

Junos® OS

OpenConfig User Guide

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Junos® OS OpenConfig User Guide

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About This Guide

Use this guide to configure and model both configurational and operational data of your switches and routers using OpenConfig data models.

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CHAPTER

OpenConfig Overview

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OpenConfig Overview

OpenConfig is a collaborative effort in the networking industry to move toward a more dynamic, programmable method for configuring and managing multivendor networks. OpenConfig supports the use of vendor-neutral data models to configure and manage the network. These data models define the configuration and operational state of network devices for common network protocols or services. The data models are written in YANG, a standards-based, data modeling language that is modular, easy to read, and supports remote procedure calls (RPCs). Using industry standard models greatly benefits an operator with devices in a network from multiple vendors. The goal of OpenConfig is for operators to be able to use a single set of data models to configure and manage all the network devices that support the OpenConfig initiative.

OpenConfig for Junos OS supports the YANG data models and uses RPC frameworks to facilitate communications between a client and the router. You have the flexibility to configure your router directly by using Junos OS, or by using a third-party schema, such as OpenConfig. OpenConfig modules define a data model through its data, and the hierarchical organization of and constraints on that data. Each module is uniquely identified by a namespace URL to avoid possible conflicts with the Junos OS name.

The configuration and operational statements in Junos OS have corresponding path statements in OpenConfig. The following is a list of data modules for which mapping of OpenConfig and Junos OS configuration and operational statements is supported:

- ["802.1X" on page 36](#)
- ["AAA" on page 41](#)
- ["BGP" on page 53](#)
- ["BFD" on page 72](#)
- ["Firewall Filters" on page 78](#)
- ["Interfaces" on page 113](#)
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- ["System Terminal" on page 273](#)
- ["Telemetry System" on page 278](#)
- ["VLAN" on page 289](#)

To understand the data models supported version and its Junos OS release for Juniper Networks ACX Series, EX Series, MX Series, PTX Series, and QFX Series, see the [Junos YANG Data Model Explorer](#).

For more information on the OpenConfig initiative, see <http://www.openconfig.net/>.

RELATED DOCUMENTATION

[OpenConfig Data Model Version | 3](#)

Understanding YANG on Devices Running Junos OS

[NETCONF XML Management Protocol Developer Guide](#)

OpenConfig Data Model Version

[Table 1 on page 4](#) lists the OpenConfig data model versions.

Table 1: OpenConfig Data Model Versions

OpenConfig Data Model	Junos OS Release Starting Support	OpenConfig Supported Version	Supported Platform
<ul style="list-style-type: none"> • AAA (openconfig-aaa.yang) • AAA Types (openconfig-aaa-types.yang) • AAA TACACS (openconfig-aaa-tacacs.yang) • AAA RADIUS (openconfig-aaa-radius.yang) 	19.3	0.4.1	Juniper Networks ACX Series, EX Series, MX Series, PTX Series, and QFX Series
BFD (openconfig-bfd.yang)	22.3R1 Junos	0.2.2	ACX710, ACX5448, MX150, MX204, MX240, MX480, MX960, MX2008, MX2010, MX2020, MX10003, MX10008, MX10016, PTX1000, and PTX10002 routers
BFD (openconfig-bfd.yang)	22.3R1 Junos OS Evolved	0.2.2	ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10008, and PTX10016 routers
<ul style="list-style-type: none"> • BGP (openconfig-bgp.yang) 	16.1	2.0.1	Juniper Networks MX Series and PTX Series
<ul style="list-style-type: none"> • BGP NEIGHBOR (openconfig-bgp-neighbor.yang) 	17.1	2.1.1	Juniper Networks MX Series and PTX Series
<ul style="list-style-type: none"> • BGP POLICY (openconfig-bgp-policy.yang) 	17.2	2.1.1	Juniper Networks MX Series, PTX Series, and QFX Series

Table 1: OpenConfig Data Model Versions (Continued)

OpenConfig Data Model	Junos OS Release Starting Support	OpenConfig Supported Version	Supported Platform
<ul style="list-style-type: none"> BGP TYPES (openconfig-bgp-types.yang) 	18.4	4.0.1	Juniper Networks MX Series, PTX Series, and QFX Series
<ul style="list-style-type: none"> BGP COMMON (openconfig-bgp-common.yang) 	17.1	2.1.1	Juniper Networks MX Series and PTX Series
<ul style="list-style-type: none"> BGP COMMON MULTIPROTOCOL (openconfig-bgp-common-multiprotocol.yang) 	17.2	2.1.1	Juniper Networks MX Series, PTX Series, and QFX Series
<ul style="list-style-type: none"> BGP COMMON STRUCTURE (openconfig-bgp-common-structure.yang) BGP GLOBAL (openconfig-bgp-global.yang) BGP PEER GROUP (openconfig-bgp-peer-group.yang) 	18.4	4.0.1	Juniper Networks MX Series, PTX Series, and QFX Series
BGP ERRORS (openconfig-bgp-errors.yang)	18.4	4.0.1	Juniper Networks MX Series and PTX Series
EXTENSIONS (openconfig-metadata.yang)	22.3R1 Junos OS Evolved	0.1.0	Juniper Networks PTX10003, PTX10004, PTX10008, and PTX10016 routers
<ul style="list-style-type: none"> GRE TUNNEL INTERFACE (openconfig-if-tunnel.yang) 	22.2R1 Junos	0.1.1	MX204, MX240, MX304, MX480, MX960, MX10003, MX10004, MX10008, MX10016, MX2010, and MX2020 routers

Table 1: OpenConfig Data Model Versions *(Continued)*

OpenConfig Data Model	Junos OS Release Starting Support	OpenConfig Supported Version	Supported Platform
<ul style="list-style-type: none"> (<code>openconfig-if-ip.yang</code>) 	22.2R1 Junos	3.0.0	MX204, MX240, MX304, MX480, MX960, MX10003, MX10004, MX10008, MX10016, MX2010, and MX2020 routers
<ul style="list-style-type: none"> IF IP (<code>openconfig-if-ip.yang</code>) 	16.1	1.0.1	Juniper Networks MX Series and PTX Series
	22.2R1 Junos Evolved	3.0.0	PTX10001-36MR, PTX10003, PTX10004, PTX10008, and PTX10016 routers
<ul style="list-style-type: none"> IF AGGREGATE (<code>openconfig-if-aggregate.yang</code>) IF IP EXT (<code>openconfig-if-ip-ext.yang</code>) 	16.1	1.0.1	Juniper Networks MX Series and PTX Series
IGMP (<code>openconfig-igmp.yang</code>)	23.2	0.3.0	<p>Junos OS—ACX Series, EX Series, MX Series and QFX Series.</p> <p>Junos OS Evolved—ACX Series, PTX Series and QFX Series.</p>
INTERFACES (<code>openconfig-interfaces.yang</code>)	16.1	1.0.1	Juniper Networks MX Series and PTX Series
	22.2R1 Junos Evolved	2.5.0	PTX10001-36MR, PTX10003, PTX10004, PTX10008, and PTX10016 routers

Table 1: OpenConfig Data Model Versions *(Continued)*

OpenConfig Data Model	Junos OS Release Starting Support	OpenConfig Supported Version	Supported Platform
<ul style="list-style-type: none"> • IF ETHERNET (openconfig-if-ethernet.yang) 	16.1	2.8.1	All Junos and Junos Evolved platforms supporting JTI
INET TYPES (openconfig-inet-types.yang)	17.3	0.1.0	Juniper Networks MX Series, PTX Series, and QFX Series
IKE INTERFACES (openconfig-ike.yang)	18.1R3	1.0.0	Juniper Networks MX Series
<ul style="list-style-type: none"> • ISIS (openconfig-isis.yang) 	17.4	0.2.1	Juniper Networks MX Series and PTX Series
<ul style="list-style-type: none"> • ISIS LSDB TYPES (openconfig-isis-lsdb-types.yang) • ISIS LSP (openconfig-isis-lsp.yang) • ISIS POLICY (openconfig-isis-policy.yang) • ISIS ROUTING (openconfig-isis-routing.yang) • ISIS TYPES (openconfig-isis-types) 	18.4	0.3.3	Juniper Networks MX Series and PTX Series
LACP (openconfig-lacp.yang)	16.1, 17.1	1.0.2	Juniper Networks MX Series and PTX Series
	17.2	1.0.2	Juniper Networks MX Series, PTX Series, and QFX Series

Table 1: OpenConfig Data Model Versions *(Continued)*

OpenConfig Data Model	Junos OS Release Starting Support	OpenConfig Supported Version	Supported Platform
	18.2	1.1.0	Juniper Networks MX Series, PTX Series, and QFX Series
LACP (<code>openconfig-lacp.yang</code>)	20.4R1 Evolved	1.1.1	Juniper Networks PTX10001-36MR, PTX10003, PTX10004, PTX10008, and PTX10016 routers.
	22.1R1	1.1.1	Juniper Networks ACX5448, MX10003, and PTX10008 routers and QFX5110, and QFX10002 switches.
LACP (<code>openconfig-lacp.yang</code>)	25.2R1	1.2.0	Juniper Networks PTX10003 router.
<ul style="list-style-type: none"> • LLDP (<code>openconfig-lldp.yang</code>) • LLDP TYPES (<code>openconfig-lldp-types.yang</code>) 	16.1	0.1.0	Juniper Networks MX Series and PTX Series
LLDP (<code>openconfig-lldp.yang</code>)	21.4R1 Evolved	0.2.1	Juniper Networks PTX10008 and PTX10016 routers
LOCAL ROUTING (<code>openconfig-local-routing.yang</code>)	16.1, 17.1	1.0.0	Juniper Networks MX Series and PTX Series
	17.2, 20.2R1 Junos OS Evolved	1.0.0	Juniper Networks MX Series, PTX Series, and QFX Series
	22.2R1 Evolved	2.0.0	Juniper Networks ACX Series and PTX Series.

Table 1: OpenConfig Data Model Versions *(Continued)*

OpenConfig Data Model	Junos OS Release Starting Support	OpenConfig Supported Version	Supported Platform
MACsec (openconfig-macsec)	22.1R1 Evolved	0.2.0	Juniper Networks PTX10008 and PTX10016 routers. Only physical MACsec is supported.
MACsec(openconfig-macsec)	25.1R1 Evolved	0.2.0	Juniper Networks ACX7100-32C, ACX7100-48L, ACX733, ACX7348, and ACX7509. Only physical MACsec is supported.
MPLS (openconfig-mpls.yang)	16.1	1.0.0	Juniper Networks MX Series and PTX Series
	17.2	1.0.0	Juniper Networks MX Series, PTX Series, and QFX Series
	17.3	1.0.1	Juniper Networks MX Series, PTX Series, and QFX Series
	17.4	2.2.0	Juniper Networks MX Series, PTX Series, and QFX Series
<ul style="list-style-type: none"> • MPLS IDP (openconfig-mpls-ldp.yang) 	16.1	1.0.0	Juniper Networks MX Series and PTX Series
<ul style="list-style-type: none"> • MPLS IGP (openconfig-mpls-igp.yang) • MPLS RSVP (openconfig-mpls-rsvp.yang) • MPLS SR (openconfig-mpls-sr.yang) 	17.2	1.0.0	Juniper Networks MX Series, PTX Series, and QFX Series

Table 1: OpenConfig Data Model Versions *(Continued)*

OpenConfig Data Model	Junos OS Release Starting Support	OpenConfig Supported Version	Supported Platform
<ul style="list-style-type: none"> • MPLS STATIC (openconfig-mpls-static.yang) • MPLS TE (openconfig-mpls-te.yang) • MPLS TYPES (openconfig-mpls-types.yang) 	17.4	2.2.0	Juniper Networks MX Series, PTX Series, and QFX Series
NETWORK INSTANCE (openconfig-network-instance.yang)	17.3, 20.2R1 Junos OS Evolved	0.4.0	Juniper Networks ACX Series, EX Series, MX Series, PTX Series, and QFX Series
NETWORK INSTANCE (openconfig-network-instance.yang)	22.2 Junos OS Evolved	0.16.1	ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, PTX10016 routers and QFX5130-32CD and QFX5130-48C switches
<ul style="list-style-type: none"> • NETWORK INSTANCE I3 (openconfig-network-instance-I3.yang) • NETWORK INSTANCE TYPES (openconfig-network-instance-types.yang) 	17.2X75	0.4.0	Juniper Networks MX Series, PTX Series, and QFX Series
NETWORK INSTANCE I2 (openconfig-network-instance-I2.yang)	22.2 Junos OS Evolved	0.16.1	ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, PTX10016 routers and QFX5130-32CD and QFX5130-48C switches

Table 1: OpenConfig Data Model Versions *(Continued)*

OpenConfig Data Model	Junos OS Release Starting Support	OpenConfig Supported Version	Supported Platform
	24.3 Junos OS Evolved	0.4.0	Juniper Networks ACX7024, ACX7024X, ACX7100-32C, ACX7100-48L, ACX7332, ACX7348, ACX7509, MX Series, PTX Series, and QFX Series
OSPF (openconfig-ospfv2.yang)	22.4 Junos	0.3.1	ACX5448, ACX7100, MX150, MX204, MX240, MX480, MX960, MX10003, MX10008, MX10016, MX2008, MX2010, MX2020 and PTX1000 routers.
	22.4 Junos OS Evolved	0.3.1	PTX10001-36MR, PTX10008 and PTX10016 routers.
P4RT INTERFACE (openconfig-p4rt.yang)	22.2 Junos OS Evolved	0.2.0	PTX10008 and PTX10016 routers.
PIM (openconfig-pim.yang)	23.2	0.4.2	Junos OS—ACX Series, EX Series, MX Series and QFX Series. Junos OS Evolved—ACX Series, PTX Series and QFX Series.
PIPELINE COUNTERS (openconfig-platform-pipeline-counters.yang)	22.4 Junos OS Evolved	0.2.1	PTX10001-36MR, PTX10004, PTX10008 and PTX10016 routers.
<ul style="list-style-type: none"> • PLATFORM (openconfig-platform.yang) • PLATFORM TYPES (openconfig-platform-types.yang) 	16.1	0.3.0	Juniper Networks MX Series and PTX Series

Table 1: OpenConfig Data Model Versions *(Continued)*

OpenConfig Data Model	Junos OS Release Starting Support	OpenConfig Supported Version	Supported Platform
PLATFORM TRANSCEIVERS (openconfig-platform-transceiver.yang)	19.1	0.1.0	Juniper Networks MX Series
	22.2R1 Junos OS Evolved	0.8.0	PTX10001-36MR, PTX10003, PTX10004, PTX10008, and PTX10016 routers
POLICY TYPES (openconfig-policy-types.yang)	16.1, 17.1	2.0.0	Juniper Networks MX Series and PTX Series
	17.2	2.0.0	Juniper Networks MX Series, PTX Series, and QFX Series
QOS (openconfig-qos.yang)	22.2R1 Junos OS and 22.2R1 Junos OS Evolved	0.3.0	MX150, MX204, MX480, MX960, MX2008, MX2010, MX2020, MX10003, MX10008, MX10016, PTX1000, PTX3000, PTX5000, PTX10001, PTX10001-36MR, PTX10002, PTX10003, PTX10004, PTX10008, and PTX10016
	24.2R1 Junos OS	0.9.1	MX Series
SUPPORTING QOS (openconfig-pf-forwarding-policies.yang)	22.2R1 Junos OS Evolved	0.2.0	PTX10001-36MR, PTX10003, PTX10004, PTX10008, and PTX10016 routers
<ul style="list-style-type: none"> RIB BGP (openconfig-rib-bgp.yang) RIB BGP EXT (openconfig-rib-bgp-ext.yang) 	16.1	0.2.0	Juniper Networks MX Series and PTX Series

Table 1: OpenConfig Data Model Versions (Continued)

OpenConfig Data Model	Junos OS Release Starting Support	OpenConfig Supported Version	Supported Platform
<ul style="list-style-type: none"> RIB BGP TYPES (<code>openconfig-rib-bgp-types.yang</code>) 	17.2	0.2.0	Juniper Networks MX Series, PTX Series, and QFX Series
ROUTING POLICY (<code>openconfig-routing-policy.yang</code>)	16.1	2.0.0	Juniper Networks MX Series and PTX Series
	17.2	2.0.0	Juniper Networks MX Series, PTX Series, and QFX Series
	20.3	2.0.1	EX2300, EX3400, EX4300, EX4600, and EX9200 switches
	22.2R1 Junos OS Evolved	3.3.0	Juniper Networks ACX and PTX Series.
RPC API (<code>openconfig-rpc-api.yang</code>)	19.1	0.1.0	Juniper Networks MX Series, PTX Series, and QFX Series
sFlow <ul style="list-style-type: none"> OpenConfig translation (<code>openconfig-sampling.yang</code>) OpenConfig telemetry (<code>openconfig-sampling-sflow.yang</code>) 	23.4R1 Junos OS Evolved	1.0.0	PTX10001-36MR, PTX10003, PTX10004, PTX10008, and PTX10016 routers
SEGMENT ROUTING (<code>openconfig-segment-routing.yang</code>)	17.3	0.0.3	Juniper Networks MX Series and PTX Series

Table 1: OpenConfig Data Model Versions *(Continued)*

OpenConfig Data Model	Junos OS Release Starting Support	OpenConfig Supported Version	Supported Platform
SYSTEM LOGGING MODEL (<code>openconfig-sys-logging.yang</code>)	21.4R1 Evolved	0.3.1	PTX10008 and PTX10016 routers
	22.1R1	0.3.1	ACX5448, MX240, MX480, MX960, MX10003, MX10008, MX10016, MX2008, MX2010, MX2020, and PTX10002 routers
SYSTEM MANAGEMENT MODEL (<code>openconfig-system-management.yang</code>)	21.4R1 Evolved	0.3.0	PTX10008 and PTX10016 routers
	22.1R1	0.3.0	ACX5448, MX240, MX480, MX960, MX10003, MX10008, MX10016, MX2008, MX2010, MX2020, and PTX10002 routers
SYSTEM MODEL (<code>openconfig-system.yang</code>)	21.4R1 Evolved	0.6.1	PTX10008 and PTX10016 routers
	22.1R1	0.6.1	ACX5448, MX240, MX480, MX960, MX10003, MX10008, MX10016, MX2008, MX2010, MX2020, and PTX10002 routers
SYSTEM TERMINAL MODEL (<code>openconfig-system-terminal.yang</code>)	21.4R1 Evolved	0.3.1	PTX10008 and PTX10016 routers
	22.1R1	0.3.1	ACX5448, MX240, MX480, MX960, MX10003, MX10008, MX10016, MX2008, MX2010, MX2020, and PTX10002 routers

Table 1: OpenConfig Data Model Versions (Continued)

OpenConfig Data Model	Junos OS Release Starting Support	OpenConfig Supported Version	Supported Platform
TELEMETRY SYSTEM (openconfig-telemetry.yang)	16.1	0.2.0	Juniper Networks MX Series, PTX Series, and QFX Series
<ul style="list-style-type: none"> TELEMETRY SYSTEM (openconfig-telemetry.yang) TELEMETRY TYPE (openconfig-telemetry-types.yang) 	22.2R1 Junos	Telemetry System-0.5.1	PTX10001-36MR, PTX10003, PTX10008, and PTX10016 routers and QFX5130 and QFX5220 switches
	22.2R1 Junos OS Evolved	Telemetry Type-0.4.2	PTX10001-36MR, PTX10003, PTX10008, and PTX10016 routers and QFX5130-32CD, QFX5130-48C, and QFX5220 switches
TERMINAL DEVICE (openconfig-terminal-device.yang)	19.1	0.3.1	Juniper Networks MX Series, PTX Series, and QFX Series
TRANSPORT TYPES (openconfig-transport-types.yang)	16.1	0.2.0	Juniper Networks MX Series and PTX Series
	17.1	0.3.1	Juniper Networks MX Series and PTX Series
TYPES (openconfig-types.yang)	16.1	0.1.1	Juniper Networks MX Series and PTX Series
	17.1	0.2.0	Juniper Networks MX Series and PTX Series
	17.2	0.2.0	Juniper Networks MX Series, PTX Series, and QFX Series

Table 1: OpenConfig Data Model Versions (*Continued*)

OpenConfig Data Model	Junos OS Release Starting Support	OpenConfig Supported Version	Supported Platform
	17.4	0.3.2	Juniper Networks MX Series, PTX Series, and QFX Series
<ul style="list-style-type: none"> VLAN CONFIGURATION SUPPORT (<code>openconfig-vlan.yang</code>) VLAN TYPES (<code>openconfig-vlan-types.yang</code>) 	16.1	1.0.1	Juniper Networks EX Series and QFX Series
<ul style="list-style-type: none"> VLAN CONFIGURATION SUPPORT (<code>openconfig-vlan.yang</code>) 	22.2R1 Junos OS Evolved	3.2.0	PTX10001-36MR, PTX10003, PTX10004, PTX10008, and PTX10016 routers
	22.2R1 Junos OS Evolved	3.2.1	ACX7100, PTX10001-36MR, PTX10003, PTX10004, PTX10008, PTX10016 routers and QFX5130 switches.
YANG TYPES (<code>openconfig-yang-types.yang</code>)	17.3	0.1.0	Juniper Networks MX Series, PTX Series, and QFX Series

RELATED DOCUMENTATION

[OpenConfig Overview | 2](#)

Understanding YANG on Devices Running Junos OS

[NETCONF XML Management Protocol Developer Guide](#)

Installing the OpenConfig Package

Starting in Junos OS Release 18.3R1, the Junos OS image includes the OpenConfig package; therefore, you do not need to install OpenConfig separately on your device.

By default, the OpenConfig schema is not available through CLI. To unhide the OpenConfig knob from the CLI, run the following command:

```
set system schema openconfig unhide
```



NOTE: The `show system yang package` command in the operational mode does not display native Junos OS OpenConfig package. This is because the Junos OS image includes the OpenConfig package.

OpenConfig package includes the following files:

- OpenConfig set of data models—Data models are written in YANG.
- Translation scripts—Translates OpenConfig configuration schemas to Junos OS configuration schemas for each supported Junos OS release.
- Deviation modules—Specifies the unsupported nodes within the schema for each supported Junos OS release.
- Augmentation module—Specifies additions to various OpenConfig specified models.
- Dynamic rendering files—Maps operational state data for each supported Junos OS release.

In releases before Junos OS Release 18.3R1, OpenConfig for Junos OS software package have the following naming convention:

```
junos-openconfig-XX.YY.ZZ.JJ-signed.tgz (Junos OS)  
junos-openconfig-x86-32-XX.YY.ZZ.JJ.tgz (Junos OS with Upgraded FreeBSD)
```

where:

- *XX* represents the OpenConfig major release number.
- *YY* represents the OpenConfig minor release number.
- *ZZ* represents the OpenConfig patch release number.
- *JJ* represents the Juniper Networks release number.



NOTE: The junos-openconfig-x86-32-*XX.YY.ZZ.JJ*.tgz package supports both 32 and 64 bit systems.

To install the OpenConfig for Junos OS software package, use the following command:

request system software add

For example:

```
user@router> request system software add junos-openconfig-XX.YY.ZZ.JJ-signed.tgz
```

or

```
user@router> request system software add junos-openconfig-x86-32-XX.YY.ZZ.JJ.tgz
```

For more details on the OpenConfig for Junos OS software package, see Release Notes available with the package on the [Juniper Software Download website](#).

Change History Table

Feature support is determined by the platform and release you are using. Use [Feature Explorer](#) to determine if a feature is supported on your platform.

Release	Description
18.3R1	Starting in Junos OS Release 18.3R1, the Junos OS image includes the OpenConfig package; therefore, you do not need to install OpenConfig separately on your device.

RELATED DOCUMENTATION

<i>Understanding YANG on Devices Running Junos OS</i>
NETCONF XML Management Protocol Developer Guide
Software Installation and Upgrade Guide
Release Information for Junos OS with Upgraded FreeBSD
<i>schema</i>

2

CHAPTER

gRPC Overview

IN THIS CHAPTER

- Understanding OpenConfig and gRPC on Junos Telemetry Interface | 20
 - Installing the Network Agent Package (Junos Telemetry Interface) | 20
 - gRPC Services for Junos Telemetry Interface | 23
 - Data Models and Sensor Paths | 27
 - Configuring gNMI Heartbeat Interval for ON_CHANGE Subscriptions | 32
-

Understanding OpenConfig and gRPC on Junos Telemetry Interface

Starting in Junos OS Release 16.1R3, you can use a set of remote procedure call (RPC) interfaces to configure the Junos telemetry interface and stream telemetry data using the gRPC framework. OpenConfig supports the use of vendor-neutral data models for configuring and managing multivendor networks. gRPC is an open source framework that provides secure and reliable transport of data.

RELATED DOCUMENTATION

<https://www.juniper.net/documentation/us/en/software/junos/grpc-network-services/topics/topic-map/grpc-services-configuring.html>

statistics

telemetry

Installing the Network Agent Package (Junos Telemetry Interface)

Network Agent functions as a gRPC server and terminates the OpenConfig RPC interfaces. It is also responsible for streaming the telemetry data according to the OpenConfig specification. The Network Agent component also supports SSL/TLS. Client-based SSL/TLS authentication is not supported. You must install SSL/TLS certificates on your Juniper Networks device. To view the OpenConfig specification for telemetry, see the [OpenConfig Telemetry specification](#). For more information about OpenConfig for Junos OS, see the [OpenConfig User Guide](#).



NOTE:

- Starting in Junos OS Release 18.3R1, OpenConfig and Network Agent packages are bundled into the Junos OS image by default. Both packages support JTI.
- Starting in Junos OS Evolved Release 19.1R1, OpenConfig (OC) and Junos Telemetry Interface (JTI) are supported. The OpenConfig and Network Agent packages are bundled into the Junos OS Evolved image by default. Both packages support JTI.

Before you begin:

- Install Junos OS Release 16.1R3 or later.
- Install the OpenConfig for Junos OS module. Using a Web browser, navigate to the All Junos Platforms software download URL on the Juniper Networks webpage: <https://www.juniper.net/support/downloads/>. From the **Network Management** tab, scroll down to select **OpenConfig**. Select the **Software** tab. Select the **OpenConfig Package (Junos with upgraded FreeBSD)**. For more information, see "[Installing the OpenConfig Package](#)" on page 17.
- Install Transport Layer Security (TLS) certificates of authentication on your Juniper Networks device.



NOTE: Only server-based TLS authentication is supported. Client-based authentication is not supported.

Starting with Junos OS Release 16.1R3, the Junos Network Agent software package provides a framework to support OpenConfig and gRPC for the Junos Telemetry Interface on MX Series routers and PTX5000 routers. The Network Agent package functions as a gRPC server that terminates the OpenConfig remote procedure call (RPC) interfaces and streams the telemetry data according to the OpenConfig specification. The Junos Network Agent package, which runs on the Routing Engine, implements local statistics collection and reports data to active telemetry stream subscribers.

Starting with Junos OS Release 17.2R1, the Junos Network Agent Package is also supported on QFX10000 switches and QFX5200 switches.

Starting with Junos OS Release 17.3R1, the Junos Network Agent Package is supported on QFX5110 switches and EX9200 switches.

Network Agent for Junos OS software package has the following naming conventions:

- **Package Name**—This is Network-Agent.
- **Architecture**—This field indicates the CPU architecture of the platforms, such as x86.
- **Application Binary Interface (ABI)**—This field indicates the “word length” of the CPU architecture. The value is 32 for 32-bit architectures.
- **Release**—This field indicates the Junos OS release number, such as 16.1R3.16.
- **Package release and spin number**—This field indicates the package version and spin number, such as C1.1.

All Junos Network Agent packages are in tarred and gzipped (.tgz) format.



NOTE: Each version of the Network Agent package is supported on a single release of Junos OS only. The Junos OS version supported is identified by the Junos OS release number included in the Network Agent package name.

An example of a valid Network Agent package name is:

- network-agent-x86-32-16.1R4.12-C1.1.tgz

Use the 32-bit Network Agent package for both 32-bit and 64-bit versions of Junos OS or Junos OS Evolved.

To download and install the Network Agent package:

1. Using a Web browser, navigate to the All Junos Platforms software download URL on the Juniper Networks webpage: <https://www.juniper.net/support/downloads/>.
2. Select the name of the Junos OS platform for the software that you want to download.
3. Select the release number (the number of the software version that you want to download) from the **Release** drop-down list to the right of the Download Software page.
4. Select the **Software** tab.
5. In the **Tools** section of the **Software** tab, select the **Junos Network Agent** package for the release.
6. Log in to the Juniper Networks authentication system using the username (generally your e-mail address) and password supplied by a Juniper Networks representative.
7. Download the software to a local host.
8. Copy the software to Juniper Networks device or to your internal software distribution site.
9. Install the new network-agent package on the device by issuing the `request system software add package-name` from the operational mode:

For example:

```
user@host > request system software add network-agent-x86-32-16.1R3.16-C1.0.tgz
```



NOTE: The command uses the `validate` option by default. This option validates the software package against the current configuration as a prerequisite to adding the software package to ensure that the device reboots successfully. This is the default behavior when the software package being added is a different release.

- 10. Issue the `show version | grep na\ telemetry` command to verify that the Network Agent package was successfully installed.

```
user@host> show version | grep na\ telemetry
JUNOS na telemetry
[20161109.201405_builder_junos_161_r3]
```

Change History Table

Feature support is determined by the platform and release you are using. Use [Feature Explorer](#) to determine if a feature is supported on your platform.

Release	Description
18.3R1	Starting in Junos OS Release 18.3R1, the Junos OS image includes the Network Agent.
17.3R1	Starting with Junos OS Release 17.3R1, the Junos Network Agent Package is supported on QFX5110 switches and EX9200 switches.
17.2R1	Starting with Junos OS Release 17.2R1, the Junos Network Agent Package is also supported on QFX10000 switches and QFX5200 switches.
16.1R3	Starting with Junos OS Release 16.1R3, the Junos Network Agent software package provides a framework to support OpenConfig and gRPC for the Junos Telemetry Interface on MX Series routers and PTX5000 routers.

RELATED DOCUMENTATION

| [Understanding OpenConfig and gRPC on Junos Telemetry Interface](#) | 20

gRPC Services for Junos Telemetry Interface

IN THIS SECTION

- [Configuring gRPC for the Junos Telemetry Interface](#) | 24
- [Configuring Mutual Authentication for gRPC for Junos Telemetry Interface](#) | 25

Configuring gRPC for the Junos Telemetry Interface

You can stream telemetry data for various network elements through gRPC, an open source framework for handling remote procedure calls based on TCP. The Junos Telemetry Interface relies on a so-called push model to deliver data asynchronously, which eliminates polling.

Before you begin:

- Install Junos OS Release 16.1R3 or later on your Juniper Networks device.

To configure your system for gRPC services specify the API connection setting based on Transport Layer Security (TLS) technology.

For example, to set the API connection:

```
[edit system services]
user@host# set extension-service request-response grpc tls
```

For an TLS-based connection, you must specify a local-certificate name. You can rely on the default IP address (::) to enable Junos to “listen” for all IPv4 and IPv6 addresses on incoming connections. If you would rather specify an IP address, follow step 2 below.

1. Specify a local certificate-name. The certificate can be any user-defined value from the certificate configuration (not shown here). The certificate name used in this example is `jsd_certificate`:

```
[edit system services extension-service request-response grpc]
user@host# set tls local-certificate jsd_certificate
```



NOTE: Enter the name of a certificate you have configured with the local *certificate-name* statement at the `[edit security certificates]` hierarchy level.

2. (Optional) Specify an IP address to listen for incoming connections. The IP address used in this example is `192.0.2.0`:

```
[edit system services extension-service request-response grpc]
user@host# set tls ip-address 192.0.2.0
```



NOTE: If you do not specify an IP address, the default address of `::` is used to listen for incoming connections.



NOTE: The maximum number of concurrent gRPC connections supported are "30". To specify the maximum number of connections, include the `max-connections` statement at the `[edit system services extension-service request-response grpc]` hierarchy level.

SEE ALSO

<https://www.juniper.net/documentation/us/en/software/junos/grpc-network-services/topics/topic-map/grpc-services-configuring.html>

<https://www.juniper.net/documentation/us/en/software/junos/security-services/topics/task/ssl-certificates-junoscript-support-importing.html>

Configuring Mutual Authentication for gRPC for Junos Telemetry Interface

Starting with Junos OS Release 17.4R1, you can configure mutual authentication for gRPC sessions used to stream telemetry data. Previously, only authentication of the server, that is, Juniper device, was supported. Now the external client, that is management station that collects data, can also be authenticated using TLS certificates. The JET service process (`jsd`), which supports application interaction with Junos OS, uses the credentials provided by the external client to authenticate the client and authorize a connection.

Before you begin:


- Configure the gRPC server. For more information, see <https://www.juniper.net/documentation/us/en/software/junos/grpc-network-services/topics/topic-map/grpc-services-configuring.html>.

To configure authentication for the external client, that is, management station that collects telemetry data streamed from the Juniper device:


1. Enable mutual authentication and specify the requirements for a client certificate.

For example, to specify the strongest authentication, which requires a certificate and its validation:

```
[edit system services extension-service request-response grpc tls]
user@host# set mutual-authentication client-certificate-request require-certificate-and-verify
```

**NOTE:** The default is no-certificate. The other options are: request-certificate, request-certificate-and-verify, require-certificate, require-certificate-and-verify. We recommend that you use no-certificate option in a test environment only.

2. Specify the certificate authority.

**NOTE:** For the certificate authority, specify a certificate-authority profile you have configured at the [edit security pki [ca-profile](#)] hierarchy level. This profile is used to validate the certificate provided by the client.

A digital certificate provides a way of authenticating users through a trusted third-party called a certificate authority (CA). The CA validates the identity of a certificate holder and “signs” the certificate to attest that it has not been forged or altered. For more information, see *Digital Certificates Overview* and *Example: Requesting a CA Digital Certificate*.

For example, to specify a certificate-authority profile named jsd_certificate:

```
[edit system services extension-service request-response grpc tls mutual-authentication]
user@host# set certificate-authority jsd_certificate
```

3. Verify that an external client can successfully connect with the Juniper device through the jsd process and invoke OpenConfig RPCs.

The external client passes username and password credentials as part of metadata in each RPC. The RPC is allowed if valid credentials are used. Otherwise an error message is returned.

Change History Table

Feature support is determined by the platform and release you are using. Use [Feature Explorer](#) to determine if a feature is supported on your platform.

Release	Description
17.4R1	Starting with Junos OS Release 17.4R1, you can configure mutual authentication for gRPC sessions used to stream telemetry data.

17.3R1	The Junos Telemetry Interface and gRPC streaming are supported on QFX5110, EX4600, and EX9200 switches starting with Junos OS Release 17.3R1.
17.2R1	The Junos Telemetry Interface and gRPC streaming are supported on QFX10000 and QFX5200 switches, and PTX1000 routers starting with Junos OS Release 17.2R1.
16.1R3	Starting with Junos OS Release 16.1R3 on MX Series routers and PTX3000 and PTX5000 routers, you can stream telemetry data for various network elements through gRPC, an open source framework for handling remote procedure calls based on TCP.

Data Models and Sensor Paths

IN THIS SECTION

- [Data Models | 27](#)
- [Sensor Paths | 28](#)
- [Sensor Path Explorer | 29](#)
- [Selecting Telemetry Sensor Paths | 29](#)
- [Important Guidelines for Selecting Sensor Paths | 30](#)

Data Models

Juniper Telemetry Interface data models define the structure of telemetry data collected from network devices, using YANG (Yet Another Next Generation). YANG is a standards-based, extensible data modeling language used in the Juniper Telemetry Interface (JTI) to define configuration, operational state data, and remote procedure calls (RPCs) for network devices. In JTI, YANG modules enable the provisioning of sensors to collect and export telemetry data, such as interface statistics, using native or OpenConfig data models. The YANG standard is defined in [RFC 6020](#) and [RFC 7950](#).

Juniper Networks publishes YANG modules for Junos devices, which can be downloaded from the [Juniper GitHub repository](#) or generated on-device.

The OpenConfig working group defines the OpenConfig data model. It is a vendor-neutral data model to configure and manage the network. OpenConfig data model generates data as Google Protocol Buffers

(GPB) messages in a universal key/value format. JTI allows you to leverage OpenConfig models for a broader, vendor-agnostic view of your network. Openconfig sensor paths are used to retrieve sensor information from sensors based on the Openconfig data model. For detailed Openconfig resource path exploration, see [Junos YANG Data Model Explorer](#).

The Juniper native data model is an open and extensible framework developed by Juniper. This model is used to stream telemetry data about the unique features found on Juniper devices. These include interface statistics, routing information, security metrics, and so on. Additionally, the native model allows for the definition of enterprise-specific sensors. To access information from Juniper or enterprise-specific sensors, subscribe to Juniper native sensors. Native sensor paths are used to retrieve sensor information from sensors based on the native data model. Juniper's YANG modules for native sensors are available at Juniper's Telemetry [GitHub](#) repository.

Sensor Paths

A telemetry sensor path describes the hierarchical path to the data points or metrics that need to be monitored. To stream the required sensor data and activate the sensor and identify the relevant sensor path. JTI supports both Openconfig sensor paths and native sensor paths:

- **Openconfig Sensor Paths**

To configure data collection from Openconfig sensors, define the subscriptions and sensor paths (for example, `/interfaces/interface/state/counters`), set up the data collector, and download the Junos Telemetry Interface protocol buffers files from the Juniper Networks support page. Capture and decode the captured data on the collector.

- **Native Sensor Paths**

Native sensor paths are specific to Junos OS (for example, `/junos/system/line card/interface/`) and offer granular, Juniper-optimized access to device-specific metrics.

To configure data collection from native sensors, use the Junos CLI to provision native sensors for collecting specific data. Configure the telemetry interface to stream data using gRPC or UDP. Use the protocol buffer's files to decode the streamed data on the collector.

Both path types enable the structured output of data in formats such as JSON or XML, ensuring compatibility with external collectors for efficient monitoring and analytics.

Sensor Path Explorer

The Juniper Networks [Junos YANG Data Model Explorer](#) is an online tool for viewing all the supported resource paths, their corresponding leaves, and the device platforms that support them. It enables you to explore or compare various OpenConfig and Native data model attributes. Use the filter option based on the software release number or product to view the list of resource paths and sensors on each platform.



NOTE: The [Junos YANG Data Model Explorer](#) was introduced in the 23.2R2-S2 releases. From releases 20.2R1 up to 23.1R1, the sensor information is available in the [Junos Telemetry Sensor Explorer](#).

Selecting Telemetry Sensor Paths

In a model-driven telemetry system, the sensor path can be configured to end at any level within the data model's container hierarchy. Based on the required telemetry information, you can configure the sensor path to retrieve a broad data set or be very specific and retrieve targeted information for a particular sensor. For example, a sensor path might point to a container that includes all interface statistics on a router, or it could be more granular, focusing on a single metric like packet loss on a specific interface.

For example, to receive telemetry data about alarms generated on the device (using the OpenConfig data model), you can configure either of the following resource paths based on the granularity of sensor data required:

- `/system/alarms/alarm/id`: This path retrieves only the alarm ID.
- `/system/alarms/alarm/config`: This path retrieves the detailed alarm information.

Configuring the correct sensor paths ensures an efficient telemetry system. Each resource path enables data streaming for the system resource globally, that is, systemwide. You can modify each resource path to specify a logical or physical interface. The resource path `/interfaces/interface/config` retrieves the list of configurable items at the global, physical interface level, whereas the path `/interfaces/interface/config/name` specifies the name of the interface, and the device may restrict the allowed values for this leaf depending on the type of the interface.

Important Guidelines for Selecting Sensor Paths

- Users should always provide the complete and direct resource path when configuring sensors. Providing partial resource paths, such as `/components/component/`, results in incomplete configurations and potential errors. Such resource paths overwhelm the device, as it needs to display all the available options at that hierarchy. To prevent this, always verify and use the full resource path to ensure precise and efficient sensor configuration.



NOTE: Creating subscription and sensor configuration at the `/` (root) and `/junos/` is not allowed.

Table 2: Sensor Path Example

Good example of a Resource Path	Poor example of a Resource Path
<code>/interfaces/interface/subinterfaces/subinterface/state/counters/out-pkts</code>	<code>/interfaces/interface</code>

- The logical and physical Packet Forwarding Engine interface sensors report some leaves inconsistently to the collector. For example, the subscribed path `/interfaces/ 115 interface/` producing the streamed path `/junos/system/linecard/interface/logical/ usage/` reports key name leaves `parent_ae_name` and `init_time` (with underscores in the leaf name). The subscribed path `/interfaces/interface/state/` producing the streamed path `/ junos/system/linecard/interface/queue/` reports key name leaves `parent-ae-name` and `init\u0002time` (with hyphens in the leaf name).

Change History Table

Feature support is determined by the platform and release you are using. Use [Feature Explorer](#) to determine if a feature is supported on your platform.

Release	Description
22.4R1	Starting in Junos OS Evolved Release 22.4R1 you can stream statistics for IPv4 and IPv6 traffic statistics using the resource path <code>/junos/system/linecard/interface/traffic/</code> .
22.4R1	Starting with Junos OS Release 22.4R1, sensors are supported on MX304 routers.
22.3R1	Starting with Junos OS Evolved Release 22.3R1, sensors to stream optics statistics is supported on ACX7100-32C, ACX7100-48L, and ACX7024 routers.
22.3R1	Starting with Junos OS Release 22.3R1, sensors are supported on MX10004 routers.

22.3R1	Junos OS and Junos OS Evolved Release 22.3R1 introduces improved performance time for the initial sync of telemetry statistics. This enhancement applies to subscription requests for the top-level sensor path /network-instances/network-instance/afts.
20.3R1	Starting with Junos OS Release 20.3R1, gRPC service for exporting LDP and mLDP statistics is supported on MPC10E-10C-MRATE, MPC10E-15C-MRATE, and MX2K-MPC11E line cards.
20.2R1	Starting with Junos OS Evolved Release 20.2R1, gRPC service for streaming NDP statistics is supported on PTX10001 routers.
20.2R1	Starting with Junos OS Release 20.2R1, gRPC service for streaming Packet forwarding Engine and Routing Engine statistics is supported on EX2300, EX2300-MP, and EX3400 switches.
20.2R1	Starting with Junos OS Release 20.2R1, gRPC service for streaming BGP routing information base (RIB) and BGP peer statistics is supported on any platform family that supports containerized routing protocol process (cRPD). cRPD is Juniper's routing protocol process (rpd) decoupled from Junos OS and packaged as a Docker container to run in Linux-based environments.
20.2R1	Starting with Junos OS Release 20.2R1, ON_CHANGE BGP peer statistics export using gRPC services and gNMI services is supported on MX960, MX2008, MX2010, MX2020, PTX1000, PTX5000, PTX10000 routers and QFX5100 and QFX5200 switches.
20.2R1	Starting with Junos OS Release 20.2R1, streaming BGP global, peer and perr groups statistics using gRPC services is supported on EX2300, EX3400, EX4300, EX4600, and EX9200 switches.
20.2R1	Starting with Junos OS Release 20.2R1, streaming revenue interface statistics through Packet Forwarding Engine sensors and pseudo interface statistics through Routing Engine sensors using gRPC services and gNMI services is supported on SRX5400, SRX5600, and SRX5800 Services Gateways..
20.2R1	Starting with Junos OS Release 20.2R1, streaming revenue interface statistics through Packet Forwarding Engine sensors and pseudo interface statistics through Routing Engine sensors using gRPC services and gNMI services is supported on SRX5400, SRX5600, and SRX5800 Services Gateways.
20.2R1	Starting with Junos OS Release 20.2R1 sensors to stream standby Routing Engine statistics are supported on MX480, MX960, MX10003, MX2010, and MX2020 routers.
20.2R1	Starting with Junos OS Release 20.2R1 sensors to stream EVPN statistics using gRPC services are supported with QFX5100, QFX5110, QFX5120, QFX5200, QFX10002-60C, QFX10002, QFX10008, and QFX10016 switches.
20.2R1	Starting with Junos OS Release 20.2R1, gRPC service for exporting LDP and mLDP statistics is supported on MX Series routers.

RELATED DOCUMENTATION

[Understanding OpenConfig and gRPC on Junos Telemetry Interface](#) | 20

Configuring gNMI Heartbeat Interval for ON_CHANGE Subscriptions

IN THIS SECTION

- [Benefits of OpenConfig gNMI Heartbeat for On-Change Subscriptions](#) | 33
- [Configure and Monitor gNMI Heartbeat Interval](#) | 33

The OpenConfig gNMI Heartbeat for On-Change Subscriptions feature enhances your network's telemetry capabilities by enabling you to specify a heartbeat interval within the gNMI `SubscribeRequest`, ensuring that complete sensor datasets are received at regular intervals, regardless of changes in data values. This mechanism is crucial for periodic state validation, helping to maintain data integrity and prevent data loss.

Effective utilization of the OpenConfig gNMI Heartbeat for On-Change Subscriptions requires understanding how to configure and monitor the feature within your network. To set the heartbeat interval, include the `heartbeat_interval` parameter in the gNMI `SubscribeRequest`. This parameter specifies the duration between complete data updates, and you must choose a value that aligns with your network's performance requirements and resource capabilities. Consider the trade-offs between more frequent updates and the potential load on network resources when configuring this interval.

Setting the heartbeat interval impacts how the network's telemetry system handles data. With the periodic delivery of sensor data, the system can perform continuous state validation and detect anomalies or inconsistencies that might otherwise go unnoticed in a purely ON_CHANGE setup. This capability is essential for reliable network monitoring and management, as it provides a consistent flow of data to your monitoring systems, ensuring that any discrepancies are quickly identified and addressed. The integration with existing telemetry frameworks and gNMI subscriptions means that this feature can be seamlessly adopted into your current monitoring infrastructure, enhancing its robustness without necessitating significant changes.

Benefits of OpenConfig gNMI Heartbeat for On-Change Subscriptions

- Ensures continuous data validation by providing complete sensor datasets at regular intervals, maintaining data integrity even when no changes occur.
- Prevents undetected data loss by guaranteeing periodic updates, which is crucial for reliable network monitoring and management.
- Allows for optimized resource management by configuring the heartbeat interval to balance performance demands with available network resources.
- Enhances troubleshooting capabilities through access to detailed statistics and operational insights via the `show network agent statistics`.
- Integrates seamlessly with existing telemetry systems and gNMI subscriptions, expanding monitoring potential without requiring substantial changes to current setups.

Configure and Monitor gNMI Heartbeat Interval

To configure the OpenConfig gNMI Heartbeat interval, set the `heartbeat_interval` in gNMI `SubscribeRequest`.



NOTE: The minimum value for the interval is set to 2 seconds, allowing for frequent data validation without overwhelming network resources. This regular data delivery is critical for maintaining data integrity and preventing potential data loss, particularly in scenarios where ON_CHANGE events are sparse or infrequent.

Once configured, the `show network agent statistics` command becomes a vital tool for monitoring the effectiveness of your heartbeat setup. This command provides comprehensive statistics that include details of per-sensor and per-client configurations, allowing you to assess the feature's performance across different network segments. By regularly reviewing these statistics, you can identify any discrepancies or performance issues, ensuring that your telemetry system continues to operate optimally. Additionally, these insights can guide adjustments to the heartbeat interval, helping you maintain an ideal balance between data reliability and network efficiency.

3

CHAPTER

OpenConfig to Junos Mapping

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- Mapping OpenConfig AAA Commands to Junos Operation | 41
- Mapping OpenConfig BGP Commands to Junos Configuration | 53
- Mapping OpenConfig BFD Commands to Junos Operation | 72
- Mapping OpenConfig Firewall Filter Commands to Junos Configuration | 78
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- Mapping OpenConfig LACP Commands to Junos Configuration | 149
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Mapping OpenConfig 802.1X Commands to Junos Configuration

IN THIS SECTION

- 802.1X Interface Configuration | 36



NOTE: See [Junos YANG Data Model Explorer](#) for supported versions of the OpenConfig data model.

802.1X Interface Configuration

See [Table 3 on page 37](#) for configuration mappings of the following OpenConfig paths under `/oc-if:interfaces/oc-if:interface/oc-eth:ethernet/oc-1x:dot1x/oc-1x:config/`:

- `authenticate-port`
- `host-mode`
- `reauthenticate-interval`
- `retransmit-interval`
- `supplicant-timeout`
- `max-requests`
- `server-fail-vlan`
- `auth-fail-vlan`

Table 3: 802.1X Configuration

<i>Command</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
Authenticate port	<pre> openconfig-interfaces:interfaces { interface ge-0/0/3 { openconfig-if-ethernet:ethernet { openconfig-1x:dot1x { config { authenticate-port; } } } } } </pre>	<pre> protocols { dot1x { authenticator { interface <> { disable; } } } } </pre>

OpenConfig path: **/oc-if:interfaces/oc-if:interface/oc-eth:ethernet/oc-1x:dot1x/oc-1x:config/authenticate-port**

Host (supplicant) mode	<pre> openconfig-interfaces:interfaces { interface ge-0/0/3 { openconfig-if-ethernet:ethernet { openconfig-1x:dot1x { config { host-mode <>; } } } } } </pre>	<pre> protocols { dot1x { authenticator { interface <> { supplicant <>; } } } } </pre>
------------------------	---	--

OC options for host-mode are SINGLE_HOST, MULTI_HOST, and MULTI_DOMAIN.

Junos options for supplicant mode are single, single-secure, and multiple.

OpenConfig path: **/oc-if:interfaces/oc-if:interface/oc-eth:ethernet/oc-1x:dot1x/oc-1x:config/host-mode**

Table 3: 802.1X Configuration (Continued)

Command	OpenConfig Configuration	Junos Configuration
Reauthenticate interval	<pre> openconfig-interfaces:interfaces { interface ge-0/0/3 { openconfig-if-ethernet:ethernet { openconfig-1x:dot1x { config { reauthenticate-interval <>; } } } } } </pre>	<pre> protocols { dot1x { authenticator { interface <> { reauthentication <>; } } } } </pre>

You can configure the reauthentication interval for 1 to 65535 seconds.

OpenConfig path: **/oc-if:interfaces/oc-if:interface/oc-eth:ethernet/oc-1x:dot1x/oc-1x:config/reauthenticate-interval**

Retransmit interval	<pre> openconfig-interfaces:interfaces { interface ge-0/0/3 { openconfig-if-ethernet:ethernet { openconfig-1x:dot1x { config { retransmit-interval <>; } } } } } </pre>	<pre> protocols { dot1x { authenticator { interface <> { transmit-period <>; } } } } </pre>
---------------------	---	---

You can configure the retransmit interval for 1 to 65535 seconds.

OpenConfig path: **/oc-if:interfaces/oc-if:interface/oc-eth:ethernet/oc-1x:dot1x/oc-1x:config/retransmit-interval**

Table 3: 802.1X Configuration (Continued)

Command	OpenConfig Configuration	Junos Configuration
Supplicant timeout	<pre> openconfig-interfaces:interfaces { interface ge-0/0/3 { openconfig-if-ethernet:ethernet { openconfig-1x:dot1x { config { supplicant-timeout <>; } } } } } </pre>	<pre> protocols { dot1x { authenticator { interface <> { supplicant-timeout <>; } } } } </pre>

You can configure the supplicant timeout for 1 to 60 seconds.

OpenConfig path: **/oc-if:interfaces/oc-if:interface/oc-eth:ethernet/oc-1x:dot1x/oc-1x:config/supplicant-timeout**

Maximum requests	<pre> openconfig-interfaces:interfaces { interface ge-0/0/3 { openconfig-if-ethernet:ethernet { openconfig-1x:dot1x { config { max-requests <>; } } } } } </pre>	<pre> protocols { dot1x { authenticator { interface <> { maximum-requests <>; } } } } </pre>
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You can configure 1 to 10 maximum requests.

OpenConfig path: **/oc-if:interfaces/oc-if:interface/oc-eth:ethernet/oc-1x:dot1x/oc-1x:config/max-requests**

Table 3: 802.1X Configuration (Continued)

Command	OpenConfig Configuration	Junos Configuration
Server fail VLAN	<pre> openconfig-interfaces:interfaces { interface ge-0/0/3 { openconfig-if-ethernet:ethernet { openconfig-1x:dot1x { config { server-fail-vlan <>; } } } } } </pre>	<pre> protocols { dot1x { authenticator { interface <> { server-fail { vlan-name <>; } } } } } </pre>

OpenConfig path: /oc-if:interfaces/oc-if:interface/oc-eth:ethernet/oc-1x:dot1x/oc-1x:config/server-fail-vlan

Authentication fail (server reject) VLAN	<pre> openconfig-interfaces:interfaces { interface ge-0/0/3 { openconfig-if-ethernet:ethernet { openconfig-1x:dot1x { config { auth-fail-vlan <>; } } } } } </pre>	<pre> protocols { dot1x { authenticator { interface <> { server-reject-vlan { vlan-name <>; } } } } } </pre>
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OpenConfig path: /oc-if:interfaces/oc-if:interface/oc-eth:ethernet/oc-1x:dot1x/oc-1x:config/auth-fail-vlan

Mapping OpenConfig AAA Commands to Junos Operation



NOTE: To understand the data models supported version and its Junos OS release for Juniper Networks ACX Series, EX Series, MX Series, PTX Series, and QFX Series, see the [Junos YANG Data Model Explorer](#).

The following tables show the mapping of OpenConfig AAA configurations with the relevant configuration in Junos OS.

- [Table 4 on page 41](#): Global AAA Configuration
- [Table 5 on page 42](#): RADIUS Server Configuration
- [Table 6 on page 44](#): Accounting Event Configuration
- [Table 7 on page 44](#): Accounting-method Configuration
- [Table 8 on page 45](#): Authorization Roles Configuration
- [Table 9 on page 46](#): Authorization Permissions Configuration: Authorization Permissions Configuration
- [Table 10 on page 47](#): Authorization Permissions Configuration
- [Table 11 on page 48](#): Authorization Policies and request-regex Configuration
- [Table 12 on page 50](#): TACACS Server Configuration
- [Table 13 on page 51](#): AAA Admin and User Configuration

Table 4: Global AAA Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
	Command path prefix: <code>/system/aaa</code>	

Table 4: Global AAA Configuration (*Continued*)

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Config-Name	/server-groups/server-group/ config/name	Not supported NOTE: There is no equivalent configuration in the Junos OS for this path. The configured server group name is used in the RADIUS/TACACS attributes configuration.
Server-Config-Address	/server-groups/server-group/ servers/server/config/address	Not supported NOTE: There is no equivalent configuration in the Junos OS for this path. The configured server address is used in the RADIUS/TACACS attributes configuration.
Server-Config-Name	/server-groups/server-group/ servers/server/config/name	Not supported NOTE: There is no equivalent configuration in the Junos OS for this path. You can configure a server name to identify the server.
Config-Timeout	/server-groups/server-group/ servers/server/config/timeout	Not supported NOTE: There is no equivalent configuration in the Junos OS for this path. However, the timeout configured is derived from the timeout parameter at the Junos OS edit radius-server or edit tacplus-server hierarchy level.

Table 5: RADIUS Server Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
	Command path prefix: /system/aaa	

Table 5: RADIUS Server Configuration (Continued)

Command Name	OpenConfig Command Path	Junos Configuration
Auth-Port	/server-groups/server-group/servers/server/radius/config/auth-port	set system radius-server <i>address</i> port <i>port</i> NOTE: The <i>address</i> value is derived from the value configured after server. The <i>port</i> value is the same value as <i>auth-port</i> .
Retransmit-Attempts	/server-groups/server-group/servers/server/radius/config/retransmit-attempts	set system radius-server <i>address</i> retry <i>retry</i> NOTE: The <i>address</i> value is derived from the value configured after server. The <i>retry</i> value is the same value as that specified for retransmit-attempts.
Secret-Key	/server-groups/server-group/servers/server/radius/config/secret-key	set system radius-server <i>address</i> secret <i>secret</i> NOTE: The <i>address</i> value is derived from the value configured after server. The <i>secret</i> value is the same value as that specified for secret-key.
Source-Address	/server-groups/server-group/servers/server/radius/config/source-address	set system radius-server <i>address</i> source-address <i>source-address</i> NOTE: The <i>address</i> value is derived from the value configured after server. The <i>source-address</i> value is the same value as that specified for source-address.

Table 6: Accounting Event Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Event	<pre> openconfig-system:system { aaa { accounting { events { event <event-type>{ config { event-type <value> } } } } } } </pre>	<pre> system { accounting { events [...]; } } </pre>

The OpenConfig configuration has two values for for event-type:

- AAA_ACCOUNTING_EVENT which maps to Junos OS event type interactive-commands
- AAA_ACCOUNTING_EVENT_LOGIN which maps to Junos OS even type login

Table 7: Accounting-method Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Accounting-method	<pre> openconfig-system:system { aaa { accounting { config { accounting-method } } } } </pre>	<pre> system { accounting { destination { radius / tacplus { server { <name> secret <>; <name> secret <>; } } } } } </pre>

Table 7: Accounting-method Configuration *(Continued)*

Command Name	OpenConfig Configuration	Junos Configuration
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The OpenConfig values for accounting-method are TACACS_ALL, RADIUS_ALL, abd LOCAL. The OpenConfig accounting-method configuration in combination with the server-groups configuration generates the Junos hierarchy /system/accounting/destination.

Table 8: Authorization Roles Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Roles	<pre>openconfig-system:system { aaa { authorization { roles { role <rolename> { } } } } }</pre>	<pre>system { login { class <name> { } } }</pre>

The OpenConfig user-defined role maps to the Junos login classes parameter.

Table 9: Authorization Permissions Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Permissions	<pre>openconfig-system:system { aaa { authorization { roles { role <rolename> { permissions [...]; } } } } }</pre>	<pre>system { login { class <name> { permissions [...]; } } }</pre>

The OpenConfig user-defined permissions is a leaf-list and maps to the Junos leaf-list permissions parameter.

Possible OpenConfig values for permissions and their corresponding Junos values are:

OpenConfig	Junos
ADMIN	admin
ADMIN CONTROL	admin-control
ALL	all
MAINTENANCE	maintenance
VIEW	view
VIEW_CONFIG	view-configuration

Table 10: Authorization Permissions Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Permissions	<pre>openconfig-system:system { aaa { authorization { roles { role foo { config { policies { policy PERMIT REQUEST_RPC { request-regex /gnmi.gNMI/ } } } } } } } }</pre>	<pre>system { login { class foo { allow-grpc-rpc- regexps /gnmi.gNMI/Set; } } }</pre>

Table 11: Authorization Policies and request-regex Configuration

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
Policies	<pre> openconfig-system:system { aaa { authorization { roles { role foo { config { policies { policy <action> <request- type> { request-regex [...]; } } } } } } } } </pre>	<pre> system { login { class foo { deny-commands-regexps [...]; OR allow-commands- regexps [...]; OR deny-configuration- regexps [...]; OR allow-configuration- regexps [...]; OR deny-grpc-rpc-regexps [...]; OR allow-grpc-rpc- regexps [...]; } } } </pre>

Table 11: Authorization Policies and request-regex Configuration (Continued)

Command Name	OpenConfig Configuration	Junos Configuration
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The OpenConfig policies configuration is translated into different allow and deny (*regexps) parameters. Possible OpenConfig values for action, request-type, and request-regex translate to the following Junos configuration parameters:

action	request-type	OpenConfig request-regex translates to:
PERMIT	REQUEST_CONFIG	allow-configuration-regexps
DENY	REQUEST_CONFIG	deny-configuration-regexps
PERMIT	REQUEST_RPC	allow-grpc-rpc-regexps
DENY	REQUEST_RPC	deny-grpc-rpc-regexps
PERMIT	REQUEST_COMMAND	allow-commands-regexps
DENY	REQUEST_COMMAND	deny-commands-regexps

Example	<pre>openconfig-system:system { aaa { authorization { roles { role foo { config { rolename foo; policies { policy DENY } } } } } } }</pre>	<pre>system { login { class foo { deny-commands-regexps ["clear interfaces" "show interfaces"]; } } }</pre>
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Table 11: Authorization Policies and request-regex Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
Example	<pre> openconfig-system:system { aaa { authorization { roles { role foo { config { policies { policy PERMIT } } } } } } } </pre>	<pre> system { login { class foo { allow-grpc-rpc- regexps /gnmi.gNMI/Set; } } } </pre>

Table 12: TACACS Server Configuration

Command Name	OpenConfig Command Path	Junos Configuration
	Command path prefix: /system/aaa	
Config-Port	/server-groups/server-group/servers/server/tacacs/config/port	set system tacplus-server <i>address</i> port <i>port</i> NOTE: The <i>address</i> value is derived from the value configured after server . The <i>port</i> value is the same value as that specified for port.

Table 12: TACACS Server Configuration (*Continued*)

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Secret-Key	/server-groups/server-group/servers/server/ tacacs/config/secret-key	set system tacplus-server <i>address</i> secret <i>secret</i> NOTE: The <i>address</i> value is derived from the value configured after server. The <i>secret</i> value is the same value as that specified for secret-key.
Source-Address	/server-groups/server-group/servers/server/ tacacs/config/source-address	set system tacplus-server <i>address</i> source-address <i>source-address</i> NOTE: The <i>address</i> value is derived from the value configured after server. The <i>source-address</i> value is the same value as that specified for source-address.

Table 13: AAA Admin and User Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
	Command path prefix: /system/aaa	
Admin-Password	/authentication/admin-user/config/admin- password	set system root-authentication <i>plain-text-password</i> NOTE: The <i>plain-text-password-</i> <i>authentication</i> value is derived from the value configured for admin-password.

Table 13: AAA Admin and User Configuration (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
Admin-Password-Hashed	/authentication/admin-user/config/admin-password-hashed	set system root-authentication encrypted-password <i>encrypted-password</i> NOTE: The <i>encrypted-password</i> value is derived from the value configured for admin-password-hashed.
Authentication-Method	/authentication/config/authentication-method	set system authentication-order NOTE: The <i>authentication-order</i> value is derived from the value configured for authentication-method.
Password	/authentication/users/user/config/password	set system login user <i>user-name</i> authentication plain-text-password <i>plain-text-password</i> NOTE: The <i>user-name</i> value is derived from the value configured for user. The <i>plain-text-password</i> value is derived from the value configured for password.
Password-Hashed	/authentication/users/user/config/password-hashed	set system login user <i>user-name</i> authentication encrypted-password <i>encrypted-password</i> NOTE: The <i>user-name</i> value is derived from the value configured for user. The <i>encrypted-password</i> value is derived from the value configured for password-hashed.

Table 13: AAA Admin and User Configuration (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
Role	/authentication/users/user/config/role	set system login user <i>user-name</i> class <i>class</i> NOTE: The <i>user-name</i> value is derived from the value configured for user. The <i>class</i> value is derived from the value configured for role.
Username	/authentication/users/user/config/username	Not supported NOTE: There is no equivalent configuration in the Junos OS.

Mapping OpenConfig BGP Commands to Junos Configuration

IN THIS SECTION

- [AFI-SAFI Prefix-Limit Configuration | 54](#)
- [AFI-SAFI Prefix-Limit Received Configuration | 56](#)



NOTE: See [Junos YANG Data Model Explorer](#) topic to understand the data models supported version and its Junos OS release for Juniper Networks MX Series, PTX Series, and QFX Series.

The following tables show the mapping of OpenConfig BGP commands with the relevant configuration in Junos.

AFI-SAFI Prefix-Limit Configuration

Table 14: SRTE Policy Prefix-Limit Configuration

Command Name	OpenConfig Command Path	Junos Configuration
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Command path prefixes:

- IPv4—/network-instances/network-instance/protocols/protocol/bgp/peer-groups/peer-group/afi-safi/afi-safi-name/<afi-safi-name>/srte-policy-ipv4
- IPv6—/network-instances/network-instance/protocols/protocol/bgp/peer-groups/peer-group/afi-safi/afi-safi-name/<afi-safi-name>/srte-policy-ipv6

Max-Prefixes	/prefix-limit-received/config/max-prefixes	<pre>protocols { bgp { group <> { family (inet inet6) { segment-routing-te { prefix-limit { maximum <>; } } } } } }</pre>
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Table 14: SRTE Policy Prefix-Limit Configuration (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
Prevent- Teardown	/prefix-limit-received/config/prevent-teardown	<pre> protocols { bgp { group <> { family (inet inet6) { segment-routing-te { prefix-limit { teardown; } } } } } } </pre>
Warning- Threshold-PCT	/prefix-limit-received/config/warning-threshold-pct	<pre> protocols { bgp { group <> { family (inet inet6) { segment-routing-te { prefix-limit { teardown <>; } } } } } } </pre>

AFI-SAFI Prefix-Limit Received Configuration

Table 15: Unicast Prefix-Limit-Received Configuration

Command Name	OpenConfig Command Path	Junos Configuration
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Command path prefixes:

- IPv4—/network-instances/network-instance/protocols/protocol/bgp/peer-groups/peer-group/afi-safi/afi-safi-name/<afi-safi-name>/ipv4-unicast
- IPv6—/network-instances/network-instance/protocols/protocol/bgp/peer-groups/peer-group/afi-safi/afi-safi-name/<afi-safi-name>/ipv6-unicast

Max-Prefixes	/prefix-limit-received/config/max-prefixes	<pre>protocols { bgp { group <> { family (inet inet6) { unicast { prefix-limit { maximum <>; } } } } } }</pre>
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Table 15: Unicast Prefix-Limit-Received Configuration (*Continued*)

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Prevent-Teardown	/prefix-limit-received/config/prevent-teardown	<pre> protocols { bgp { group <> { family (inet inet6) { unicast { prefix-limit { teardown; } } } } } } </pre>
Warning-Threshold-PCT	/prefix-limit-received/config/warning-threshold-pct	<pre> protocols { bgp { group <> { family (inet inet6) { unicast { prefix-limit { teardown <>; } } } } } } </pre>

Table 16: Policy Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
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Command path prefixes:

- openconfig-network-instance/network-instances/

Table 16: Policy Configuration (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
Peer Group Export Policy	<pre> network-instance DEFAULT { config { type DEFAULT_INSTANCE; } protocols { protocol BGP bgp { bgp { neighbors { neighbor 1.1.1.1 { config { peer-group ext; } afi-safis { afi-safi } } } } } } } </pre>	<pre> protocols { bgp { group ext { type internal; local-as 200; neighbor 1.1.1.1 { family inet { unicast { export } } } } } } </pre>

Table 16: Policy Configuration (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
Peer Group Import Policy	<pre> network-instance DEFAULT { config { type DEFAULT_INSTANCE; } protocols { protocol BGP bgp { bgp { peer-groups { peer-group ext { config { local-as 200; peer-type INTERNAL; } afi-safis { afi-safi IPV4_UNICAST { apply-policy { config { import- policy send-direct; } } } } } } } } } } } </pre>	<pre> protocols { bgp { group ext { type internal; family inet { unicast { import send- direct; } } local-as 200; } } } </pre>

Table 16: Policy Configuration (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
Neighbor Export Policy	<pre> network-instance DEFAULT { config { type DEFAULT_INSTANCE; } protocols { protocol BGP bgp { bgp { neighbors { neighbor 1.1.1.1 { config { peer-group ext; } afi-safis { afi-safi IPV4_UNICAST { apply-policy { config { export- policy send-direct; } } } } } } } } } } } </pre>	<pre> protocols { bgp { group ext { type internal; local-as 200; neighbor 1.1.1.1 { family inet { unicast { export send-direct; } } } } } } </pre>

Table 16: Policy Configuration (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
Neighbor Import Policy	<pre> network-instance DEFAULT { config { type DEFAULT_INSTANCE; } protocols { protocol BGP bgp { bgp { neighbors { neighbor 1.1.1.1 { config { peer-group ext; } afi-safis { afi-safi IPV4_UNICAST { apply-policy { config { import- policy send-direct; } } } } } } } } } } } </pre>	<pre> protocols { bgp { group ext { type internal; local-as 200; neighbor 1.1.1.1 { family inet { unicast { import send-direct; } } } } } } </pre>

Table 16: Policy Configuration (*Continued*)

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Global Export Policy	Not Supported	<pre> protocols { bgp { family inet { unicast { export send- direct; } } } } </pre>
Global Import Policy	Not Supported	<pre> protocols { bgp { family inet { unicast { import send- direct; } } } } </pre>

NOTE: OpenConfig configuration of export and import policies under the afi-sai hierarchy level is only supported for IPv4 and IPv6 unicast.

Table 17: Labeled-Unicast Prefix-Limit-Received Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
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Command path prefixes:

- IPv4—/network-instances/network-instance/protocols/protocol/bgp/peer-groups/peer-group/afi-safi/afi-safi-name/ <afi-safi-name>/ipv4-labeled-unicast
- IPv6—/network-instances/network-instance/protocols/protocol/bgp/peer-groups/peer-group/afi-safi/afi-safi-name/ <afi-safi-name>/ipv6-labeled-unicast
- L3 VPN-IPv4—/network-instances/network-instance/protocols/protocol/bgp/peer-groups/peer-group/afi-safi/afi-safi-name/ <afi-safi-name>/l3vpn-ipv4-unicast
- L3 VPN-IPv6—/network-instances/network-instance/protocols/protocol/bgp/peer-groups/peer-group/afi-safi/afi-safi-name/ <afi-safi-name>/l3vpn-ipv6-unicast

Max-Prefixes	/prefix-limit-received/config/max-prefixes	<pre> protocols { bgp { group <> { family (inet inet6 inet-vpn inet6-vpn) { labeled-unicast { prefix-limit { maximum <>; } } } } } } </pre>
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Table 17: Labeled-Unicast Prefix-Limit-Received Configuration (Continued)

Command Name	OpenConfig Command Path	Junos Configuration
Prevent- Teardown	/prefix-limit-received/config/prevent-teardown	<pre> protocols { bgp { group <> { family (inet inet6 inet-vpn inet6-vpn) { labeled-unicast { prefix-limit { teardown; } } } } } } </pre>
Warning- Threshold-PCT	/prefix-limit-received/config/warning-threshold-pct	<pre> protocols { bgp { group <> { family (inet inet6 inet-vpn inet6-vpn) { labeled-unicast { prefix-limit { teardown <>; } } } } } } </pre>

Table 18: L3 VPN Multicast Prefix-Limit-Received Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
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Command path prefixes:

- IPv4—/network-instances/network-instance/protocols/protocol/bgp/peer-groups/peer-group/afi-safi/afi-safi-name/<afi-safi-name>/l3vpn-ipv4-multicast
- IPv6—/network-instances/network-instance/protocols/protocol/bgp/peer-groups/peer-group/afi-safi/afi-safi-name/<afi-safi-name>/l3vpn-ipv6-multicast

Max-Prefixes	/prefix-limit-received/config/max-prefixes	<pre> protocols { bgp { group <> { family (inet-vpn inet6-vpn) { multicast { prefix-limit { maximum <>; } } } } } } </pre>
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Table 18: L3 VPN Multicast Prefix-Limit-Received Configuration (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
Prevent-Teardown	/prefix-limit-received/config/prevent-teardown	<pre> protocols { bgp { group <> { family (inet-vpn inet6-vpn) { labeled-unicast { prefix-limit { teardown; } } } } } }</pre>
Warning-Threshold-PCT	/prefix-limit-received/config/warning-threshold-pct	<pre> protocols { bgp { group <> { family (inet-vpn inet6-vpn) { labeled-unicast { prefix-limit { teardown <>; } } } } } }</pre>

Table 19: L2 VPN VPLS Prefix-Limit-Received Configuration

Command Name	OpenConfig Command Path	Junos Configuration
Command path prefix: <ul style="list-style-type: none"> /network-instances/network-instance/protocols/protocol/bgp/peer-groups/peer-group/afi-safi/afi-safi-name/<afi-safi-name>/l2vpn-vpls 		
Max-Prefixes	/prefix-limit-received/config/max-prefixes	<pre> protocols { bgp { group <> { family l2vpn { signaling { prefix-limit { maximum <>; } } } } } } </pre>
Prevent-Teardown	/prefix-limit-received/config/prevent-teardown	<pre> protocols { bgp { group <> { family l2vpn { signaling { prefix-limit { teardown; } } } } } } </pre>

Table 19: L2 VPN VPLS Prefix-Limit-Received Configuration (Continued)

Command Name	OpenConfig Command Path	Junos Configuration
Warning-Threshold-PCT	/prefix-limit-received/config/warning-threshold-pct	<pre> protocols { bgp { group <> { family l2vpn { signaling { prefix-limit { teardown <>; } } } } } } </pre>

Table 20: L2 VPN EVPN Prefix-Limit-Received Configuration

Command Name	OpenConfig Command Path	Junos Configuration
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Command path prefix:

- /network-instances/network-instance/protocols/protocol/bgp/peer-groups/peer-group/afi-safi/afi-safi-name/<afi-safi-name>/l2vpn-evpn

Table 20: L2 VPN EVPN Prefix-Limit-Received Configuration (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
Max-Prefixes	/prefix-limit-received/config/max-prefixes	<pre> protocols { bgp { group <> { family evpn { signaling { prefix-limit { maximum <>; } } } } } } </pre>
Prevent-Teardown	/prefix-limit-received/config/prevent-teardown	<pre> protocols { bgp { group <> { family evpn { signaling { prefix-limit { teardown; } } } } } } </pre>

Table 20: L2 VPN EVPN Prefix-Limit-Received Configuration (*Continued*)

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Warning-Threshold-PCT	/prefix-limit-received/config/warning-threshold-pct	<pre> protocols { bgp { group <> { family evpn { signaling { prefix-limit { teardown <>; } } } } } } </pre>

Table 21: SRTE Policy Prefix-Limit-Received Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
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Command path prefixes:

- IPv4—/network-instances/network-instance/protocols/protocol/bgp/peer-groups/peer-group/afi-safi/afi-safi-name/<afi-safi-name>/srte-policy-ipv4
- IPv6—/network-instances/network-instance/protocols/protocol/bgp/peer-groups/peer-group/afi-safi/afi-safi-name/<afi-safi-name>/srte-policy-ipv6

Table 21: SRTE Policy Prefix-Limit-Received Configuration (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
Max-Prefixes	/prefix-limit-received/config/max-prefixes	<pre> protocols { bgp { group <> { family (inet inet6) { segment-routing-te { prefix-limit { maximum <>; } } } } } } </pre>
Prevent-Teardown	/prefix-limit-received/config/prevent-teardown	<pre> protocols { bgp { group <> { family (inet inet6) { segment-routing-te { prefix-limit { teardown; } } } } } } </pre>

Table 21: SRTE Policy Prefix-Limit-Received Configuration (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
Warning-Threshold-PCT	/prefix-limit-received/config/warning-threshold-pct	<pre> protocols { bgp { group <> { family (inet inet6) { segment-routing-te { prefix-limit { teardown <>; } } } } } } </pre>

RELATED DOCUMENTATION

[Mapping OpenConfig Routing Policy Commands to Junos Configuration | 256](#)

[Mapping OpenConfig Interface Commands to Junos Configuration | 113](#)

[Mapping OpenConfig LLDP Commands to Junos Configuration | 159](#)

[Mapping OpenConfig Local Routing Commands to Junos Configuration | 161](#)

[Mapping OpenConfig MPLS Commands to Junos Configuration | 175](#)

Mapping OpenConfig BFD Commands to Junos Operation



NOTE: See [Junos YANG Data Model Explorer](#) topic to understand the data models supported version and its Junos OS release for Juniper Networks ACX Series, EX Series, MX Series, PTX Series, and QFX Series.

The following tables show the mapping of OpenConfig Bidirectional Forwarding Detection (BFD) configurations with the relevant configuration in Junos OS.

- [Table 22 on page 73](#): Interface Configuration
- [Table 23 on page 75](#): Interface Micro-bfd Session Configuration
- [Table 24 on page 77](#): Interface-ref Configuration

Table 22: Interface Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Interface ID	<pre> openconfig-bfd interfaces { interface <> { config{ id <>; } } } </pre>	Not supported

Not configurable in Junos or Junos Evolved. However, the id leaf value is obtained by Junos when BFD is enabled on the client's interface.

OpenConfig path: **/bfd/interfaces/interface/config/id**

Interface Name	<pre> openconfig-bfd interfaces { interface <> { config{ enabled; } } } </pre>	Not supported
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Not configurable in Junos or Junos Evolved. However, the name leaf is implicit when BFD is enabled on an interface.

OpenConfig path: **/bfd/interfaces/interface/config/enabled**

Table 22: Interface Configuration (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
Local address	<pre> openconfig-bfd interfaces { interface <> { config{ local-address <>; } } } </pre>	Not supported

Not configurable in Junos or Junos Evolved. However, the name leaf is implicit when BFD is enabled on an interface.

OpenConfig path: `/bfd/interfaces/interface/config/local-address`

Desired minimum transmit interval	<pre> openconfig-bfd interfaces { interface <> { config{ desired-minimum-tx- interval <>; } } } </pre>	<pre> interface { bfd-liveness-detection { transmit-interval { minimum-interval; } } } </pre>
-----------------------------------	--	---

OpenConfig path: `/bfd/interfaces/interface/config/desired-minimum-tx-interval`

Required minimum receive interval	<pre> openconfig-bfd interfaces { interface <> { config{ required-minimum-receive <>; } } } </pre>	<pre> interface { bfd-liveness-detection { minimum-receive-interval; } } </pre>
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OpenConfig path: `/bfd/interfaces/interface/config/required-minimum-receive`

Table 22: Interface Configuration (Continued)

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Detection multiplier	<pre> openconfig-bfd interfaces { interface <> { config{ detection-multiplier <>; } } } </pre>	<pre> interface { bfd-liveness-detection { multiplier ; } } </pre>

OpenConfig path: `/bfd/interfaces/interface/config/detection-multiplier`

Enable per member link	<pre> openconfig-bfd interfaces { interface <> { config{ enable-per-member-link } } } </pre>	Not supported
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OpenConfig path: `/bfd/interfaces/interface/config/enable-per-member-link/`

Table 23: Interface Micro-bfd Session Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Member interface	<pre> Openconfig-bfd interfaces { Interface <> { micro-bfd-sessions { micro-bfd-session { member-interface <>; } } } } </pre>	Not supported

Table 23: Interface Micro-bfd Session Configuration (Continued)

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
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Not configurable in Junos or Junos Evolved. However, the micro-bfd leaf value is enabled on all member interfaces by default.

OpenConfig path: **/bfd/interfaces/interface/micro-bfd-sessions/micro-bfd-session/member-interface**

Local address	<pre> Openconfig-bfd interfaces { Interface <> { micro-bfd-sessions { micro-bfd-session { config { local-address <>; } } } } } </pre>	<pre> interfaces { aggregated-ether-options { bfd-liveness-detection { local-address } } } </pre>
---------------	---	---

OpenConfig path: **/bfd/interfaces/interface//micro-bfd-sessions/micro-bfd-session/config/local-address**

Remote address	<pre> Openconfig-bfd interfaces { Interface <> { micro-bfd-sessions { micro-bfd-session { config { remote-address <>; } } } } } </pre>	<pre> interfaces { aggregated-ether-options { bfd-liveness-detection { neighbor <>; } } } </pre>
----------------	--	--

OpenConfig path: **/bfd/interfaces/interface/micro-bfd-sessions/micro-bfd-session/config/remote-address**

Table 24: Interface-ref Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Interface-ref	<pre> Openconfig-bfd interfaces { Interface <> { interface-ref { config { interface <>; } } } } </pre>	Not supported

Not configurable in Junos or Junos Evolved.

OpenConfig path: **/bfd/interfaces/interface/interface-ref/config/interface**

Subinterface	<pre> Openconfig-bfd interfaces { Interface <> { interface-ref { config { subinterface <>; } } } } </pre>	Not supported
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Not configurable in Junos or Junos Evolved. However, the subinterface leaf value is part of the interface name and parsed to form a Junos CLI "unit."

OpenConfig path: **/bfd/interfaces/interface/interface-ref/config/subinterface**

Mapping OpenConfig Firewall Filter Commands to Junos Configuration



NOTE: See [Junos YANG Data Model Explorer](#) topic to understand the data models supported version and its Junos OS release for Juniper Networks ACX Series, EX Series, MX Series, PTX Series, and QFX Series.

The following tables show the mapping of OpenConfig firewall filter commands with the relevant configuration in Junos OS:

- [Table 25 on page 79](#): Differentiated Services code point (DSCP) Filter Configuration
- [Table 26 on page 82](#): Google Discovery Protocol (GDP) and Traceroute Configuration
- [Table 27 on page 86](#): MPLS Filter Configuration
- [Table 28 on page 87](#): IPv4 Filter Configuration
- [Table 29 on page 94](#): IPv6 Filter Configuration
- [Table 30 on page 100](#): Bind Configuration
- [Table 31 on page 102](#): IPv6 Network Instance Filtering Configuration
- [Table 32 on page 107](#): Network Instance Action Filtering Configuration
- [Table 33 on page 109](#): Network Instance Bind Configuration

Table 25: Differentiated Services code point (DSCP) Filter Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Filter	<pre> network-instances { network-instance n1 { policy-forwarding { policies { policy dscp-steer { config { policy-id dscp-steer; } rules { rule 1 { config { sequence-id 1; } ipv4 { config { dscp <>; } } ipv6 { config { dscp <>; } } action { config { network- instance <>; } } } } } } } } } </pre>	<pre> firewall { family inet { filter dscp-steer-ipv4-n1 { term 1 { from { interface et-1/0/0.0; dscp <>; } then { routing-instance <>; } } term 2 { then accept; } } } family inet6 { filter dscp-steer-ipv6-n1 { term 1 { from { interface et-1/0/0.0; traffic-class <>; } then { routing-instance <>; } } term 2 { then accept; } } } } </pre>

Table 25: Differentiated Services code point (DSCP) Filter Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
Binding	<pre> network-instances { network-instance n1 { policy-forwarding { interfaces { interface et-1/0/0.0 { config { apply-forwarding-policy dscp_steer; } interface-ref { config { interface et-1/0/0; subinterface 0; } } } } } } } </pre>	<pre> routing-instances { n1 { forwarding-options { family inet { filter { input dscp-steer- ipv4-n1; } } family inet6 { filter { input dscp-steer- ipv6-n1; } } } } } </pre> <p>In case of binding to 'default' routing instance then following will be the junos config</p> <pre> forwarding-options { family inet { filter { input dscp-steer-ipv4- n1; } } family inet6 { filter { input dscp-steer-ipv6- n1; } } } </pre>

Table 25: Differentiated Services code point (DSCP) Filter Configuration *(Continued)*

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
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This OpenConfig DSCP configuration is intended to filter traffic routed to a specific port according to the following set of input criteria specified in the device configuration:

- An input Layer 3 interface
- DSCP enabled
- Using IP protocol as the transport

If there is no match, packets are filtered back to a default VRF context where they are routed according to the exposed header.

Table 26: Google Discovery Protocol (GDP) and Traceroute Filter Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Filter	<pre> acl-sets { acl-set gdp-trace-route-filter ACL_MIXED { config { name gdp-trace-route- filter; type ACL_MIXED; } acl-entries { acl-entry 1 { config { sequence-id 1; } l2 { config { ethertype 0x6007; } } actions { config { jnx-redirect <>; } } } acl-entry 2 { config { sequence-id 2; } ipv4 { config { hop-limit 0; } } actions { config { jnx-redirect <>; } } } } } } </pre>	<pre> firewall { family any { filter gdp-trace-route-filter { term 1 { from { ether-type 0x6007; } then redirect <>; } term 2 { from { ip-version { ipv4 { ttl 0; } } } then redirect <>; } term 3 { from { ip-version { ipv4 { ttl 1; } } } then redirect <>; } term 4 { from { ip-version { ipv6 { hop-limit 0; } } } then redirect <>; } term 5 { </pre>

Table 26: Google Discovery Protocol (GDP) and Traceroute Filter Configuration *(Continued)*

Command Name	OpenConfig Configuration	Junos Configuration
	<pre> acl-entry 3 { config sequence-id 3; } ipv4 { config { hop-limit 1; } } actions { config { jnx-redirect <>; } } acl-entry 4 { config sequence-id 4; } ipv6 { config { hop-limit 0; } } actions { config { jnx-redirect <>; } } acl-entry 5 { config sequence-id 5; </pre>	<pre> from { ip-version { ipv6 { hop-limit 1; } } } then redirect <>; } term 6 { then accept; } } } services { inline-monitoring { instance { <> { controller p4; } } } } </pre>

Table 26: Google Discovery Protocol (GDP) and Traceroute Filter Configuration *(Continued)*

Command Name	OpenConfig Configuration	Junos Configuration
	<pre> } ipv6 { config { hop-limit 1; } } actions { config { jnx-redirect <>; } } } acl-entry 6 { config { sequence-id 6; } actions { config { forwarding- action ACCEPT; } } } }</pre>	

The Junos redirect statement corresponds to the redirect action in the filter term. Inline monitoring is configured implicitly. The instance-name under the redirect statement cannot be modified. You need to delete the redirect statement and commit the configuration again.

Table 26: Google Discovery Protocol (GDP) and Traceroute Filter Configuration *(Continued)*

Command Name	OpenConfig Configuration	Junos Configuration
Binding	<pre> interfaces { interface et-0/0/1 { config { id et-0/0/1; } interface-ref { config { interface et-0/0/1; subinterface 4000; } } ingress-acl-sets { ingress-acl-set gdp- trace-route-filter ACL_MIXED { config { set-name gdp- trace-route-filter; type ACL_MIXED; } } } } } </pre>	<pre> /* gdp-trace-route-filter binding */ interfaces { et-0/0/1 { unit 4000 { filter { input gdp-trace-route-filter; } } } } </pre>

Table 27: MPLS Filter Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Traffic class	<pre> acl-sets { acl-set <> ACL_MPLS { acl-entries { acl-entry 1 { mpls { config { traffic-class <>; } } } } } } </pre>	<pre> family mpls { filter <> { term <> { from { exp0 <>; } } } } </pre>
OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/mpls/config/traffic-class		
Start label value	<pre> acl-sets { acl-set <> ACL_MPLS { acl-entries { acl-entry 1 { mpls { config { start-label-value <>; } } } } } } </pre>	<pre> family mpls { filter <> { term <> { from { label 0 <>; } } } } </pre>
OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/mpls/config/start-label-value		

Table 27: MPLS Filter Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
End label value	<pre> acl-sets { acl-set <> ACL_MPLS { acl-entries { acl-entry 1 { mpls { config { end-label-value <>; } } } } } } </pre>	<pre> family mpls { filter <> { term <> { from { label 0 <>; } } } } </pre>

OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/mpls/config/end-label-value

Table 28: IPv4 Filter Configuration

Command Name	OpenConfig Configuration	Junos Configuration
destination address	<pre> acl-sets { acl-set <> ACL_IPV4 { acl-entries { acl-entry <> { ipv4 { config { destination-address <>; } } } } } } </pre>	<pre> firewall { family inet { filter <> { term <> { from { destination- address { <>; } } } } } } </pre>

OpenConfig path: acl/acl-sets/acl-set/acl-entries/acl-entry/ipv4/config/destination-address

Table 28: IPv4 Filter Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
DSCP	<pre> acl-sets { acl-set <> ACL_IPV4 { acl-entries { acl-entry <> { ipv4 { config { dscp <>; } } } } } } </pre>	<pre> Firewall { family inet { filter <> { term <> { from { dscp <>; } } } } } </pre>
OpenConfig path: acl/acl-sets/acl-set/acl-entries/acl-entry/ipv4/config/dscp		
hop limit	<pre> acl-sets { acl-set <> ACL_IPV4 { acl-entries { acl-entry <> { ipv4 { config { hop-limit <>; } } } } } } </pre>	<pre> firewall { family inet { filter <> { term <> { from { ttl <>; } } } } } </pre>
OpenConfig path: acl/acl-sets/acl-set/acl-entries/acl-entry/ipv4/config/hop-limit		

Table 28: IPv4 Filter Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
protocol	<pre> acl-sets { acl-set <> ACL_IPV4 { acl-entries { acl-entry <> { ipv4 { config { protocol <>; } } } } } } </pre>	<pre> firewall { family inet { filter <> { term <> { from { protocol <>; } } } } } </pre>
OpenConfig path: acl/acl-sets/acl-set/acl-entries/acl-entry/ipv4/config/protocol		
source address	<pre> acl-sets { acl-set <> ACL_IPV4 { acl-entries { acl-entry <> { ipv4 { config { source-address <>; } } } } } } </pre>	<pre> firewall { family inet { filter <> { term <> { from { source-address { <>; } } } } } } </pre>
OpenConfig path: acl/acl-sets/acl-set/acl-entries/acl-entry/ipv4/config/source-address		

Table 28: IPv4 Filter Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
destination port	<pre> acl-sets { acl-set <> ACL_IPV4 { acl-entries { acl-entry <> { transport { config { destination-port <>; } } } } } } </pre>	<pre> firewall { family inet { filter <> { term <> { from { destination-port <>; } } } } } </pre>

OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/transport/config/destination-port

source port	<pre> acl-sets { acl-set <> ACL_IPV4 { acl-entries { acl-entry <> { transport { config { source-port <>; } } } } } } </pre>	<pre> firewall { family inet { filter <> { term <> { from { source-port <>; } } } } } </pre>
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OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/transport/config/source-port

Table 28: IPv4 Filter Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
TCP flags	<pre> acl-sets { acl-set <> ACL_IPV4 { acl-entries { acl-entry <> { transport { config { tcp-flags <>; } } } } } } </pre>	<pre> firewall { family inet { filter <> { term <> { from { tcp-flags <>; } } } } } </pre>

OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/transport/config/tcp-flags

interface	<pre> acl-sets { acl-set <> ACL_IPV4 { acl-entries { acl-entry <> { input-interface { interface-ref { config { interface <>; subinterface <>; } } } } } } } </pre>	<pre> firewall { family inet { filter <> { term <> { from { interface <>; } } } } } </pre>
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OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/input-interface/interface-ref/config/interface-subinterface

Table 28: IPv4 Filter Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
forwarding-action ACCEPT	<pre> acl-sets { acl-set <> ACL_IPV4 { acl-entries { acl-entry <> { actions { config { forwarding-action ACCEPT; } } } } } } </pre>	<pre> firewall { family inet { filter <> { term <> { then accept; } } } } </pre>
OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/actions/config/forwarding-action		
forwarding-action DROP	<pre> acl-sets { acl-set <> ACL_IPV4 { acl-entries { acl-entry <> { actions { config { forwarding-action DROP; } } } } } } </pre>	<pre> firewall { family inet { filter <> { term <> { then { discard; } } } } } </pre>
OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/actions/config/forwarding-action		

Table 28: IPv4 Filter Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
forwarding-action REJECT	<pre> acl-sets { acl-set <> ACL_IPV4 { acl-entries { acl-entry <> { actions { config { forwarding-action REJECT; } } } } } } </pre>	<pre> firewall { family inet { filter <> { term <> { then { reject; } } } } } </pre>
OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/actions/config/forwarding-action		
log-action LOG_SYSLOG	<pre> acl-sets { acl-set <> ACL_IPV4 { acl-entries { acl-entry <> { actions { config { log-action LOG_SYSLOG; } } } } } } </pre>	<pre> firewall { family inet { filter <> { term <> { then syslog; } } } } </pre>
OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/actions/config/log-action		

Table 29: IPv6 Filter Configuration

Command Name	OpenConfig Configuration	Junos Configuration
destination address	<pre> acl-sets { acl-set <> ACL_IPV6 { acl-entries { acl-entry <> { ipv6 { config { destination-address } } } } } } </pre>	<pre> firewall { family inet6 { filter <> { term <> { from { destination-address { <>; } } } } } } </pre>

OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/ipv6/config/destination-address

hop limit	<pre> acl-sets { acl-set <> ACL_IPV6 { acl-entries { acl-entry <> { ipv6 { config { hop-limit <>; } } } } } } </pre>	<pre> firewall { family inet6 { filter <> { term <> { from { hop-limit <>; } } } } } </pre>
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OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/ipv6/config/hop-limit

Table 29: IPv6 Filter Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
protocol	<pre> acl-sets { acl-set <> ACL_IPV6 { acl-entries { acl-entry <> { ipv6 { config { protocol <>; } } } } } } </pre>	<pre> firewall { family inet6 { filter <> { term <> { from { next-header <>; } } } } } </pre>
OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/ipv6/config/protocol		
source address	<pre> acl-sets { acl-set <> ACL_IPV6 { acl-entries { acl-entry <> { ipv6 { config { source-address <>; } } } } } } </pre>	<pre> firewall { family inet6 { filter <> { term <> { from { source-address { <>; } } } } } } </pre>
OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/ipv6/config/source-address		

Table 29: IPv6 Filter Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
DSCP	<pre> acl-sets { acl-set <> ACL_IPV6 { acl-entries { acl-entry <> { ipv6 { config { dscp <>; } } } } } } </pre>	<pre> firewall { family inet6 { filter <> { term <> { from { traffic-class <>; } } } } } </pre>
OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/ipv6/config/dscp		
destination port	<pre> acl-sets { acl-set <> ACL_IPV6 { acl-entries { acl-entry <> { transport { config { destination-port <>; } } } } } } </pre>	<pre> firewall { family inet6 { filter <> { term <> { from { destination-port <>; } } } } } </pre>
OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/transport/config/destination-port		

Table 29: IPv6 Filter Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
source port	<pre> acl-sets { acl-set <> ACL_IPV6 { acl-entries { acl-entry <> { transport { config { source-port <>; } } } } } } </pre>	<pre> firewall { family inet6 { filter <> { term <> { from { source-port <>; } } } } } </pre>
OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/transport/config/source-port		
TCP flags	<pre> acl-sets { acl-set <> ACL_IPV6 { acl-entries { acl-entry <> { transport { config { tcp-flags <>; } } } } } } </pre>	<pre> firewall { family inet6 { filter <> { term <> { from { tcp-flags <>; } } } } } </pre>
OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/transport/config/tcp-flags		

Table 29: IPv6 Filter Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
interface	<pre> acl-sets { acl-set <> ACL_IPV6 { acl-entries { acl-entry <> { input-interface { interface-ref { config { interface <>; subinterface <>; } } } } } } } </pre>	<pre> firewall { family inet6 { filter <> { term <> { from { interface <>; } } } } } </pre>

OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/input-interface/interface-ref/config/interface

forwarding-action ACCEPT	<pre> acl-sets { acl-set <> ACL_IPV6 { acl-entries { acl-entry <> { actions { config { forwarding-action ACCEPT; } } } } } } </pre>	<pre> firewall { family inet6 { filter <> { term <> { then accept; } } } } </pre>
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OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/actions/config/forwarding-action

Table 29: IPv6 Filter Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
forwarding-action DROP	<pre> acl-sets { acl-set <> ACL_IPV6 { acl-entries { acl-entry <> { actions { config { forwarding-action } } } } } } </pre>	<pre> firewall { family inet6 { filter <> { term <> { then discard; } } } } </pre>
OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/actions/config/forwarding-action		
forwarding-action REJECT	<pre> acl-sets { acl-set <> ACL_IPV6 { acl-entries { acl-entry <> { actions { config { forwarding-action } } } } } } </pre>	<pre> firewall { family inet6 { filter <> { term <> { then { reject; } } } } } </pre>
OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/actions/config/forwarding-action		

Table 29: IPv6 Filter Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
log-action LOG_SYSLOG	<pre> acl-sets { acl-set <> ACL_IPV6 { acl-entries { acl-entry <> { actions { config { log-action LOG_SYSLOG; } } } } } } </pre>	<pre> firewall { family inet6 { filter <> { term <> { then syslog; } } } } </pre>

OpenConfig path: /acl/acl-sets/acl-set/acl-entries/acl-entry/actions/config/log-action

Table 30: Bind Configuration

Command Name	OpenConfig Configuration	Junos Configuration
ingress bind configuration	<pre> openconfig-acl:acl { interfaces { interface <> { interface-ref { config { interface <>; subinterface <>; } } } ingress-acl-sets { ingress-acl-set <> ACL_IPV6; } } } </pre>	<pre> interfaces { xe-<> { unit 0 { family inet6 { filter { input <>; } } } } } </pre>

Table 30: Bind Configuration (Continued)

Command Name	OpenConfig Configuration	Junos Configuration
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OpenConfig path: /acl/interfaces/interface/config/interface/interface-ref/config/interface/ingress-acl-sets/
ingress-acl-set

egress bind configuration	<pre>openconfig-acl:acl { interfaces { interface <> { interface-ref { config { interface <>; subinterface <>; } } } egress-acl-sets { egress-acl-set <> ACL_IPV6; } } }</pre>	<pre>interfaces { <> { unit 0 { family inet6 { filter { output <>; } } } } }</pre>
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OpenConfig path: /acl/interfaces/interface/config/interface/interface-ref/config/interface/egress-acl-sets/
egress-acl-set

Table 31: IPv6 Network Instance Filtering Configuration

Command Name	OpenConfig Configuration	Junos Configuration
destination address	<pre>network-instances { network-instance <> { policy-forwarding { policies { policy <> { rules { rule <> { ipv6 { config { destination- address <>; } } } } } } } } }</pre>	<pre>firewall { family inet6 { filter <> { term <> { from { destination- address { <>; } } } } } }</pre>

OpenConfig path: /network-instances/network-instance/policy-forwarding/policies/policy/rules/rule/ipv6/config/destination-address

Table 31: IPv6 Network Instance Filtering Configuration *(Continued)*

Command Name	OpenConfig Configuration	Junos Configuration
hop limit	<pre>network-instances { network-instance <> { policy-forwarding { policies { policy <> { rules { rule <> { ipv6 { config { hop-limit <>; } } } } } } } } }</pre>	<pre>firewall { family inet6 { filter <> { term <> { from { ttl <>; } } } } }</pre>
OpenConfig path: /network-instances/network-instance/policy-forwarding/policies/policy/rules/rule/ipv6/config/hop-limit		

Table 31: IPv6 Network Instance Filtering Configuration (Continued)

Command Name	OpenConfig Configuration	Junos Configuration
protocol	<pre>network-instances { network-instance <> { policy-forwarding { policies { policy <> { rules { rule <> { ipv6 { config { protocol <>; } } } } } } } } }</pre>	<pre>firewall { family inet6 { filter <> { term <> { from { protocol <>; } } } } }</pre>

OpenConfig path: /network-instances/network-instance/policy-forwarding/policies/policy/rules/rule/ipv6/config/protocol

Table 31: IPv6 Network Instance Filtering Configuration (Continued)

Command Name	OpenConfig Configuration	Junos Configuration
source address	<pre>network-instances { network-instance <> { policy-forwarding { policies { policy dscp <> { rules { rule <> { ipv6 { config { source-address } } } } } } } } } <>;</pre>	<pre>firewall { family inet6 { filter <> { term <> { from { source-address } } } } } <>;</pre>

OpenConfig path: /network-instances/network-instance/policy-forwarding/policies/policy/rules/rule/ipv6/config/source-address

Table 31: IPv6 Network Instance Filtering Configuration (Continued)

Command Name	OpenConfig Configuration	Junos Configuration
action: discard	<pre>network-instances { network-instance <> { policy-forwarding { policies { policy <> { rules { rule <> { action { config { discard <>; } } } } } } } } }</pre>	<pre>firewall { family inet6 { filter <> { term <> { then { discard; } } } } }</pre>

Table 32: Network Instance Action Filtering Configuration

Command Name	OpenConfig Configuration	Junos Configuration
action: discard	<pre>network-instances { network-instance <> { policy-forwarding { policies { policy <> { rules { rule <> { action { config { discard <>; } } } } } } } } }</pre>	<pre>firewall { family inet { filter <> { term <> { then { discard; } } } } } firewall { family inet6 { filter <> { term <> { then { discard; } } } } }</pre>

OpenConfig path: /network-instances/network-instance/policy-forwarding/policies/policy/rules/rule/action/config/discard

Table 32: Network Instance Action Filtering Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
action: config network-instance	<pre> network-instances { network-instance <> { policy-forwarding { policies { policy dscp-steer { rules { rule <> { action { config { network- instance <>; } } } } } } } } } </pre>	<pre> firewall { family inet { filter <> { term <> { then { routing- instance <>; } } } } } firewall { family inet6 { filter <> { term <> { then { routing- instance <>; } } } } } </pre>

OpenConfig path: **/network-instances/network-instance/policy-forwarding/policies/policy dscp-steer/rules/rule/action/config/network-instance**

NOTE: When the network-instance leaf is set, packets matching the match criteria for the forwarding rule should be looked up in the network instance that is referenced rather than the network-instance with which the interface is associated. This configuration permits policy routing for multiple subtopologies from a single ingress access interface.

Table 33: Network Instance Bind Configuration

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
INET: apply forwarding policy (default routing instance)	<pre> INET interface bind ingress (default routing instance) network-instances { network-instance <> { policy-forwarding { interfaces { interface <> { config { apply-forwarding-policy <>; } } } } } } </pre>	<pre> INET interface bind ingress (default routing instance) firewall { family inet { filter <> { term <> { then { next-interface; } } } } } forwarding-options { family inet { filter { input <>; } } } </pre>

OpenConfig path: /network-instances/network-instance/policy-forwarding/interfaces/interface/config/apply-forwarding-policy/interface-ref/config/interface/subinterface

NOTE: Use the apply-forwarding-policy leaf to apply the policy to an interface. Packets ingressing on the referenced interface should be compared to the match criteria within the specified policy. If the criteria are met, the forwarding actions specified are applied. These policies do not take precedence over any quality of service classification or ACL actions on the corresponding interface.

Table 33: Network Instance Bind Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
INET: apply forwarding policy (not a default routing instance)	<pre> network-instances { network-instance <> { policy-forwarding { interfaces { interface <> { config { apply-forwarding- policy <>; } interface-ref { config { interface <>; subinterface <>; } } } } } } } </pre>	<pre> firewall { family inet { filter <> { term <> { then { next-interface; } } } } } routing-instances { <> { forwarding-options { family inet { filter { input <>; } } } } } </pre>

OpenConfig path: /network-instances/network-instance/policy-forwarding/interfaces/interface/config/apply-forwarding-policy/interface-ref/config/interface/subinterface

Table 33: Network Instance Bind Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
INET6: apply forwarding policy (default routing instance)	<pre> network-instances { network-instance <> { policy-forwarding { interfaces { interface <> { config { apply-forwarding- policy <>; } interface-ref { config { interface <>; subinterface <>; } } } } } } } </pre>	<pre> firewall { family inet6 { filter <> { term <> { then { next-interface; } } } } } forwarding-options { family inet6 { filter { input <>; } } } </pre>

OpenConfig path: /network-instances/network-instance/policy-forwarding/interfaces/interface/config/apply-forwarding-policy/interface-ref/config/interface/subinterface

Table 33: Network Instance Bind Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
INET6: apply forwarding policy (not a default routing instance)	<pre> network-instances { network-instance <> { policy-forwarding { interfaces { interface <> { config { apply-forwarding- policy <>; } interface-ref { config { interface <>; subinterface <>; } } } } } } } </pre>	<pre> firewall { family inet6 { filter <> { term <> { then { next-interface; } } } } } routing-instances { <> { forwarding-options { family inet6 { filter { input <>; } } } } } </pre>

NOTE: These filters are implemented as an input forwarding table filter.

NOTE: Egress filtering is not supported.

Mapping OpenConfig Interface Commands to Junos Configuration



NOTE: See [Junos YANG Data Model Explorer](#) topic to understand the data models supported version and its Junos OS release for Juniper Networks MX Series, PTX Series, and QFX Series.

The following tables show the mapping of OpenConfig interface commands to the relevant configuration in Junos:

- [Table 34 on page 113](#): Ethernet Configuration
- [Table 35 on page 114](#): GRE Tunnel Interface Configuration
- [Table 36 on page 116](#): IPv4 and IPV6 Address Configuration
- [Table 37 on page 118](#): Interface AE Configuration
- [Table 38 on page 119](#): IFD Configuration
- [Table 39 on page 120](#): IFL Configuration
- [Table 40 on page 121](#): LACP Configuration
- [Table 41 on page 121](#): Member Interface Configuration
- [Table 42 on page 122](#): Optical Transport Configuration
- [Table 43 on page 122](#): P4Runtime (P4RT) Configuration
- [Table 44 on page 123](#): Proxy ARP Configuration
- [Table 45 on page 124](#): VRRP Configuration

Table 34: Ethernet Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Auto-negotiate	/ethernet/config/auto-negotiate	set interfaces <i>interface</i> gigether-options <i>auto-negotiation/no-auto-negotiation</i>

Table 34: Ethernet Configuration (Continued)

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
MAC Address	/ethernet/config/mac-address	set interfaces <i>interface</i> mac
Duplex Mode	/ethernet/config/duplex-mode	set interfaces <i>interface</i> link-mode
Port Speed	/ethernet/config/port-speed	set interface <i>interface</i> speed
Flow Control	/ethernet/config/enable-flow-control	set interface <i>interface</i> gigether-options flow-control

Table 35: GRE Tunnel Interface Configuration

<i>Command Name</i>	<i>OpenConfig configuration</i>	<i>Junos Configuration</i>
Source	<pre> openconfig-interfaces { interfaces { interface[name] { subinterfaces { subinterface[index] { jnx-aug-openconfig-if- tunnel:tunnel { config { src <>; } } } } } } </pre>	<pre> interfaces { gr-<> { unit <> { tunnel { source <>; } } } } </pre>

The augmented OpenConfig tunnel src node value maps to the Junos source parameter.

Table 35: GRE Tunnel Interface Configuration (*Continued*)

Command Name	OpenConfig configuration	Junos Configuration
Destination	<pre> openconfig-interfaces { interfaces { interface[name] { subinterfaces { subinterface[index] { jnx-aug-openconfig-if- tunnel:tunnel { config { dst <>; } } } } } } } </pre>	<pre> interfaces { gr-<> { unit <> { tunnel { destination <>; } } } } </pre>

The augmented OpenConfig tunnel dst node value maps to the Junos destination parameter.

TTL	<pre> openconfig-interfaces { interfaces { interface[name] { subinterfaces { subinterface[index] { jnx-aug-openconfig-if- tunnel:tunnel { config { ttl <>; } } } } } } } </pre>	<pre> interfaces { gr-<> { unit <> { tunnel { ttl <>; } } } } </pre>
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The augmented OpenConfig tunnel ttl node value maps to the Junos ttl parameter.

Table 35: GRE Tunnel Interface Configuration (Continued)

Command Name	OpenConfig configuration	Junos Configuration
Key	<pre> openconfig-interfaces { interfaces { interface[name] { subinterfaces { subinterface[index] { jnx-aug-openconfig-if- tunnel:tunnel { config { gre-key <>; } } } } } } } } </pre>	<pre> interfaces { gr-<> { unit <> { tunnel { key <>; } } } } </pre>

The augmented OpenConfig tunnel gre-key node value maps to the Junos key parameter.

Table 36: IPv4 and IPv6 Address Configuration

Command Name	OpenConfig Command Path	Junos Configuration
Configuration Address	<pre> ipv4/addresses/address/ip ipv4/addresses/address/prefix-length </pre>	<pre> set interfaces <i>interface-name</i> unit <i>unit- number</i> family inet address <i>address</i> set interfaces <i>interface-name</i> unit <i>unit- number</i> family inet6 address <i>address</i> </pre>
Neighbor Address	<pre> ipv4/neighbors/neighbor/ip ipv6/neighbors/neighbor/ip </pre>	<pre> set interfaces <i>interface-name</i> unit <i>unit- number</i> family inet address <i>address</i> arp <i>address</i> set interfaces <i>interface-name</i> unit <i>unit- number</i> family inet6 address <i>address</i> ndp <i>address</i> </pre>

Table 36: IPv4 and IPv6 Address Configuration (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
Link Layer Address	ip4/neighbors/neighbor/ip/link-layer-address ip6/neighbors/neighbor/ip/link-layer-address	set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet address <i>address</i> arp <i>address</i> mac <i>address</i> set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet6 address <i>address</i> ndp <i>address</i> mac <i>address</i>
Neighbor solicitation messages to send for duplicate address detection dup-addr-detect-transmits 0	<pre> openconfig-interfaces:interfaces { interface <interface_name> { subinterfaces { subinterface <unit> { openconfig-if- ip:ipv6 { config { dup-addr- detect-transmits 0; } } } } } } } </pre>	<pre> interfaces { <interface_name> { unit <unit> { family inet6 { dad-disable; } } } } </pre>

Table 36: IPv4 and IPv6 Address Configuration (Continued)

Command Name	OpenConfig Command Path	Junos Configuration
Neighbor solicitation messages to send for duplicate address detection dup-addr-detect-transmits <non_zero_value>	<pre> openconfig-interfaces:interfaces { interface <interface_name>{ subinterfaces { subinterface <unit> { openconfig-if- ip:ipv6 { config { dup-addr- detect-transmits <non_zero_value>; } } } } } } </pre>	<pre> system { internet-options { ipv6-duplicate-addr-detection- transmits <non_zero_value>; } } interfaces { <interface_name> { unit <unit> { family inet6 { no-dad-disable; } } } } </pre> <p>NOTE: Junos OS has no equivalent configuration under the interfaces hierarchy to map the number of neighbor solicitation messages to send for duplicate address detection. Consequently, this is mapped to the parameter ipv6-duplicate-addr-detection-transmits at the system hierarchy. When there are multiple instances of OpenConfig dup-addr-detect-transmits at the interfaces stanza, the Junos OS parameter takes the maximum value configured among them.</p>

Table 37: Interface AE Configuration

Command Name	OpenConfig Command Path	Junos Configuration
LAG Type	<pre> /aggregation/config/lag-type/lacp /aggregation/config/lag-type/static </pre>	set interfaces <i>ae-name</i> aggregated-ether-options lacp

Table 37: Interface AE Configuration (*Continued*)

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Minimum Links	/aggregation/config/min-links	set interfaces <i>ae-name</i> aggregated-ether-options minimum-links

Table 38: IFD Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Interface Type	/interfaces/ <i>interface</i> /config/type	Not supported. Type is derived from the interface name.
Interface MTU	/interfaces/ <i>interface</i> /config/mtu	set interface <i>interface</i> mtu
Interface Name	/interfaces/ <i>interface</i> /config/name	set interface <i>interface</i>
Interface Description	/interfaces/ <i>interface</i> /config/description	set interface <i>interface</i> description
Interface Enabled/ Disabled	/interfaces/ <i>interface</i> /config/enabled	set interface <i>interface</i> disabled set interface <i>interface</i> enabled
Hold Time Up	/interfaces/ <i>interface</i> /config/hold-time/ config/up	set interface <i>interface</i> hold-time up
Hold Time Down	/interfaces/ <i>interface</i> /config/hold-time/ config/down	set interface <i>interface</i> hold-time down

Table 38: IFD Configuration (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
VLAN tag protocol identifier (TPID)	<pre> openconfig-interfaces:interfaces { interfaces <interface_name> { config { openconfig-vlan:tpid <tpid>; } } } </pre>	<pre> interfaces { <interface_name> { gigerther-options { ethernet-switch-profile { tag-protocol-id <tpid>; } } } } </pre>

Table 39: IFL Configuration

Command Name	OpenConfig Command Path	Junos Configuration
Unit Name	/interfaces/ <i>interface</i> /subinterfaces/ subinterface/config/index	set interfaces <i>interface</i> unit <i>unit</i>
Unnumbered Address	/interfaces/ <i>interface</i> /config/ subinterfaces/subinterface/config/ unnumbered	set interfaces <i>interface</i> unit <i>unit</i> family <i>family</i> unnumbered-address source <i>ifl</i>
Unit Description	/interfaces/ <i>interface</i> /subinterfaces/ subinterface/config/description	set interfaces <i>interface</i> unit <i>unit</i> description
Unit Enabled/Disabled	/interfaces/ <i>interface</i> /subinterfaces/ subinterface/config/enabled	set interfaces <i>interface</i> unit <i>unit</i> enabled set interfaces <i>interface</i> unit <i>unit</i> disabled
Interface Alias	/interfaces/ <i>interface</i> /subinterfaces/ subinterface/config/name	set interfaces <i>interface</i> alias

Table 40: LACP Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
LACP Interval	/lacp/interfaces/interface/ config/interval	set interfaces <i>ae-name</i> aggregated-ether-options lacp periodic fast set interfaces <i>ae-name</i> aggregated-ether-options lacp periodic slow
LACP Mode	/lacp/interfaces/interface/ config/lacp-mode	set interfaces <i>ae-name</i> aggregated-ether-options lacp active set interfaces <i>ae-name</i> aggregated-ether-options lacp passive
System ID	/lacp/interfaces/interface/ config/system-id-mac	set interfaces <i>ae-name</i> aggregated-ether-options lacp system-id <i>address</i>
System Priority	/lacp/interfaces/interface/ config/system-priority	set interfaces <i>ae-name</i> aggregated-ether-options lacp system-priority <i>system-priority</i>
Ethernet Options	/lacp/interfaces/interface/ members/member	set interface <i>interface</i> gigether-options 802.3ad set interface <i>interface</i> fastether-options 802.3ad set interface <i>interface</i> ether-options 802.3ad

Table 41: Member Interface Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Aggregate ID	/interface/aggregate-id	set interface <i>interface</i> gigether-options 802.3ad <i>aggregate-id</i> set interface <i>interface</i> fastether-options 802.3ad <i>aggregate-id</i> set interface <i>interface</i> ether-options 802.3ad <i>aggregate-id</i>

Table 42: Optical Transport Configuration

<i>Command Name</i>	<i>OpenConfig configuration</i>	<i>Junos Configuration</i>
Frequency	<pre> openconfig-platform:components { component <> { openconfig-terminal-device:optical-channel { config { frequency <>; } } } </pre>	<pre> interfaces <> { optics-options { wavelength <>; } } </pre>

The formula to calculate the wavelength from frequency, or vice-versa, is $C = (\text{wavelength} \times \text{frequency})$ where C = the speed of light in vacuum (299792458 m/s).

Table 43: P4Runtime (P4RT) Configuration

<i>Command Name</i>	<i>OpenConfig configuration</i>	<i>Junos Configuration</i>
id	<pre> openconfig-interfaces:interfaces { interface <> { config { openconfig-p4rt:id <>; } } } </pre>	<pre> interfaces { <> { p4rt { Id <>; } } } </pre>

Table 43: P4Runtime (P4RT) Configuration *(Continued)*

Command Name	OpenConfig configuration	Junos Configuration
id	<pre> openconfig-interfaces:interfaces { interface <> { config { type <> { openconfig-if-sdn- ext:forwarding-viable <>; } } } } </pre>	<pre> interfaces { < > { no-forwarding-viable; } } </pre>

Table 44: Proxy ARP Configuration

Command Name	OpenConfig configuration	Junos Configuration
proxy-arp	<pre> openconfig-interfaces:interfaces { interface <> { subinterfaces { subinterface <> { openconfig-if-ip:ipv4 { proxy-arp { config { mode <>; } } } } } } } </pre>	<pre> interfaces { <> { unit <> { proxy-arp <>; } } } </pre>

Table 44: Proxy ARP Configuration (Continued)

<i>Command Name</i>	<i>OpenConfig configuration</i>	<i>Junos Configuration</i>
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OpenConfig has three proxy-arp and Junos has two modes:

- OC maps to Junos (native)
- REMOTE_ONLY maps to restricted
- ALL maps to Unrestricted
- DISABLE deletes the configured proxy-arp configuration

Table 45: VRRP Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Virtual Router ID	ifa/vrrp/vrrp-group/config/virtual-router-id	set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet address <i>address</i> vrrp-group <i>virtual-router-id</i> set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet6 address <i>address</i> vrrp-inet6-group <i>virtual-router-id</i>
Virtual Address	ifa/vrrp/vrrp-group/config/virtual-address	set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet address <i>address</i> vrrp-group <i>virtual-router-id</i> virtual-address <i>address</i> set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet6 address <i>address</i> vrrp-inet6-group <i>virtual-router-id</i> virtual-inet6-address
VRRP Priority	ifa/vrrp/vrrp-group/config/priority	set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet address <i>address</i> vrrp-group <i>virtual-router-id</i> priority set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet6 address <i>address</i> vrrp-inet6-group <i>virtual-router-id</i> priority

Table 45: VRRP Configuration (Continued)

Command Name	OpenConfig Command Path	Junos Configuration
VRRP Preempt	ifa/vrrp/vrrp-group/config/preempt	set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet address <i>address</i> vrrp-group <i>virtual-router-id</i> preempt set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet6 address <i>address</i> vrrp-inet6-group <i>virtual-router-id</i> preempt
VRRP Preempt Hold Time	ifa/vrrp/vrrp-group/config/preempt-delay	set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet address <i>address</i> vrrp-group <i>virtual-router-id</i> preempt hold-time <i>time</i> set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet6 address <i>address</i> vrrp-inet6-group <i>virtual-router-id</i> preempt hold-time <i>time</i>
Accept Data	ifa/vrrp/vrrp-group/config/accept_mode	set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet address <i>address</i> vrrp-group <i>virtual-router-id</i> accept-data set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet6 address <i>address</i> vrrp-inet6-group <i>virtual-router-id</i> accept-data
Advertise Interval	ifa/vrrp/vrrp-group/config/advertisement_interval	set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet address <i>address</i> vrrp-group <i>virtual-router-id</i> advertise-interval set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet6 address <i>address</i> vrrp-inet6-group <i>virtual-router-id</i> inet6-advertise-interval

Table 45: VRRP Configuration (Continued)

Command Name	OpenConfig Command Path	Junos Configuration
Track Interface	ifa/vrrp/vrrp-group/interface-tracking/config/track-interface	set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet address <i>address</i> vrrp-group <i>virtual-router-id</i> track interface <i>interface-name</i> set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet6 address <i>address</i> vrrp-inet6-group <i>virtual-router-id</i> track interface <i>interface-name</i>
Priority Cost	ifa/vrrp/vrrp-group/interface-tracking/config/priority-decrement	set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet address <i>address</i> vrrp-group <i>virtual-router-id</i> track interface <i>interface-name</i> priority-cost <i>cost</i> set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet6 address <i>address</i> vrrp-inet6-group <i>virtual-router-id</i> track interface <i>interface-name</i> priority-cost <i>cost</i>
Virtual Link Local Address	ifa/vrrp/vrrp-group/config/virtual-link-local	set interfaces <i>interface-name</i> unit <i>unit-number</i> family inet6 address <i>address</i> vrrp-inet6-group <i>virtual-router-id</i> virtual-link-local-address

RELATED DOCUMENTATION

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Mapping OpenConfig ISIS Commands to Junos Configuration

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NOTE: See [Junos YANG Data Model Explorer](#) for supported versions of the OpenConfig data model.

Global Configuration

See [Table 46 on page 128](#) for configuration mappings of the following OpenConfig paths under `/network-instances/network-instance/protocols/protocol/isis/`:

- `/global/timers/config/lsp-lifetime-interval`
- `/global/timers/config/lsp-refresh-interval`
- `/global/timers/spf/config/spf-first-interval`
- `/global/timers/spf/config/spf-hold-interval`
- `/global/lsp-bit/overload-bit/config/set-bit`
- `/global/config/net`
- `/global/config/level-capability`
- `/global/afi-safi/af/config/enabled`
- `/global/afi-safi/af/multi-topology/config/afi-name`
- `/global/config/max-ecmp-paths`

- /global/graceful-restart/config/enabled
- /global/transport/config/lsp-mtu-size

Table 46: Global ISIS Configuration

Command	OpenConfig Configuration	Junos Configuration
LSP lifetime interval	<pre>openconfig-network-instance:network-instances { protocols { protocol ISIS <> { global { timers { config { lsp-lifetime-interval <>; } } } } } }</pre>	<pre>protocols { isis { lsp-lifetime <>; } }</pre>

OpenConfig path: /network-instances/network-instance/protocols/protocol/isis/global/timers/config/lsp-lifetime-interval

LSP refresh interval	<pre>openconfig-network-instance:network-instances { protocols { protocol ISIS <> { global { timers { config { lsp-refresh-interval <>; } } } } } }</pre>	<pre>protocols { isis { lsp-refresh-interval <>; } }</pre>
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OpenConfig path: /network-instances/network-instance/protocols/protocol/isis/global/timers/config/lsp-refresh-interval

Table 46: Global ISIS Configuration (Continued)

Command	OpenConfig Configuration	Junos Configuration
SPF first interval	<pre> openconfig-network-instance:network-instances { protocols { protocol ISIS <> { global { timers { spf { config { spf-first-interval <>; } } } } } } } </pre>	<pre> protocols { isis { spf-options { delay <>; } } } </pre>

OpenConfig path:

/network-instances/network-instance/protocols/protocol/isis/global/timers/spf/config/spf-first-interval

SPF hold interval	<pre> openconfig-network-instance:network-instances { protocols { protocol ISIS <> { global { timers { spf { config { spf-hold-interval <>; } } } } } } } </pre>	<pre> protocols { isis { spf-options { holddown <>; } } } </pre>
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OpenConfig path: **/network-instances/network-instance/protocols/protocol/isis/global/timers/spf/config/spf-hold-interval**

Table 46: Global ISIS Configuration (*Continued*)

Command	OpenConfig Configuration	Junos Configuration
Overload bit	<pre> openconfig-network-instance:network-instances { protocols { protocol ISIS <> { global { lsp-bit { overload-bit { config { set-bit <true false>; } } } } } } } </pre>	<pre> protocols { isis { overload; } } </pre>

OpenConfig path: **/network-instances/network-instance/protocols/protocol/isis/global/lsp-bit/overload-bit/config/set-bit**

Net	<pre> openconfig-network-instance:network-instances { protocols { protocol ISIS <> { global { config { overload-bit { config { net <>; } } } } } } } </pre>	<pre> protocols { isis { net <>; } } </pre>
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OpenConfig path: **/network-instances/network-instance/protocols/protocol/isis/global/config/net**

Table 46: Global ISIS Configuration (Continued)

Command	OpenConfig Configuration	Junos Configuration
Level capability	<pre>openconfig-network-instance:network-instances { protocols { protocol ISIS <> { global { config { overload-bit { config { level-capability <>; } } } } } } }</pre>	<pre>protocols { isis { level <> disable; } }</pre>

OpenConfig path: /network-instances/network-instance/protocols/protocol/isis/global/config/level-capability

Address family indicator (AFI) and subsequent address family identifier (SAFI)	<pre>openconfig-network-instance:network-instances { protocols { protocol ISIS <> { global { afi-safi { af <> { config { enabled FALSE; } } } } } } }</pre>	<pre>protocols { isis { (no-ipv4-routing no-ipv6-routing); } }</pre>
--	---	--

Table 46: Global ISIS Configuration (Continued)

Command	OpenConfig Configuration	Junos Configuration
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OpenConfig path: /network-instances/network-instance/protocols/protocol/isis/global/afi-safi/af/config/enabled

In OpenConfig, configure the values true or false to enable or disable the address families. In Junos, the IPv4 and IPv6 address families are enabled by default. To disable, use the no-ipv4-routing or no-ipv6-routing statements.

NOTE: Junos supports only the IPv4 and IPv6 address families for AFI, and unicast for SAFI.

Address Family Type	<pre>openconfig-network-instance:network-instances { protocols { protocol ISIS DEFAULT { isis { global { afi-safi { af <afi-name> <safi-name> { multi-topology { config { afi-name <afi- name >; } } } } } } } } }</pre>	<pre>protocols { isis { topologies <topology>; } }</pre>
---------------------	--	--

OpenConfig path: /network-instances/network-instance/protocols/protocol/isis/global/afi-safi/af/multi-topology/config/afi-name-safi/af/config/enabled

Table 46: Global ISIS Configuration *(Continued)*

Command	OpenConfig Configuration	Junos Configuration
Max-paths count	<pre>openconfig-network-instance:network-instances { protocols { protocol ISIS DEFAULT { isis { global { config { max-ecmp-paths 16; } } } } } }</pre>	<pre>chassis { maximum-ecmp <max-ecmp- value>; } routing-options { maximum-ecmp <max-ecmp- value>; }</pre>

OpenConfig path: **/network-instances/network-instance/protocols/protocol/isis/global/config/max-ecmp-paths**

NOTE:

- Max-ecmp-paths is supported only for limited values of 16 ,32, 64, 96, 128, 160, 192, and 224.
- Configuring max-ecmp might affect other modules that have the max-ecmp-path feature enabled at the routing-options and chassis level.
- Max-ecmp is platform dependent and the upper limit range varies depending on the platform.

Table 46: Global ISIS Configuration (Continued)

Command	OpenConfig Configuration	Junos Configuration
Graceful Restart	<pre>openconfig-network-instance:network-instances { protocols { protocol ISIS DEFAULT { isis { global { graceful-restart { config { enabled<value>; } } } } } } }</pre>	<pre>rotocols { isis { graceful-restart <options>; } }</pre>

OpenConfig path: /network-instances/network-instance/protocols/protocol/isis/global/graceful-restart/config/enabled

NOTE:

- OpenConfig GR configurations won't enable Junos Graceful Restart at the routing-options level, and only handles GR under the ISIS protocol level.
- To test GR functionality, GR should be explicitly set at routing-option levels.
- Graceful-restart enabled with true and helper-only true combination is not supported.

Table 46: Global ISIS Configuration (Continued)

Command	OpenConfig Configuration	Junos Configuration
LSP MTU size	<pre>openconfig-network-instance:network-instances { protocols { protocol ISIS <> { isis { global { transport { config { lsp-mtu-size <>; } } } } } } }</pre>	<pre>protocols { isis { max-lsp-size <>; } }</pre>

OpenConfig path: /network-instances/network-instance/protocols/protocol/isis/global/transport/config/lsp-mtu-size

NOTE: The range of values for max-lsp-size is 512 to 9192 bytes. Values outside this range will cause a commit error in OpenConfig.

Level Configuration

See [Table 47 on page 136](#) for configuration mappings of the following OpenConfig paths under /network-instances/network-instance/protocols/protocol/isis/:

- /levels/level/config/enabled
- /levels/level/authentication/config/auth-type
- /levels/level/authentication/config/auth-password
- /levels/level/authentication/config/enabled
- /levels/level/authentication/config/disable-lsp

Table 47: Level ISIS Configuration

Command and Path	OpenConfig Configuration	Junos Configuration
Enable or disable	<pre>openconfig-network-instance:network-instances { protocols { protocol ISIS <> { levels { level { config { enabled FALSE; } } } } } }</pre>	<pre>protocols { isis { level <> { disable; } } }</pre>

OpenConfig path: **/network-instances/network-instance/protocols/protocol/isis/levels/level/config/enabled**

In OpenConfig, configure the value true to enable.

Authentication type	<pre>openconfig-network-instance:network-instances { protocols { protocol ISIS <> { levels { level <> { authentication { config { auth-type (simple-key keychain); } } } } } } }</pre>	NA
---------------------	--	----

Table 47: Level ISIS Configuration (Continued)

Command and Path	OpenConfig Configuration	Junos Configuration
OpenConfig path: /network-instances/network-instance/protocols/protocol/isis/levels/level/authentication/config/auth-type		
Authentication password	<pre>openconfig-network-instance:network-instances { protocols { protocol ISIS <> { levels { level <> { authentication { config { auth-password <>; } } } } } } }</pre>	<pre>protocols { isis { level <> { authentication-key <>; } } }</pre>
OpenConfig path: /network-instances/network-instance/protocols/protocol/isis/levels/level/authentication/config/auth-password		

Table 47: Level ISIS Configuration (Continued)

Command and Path	OpenConfig Configuration	Junos Configuration
Hello authentication (disable)	<pre> openconfig-network-instance:network-instances { protocols { protocol ISIS <> { levels { level <> { authentication { config { enabled FALSE; } } } } } } } </pre>	<pre> protocols { isis { level <> { inactive: authentication-key <>; inactive: authentication-type <>; } } } </pre>

OpenConfig path: **/network-instances/network-instance/protocols/protocol/isis/levels/level/authentication/config/enabled**

Disable authentication for LSP packets	<pre> openconfig-network-instance:network-instances { protocols { protocol ISIS <> { isis { levels { level <> { authentication { config { disable-lsp TRUE; } } } } } } } } </pre>	<pre> protocols { isis { level <> { no-lsp-authentication; } } } </pre>
--	--	---

Table 47: Level ISIS Configuration (Continued)

Command and Path	OpenConfig Configuration	Junos Configuration
OpenConfig path: /network-instances/network-instance/protocols/protocol/isis/levels/level/authentication/config/disable-lsp		

Interface Configuration

See [Table 48 on page 140](#) for configuration mappings of the following OpenConfig paths under /network-instances/network-instance/protocols/protocol/isis/:

- /interfaces/interface/config/enabled
- /interfaces/interface/config/hello-padding
- /interfaces/interface/config/circuit-type
- /interfaces/interface/timers/config/csnp-interval
- /interfaces/interface/levels/level/timers/config/hello-interval
- /interfaces/interface/levels/level/timers/config/hello-multiplier
- interfaces/interface/levels/level/hello-authentication/config/enabled
- /interfaces/interface/levels/level/hello-authentication/config/auth-type
- /interfaces/interface/levels/level/hello-authentication/config/auth-mode
- /interfaces/interface/levels/level/hello-authentication/config/auth-password
- /interfaces/interface/afi-safi/af/config/enabled

Table 48: Interface ISIS Configuration

Command and Path	OpenConfig Configuration	Junos Configuration
Enable or disable	<pre>openconfig-network-instance:network-instances { protocols { protocol ISIS <> { interfaces { interface { config { enabled FALSE; } } } } } }</pre>	<pre>protocols { isis { interface <> { disable; } } }</pre>

OpenConfig path: **/network-instances/network-instance/protocols/protocol/isis/interfaces/interface/config/enabled**

Hello padding	<pre>openconfig-network-instance:network-instances { protocols { protocol ISIS <> { interfaces { interface { config { hello-padding <>; } } } } } }</pre>	<pre>protocols { isis { interface <> { hello-padding <>; } } }</pre>
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OpenConfig path: **/network-instances/network-instance/protocols/protocol/isis/interfaces/interface/config/hello-padding**

Table 48: Interface ISIS Configuration (Continued)

Command and Path	OpenConfig Configuration	Junos Configuration
CSNP interval	<pre>openconfig-network-instance:network-instances { protocols { protocol ISIS <> { interfaces { interface <> { timers { config { csnp-interval <>; } } } } } } }</pre>	<pre>protocols { isis { interface <> { csnp-interval <>; } } }</pre>

OpenConfig path: /network-instances/network-instance/protocols/protocol/isis/interfaces/interface/timers/config/csnp-interval

Table 48: Interface ISIS Configuration (Continued)

Command and Path	OpenConfig Configuration	Junos Configuration
Hello interval	<pre>openconfig-network-instance:network-instances { protocols { protocols ISIS <> { interfaces { interface <> { levels { level <> { timers { config { hello-interval <>; } } } } } } } } }</pre>	<pre>protocols { isis { interface <> { level <> { hello-interval <>; } } } }</pre>

OpenConfig path: /network-instances/network-instance/protocols/protocol/isis/interfaces/interface/levels/level/timers/config/hello-interval

Table 48: Interface ISIS Configuration *(Continued)*

Command and Path	OpenConfig Configuration	Junos Configuration
Hello multiplier	<pre>openconfig-network-instance:network-instances { protocols { protocols ISIS <> { interfaces { interface <> { levels { level <>; timers { config { hello-multiplier <>; } } } } } } } }</pre>	<pre>protocols { isis { interface <> { level <> { hold-time <>; } } } }</pre>

OpenConfig path: /network-instances/network-instance/protocols/protocol/isis/interfaces/interface/levels/level/timers/config/hello-multiplier

Table 48: Interface ISIS Configuration *(Continued)*

Command and Path	OpenConfig Configuration	Junos Configuration
Circuit type	<pre>openconfig-network-instance:network-instances { protocols { protocol ISIS <> { interfaces { interface <> { timers { config { circuit-type <>; } } } } } } }</pre>	<pre>protocols { isis { interface <> { point-to-point; } } }</pre>

OpenConfig path: `/network-instances/network-instance/protocols/protocol/isis/interfaces/interface/config/circuit-type`

Table 48: Interface ISIS Configuration (Continued)

Command and Path	OpenConfig Configuration	Junos Configuration
Hello authentication (enable or disable)	<pre>openconfig-network-instance:network-instances { protocols { protocols ISIS <> { interfaces { interface <> { levels { level <> { hello-authentication { config { enabled FALSE; } } } } } } } } }</pre>	<pre>protocols { isis { interface <> { level <> { inactive: hello- authentication-key <>; inactive: hello- authentication-type <>; } } } }</pre>

OpenConfig path: /network-instances/network-instance/protocols/protocol/isis/interfaces/interface/levels/level/hello-authentication/config/enable

NOTE: When the following conditions apply in the OpenConfig configuration, the Junos configuration will move to the inactive state:

- Authentication mode is configured.
- Authentication password is configured.
- Value for enabled is set to false.

Table 48: Interface ISIS Configuration (Continued)

Command and Path	OpenConfig Configuration	Junos Configuration
Authentication type	<pre>openconfig-network-instance:network-instances { protocols { protocols ISIS <> { interfaces { interface <> { levels { level <>; hello-authentication { config { auth-type <>; } } } } } } } }</pre>	NA

OpenConfig path: /network-instances/network-instance/protocols/protocol/isis/interfaces/interface/levels/level/hello-authentication/config/auth-type

Table 48: Interface ISIS Configuration (Continued)

Command and Path	OpenConfig Configuration	Junos Configuration
Authentication mode	<pre>openconfig-network-instance:network-instances { protocols { protocols ISIS <> { interfaces { interface <> { levels { level <>; hello-authentication { config { auth-mode <>; } } } } } } } }</pre>	<pre>protocols { isis { interface <> { level <> { hello- authentication-type } } } }</pre>

OpenConfig path: /network-instances/network-instance/protocols/protocol/isis/interfaces/interface/levels/level/hello-authentication/config/auth-mode

Table 48: Interface ISIS Configuration (Continued)

Command and Path	OpenConfig Configuration	Junos Configuration
Authentication password	<pre>openconfig-network-instance:network-instances { protocols { protocols ISIS <> { interfaces { interface <> { levels { level <>; hello-authentication { config { auth-password <>; } } } } } } } }</pre>	<pre>protocols { isis { interface <> { level <> { hello- authentication-key <>; } } } }</pre>


OpenConfig path: /network-instances/network-instance/protocols/protocol/isis/interfaces/interface/levels/level/hello-authentication/config/auth-password

Table 48: Interface ISIS Configuration (Continued)

Command and Path	OpenConfig Configuration	Junos Configuration
AFI-SAFI configuration	<pre> openconfig-network-instance:network-instances { protocols { protocols ISIS <> { interfaces { interface <> { afi-safi { af <>; config { enabled (true false); } } } } } } } </pre>	<pre> protocols { isis { interface <> { no-unicast-topology; } } } </pre>

OpenConfig path: /network-instances/network-instance/protocols/protocol/isis/interfaces/interface/afi-safi/af/config/enabled

Mapping OpenConfig LACP Commands to Junos Configuration



NOTE: See [Junos YANG Data Model Explorer](#) topic to understand the data models supported version and its Junos OS release for Juniper Networks ACX Series, MX Series, PTX Series, and QFX Series.

Table 49 on page 150 shows the mapping of OpenConfig LACP configurations with the relevant configuration in Junos.

Table 49: LACP Configuration

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
System priority	/lacp/config/system-priority	set chassis aggregated-devices ethernet lacp system-priority <i>system-priority</i>
Interval	/lacp/interfaces/interface/config/interval	set interfaces <i>ae_name</i> aggregated-ether-options lacp periodic [fast slow]
LACP mode	/lacp/interfaces/interface/config/lacp-mode/	set interfaces <i>ae_name</i> aggregated-ether-options lacp [active passive]
Name	/lacp/interfaces/interface/config/name/	set interfaces <i>ae_name</i>
System ID MAC	/lacp/interfaces/interface/config/system-id-mac/	set interfaces <i>ae_name</i> aggregated-ether-options lacp system-id <i>system-id-mac</i>
System Priority	/lacp/interfaces/interface/config/system-priority/	set interfaces <i>ae_name</i> aggregated-ether-options lacp system-priority <i>system-priority</i>

RELATED DOCUMENTATION
[Mapping OpenConfig Routing Policy Commands to Junos Configuration | 256](#)
[Mapping OpenConfig Interface Commands to Junos Configuration | 113](#)
[Mapping OpenConfig Local Routing Commands to Junos Configuration | 161](#)
[Mapping OpenConfig BGP Commands to Junos Configuration | 53](#)
[Mapping OpenConfig MPLS Commands to Junos Configuration | 175](#)

Mapping OpenConfig LDP Commands to Junos Configuration

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- [Global LDP Configuration | 151](#)
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- [Graceful Restart Configuration | 153](#)
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- [Targeted LDP Configuration | 156](#)
- [LDP Neighbor Configuration | 157](#)



NOTE: See [Junos YANG Data Model Explorer](#) topic to understand the data models supported version and its Junos OS release for Juniper Networks MX Series and PTX Series.

The following table shows the mappings of LDP commands with the relevant configurations in Junos.

- [Table 50 on page 152](#): Global LDP
- [Table 51 on page 153](#): Interfaces
- [Table 52 on page 154](#): Graceful Restart
- [Table 53 on page 156](#): Authentication
- [Table 54 on page 157](#): Targeted LDP
- [Table 55 on page 158](#): LDP Neighbor

Global LDP Configuration

See [Table 50 on page 152](#) for configuration mappings of the following sensor:

- `/network-instances/network-instance/mps/signaling-protocols/ldp/global/config/lsr-id`

Table 50: Global LDP Configuration

Command Name	OpenConfig configuration	Junos Configuration
LSR ID	<pre>ldp { global { config { lsr-id <>; } } }</pre>	<pre>ldp { transport-address <>; }</pre>

For the LSR ID in OpenConfig, the transport address can be set as either the interface ID, router ID, or any other ID. This is only for single transport.

Interface Configuration

See [Table 51 on page 153](#) for configuration mappings of the following sensors:

- /network-instances/network-instance/mpls/signaling-protocols/ldp/interface-attributes/interfaces/interface/config/interface-id
- /network-instances/network-instance/mpls/signaling-protocols/ldp/interface-attributes/interfaces/interface/config/hello-holdtime
- /network-instances/network-instance/mpls/signaling-protocols/ldp/interface-attributes/interfaces/interface/config/hello-interval

Table 51: Interface Configuration

<i>Command Name</i>	<i>OpenConfig configuration</i>	<i>Junos Configuration</i>
interface ID	<pre> ldp { interface-attributes { interface <> { config { interface-id ge-0/0/2.0; } } } } </pre>	<pre> ldp { interface <>; } </pre>
hello holdtime	<pre> ldp { interface-attributes { interface <>/all { config { hello-holdtime <>; } } } } </pre>	<pre> ldp { interface <>/all { hello-holdtime <>; } } </pre>
hello interval	<pre> ldp { interface-attributes { interface <>/all { config { hello-interval <>; } } } } </pre>	<pre> ldp { interface <>/all { hello-interval <>; } } </pre>

Graceful Restart Configuration

See [Table 52 on page 154](#) for configuration mappings of the following sensors:

- /network-instances/network-instance/mpls/signaling-protocols/ldp/global/graceful-restart/config/enabled
- /network-instances/network-instance/mpls/signaling-protocols/ldp/global/graceful-restart/config/reconnect-time
- /network-instances/network-instance/mpls/signaling-protocols/ldp/global/graceful-restart/config/recovery-time
- /network-instances/network-instance/mpls/signaling-protocols/ldp/global/graceful-restart/config/helper-enable

Table 52: Graceful Restart Configuration

Command Name	OpenConfig configuration	Junos Configuration
enabled	<pre>ldp { graceful-restart { config { enabled <true/false>; } } }</pre>	<pre>ldp { graceful-restart { disable; } }</pre>
reconnect-time	<pre>ldp { graceful-restart { config { reconnect-time <>; } } }</pre>	<pre>ldp { graceful-restart { reconnect-time <>; } }</pre>

By default, graceful restart is disabled in the OC configuration. To enable graceful restart, set enable to true.

Table 52: Graceful Restart Configuration (*Continued*)

Command Name	OpenConfig configuration	Junos Configuration
recovery-time	<pre> ldp { graceful-restart { config { recovery-time <>; } } } </pre>	<pre> ldp { graceful-restart { recovery-time <>; } } </pre>
helper-disable	<pre> ldp { graceful-restart { config { helper-disable <>; } } } </pre>	<pre> ldp { graceful-restart { helper-disable <>; } } </pre>

Authentication Configuration

See [Table 53 on page 156](#) for configuration mappings of the following sensors:

- `/network-instances/network-instance/mpls/signaling-protocols/ldp/global/authentication/config/authentication-key`
- `/network-instances/network-instance/mpls/signaling-protocols/ldp/global/authentication/config/enable`

Table 53: Authentication Configuration

Command Name	OpenConfig configuration	Junos Configuration
authentication-key	<pre>ldp { authentication { config { authentication-key <>; } } }</pre>	<pre>ldp { session-group 0.0.0.0/0 { authentication-key <>; } }</pre>

Authentication key configuration is not available at the global level. Use session group 0.0.0.0/0 for global configuration.

enable	<pre>ldp { authentication { config { enable <true/false>; } } }</pre>	<pre>ldp { session-group 0.0.0.0/0 { inactive; authentication- key <>; } }</pre>
--------	---	--

In OC configuration, the authentication key will be activated when enable is set to true. In JUNOS configuration, authentication key will be inactive by default.

Targeted LDP Configuration

See [Table 54 on page 157](#) for configuration mappings of the following sensors:

- /network-instances/network-instance/mpls/signaling-protocols/ldp/targeted/config/hello-interval
- /network-instances/network-instance/mpls/signaling-protocols/ldp/targeted/config/hello-holdtime
- /network-instances/network-instance/mpls/signaling-protocols/ldp/targeted/config/hello-accept

Table 54: Targeted LDP Configuration

Command Name	OpenConfig configuration	Junos Configuration
hello-interval	<pre> ldp { targeted { config { hello-interval <>; } } } </pre>	<pre> ldp { targeted-hello { hello-interval <>; } } </pre>
hello-holdtime	<pre> ldp { targeted { config { hello-holdtime <>; } } } </pre>	<pre> ldp { targeted-hello { hold-time <>; } } </pre>
hello-accept	<pre> ldp { targeted { config { hello-accept; } } } </pre>	<pre> ldp { strict-targeted-hellos; } </pre>

LDP Neighbor Configuration

See [Table 55 on page 158](#) for configuration mappings of the following sensors:

- `/network-instances/network-instance/mpls/signaling-protocols/ldp/neighbors/neighbor/`

- /network-instances/network-instance/mpls/signaling-protocols/ldp/neighbors/neighbor/authentication/config/enable
- /network-instances/network-instance/mpls/signaling-protocols/ldp/neighbors/neighbor/authentication/config/authentication-key

Table 55: LDP Neighbor Configuration


Command Name	OpenConfig configuration	Junos Configuration
neighbor	<pre>ldp { neighbors { neighbor <id><label-space-id>; } }</pre>	<pre>ldp { session <neighbor-id>; }</pre>
enable	<pre>ldp { neighbors { neighbor <> { authentication { config { enable <true/false>; } } } } }</pre>	<pre>ldp { session <> { inactive: authentication-key <>; } }</pre>

For neighbour ID, the neighbor IP address and label space ID are the keys. Label space ID should be zero. Non-zero values will be treated as zeros.

Table 55: LDP Neighbor Configuration (Continued)

Command Name	OpenConfig configuration	Junos Configuration
authentication-key	<pre>ldp { neighbors { neighbor <> { authentication { config { authentication-key <>; } } } } }</pre>	<pre>ldp { session-group <> { authentication-key <>; } }</pre>

Mapping OpenConfig LLDP Commands to Junos Configuration



NOTE: See [Junos YANG Data Model Explorer](#) topic to understand the data models supported version and its Junos OS release for Juniper Networks MX Series and PTX Series.

[Table 56 on page 160](#) and [Table 57 on page 160](#) show the mapping of OpenConfig LLDP commands with the relevant configuration in Junos.

Table 56: Global LLDP Configuration

Command Name	OpenConfig Command Path	Junos Configuration
Enable	/lldp/config/enabled NOTE: Supported in Junos Evolved OS Release 21.4R1 for PTX10008 and PTX10016 routers based on OpenConfig data model openconfig-lldp.yang version 0.2.1.	set protocols lldp <i>enable/disable</i>
Hello time	/lldp/config/hello-timer	set protocols lldp tlv-filter
TLV advertisement	/lldp/config/suppress-tlv-advertisement NOTE: Supported in Junos Evolved OS Release 21.4R1 for PTX10008 and PTX10016 routers based on OpenConfig data model openconfig-lldp.yang version 0.2.1.	set protocols lldp advertisement-interval <i>advertisement-interval</i>
System Information	/lldp/config/chassis-id /lldp/config/chassis-id-type	Not supported


Table 57: Interface Configuration

Command Name	OpenConfig Command Path	Junos Configuration
Interface	/lldp/interfaces/interface/ NOTE: Supported in Junos Evolved OS Release 21.4R1 for PTX10008 and PTX10016 routers based on OpenConfig data model openconfig-lldp.yang version 0.2.1.	set protocols lldp interface <i>interface-name</i>
Interface Config	/lldp/interfaces/interface/config/name /lldp/interfaces/interface/config/enabled NOTE: Supported in Junos Evolved OS Release 21.4R1 for PTX10008 and PTX10016 routers based on OpenConfig data model openconfig-lldp.yang version 0.2.1.	set protocols lldp interface <i>interface-name</i> enable

RELATED DOCUMENTATION

Mapping OpenConfig Routing Policy Commands to Junos Configuration 256
Mapping OpenConfig Interface Commands to Junos Configuration 113
Mapping OpenConfig Local Routing Commands to Junos Configuration 161
Mapping OpenConfig BGP Commands to Junos Configuration 53
Mapping OpenConfig MPLS Commands to Junos Configuration 175

Mapping OpenConfig Local Routing Commands to Junos Configuration



NOTE: See [Junos YANG Data Model Explorer](#) topic to understand the data models supported version and its Junos OS release for Juniper Networks ACX Series, EX Series, MX Series, PTX Series, and QFX Series.

Table 58 on page 161 and Table 59 on page 162 show the mapping of OpenConfig local routing commands to the relevant configuration in Junos.

Table 58: Static Route Configuration

Command Name	OpenConfig Command Path	Junos Configuration
	Command path prefix: <code>/local-routes/static-routes</code>	
<p>NOTE: Supported in Junos OS Release 21.2R1 for PTX Series and MX Series. Supported in Junos Evolved OS Release 21.3R1 for PTX10003 and PTX10008 routers. Supported in Junos Evolved OS Release 21.4R1 for PTX10016 routers.</p> <p>Local Static Routes</p>	<code>/static/next-hops/next-hop/config/metric</code>	<pre>set routing-options static route prefix qualified-next-hop nexthop metric value</pre>

Table 58: Static Route Configuration (*Continued*)

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Local Static Prefix	/static/config/prefix	set routing-options static route <i>prefix</i>
Local Static Next Hop	/static/config/prefix /static/config/next-hop/ <i>ip-address</i> /static/config/next-hop/ <i>local-defined-next-hop</i> /static/config/next-hop/ <i>string</i>	set routing-options static route <i>prefix</i> next-hop (<i>address</i> <i>interface</i>) set routing-options static route <i>prefix</i> discard
Local Static Tag	/static/config/prefix /static/config/set-tag	set routing-options static route <i>prefix</i> tag <i>tag</i>

Table 59: Local Aggregate Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
	Command path prefix: /local-routes/local-aggregates	
Local Aggregate Prefix	/aggregate/config/prefix	set routing-options aggregate route <i>prefix</i>
Local Aggregate Discard	/aggregate/config/prefix /aggregate/config/discard	set routing-options aggregate route <i>prefix</i> discard
Local Aggregate Tag	/aggregate/config/prefix /aggregate/config/set-tag	set routing-options aggregate route <i>prefix</i> tag <i>tag</i>

RELATED DOCUMENTATION

Mapping OpenConfig BGP Commands to Junos Configuration	53
Mapping OpenConfig Interface Commands to Junos Configuration	113
Mapping OpenConfig LLDP Commands to Junos Configuration	159
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Mapping OpenConfig MACsec Model Commands to Junos Configuration



NOTE: See [Junos YANG Data Model Explorer](#) topic to understand the data models supported version and its Junos OS release for Juniper Networks PTX, and ACX Series.

The following tables show the mapping of OpenConfig Media Access Control Security (MACsec) commands with the relevant configurations in Junos OS:

- [Table 60 on page 164](#): MACsec Key Agreement (MKA) Policies Configuration
- [Table 61 on page 168](#): MKA Key Chain Configuration
- [Table 62 on page 171](#): MKA Key Chain Key ID Configuration Deviation
- [Table 63 on page 173](#): MACsec Interfaces Configuration

Table 60: MACsec Key Agreement (MKA) Policies Configuration

Command Name	OpenConfig Configuration	Junos Configuration
name	<pre> openconfig-macsec: macsec { mka { policies { policy { name(leafref) } } } } </pre>	<pre> security macsec { connectivity-association { <ca_name> } } </pre>
name	<pre> openconfig-macsec: macsec { mka { policies { policy { config { name(string) } } } } } </pre>	<pre> security macsec { connectivity-association { <name> } } </pre>
key-server-priority	<pre> openconfig-macsec: macsec { mka { policies { policy { config { key-server-priority(uint8) } } } } } </pre>	<pre> security macsec { connectivity-association { <name> { mka { key-server- priority < 0..255 > } } } } </pre>

Table 60: MACsec Key Agreement (MKA) Policies Configuration *(Continued)*

Command Name	OpenConfig Configuration	Junos Configuration
macsec-cipher-suite	<pre> openconfig-macsec: macsec { mka { policies { policy { config { macsec-cipher- suite(macsec-types:macsec-cipher-suite) } } } } } </pre>	<pre> security macsec { connectivity-association { <name> { cipher-suite { <suit-options> } } } } </pre>
confidentiality-offset	<pre> openconfig-macsec: macsec { mka { policies { policy { config { confidentiality- offset(macsec-types: confidentiality-offset) } } } } } </pre>	<pre> security macsec { connectivity-association { <name> { offset { <0 or 30 or 50> } } } } </pre>

Table 60: MACsec Key Agreement (MKA) Policies Configuration *(Continued)*

Command Name	OpenConfig Configuration	Junos Configuration
delay-protection	<pre> openconfig-macsec: macsec { mka { policies { policy { config { delay-protection(boolean) } } } } } </pre>	<pre> security macsec { connectivity-association { <name> { mka { bounded-delay } } } } </pre>
include-icv-indication	<pre> openconfig-macsec: macsec { mka { policies { policy { config { include-icv-indication(boolean) } } } } } </pre>	Configuration unsupported in Junos OS.
sak-rekey-interval	<pre> openconfig-macsec: macsec { mka { policies { policy { config { sak-rekey-interval(uint32) } } } } } </pre>	<pre> security macsec { connectivity-association { <name> { mka { sak-rekey-interval < 60..86400 seconds> } } } } </pre>

Table 60: MACsec Key Agreement (MKA) Policies Configuration *(Continued)*

Command Name	OpenConfig Configuration	Junos Configuration
sak-rekey-on-live-peer-loss	<pre> openconfig-macsec: macsec { mka { policies { policy { config { sak-rekey-on-live-peer- loss(boolean) } } } } } </pre>	Configuration unsupported in Junos OS.
use-updated-eth-header	<pre> openconfig-macsec: macsec { mka { policies { policy { config { use-updated-eth- header(boolean) } } } } } </pre>	Configuration unsupported in Junos OS.

Table 61: MKA Key Chain Configuration

Command Name	OpenConfig Configuration	Junos Configuration
key-chain name	<pre> openconfig-macsec: macsec { mka { key-chains { key-chain { name(leafref) } } } } </pre>	<pre> security authentication-key-chains { key-chain { <key-chain-name> } } </pre>
key-chain config name	<pre> openconfig-macsec: macsec { mka { key-chains { key-chain { config { name(string) } } } } } </pre>	<pre> security authentication-key-chains { key-chain { <key-chain-name> } } </pre>
mka-key id	<pre> openconfig-macsec: macsec { mka { key-chains { key-chain { mka-keys { mka-key { id(leafref) } } } } } } </pre>	<pre> security authentication-key-chains { key-chain { <key-chain-name> { key <0..63> } } } </pre>

Table 61: MKA Key Chain Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
mka-key config id	<pre> openconfig-macsec: macsec { mka { key-chains { key-chain { mka-keys { mka-key { config { id(oc-yang:hex- string) } } } } } } } </pre>	<pre> security authentication-key-chains { key-chain { <key-chain-name> { key <0..63> { key-name <> } } } } </pre>
key-clear-text	<pre> openconfig-macsec: macsec { mka { key-chains { key-chain { mka-keys { mka-key { config { key-clear- text(string) } } } } } } } </pre>	<pre> key-chain { <key-chain-name> { key <0..63> { secret <secret_key> } } } </pre>

Table 61: MKA Key Chain Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
cryptographic-algorithm	<pre> openconfig-macsec: macsec { mka { key-chains { key-chain { mka-keys { mka-key { config { cryptographic- algorithm(enumeration) } } } } } } } </pre>	Configuration unsupported in Junos OS.
valid-date-time	<pre> openconfig-macsec: macsec { mka { key-chains { key-chain { mka-keys { mka-key { config { valid-date- time(union) } } } } } } } </pre>	<pre> security authentication-key-chains { key-chain { <key-chain-name> { key <0..63> { start-time { < YYYY-MM- DD.HH:MM> } } } } } </pre>

Table 61: MKA Key Chain Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
	<pre> openconfig-macsec: macsec { mka { key-chains { key-chain { mka-keys { mka-key { config { expiration-date- time(union) } } } } } } } </pre>	Configuration unsupported in Junos OS.

Table 62: MKA Key Chain Key ID Configuration Deviation

Command Name	OpenConfig Configuration	Junos Configuration
MKA Key	<pre> openconfig-macsec: macsec { mka { key-chains { key-chain { mka-keys { mka-key { id(leafref) } } } } } } </pre>	<pre> security authentication-key-chains { key-chain { <key-chain-name> { key <0..63> } } } </pre>

Table 62: MKA Key Chain Key ID Configuration Deviation (*Continued*)

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
---------------------	---------------------------------	----------------------------

In OpenConfig configurations, the `mka-key` elements ID, key, and start time are referenced by the `mka-key id`. In Junos OS configurations, this is referenced by the key value, in the range from 0 to 63.

In order to support the OpenConfig configuration, Junos OS deviates the `mka-key` pattern in the OpenConfig model in the following way:

- The first two digits should be an integer from 00 to 63 followed by a hexstring; for example: `[00..63][hexstring]`.
- The first two digits from the OpenConfig `mka-key id` translate to the Junos OS configuration integer.

The following OpenConfig configuration is an example:

```
set openconfig-macsec:macsec mka key-chains key-chain MACSEC_OC_KEY mka-keys mka-key 00cafe0000
config key-clear-text 1234567890
```

```
set openconfig-macsec:macsec mka key-chains key-chain MACSEC_OC_KEY mka-keys mka-key 00cafe0000
config valid-date-time 2021-11-30T00:00:00.OZ
```

The resulting OpenConfig configuration commit on a Juniper device looks like this:

```
security {
  authentication-key-chains {
    key-chain MACSEC_OC_KEY {
      key 0 {
        secret "$9$EVBcev8X7Vs2LXikmfzFevMW-VJGDjk."; ## SECRET-DATA
        key-name cafe0000;
        start-time "2021-11-29.16:00:00 -0800";
      }
    }
  }
}
```

Table 63: MACsec Interfaces Configuration

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
interface name	<pre> openconfig-macsec: macsec { interfaces { interface { name(leafref) } } } </pre>	<pre> security macsec { interfaces { <name> } } </pre>
interface config name	<pre> openconfig-macsec: macsec { interfaces { interface { config { name(oc-if:base-interface- ref) } } } } </pre>	<pre> security macsec { interfaces { <name> } } </pre>
config enable	<pre> openconfig-macsec: macsec { interfaces { interface { config { enable(boolean) } } } } </pre>	There is no separate enable keyword in Junos OS.

Table 63: MACsec Interfaces Configuration (Continued)

Command Name	OpenConfig Configuration	Junos Configuration
replay-protection	<pre> openconfig-macsec: macsec { interfaces { interface { config { replay-protection(uint16) } } } } </pre>	<pre> openconfig-macsec: macsec { interfaces { interface { config { replay-protection(uint16) } } } } security macsec { connectivity-association { <name> { replay-protect { replay-window-size < 0..65535 packets> } } } } </pre>
mka-policy	<pre> openconfig-macsec: macsec { interfaces { interface { mka { config { mka-policy(leafref) } } } } } </pre>	<pre> security macsec { interfaces { <name> { connectivity-association { <connectivity- association> } } } } </pre>

Table 63: MACsec Interfaces Configuration (Continued)

Command Name	OpenConfig Configuration	Junos Configuration
config key-chain	<pre> openconfig-macsec: macsec { interfaces { interface { mka { config { key-chain(leafref) } } } } } </pre>	<pre> security macsec { connectivity-association { <name> { pre-shared-key-chain { <pre-shared-key-chain> } } } } </pre>

Mapping OpenConfig MPLS Commands to Junos Configuration



NOTE: See [Junos YANG Data Model Explorer](#) topic to understand the data models supported version and its Junos OS release for Juniper Networks MX Series, PTX Series, and QFX Series.

Table 64 on page 175 to Table 69 on page 186 show the mapping of OpenConfig MPLS commands with the relevant configuration in Junos.

Table 64: Global MPLS Configuration

Command Name	OpenConfig Command Path	Junos Configuration
Explicit Null	<pre> /mpls/global/config/null-label/explicit /mpls/global/config/null-label/implicit </pre>	<pre> set protocols mpls explicit-null </pre>

Table 64: Global MPLS Configuration (*Continued*)

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Interface	/mpls/global/interface-attributes/interface/config/ interface-id /mpls/global/interface-attributes/interface/config/mpls- enabled /mpls/global/interface-attributes/interface/interface-ref/ config/interface /mpls/global/interface-attributes/interface/interface-ref/ config/subinterface	set protocols mpls interface <i>interface</i> set protocols mpls interface <i>interface</i> disable

Table 65: TE Global Attributes

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
SRLGs	/mpls/te-global-attributes/srlg/srlg/config/name	Flooded: set routing-options srlg <i>name</i> Static: set routing-options fate- sharing group <i>name</i>
SRLG Value	/mpls/te-global-attributes/srlg/srlg/config/value	set routing-options fate- sharing group <i>name</i> srlg-value <i>value</i>
SRLG Cost	/mpls/te-global-attributes/srlg/srlg/config/cost	Flooded: set routing-options srlg <i>name</i> srlg-cost <i>cost</i> Static: set routing-options fate- sharing group <i>name</i> cost <i>cost</i>

Table 65: TE Global Attributes (Continued)

Command Name	OpenConfig Command Path	Junos Configuration
Address	/mpls/te-global-attributes/srlg/srlg/static-srlg-members/ members-list/config/from-address /mpls/te-global-attributes/srlg/srlg/static-srlg-members/ members-list/config/to-address	set routing-options fate-sharing group <i>name</i> from <i>address</i> to <i>address</i>
Admin Groups	/mpls/te-global-attributes/mpls-admin-groups/admin-group/ config/admin-group-name /mpls/te-global-attributes/mpls-admin-groups/admin-group/ config/bit-position	Bit position (group-value) 0-31: set protocols mpls admin-groups <i>group-name</i> <i>group-value</i> Bit position (group-value) 32-4294967295: set routing-options admin-groups-extended <i>group-name</i> <i>group-value</i> <i>group-value</i>
Delay	/mpls/te-global-attributes/te-lsp-timers/config/install-delay /mpls/te-global-attributes/te-lsp-timers/config/cleanup-delay /mpls/te-global-attributes/te-lsp-timers/config/reoptimize-timer	set protocols mpls optimize-switchover-delay <i>delay</i> set protocols mpls optimize-hold-dead-delay <i>delay</i> set protocols mpls optimize-timer <i>timer</i>

Table 66: TE Interface Attributes

Command Name	OpenConfig Command Path	Junos Configuration
TE Interface	/mpls/te-interface-attributes/interface/config/interface-id /mpls/te-interface-attributes/interface/interface-ref/config/interface /mpls/te-interface-attributes/interface/interface-ref/config/subinterface	set protocols ospf area <i>id</i> interface <i>interface</i>

Table 66: TE Interface Attributes (Continued)

Command Name	OpenConfig Command Path	Junos Configuration
TE Metric	/mpls/te-interface-attributes/interface/config/te-metric	set protocols ospf area <i>id</i> interface <i>interface</i> te-metric <i>te-metric</i> set protocols isis interface <i>interface</i> level <i>level</i> te-metric <i>te-metric</i>
SRLG Membership	/mpls/te-interface-attributes/interface/config/srlg-membership	set protocols mpls interface <i>name</i> srlg <i>name</i>
Admin Groups	/mpls/te-interface-attributes/interface/config/admin-group	If protocols mpls admin-groups <i>name</i> is configured: set protocols mpls interface <i>name</i> admin-group <i>name</i> If routing-options admin-groups-extended <i>name</i> is configured: set protocols mpls interface <i>name</i> admin-group-extended <i>name</i>
IGP Flooding Bandwidth	/mpls/te-interface-attributes/interface/igp-flooding-bandwidth/config/threshold-type /mpls/te-interface-attributes/interface/igp-flooding-bandwidth/config/delta-percentage	set protocols rsvp interface <i>name</i> update-threshold <i>threshold</i>
	/mpls/te-interface-attributes/interface/igp-flooding-bandwidth/config/threshold-specification /mpls/te-interface-attributes/interface/igp-flooding-bandwidth/config/up-thresholds /mpls/te-interface-attributes/interface/igp-flooding-bandwidth/config/down-thresholds /mpls/te-interface-attributes/interface/igp-flooding-bandwidth/config/up-down-thresholds	Not supported

Table 67: RSVP Signaling Protocols

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Graceful Restart	/mpls/signaling-protocols/rsvp-te/global/ graceful-restart/config/enable /mpls/signaling-protocols/rsvp-te/global/ graceful-restart/config/restart-time /mpls/signaling-protocols/rsvp-te/global/ graceful-restart/config/recovery-time	set protocols rsvp graceful- restart enable set protocols rsvp graceful- restart maximum-helper- recovery-time <i>time</i> set protocols rsvp graceful- restart maximum-helper- restart-time <i>time</i>
Cleanup Timer	/mpls/signaling-protocols/rsvp-te/global/ soft- preemption/config/enable /mpls/signaling-protocols/rsvp-te/global/ soft- preemption/config/soft-preemption-timeout	set protocols rsvp preemption soft-preemption cleanup-timer <i>timer</i>
Hello Interval (All Interfaces)	/mpls/signaling-protocols/rsvp-te/global/ hellos/ config/hello-interval /mpls/signaling-protocols/rsvp-te/global/ hellos/ config/refresh-reduction	set protocols rsvp interface all hello-interval <i>interval</i> set protocols rsvp interface all no-reliable

Table 67: RSVP Signaling Protocols (*Continued*)

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Hello Interval (Single Interface)	/mpls/signaling-protocols/rsvp-te/interface-attributes/ interface/config/interface-id	set protocols rsvp interface <i>name</i> hello-interval <i>interval</i>
	/mpls/signaling-protocols/rsvp-te/interface-attributes/ interface/interface-ref/config/interface	set protocols rsvp interface <i>name</i> no-reliable
	/mpls/signaling-protocols/rsvp-te/interface-attributes/ interface/config/interface-name	
	/mpls/signaling-protocols/rsvp-te/interface-attributes/ interface/hellos/config/hello-interval	
	/mpls/signaling-protocols/rsvp-te/interface-attributes/ interface/hellos/config/refresh-reduction	
Authentication Key	/mpls/signaling-protocols/rsvp-te/interface-attributes/ interface/config/interface-id	set protocols rsvp interface <i>name</i> authentication-key <i>key</i>
	/mpls/signaling-protocols/rsvp-te/interface-attributes/ interface/interface-ref/config/interface	
	/mpls/signaling-protocols/rsvp-te/interface-attributes/ interface/interface-ref/config/subinterface	
	/mpls/signaling-protocols/rsvp-te/interface-attributes/ interface/authentication/config/enable	
	/mpls/signaling-protocols/rsvp-te/interface-attributes/ interface/authentication/config/authentication-key	

Table 67: RSVP Signaling Protocols (*Continued*)

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Subscription	/mpls/signaling-protocols/rsvp-te/interface-attributes/ interface/config/interface-id /mpls/signaling-protocols/rsvp-te/interface-attributes/ interface/interface-ref/config/interface /mpls/signaling-protocols/rsvp-te/interface-attributes/ interface/interface-ref/config/subinterface /mpls/signaling-protocols/rsvp-te/interface-attributes/ interface/subscription/config/subscription	set protocols rsvp interface <i>name</i> subscription <i>subscription</i>

Table 67: RSVP Signaling Protocols (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
Link Protection	/mpls/signaling-protocols/rsvp-te/interface-attributes/ interface/config/interface-id /mpls/signaling-protocols/rsvp-te/interface-attributes/ interface/interface-ref/config/interface /mpls/signaling-protocols/rsvp-te/interface-attributes/ interface/interface-ref/config/subinterface /mpls/signaling-protocols/rsvp-te/interface-attributes/interface/ protection/config/link-protection-style-requested/unprotected /mpls/signaling-protocols/rsvp-te/interface-attributes/interface/protection/ config/link-protection-style-requested/link-protection-requested /mpls/signaling-protocols/rsvp-te/interface-attributes/interface/protection/ config/link-protection-style-requested/link-node-protection-requested /mpls/signaling-protocols/rsvp-te/interface-attributes/interface/protection/ config/bypass-optimize-interval	set protocols rsvp interface <i>name</i> link-protection To disable node-protection: set protocols rsvp interface <i>name</i> link-protection no-node-protection set protocols rsvp interface <i>name</i> link-protection optimize-timer <i>timer</i>

Table 68: Label Switched Paths

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Path	/mpls/lsp/ constrained-path/ named-explicit-paths/ config/ name /mpls/lsp/ constrained-path/ named-explicit-paths/ explicit-route-objects/ config/ address /mpls/lsp/ constrained-path/ named-explicit-paths/ explicit-route-objects/ config/ hop-type /mpls/lsp/ constrained-path/ named-explicit-paths/ explicit-route-objects/ config/ index	set protocols mpls path <i>name</i> <i>address hop-type</i>
Name	/mpls/lsp/ constrained-path/ tunnel/ config/ name /mpls/lsp/ constrained-path/ tunnel/ config/ type/ P2P /mpls/lsp/ constrained-path/ tunnel/ config/ signaling-protocol/ path-setup-rsvp	set protocols mpls label-switched-path <i>name</i>
Description	/mpls/lsp/ constrained-path/ tunnel/ config/ description	set protocols mpls label-switched-path <i>name</i> description <i>description</i>
Admin-Status	/mpls/lsp/ constrained-path/ tunnel/ config/ admin-status	set protocols mpls label-switched-path <i>name</i> disable
Preference	/mpls/lsp/ constrained-path/ tunnel/ config/ preference	set protocols mpls label-switched-path <i>name</i> preference <i>preference</i>
Metric	/mpls/lsp/ constrained-path/ tunnels/ tunnel/ config/ metric-type /mpls/lsp/ constrained-path/ tunnels/ tunnel/ config/ shortcut-eligible /mpls/lsp/ constrained-path/ tunnel/ config/ metric	set protocols mpls label-switched-path <i>name</i> metric <i>metric</i>

Table 68: Label Switched Paths *(Continued)*

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Link Protection	/mpls/lsp/constrained-path/tunnel/config/ protection-style-requested/unprotected	set protocols mpls label-switched-path <i>name</i> link-protection
	/mpls/lsp/constrained-path/tunnel/config/ protection-style-requested/link-protection-requested	set protocols mpls label-switched-path <i>name</i> node-link-protection
	/mpls/lsp/constrained-path/tunnel/config/ protection-style-requested/link-node-protection-requested	
Optimize Timer	/mpls/lsp/constrained-path/tunnel/config/reoptimize-timer	set protocols mpls label-switched-path <i>name</i> optimize-timer <i>timer</i>
Source	/mpls/lsp/constrained-path/tunnel/config/source	set protocols mpls label-switched-path <i>name</i> from <i>from</i>
Soft Preemption	/mpls/lsp/constrained-path/tunnel/config/soft-preemption	set protocols mpls label-switched-path <i>name</i> soft-preemption
Priority	/mpls/lsp/constrained-path/tunnel/config/setup-priority	set protocols mpls label-switched-path <i>name</i> priority <i>setup reservation</i>
	/mpls/lsp/constrained-path/tunnel/config/hold-priority	
Bandwidth	/mpls/lsp/constrained-path/tunnel/bandwidth/config/specification-type/specified	set protocols mpls label-switched-path <i>name</i> bandwidth <i>bandwidth</i>
	/mpls/lsp/constrained-path/tunnel/bandwidth/config/set-bandwidth	

Table 68: Label Switched Paths *(Continued)*

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Min/Max Bandwidth	/mpls/lsp/constrained-path/tunnel/bandwidth/config/specification-type/auto /mpls/lsp/constrained-path/tunnel/bandwidth/auto-bandwidth/ config/enabled /mpls/lsp/constrained-path/tunnel/bandwidth/auto-bandwidth/ config/min-bw /mpls/lsp/constrained-path/tunnel/bandwidth/auto-bandwidth/ config/max-bw /mpls/lsp/constrained-path/tunnel/bandwidth/auto-bandwidth/ config/adjust-interval /mpls/lsp/constrained-path/tunnel/bandwidth/auto-bandwidth/ config/adjust-threshold	set protocols mpls label-switched-path <i>name</i> minimum-bandwidth <i>minimum</i> set protocols mpls label-switched-path <i>name</i> maximum-bandwidth <i>maximum</i> set protocols mpls label-switched-path <i>name</i> adjust-interval <i>interval</i> set protocols mpls label-switched-path <i>name</i> adjust-threshold <i>threshold</i>
Overflow Bandwidth	/mpls/lsp/constrained-path/tunnel/bandwidth/ config/specification-type/auto /mpls/lsp/constrained-path/tunnel/auto-bandwidth/ overflow/ config/enabled /mpls/lsp/constrained-path/tunnel/bandwidth/auto-bandwidth/ overflow/config/overflow-threshold /mpls/lsp/constrained-path/tunnel/bandwidth/auto-bandwidth/ overflow/config/trigger-event-count	set protocols mpls label-switched-path <i>name</i> auto-bandwidth adjust-threshold-overflow-limit

Table 68: Label Switched Paths (*Continued*)

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Underflow Bandwidth	/mpls/lsp/constrained-path/tunnel/bandwidth/config/specification-type/auto /mpls/lsp/constrained-path/tunnel/auto-bandwidth/underflow/ config/enabled /mpls/lsp/constrained-path/tunnel/bandwidth/auto-bandwidth/ underflow/config/underflow-threshold /mpls/lsp/constrained-path/tunnel/bandwidth/auto-bandwidth/ underflowflow/config/trigger-event-count	set protocols mpls label-switched-path <i>name</i> auto-bandwidth adjust-threshold-underflow-limit

Table 69: RSVP P2P Tunnel

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Destination	/mpls/lsp/constrained-path/tunnel/ p2p-tunnel-attributes/config/destination	set protocols mpls label-switched-path <i>name</i> to <i>to</i>
Primary Path	/mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-primary-paths/config/ name	set protocols mpls label-switched-path <i>name</i>

Table 69: RSVP P2P Tunnel (Continued)

Command Name	OpenConfig Command Path	Junos Configuration
Primary Path - Locally-Computed	/mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-primary-paths/config/path-computation-method/ locally-computed /mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-primary-paths/config/use-cspf /mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-primary-paths/config/cspf-tiebreaker/random /mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-primary-paths/config/cspf-tiebreaker/least-fill /mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-primary-paths/config/cspf-tiebreaker/most-fill	set protocols mpls label-switched-path <i>name</i> no-cspf set protocols mpls label-switched-path <i>name</i> random set protocols mpls label-switched-path <i>name</i> least-fill set protocols mpls label-switched-path <i>name</i> most-fill
Primary Path - Externally Queried	/mpls/lsp/constrained-path/tunnel/ p2p-tunnel-attributes/p2p-primary-paths/config/path-computation-method/externally-queried	set protocols mpls label-switched-path <i>name</i> lsp-external-controller pccd set protocols pcep pce <i>name</i> destination-ipv4-address <i>address</i> set protocols pcep pce <i>name</i> destination-port 4189
Primary Path - Explicitly Defined	/mpls/lsp/constrained-path/tunnel/ p2p-tunnel-attributes/p2p-primary-paths/config/path-computation-method/explicitly-defined /mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-primary-paths/config/explicit-path-name	set protocols mpls label-switched-path <i>name</i> primary <i>path</i>

Table 69: RSVP P2P Tunnel (Continued)

Command Name	OpenConfig Command Path	Junos Configuration
Primary Path - Preference	/mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-primary-paths/config/preference	set protocols mpls label-switched-path <i>name</i> primary path preference <i>preference</i>
Primary Path - Priorities	/mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-primary-paths/config/setup-priority /mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-primary-paths/config/hold-priority	set protocols mpls label-switched-path <i>name</i> primary path priority <i>setup reservation</i>
Primary Path - Retry Timer	/mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-primary-paths/config/retry-timer	set protocols mpls label-switched-path <i>name</i> retry-timer
Primary Path - Candidate Secondary Paths	/mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-primary-paths/candidate-secondary-paths	Not supported
Primary Path - Admin-Groups	/mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-primary-paths/admin-groups/config/exclude-group /mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-primary-paths/admin-groups/config/include-all-group /mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-primary-paths/admin-groups/config/include-any-group	set protocols mpls label-switched-path <i>name</i> primary path admin-group exclude <i>group</i> set protocols mpls label-switched-path <i>name</i> primary path admin-group exclude <i>group</i> set protocols mpls label-switched-path <i>name</i> primary path admin-group include-any <i>group</i>

Table 69: RSVP P2P Tunnel (Continued)

Command Name	OpenConfig Command Path	Junos Configuration
Secondary Path	/mpls/lsp/constrained-path/tunnel/config/ name /mpls/lsp/constrained-path/tunnel/config/ type/P2P /mpls/lsp/constrained-path/tunnel/p2p- tunnel-attributes/ p2p-secondary-paths/ config/name	set protocols mpls label-switched-path <i>name</i>
Secondary Path - Locally-Computed	/mpls/lsp/constrained-path/tunnel/p2p- tunnel-attributes/ p2p-secondary-paths/ config/ path-computation-method/locally- computed /mpls/lsp/constrained-path/tunnel/p2p- tunnel-attributes/ p2p-secondary-paths/ config/use-cspf /mpls/lsp/constrained-path/tunnel/p2p- tunnel-attributes/ p2p-secondary-paths/ config/cspf-tiebreaker/random /mpls/lsp/constrained-path/tunnel/p2p- tunnel-attributes/ p2p-secondary-paths/ config/cspf-tiebreaker/least-fill /mpls/lsp/constrained-path/tunnel/p2p- tunnel-attributes/ p2p-secondary-paths/ config/cspf-tiebreaker/most-fill	set protocols mpls label-switched-path <i>name</i> secondary <i>path name</i> no-cspf
Secondary Path - Externally Queried	/mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-secondary-paths/config/ path-computation-method/externally-queried	Not supported

Table 69: RSVP P2P Tunnel (Continued)

Command Name	OpenConfig Command Path	Junos Configuration
Secondary Path - Explicitly Defined	/mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-secondary-paths/config/ path-computation-method/explicitly-defined /mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-secondary-paths/config/explicit-path-name	set protocols mpls label-switched-path <i>name</i> secondary <i>path</i>
Secondary Path - Preference	/mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-secondary-paths/config/preference	set protocols mpls label-switched-path <i>name</i> secondary <i>path</i> preference <i>preference</i>
Secondary Path - Priorities	/mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-secondary-paths/config/setup-priority /mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-secondary-paths/config/hold-priority	set protocols mpls label-switched-path <i>name</i> secondary <i>path</i> priority <i>setup reservation</i>
Secondary Path - Retry Timer	/mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-secondary-paths/config/retry-timer	set protocols mpls label-switched-path <i>name</i> secondary <i>path</i> retry-timer

Table 69: RSVP P2P Tunnel *(Continued)*

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Secondary Path - Admin-Groups	/mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-secondary-paths/admin-groups/config/exclude-group	set protocols mpls label-switched-path <i>name</i> secondary <i>path</i> admin-group exclude <i>group</i>
	/mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-secondary-paths/admin-groups/config/include-all-group	set protocols mpls label-switched-path <i>name</i> secondary <i>path</i> admin-group include-all <i>group</i>
	/mpls/lsp/constrained-path/tunnel/p2p-tunnel-attributes/ p2p-secondary-paths/admin-groups/config/include-any-group	set protocols mpls label-switched-path <i>name</i> secondary <i>path</i> admin-group include-any <i>group</i>

RELATED DOCUMENTATION

[Mapping OpenConfig BGP Commands to Junos Configuration | 53](#)
[Mapping OpenConfig Interface Commands to Junos Configuration | 113](#)
[Mapping OpenConfig LLDP Commands to Junos Configuration | 159](#)
[Mapping OpenConfig Local Routing Commands to Junos Configuration | 161](#)
[Mapping OpenConfig Routing Policy Commands to Junos Configuration | 256](#)

Mapping OpenConfig Multicast Commands to Junos Configuration

IN THIS SECTION

- [IGMP Configuration | 192](#)



NOTE: See [Junos YANG Data Model Explorer](#) for supported versions of the OpenConfig data model.

IGMP Configuration

See [Table 70 on page 192](#) for configuration mappings of the following OpenConfig paths under /
network-instances/network-instance/protocols/protocol/igmp:

- /interfaces/interface/config/interface-id
- /interfaces/interface/config/enabled
- /interfaces/interface/config/version

Table 70: IGMP Configuration

Command	OpenConfig Configuration	Junos Configuration
Interface ID	<pre>openconfig-network-instance:network-instances { protocols IGMP <> { igmp { interfaces { interface <> { config { interface-id <>; } } } } } }</pre>	<pre>protocols { igmp { interface <>; } }</pre>

OpenConfig path: /network-instances/network-instance/protocols/protocol/igmp/interfaces/interface/config/
interface-id

Table 70: IGMP Configuration (Continued)

Command	OpenConfig Configuration	Junos Configuration
Enable or disable	<pre>openconfig-network-instance:network-instances { protocols IGMP <> { igmp { interfaces { interface <> { config { enabled <true false>; } } } } } }</pre>	<pre>protocols { igmp { interface <> { disable; } } }</pre>


In Junos OS, there is no explicit configuration to enable IGMP. Enable the protocol by configuring the interface at the [edit protocols igmp] hierarchy level.

OpenConfig path: **/network-instances/network-instance/protocols/protocol/igmp/interfaces/interface/config/enabled**

IGMP version	<pre>openconfig-network-instance:network-instances { protocols IGMP <> { igmp { interfaces { interface <> { config { version <1 2 3>; } } } } } }</pre>	<pre>protocols { igmp { interface <> { version <1 2 3>; } } }</pre>
--------------	---	---

OpenConfig path: **/network-instances/network-instance/protocols/protocol/igmp/interfaces/interface/config/version**

Mapping OpenConfig Network Instance Commands to Junos Operation



NOTE: See [Junos YANG Data Model Explorer](#) topic to understand the data models supported version and its Junos OS release for Juniper Networks ACX Series, EX Series, MX Series, PTX Series, and QFX Series.

Network instance models a generic virtual forwarding table on a device. This supports a Layer 3 forwarding construct such as a virtual routing and forwarding (VRF) instance, or a Layer 2 instance such as a virtual switch instance. A mixed Layer 2 and Layer 3 instances are also supported.

Tables [Table 71 on page 194](#) to [Table 77 on page 212](#) lists the network instance resource paths.

For configuration and mappings to Junos commands, see:

- [Table 71 on page 194](#): Basic Configuration
- [Table 72 on page 196](#): Interfaces Configuration
- [Table 73 on page 197](#): Subinterfaces Configuration
- [Table 74 on page 199](#): Static Routes Configuration
- [Table 75 on page 206](#): Local Aggregates Configuration
- [Table 76 on page 209](#): Inter-Instance Policies Configuration
- [Table 77 on page 212](#): Route Limits

Table 71: Basic Configuration

Command Name	OpenConfig Configuration	Junos Configuration
description	<pre> network-instances { network-instance <> { config { description; } } }</pre>	<pre> routing-instances <> { description; }</pre>

Table 71: Basic Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
enabled	<pre> network-instances { network-instance <> { config { enabled; } } } </pre>	<pre> routing-instances <>; </pre> <p>NOTE: Use the deactivate command to indicate that the network instance should not be active.</p>
name	<pre> network-instances { network-instance <> { config { name; } } } </pre>	<pre> routing-instances <>; </pre>
route-distinguisher	<pre> network-instances { network-instance <> { config { route-distinguisher <>; } } } </pre>	<pre> routing-instances <> { route-distinguisher <>; } </pre>
router-id	<pre> network-instances { network-instance <> { config { router-id <>; } } } </pre>	<pre> routing-instances <> { router-options { router-id <>; } } </pre>

Table 71: Basic Configuration (Continued)

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
type	<pre> network-instances { network-instance <> { config { type <>; } } } </pre>	<pre> routing-instances <> { instance-type <>; } </pre>

Table 72: Interfaces Configuration

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
interface	<pre> network-instances { network-instance <> { interfaces { config { interface <>; } } } } </pre>	<pre> routing-instances <> { interface <>; } </pre>
subinterface	<pre> network-instances { network-instance <> { interfaces { config { subinterface <>; } } } } </pre>	<pre> routing-instances <> { interface <>; } </pre>

Table 73: Sub-interfaces Configuration

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
interval	<pre> openconfig-interfaces:interfaces { interface <> { subinterfaces { subinterface <> { oc-ip:ipv6 { oc-ip:router-advertisement { oc-ip:config { oc-ip:interval <>; } } } } } } } </pre>	<pre> protocols { router-advertisement { interface <> { max-advertisement-interval <>; } } } </pre>
lifetime	<pre> openconfig-interfaces:interfaces { interface <> { subinterfaces { subinterface <> { oc-ip:ipv6 { oc-ip:router-advertisement { oc-ip:config { oc-ip:lifetime <>; } } } } } } } </pre>	<pre> protocols { router-advertisement { interface <> { default-lifetime <>; } } } </pre>

Table 73: Sub-interfaces Configuration *(Continued)*

Command Name	OpenConfig Configuration	Junos Configuration
suppress	<pre>openconfig-interfaces:interfaces { interface <> { subinterfaces { subinterface <> { oc-ip:ipv6 { oc-ip:router-advertisement { oc-ip:config { oc-ip:suppress <>; } } } } } } }</pre>	<pre>protocols { router-advertisement { interface <> { passive-mode <>; } } }</pre>

Table 74: Static Route Configuration

Command Name	OpenConfig Configuration	Junos Configuration
description	<pre> openconfig-network-instance:network-instances { network-instance <> { protocols { protocol <> { static-routes{ static <> { config { description <>; } } } } } } } </pre>	<pre> routing-instances <> { routing-options { static { route <> { description <> } } } } </pre>
prefix	<pre> network-instances { network-instance <> { protocols { protocol { static-routes { static { config { prefix <>; } } } } } } } </pre>	<pre> routing-instances <> { routing-options { static { route <>; } } } </pre>

Table 74: Static Route Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
set tag (static routes)	<pre> network-instances { network-instance <> { protocols { protocol { static-routes { static { config { set-tag <>; } } } } } } } </pre>	<pre> routing-instances <> { routing-options { static { route <> { tag <>; } } } } </pre>
index	<pre> network-instances { network-instance <> { protocols { protocol { static-routes { static { next-hops { next-hop <> { config { index <>; } } } } } } } } } </pre>	<pre> routing-instances <> { routing-options { static { route <> { next-hop <>; } } } } </pre>

Table 74: Static Route Configuration (Continued)

Command Name	OpenConfig Configuration	Junos Configuration
metric	<pre>network-instances { network-instance <> { protocols { protocol { static-routes { static { next-hops { next-hop <> { config { metric <>; } } } } } } } } }</pre>	<pre>routing-instances <> { routing-options { static { route <> { qualified-next-hop <> { metric <>; } } } } }</pre>

Table 74: Static Route Configuration (Continued)

Command Name	OpenConfig Configuration	Junos Configuration
next-hop	<pre>network-instances { network-instance <> { protocols { protocol { static-routes { static { next-hops { next-hop <> { config { next-hop <>; } } } } } } } } }</pre>	<pre>routing-instances <> { routing-options { static { route <> { next-hop <>; } } } }</pre>

Table 74: Static Route Configuration (Continued)

Command Name	OpenConfig Configuration	Junos Configuration
interface	<pre>network-instances { network-instance <> { protocols { protocol { static-routes { static { next-hops { next-hop <> { interface-ref { config { interface <>; } } } } } } } } } }</pre>	<pre>routing-instances <> { routing-options { static { route <> { next-hop <>; } } } }</pre>

Table 74: Static Route Configuration *(Continued)*

Command Name	OpenConfig Configuration	Junos Configuration
sub-interface	<pre>network-instances { network-instance <> { protocols { protocol { static-routes { static { next-hops { next-hop <> { interface-ref { config { subinterface <>; } } } } } } } } } }</pre>	<pre>routing-instances <> { routing-options { static { route <> { next-hop <>; } } } }</pre>

Table 74: Static Route Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
recurse	<pre> network-instances { network-instance <> { protocols { protocol { static-routes { static { next-hops { next-hop <> { config { recurse; } } } } } } } } } </pre>	<pre> routing-instances <> { routing-options { static { route <> { resolve; } } } } </pre>
default metric	<pre> network-instances { network-instance <> { protocols { protocol { config { default-metric; } } } } } </pre>	<pre> routing-instances <> { routing-options { static { defaults { metric <>; } } } } </pre>

Table 75: Local Aggregates Configuration

Command Name	OpenConfig Configuration	Junos Configuration
description	<pre> openconfig-network-instance:network-instances { network-instance <> { protocols { protocol <> { local-aggregates{ aggregate <> { config { description <>; } } } } } } } </pre>	<pre> routing-instances <> { routing-options { aggregate { route <> { description <> } } } } </pre>
discard	<pre> network-instances { network-instance <> { protocols { protocol { local-aggregates { aggregate { config { discard <>; } } } } } } } </pre>	<pre> routing-instances <> { routing-options { aggregate { route <> { discard; } } } } </pre>

Table 75: Local Aggregates Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
prefix	<pre> network-instances { network-instance <> { protocols { protocol { local-aggregates { aggregate { config { prefix <>; } } } } } } } </pre>	<pre> routing-instances <> { routing-options { aggregate { route <>; } } } </pre>
set tag	<pre> network-instances { network-instance { protocols { protocol { local-aggregates { aggregate { config { set-tag <>; } } } } } } } </pre>	<pre> routing-instances <> { routing-options { aggregate { route <> { tag <>; } } } } </pre>

Table 75: Local Aggregates Configuration (*Continued*)

Command Name	OpenConfig Configuration	Junos Configuration
metric	<pre> network-instances { network-instance { protocols { protocol { local-aggregates { aggregate <> { config { metric <>; } } } } } } } </pre>	<pre> routing-instances <> { routing-options { aggregate { route <> { metric <>; } } } } </pre>
preference	<pre> network-instances { network-instance { protocols { protocol { local-aggregates { aggregate <> { config { preference <>; } } } } } } } </pre>	<pre> routing-instances <> { routing-options { aggregate { route <> { preference <>; } } } } </pre>

Table 75: Local Aggregates Configuration (Continued)

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
default metric	<pre> network-instances { network-instance <> { protocols { protocol { config { default-metric; } } } } } </pre>	<pre> routing-instances <> { routing-options { aggregate { defaults { metric <>; } } } } </pre>

Table 76: Inter-instance Policies

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
export policy	<pre> network-instances { network-instance <> { inter-instance-policies { apply-policy <> { config { export-policy; } } } } } </pre>	<pre> routing-instances <> { vrf-export <>; } </pre>

Table 76: Inter-instance Policies *(Continued)*

Command Name	OpenConfig Configuration	Junos Configuration
import policy	<pre>network-instances { network-instance <> { inter-instance-policies { apply-policy <> { config { import-policy; } } } } }</pre>	<pre>routing-instances <> { vrf-import <>; }</pre>
default export policy	<pre>network-instances { network-instance <> { inter-instance-policies { apply-policy <> { config { default-export-policy; } } } } }</pre>	<pre>routing-instances <> { export-default-action <accept reject>; }</pre>

You must configure an export policy before you can configure a default export policy.

Table 76: Inter-instance Policies *(Continued)*

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
default import policy	<pre> network-instances { network-instance <> { inter-instance-policies { apply-policy <> { config { default-import-policy; } } } } } </pre>	<pre> routing-instances <> { import-default-action <accept reject>; } </pre>
You must configure an import policy before you can configure a default import policy.		
export route target	<pre> network-instances { network-instance <> { inter-instance-policies { import-export-policy { config { export-route-target; } } } } } </pre>	<pre> routing-instances <> { vrf-target { export; } } </pre>

Table 76: Inter-instance Policies (Continued)

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
import route target	<pre> network-instances { network-instance <> { inter-instance-policies { import-export-policy { config { import-route-target; } } } } } </pre>	<pre> routing-instances <> { vrf-target { import; } } </pre>

Table 77: Route Limits Configuration

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
maximum	<pre> network-instances { network-instance <> { route-limits { route-limit <> { config { maximum <>; } } } } } </pre>	<pre> routing-instances <> { routing-options rib <> { maximum-paths <>; } } </pre>

Table 77: Route Limits Configuration *(Continued)*

Command Name	OpenConfig Configuration	Junos Configuration
warning only	<pre>network-instances { network-instance <> { route-limits { route-limit <> { config { warning-only <>; } } } } }</pre>	<pre>routing-instances <> { routing-options rib <> { maximum-paths log-only; } }</pre>

Change History Table

Feature support is determined by the platform and release you are using. Use [Feature Explorer](#) to determine if a feature is supported on your platform.

Release	Description
17.4R1	Starting with Junos OS Release 18.1R1, network instance based BGP configuration is supported.

RELATED DOCUMENTATION

Mapping OpenConfig BGP Commands to Junos Configuration 53
Mapping OpenConfig Interface Commands to Junos Configuration 113

Mapping OpenConfig OSPF Commands to Junos Configuration

IN THIS SECTION

- Global Configuration | 214
- Timer Configuration (Global) | 216
- Timer Configuration (Interfaces) | 219
- MPLS Configuration (Global) | 222
- MPLS Configuration (Interfaces) | 223
- Graceful Restart Configuration | 226
- Area Configuration | 228
- Interface Configuration | 228
- Neighbor Configuration | 233



NOTE: See [Junos YANG Data Model Explorer](#) for supported versions of the OpenConfig data model.

Global Configuration

See [Table 78 on page 215](#) for configuration mappings of the following OpenConfig paths under `/network-instances/network-instance/protocols/protocol/ospfv2/`:

- `/global/config/router-id`
- `/global/config/igp-shortcuts`
- `/global/config/log-adjacency-changes`

Table 78: Global OSPF Configuration

Command	OpenConfig Configuration	Junos Configuration
Router ID	<pre>openconfig-network-instance:network-instances { protocols ospf { ospfv2 { global { config { router-id <>; } } } } }</pre>	<pre>routing-options { router-id <>; }</pre>

A 32-bit number represented as a dotted quad assigned to each router running the OSPFv2 protocol. This number should be unique within the autonomous system.

OpenConfig path: **/network-instances/network-instance/protocols/protocol/ospf/ospfv2/global/config/router-id**

IGP shortcuts	<pre>openconfig-network-instance:network-instances { protocols ospf { ospfv2 { global { config { igp-shortcuts <>; } } } } }</pre>	<pre>protocols { ospf { traffic-engineering { shortcuts; } } }</pre>
---------------	--	--

When this leaf is set to true, OSPFv2 will route traffic to a remote system via any LSP to the system that is marked as shortcut eligible.

OpenConfig path: **/network-instances/network-instance/protocols/protocol/ospf/ospfv2/global/config/igp-shortcuts**

Table 78: Global OSPF Configuration (Continued)

Command	OpenConfig Configuration	Junos Configuration
Log adjacency changes	<pre>openconfig-network-instance:network-instances { protocols ospf { ospfv2 { global { config { log-adjacency-changes <>; } } } } }</pre>	<pre>protocols { ospf { traceoptions { file <> size <>; flag state; } } }</pre>

When this leaf is set to true, a log message will be generated when the state of an OSPFv2 neighbor changes.

OpenConfig path: /network-instances/network-instance/protocols/protocol/ospf/ospfv2/global/config/log-adjacency-changes

Timer Configuration (Global)

See [Table 79 on page 217](#) for configuration mappings of the following OpenConfig paths under /network-instances/network-instance/protocols/protocol/ospfv2/:

- /global/timers/spf/config/initial-delay
- /global/timers/max-metric/config/set
- /global/timers/max-metric/config/timeout
- /global/timers/max-metric/config/include

Table 79: Global Timer Configuration

Command	OpenConfig Configuration	Junos Configuration
SPF initial delay	<pre>openconfig-network-instance:network-instances { protocol ospf { ospfv2 { global { timer{ spf { config { initial-delay <>; } } } } } } }</pre>	<pre>routing-options { ospf { spf-options { delay <>; } } }</pre>

The value of this leaf specifies the time between a change in topology being detected and the first run of the SPF algorithm.

OpenConfig path: `/network-instances/network-instance/protocols/protocol/ospf/ospfv2/global/timers/spf/config/initial-delay`

Maximum metric	<pre>openconfig-network-instance:network-instances { protocol ospf { ospfv2 { global { timer { max-metric { config { set <>; } } } } } } }</pre>	<pre>protocols { ospf { overload; } }</pre>
----------------	--	---

Table 79: Global Timer Configuration (Continued)

Command	OpenConfig Configuration	Junos Configuration
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When this leaf is set to true, all non-stub interfaces of the local system are advertised with the maximum metric, such that the router does not act as a transit system.

OpenConfig path: /network-instances/network-instance/protocols/protocol/ospf/ospfv2/global/timers/max-metric/config/set

Maximum metric timeout	<pre>openconfig-network-instance:network-instances { protocol ospf { ospfv2 { global { timer { max-metric { config { timeout <>; } } } } } } }</pre>	<pre>protocols { ospf { overload { timeout <>; } } }</pre>
---------------------------	--	--

The delay after which the advertisement of entities with the maximum metric should be cleared, and the system reverts to the default, or configured, metrics.

OpenConfig path: /network-instances/network-instance/protocols/protocol/ospf/ospfv2/global/timers/max-metric/config/timeout

Table 79: Global Timer Configuration (Continued)

Command	OpenConfig Configuration	Junos Configuration
Maximum metric include	<pre> openconfig-network-instance:network-instances { protocol ospf { ospfv2 { global { timer { max-metric { config { include <>; } } } } } } } </pre>	<pre> protocols { ospf { overload { stub-network; as-external; } } } </pre>

By default, the maximum metric is advertised for all non-stub interfaces of a device. You specify additional entities to advertise using the include leaf list.

OpenConfig path: `/network-instances/network-instance/protocols/protocol/ospf/ospfv2/global/timers/max-metric/config/include`

Timer Configuration (Interfaces)

See [Table 79 on page 217](#) for configuration mappings of the following OpenConfig paths under `/network-instances/network-instance/protocols/protocol/ospfv2/`:

- `/areas/area/interfaces/interface/timers/config/hello-interval`
- `/areas/area/interfaces/interface/timers/config/dead-interval`
- `/areas/area/interfaces/interface/timers/config/retransmission-interval`

Table 80: Timer Configuration (Interfaces)

Command	OpenConfig Configuration	Junos Configuration
Hello interval	<pre>openconfig-network-instance:network-instances { protocol ospf { ospfv2 { areas { area <> { interfaces { interface <> { timers { config { hello-interval <>; } } } } } } } } }</pre>	<pre>protocols { ospf { area <> { interface <> { hello-interval <>; } } } }</pre>

OpenConfig path: /network-instances/network-instance/protocols/protocol/ospf/ospfv2/areas/area/interfaces/interface/timers/config/hello-interval

Table 80: Timer Configuration (Interfaces) *(Continued)*

Command	OpenConfig Configuration	Junos Configuration
Dead interval	<pre>openconfig-network-instance:network-instances { protocol ospf { ospfv2 { areas { area <> { interfaces { interface <> { timers { config { dead-interval <>; } } } } } } } } }</pre>	<pre>protocols { ospf { area <> { interface <> { dead-interval <>; } } } }</pre>

OpenConfig path:
/network-instances/network-instance/protocols/protocol/ospf/ospfv2/areas/area/interfaces/interface/timers/config/dead-interval

Table 80: Timer Configuration (Interfaces) (Continued)

Command	OpenConfig Configuration	Junos Configuration
Retransmission interval	<pre>openconfig-network-instance:network-instances { protocol ospf { ospfv2 { areas { area <> { interfaces { interface <> { timers { config { retransmission- interval <>; } } } } } } } } }</pre>	<pre>protocols { ospf { area <> { interface <> { retransmit- interval <>; } } } }</pre>

OpenConfig path: /network-instances/network-instance/protocols/protocol/ospf/ospfv2/areas/area/interfaces/interface/timers/config/retransmission-interval

MPLS Configuration (Global)

See [Table 81 on page 223](#) for configuration mappings of the OpenConfig path /network-instances/network-instance/protocols/protocol/ospfv2/global/mpls/config/traffic-engineering-extensions.

Table 81: MPLS Configuration (Global)

Command and Path	OpenConfig Configuration	Junos Configuration
Traffic engineering extensions	<pre> openconfig-network-instance:network-instances { protocol ospf { ospfv2 { global { mpls { config { traffic-engineering-extensions } } } } } } <>; </pre>	<pre> protocols { ospf { traffic-engineering; } } </pre>

When this leaf is set to true, traffic engineering extensions for OSPF advertise traffic engineering parameters using type 10 opaque LSAs.

OpenConfig path: `/network-instances/network-instance/protocols/protocol/ospf/ospfv2/global/mpls/config/traffic-engineering-extensions`

MPLS Configuration (Interfaces)

See [Table 79 on page 217](#) for configuration mappings of the following OpenConfig paths under `/network-instances/network-instance/protocols/protocol/ospfv2/`:

- `/areas/area/interfaces/interface/mpls/config/traffic-engineering-metric`
- `/areas/area/interfaces/interface/mpls/igp-ldp-sync/config/enabled`
- `/areas/area/interfaces/interface/mpls/igp-ldp-sync/config/post-session-up-delay`

Table 82: MPLS Configuration (Interfaces)

Command	OpenConfig Configuration	Junos Configuration
Traffic engineering metric	<pre>openconfig-network-instance:network-instances { protocol ospf { ospfv2 { areas { area <> { interfaces { interface <> { mpls { config { traffic-engineering- metric <>; } } } } } } } } }</pre>	<pre>protocols { ospf { area <> { interface <> { te-metric <>; } } } }</pre>

A link metric that should only be considered for traffic engineering purposes.

OpenConfig path: `/network-instances/network-instance/protocols/protocol/ospfv2/areas/area/interfaces/interface/mps/config/traffic-engineering-metric`

Table 82: MPLS Configuration (Interfaces) (Continued)

Command	OpenConfig Configuration	Junos Configuration
IGP-LDP sync	<pre>openconfig-network-instance:network-instances { protocol ospf { ospfv2 { areas { area <> { interfaces { interface <> { mpls { igp-ldp-sync { config { enabled <>; } } } } } } } } } }</pre>	<pre>protocols { ospf { area <> { interface <> { ldp- synchronization <>; } } } }</pre>

When this leaf is set to true, do not utilize this link for forwarding over IGP until LDP adjacencies to the neighbors over the link are established.

OpenConfig path: /network-instances/network-instance/protocols/protocol/ospfv2/areas/area/interfaces/interface/mps/igp-ldp-sync/config/enabled

Table 82: MPLS Configuration (Interfaces) (Continued)

Command	OpenConfig Configuration	Junos Configuration
Post-session up delay	<pre> openconfig-network-instance:network-instances { protocol ospf { ospfv2 { areas { area <> { interfaces { interface <> { mpls { igp-ldp-sync { config { post-session-up-delay <>; } } } } } } } } } } </pre>	<pre> protocols { ospf { area <> { interface <> { ldp- synchronization { hold-time <>; } } } } } </pre>

This leaf specifies a delay, in milliseconds, between the establishment of the LDP session to the IGP neighbor, and it being considered synchronized by the IGP. You must configure this leaf using multiples of 1000 so that it maps to the Junos equivalent hold-time, which is measured in seconds.

OpenConfig path: `/network-instances/network-instance/protocols/protocol/ospfv2/areas/area/interfaces/interface/mpls/igp-ldp-sync/config/post-session-up-delay`

Graceful Restart Configuration

See [Table 83 on page 227](#) for configuration mappings of the following OpenConfig paths under `/network-instances/network-instance/protocols/protocol/ospfv2/`:

- `/global/graceful-restart/config/enabled`
- `/global/graceful-restart/config/helper-only`

Table 83: Graceful Restart Configuration

Command	OpenConfig Configuration	Junos Configuration
Enable	<pre> openconfig-network-instance:network-instances { protocol ospf { ospfv2 { global { graceful-restart { config { enabled <>; } } } } } } </pre>	<pre> system { commit synchronize; } chassis { redundancy { graceful-switchover; } } routing-options { graceful-restart; } </pre>

OpenConfig path: /network-instances/network-instance/protocols/protocol/ospf/ospfv2/global/graceful-restart/config/enabled

Helper mode	<pre> openconfig-network-instance:network-instances { protocol ospf { ospfv2 { global { graceful-restart { config { helper-only <>; } } } } } } </pre>	<p>NOTE: Helper mode is enabled by default.</p> <p>If you enable helper mode using OpenConfig:</p> <ul style="list-style-type: none"> You will not be able to configure graceful restart in Junos. Any existing configuration for graceful restart in Junos will be deleted.
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OpenConfig path: /network-instances/network-instance/protocols/protocol/ospf/ospfv2/global/graceful-restart/config/helper-only

Area Configuration

See [Table 84 on page 228](#) for configuration mappings of the OpenConfig path `/network-instances/network-instance/protocols/protocol/ospfv2/areas/area/config/identifier`.

Table 84: Area Configuration

Command and Path	OpenConfig Configuration	Junos Configuration
Area ID	<pre> openconfig-network-instance:network-instances { protocol ospf { ospfv2 { areas { area <> { config { identifier <>; } } } } } } </pre>	<pre> protocols { ospf { area <>; } } </pre>

OpenConfig path: `/network-instances/network-instance/protocols/protocol/ospfv2/areas/area/config/identifier`

Interface Configuration

See [Table 85 on page 229](#) for configuration mappings of the following OpenConfig paths under `/network-instances/network-instance/protocols/protocol/ospfv2/`:

- `/areas/area/interfaces/interface/config/id`
- `/areas/area/interfaces/interface/config/passive`
- `/areas/area/interfaces/interface/config/priority`
- `/areas/area/interfaces/interface/config/metric`
- `/areas/area/interfaces/interface/config/network-type`

Table 85: Interface Configuration

Command	OpenConfig Configuration	Junos Configuration
Interface ID	<pre>openconfig-network-instance:network-instances { protocol ospf { ospfv2 { areas { area <> { interfaces { interface <> { config { id <>; } } } } } } } }</pre>	<pre>protocols { ospf { area <> { interface <>; } } }</pre>

Use this leaf to define a unique reference for the interface.

OpenConfig path: **/network-instances/network-instance/protocols/protocol/ospf/ospfv2/areas/area/interfaces/interface/config/id**

Table 85: Interface Configuration *(Continued)*

Command	OpenConfig Configuration	Junos Configuration
Passive interface	<pre>openconfig-network-instance:network-instances { protocol ospf { ospfv2 { areas { area <> { interfaces { interface <> { config { passive <>; } } } } } } } }</pre>	<pre>protocols { ospf { area <> { interface <> { passive; } } } }</pre>

When this leaf is set to true, the interface is advertised within the OSPF area but OSPF adjacencies are not established over the interface.

OpenConfig path: `/network-instances/network-instance/protocols/protocol/ospf/ospfv2/areas/area/interfaces/interface/config/passive`

Table 85: Interface Configuration *(Continued)*

Command	OpenConfig Configuration	Junos Configuration
Interface priority	<pre>openconfig-network-instance:network-instances { protocol ospf { ospfv2 { areas { area <> { interfaces { interface <> { config { priority <>; } } } } } } } }</pre>	<pre>protocols { ospf { area <> { interface <> { priority <>; } } } }</pre>

The local system's priority to become the designated router.

OpenConfig path: **/network-instances/network-instance/protocols/protocol/ospf/ospfv2/areas/area/interfaces/interface/config/priority**

Table 85: Interface Configuration (Continued)

Command	OpenConfig Configuration	Junos Configuration
Interface metric	<pre>openconfig-network-instance:network-instances { protocol ospf { ospfv2 { areas { area <> { interfaces { interface <> { config { metric <>; } } } } } } } }</pre>	<pre>protocols { ospf { area <> { interface <> { metric <>; } } } }</pre>

OpenConfig path: /network-instances/network-instance/protocols/protocol/ospf/ospfv2/areas/area/interfaces/interface/config/metric

Interface network type	<pre>openconfig-network-instance:network-instances { protocol ospf { ospfv2 { areas { area <> { interfaces { interface <> { config { network-type <>; } } } } } } } }</pre>	<pre>protocols { ospf { area <> { interface <> { interface-type <>; } } } }</pre>
------------------------	---	---

Table 85: Interface Configuration *(Continued)*

Command	OpenConfig Configuration	Junos Configuration
	OpenConfig path: /network-instances/network-instance/protocols/protocol/ospf/ospfv2/areas/area/interfaces/interface/config/network-type	

Neighbor Configuration

See [Table 86 on page 233](#) for configuration mappings of the OpenConfig path /network-instances/network-instance/protocols/protocol/ospfv2/areas/area/interfaces/interface/neighbors/neighbor/config/router-id.

Table 86: Neighbor Configuration

Command and Path	OpenConfig Configuration	Junos Configuration
Neighbor router ID	<pre>openconfig-network-instance:network-instances { protocol ospf { ospfv2 { areas { area <> { interfaces { interface <> { neighbors { neighbor <router-id> { config { router-id <router-id>; } } } } } } } } } }</pre>	<pre>protocols { ospf { area <> { interface <> { neighbor <>; } } } }</pre>

Table 86: Neighbor Configuration (Continued)

Command and Path	OpenConfig Configuration	Junos Configuration
The router ID of the remote system.		
OpenConfig path: /network-instances/network-instance/protocols/protocol/ospfv2/areas/area/interfaces/interface/neighbors/neighbor/config/router-id		

Mapping OpenConfig QoS Commands to Junos Configuration

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NOTE: See [Junos YANG Data Model Explorer](#) for supported data model versions and corresponding Junos OS or Junos Evolved OS releases.

Forwarding Class Configuration

See [Table 87 on page 235](#) for configuration mappings of the following OpenConfig paths:

- /qos/forwarding-groups/forwarding-group/name
- /qos/forwarding-groups/forwarding-group/config/name
- /qos/forwarding-groups/forwarding-group/config/fabric-priority
- /qos/forwarding-groups/forwarding-group/config/output-queue

Table 87: Forwarding Class Configuration

OpenConfig Configuration	Junos Configuration
<pre>openconfig-qos:qos { forwarding-groups { forwarding-group { name af1; config { name <>; fabric-priority 0; output-queue <>; } } forwarding-group { name nc; config { name <>; fabric-priority 1; output-queue <>; } } } }</pre>	<pre>class-of-service { forwarding-classes { class <name> queue-num <num> priority low; class <name> queue-num <num> priority high; } }</pre>
An OpenConfig fabric-priority value of 0 indicates low priority. Any non-zero value indicates high priority. The fabric-priority value is not supported on the PTX platform.	

BA Classifier Configuration

See for configuration mappings of the following OpenConfig paths:

- /qos/classifiers/classifier/name

- /qos/classifiers/classifier/terms/term/id
- /qos/classifiers/classifier/config/name
- /qos/classifiers/classifier/config/type
- /qos/classifiers/classifier/terms/term/id
- /qos/classifiers/classifier/terms/term/config
- /qos/classifiers/classifier/terms/term/config/id
- /qos/classifiers/classifier/terms/term/conditions/ipv4/config/dscp-set
- /qos/classifiers/classifier/terms/term/conditions/ipv6/config/dscp-set
- /qos/classifiers/classifier/terms/term/actions/config/target-group



NOTE: To more easily follow the OpenConfig examples below, variables are used in the OpenConfig configuration tree above.

Table 88: BA Classifier Configuration

OpenConfig Configuration	Junos Configuration
<pre>Open-Config-QoS:QoS:classifiers:classifier { name DSCP; terms { term { id 0; conditions { ipv6 { config { dscp-set [2 3]; } } } actions { config { target-group best-effort; } } } } }</pre>	<pre>[edit class-of-service] classifiers { dscp DSCP { term-id { term-id 0; forwarding-class best-effort { loss-priority low code-points [000100 000010]; } } } }</pre>
<p>Junos OS expects a loss-priority value. However, the OpenConfig configuration does not provide this. By default, the loss-priority value is considered as low.</p> <p>The OpenConfig code-point value is provided using bit format as octets and decimal values as decimals. To avoid confusion, you can provide code-point values in decimal format and the script converts them into a 6-bit pattern and sends it to the management daemon. For example:</p> <p>set openconfig-qos:qos classifiers classifier DSCP terms term 0 conditions ipv4 config dscp-set [2 3]</p>	

MPLS Classifier Configuration

See [Table 89 on page 239](#) for configuration mappings of the following OpenConfig paths:

- /qos/classifiers/classifier/terms/term/conditions/mpls
- /qos/classifiers/classifier/terms/term/conditions/mpls/config

- /qos/classifiers/classifier/terms/term/conditions/mps/config/traffic-class
- /qos/classifiers/classifier/terms/term/actions/config/target-group

Table 89: MPLS Classifier Configuration

<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
<pre> openconfig-qos:qos { classifiers { classifier <> { config { name <>; type <>; } terms { term { id <>; conditions { mpls { config { traffic-class <>; } } } actions { config { target-group <>; } } } } } } term { id <>; conditions { mpls { config { traffic-class <>; } } } actions { config { target-group <>; } } } } </pre>	<pre> class-of-service { classifiers { exp <> { forwarding-class <> { loss-priority low code-points } } forwarding-class <> { loss-priority low code-points } } } </pre>

Table 89: MPLS Classifier Configuration (Continued)

OpenConfig Configuration	Junos Configuration
<pre> } } }</pre>	
<p>Junos OS expects a loss-priority value. The OpenConfig configuration does not provide this. By default, the loss-priority value is low.</p> <p>The OpenConfig code-point value is provided using bit format as octets and decimal values as decimals. To avoid confusion, provide code-point values in decimal format.</p>	

Rewrite Rules Configuration

See [Table 90 on page 241](#) for configuration mappings of the following OpenConfig paths:

- /qos/classifiers/classifier/terms/term/actions/remark
- /qos/classifiers/classifier/terms/term/actions/remark/config
- /qos/classifiers/classifier/terms/term/actions/remark/config/set-dscp
- /qos/classifiers/classifier/terms/term/actions/remark/config/set-dot1p
- /qos/classifiers/classifier/terms/term/actions/remark/config/set-mpls-tc

Table 90: Rewrite Rules Configuration

OpenConfig Configuration	Junos Configuration
<pre>openconfig-qos:qos { classifiers { classifier <> { config { name <>; type IPV4; } terms { term 0 { actions { config { target-group <>; } remark { config { set-dscp 5; } } } } term 1 { actions { config { target-group <>; } remark { config { set-dscp 6; } } } } } } } }</pre>	<pre>class-of-service { rewrite-rules { dscp <> { forwarding-class <> { loss-priority low code-point 000101 term-id 0; } forwarding-class <> { loss-priority low code-point 000110 term-id 1; } } } }</pre>

Table 90: Rewrite Rules Configuration (Continued)

OpenConfig Configuration	Junos Configuration
<pre> openconfig-qos:qos { classifiers { classifier <> { config { name <>; type IPV6; } terms { term 0 { actions { config { target-group <>; } remark { config { set-dscp 7; } } } } term 1 { actions { config { target-group <>; } remark { config { set-dscp 8; } } } } } } } } </pre>	<pre> class-of-service { rewrite-rules { dscp-ipv6 <> { forwarding-class <> { loss-priority low code-point 000111 term-id 0; } forwarding-class <> { loss-priority low code-point 001000 term-id 1; } } } } </pre>

Table 90: Rewrite Rules Configuration (Continued)

OpenConfig Configuration	Junos Configuration
<pre>openconfig-qos:qos { classifiers { classifier <> { config { name <>; type MPLS; } terms { term 0 { actions { config { target-group <>; } remark { config { set-mpls-tc 5; } } } } term 1 { actions { config { target-group <>; } remark { config { set-mpls-tc 6; } } } } } } } }</pre>	<pre>class-of-service { rewrite-rules { exp <> { forwarding-class <> { loss-priority low code-point 101 term-id 0; } forwarding-class <> { loss-priority low code-point 110 term-id 1; } } } }</pre>

The forwarding groups used for the rewrite rules configuration are shown below:

Table 90: Rewrite Rules Configuration (Continued)

OpenConfig Configuration	Junos Configuration
<pre> openconfig-qos:qos { forwarding-groups { forwarding-group <> { config { name <>; output-queue 0; } } forwarding-group <> { config { name <>; output-queue 1; } } } } </pre>	<pre> class-of-service { forwarding-classes { class <> queue-num 0; class <> queue-num 1; } } </pre>

Classifier Binding Configuration

See [Table 91 on page 245](#) for configuration mappings of the following OpenConfig paths:

- /qos/interfaces/interface/interface-id
- /qos/interfaces/interface/interface-ref/config/interface
- /qos/interfaces/interface/interface-ref/config/subinterface
- /qos/interfaces/interface/input/classifiers/classifier/type
- /qos/interfaces/interface/input/classifiers/classifier/config/name
- /qos/interfaces/interface/input/classifiers/classifier/config/type



NOTE: To more easily follow the OpenConfig examples below, variables are used in the OpenConfig configuration tree.

Table 91: Classifier Binding Configuration

OpenConfig Configuration	Junos Configuration
<pre>openconfig-qos:qos { interfaces { interface { interface-id et-0/0/1.0; input { classifiers { classifier { type <>; config { name <>; type <>; } } } } } } interface { interface-id ae0; interface-ref { config { subinterface <>; } } input { classifiers { classifier { type <>; config { name <>; type <>; } } } } } }</pre>	<pre>class-of-service { et-0/0/1 { unit 0 { classifiers { dscp <>; } } } ae0 { unit <> { classifiers { exp <>; } } } }</pre>

Table 91: Classifier Binding Configuration (Continued)

<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
<p>Classifier binding can be formed from the interfaces table by mapping classifier and interface.</p> <p>This configuration also supports wild cards (*). For example:</p> <pre>set openconfig-qos:qos interfaces interface et-*/*/.0 interface-ref config interface et-*/*/ set openconfig-qos:qos interfaces interface et-*/*/.0 interface-ref config subinterface 0 set openconfig-qos:qos interfaces interface et-*/*/.0 input classifiers classifier IPV4 config name DSCP</pre>	
<pre>openconfig-qos:qos { interfaces interface <> { interface-ref { config interface <>; } output scheduler-policy { config name <>; } } }</pre>	<pre>class-of-service { interfaces <> { output-traffic-control-profile <>; } }</pre>

Scheduler Configuration

See [Table 92 on page 248](#) for configuration mappings of the following OpenConfig paths:

- `/qos/scheduler-policies/scheduler-policy/name`
- `/qos/scheduler-policies/scheduler-policy/schedulers/scheduler/sequence`
- `/qos/scheduler-policies/scheduler-policy/schedulers/scheduler/config/priority`
- `/qos/scheduler-policies/scheduler-policy/schedulers/scheduler/output/config/output-fwd-group`
- `/qos/scheduler-policies/scheduler-policy/schedulers/scheduler/config/sequence`
- `/qos/scheduler-policies/scheduler-policy/schedulers/scheduler/two-rate-three-color/config/bc`
- `/qos/scheduler-policies/scheduler-policy/schedulers/scheduler/two-rate-three-color/config/cir`

- /qos/scheduler-policies/scheduler-policy/schedulers/scheduler/two-rate-three-color/config/cir-pct
- /qos/scheduler-policies/scheduler-policy/schedulers/scheduler/two-rate-three-color/config/pir
- /qos/scheduler-policies/scheduler-policy/schedulers/scheduler/two-rate-three-color/config/pir-pct
- /qos/scheduler-policies/scheduler-policy/schedulers/scheduler/inputs/input/id
- /qos/scheduler-policies/scheduler-policy/schedulers/scheduler/inputs/input/config/id
- /qos/scheduler-policies/scheduler-policy/schedulers/scheduler/inputs/input/config/input-type
- /qos/scheduler-policies/scheduler-policy/schedulers/scheduler/inputs/input/config/queue
- /qos/scheduler-policies/scheduler-policy/schedulers/scheduler/inputs/input/config/weight
- /qos/scheduler-policies/scheduler-policy/schedulers/scheduler/config/priority



NOTE: To more easily follow the OpenConfig examples below, variables are used in the OpenConfig configuration trees below.

Table 92: Scheduler Configuration

<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
<pre> openconfig-qos:qos { scheduler-policies { scheduler-policy { name smap; schedulers { scheduler { sequence:4 two-rate-three-color { config { cir-pct:10 } } } } } scheduler { sequence:1 two-rate-three-color { config { cir-pct:1 } } } scheduler { sequence:5 two-rate-three-color { config { cir-pct:1 } } } scheduler { sequence:2 priority: STRICT two-rate-three-color { config { cir-pct:1 } } } scheduler { sequence:0 two-rate-three-color { </pre>	<pre> class-of-service { scheduler-maps { smap { forwarding-class af1 scheduler sched_af1; forwarding-class af2 scheduler sched_af2; forwarding-class af3 scheduler sched_af3; forwarding-class af4 scheduler sched_af4; forwarding-class be1 scheduler sched_be1; forwarding-class nc1 scheduler sched_nc1; } } schedulers { sched_af1 { transmit-rate percent 10; buffer-size shared; priority low; } sched_af2 { transmit-rate percent 1; buffer-size shared; priority low; } sched_af3 { transmit-rate percent 1; buffer-size shared; priority low; } sched_af4 { transmit-rate percent 1; buffer-size shared; priority strict-high; } sched_be1 { transmit-rate percent 1; buffer-size shared; priority low; } sched_nc1 { transmit-rate percent 1; buffer-size shared; priority low; </pre>

Table 92: Scheduler Configuration (Continued)

OpenConfig Configuration	Junos Configuration
<pre>config { cir-pct:1 } } scheduler { sequence:3 two-rate-three-color { config { cir-pct:1 } } } } } }</pre>	<pre>} } }</pre>

Table 92: Scheduler Configuration (Continued)

<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
<p>The OpenConfig parameters that are not supported under the scheduler command include buffer-size, excess-rates, and excess priorities. Only STRICT-HIGH priority is supported. If you configure a priority, it is treated as STRICT-HIGH. Otherwise, the priority is LOW by default.</p> <p>The OpenConfig fields that are unsupported fields under scheduler command are cir-pct-remaining, pir-pct-remaining, be (excess burst size), and bc (committed burst size). These fields are unsupported on the PTX platform but are supported on the MX platform.</p> <p>There is no parameter to configure a scheduler name in OpenConfig. Instead, the name is deduced by combining the Junos scheduler-map name and forwarding group. For example, the below parameters creates the scheduler name sched_smap_assured-forwarding.</p> <pre><schedulers> { <name> "sched" _ "_" _\$smap_name _ "_" _ \$out_fwd_group; }</pre> <p>NOTE: The scheduler name can be 64 characters in length. Since scheduler map and forwarding class names are concatenated in OpenConfig configurations, care must be taken when providing them.</p> <p>The OpenConfig sequence number should be same as the queuenum value, which the forwarding group represents. For example, if assured-forwarding is attached to queue 2, then sequence number should be 2. While exporting state, the queuenum to which the target-group is attached is exported as the sequence number.</p> <p>set openconfig-qos:qos scheduler-policies scheduler-policy smap schedulers scheduler 2 output config output-fwd-group assured-forwarding</p>	

Table 92: Scheduler Configuration (Continued)

OpenConfig Configuration	Junos Configuration
<pre> openconfig-qos:qos { scheduler-policies scheduler-policy sp1 { schedulers scheduler 0 { inputs { input AF4 { config id AF4; input-type QUEUE; queue 2; weight 60; } } } } } </pre>	<pre> class-of-service { scheduler-maps sp1{ forwarding-class AF4 scheduler sched_scheduler_AF4; } traffic-control-profiles { tcp_sp1 schedule-map sp1; } } // If STRICT priority is configured: class-of-service { schedulers { scheduler_AF4{ transmit-rate percent 100; excess-rate percent 60; priority high; } } } // If *not* STRICT priority, use Weighted Round Robin (WRR)mode: class-of-service { schedulers { scheduler_AF4{ transmit-rate percent 0; excess-rate percent 60; priority low; } } } </pre>

Table 92: Scheduler Configuration (Continued)

OpenConfig Configuration	Junos Configuration
<p>NOTE: Values are added to the above configurations for a better understanding of the mapping.</p> <p>The queue leaf value is translated as the equivalent forwarding class value in the scheduler map.</p> <p>When you configure a strict scheduler priority:</p> <ul style="list-style-type: none">• Configure transmit-rate value as 100 percent for each forwarding class.• Forwarding class priority is based on the OpenConfig forwarding class weights in ascending order.• Forwarding class priority is assigned in the order of "strict-high:high:medium-high:medium-low:low:low:low:low:low:low. <p>In cases where strict scheduler priority is not configured (WRR mode):</p> <ul style="list-style-type: none">• Configure transmit-rate value as 0 percent for each forwarding class.• Configure excess-rate value with the same value as the weights for each OpenConfig forwarding class. A weight value over 100 is not permitted. <p>You can only use the QUEUE value for input-type with OpenConfig path /qos/scheduler-policies/scheduler-policy/schedulers/scheduler/input/config/input-type because QUEUE is the only enumeration value that can be mapped to the Junos OS. Likewise, subscribing to the resource path /qos/scheduler-policies/scheduler-policy/schedulers/scheduler/state/input-type will always stream the enumeration QUEUE leaf to a collector.</p> <p>From the Junos OS, create a traffic control profile (TCP) for the scheduler map configuration and use the TCP to bind the configuration to the interface. The Junos OS configuration above uses TCP tcp_sp1 and scheduler map sp1.</p>	

Scheduler Map Configuration

See [Table 93 on page 253](#) for configuration mappings of the following OpenConfig paths:

- /qos/interfaces/interface/interface-id
- /qos/interfaces/interface/output/scheduler-policy/config/name



NOTE: To more easily follow the OpenConfig examples below, variables are used in the OpenConfig configuration trees below.

Table 93: Scheduler Map Configuration

<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
<pre> openconfig-qos:qos { interfaces { interface { interface-id et-0/0/1; output { scheduler-policy { config { name <>; } } } } } } </pre>	<pre> class-of-service { interfaces et-0/0/1{ output-traffic-control-profile tcp_sp1; } } </pre>
<p>Scheduler-maps can be bound to physical (IFD) interfaces only.</p> <p>Wild cards are also supported. For example:</p> <pre> set openconfig-qos:qos interfaces interface et-*/*/ interface-ref config interface et-*/*/ set openconfig-qos:qos interfaces interface et-*/*/ output scheduler-policy config name smap </pre>	

Drop Profile Configuration

See [Table 94 on page 254](#) for configuration mappings of the following OpenConfig paths:

- /qos/queue-management-profiles/queue-management-profile/config/name
- /qos/queue-management-profiles/queue-management-profile/wred/uniform/config/min-threshold

- /qos/queue-management-profiles/queue-management-profile/wred/uniform/config/max-threshold
- /qos/queue-management-profiles/queue-management-profile/wred/uniform/config/max-drop-probability-percent
- /qos/queue-management-profiles/queue-management-profile/wred/uniform/config/enable-ecn
- /qos/queue-management-profiles/queue-management-profile/wred/
- /qos/interfaces/interface/output/queues/queue/config/name
- /qos/interfaces/interface/output/queues/queue/config/queue-management-profile

Table 94: Drop Profile Configuration

OpenConfig Configuration	Junos Configuration
<pre> openconfig-qos:qos { queue-management-profiles { queue-management-profile <> { wred { uniform { config { min-threshold; (not for MX Series) max-threshold; (not for MX Series) enable-ecn <true false>; (not for MX Series) max-drop-probability-percent <>; } } } } } } </pre>	<pre> class-of-service { drop-profiles { <profile-name> { fill-level <> drop-probability <>; } } schedulers { <scheduler-name> { explicit-congestion-notification; } } } </pre>
<p>In OpenConfig, you configure the minimum and maximum threshold levels in bytes. In Junos, you configure each threshold as a percentage of the queue fill level. You can repeat the fill-level statement, combined with the drop-probability statement, to configure the minimum and maximum thresholds.</p>	


Table 94: Drop Profile Configuration (Continued)

OpenConfig Configuration	Junos Configuration
<pre> openconfig-qos:qos { queue-management-profile { config { name <>; } } wred { uniform { config { min-threshold-percent <>; max-threshold-percent <>; max-drop-probability-percent <>; } } } } </pre>	<pre> class-of-service { drop-profiles { <profile-name> { interpolate { fill-level [<> <>]; drop-probability <>; } } } } </pre>
<pre> openconfig-qos:qos { interfaces interface <> { interface-ref { config interface <>; } } output queues <> { config { name <>; queue-management-profile <>; } } } </pre>	<pre> interfaces { <interface-name>{ scheduler-map <>; } } scheduler-maps { <scheduler-map-name> { forwarding-class best-effort scheduler <>; } } schedulers { <scheduler-name> { drop-profile-map loss-priority any protocol any drop-profile <>; } } </pre>

Table 94: Drop Profile Configuration (Continued)

<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
<pre> openconfig-qos:qos { scheduler-policies scheduler-policy <> { schedulers scheduler <> { } } } </pre>	<pre> class-of-service { schedulers { <scheduler> { priority strict-high; } } } </pre>
<p>When binding the queue-management profile to the queue under the interface configuration, the Junos OS class of service model attaches the drop profile to the scheduler map which is already present under the same interface output. In order to attach a drop profile to the interface, the interface must have a scheduler-policy attached to it in the output under <code>/qos/interfaces/interface/output/scheduler-policy/</code></p>	

Mapping OpenConfig Routing Policy Commands to Junos Configuration



NOTE: See [Junos YANG Data Model Explorer](#) topic to understand the data models supported version and its Junos OS release for Juniper Networks EX2300, EX3400, EX4300, EX4600, and EX9200 switches, MX Series, PTX Series, and QFX Series.

Table 95 on page 256 to Table 97 on page 257 show the mapping of OpenConfig routing policy commands to the relevant configuration in Junos.

Table 95: Defined Set Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Prefix Set	/routing-policy/defined-sets/ prefix-set	set policy-options prefix-list <i>name</i>

Table 95: Defined Set Configuration (*Continued*)

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Neighbor Set	/routing-policy/defined-sets/ neighbor-set	set policy-options neighbor-list <i>name</i>
Tag Set	/routing-policy/defined-sets/tag- set	set policy-options tag-list <i>name</i> tag-set <i>value</i>

Table 96: BGP Defined Set Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Community Set	/routing-policy/defined-sets/bgp-defined-sets/ community-set	set policy-options community <i>name</i> members <i>value</i>
AS Path Set	/routing-policy/defined-sets/bgp-defined-sets/as- path-set	Not supported
Ext Community Set	/routing-policy/defined-sets/bgp-defined-sets/ext- community-set	set policy-options community <i>name</i> members <i>value</i>

Table 97: Policy Definition Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
	Command path prefix: /routing-policy/policy- definition/statements/ statement	
Call Policy	/conditions/call-policy	set policy-options policy-statement <i>name</i> from policy <i>value</i>

Table 97: Policy Definition Configuration (Continued)

Command Name	OpenConfig Command Path	Junos Configuration
Prefix Set	/conditions/match-prefix-set/ prefix-set	set policy-options policy-statement <i>name</i> from prefix-list <i>name</i> set policy-options policy-statement <i>name</i> from route-filter <i>address</i> prefix-length-range <i>range</i>
Match Set Options	<pre> conditions { match-prefix-set { config { match-set-options <> } } } </pre>	<pre> policy-options { policy-statement <> { term <> { from { route-filter-list <> invert; } } } } </pre>

Possible OpenConfig values for match-set-options are any and invert. If you configure any, there is no Junos OS translation because this is the Junos OS default behavior. If you configure invert, the Junos OS mapping configuration is shown above, ending with route-filter-list <> invert-match.

Neighbor Set	/conditions/match-neighbor-set/ neighbor-set	set policy-options policy-statement <i>name</i> from neighbor <i>address</i>
Match Neighbor Set	/conditions/match-neighbor-set/ match-set-options	Not supported
Tag Set	/conditions/match-tag-set/tag- set	set policy-options policy-statement <i>name</i> from tag <i>tag</i>
Match Tag Set	/conditions/match-tag-set/ match-set-options	Not supported

Table 97: Policy Definition Configuration (Continued)

Command Name	OpenConfig Command Path	Junos Configuration
Install Protocol EQ	/conditions/install-protocol-eq	set policy-options policy-statement <i>name</i> from protocol <i>protocol</i>
IGP Conditions	/conditions/igp-conditions	Not supported
BGP Match Community Set	/conditions/bgp-conditions/ match-community-set/community-set	set policy-options policy-statement <i>name</i> from community <i>name</i>
BGP Match Ext Community Set	/conditions/bgp-conditions/ match-ext-community-set	set policy-options policy-statement <i>name</i> from community <i>name</i>
BGP Match Ext Community Set Options	/conditions/bgp-conditions/ match-ext-community-set/match-set-options	Not supported
BGP Match AS Path Set	/conditions/bgp-conditions/ match-as-path-set	Not supported
BGP MED EQ	/conditions/bgp-conditions/med-eq	set policy-options policy-statement <i>name</i> from metric <i>metric</i>
BGP Origin EQ	/conditions/bgp-conditions/origin-eq	set policy-options policy-statement <i>name</i> from origin (egp igp incomplete)
BGP Next Hop	/conditions/bgp-conditions/ next-hop-in	set policy-options policy-statement <i>name</i> from next-hop <i>address</i>
BGP Local Preference EQ	/conditions/bgp-conditions/ local-pref-eq	set policy-options policy-statement <i>name</i> from local-preference <i>preference</i>

Table 97: Policy Definition Configuration (Continued)

Command Name	OpenConfig Command Path	Junos Configuration
BGP Community Count	/conditions/bgp-conditions/ community-count	set policy-options policy-statement <i>name</i> from community-count <i>count</i> (equal orhigher orlower)
BGP AS Path Length	/conditions/bgp-conditions/as- path-length	Not supported
Accept-Route	/actions/config/accept-route	set policy-options policy-statement example-accept then accept
Reject-Route	/actions/config/reject-route	set policy-options policy-statement example-reject then reject
Set Tag	<pre>actions { set-tag { inline { config { tag <>; } } } }</pre>	<pre>policy-options { policy-statement <> { term <> { then { tag <> ; } } } }</pre>
IGP Actions	/actions/igp-actions/set-tag	set policy-options policy-statement <i>name</i> then tag <i>tag</i>
BGP Actions Set AS Path Prepend	/actions/bgp-actions/set-as- path-prepend	Not supported
BGP Actions Set Community	/actions/bgp-actions/set- community	set policy-options policy-statement <i>name</i> then community (set replace add) <i>name</i>

Table 97: Policy Definition Configuration (*Continued*)

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
BGP Actions Set Ext Community	/actions/bgp-actions/set-ext-community	set policy-options policy-statement <i>name</i> then community (set replace add) <i>name</i>
BGP Actions Set Route Origin	/actions/bgp-actions/set-route-origin	set policy-options policy-statement <i>name</i> then origin (egp igp incomplete)
BGP Actions Set Local Preferences	/actions/bgp-actions/set-local-pref	set policy-options policy-statement <i>name</i> then local-preference <i>preference</i>
BGP Actions Set Next Hop	/actions/bgp-actions/set-next-hop	set policy-options policy-statement <i>name</i> then next-hop <i>address</i>
BGP Actions Set Med	/actions/bgp-actions/set-med	set policy-options policy-statement <i>name</i> then metric <i>metric</i>
BGP Actions As-Path-Prepend	/actions/bgp-actions/config/set-as-path-prepend/asn	set policy-options policy-statement <i>name</i> then as-path-prepend <i>as-path</i>

RELATED DOCUMENTATION

[Mapping OpenConfig BGP Commands to Junos Configuration | 53](#)
[Mapping OpenConfig Interface Commands to Junos Configuration | 113](#)
[Mapping OpenConfig LLDP Commands to Junos Configuration | 159](#)
[Mapping OpenConfig Local Routing Commands to Junos Configuration | 161](#)
[Mapping OpenConfig MPLS Commands to Junos Configuration | 175](#)

Mapping OpenConfig System Logging Model Commands to Junos Configuration



NOTE: See [Junos YANG Data Model Explorer](#) topic to understand the data models supported version and its Junos OS release for Juniper Networks MX Series and PTX Series.

The following tables show the mapping of OpenConfig logging commands with the relevant configuration in Junos OS:

- [Table 98 on page 262](#): Remote Logging Configuration
- [Table 99 on page 264](#): Console Logging Configuration

Table 98: Remote Logging Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Host	<pre>openconfig-system:system { logging { remote-servers { remote-server <host> { ... } } } }</pre>	<pre>system { syslog { host <> { } } }</pre>

The OpenConfig remote-logging server host leaf maps to the Junos host parameter.

Table 98: Remote Logging Configuration *(Continued)*

Command Name	OpenConfig Configuration	Junos Configuration
Source-address	<pre>openconfig-system:system { logging { remote-servers { remote-server <> { config { source-address <>; } } } } }</pre>	<pre>system { syslog { host <> { source-address <>; } } }</pre>

The OpenConfig source-address leaf maps to the Junos source-address parameter.

Remote-port	<pre>openconfig-system:system { logging { remote-servers { remote-server <> { config { remote-port <>; } } } } }</pre>	<pre>system { syslog { host <> { port <>; } } }</pre>
-------------	--	---

The OpenConfig remote-port leaf maps to the Junos port parameter.

Table 98: Remote Logging Configuration (Continued)

Command Name	OpenConfig Configuration	Junos Configuration
Selector	<pre> openconfig-system:system { logging { remote-servers { remote-server <> { selectors { selector <facility> <severity>; } } } } } </pre>	<pre> system { syslog { host <> { <facility> <severity>; } } } </pre>

The OpenConfig facility and severity leaves map to the Junos facility and severity parameters.

Table 99: Console Logging Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Console	<pre> openconfig-system:system { logging { console { } } } </pre>	<pre> system { syslog { console { } } } </pre>
Selector	<pre> openconfig-system:system { logging { console { selectors { selector <facility> <severity> ; } } } } </pre>	<pre> system { syslog { console { <facility> <severity>; } } } </pre>

Table 99: Console Logging Configuration *(Continued)*

Command Name	OpenConfig Configuration	Junos Configuration
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The OpenConfig facility and severity leaves map to the Junos facility and severity parameters.

Mapping OpenConfig System Management Model Commands to Junos Configuration



NOTE: See [Junos YANG Data Model Explorer](#) topic to understand the data models supported version and its Junos OS release for Juniper Networks MX Series and PTX Series.

The following tables show the mapping of OpenConfig system management configuration with the relevant configuration in the Junos OS.

- [Table 100 on page 266](#): DNS Configuration
- [Table 101 on page 266](#): Domain Name Configuration
- [Table 102 on page 266](#): Host Name Configuration
- [Table 103 on page 267](#): Login Banner Configuration
- [Table 104 on page 267](#): MOTD Banner Configuration
- [Table 105 on page 268](#): Time Zone Configuration
- [Table 106 on page 268](#): Local Station MAC Address

Table 100: DNS Configuration

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
Search	<pre> openconfig-system:system { dns { config { search [<> ...]; } } } </pre>	<pre> system { domain-search [<> ...]; } </pre>

The OpenConfig DNS search leaf maps to the Junos domain-search statement.

Table 101: Domain Name Configuration

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
Domain-name	<pre> openconfig-system:system { config { domain-name <>; } } </pre>	<pre> system { domain-name <>; } </pre>

The OpenConfig domain-name leaf maps to the Junos domain-name statement.

Table 102: Host Name Configuration

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
Host-name	<pre> openconfig-system:system { config { hostname <>; } } </pre>	<pre> system { host-name <>; } </pre>

Table 102: Host Name Configuration (Continued)

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
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The OpenConfig hostname leaf maps to the Junos hostname statement.

Table 103: Login Banner Configuration

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
Login-banner	<pre> openconfig-system:system { config { login-banner <>; } } </pre>	<pre> system { login { message <>; } } </pre>

The OpenConfig DNS login-banner leaf maps to the Junos message statement.

Table 104: MOTD Banner Configuration

<i>Command Name</i>	<i>OpenConfig Configuration</i>	<i>Junos Configuration</i>
Motd-banner	<pre> openconfig-system:system { config { motd-banner <>; } } </pre>	<pre> system { login { announcement <>; } } </pre>

The OpenConfig motd-banner leaf maps to the Junos announcement statement.

Table 105: Time Zone Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Time-zone	<pre>openconfig-system:system { clock { config { timezone-name <>; } } }</pre>	<pre>system { time-zone <>; }</pre>

The OpenConfig timezone-name leaf maps to the Junos time-zone statement.

Table 106: Local Station MAC Address Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Routing MAC	<pre>openconfig-system:system { mac-address { config { routing-mac <>; } } }</pre>	<pre>chassis { local-station-mac <>; }</pre>

Use to configure a MAC address for the entire chassis.

Mapping OpenConfig System Model Commands to Junos Configuration



NOTE: See [Junos YANG Data Model Explorer](#) topic to understand the data models supported version and its Junos OS or Junos Evolved OS release for Juniper Networks ACX Series, MX Series and PTX Series.

The following tables show the mapping of OpenConfig system commands with the relevant configuration in Junos OS:

- [Table 107 on page 269](#): SSH Server Configuration
- [Table 108 on page 271](#): NTP Configuration

Table 107: SSH Server Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Timeout	<pre> openconfig-system:system { ssh-server { config { timeout <>; } } }</pre>	<pre> system { services { ssh { client-alive-count-max 1; client-alive-interval <>; } } }</pre>

The OpenConfig timeout leaf value is set to the client-alive-interval parameter. The client-alive-count-max parameter value is set to 1. It must be set to 1 to overwrite the default value of 3.

Session limit	<pre> openconfig-system:system { ssh-server { config { session-limit <>; } } }</pre>	<pre> system { services { ssh { connection-limit <>; } } }</pre>
---------------	--	--

Table 107: SSH Server Configuration (Continued)

Command Name	OpenConfig Configuration	Junos Configuration
The OpenConfig session-limit leaf value is set to the Junos parameter connection-connection-limit value.		
Rate limit	<pre>openconfig-system:system { ssh-server { config { rate-limit <>; } } }</pre>	<pre>system { services { ssh { rate-limit <>; } } }</pre>
The OpenConfig rate-limit leaf value is set to the Junos parameter rate-limit value.		
Protocol version	<pre>openconfig-system:system { ssh-server { config { protocol-version <>; } } }</pre>	<pre>system { services { ssh { protocol-version <>; } } }</pre>
The OpenConfig protocol-version leaf value is set to the Junos parameter protocol-version value.		
Enable	<pre>openconfig-system:system { ssh-server { config { enable <>; } } }</pre>	<pre>system { services { ssh { } } }</pre>
The OpenConfig enable leaf value toggles the set system services ssh configuration. When enable is not configured, the SSH configuration is enabled by default. The model defines TRUE as the default value for the enable leaf.		

Table 108: NTP Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Prefer	<pre>openconfig-system:system { ntp { servers { server <> { config { prefer <>; } } } } }</pre>	<pre>system { ntp { server <> prefer; } }</pre>

When the OpenConfig prefer leaf value is set to true, the Junos prefer parameter will be set. The Junos prefer parameter is a toggle and needs to be set when the OpenConfig value prefer is set to true.

Version	<pre>openconfig-system:system { ntp { servers { server <> { config { version <>; } } } } }</pre>	<pre>system { ntp { server <> version <>; } }</pre>
---------	--	---

The OpenConfig NTP version leaf value is set to the Junos parameter version value.

Table 108: NTP Configuration *(Continued)*

Command Name	OpenConfig Configuration	Junos Configuration
Port	<pre>openconfig-system:system { ntp { servers { server <> { config { port <>; } } } } }</pre>	Not supported.
Junos OS doesn't have a parameter for an NTP server port, and instead, always runs at port 1234. Consequently, the OpenConfig leaf port is not supported.		
Enabled	<pre>openconfig-system:system { ntp { config { enabled <>; } } }</pre>	<pre>system { ntp { } }</pre>
The OpenConfig enable leaf value toggles the set system ntp configuration. Since its default value is FALSE, the NTP configuration is enabled only when the enable parameter is set to TRUE.		

Mapping OpenConfig System Terminal Model Commands to Junos Configuration



NOTE: See [Junos YANG Data Model Explorer](#) topic to understand the data models supported version and its Junos OS or Junos Evolved OS release for Juniper Networks ACX Series, MX Series and PTX Series.

The following tables show the mapping of system terminal commands with the relevant configurations in Junos:

- [Table 109 on page 273](#): gRPC Server Configuration
- [Table 110 on page 276](#): Telnet Server Configuration

Table 109: gRPC Server Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Port	<pre> openconfig-system:system { grpc-servers { grpc-server <> { config { port <>; } } } } </pre>	<pre> system { services { extension-service { request-response { grpc { ssl { port <>; } } } } } } </pre>

The OpenConfig port leaf value maps to the Junos port statement.

Table 109: gRPC Server Configuration (Continued)

Command Name	OpenConfig Configuration	Junos Configuration
Listen address	<pre> openconfig-system:system { grpc-servers { grpc-server <> { config { listen-addresses } } } } </pre>	<pre> system { services { extension-service { request-response { grpc { ssl { address <>; } } } } } } </pre>

The OpenConfig listen-addresses is a leaf-list and maps to the Junos address statement. Consequently, the listen-addresses leaf value is restricted to a single value.

Certificate-id	<pre> openconfig-system:system { grpc-servers { grpc-server <> { config { certificate-id } } } } </pre>	<pre> system { services { extension-service { request-response { grpc { ssl { local-certificate <>; } } } } } } </pre>
----------------	---	--

The OpenConfig certificate-id leaf maps to the Junos statement local-certificate. The single OpenConfig certificate value is merged with Junos certificates.

Table 109: gRPC Server Configuration (Continued)

Command Name	OpenConfig Configuration	Junos Configuration
Enable	<pre>openconfig-system:system { grpc-servers { grpc-server <> { config { enable <>; } } } }</pre>	<pre>system { services { extension-service { request-response { grpc { ssl { } } } } } }</pre>
Metadata-authentication	<pre>openconfig-system:system { grpc-servers { grpc-server <> { config { metadata- authentication <>; } } } }</pre>	Not supported.
Metadata authentication is enabled by default in Junos. There is no Junos statement to enable or disable this feature.		

Table 109: gRPC Server Configuration (Continued)

Command Name	OpenConfig Configuration	Junos Configuration
Transport-security	<pre> openconfig-system:system { grpc-servers { grpc-server <> { config { transport- security <>; } } } } </pre>	<pre> system { services { extension-service { request-response { grpc { ssl { } } } } } } </pre>

The OpenConfig transport-security leaf is a toggle to enable or disable gRPC Secure Sockets Layer (SSL)/Transport Layer Security (TLS). The default value for transport-security is TRUE. SSL is enabled by default. However, if the value for transport-security is FALSE, the configuration commit will fail.

Table 110: Telnet Server Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Rate-limit	<pre> openconfig-system:system { telnet-server { config { rate-limit <>; } } } </pre>	<pre> system { services { telnet { rate-limit <>; } } } </pre>

The OpenConfig rate-limit leaf is set to the Junos telnet server rate-limit value.

Table 110: Telnet Server Configuration *(Continued)*

Command Name	OpenConfig Configuration	Junos Configuration
Session-limit	<pre>openconfig-system:system { telnet-server { config { session-limit <>; } } }</pre>	<pre>system { services { telnet { connection-limit <>; } } }</pre>

The OpenConfig session-limit leaf is set to the Junos telnet server connection-limit value.

Timeout	<pre>openconfig-system:system { telnet-server { config { timeout <>; } } }</pre>	Not supported.
---------	--	----------------

The OpenConfig timeout leaf is not supported on Junos.

Enable	<pre>openconfig-system:system { telnet-server { config { enable <>; } } }</pre>	<pre>system { services { telnet { } } }</pre>
--------	---	---

The OpenConfig enable leaf is a toggle to enable or disable the telnet server configuration. It's disabled or set to FALSE by default.

Mapping OpenConfig Telemetry System Model Commands to Junos Configuration

IN THIS SECTION

- [OpenConfig Sensor Example | 284](#)
- [OpenConfig Destination Configuration | 286](#)
- [OpenConfig Telemetry System Example | 286](#)



NOTE: See [Junos YANG Data Model Explorer](#) topic to understand the data models supported version and its Junos OS or Junos Evolved OS release for Juniper Networks ACX Series, MX Series and PTX Series.

The following tables show the mapping of telemetry system commands with the relevant configurations in Junos:

- [Table 111 on page 279](#): Sensor Path and Filter Configuration
- [Table 112 on page 280](#): Sample Interval Configuration
- [Table 113 on page 281](#): Destination Group Configuration
- [Table 114 on page 282](#): Export Profile Configuration
- [Table 115 on page 283](#): Protocol Configuration
- [Table 116 on page 284](#): Encoding Configuration

Table 111: Sensor Path and Filter Configuration

Command Name	OpenConfig Configuration	Junos Configuration
sensor-path	<pre> openconfig-telemetry-system:telemetry- system { sensor-groups { sensor-group <sensor-group-id> { config { sensor-group-id <sensor-group- id>; } sensor-paths { sensor-path <path> { config { path <path>; } } } } } } </pre>	<pre> services { analytics { sensor <<subscription- name>__ + <sensor-group-id>__ + <sensor-path >> { resource <path>; } } } </pre>

The OpenConfig sensor-path leaf value maps to the Junos *paths* parameter at the edit services analytics sensor resource hierarchy level. When enable is not specified, the SSH configuration is still enabled. This occurs because the **openconfig-telemetry.yang** data model defines the default value for the enable leaf as TRUE.

Note that the Junos sensor name is derived using the data values subscription-name, sensor-group-id, and sensor-path.

See ["OpenConfig Sensor Example" on page 284](#) for an example of this configuration.

Table 112: Sample Interval Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Sample-interval	<pre>openconfig-telemetry-system:telemetry-system { subscriptions { persistent-subscriptions { persistent-subscription 10000 { sensor-profiles { sensor-profile <> { config { sample-interval <>; } } } } } } }</pre>	<pre>services { analytics { sensor <<subscription- name>_ + <sensor-group-id>_ + <sensor-path>> { reporting-rate <>; } } }</pre>

The OpenConfig sample-interval leaf value maps to the Junos reporting-rate parameter value at the edit services analytics sensor hierarchy level. The reporting-rate equals the sampling-interval/1000 as reporting-rate (in seconds) and sampling-interval (in milliseconds).

Table 113: Destination Group Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Sample-interval	<pre>openconfig-telemetry-system:telemetry- system { destination-groups { destination-group DST1 { destinations { destination <destination- address> { config { destination-address <address>; destination-port <port>; } } } } } }</pre>	<pre>services { analytics { streaming-server <<destination-group-id>_ + <destination-address>_ + <destination-port> { remote-address 10.1.1.1; remote-port 2000; } }</pre>

The OpenConfig destination-address and port leaf values map to Junos parameters remote-address and remote-port. Each OpenConfig destination entry maps to a separate Junos streaming-server entry.

The OpenConfig streaming-server value is generated using the Junos parameter values for destination-group-id, destination-address and destination-port.

See ["OpenConfig Destination Configuration" on page 286](#) for an example of this configuration.

Table 114: Export Profile Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Export-profile	<pre>openconfig-telemetry-system:telemetry-system { subscriptions { persistent-subscriptions { persistent-subscription 10000 { config { name 10000; local-source-address 10.2.3.1; originated-qos-marking 60; } sensor-profiles { sensor-profile SEN1 { config { sensor-group SEN1; sample-interval 10000; } } } } } } }</pre>	<pre>services { analytics { export-profile 10000 { local-address 10.2.3.1; dscp 60; } sensor 10000__SEN1__<sensor- path> { export-name 10000; } } }</pre>

The OpenConfig local-source-address leaf value maps to the Junos local-address parameter value.

The OpenConfig originated-qos-marking leaf value maps to the Junos dscp parameter value.

Note that the Junos export-profile name is generated from the *subscription-name*.

Table 115: Protocol Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Protocol	<pre>openconfig-telemetry-system:telemetry- system { subscriptions { persistent-subscriptions { persistent-subscription 10000 { sensor-profiles { sensor-profile <> { config { protocol <>; } } } } } }</pre>	<pre>services { analytics { export-profile 10000 { transport <>; } sensor 10000__SEN1__<sensor- path> { export-name 10000; } } }</pre>

The OpenConfig protocol leaf value maps to the Junos transport parameter value at the edit services analytics hierarchy level. The OpenConfig protocol value STREAM_GRPC maps to the Junos transport value grpc.

Table 116: Encoding Configuration

Command Name	OpenConfig Configuration	Junos Configuration
Encoding	<pre> openconfig-telemetry-system:telemetry-system { system { subscriptions { persistent-subscriptions { persistent-subscription 10000 { sensor-profiles { sensor-profile <> { config { encoding <>; } } } } } } } } </pre>	<pre> services { analytics { export-profile 10000 { format <>; } sensor 10000__SEN1__<sensor- path> { export-name 10000; } } } </pre>

The OpenConfig encoding leaf value maps to the Junos format parameter value at the edit services analytics export-profile hierarchy level. The OpenConfig encoding values ENC_JSON_IETF and ENC_PROTO3 map respectively to the Junos values json-gnmi and gpb-gnmi.

OpenConfig Sensor Example

For information about the OpenConfig to Junos mapping used in this example, refer to [Table 111 on page 279](#): Sensor Path and Filter Configuration.

```

openconfig-telemetry-system:telemetry-system {
  sensor-groups {
    sensor-group SEN1 {
      config {
        sensor-group-id SEN1;
      }
      sensor-paths {
        sensor-path /junos/system/linecard/interface/ {

```


OpenConfig Destination Configuration

For information about the OpenConfig to Junos mapping used in this example, refer to [Table 113 on page 281](#): Destination Group Configuration.

```

OC destination config:
----
destination-groups {
  destination-group DST1 {
    destinations {
      destination 10.1.1.1 2000 {
        config {
          destination-address 10.1.1.1;
          destination-port 2000;
        }
      }
    }
  }
}

Translates to:
services {
  analytics {
    streaming-server DST1_10.1.1.1_2000 {
      remote-address 10.1.1.1;
      remote-port 2000;
    }
  }
}

```

OpenConfig Telemetry System Example

The following example illustrates a complete OpenConfig telemetry system configuration.

```

openconfig-telemetry-system:telemetry-system {
  sensor-groups {
    sensor-group SEN1 {
      config {
        sensor-group-id SEN1;

```

```

    }
    sensor-paths {
        sensor-path /junos/system/linecard/interface/ {
            config {
                path /junos/system/linecard/interface/;
            }
        }
    }
}

destination-groups {
    destination-group DST1 {
        config {
            group-id DST1;
        }
        destinations {
            destination 10.1.1.1 2000 {
                config {
                    destination-address 10.1.1.1;
                    destination-port 2000;
                }
            }
            destination 10.2.2.1 4000 {
                config {
                    destination-address 10.2.2.1;
                    destination-port 4000;
                }
            }
            destination 10.2.1.1 2000 {
                config {
                    destination-address 10.2.1.1;
                    destination-port 2000;
                }
            }
        }
    }
}

subscriptions {
    persistent-subscriptions {
        persistent-subscription 10000 {
            config {
                name 10000;
                local-source-address 10.2.3.1;
            }
        }
    }
}

```

```

        originated-qos-marking 60;
        protocol STREAM_GRPC;
        encoding ENC_PROTO3;
    }
    sensor-profiles {
        sensor-profile SEN1 {
            config {
                sensor-group SEN1;
                sample-interval 10000;
            }
        }
    }
    destination-groups {
        destination-group DST1;
    }
}
}
}
}

```

The OpenConfig configuration example above maps to the following Junos telemetry system configuration.

```

services {
    analytics {
        streaming-server DST1_10.1.1.1_2000 {
            remote-address 10.1.1.1;
            remote-port 2000;
        }
        streaming-server DST1_10.2.2.1_4000 {
            remote-address 10.2.2.1;
            remote-port 4000;
        }
        streaming-server DST_10.2.1.1_2000 {
            remote-address 10.2.1.1;
            remote-port 2000;
        }
    }
    export-profile 10000 {
        local-address 10.2.3.1;
        dscp 60;
        transport grpc;
    }
}

```

```

        format gpb-gnmi;
    }
    sensor 10000__SEN1__junos_system_linecard_interface {
        server-name [DST1_10.1.1.1_2000
                    DST1_10.2.2.1_4000 DST1_10.2.1.1_2000 ];
        export-name 10000;
        resource /junos/system/linecard/interface/;
        subscription-id 10000;
        reporting-rate 10;
    }
}
}
}

```

Mapping OpenConfig VLAN Commands to Junos Configuration



NOTE: See [Junos YANG Data Model Explorer](#) topic to understand the data models supported version and its Junos OS release for Juniper Networks EX Series and QFX Series.

The following tables show the mapping of OpenConfig VLAN commands with the relevant configuration in Junos:

- [Table 117 on page 290](#): Top-level Group VLAN Configuration
- [Table 118 on page 291](#): VLAN Membership Configuration
- [Table 119 on page 293](#): MAC Table Configuration
- [Table 120 on page 297](#): Ethernet Interfaces Configuration
- [Table 121 on page 298](#): Aggregation Interfaces Configuration
- [Table 122 on page 300](#): Routed VLAN Interfaces Configuration
- [Table 123 on page 300](#): VLAN Tagged IFL Configuration

Table 117: Top-level Group VLAN Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
VLAN Name and ID	<pre> openconfig-network-instance:network-instances { network-instance <routing-instance-name>; config { type L2VSI; } } openconfig-vlan:vlan { config { name <name>; } vlan-id <id>; } </pre> <p>Or:</p> <pre> openconfig-network-instance:network-instances { network-instance <routing-instance-name>; config { type DEFAULT-INSTANCE; } } openconfig-vlan:vlan { config { name <name>; } vlan-id <id>; } </pre>	<pre> vlan { vlan-name; vlan-id <id>; } </pre> <p>Or:</p> <pre> routing-instances { <instance-name>; instance-type virtual-switch; vlan { vlan-name; vlan-id <id>; } } </pre> <p>Or:</p> <pre> bridge-domains { <name>; vlan-id <id>; } </pre> <p>Or:</p> <pre> routing-instances { <instance-name>; instance-type virtual-switch; bridge-domains { <name>; vlan-id <id>; } } </pre>

Table 117: Top-level Group VLAN Configuration (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
VLAN Admin State	<pre> openconfig-network-instance:network-instances { network-instance <routing-instance-name>; openconfig-vlan:vlan { vlan { config { status <activate deactivate>; } } } } </pre>	<pre> deactivate/activate { vlans <name>; } Or: deactivate/activate { routing-instances { <instance-name>; vlans <name>; } } Or: deactivate/activate { routing-instances { <instance-name>; bridge-domains <name>; } } Or: deactivate/activate { bridge-domains <name>; } </pre>

Table 118: VLAN Membership Configuration

Command Name	OpenConfig Command Path	Junos Configuration
	<p>Command path prefix:</p> <pre> /oc-if:interfaces/oc- if:interface/oc-eth:ethernet/ switched-vlan </pre>	

Table 118: VLAN Membership Configuration (Continued)

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Interface Mode	/config/interface-mode	set interfaces ge-0/0/0 unit 0 family ethernet-switching interface-mode trunk (l2ng)
Native VLAN	/config/native-vlan	set interfaces ge-0/0/0 native-vlan-id <i>vid</i> (for a trunk port) set interface ge-0/0/0 unit 0 family ethernet-switching interface-mode trunk
Trunk VLANs	/config/trunk-vlans	set interfaces ge-0/0/0 unit 0 family ethernet-switching vlan members 600 set interfaces ge-0/0/0 unit 0 family ethernet-switching vlan members [10-200] Interface-mode = TRUNK
Access VLAN	/config/access-vlan	set interfaces ge-0/0/0 unit 0 family ethernet-switching vlan members 600 Interface-mode = ACCESS

Table 119: MAC Table Configuration

Command Name	OpenConfig Command Path	Junos Configuration
MAC aging time	<pre> openconfig-network-instance:network-instances { network-instance <instance-name>; config { type L2VSI; } openconfig-fdb:fdb { config { mac-aging-time <time>; } } } </pre> <p>Or:</p> <pre> openconfig-network-instance:network-instances { network-instance <instance-name>; config { type DEFAULT_INSTANCE; } openconfig-fdb:fdb { config { mac-aging-time <time>; } } } </pre>	<pre> routing-instances { <instance-name>; switch-options { mac-table-aging-time { <time>; } } } </pre> <p>Or:</p> <pre> switch-options { mac-table-aging-time <time>; } </pre> <p>NOTE: The switch-options configuration is allowed only if a virtual switch is configured as the instance-type. The mac-table-aging-time configuration is allowed only with enhanced-mode.</p>

Table 119: MAC Table Configuration (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
MAC learning	<pre> openconfig-network-instance:network-instances { network-instance <instance-name>; config { type L2VSI; } openconfig-fdb:fdb { config { mac-learning <true false>; } } } </pre> <p>Or:</p> <pre> openconfig-network-instance:network-instances { network-instance <instance-name>; config { type DEFAULT_INSTANCE; } openconfig-fdb:fdb { config { mac-learning <true false>; } } } </pre>	<pre> routing-instances { <instance-name>; switch-options { no-mac-learning; } } </pre> <p>Or:</p> <pre> switch-options { no-mac-learning; } </pre>

Table 119: MAC Table Configuration (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
Maximum entries	<pre> openconfig-network-instance:network-instances { network-instance <instance-name>; config { type L2VSI; } openconfig-fdb:fdb { config { maximum-entries <limit>; } } } </pre> <p>Or:</p> <pre> openconfig-network-instance:network-instances { network-instance <instance-name>; config { type DEFAULT_INSTANCE; } openconfig-fdb:fdb { config { maximum-entries <limit>; } } } </pre>	<pre> routing-instances { <instance-name>; switch-options { mac-table-size <limit>; } } </pre> <p>Or:</p> <pre> switch-options { mac-table-size <limit>; } </pre>

Table 119: MAC Table Configuration (*Continued*)

Command Name	OpenConfig Command Path	Junos Configuration
MAC pinning	<pre> openconfig-network-instance:network-instances { network-instance <instance-name>; config { type L2VSI; } openconfig-interface:interfaces { interface <name> { config { mac-pinning <true false>; } } } } </pre> <p>Or:</p> <pre> openconfig-network-instance:network-instances { network-instance <instance-name>; config { type DEFAULT_INSTANCE; } openconfig-interface:interfaces { interface <name> { config { mac-pinning <true false>; } } } } </pre>	<pre> routing-instances { <instance-name> ; switch-options { interface <name> { mac-pinning; } } } </pre> <p>Or:</p> <pre> switch-options { interface <name> { mac-pinning } } </pre>

Table 120: Ethernet Interfaces Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Interface Mode	<pre> openconfig-interfaces:interfaces { interface <name>; openconfig-if-ethernet:ethernet { openconfig-vlan:switched-vlan { config { interface-mode <access trunk>; } } } } </pre>	<pre> interfaces { <name>; unit 0; family ethernet-switching; interface-mode <access trunk>; } </pre>
Native VLAN	<pre> openconfig-interfaces: interfaces { interface <name>; openconfig-if-ethernet:ethernet { openconfig-vlan:switched-vlan { config { native-vlan <id>; } } } } </pre>	<pre> interfaces { <name>; native-vlan-id <id>; } </pre>
Access VLAN	<pre> openconfig-interfaces:interfaces{ interface <name>; openconfig-if-ethernet:ethernet { openconfig-vlan:switched-vlan { config { access-vlan <id>; } } } } </pre>	<pre> interfaces { <name>; unit 0; family ethernet-switching; vlan { members <id>; } } </pre>

Table 120: Ethernet Interfaces Configuration (*Continued*)

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Trunk VLAN	<pre> openconfig-interfaces:interfaces { interface <name>; openconfig-if-ethernet:ethernet { openconfig-vlan:switched-vlan { config { trunk-vlan <id>; } } } } </pre>	<pre> interfaces { <name>; unit <unit-no>; family bridge; vlan-id { <id>; } } </pre>

Table 121: Aggregation Interfaces Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
Interface Mode	<pre> openconfig-interfaces:interfaces { interface <name>; openconfig-if-aggregate:aggregation { openconfig-vlan:switched-vlan { config { interface-mode <trunk access>; } } } } </pre>	<pre> interfaces { <name>; unit <unit-no>; family <ethernet-switching bridge>; interface-mode <access trunk>; } </pre>

Table 121: Aggregation Interfaces Configuration *(Continued)*

Command Name	OpenConfig Command Path	Junos Configuration
Native VLAN	<pre> openconfig-interfaces:interfaces { interface <name>; openconfig-if-aggregate:aggregation { openconfig-vlan:switched-vlan { config { native-vlan <id>; } } } } </pre>	<pre> interfaces { <name>; native-vlan-id <id>; } </pre>
Access VLAN	<pre> openconfig-interfaces:interfaces { interface <name>; openconfig-if-aggregate:aggregation { openconfig-vlan:switched-vlan { config { access-vlan <id>; } } } } </pre>	<pre> interfaces { <name>; unit 0; family ethernet-switching; vlan { members <id>; } } </pre>
Trunk VLAN	<pre> openconfig-interfaces:interfaces { interface <name>; openconfig-if-aggregate:aggregation { openconfig-vlan:switched-vlan { config { trunk-vlan <id> ; } } } } </pre>	<pre> interfaces { <name>; unit <unit-no>; family <bridge>; vlan-id { <id>; } } </pre>

Table 122: Routed VLAN Interfaces Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
	Command path prefix: /oc-if:interfaces/oc-if:interface/routed-vlan	
VLAN	/config/vlan	Set vlans <i>vlan-name</i> l3-interface <i>irb.vid</i> NOTE: To create IRB IFL, configure IPv4/IPv6 under routed VLAN hierarchy.

Table 123: VLAN Tagged IFL Configuration

<i>Command Name</i>	<i>OpenConfig Command Path</i>	<i>Junos Configuration</i>
	Command path prefix: /ocif:interfaces/ocif:interface/ocif:subinterfaces/ocif:subinterface/vlan	
VLAN ID	/config/vlan-id	set interfaces <i>interface</i> unit <i>subinterface index</i> vlan-id <i>vid</i> set interfaces <i>interface</i> vlan-tagging

RELATED DOCUMENTATION
[Mapping OpenConfig Interface Commands to Junos Configuration | 113](#)
[Mapping OpenConfig Local Routing Commands to Junos Configuration | 161](#)
[Mapping OpenConfig Network Instance Commands to Junos Operation | 194](#)
[Mapping OpenConfig Routing Policy Commands to Junos Configuration | 256](#)

4

CHAPTER

Configuration Statements and Operational Commands

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- [Junos CLI Reference Overview | 302](#)
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Junos CLI Reference Overview

We've consolidated all Junos CLI commands and configuration statements in one place. Read this guide to learn about the syntax and options that make up the statements and commands. Also understand the contexts in which you'll use these CLI elements in your network configurations and operations.

- [Junos CLI Reference](#)

Click the links to access Junos OS and Junos OS Evolved configuration statement and command summary topics.

- [Configuration Statements](#)
- [Operational Commands](#)