
                        <low-limit>75</low-limit>
                    </route>
                </threshold-monitor>
            </threshold-monitor-hidden>
        </config>
    </edit-config>
</rpc>
]]>]]>
```

threshold-monitor vxlan-tunnel

Configures monitoring of the number of VXLAN Tunnels against the maximum number of supported VXLAN Tunnels and alerts the user when configured thresholds are exceeded.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
    <edit-config>
        <target>
            <running/>
        </target>
        <config>
            <threshold-monitor-hidden xmlns="urn:brocade.com:mgmt:brocade-threshold-
monitor">
                <threshold-monitor>
                    <vxlan-tunnel>
                        <actions>snmp</actions>
                        <high-limit>85</high-limit>
                        <low-limit>75</low-limit>
                    </vxlan-tunnel>
                </threshold-monitor>
            </threshold-monitor-hidden>
        </config>
    </edit-config>
</rpc>
]]>]]>
```

tpvm-cfg ldap ca-cert

Configures the remote server from where the certificate can be retrieved. The remote server can be accessed using its IPv4 or IPv6 address formats or its FQDN.

Usage

```
<rpc message-id="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <edit-config>
        <target>
            <running/>
        </target>
        <config>
            <tpvm-cfg xmlns="http://extremenetworks.com/yang/extreme-tpvm-config">
                <tpvm>
                <tpvm-instance-id>%req_val%</tpvm-instance-id>
                    <ldap>
                        <ca-cert>
                            <import>
                            <protocol>%enumeration%</protocol>
                            <user>%string%</user>
                            <ldap-password>%string%</ldap-password>
                            <ldap-host>%inet:host%</ldap-host>
                            <directory>%string%</directory>
                            <filename>%string%</filename>
                            </import>
                        </ca-cert>
                    </ldap>
                </tpvm>
            </tpvm-cfg>
        </config>
    </edit-config>
</rpc>
```

tpvm-cfg dhcpv6

Configures enabling DHCP for assigning IPv6 address for the management interface (eth0) of the TPVM.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="20a96bbf-
cfae-43e7-90f6-65e7a23ce7b6">
<edit-config>
<target>
<running/>
</target>
<config>
<tpvm-cfg xmlns="http://extremenetworks.com/yang/extreme-tpvm-config">
<tpvm>
<tpvm-instance-id>TPVM</tpvm-instance-id>
    <interface>
        <management>
            <ipv6>
                <dhcpv6/>
            </ipv6>
        </management>
    </interface>
</tpvm>
</tpvm-cfg>
</config>
</edit-config>
</rpc>
]]>]]>
```

tpvm-cfg ipv6

Configures the IPv6 address and gateway for the management interface (eth0) of the TPVM.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
 message-id="20a96bbf-cfae-43e7-90f6-65e7a23ce7b6">
      <edit-config>
          <target>
              <running/>
          </target>
      <config>
  <tpvm-cfg>
      <xmlns="http://extremenetworks.com/yang/extreme-tpvm-config">
      <tpvm>
          <tpvm-instance-id>TPVM>
            </tpvm-instance-id>
                <interface>
                    <management>
                        <ipv6>
                            <ipv6-params>
                                <ipv6addr>12:23::34:21/24</ipv6addr>

<gw>23:43::12:34</gw>
                            </ipv6-params>
                        </ipv6>
                    </management>
                </interface>
            </tpvm>
   </tpvm-cfg>
</conf>
</edit-config>
</rpc>
```

tpvm-cfg dns

Configures the primary and secondary DNS servers for the management interface (eth0) of the TPVM. Also configures the domain name.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
message-id="20a96bbf-cfae-43e7-90f6-65e7a23ce7b6">
 <edit-config>
    <target>
        <running/>
    </target>
 <config>
 <tpvm-cfg>
  <xmlns="http://extremenetworks.com/yang/extreme-tpvm-config">
    <tpvm>
        <tpvm-instance-id>TPVM>
            </tpvm-instance-id>
                <dns>
                    <dns-params>
                        <primary-server>12:34::56:78</primary-server>
                        <secondary-server>98:76::54:21</secondary-server>
                        <domain>extreme.com</domain>
                    </dns-params>
                </dns>
            </tpvm>
  </tpvm-cfg>
 </config>
</edit-config>
            </rpc>
```

tpvm-cfg trusted-peer

Configures the single trusted peer for this TPVM instance.

Usage

```
 <rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
  message-id="2">
    <edit-config>
        <target>
            <running/>
        </target>
    <config>
        <tpvm-cfg>
            xmlns="http://extremenetworks.com/yang/extreme-tpvm-config">
         <tpvm>
            <tpvm-instance-id>TPVM>
                </tpvm-instance-id>
                    <trusted-peer>
                        <pwless>
                            <ipv6>12:23::65:76</ipv6>
                            <password>$9$3soOK1m+a/h/zTsCair2Pw==></password>
                        </pwless>
                            <sudo-user>root</sudo-user>
                    </trusted-peer>
                </tpvm>
        </tpvm-cfg>
    </config>
</edit-config>
</rpc>
```

tpvm-cfg ntp

Configures the NTP servers for use with this TPVM instance. Up to 5 NTP servers can be configured. NTP servers can be configured as IPv4 or IPv6 address formats or as FQDNs.

Usage

```
 <rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="2">
    <edit-config>
        <target>
            <running/>
        </target>
    <config>
        <tpvm-cfg>
            <xmlns="http://extremenetworks.com/yang/extreme-tpvm-config">
        <tpvm>
            <tpvm-instance-id>TPVM>
                </tpvm-instance-id>
                    <ntp>
                        <server>time.google.com</server>
                         <server>12.3.4.5</server>
                         <server>12::23</server>
                         <server>12:21::87:22</server>
                         <server>some.ntp5.com</server>
                    </ntp>
                 </tpvm>
           </tpvm-cfg>
        </config>
    </edit-config>
</rpc>
```

tpvm-cfg ldap

Configures the LDAP server for use with this TPVM instance. LDAP server can be configured as IPv4 or IPv6 address formats or as FQDNs.

Usage

```
<rpc message-id="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <edit-config>
      <target>
        <running/>
      </target>
      <config>
        <tpvm-cfg xmlns="http://extremenetworks.com/yang/extreme-tpvm-config">
          <tpvm>
            <tpvm-instance-id>%req_val%</tpvm-instance-id>
               <ldap>
                <ldap-server>
                  <host>%inet:host%</host>
                    <ldap-server-options>
                      <port>%uint16%</port>
                    </ldap-server-options>
                </ldap-server>
              </ldap>
            </tpvm>
        </tpvm-cfg>
      </config>
  </edit-config>
</rpc>
```

tpvm upgrade

Configures the parameters to upgrade TPVM.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="2">
<action xmlns="http://tail-f.com/ns/netconf/actions/1.0">
<data>
    <tpvm xmlns="urn:brocade.com:mgmt:brocade-tpvm">
        <upgrade>
            <protocol>scp</protocol>
            <user>scpuser</user>
            <password>test123</password>
            <host>10:12::23:34</host>
            <directory>/tftpboot/img</directory>
            <filename>test_tpvm.img</filename>
            <force-default-password-change/>
        </upgrade>
    </tpvm>
</data>
</action>
</rpc>]]>]]>
```

tpvm download

Configures the parameters to download a specific TPVM image.

Usage

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="2">
<action xmlns="http://tail-f.com/ns/netconf/actions/1.0">
<data>
    <tpvm xmlns="urn:brocade.com:mgmt:brocade-tpvm">
        <download>
            <protocol>scp</protocol>
            <user>scpuser</user>
            <password>test123</password>
            <host>10:12::23:34</host>
            <directory>/tftpboot/img</directory>
            <filename>test_tpvm.img</filename>
        </download>
    </tpvm>
</data>
</action>
</rpc>]]>]]>
```

user-session-info

Returns user role information.

Usage

```
<user-session-info></user-session-info>

<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="20">
    <user-role xmlns="urn:brocade.com:mgmt:brocade-aaa-ext">admin</user-role>
</rpc-reply>
```

Parameters

user-role

Displays the user role.