

# Release Notes

Published  
2023-08-10

## Junos<sup>®</sup> OS Evolved Release 21.3R1

### SUPPORTED PLATFORMS

- ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220, and QFX5700

### SOFTWARE HIGHLIGHTS

- Support for EVPN-VXLAN on MAC-VRF instances (PTX10001-36MR, PTX10004, and PTX10008)
- Support for optics local loopback on 400GbE coherent ZR DWDM optics (PTX10004 and PTX10008)
- RSVP updates available bandwidth values without notifying IS-IS (PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, and QFX5220)
- Support for express segments to establish end-to-end segment routing paths (PTX10001-36MR, PTX10003, and PTX10008 )
- BGP route service API supports programming routes with IP-IP encapsulation attributes (PTX10001-36MR, PTX10004, and PTX10008)
- Support for bidirectional PIM (PTX 10001-36MR, PTX 10004 and PTX10008)
- Optimized fast branch updates (PTX10001-36MR, PTX10004, and PTX10008)
- SNMP MIB support for the timing Synchronous Ethernet feature (PTX10008)
- SNMP support for interface attached policers (PTX10001-36MR, PTX10004, and PTX10008)
- Enhancements to prefix-limit and accepted-prefix-limit configuration statements, and updates to show bgp neighbor command (PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5130-48C, and QFX5220)
- Firewall output filtering support using FFT block for line-rate performance of up to 2 billion PPS (PTX10001-36MR and PTX10008)
- Firewall filtering using flood policer, IRB, and service provider egress filtering (PTX10001-36MR, PTX10004, and PTX10008)

- New firewall filter feature: shared-bandwidth and percentage policers on the BT chip (PTX10001-36MR, PTX10004, and PTX10008)
- Support for packet rate policers (PTX10003)
- Configuration option to disable VLAN support and MPLS encapsulated frames (PTX10001 and PTX10008)
- CFM support (PTX10001-36MR, PTX10004, and PTX10008)
- CPU statistics support with JTI (PTX10003, PTX10004, and PTX10008)
- Inline active flow monitoring using IPFIX and version 9 templates (PTX10001-36MR, PTX10004, and PTX10008)

# Table of Contents

## **Introduction | 1**

### **Junos OS Evolved Release Notes for ACX7100-32C and ACX7100-48L Devices**

#### **What's New | 1**

##### **What's New in 21.3R1 | 2**

Chassis | 2

EVPN | 3

Routing Policy and Firewall Filters | 3

Routing Protocols | 4

Additional Features | 4

#### **What's Changed | 6**

| What's Changed in Release 21.3R1 | 6

#### **Known Limitations | 9**

#### **Open Issues | 10**

#### **Resolved Issues | 11**

| Resolved Issues: 21.3R1 | 12

### **Junos OS Evolved Release Notes for PTX10001-36MR, PTX10003, PTX10004, and PTX10008 Devices**

#### **What's New | 14**

##### **What's New in 21.3R1 | 14**

Class of Service | 15

EVPN | 16

High Availability | 16

Interfaces | 17

IP Tunneling | 17

Juniper Extension Toolkit (JET) | 17

Junos OS API and Scripting | 18

MPLS | 18

Multicast | 19

Network Management and Monitoring	20
Routing Options	20
Routing Policy and Firewall Filters	21
Routing Protocols	22
Services Applications	23
Software Installation and Upgrade	24
Additional Features	24

## **What's Changed | 27**

What's Changed in Release 21.3R1	27
----------------------------------	----

## **Known Limitations | 31**

## **Open Issues | 32**

## **Resolved Issues | 37**

Resolved Issues: 21.3R1	37
-------------------------	----

## **Junos OS Evolved Release Notes for QFX5130-32CD, QFX5220, and QFX5700 Devices**

## **What's New | 46**

What's New in 21.3R1	46
Hardware	47
Junos OS API and Scripting	47
IP Tunneling	47
MPLS	48
Routing Options	48
Routing Protocols	49
Additional Features	49

## **What's Changed | 50**

What's Changed in Release 21.3R1	50
----------------------------------	----

## **Known Limitations | 53**

## **Open Issues | 54**

## **Resolved Issues | 56**

Resolved Issues: 21.3R1	57
-------------------------	----

## **Upgrade Your Junos OS Evolved Software | 58**

Licensing | 59

Finding More Information | 59

Documentation Feedback | 60

Requesting Technical Support | 60

Revision History | 62

# Introduction

Use these release notes to find new and updated features, software limitations, and open issues for Junos OS Evolved Release 21.3R1.

These release notes are cumulative and are updated for later releases.

For more information on this release of Junos OS Evolved, see [Introducing Junos OS Evolved](#).

## Junos OS Evolved Release Notes for ACX7100-32C and ACX7100-48L Devices

### IN THIS SECTION

- [What's New | 1](#)
- [What's Changed | 6](#)
- [Known Limitations | 9](#)
- [Open Issues | 10](#)
- [Resolved Issues | 11](#)

These release notes accompany Junos OS Evolved Release 21.3R1 for ACX7100-32C and ACX7100-48L routers. They describe new features, limitations, and known problems in the hardware and software.

### What's New

### IN THIS SECTION

- [What's New in 21.3R1 | 2](#)

Learn about new features introduced in this release for ACX Series Routers.

## What's New in 21.3R1

### IN THIS SECTION

- [Chassis | 2](#)
- [EVPN | 3](#)
- [Routing Policy and Firewall Filters | 3](#)
- [Routing Protocols | 4](#)
- [Additional Features | 4](#)

To view features supported on the ACX platforms, view the Feature Explorer using the following links. To see which features were added in Junos OS Evolved Release 21.3R1, click the Group by Release link. You can collapse and expand the list as needed.

- [ACX7100-32C](#)
- [ACX7100-48L](#)

The following sections highlight the key features in this release.

### Chassis

- **Support for the Power Saving mode (ACX7100-32C and ACX7100-48L)**—In addition to configuring the Normal mode, you can now enable and disable the Power Saving mode using the `set interfaces interface-range` command.
  - A system reboot is mandatory after enabling this configuration.
  - The ACX Series device has two cores, and each core can handle 2.4 Tbps traffic. In the Power Saving mode, only one core (Core1) is available. The ACX device can only work in the 2.4 Tbps mode.
  - We recommend that you configure this mode on Core1 ports only.
  - You can save up to 48 W power by enabling this mode.

[See [Managing Power](#) and [interfaces \(QFX Series, ACX Series\)](#).]

## EVPN

- **Support for EVPN-MPLS (ACX7100-32C and ACX7100-48L)**—Starting in Junos OS Evolved Release 21.3R1, we support the following EVPN-MPLS features on MAC-VRF instances:
  - L2 flooding for broadcast, unknown unicast, and multicast (BUM) traffic
  - Split-horizon between core interfaces
  - Data plane and control plane MAC learning and aging, and static MAC
  - MAC movement and MAC mobility on control plane only
  - MAC limiting and MAC learning
  - Input and output VLAN maps using normalization on user-to-network interfaces (UNIs)
  - Aggregated Ethernet interfaces used for UNIs and network node interfaces (NNIs)
  - Physical interfaces for VLAN tagging, stacked VLAN tagging, flexible VLAN tagging, and extended VLAN bridges using EVPN-MPLS as a service
  - Ethernet bridge mode for logical UNIs
  - VLAN ID lists, and native VLAN ID supported logical UNIs and priority-tagged logical interfaces
  - Underlay with ECMP and FRRouting (FFR)
  - Control-word support for EVPN
  - EVPN Proxy ARP and ARP suppression

## Routing Policy and Firewall Filters

- **Enhanced scale support for firewall filters (ACX7100-32C and ACX7100-48L)**—Starting in Junos OS Evolved Release 21.3R1, we support 16000 firewall filters.

[See [Understanding How to Use Standard Firewall Filters.](#)]

- **Multiple database profile support (ACX7100-32C and ACX7100-48L)**—ACX7000 series is based on Broadcom DNX family ASIC which internally stores forwarding information in a number of databases and tables: LPM, LEM, EEDB (ARP) which share the same memory space and each table has predefined fixed size. Starting with Junos OS Evolved Release 21.3R1, this feature enables you to allocate different sizes for the databases in ASIC. Use new statement `hw-db-profile` at the `[edit system packet-forwarding-options]` hierarchy level to configure the available profiles to allocate sizes for the databases.

[See [hw-db-profile.](#)]



## Routing Protocols

- **Layer 2 protocol tunneling (ACX7100-32C and ACX7100-48L)**—Starting in Junos OS Evolved Release 21.3R1, we support Layer 2 protocol tunneling (L2PT). You can use L2PT to send L2 protocol data units (PDUs) across the network and deliver them to devices that are not part of the local broadcast domain.

You can configure L2PT using `protocol <protocol name>` at the `[protocols layer2-control mac-rewrite interface <interface name>]` hierarchy and the destination MAC address using `tunnel-destination-mac <mac address>` at the `[protocols layer2-control mac-rewrite]` hierarchy.

[See [Layer 2 Protocol Tunneling](#), [layer2-control](#), [show mac-rewrite interface](#), and [clear error mac-rewrite](#).]

## Additional Features

We've extended support for the following features to these platforms.

- **BFD support (ACX7100-32C and ACX7100-48L)**—

Starting in Junos OS Evolved Release 21.3R1, you can configure BFD over label-switched paths (LSPs) or RSVP-based LSPs in a centralized mode.

[See [Bidirectional Forwarding Detection \(BFD\) for MPLS](#).]

- **Control plane distributed denial of service (DDoS) protection (ACX7100-32C and ACX7100-48L)**

[See [Control Plane Distributed Denial-of-Service \(DDoS\) Protection Overview](#).]

- **Disabling local switching in bridge domains (ACX7100-32C and ACX7100-48L)**

[See [Configuring MAC Address Flooding and Learning for VPLS](#).]

- **Ethernet ring protection switching (ERPS) with G.8032 version 2 (ACX7100-32C and ACX7100-48L)**

[See [Understanding Ethernet Ring Protection Switching Functionality](#).]

- **Firewall filter protocols (MPLS, CCC, virtual private LAN service (VPLS), and ANY) (ACX7100-32C and ACX7100-48L)**

[See [Firewall Filters Overview](#).]

- **IEEE 802.1ag Operation, Administration, and Maintenance (OAM) CFM (ACX7100-32C and ACX7100-48L)**

[See [IEEE 802.1ag OAM Connectivity Fault Management Overview](#).]

- **Layer 2 VPN and Layer 2 circuit support (ACX7100-32C and ACX7100-48L):**

- L2 circuit—Targeted LDP signaling pseudowires and interoperability between different types of supported attachment circuit (AC) for L2 circuit

- L2 VPN circuit—BGP signaling
- MPLS fast reroute (FRR) on IGP, circuit attachment types (port, VLAN, and Q-in-Q tunneling), control word, pseudowire circuit on aggregated Ethernet interfaces, indirect next hops and composite next hops, pipe and uniform mode time-to-live (TTL), Tag Protocol Identifiers (TPIDs), and VLAN map on pop, push, or swap

[See [Understanding Layer 2 VPNs](#) and [Configuring Interfaces for Layer 2 Circuits](#).]

- **Logical interfaces support classification and rewrite rules for MPLS, VPLS, Layer 3 VPN, Layer 2 Circuit, CCC, IRB, and EVPN** (ACX7100-32C and ACX7100-48L)

[See [Classifiers and Rewrite Rules at the Global, Physical, and Logical Interface Levels Overview](#).]

- **Optical interfaces, transceivers, and direct attach copper (DAC) cables** (ACX7100-32C and ACX7100-48L)

[See [Hardware Compatibility Tool](#).]

- **Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), and VLAN Spanning Tree Protocol (VSTP)** (ACX7100-32C and ACX7100-48L)

[See [Spanning-Tree Protocol Overview](#).]

- **Segment routing support** (ACX7100-32C and ACX7100-48L):

- Segment routing global block (SRGB) for OSPF and IS-IS
- Fast reroute
- Metro Ethernet services over segment routing infrastructure
- Segment routing services- L3VPN, IPv6 VPN Provider Edge (6VPE) , IPv6 Provider Edge (6PE), Layer 2 VPN, Layer 2 Circuit, and BGP-VPLS
- Static segment routing (node segment, prefix segment, adjacency, and anycast segments) for OSPF and IS-IS
- Topology independent loop-free alternate (TI-LFA) with segment routing for OSPF and IS-IS

[See [Understanding Topology-Independent Loop-Free Alternate with Segment Routing for IS-IS](#), [Understanding Source Packet Routing in Networking \(SPRING\)](#), and [Understanding Adjacency Segments, Anycast Segments, and Configurable SRGB in SPRING](#).]

- **Storm control** (ACX7100-32C and ACX7100-48L , and QFX5700)

[See [Understanding Storm Control](#)]

- **Virtual private wire service (VPWS) with EVPN signaling mechanisms and flexible cross-connect (FXC) support** (ACX7100-32C and ACX7100-48L)

By default, control-word is enabled on these platforms. To disable the control word feature, use the `set routing-instances routing-instance-name protocols evpn no-control-word` command.

[See [Overview of VPWS with EVPN Signaling Mechanisms](#).]

- **VRRP for IPv4 and IPv6** (ACX7100-32C and ACX7100-48L)

[See [VRRP and VRRP for IPv6 Overview](#).]

## What's Changed

### IN THIS SECTION

- [What's Changed in Release 21.3R1](#) | 6

Learn about what changed in this release for ACX Series Routers.

## What's Changed in Release 21.3R1

### IN THIS SECTION

- [Authentication and Access Control](#) | 6
- [Class of Service](#) | 7
- [EVPN](#) | 7
- [General Routing](#) | 7
- [Interfaces and Chassis](#) | 8
- [Junos XML API and Scripting](#) | 8
- [Layer 2 Features](#) | 8
- [Network Management and Monitoring](#) | 8

## Authentication and Access Control

- **Command to automate SSH key-based authentication (ACX Series, PTX Series, and QFX Series)**—You can set up SSH-key based authentication between the network device and a remote host by issuing

the `request security ssh password-less-authentication operational mode` command. When you execute the command with the appropriate options, the device generates SSH keys for the current user, provided the user does not already have existing keys, and transfers the user's public key to the `authorized_keys` file of the specified user on the remote host.

[See [request security ssh password-less-authentication](#).]

## Class of Service

- Junos OS Evolved now correctly displays the index for `show class-of-service` commands.

## EVPN

- **Minimum auto-recovery time reduced for duplicate MAC address detection (ACX Series, PTX Series and QFX Series)**—Junos OS has changed the minimum value allowed for auto-recovery time for duplicate MAC address detection from 5 minutes to 1 minute. The auto-recovery time is the length of time that the device suppresses a duplicate MAC address. Reducing the auto-recovery time allows customers to quickly recover from a MAC address duplication state. You configure the `auto-recovery-time` option under the `duplicate-mac-detection` statement at the `edit routing-instances routing-instance-name protocols evpn` or `edit protocols evpn hierarchy`.

[See [Changing Duplicate MAC Address Detection Settings](#) .]

## General Routing

- **Enhancement to the `show chassis pic` command**—You can now view additional information about the optics when you run the `show chassis pic` command. The output now displays the following additional field:

MSA Version: Multi-source Agreements (MSA) version that the specified optics is compliant to. Values supported are: SFP+/SFP28 -- SFF-8472 (versions 9.3 - 12.3), QSFP+/QSFP28 -- SFF 8363 (versions 1.3 - 2.10), and QSFP-DD -- CMIS 3.0, 4.0, 5.0.

Previously, the `show chassis pic` command did not display this additional field.

[See [show chassis pic](#).]

- **Enhancement to the `show interfaces (Aggregated Ethernet) command (ACX Series, PTX Series, and QFX Series)`**—When you run the `show interfaces extensive` command for Aggregated Ethernet interfaces. You can now view following additional fields for MAC statistics : Receive, Transmit, Broadcast and Multicast packets.

[See [show chassis pic](#).]

## Interfaces and Chassis

- When configuring multiple flexible tunnel interface (FTI) tunnels, the source and destination address pair needs to be unique only among the FTI tunnels of the same tunnel encapsulation type. Prior to this PR, the source and destination address pair had to be unique among all the FTI tunnels regardless of the tunnel encapsulation type.

## Junos XML API and Scripting

- **Changes to how command-line arguments are passed to Python op scripts (ACX Series, PTX Series, and QFX Series)**—When the device passes command-line arguments to a Python op script, it prefixes a hyphen (-) to single-character argument names, and it prefixes two hyphens (--) to multi-character argument names. The prefix enables you to use standard command-line parsing libraries to handle the arguments. In earlier releases, the device prefixes a single hyphen (-) to all argument names.

[See [Declaring and Using Command-Line Arguments in Op Scripts.](#)]

## Layer 2 Features

- **Link selection support for DHCP**—We have introduced the `link-selection` statement at the `[edit forwarding-options dhcp-relay relay-option-82]` hierarchy level, which allows DHCP relay to add suboption 5 to option 82. Suboption 5 allows DHCP proxy clients and relay agents to request an IP address for a specific subnet from a specific IP address range and scope. Prior to this release, the DHCP relay dropped packets during the renewal DHCP process and the DHCP server used the leaf's address as a destination to acknowledge the DHCP renewal message.

[See [relay-option-82.](#)]

## Network Management and Monitoring

- **Changes in contextEngineID for SNMPv3 INFORMS (ACX Series, PTX Series, and QFX Series)**—Now the contextEngineID of SNMPv3 INFORMS is set to the local engine-id of Junos devices. In earlier releases, the contextEngineID of SNMPv3 INFORMS was set to remote engine-id.

[See [SNMP MIBs and Traps Supported by Junos OS.](#)]

## Known Limitations

### IN THIS SECTION

- [General Routing](#) | 9

Learn about known limitations in Junos OS Evolved Release 21.3R1 for ACX Series Routers.

For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online [Junos Problem Report Search](#) application.

## General Routing

- When inserting 40G optics which has the existing link, the LED of this 40G port shows green first, then the port LED shows amber and green. This is because TX\_ENABLE is set by default for this optics. When the optics is out of reset after being inserted, the laser is turned on, so the port is up. Then after two seconds, the laser is turned off for serdes init, and the laser is turned on after serdes init is complete. The optics module firmware cannot be changed, and the design has no issue. This must be a product limit. [PR1565723](#)
- The protocol is obsolete and same functionality can be achieved by using static IGMP. [PR1589956](#)
- When PTP is enabled, Storm port 31 will be configured to 1G. Vendor J2 only supports to 10G, so vendor gearbox converts 10G to 1G by rate matching, but there is one limitation: it can only support frame size to 2000 bytes officially, so jumbo frame cannot be supported on port 31 when PTP mode is enabled. [PR1593015](#)
- In Layer 3 VPN, Layer 3 rewrite does not work for the core file to access packets if **vrf-table-label** is not used in the routing-instance. [PR1594401](#)
- ACX7100 does not support multicast route statistics. [PR1595046](#)
- In Junos OS Evolved, we support only default ieee-802.1 classification on family ccc physical interfaces. This classifier is not displayed in CLI. [PR1596342](#)
- Observing traffic drop on scaling RSVP ingress LSP beyond 32000 on the system. Traffic loss observed because LSP installation in Packet Forwarding Engine takes a longer time. When we are trying to scale more than 32000 LSP scale. [PR1603195](#)

- This is the common issue of Junos OS Evolved platform for 400G DAC. On picd restart, the first pcsE has no Xcvr info, and the default Xcvr type is optics, so pfemand will configure the port as 400G optics and turn off AN, later on. When the second pcsE arrives, it will carry the correct Xcvr info, and turn on AN again. This will cause an one-link flap. In early stage of picd restart, the underlying link is still up, this will be updated to picd inevitably. Then the first PcsE event comes, and link is down. After the second PcsE event comes, link is up. [PR1604454](#)
- LSP installation in Packet Forwarding Engine takes a longer time. When we are trying to scale more than 32000 LSP scale. During High CPU the installation rate of NH and RT for rsvp LSP is less that is causing the delay. [PR1609568](#)

## Open Issues

### IN THIS SECTION

- [General Routing | 10](#)

Learn about open issues in Junos OS Evolved Release 21.3R1 ACX Series Routers.

For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online [Junos Problem Report Search](#) application.

## General Routing

- On the ACX7100-32C and ACX7100-48L platforms running Junos OS Evolved, you cannot clear or reset the disk option specified in the scheduled request `node reboot` command. The node reboots with the disk option last specified. [PR1517596](#)
- Egress IP MTU exception and fragmentation is not supported. Outgoing IP packets bigger than the configured interface MTU does not get fragmented. [PR1558327](#)
- Monitor interface traffic statistics is not flushed out after the interface goes down. This is a common behavior across Junos OS Evolved platforms. Even on re-enabling it is still not flushed. [PR1564672](#)
- If you configure unsupported actions in egress firewall filter, commit errors are thrown. If the unsupported actions are removed from the configuration and committed, the filter might not work in the Packet Forwarding Engine even then. This behavior depends on the order the BIND and MODIFY

of filter comes to the Packet Forwarding Engine from firewall. Syslog errors and pfe-cli commands can be used to check the filter install status. [PR1568525](#)

- 4x400G FPC is supported only by FPC Slot 1 and FPC slot 5 as per design. 4x400G FPC plugged into any slot would bring FPC online but links will come up only in FPC1 or FPC5. 4x400G FPC plugged into a slot that is not supported will not allow FPC to come online and alarm will be raised. 16x100G FPC, 20xSFP56 FPC, 4x400G FPC are not supported in FPC slot 8 (9th slot). Not bringing these board online and raise alarm. [PR1582183](#)
- Timing applications cannot be restarted successfully on the ACX7100 platform with the first software version G.8275.1. [PR1597120](#)
- When Layer 2 CoS rewrite rules are configured upto supported scale limit, if delete of Layer 2 CoS rewrite profiles and set of Layer 3 CoS rewrite profiles is done in single commit, then rewrite behaviour is undefined. Workaround is to have delete followed by commit and then set. [PR1600730](#)
- When Layer 3 CoS rewrite rules are configured upto supported scale limit, if delete of Layer 3 CoS rewrite profiles and set of Layer 2 CoS rewrite profiles is done in single commit, then rewrite behaviour is undefined. Workaround is to have delete followed by commit and then set. [PR1600746](#)
- The dscp rewrite-rule remarks both DSCP and ToS bits in IPv4 and IPv6 header respectively. Similarly, dscpv6 rewrite-rule remarks both ToS and DSCP bits in IPv6 and IPv4 header respectively. [PR1606384](#)
- On Junos OS Evolved pfemad application restart, at some rare occasions some of the interface creation might fail or interface might stop forwarding traffic. [PR1608004](#)
- A restart of DHCP takes more time because of internal issues with the SIGTERM event. [PR1610229](#)
- Default DSCP IPv6 classification will not work in ACX7100 platforms. [PR1614249](#)
- The **snapshot banner** message when booted from **snapshot partition** is not getting displayed because /etc/motd file is not getting updated. To check if a system is booted from a snapshot partition, then run cli command `show system software list`. [PR1618946](#)

## Resolved Issues

### IN THIS SECTION

- [Resolved Issues: 21.3R1 | 12](#)



Learn about the issues fixed in this release for ACX Series Routers.

For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online [Junos Problem Report Search](#) application.

## Resolved Issues: 21.3R1

### IN THIS SECTION

- [General Routing | 12](#)
- [Infrastructure | 13](#)
- [User Interface and Configuration | 13](#)

## General Routing

- The device NMI watchdog starts after USB scratch install is done and we wait for the user action to reboot, resulting in a system exception. [PR1555142](#)
- Few streams might observe 8-9 seconds traffic drop during ECMP member link flap. [PR1573295](#)
- High CPU seen mostly with systemd with 4000 mac-vrf instances activate or deactivate. [PR1581283](#)
- Large scale BFD sessions are not in stability. [PR1583444](#)
- PICD restart or crash might result in junks statistics for carrier transition. [PR1594253](#)
- The evo-pfemamd might crash after restarting app evo-pfemamd. [PR1594331](#)
- Few Label Switched Interface (LSI) MACs do not get properly learnt in the software with 8000 VPLS instance scale. [PR1597125](#)
- On ACX7100, no MAC address present in Ethernet table but arp is present in the system. [PR1597277](#)
- The arpd and ndp daemon crash is observed in scale setups. [PR1598217](#)
- The egress access control list (ACL) actions are skipped for BUM (Broadcast, Unknown Unicast, and Multicast) traffic and does not hit. [PR1598489](#)
- The ARPs (Address Resolution Protocol) might not be resolved on the IRB (integrated routing and bridging) interface which is replaced by another IRB interface. [PR1600209](#)

- For ACX7100-32C and ACX7100-48L the **Voltage Threshold Crossed** alarm might observe sometime. [PR1601493](#)

## Infrastructure

- In certain circumstances journalctl can be overwhelmed with **No TTP\_TLV\_VRF** related log messages. [PR1610313](#)

## User Interface and Configuration

- The mgd process might crash after performing the commit check. [PR1593192](#)
- The file copy command does not accept HTTPS URIs. [PR1596881](#)

# Junos OS Evolved Release Notes for PTX10001-36MR, PTX10003, PTX10004, and PTX10008 Devices

### IN THIS SECTION

- [What's New | 14](#)
- [What's Changed | 27](#)
- [Known Limitations | 31](#)
- [Open Issues | 32](#)
- [Resolved Issues | 37](#)

These release notes accompany Junos OS Evolved Release 21.3R1 for PTX10001-36MR, PTX10003, PTX10004, and PTX10008 Packet Transport Routers. They describe new and changed features, limitations, and known and resolved problems in the hardware and software.

**NOTE:** The PTX10016 is not supported in Junos OS Evolved Release 21.3R1 or later 21.3 releases.

## What's New

### IN THIS SECTION

- [What's New in 21.3R1 | 14](#)

Learn about new features introduced in this release for PTX Series Routers.

## What's New in 21.3R1

### IN THIS SECTION

- [Class of Service | 15](#)
- [EVPN | 16](#)
- [High Availability | 16](#)
- [Interfaces | 17](#)
- [IP Tunneling | 17](#)
- [Juniper Extension Toolkit \(JET\) | 17](#)
- [Junos OS API and Scripting | 18](#)
- [MPLS | 18](#)
- [Multicast | 19](#)
- [Network Management and Monitoring | 20](#)
- [Routing Options | 20](#)
- [Routing Policy and Firewall Filters | 21](#)
- [Routing Protocols | 22](#)
- [Services Applications | 23](#)

- [Software Installation and Upgrade | 24](#)
- [Additional Features | 24](#)

To view features supported on the PTX platforms, view the Feature Explorer using the following links. To see which features were added in Junos OS Evolved Release 21.3R1, click the Group by Release link. You can collapse and expand the list as needed.

- [PTX10001-36MR](#)
- [PTX10003](#)
- [PTX10004](#)
- [PTX10008](#)

The following sections highlight the key features in this release.

### Class of Service

- **Support for forwarding-class policy and routing information base (RIB) (PTX10008)**—Starting in Junos OS Evolved Release 21.3R1, RIB APIs can perform the routing and wavelength assignment.

A new configuration statement `match-next-hop-forwarding-class` is introduced at the `[edit class-of-service forwarding-policy next-hop-map map-name forwarding-class class-name]` hierarchy level. This statement enables applications to specify the next hop with a forwarding-class. Application specified forwarding-class must be a predefined forwarding-class or a forwarding-class that is configured using CLI.

[See [forwarding-class \(Forwarding Policy\)](#), and [forwarding-class-default \(Forwarding Policy\)](#).]

- **Support for importing Classifier and/or Rewrite Rules (PTX10001-36MR, PTX10003, PTX10008, QFX5220)**—Starting in Junos OS Evolved Release 21.3R1, you can import classifier and/or rewrite rules to form new rules in the PTX10001-36MR, PTX10003, PTX10008, and QFX5220 platforms.

[See [Understanding Applying CoS Classifiers and Rewrite Rules to Interfaces](#).]

- **Support for ECN and PFC (PTX10004)**—Starting in Junos Release 21.3R1-EVO, support for priority-based flow control (PFC) at Layer 3 for untagged traffic and explicit congestion notification (ECN) are introduced in PTX10004.

[See [Understanding PFC Using DSCP at Layer 3 for Untagged Traffic](#) and [Understanding CoS Explicit Congestion Notification](#).]

## EVPN

- **Support for EVPN-VXLAN on MAC-VRF instances (PTX10001-36MR, PTX10004, and PTX10008)** — Starting in Junos OS Evolved Release 21.3R1, you can configure EVPN-VXLAN on MAC-VRF instances only with the following functionalities:
  - VLAN-based service, VLAN bundle service, and VLAN-aware bundle service
  - Configuration of overlapping VLAN IDs across MAC-VRF instances
  - Tunneling encapsulated traffic from locally connected Layer 2 network over a VXLAN tunnel toward the core
  - De-encapsulation of VXLAN traffic from the core and forwarding it to the local L2 network
  - VXLAN overlay with IPv4 underlay network
  - Underlay reachability over ECMP
  - Multihoming of customer edge (CE) devices to multiple provider edge (PE) devices over an Ethernet segment identifier (ESI) interface using active/active configuration
  - Proxy ARP and Network Discovery Protocol (NDP)
  - ECMP
  - IRB interfaces
  - IRB interfaces that can route the multicast packets without IGMP snooping

## High Availability

- **GRES-IRB support (PTX10008)**—Starting in Junos OS Evolved Release 21.3R1, Graceful Routing Engine Switchover (GRES) is supported, in the existing IRB support, on PTX10008 routers. GRES enables a router with redundant Routing Engines to continue forwarding packets even if one Routing Engine fails. GRES preserves interface and kernel information. Traffic is not interrupted. GRES is supported only on dual Routing Engine platforms. GRES allows you to eliminate network downtime, reduce operating costs, and deliver higher levels of services.  
[See [Understanding Graceful Routing Engine Switchover.](#)]
- **NSR support for RSVP-TE dynamic tunnels (PTX10004, PTX10008)**—Starting in Junos OS Release 21.3R1, we support NSR for RSVP-TE dynamic tunnels.  
[See [Nonstop Active Routing System Requirements.](#)]

## Interfaces

- **Support for optics local loopback on 400GbE coherent ZR DWDM optics (PTX10004 and PTX10008)**—Starting in Junos OS Evolved Release 21.3R1, we support optics local loopback on 400GbE coherent ZR dense wavelength-division multiplexing (DWDM) optics. To enable this feature, use `loopback <local>` at the `[edit interfaces optics-options]` hierarchy level. We also support 75 Grid spacing for 400GbE ZR.

[See [optics-options](#), [show interfaces](#), [show interfaces diagnostics optics](#), and [show chassis pic](#).]

- **Support for performance monitoring and TCA (PTX10004 and PTX10008 with PTX10K-LC1202-36MR)**—We now support performance monitoring and threshold-crossing alert (TCA) information for the QSFP56-DD 400GbE ZR optical transceiver modules (shown in CLI output as QSFP56-DD-400GE-ZR). TCAs provide the management system an early indication of the deteriorating health of an optical network connection when the performance parameter that you monitor crosses a certain threshold. You can view the current and historical performance monitoring metrics which are accumulated into 15-minute and 1-day interval bins by using the `show interfaces transport pm` command. You can thus manage optical transport link efficiently.

[See [show interfaces transport pm](#).]

## IP Tunneling

- **Support for multiple single-hop EBGP sessions on different links using the same link-local address (PTX10001-36MR, PTX10008, and QFX5220)**—Starting in Junos OS Evolved Release 21.3R1, you need not configure unique BGP peer addresses for Juniper Networks devices for every external BGP (EBGP) session. You can now enable single-hop EBGP sessions on different links over multiple directly connected peers that use the same IPv6 link-local address. In earlier Junos OS Evolved Releases, BGP peers could be configured with link-local addresses, but multiple BGP peers could not be configured to use the same link-local address on different interfaces.

[See [Overview: Configure Multiple Single-Hop EBGP Sessions on Different Links Using the Same Link-Local Address \(IPv6\)](#).]

## Juniper Extension Toolkit (JET)

- **Juniper Extension Toolkit (JET) supports BFD Service APIs for routing protocol process (rpd) programmability (PTX10001-36MR and PTX10008)**—Starting in Junos OS Evolved Release 21.3R1, you can use programmable rpd (prpd) BFD APIs to add, update, and delete BFD sessions and subscribe to BFD events from outside applications. These APIs enable the integration of rpd with software-defined networking (SDN) controllers and increase the flexibility of your network. The prpd BFD APIs support BFD Echo-Lite sessions in single-hop IPv4 and IPv6 modes.

The following BFD Service APIs are supported:

- Initialize
- SessionAdd
- SessionUpdate
- SessionDelete
- SessionDeleteAll
- Subscribe
- Unsubscribe

Use the `show bfd session extensive` command to view BFD sessions. BFD sessions added through prpd BFD APIs are labeled with `PRPD:<session-id>` in the client field. The `<session-id>` is 1 for the first BFD session that is added, 2 for the second, and so on.

[See [show bfd session](#) and [Juniper Extension Toolkit \(JET\)](#).]

## Junos OS API and Scripting

- **Support for REST interface over HTTPS (ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5130-48C and QFX5220)**— Starting in Junos OS Evolved Release 21.3R1, we support HTTPS protocol for REST interfaces.

[See [REST API Guide](#).]

## MPLS

- **RSVP updates available bandwidth values without notifying IS-IS (PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, and QFX5220)**—When RSVP label-switched paths (LSPs) and segment routing LSPs coexist on a link, RSVP takes into account how much bandwidth the segment routing LSPs use. By default, RSVP updates the values for the local unreserved bandwidth and the maximum available bandwidth and passes the values on to IS-IS. Starting in Junos OS Evolved Release 21.3R1, you can configure RSVP to update available bandwidth values without notifying IS-IS if the bandwidth change is within a certain threshold configured at the `[edit protocols rsvp interface interface-name update-threshold-max-reservable]`.

If you configure the `local-bw-override-threshold` statement at the `[edit protocols rsvp interface interface-name non-rsvp-bandwidth]` hierarchy level, RSVP always updates the available bandwidth values. However, it reports only the new values to IS-IS if the bandwidth change passes the threshold.

[See [update-threshold-max-reservable](#) and [local-bw-override-threshold](#).]

- **BGP-CT planes to facilitate service mapping over colored tunnels (PTX10001-36MR, PTX10004, and PTX10008)**—Starting in Junos OS Evolved Release 21.3R1, you can classify colored transport tunnels

(RSVP, IS-IS flexible algorithm) in your network into transport classes and map service routes over an intended transport class. You can also extend the transport tunnels to span across multiple domains (autonomous systems (ASs) or IGP areas) by using the new BGP transport address family called BGP Classful Transport (BGP-CT).

[See [BGP Classful Transport Planes Overview](#).]

- **BGP route service API supports programming routes with IP-IP encapsulation attributes (PTX10001-36MR, PTX10004, and PTX10008)**—Starting in Junos OS Evolved Release 21.3R1, you can use the BGP route service API to program BGP routes with IP over IP (IP-IP) encapsulation attributes. You can specify the tunnel type, the remote endpoint address, and the color of the route. Keep the following in mind:
  - The egress endpoint must be a unicast IPv4 address.
  - The colors encoded in `tunnel_encap` and `extended_community` must match.
  - If the encapsulation `ext_com` and the tunnel attribute are both present, the egress endpoint must match the next-hop address.

To enable this feature, configure the `bgp-signal` option at the `[edit routing-options dynamic-tunnels tunnel-name]` hierarchy level.

[See [dynamic-tunnels](#) and [JET APIs on Juniper EngNet](#).]

- **Support for express segments to establish end-to-end segment routing paths (PTX10001-36MR, PTX10003, and PTX10008)**—Starting in Junos OS Evolved Release 21.3R1, you can use express segments to establish end-to-end traffic engineering paths between interconnected traffic engineering networks. Express segments (also known as virtual traffic engineering links) are generated dynamically through policies matching the underlay LSPs. Express segments and the corresponding abstracted topology (required by RFC7926) are generated with policies.

[See [Express Segment LSP Configuration](#).]

## Multicast

- **Optimized fast branch updates (PTX10001-36MR, PTX10004, and PTX10008)**—Starting in Junos OS Evolved Release 21.3R1, we've refined the current method of fast-branch updates to the multicast replication tree. Now, any membership changes in the tree (such as joins and deletes) trigger fast make-before-break re-optimization of the tree to ensure that there is no traffic loss.

[See [Multicast Shortest-Path Tree](#).]



## Network Management and Monitoring

- **TWAMP support for SNMP (PTX10001-36MR, PTX10003, PTX10004, and PTX10008)**—Starting in Junos OS Evolved Release 21.3R1, you can monitor the network performance using the Two-Way Active Measurement Protocol (TWAMP) MIB.

[See [Enterprise-Specific MIBs for Junos OS Evolved](#).]

- **SNMP MIB support for the timing Synchronous Ethernet feature (PTX10008)**—Starting in Junos OS Evolved Release 21.3R1, you can get the Synchronous Ethernet defect and event notifications. We've introduced a timing MIB to support this feature. The trap notifications are disabled by default. To enable trap notifications for the timing feature, include the `timing-events` statement at the `[edit snmp trap-group group-name categories]` hierarchy level.

[See [Configuring SNMP Trap Groups](#) and [Enterprise-Specific MIBs for Junos OS Evolved](#).]

- **SNMP support for interface attached policers (PTX10001-36MR, PTX10004, and PTX10008)**—Starting in Junos OS Evolved 21.3R1, you can fetch the byte and packet count of interface attached policers using a new MIB called Firewall MIB.

[See [Enterprise-Specific MIBs for Junos OS Evolved](#).]

## Routing Options

- **Enhancements to prefix-limit and accepted-prefix-limit configuration statements, and updates to show bgp neighbor command (PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5130-48C, and QFX5220)**—Starting in Junos OS Evolved Release 21.3R1, the `prefix-limit` and `accepted-prefix-limit` configuration statements include the following options:
  - `drop-excess <percentage>`—If you include the `drop-excess <percentage>` option, the excess routes are dropped when the maximum number of prefixes is reached. If you specify a percentage, the routes are logged when the number of prefixes exceeds that percentage value of the maximum number.
  - `hide-excess <percentage>`—If you include the `hide-excess <percentage>` option, the excess routes are hidden when the maximum number of prefixes is reached. If you specify a percentage, the routes are logged when the number of prefixes exceeds that percentage value of the maximum number.

We have enhanced the `show bgp neighbor` command to display the following additional information:

- Count of prefixes that are dropped or hidden based on network layer reachability information (NLRI) when the maximum number of allowed prefixes threshold is exceeded
- Alerts when a peer starts to drop or hide routes
- Configuration details of the `prefix-limit` and `accepted-prefix-limit` statements

[See [prefix-limit](#), [accepted-prefix-limit](#), [show bgp neighbor](#), and [Multiprotocol BGP](#).]

- **Support for MPLS import policy (PTX10008)**—Starting in Junos OS Evolved Release 21.3R1, the `mpls-import policy-name` CLI configuration statement at the `[edit routing-options resolution rib rib-name]` hierarchy level enables multi-path scenarios where a node-SID label points to multiple forwarding paths. The `mpls-import policy-name` configuration statement applies the resolution import policy for next-hop resolution.

[See [resolution](#).]

## Routing Policy and Firewall Filters

- **Support for line-rate firewall filtering in the egress direction (PTX10001-36MR and PTX10008)**—Starting in Junos OS Evolved Release 21.3R1, you can enable `fast-lookup-filter` to increase the performance of output firewall filters. Family `inet`, `inet6` and MPLS filters can be configured with `fast-lookup-filter` at the `[edit firewall family family-name filter filter-name]` hierarchy level.

[See [fast-lookup-filter](#) .]

- **Firewall filtering using flood policer, IRB, and service provider egress filtering (PTX10001-36MR, PTX10004, and PTX10008)**—In Junos OS Evolved Release 21.3R1, you can use the flood policer feature to control flooding of the network with broadcast, unknown unicast, and multicast (BUM) traffic, and this control includes the EVPN flood policer. We now support inner VLAN ID and inner VLAN priority on ingress and egress and service provider style egress filters. Service provider style egress filters are Layer 2 filters attached in the egress direction for L2 interfaces configured in the service provider style. IRB filters are attached to an IRB interface configured for transitioning packets from Layer 2 to Layer 3 forwarding and vice versa (both entering or exiting the L3 interface) to control flooding of traffic in a given bridge domain. You can attach filters to IRB interfaces for both ingress and egress, but the execution of filters is different for each direction. Note that EVPN-MPLS configurations also support flood policers.

[See [Configuring the Filter Profile](#).]

- **New firewall filter feature: shared-bandwidth and percentage policers on the BT chip (PTX10001-36MR, PTX10004, and PTX10008)**—Junos OS Evolved Release 21.3R1 introduces the shared-bandwidth policer for instances where policers are attached to aggregated Ethernet interface bundles with child legs spanning different Packet Forwarding Engine or Flexible Port Concentrator (FPC) instances. The bandwidth policers program the policer token bucket with weighted bandwidth or burst (depending on the number of child legs per Packet Forwarding Engine).

The percentage policer feature allows you to configure the bandwidth policer relative to the IFD speed where you configure the Class of Service (CoS) shaping rate. After the configuration, the egress policer can then use this base CoS shaping rate instead of the IFD speed.

[See [Configuring the Filter Profile](#).]

- **Support for packet rate policers (PTX10003)**—Starting in Junos OS Evolved release 21.3R1, you can use a count of packets as the threshold for traffic policers. These per-packet policers can better mitigate low-and-slow types of denial-of-service (DoS) and distributed denial-of-service (DDoS) attacks. You can apply per-packet policers in the ingress or egress interface direction and for the following families: inet, inet6, mpls, and ethernet-switching. Per-packet policers support both two-color and three-color policies.

[See [Packets-Per-Second \(pps\)-Based Policer Overview](#) and [pps-limit \(Policer\)](#).]

## Routing Protocols

- **Keychain Mechanism for BGP and LDP Routing Protocols**—Starting in Junos OS Evolved Release 21.3R1, the PTX Series routers support key update mechanism for BGP and LDP routing protocols. This allows you to update authentication keys without interrupting associated routing and signaling protocols.

However, the following features are not supported in this release:

- Link Local and dynamic neighbors are not supported.
- Only 500 BGP connections with keychain is supported by the router.
- Only 200 LDP connections with keychain will be supported by a router.
- Connections with keychain does not support NSR; during switchover a flap maybe seen.

[See [Authentication for Routing Protocols](#).]

- **Support to display PRBS statistics (PTX10001-36MR, PTX10004, PTX10008, and PTX10008 with PTX10K-LC1202-36MR)**—

Starting in Junos OS Evolved Release 21.3R1, you can enable support for pseudorandom binary sequence (PRBS) statistics.

The output of the `show interfaces interface-name` command displays the PRBS statistics while the test is in progress.

[See [show interfaces prbs-stats](#), [Collecting Pseudo Random Bit Sequence \(PRBS\) Statistics](#).]

- **Support for unnumbered interfaces (PTX10001-36MR, PTX10004, and PTX10008)**—

You can now specify the donor interface to an unnumbered interface after you configure an Ethernet interface. Use the IP address of the donor interface as the source address of the unnumbered interface from where IPv4 or IPv6 packets exit the router.

We support the following features for unnumbered interfaces:

- Subnet Ethernet helper router
- Qualified next hop

- IS-IS protocol adjacency
- RSVP traffic engineering
- Source Packet Routing in Networking (SPRING) over OSPFv2

[See [Configuring an Unnumbered Interface.](#)]

- **Support for route target (RT) multipath (PTX10001-36MR, PTX10003, PTX10004, and PTX10008)—**

Starting in Junos OS Evolved Release 21.3R1, the BGP RIB sharding supports route target (RT) multipath and dependent features such as protect-core and policy-based multipath. RT multipath does load balancing by combining next hops from multiple component routes to form a forwarding-only route. When you enable sharding, both the shard and the main threads participates in this process of creating the forwarding-only route.

[See [RIB Sharding](#) and [Configuring Proxy BGP Route Target Filtering for VPNs.](#)]

- **Support for BGP Auto-discovered Neighbor (PTX10001-36MR, PTX10003, PTX10004, PTX10008 and QFX5220)—**Starting in Junos OS Evolved Release 21.3R1, we support BGP auto-discovered neighbors using IPv6 Neighbor Discovery Protocol (ND). With this feature, you can enable BGP to create peer neighbor sessions using link-local IPv6 addresses of directly connected neighbor devices. You need not specify remote or local neighbor IP addresses.

To enable peering for a given interface or set of interfaces without specifying the local or remote neighbor addresses, configure the peer-auto-discovery statement at the [edit fabric protocols bgp group <name> dynamic-neighbor <name>] hierarchy level.

[See [BGP Auto-Discovered Neighbors.](#)]

- **BMP with BGP Sharding and Update IO (PTX10001-36MR, PTX10003, PTX10004 and PTX10008)—**Starting in Junos OS Evolved Release 21.3R1, we support BGP Monitoring Protocol (BMP) with BGP sharding and Update IO in multi-threaded mode.

[See [BGP Monitoring Protocol.](#)]

## Services Applications

- **Configuration option to disable VLAN support and MPLS encapsulated frames (PTX10001 and PTX10008) –** A configuration option is available for PTX series devices, at individual ASIC level, to stop analyzing VLAN frames tagged with TPID 0x8100 and MPLS encapsulated frames. Support is disabled for VLAN frames on a specific FPC. However, VLAN tagged interfaces can be used on other FPCs, that are not configured with **no-vlan-tagging**. The user can configure other TPIDs as required.

[See set chassis fpc and No Link Title.]

## Software Installation and Upgrade

- **Support for DHCP options 61 and 77 on ZTP (PTX10001-36MR, PTX10003, PTX10004, and PTX10008)**—Starting in Junos OS Evolved Release 21.3R1, zero-touch provisioning (ZTP) now supports DHCP options 61 and 77. DHCP option 61 is used to specify the chassis serial number, and DHCP option 77 is used to specify the make, model, and software version of the chassis.

[See [Zero Touch Provisioning](#).]

## Additional Features

We've extended support for the following features to these platforms.

- **CFM support** (PTX10001-36MR, PTX10004, and PTX10008):
  - Down maintenance association end points (MEPs) on inet and CCC interfaces, to monitor Ethernet networks for connectivity faults
  - Continuity check message (CCM) interval support of 10s, 1s, 100ms, 10ms
  - Action profile for down MEP sessions
  - CFM support on child links on aggregated Ethernet tagged interfaces
  - GRES and non GRES
  - RSVP support
- **CMErrors configuration and CMErrors counters with Junos telemetry interface (JTI)** (PTX10001-36MR and PTX10004)
- **CPU statistics support with JTI** (PTX10003, PTX10004, and PTX10008)
- **ECMP nexthop update rate throttling** (PTX10001-36MR, PTX10003, PTX10004, and PTX10008)
- **Express segments using segment routing–traffic engineering (SR-TE) underlay** (PTX10003 and PTX10008)

[See [Introduction to OAM Connectivity Fault Management \(CFM\)](#).]

[See [Telemetry Sensor Explorer](#).]

[See [Telemetry Sensor Explorer](#).]

[See [pause-computation-during-churn](#).]

[See [Express Segment LSP Configuration](#).]

- **Fabric FOAM support for PTX-Series** provides functionality to enable and disable fabric self-ping and Packet Forwarding Engine (PFE) liveliness mechanism. [See [edit-chassis-fabric-oam-detection-disable](#), [show-system-errors-active](#), and [show-system-alarms](#).]

- **Host-to-host security for BGP sessions using IPsec with the `mode` statement set to transport** (PTX10001-36MR, PTX10004, PTX10008, and QFX5220):

We support the `parse`, `netlink-socket`, `database`, and `general` security traceoptions flags. We've also introduced the `ipsec` traceoptions flag for BGP traffic.

[See [IP Security for BGP](#), [Configuring IPsec Security Associations](#), and [traceoptions \(Protocols BGP\)](#).]

- **IEEE 802.3ah link fault management (LFM) support** (PTX10008)

[See [Introduction to OAM Link Fault Management \(LFM\)](#).]

- **Inline active flow monitoring using IPFIX and version 9 templates** (PTX10001-36MR, PTX10004, and PTX10008):

- Support for IPv4 and IPv6 traffic on IRB interfaces.
- BGP next-hop address in the IPv6 and MPLS-IPv6 templates: Information Element 63, IPv6 BGP NextHop Address, is now available.

[See [Inline Active Flow Monitoring on IRB Interfaces](#) and [IPFIX and Version 9 Templates](#).]

- **MSDP support** (PTX10001-36MR, PTX10004, and PTX10008)—

We now support the following features:

- Nonstop active routing (NSR) with MD5 authentication
- Multicast Source Discovery Protocol (MSDP) peer authentication

[See [Understanding MSDP](#).]

- **OpenConfig network instance configuration support with JTI** (PTX10003, PTX10008, and PTX10016).

[See [Mapping OpenConfig Network Instance Commands to Junos Operation](#).]

- **Optimizing auto-bandwidth adjustments for MPLS label-switched paths (LSPs)** (PTX10001-36MR, PTX10004, and PTX10008)

[See [Configuring Optimized Auto-bandwidth Adjustments for MPLS LSPs](#).]

- **Path Computation Element Protocol (PCEP) support for reporting and delegating colored Distributed Constrained Shortest Path First (DCSPF) segment routing LSPs** (PTX10003 and QFX5200)

[See [Understanding Static Segment Routing LSP in MPLS Networks](#).]

- **Precision Time Protocol (PTP) transparent clock over IPv6** (PTX10001-36MR)

[See [Understanding Transparent Clocks in Precision Time Protocol](#).]

- **Support for bidirectional PIM** (PTX 10001-36MR, PTX10004 and PTX10008)—Starting in Junos OS Evolved Release 21.3R1, we support bidirectional Physical Interface Modules (PIMs) for multicast traffic.

[See [pim-snooping](#).]

- **Support for 10-Gbps speed on SFP+ ER optics** (PTX10001-36MR and PTX10008):

You can configure 10-Gbps speed with SFP+ extended reach (ER) optics by plugging in the QSA adapter on the QSFP/QSFP+ ports of the JNP10K-LC1201 and JNP10K-LC1202 line cards and the PTX10001-36MR.

[See [Port Speed on JNP10K-LC1201 Overview](#).]

- **Support for 128 primary paths per static segment routing LSP** (PTX10001-36MR, PTX10003, PTX10004, and PTX10008)

[See [Static Segment Routing LSP Limitations](#).]

- **Support for IPv6 L3VPN over IPv6 SR-TE and IPv6 Underlay** (PTX10001-36MR, PTX10004, and PTX10008): To configure an IPv6 address for Layer 3 VPN connection, include the family `inet6-vpn` configuration statement at the `[edit protocols bgp groupname]` hierarchy level.

[See [Understanding Static Segment Routing LSP in MPLS Networks](#)]

- **Synchronous Ethernet** (PTX10008 with PTX10K-LC1202-36MR line cards)

[See [Synchronous Ethernet Overview](#).]

- **TARGET\_DEFINED subscription mode support with JTI and export data using JavaScript Object Notation (JSON) encoding format with JTI and gRPC Network Management Interface (gNMI) extension headers** (PTX10001-36MR, PTX10003, PTX10004, PTX10008, and QFX5220)

[See [export-profile \(Junos Telemetry Interface\)](#) and [Understanding OpenConfig and gRPC and gNMI on Junos Telemetry Interface](#).]

- **Transceiver diagnostic statistics with JTI** (PTX10003, PTX10004, and PTX10008)

[See [Telemetry Sensor Explorer](#).]

- **Two-Way Active Measurement Protocol (TWAMP) SNMP trap support** (PTX Series)

[See [traps](#).]

- **VCCV support for pseudowires** (PTX10001-36MR, PTX10004, and PTX10008)

[See [Configuring BFD for VCCV for Layer 2 Circuits](#), [BFD Support for VCCV for Layer 2 VPNs](#), [Layer 2 Circuits](#), and [VPLS](#), [MPLS Pseudowires Configuration](#), [show ldp database](#), and [show route instance](#).]

## What's Changed

### IN THIS SECTION

- [What's Changed in Release 21.3R1](#) | 27

Learn about what changed in this release for PTX Series Routers..

## What's Changed in Release 21.3R1

### IN THIS SECTION

- [Authentication and Access Control](#) | 27
- [Class of Service](#) | 28
- [EVPN](#) | 28
- [General Routing](#) | 28
- [Interfaces and Chassis](#) | 29
- [Junos XML API and Scripting](#) | 29
- [Layer 2 Features](#) | 29
- [Network Management and Monitoring](#) | 30
- [Security](#) | 30
- [Software Licensing](#) | 30

## Authentication and Access Control

- **Command to automate SSH key-based authentication (ACX Series, PTX Series, and QFX Series)**—You can set up SSH-key based authentication between the network device and a remote host by issuing the request `security ssh password-less-authentication operational mode` command. When you execute the



command with the appropriate options, the device generates SSH keys for the current user, provided the user does not already have existing keys, and transfers the user's public key to the **authorized\_keys** file of the specified user on the remote host.

[See [request security ssh password-less-authentication](#).]

## Class of Service

- Junos OS Evolved now correctly displays the index for `show class-of-service` commands.

## EVPN

- **Minimum auto-recovery time reduced for duplicate MAC address detection (ACX Series, PTX Series and QFX Series)**—Junos OS has changed the minimum value allowed for auto-recovery time for duplicate MAC address detection from 5 minutes to 1 minute. The auto-recovery time is the length of time that the device suppresses a duplicate MAC address. Reducing the auto-recovery time allows customers to quickly recover from a MAC address duplication state. You configure the auto-recovery-time option under the duplicate-mac-detection statement at the `edit routing-instances routing-instance-name protocols evpn` or `edit protocols evpn hierarchy`.

[See [Changing Duplicate MAC Address Detection Settings](#) .]

- **Output for `show Ethernet switching flood extensive`**—The output for `show ethernet-switching flood extensive` now displays the correct next-hop type for Virtual Ethernet and WAN mesh group in an EVPN-VXLAN network as `unilist`. Previously, the output for `show ethernet-switching flood extensive` would misidentify the next-hop type as `composite`.

## General Routing

- **Enhancement to the `show chassis pic` command**—You can now view additional information about the optics when you run the `show chassis pic` command. The output now displays the following additional field:

MSA Version: Multi-source Agreements (MSA) version that the specified optics is compliant to. Values supported are: SFP+/SFP28 -- SFF-8472 (versions 9.3 - 12.3), QSFP+/QSFP28 -- SFF 8363 (versions 1.3 - 2.10), and QSFP-DD -- CMIS 3.0, 4.0, 5.0.

Previously, the `show chassis pic` command did not display this additional field.

[See [show chassis pic](#).]

- **Enhancement to the `show interfaces (aggregated Ethernet) command (ACX Series, PTX Series, and QFX Series)`**—When you run the `show interfaces extensive` command for aggregated Ethernet interfaces.

You can now view following additional fields for MAC statistics: Receive, Transmit, Broadcast and Multicast packets.

[See [show chassis pic.](#)]

- **Validation of TCA threshold values (PTX10008)**—We've implemented immediate validation of threshold values configured in the `tca-identifier (enable-tca | no-enable-tca) (threshold number | threshold-24hrs number)` statement under the `[edit interface <interface name> optics-optics tca]` hierarchy level to ensure the threshold value entered is valid.

[See [optics-options.](#)]

- **A major alarm is raised (PTX10008)**—A major alarm is raised when a fan tray controller is removed from the chassis.
- **Enhancement to the request system license add terminal command (PTX10001-36MR)**—When you run the `request system license add terminal` command, you can now view following additional fields for information: JUNOS564022985: Ignoring unknown feature.

[See [Managing vMX Licenses.](#)]

## Interfaces and Chassis

- When configuring multiple flexible tunnel interface (FTI) tunnels, the source and destination address pair needs to be unique only among the FTI tunnels of the same tunnel encapsulation type. Prior to this PR, the source and destination address pair had to be unique among all the FTI tunnels regardless of the tunnel encapsulation type.

## Junos XML API and Scripting

- **Changes to how command-line arguments are passed to Python op scripts (ACX Series, PTX Series, and QFX Series)**—When the device passes command-line arguments to a Python op script, it prefixes a hyphen (-) to single-character argument names, and it prefixes two hyphens (--) to multi-character argument names. The prefix enables you to use standard command-line parsing libraries to handle the arguments. In earlier releases, the device prefixes a single hyphen (-) to all argument names.

[See [Declaring and Using Command-Line Arguments in Op Scripts.](#)]

## Layer 2 Features

- **Link selection support for DHCP**—We have introduced the `link-selection` statement at the `[edit forwarding-options dhcp-relay relay-option-82]` hierarchy level, which allows DHCP relay to add suboption 5 to option 82. Suboption 5 allows DHCP proxy clients and relay agents to request an IP address for a specific subnet from a specific IP address range and scope. Prior to this release, the DHCP relay

dropped packets during the renewal DHCP process and the DHCP server used the leaf's address as a destination to acknowledge the DHCP renewal message.

[See [relay-option-82](#).]

- **Support for Maximum Response Time in EVPN Type 8 Routes**—Junos OS now supports the Maximum Response Time (MRT) attribute field in EVPN Type 8 Route messages. This attribute is defined in the IETF draft of IGMP and MLD Proxy for EVPN, version 13. MRT is used to synchronize the wait time before responding to IGMP messages. To maintain compatibility with devices running previous versions of Junos OS that do not support MRT, set `protocols evpn leave-sync-route-oldstyle`.

[See [evpn](#).]

- **New Commit check for Layer 2 Interfaces (PTX10003)**—We've introduced a commit check to prevent you from misconfiguring ethernet encapsulation on Layer 2 interfaces. Ethernet encapsulation is not supported on Layer 2 interfaces.

[See [encapsulation \(Logical Interface\)](#) and [Layer 2 Address Learning and Forwarding Overview](#).]

## Network Management and Monitoring

- **Changes in contextEngineID for SNMPv3 INFORMS (ACX Series, PTX Series, and QFX Series)**—Now the contextEngineID of SNMPv3 INFORMS is set to the local engine-id of Junos devices. In earlier releases, the contextEngineID of SNMPv3 INFORMS was set to remote engine-id.

[See [SNMP MIBs and Traps Supported by Junos OS](#).]

## Security

**Renamed veriexec-check option**—We have changed the veriexec-check option of the `request system malware-scan` command to integrity-check. This update does not include any functional changes. You can use the integrity-check option to check whether integrity mechanisms are enabled for the Juniper Malware Removal Tool.

## Software Licensing

- **Juniper Agile Licensing (PTX10003, PTX10016, QFX5130-32CD, and QFX5220)**—Starting from this release onwards, the Juniper Agile License Manager is deprecated. You can use the Juniper Agile Licensing Portal to activate, install, manage, and monitor licenses on Juniper Networks devices.

[See [Juniper Agile Licensing Guide](#).]

## Known Limitations

### IN THIS SECTION

- [EVPN | 31](#)
- [General Routing | 31](#)
- [MPLS | 32](#)
- [Network Management and Monitoring | 32](#)
- [Routing Protocols | 32](#)

Learn about known limitations in Junos OS Evolved Release 21.3R1 for PTX Series Routers..

For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online [Junos Problem Report Search](#) application.

## EVPN

- If packets with unknown inner ether-type are received at the device over an EVPN-MPLS tunnel, then such packets are dropped. [PR1564431](#)

## General Routing

- Restarting the fabspoked-pfe application for the line card restarts the line card. [PR1486023](#)
- Double-fault scenarios are not handled by the link auto-heal feature and the fabric links remain down if the Routing Engine switchover is attempted while auto-heal recovery is in progress. [PR1529599](#)
- IPv6 addressing is configured with the /64 subnet by default irrespective of the subnet configured on the DHCP server side. [PR1539839](#)
- Double-fault scenarios are not handled by link auto heal feature and fabric links remain down if the Routing Engine switchover is attempted while auto heal recovery is in progress. [PR1578615](#)
- If multiple SIBs are in offline and the primary Routing Engine in halt, the SIBs might get stuck in the offlining state for 15 minutes before it goes to offline state. [PR1584712](#)

- If a 400G ZR link is configured with 4x100GE channelized mode on one end and 1x400GE on the other end, it results in link status mismatch. The 1x400GE port erroneously reports Up when it is in fact down and the 4x100GE port reports down. [PR1597707](#)
- On PTX10008 platform, VXLAN configuration options are not supported. [PR1602635](#)
- On PTX10001-36MR platforms, PTP TC over IPv6 does not receive T1/T4 error for 4x25G mode when connected between 2 retimer ports (that is, port 4 to port 7 in each PIC). This does not impact basic PTP TC over IPv6 functionality. However, the other performance metrics such as two-way time error, cTE, and dTE meet class B for all the port combinations. [PR1609110](#)
- For family inet, unsupported match (gre-key) is not getting programmed under FLT. [PR1609892](#)

## MPLS

- If all the Routing Engines are not rebooted after a network service configuration change, the rpd process might crash. [PR1461468](#)

## Network Management and Monitoring

- Configuring the `set system no-hidden-commands` blocks NETCONF sessions. As a workaround, customer can disable the `no-hidden-commands`. [PR1590350](#)

## Routing Protocols

- If you do not issue the `restart routing` command after configuring the enhanced `ip` might result in a label inconsistency that causes the device to generate a rpd core file. [PR1577451](#)

## Open Issues

### IN THIS SECTION



[General Routing | 33](#)

- Infrastructure | 35
- Interfaces and Chassis | 36
- Juniper Extension Toolkit (JET) | 36
- Interfaces and Chassis | 36
- MPLS | 36
- User Interface and Configuration | 36

Learn about open issues in Junos OS Release 21.3R1 for PTX Series Routers..

For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online [Junos Problem Report Search](#) application.

## General Routing

- GRES is not supported when FPCs are restarted. [PR1539685](#)
- On PTX10001-36MR, PTX10004, and PTX10008 platforms with inherit configuration, sessions might take longer time to converge, which will cause traffic loss. To reduce traffic loss in such scenario, configure inherit advertisement interval timer to 6 seconds. [PR1571339](#)
- On QFX5220-32CD, QFX5220-128C, and QFX5130 platforms, any MTU change on an interface causes the interface to flap multiple times. This will stabilize within 2 seconds. [PR1576199](#)
- On PTX10000 line of routers, CB *slot* becomes Fault Standby after issuing the request node power-off re *slot* command on the primary re *slot*. The correct CB state is offline. [PR1581476](#)
- For the input subscription paths containing a ":" character, the extension header in case of GNMI and certain fields for the show network-agent statistics command shows incorrect values. [PR1581659](#)
- The sFlow ingress sampling does not work for user IPv6 traffic with aggregated Ethernet ECMP case at last hop router with ultimate hop popping (UHP) LSP. [PR1582960](#)
- IPv6 based PKID enrollment operations are not supported over revenue ports on Junos OS Evolved platforms. [PR1584378](#)
- The ECMP tracer fails to count output packet on aggregated Ethernet interface. [PR1597038](#)

- When all Packet Forwarding Engines are in offline and come back to online with multicast route being active, during this cycle, multicast traffic will be permanently lost due to the absence of mcast route. [PR1598894](#)
- On PTX10001-36MR, PTX10004, and PTX10008 platforms, MVRP enabled trunk ports might go into blocked or designated state if the peer connected to the interface has no VLANs configured in its trunk port. [PR1601915](#)
- On PTX10008 routers, the ZTP fails on 40G WAN ports intermittently. [PR1602131](#)
- Brief multicast traffic loss is observed while performing Routing Engine switchover with GRES. [PR1593810](#)
- The sFlow ingress sampling reports incorrect OIF and next hop with user ipv6 traffic in an ECMP scenario at last hop router with the ultimate hop pop LSP. [PR1602448](#)
- When the multicast traffic is sent from a Session and Resource Control (SRC) to the receivers with the egress sampling enabled, then J-Flow records report incorrect Src IP and Dst IP. [PR1609008](#)
- On PICD restart, telemetry support on optics/interface sensor data is not supported. [PR1609360](#)
- Initial sync for subscription path /components/component/transceiver/physical-channels is not rendered. [PR1609865](#)
- The Packet Forwarding Engine level statistics for host bound traffic shows as zero. [PR1611115](#)
- On QFX5130 and QFX5220 platforms, the priority flow control feature might not work properly after the Packet Forwarding Engine process (evo-pfemand) restart. [PR1614035](#)
- VCCV for LDP signaled pseudowire does not work with Junos OS Evolved 21.3R1 image unless the set routing-options platform-parameters platform-supports-vccv-bfd CLI is configured and restart of the routing process is done. [PR1615419](#)
- On 400G or 4x100G interfaces using third party 400G-ZR optics, after the data path of the optics is powered up and Tx laser enabled, sometimes the actual transmitting power might appear very low. A check-and-recovery mechanism has been implemented in the 400G-ZR software driver. If the actual Tx power appears very low after powered-up and Tx laser enabled, a data path powering-down and re-init sequence will be exercised. The Tx power level will be recovered back to normal. Once such hardware bug is hit, the actual link up time will be longer than expected. No further user intervention is needed as the workaround is built-in the software. [PR1616445](#)
- Match on v6-prefix for prefix lengths less than or equal to 64 bits does not work. [PR1618211](#)
- Snapshot banner messages are appeared when booted from snapshot partition that is not displayed because /etc/motd file is not getting updated. To check if a system is booted from a snapshot partition, run the show system software list command. [PR1618946](#)

- Input interface reported by sFlow and J-Flow application for MPLS IPv4 and MPLS IPv6 ingress sampling in the case of Layer 3 VPN (label assigned per next hop or per prefix scenario) is incorrect. It incorrectly reports outgoing interface as input interface. [PR1619052](#)
- Any filter modification on the matches or actions does not work for filter with counter actions. [PR1619287](#)
- If the picd is restarted, either manually or due to systemd policy, some channelized links might stay down. [PR1619393](#)
- The evo-aftmand-bt core files are seen on Packet Forwarding Engine restart scenarios due to a race condition in evo-aftamand process. [PR1619798](#)
- Firewall counter does not hit with a specific configuration sequence. As a workaround, deactivate and activate the firewall bind configuration. [PR1620410](#)
- MPLS family filters do not work when applied to passive monitoring interfaces. [PR1620470](#)
- The PIC stuck in offlining state when an offline command is issued right after transceiver plugin. This issue is seen only in scenarios where transceiver is plugged in or PIC goes offline within 2s. When the issue is seen, restart the FPC for the affected PIC to recover using the request chassis fpc restart command. [PR1621694](#)

## Infrastructure

- When using a source IP address as the management interface with RPF check for the set to strict, the response for the ICMP ping from the peer is dropped by the Linux kernel. [PR1498255](#)
- On PTX10004, PTX10008, and PTX10001-36 MR routers, system login banner message is not displayed for the initial login attempt using telnet, but if that login attempt fails for any reason and the user is prompted again, then the message is displayed. [PR1528996](#)
- The GRES triggered using the request chassis routing-engine master switch command shows the following connector driver overlay message: {master} user@host> [ 1185.081257] gpio-jnx-i2cs gpio-jnx-i2cs.50: Asserting power\_status irq 59 [ 1185.125182] OF: overlay: overlay\_is\_topmost: #9 clashes #10 @/ftc0/i2c-bus/i2cs@54/fan\_hwmmon [ 1185.125183] OF: overlay: overlay #9 is not topmost. [PR1539232](#)
- Backup path is not found in ASBR6 FIB table. The problem triggers due to the show route forwarding table extensive command displays nh-weight attribute in route display have MPLS configurations. [PR1618916](#)



## Interfaces and Chassis

- The local switching traffic sequence numbers were not reset. [PR1560111](#)
- If the marvd daemon restarted for any reason, the device becomes unreachable because of PCI uncorrectable non-fatal AER errors getting generated and system goes for a reboot without any core file. This is a rare event that occurs if the marvd crashes. [PR1600870](#)

## Juniper Extension Toolkit (JET)

- The jsd process generates core files intermittently. The service will automatically restart and recover. [PR1592429](#)

## Interfaces and Chassis

- Junos telemetry interface does not send all optics data when subscribe /junos/system/linecard/optics/ during one reporting interval. [PR1607267](#)

## MPLS

- In Junos OS Evolved platforms, the LDP session authentication key-chain configuration made based on the session remote-id on initiator stops from the session establishment, even though the responder's authentication key-chain is configured for its remote-id. [PR1592431](#)
- When express segments are configured with SR-TE as underlay protocol, sometimes rpd process might crash when express segments are getting deleted or readvertised. [PR1613372](#)

## User Interface and Configuration

- When a user tries to deactivate the MPLS related configuration, the commit fails on the backup Routing Engine. [PR1519367](#)

## Resolved Issues

### IN THIS SECTION

- [Resolved Issues: 21.3R1 | 37](#)

Learn about the issues fixed in this release for PTX Series Routers..

For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online [Junos Problem Report Search](#) application.

## Resolved Issues: 21.3R1

### IN THIS SECTION

- [General Routing | 37](#)
- [Authentication and Access Control | 43](#)
- [Class of Service \(CoS\) | 43](#)
- [EVPN | 43](#)
- [Infrastructure | 43](#)
- [Interfaces and Chassis | 43](#)
- [Juniper Extension Toolkit \(JET\) | 44](#)
- [MPLS | 44](#)
- [Network Management and Monitoring | 44](#)
- [Routing Policy and Firewall Filters | 44](#)
- [Routing Protocols | 45](#)
- [User Interface and Configuration | 45](#)

## General Routing

- VCCV type 1 connectivity verification is not supported. [PR1503724](#)
- The `mpls-label` does not reap out when configured for SR-sid ingress sensors. [PR1516811](#)

- A set of info level no passwd entry cron logs are displayed in every 1 minute. [PR1527266](#)
- Global port-mirroring applied with deactivation does not display XML correctly for PTX10003 platforms. [PR1529413](#)
- The `show chassis alarms` command must be redirect to the `show system alarm`. [PR1536020](#)
- The port mirroring stops working for the FTI interface when the GRE source is changed. [PR1536223](#)
- On PTX10003-80C routers, configuration archival might not work. [PR1540843](#)
- CPU utilization of evo-aftman process goes to 100 percent in a certain scenario on PTX Series devices. [PR1562328](#)
- Layer 2 interface information is not included in DHCPv4 option-82 circuit-id or remote-id and DHCPv6 relay-agent-interface-id or relay-agent-remote-id options when service provider style configuration for switch interfaces is employed. [PR1564010](#)
- Drop counts in the `show interfaces voq ae0` command might not match with the `show interfaces queue` command when the `clear interface` command is issued while traffic is flowing. [PR1567598](#)
- The `request system zeroize` command does not delete snapshot images from the backup HDD. [PR1569294](#)
- On PTX10008 platforms, user script output must be logged during the ZTP execution for determining failure in the logs. [PR1570167](#)
- A certain leaf in the `/components/component[name='FPC1:CPU']/properties/property/cpu-utilization-total` is not available. [PR1571502](#)
- On the PTX10008 platforms, the communication failure with `/fpc0/evo-aftmand-bt/` CLI timeout error and traffic loss might be observed. [PR1574513](#)
- IPv6 traffic loss might be observed after NSR SWO. [PR1576369](#)
- On PTX10008 platforms, incorrect capacity value is shown on the JNP10K-PWR-AC2 and JNP10K-PWR-DC2 PSM. [PR1578682](#)
- FPC status LEDs are not turning RED during power fault. [PR1579466](#)
- The Packet Forwarding Engine function might break down on all the FPCs after performing Routing Engine switchover on the Junos OS Evolved platforms. [PR1579683](#)
- An FPC is stuck in `onlining` state and reboots continuously during unified ISSU. [PR1580374](#)
- The `l2cpd` process might crash on the Junos OS Evolved platforms with dual Routing Engines. [PR1580479](#)
- The Junos Telemetry Interface properties are missing after HwD app restart. [PR1580735](#)

- In certain scenarios, shapers applied on a 10G interface might drop the traffic more than the configured max-rate. [PR1580795](#)
- The timingd process might crash post NSR. [PR1581270](#)
- Streaming over IPv6 fails in the Junos OS Evolved platforms. [PR1581341](#)
- The rpd process might crash on the new primary Routing Engine after performing the graceful switchover. [PR1581878](#)
- The rpd process generates a core file after Routing Engine switchover. [PR1582095](#)
- On PTX10004 platforms, after disabling active path, forcing FRR shows large traffic loss and increased irp.core.trapcode.cfg\_err counter. [PR1582170](#)
- On PTX10008 platforms, the show chassis craft-interface command does not show correct PSM LED status. [PR1582444](#)
- Node locked license addition fails. [PR1582704](#)
- There might be a failure of the config-sync service and a major system alarm is raised after upgrade. [PR1582717](#)
- The Junos telemetry interfaces leaves /components/component[name='FPC2:PIC1:PORT0:Xcvr0']/transceiver/state are missing. [PR1583076](#)
- On PTX10008 platforms, grpc core files might be seen on a large number of telemetry subscriptions. [PR1583161](#)
- The system might crash if you configure IPv6 FBF with prefix /88. [PR1583374](#)
- On PTX10008 platforms, the show chassis clocks command must be handled in a graceful way or with a meaningful error. [PR1583715](#)
- The FRR convergence number is high with ALB enabled on the aggregated Ethernet bundle. [PR1583866](#)
- The ospf-hello DDoS statistics pktCnt is listed as 0. [PR1584458](#)
- The vmcore files are generated after performing the switchover. [PR1585436](#)
- After PIC goes offline and then online, the show interfaces queue intf command shows large values for cumulative tail-drop and RED-drop packets and bytes. [PR1585552](#)
- Packet loss might be seen during global repair of FRR. [PR1586122](#)
- On PTX10008 routers, need to add HBM statistics for the network processing unit (NPU) sensor. [PR1586148](#)

- The RPD\_KRT\_KERNEL\_BAD\_ROUTE error message is seen in certain scenarios when the rpd process restarts or GRES happens when NSR is enabled. This error has no functional impact. [PR1586466](#)
- Removing SIB without turning offline first might impact traffic. [PR1586820](#)
- The Junos Telemetry Interface leaves such as used-power and allocated-power under /components do not reflect correct values. [PR1587184](#)
- The exported header of the NPU sensor is changed to match Junos OS. [PR1588242](#)
- On PTX10008 platform, error or warning messages are appeared when issuing request chassis cb slot 1 offline command before node goes offline. [PR1589433](#)
- Traffic loss is observed on global repair after disabling the active path forcing FRR. [PR1589803](#)
- Sensor statistics might not be displayed accurately in the show network-agent statistics operational command for the data generated from multiple nodes. [PR1590249](#)
- On PTX10008 platforms, the Packet Forwarding Engine might get stuck in ready state with anomalies type net::juniper::fabric::fabricPfeE. [PR1590319](#)
- VM core files are observed when performing switchover. [PR1590372](#)
- Non-zero values might be displayed against the drop field in the show network-agent statistics CLI command output post switchover scenarios. [PR1590432](#)
- FPC goes offline after switchover if the system has power shortage. [PR1592004](#)
- On PTX10008 platforms, picd log floods when there is the following system alarm: Optics does not support configured speed. [PR1592165](#)
- The aftmand process might crash when an interface is configured with the analyzer. [PR1592267](#)
- The ZTP occasionally fails to apply user configuration after the system upgrade. [PR1592281](#)
- The duplicate Junos Telemetry Interface leaf of oper-status tag for logical interface index 16386 have mismatch value. [PR1592468](#)
- The firewall filter might not take into effect on Junos OS Evolved PTX Series platforms. [PR1592500](#)
- On the PTX10008 and PTX10001-36MR platforms, sFlow sample-rate configuration greater than 16000000 is not supported. [PR1592788](#)
- Port related component sensor does not get exported when subscribed to the /components/component/state/ path. [PR1593031](#)
- After Routing Engine switchover, the following error messages are seen: JexprSlowCntrRead - Unable to get the plct Inst for pfeIdx: 255, User-type: OVFM\_OFFCHIP\_NEXTHOP\_CNTR. [PR1593079](#)

- The rpdagent crashes on the primary Routing Engine after multiple GRES with GR and NSR enabled. [PR1593104](#)
- The port mirroring instance might be down on Junos OS Evolved based platforms. [PR1593276](#)
- Load balance might not take effect for the Layer 2 VPN traffic on the PTX10008 platforms. [PR1593548](#)
- The node name must not be attached to the system hostname under LLDP. [PR1593991](#)
- The evo-pfemand might crash after restarting app evo-pfemand. [PR1594331](#)
- The BFD session for MPLS LSP goes down after enabling ultimate-hop-popping. [PR1594621](#)
- The type leaf value for FPC3:PIC0:PORT0:XcvrX displays XCVR. [PR1595103](#)
- On PTX10008 platform, inconsistent component name for FPC CPU. [PR1595109](#)
- On PTX10008 platforms, application error alarms and trace-writer core files are generated due to defunct rcv zombie. [PR1595409](#)
- Layer 2 VPN stops forwarding when interface encapsulation is changed to vlan-ccc from ethernet-ccc and back. [PR1595455](#)
- Some TCP sessions might not be established after performing the request system snapshot command. [PR1595470](#)
- On PTX10008 platforms, default wavelength for 400G ZR module is incorrect. [PR1595498](#)
- The applications might crash if the publishing parent objects linked child objects are published by different applications. [PR1595846](#)
- On 400G ZR, logical interface creation fails after adding or deleting invalid speed configuration. [PR1597022](#)
- The following error message is observed: cannot find ifToken for counterType:12. [PR1597355](#)
- The aftmand core file might be observed on all Junos Os Evolved platforms. [PR1597649](#)
- Major host 13 Ethernet interface link down false alarm is seen after Routing Engine 1 replacement manually. [PR1597763](#)
- Master-only IP address keeps in old master (new backup) and device becomes inaccessible after Routing Engine switchover. [PR1598173](#)
- Due to issue in AGEOUT notification for inline sessions, sessions remains up till peer sends BFD down packet or BFD client brings it down. [PR1599257](#)
- FTC status LED and SIB power LED are unlit or off on PTX10008 platforms. [PR1600178](#)

- The config interface `ip remove` command is not working correctly. [PR1600932](#)
- On PTX10008 routers, the `set chassis redundancy routing-engine 1 mastercommand` does not change the default Routing Engine election priority. [PR1601430](#)
- On PTX10008 routers, AFTMAN core files are seen at `jexpr_if_logical_l2d_alloc` while powering off or on all the Packet Forwarding Engine across all the FPCs. [PR1602035](#)
- On PTX10003 platform, IRB ping fails post power off or power on underlying Packet Forwarding Engine for aggregated Ethernet child member. [PR1602181](#)
- GRE keepalive packet with recursion control bit set gets dropped on PTX10003 platforms. [PR1602353](#)
- Continuous FPC restart might be observed on Junos OS Evolved platforms with the firewall policer configuration. [PR1602446](#)
- On PTX10008 routers, powering off Packet Forwarding Engines displays the following error message: `Jexpr: deleteFdbEntry: Null.` [PR1602670](#)
- The following error message is observed: `evo-aftmand-bt[18089]: [Error] IfStats:map entry not present for ifl:1039.` [PR1604334](#)
- The channel 0 physical interface does not come up after adding the correct speed configuration. [PR1604810](#)
- The host loopback wedge might be detected in the Packet Forwarding Engine when deleting the aggregated Ethernet bundle configuration. [PR1605599](#)
- On PTX10008 platforms, fan tray controller removal or absence alarm is generated. [PR1605987](#)
- The DNS lookup might fail on all Junos OS Evolved platforms. [PR1607505](#)
- On PTX10008 platforms, defunct rcp increases due to transport-alarm-statsd daemon. [PR1608776](#)
- On PTX10008 platforms, the `evo-aftmand-bt.fpc_x86_64` core file is seen @ `jexpr_pile_malloc` with LSR core profile configuration. [PR1608999](#)
- High priority queue might not get the expected bandwidth on the Junos OS Evolved platforms. [PR1609823](#)
- On PTX10001-36MR, PTX10004, and PTX10008 platforms, IS-IS does not come up when network type is P2P for IRB interface. [PR1612606](#)
- Mitigate false wrap of drop statistics when physical interfaces move into or out-of an aggregated Ethernet while physical interface drops excess traffic. [PR1613889](#)

## Authentication and Access Control

- Root password might not be accepted under su on the Junos OS Evolved platforms. [PR1607861](#)

## Class of Service (CoS)

- The user-defined CoS might not get applied on the interface when you configure class-of-service stanza with `interface all`. [PR1592900](#)

## EVPN

- Sometimes the BUM traffic coming through EVPN MPLS tunnel gets dropped or duplicated when going out of the aggregated Ethernet interface after tunnel termination when the aggregated Ethernet members are spanned across multiple Packet Forwarding Engines. [PR1578314](#)
- On PTX10004 platforms, the EVPN option is missing under `routing-instances protocols`. [PR1581821](#)

## Infrastructure

- The `default-address-selection` statement might not work on all the Junos OS Evolved platforms. [PR1570552](#)
- The FTP IPv6 server function might fail on all the Junos OS Evolved platforms. [PR1591733](#)
- The `detail` and the `write-file` options for the `monitor traffic interface` CLI command are incompatible with each other when used simultaneously. [PR1596188](#)
- Malformed packets might be sent out on egress interfaces in Junos OS Evolved platforms. [PR1603783](#)

## Interfaces and Chassis

- The `resiliencyd.re.re0` core files are seen on executing `cminfra` scripts. [PR1578822](#)
- The Junos Telemetry Interface optics sensor's alarm data type changed from `bool_val` to `str_val`. [PR1580113](#)
- On PTX10008 platforms, `ifmand` core files are seen on configuring `master-only` on the non-duplicate address. [PR1583681](#)
- When changing the micro BFD session address from IPv4 to IPv6 or vice versa, the BFD session and aggregated Ethernet interface go down. [PR1584853](#)



- The SIB might be stuck at an offlining state after performing offline and online operations. [PR1591076](#)
- Some interface unit descriptions are missing from the output of the `show interfaces description` command on certain PTX Series platforms. [PR1591340](#)
- The 25G interfaces with FEC91 go down on a few configurations. [PR1594740](#)
- On PTX10003-160C platforms, interface is not programmed in routing-instance. [PR1596768](#)
- On PTX10003 platforms, the `show platform object-info anomalies summary` CLI command times out. [PR1598337](#)
- The LACP system priority might take a value of 0 and causes an LACP interoperability issue. [PR1602724](#)
- A few links on channelized interface is down after `oir_enable` and `oir_disable` in 4X25G. [PR1606644](#)

## Juniper Extension Toolkit (JET)

- The gRPC connection stuck on ESTABLISHED state with no active collector. [PR1592542](#)

## MPLS

- MBB is not triggered when LSP reverts back to the primary path. [PR1587704](#)

## Network Management and Monitoring

- The SNMP query timeout failure might be observed on the Junos OS Evolved platforms. [PR1585409](#)
- The syslog archival transfer might fail if the archive site URL is configured with an IPv6 address. [PR1603342](#)

## Routing Policy and Firewall Filters

- The `dfwd-junos-relay` core file is generated during switchover. [PR1597853](#)
- The `dfwd` crashes when the `no-decrement-ttl` filter match condition and action is sent from control plane to the Packet Forwarding Engine. [PR1602645](#)
- The `firewalld` might crash if you configure `fragment-offset` out of the range (fragment-offset range: 1-9000000000000). [PR1605805](#)

## Routing Protocols

- Traffic might be misroute or dropped after the Packet Forwarded Engine restarts or interface flaps. [PR1581845](#)
- On a rare occasion, the rpd process generates a core file on the backup Routing Engine after loading a new image. [PR1583630](#)
- Origin validation replication status shows up in the show task replication command output even when it is not configured. [PR1583692](#)
- The rpd process might crash when the BGP RPKI session record-lifetime is configured less than the hold time. [PR1585321](#)
- The rpd process might crash in a BGP multipath scenario if the interface for a single hop EBGP peer goes down. [PR1589141](#)
- PIM joins might not be synchronized between the primary and backup Routing Engines because of ppmd restart. [PR1591685](#)
- When you enable or disable BGP in a short time interval on a scaled NSR, the router might result in a backup rpd restart. [PR1591717](#)

## User Interface and Configuration

- The following error is seen: shell-init: error retrieving current directory: getcwd: cannot access parent directories: No such file or directory. [PR1549479](#)
- The no-persist-groups-inheritance configuration is not supported. [PR1575995](#)
- System logs are not updated when a new user gets added or an old user is deleted after commit. [PR1589858](#)
- Post request system zeroize operation, the sshd service is not enabled by default due to a race condition on PTX10008 platforms. [PR1594258](#)
- The file copy command does not accept HTTPS URLs. [PR1596881](#)
- The transfer-on-commit configuration does not commit if you commit through NETCONF. [PR1602331](#)
- The request pfe execute command usage too frequently might cause cmdd to crash. [PR1610829](#)

# Junos OS Evolved Release Notes for QFX5130-32CD, QFX5220, and QFX5700 Devices

## IN THIS SECTION

- [What's New | 46](#)
- [What's Changed | 50](#)
- [Known Limitations | 53](#)
- [Open Issues | 54](#)
- [Resolved Issues | 56](#)

These release notes accompany Junos OS Evolved Release 21.3R1 for QFX5130-32CD, QFX5220-32CD, QFX5220-128C, and QFX5700 switches. They describe new and changed features, limitations, and known and resolved problems in the hardware and software.

## What's New

## IN THIS SECTION

- [What's New in 21.3R1 | 46](#)

Learn about new features introduced in this release for QFX Series Switches.

## What's New in 21.3R1

## IN THIS SECTION

- [Hardware | 47](#)

- Junos OS API and Scripting | 47
- IP Tunneling | 47
- MPLS | 48
- Routing Options | 48
- Routing Protocols | 49
- Additional Features | 49

Learn about new features introduced in this release for QFX Series Switches.

## Hardware

- **Support for the JNP-100G-DAC-5M DAC cable (QFX5130-32CD and QFX5220-32CD)**—Starting in Junos OS Evolved Release 21.3R1, we support the JNP-100G-DAC-5M direct attach copper (DAC) cable.

[See [Hardware Compatibility Tool](#).]

- **Support for the JNP-100G-DAC-1M and JNP-100G-DAC-3M cables (QFX5220-32CD)**—Starting in Junos OS Evolved Release 21.3R1, we support the JNP-100G-DAC-1M and the JNP-100G-DAC-3M direct attach copper (DAC) cables.

[See [Hardware Compatibility Tool](#).]

## Junos OS API and Scripting

- **Support for REST interface over HTTPS (ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5130-48C and QFX5220)**— Starting in Junos OS Evolved Release 21.3R1, we support HTTPS protocol for REST interfaces.

[See [REST API Guide](#).]

## IP Tunneling

- **Support for multiple single-hop EBGP sessions on different links using the same link-local address (PTX10001-36MR, PTX10008, and QFX5220)**—Starting in Junos OS Evolved Release 21.3R1, you need not configure unique BGP peer addresses for Juniper Networks devices for every external BGP (EBGP) session. You can now enable single-hop EBGP sessions on different links over multiple directly connected peers that use the same IPv6 link-local address. In earlier Junos OS Evolved

Releases, BGP peers could be configured with link-local addresses, but multiple BGP peers could not be configured to use the same link-local address on different interfaces.

[See [Overview: Configure Multiple Single-Hop EBGp Sessions on Different Links Using the Same Link-Local Address \(IPv6\)](#).]

## MPLS

- **RSVP updates available bandwidth values without notifying IS-IS (PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, and QFX5220)**—When RSVP label-switched paths (LSPs) and segment routing LSPs coexist on a link, RSVP takes into account how much bandwidth the segment routing LSPs use. By default, RSVP updates the values for the local unreserved bandwidth and the maximum available bandwidth and passes the values on to IS-IS. Starting in Junos OS Evolved Release 21.3R1, you can configure RSVP to update available bandwidth values without notifying IS-IS if the bandwidth change is within a certain threshold configured at the [edit protocols rsvp interface *interface-name* update-threshold-max-reservable].

If you configure the local-bw-override-threshold statement at the [edit protocols rsvp interface *interface-name* non-rsvp-bandwidth] hierarchy level, RSVP always updates the available bandwidth values. However, it reports only the new values to IS-IS if the bandwidth change passes the threshold.

[See [update-threshold-max-reservable](#) and [local-bw-override-threshold](#).]

## Routing Options

- **Enhancements to prefix-limit and accepted-prefix-limit configuration statements, and updates to show bgp neighbor command (PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5130-48C, and QFX5220)**— Starting in Junos OS Evolved Release 21.3R1, the prefix-limit and accepted-prefix-limit configuration statements include the following options:
  - drop-excess *<percentage>*—If you include the drop-excess *<percentage>* option, the excess routes are dropped when the maximum number of prefixes is reached. If you specify a percentage, the routes are logged when the number of prefixes exceeds that percentage value of the maximum number.
  - hide-excess *<percentage>*—If you include the hide-excess *<percentage>* option, the excess routes are hidden when the maximum number of prefixes is reached. If you specify a percentage, the routes are logged when the number of prefixes exceeds that percentage value of the maximum number.

We have enhanced the show bgp neighbor command to display the following additional information:

- Count of prefixes that are dropped or hidden based on network layer reachability information (NLRI) when the maximum number of allowed prefixes threshold is exceeded
- Alerts when a peer starts to drop or hide routes

- Configuration details of the `prefix-limit` and `accepted-prefix-limit` statements

[See [prefix-limit](#), [accepted-prefix-limit](#), [show bgp neighbor](#), and [Multiprotocol BGP](#).]

## Routing Protocols

- **Support for BGP Auto-discovered Neighbor (PTX10001-36MR, PTX10003, PTX10004, PTX10008 and QFX5220)**—Starting in Junos OS Evolved Release 21.3R1, we support BGP auto-discovered neighbors using IPv6 Neighbor Discovery Protocol (ND). With this feature, you can enable BGP to create peer neighbor sessions using link-local IPv6 addresses of directly connected neighbor devices. You need not specify remote or local neighbor IP addresses.

To enable peering for a given interface or set of interfaces without specifying the local or remote neighbor addresses, configure the `peer-auto-discovery` statement at the `[edit fabric protocols bgp group <name> dynamic-neighbor <name>]` hierarchy level.

[See [BGP Auto-Discovered Neighbors](#).]

## Additional Features

We've extended support for the following features to these platforms.

- **Host-to-host security for BGP sessions using IPsec with the `mode` statement set to `transport`** (PTX10001-36MR, PTX10004, PTX10008, and QFX5220):

We support the `parse`, `netlink-socket`, `database`, and `general security traceoptions` flags. We've also introduced the `ipsec traceoptions` flag for BGP traffic.

[See [IP Security for BGP](#), [Configuring IPsec Security Associations](#), and [traceoptions \(Protocols BGP\)](#).]

- **Path Computation Element Protocol (PCEP) support for reporting and delegating colored Distributed Constrained Shortest Path First (DCSPF) segment routing LSPs** (PTX10003 and QFX5200)

[See [Understanding Static Segment Routing LSP in MPLS Networks](#).]

- **Storm control** (ACX7100-32C and ACX7100-48L , and QFX5700)

[See [Understanding Storm Control](#)]

- **TARGET\_DEFINED subscription mode support with JTI and export data using JavaScript Object Notation (JSON) encoding format with JTI and gRPC Network Management Interface (gNMI) extension headers** (PTX10001-36MR, PTX10003, PTX10004, PTX10008, and QFX5220)

[See [export-profile \(Junos Telemetry Interface\)](#) and [Understanding OpenConfig and gRPC and gNMI on Junos Telemetry Interface](#).]

## What's Changed

### IN THIS SECTION

- [What's Changed in Release 21.3R1 | 50](#)

Learn about what changed in this release for QFX Series Switches.

## What's Changed in Release 21.3R1

### IN THIS SECTION

- [Authentication and Access Control | 50](#)
- [Class of Service | 51](#)
- [EVPN | 51](#)
- [General Routing | 51](#)
- [EVPN | 52](#)
- [Interfaces and Chassis | 52](#)
- [Junos XML API and Scripting | 52](#)
- [Layer 2 Features | 52](#)
- [Network Management and Monitoring | 53](#)
- [Software Licensing | 53](#)

## Authentication and Access Control

- **Command to automate SSH key-based authentication (ACX Series, PTX Series, and QFX Series)**—You can set up SSH-key based authentication between the network device and a remote host by issuing the `request security ssh password-less-authentication operational mode` command. When you execute the command with the appropriate options, the device generates SSH keys for the current user, provided the user does not already have existing keys, and transfers the user's public key to the `authorized_keys` file of the specified user on the remote host.

[See [request security ssh password-less-authentication](#).]

## Class of Service

- Junos OS Evolved now correctly displays the index for `show class-of-service` commands.

## EVPN

- **Minimum auto-recovery time reduced for duplicate MAC address detection (ACX Series, PTX Series and QFX Series)**—Junos OS has changed the minimum value allowed for auto-recovery time for duplicate MAC address detection from 5 minutes to 1 minute. The auto-recovery time is the length of time that the device suppresses a duplicate MAC address. Reducing the auto-recovery time allows customers to quickly recover from a MAC address duplication state. You configure the `auto-recovery-time` option under the `duplicate-mac-detection` statement at the `edit routing-instances routing-instance-name protocols evpn` or `edit protocols evpn hierarchy`.

[See [Changing Duplicate MAC Address Detection Settings](#) .]

## General Routing

- **Default FEC Settings (QFX5130-32CD, QFX5220-32CD, and QFX5220-128C)**— The default FEC mode for 4x25 optics is changed to FEC91 instead of FEC74. For 4x25G Direct Attach Copper Breakout Cables (DACBO), the default FEC mode remains as FEC74.

[See [show interfaces extensive](#).]

- **Enhancement to the `show chassis pic` command**—You can now view additional information about the optics when you run the `show chassis pic` command. The output now displays the following additional field:

MSA Version: Multi-source Agreements (MSA) version that the specified optics is compliant to. Values supported are: SFP+/SFP28 -- SFF-8472 (versions 9.3 - 12.3), QSFP+/QSFP28 -- SFF 8363 (versions 1.3 - 2.10), and QSFP-DD -- CMIS 3.0, 4.0, 5.0.

Previously, the `show chassis pic` command did not display this additional field.

[See [show chassis pic](#).]

- **Enhancement to the `show interfaces (Aggregated Ethernet)` command (ACX Series, PTX Series, and QFX Series)**—When you run the `show interfaces extensive` command for Aggregated Ethernet interfaces. You can now view following additional fields for MAC statistics : Receive, Transmit, Broadcast and Multicast packets.

[See [show chassis pic](#).]



## EVPN

- **Community information no longer included in VRF routing table**—The QFX series switches no longer include the inherited advertised route target communities, EVPN extended communities, or VXLAN encapsulation communities for EVPN Type 2 and EVPN Type 5 routes when an IP host is added in the VRF routing table.
- **Minimum auto-recovery time reduced for duplicate MAC address detection (QFX series)**—Junos OS has changed the minimum value allowed for auto-recovery time for duplicate MAC address detection from 5 minutes to 1 minute. The auto-recovery time is the length of time that the device suppresses a duplicate MAC address. Reducing the auto-recovery time allows customers to quickly recover from a MAC address duplication state. You configure the auto-recovery-time option under the duplicate-mac-detection statement at the **edit routing-instances routing-instance-name protocols evpn** or **edit protocols evpn** hierarchy.

[See [Changing Duplicate MAC Address Detection Settings](#) .]

- **Output for show Ethernet switching flood extensive**—The output for show ethernet-switching flood extensive now displays the correct next-hop type for Virtual Ethernet and WAN mesh group in an EVPN-VXLAN network as unicast. Previously, the output for show ethernet-switching flood extensive would misidentify the next-hop type as composite.

## Interfaces and Chassis

- When configuring multiple flexible tunnel interface (FTI) tunnels, the source and destination address pair needs to be unique only among the FTI tunnels of the same tunnel encapsulation type. Prior to this PR, the source and destination address pair had to be unique among all the FTI tunnels regardless of the tunnel encapsulation type.

## Junos XML API and Scripting

- **Changes to how command-line arguments are passed to Python op scripts (ACX Series, PTX Series, and QFX Series)**—When the device passes command-line arguments to a Python op script, it prefixes a hyphen (-) to single-character argument names, and it prefixes two hyphens (--) to multi-character argument names. The prefix enables you to use standard command-line parsing libraries to handle the arguments. In earlier releases, the device prefixes a single hyphen (-) to all argument names.

[See [Declaring and Using Command-Line Arguments in Op Scripts](#) .]

## Layer 2 Features

- **Link selection support for DHCP**—We have introduced the link-selection statement at the [edit forwarding-options dhcp-relay relay-option-82] hierarchy level, which allows DHCP relay to add suboption

5 to option 82. Suboption 5 allows DHCP proxy clients and relay agents to request an IP address for a specific subnet from a specific IP address range and scope. Prior to this release, the DHCP relay dropped packets during the renewal DHCP process and the DHCP server used the leaf's address as a destination to acknowledge the DHCP renewal message.

[See [relay-option-82](#).]

## Network Management and Monitoring

- **Changes in contextEngineID for SNMPv3 INFORMS**—Now the contextEngineID of SNMPv3 INFORMS is set to the local engine-id of Junos devices. In earlier releases, the contextEngineID of SNMPv3 INFORMS was set to remote engine-id.

[See [SNMP MIBs and Traps Supported by Junos OS](#).]

## Software Licensing

- **Juniper Agile Licensing (PTX10003, PTX10016, QFX5130-32CD, and QFX5220)**—Starting from this release onwards, the Juniper Agile License Manager is deprecated. You can use the Juniper Agile Licensing Portal to activate, install, manage, and monitor licenses on Juniper Networks devices.

[See [Juniper Agile Licensing Guide](#).]

## Known Limitations

### IN THIS SECTION

- [General Routing | 54](#)

Learn about known limitations in Junos OS Evolved Release 21.3R1 for QFX Series Switches.

For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online [Junos Problem Report Search](#) application.

## General Routing

- On the QFX5130-32CD platform, the port status LED remains off for a channelized interface, when one of the channels in the channelized port is down or is disabled. The port LED is lit only when all the channels that are part of the port are up. [PR1526532](#)
- On QFX5700 seeing **BrcmPlusPfe: SI Set Failed , Port Multi Set Failed** error messages after de-channelization of 4x10G and 4X25G channelized interfaces. [PR1569703](#)
- On QFX5700 platforms when configuration of multiple interfaces are modified in a single commit, any CLI command executed immediately to display the hardware or interface status will give an error message **error: communication failure with /re0/picd/**. No functional impact and output will be displayed after sometime. [PR1574569](#)
- On QFX5700 platforms system goes for reboot when faulty FEB is off-lined for recovery. [PR1578090](#)
- If the input voltage drops or surges, there would not be any alarm generated indicating the voltage is low or high than operating range. However, there is an **<PSM psm number> Input Under Voltage Failure** alarm generated when the PSM goes offline due to low voltage. [PR1579105](#)
- The software does not reject invalid FEC Configuration. Applying invalid FEC configuration might lead to port going down. [PR1602182](#)

## Open Issues

### IN THIS SECTION

- [General Routing | 55](#)
- [Infrastructure | 56](#)

Learn about open issues in Junos OS Evolved Release 21.3R1 for QFX Series switches.

For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online [Junos Problem Report Search](#) application.

## General Routing

- On QFX5220-32CD, VLANs between 3968 and 4095 are reserved for Layer 3 interfaces by default. So, these VLANs cannot be used for Layer 2 interfaces. As of now there is no commit check added for this purpose. You need to take care of this while configuring VLANs for Layer 2. [PR1423468](#)
- On the QFX5130-32CD platform running Junos OS Evolved, you cannot clear or reset the disk option specified in the scheduled request `node reboot` command. The node reboots with the disk option last specified. [PR1517596](#)
- When the `evo-pfmand` process is restarted due to any error conditions, the channelized interfaces (if configured) flap two times: once during the initialisation and the second time after the configuration is programmed. [PR1526984](#)
- Any MTU change on an interface on QFX5220-32CD, QFX5220-128C or QFX5130 will cause the interface to flap multiple times. This will stabilise within 2 seconds. [PR1576199](#)
- Vendor API behaviour change with ECMP dynamic mode, so ECMP Create API will fail when changing dynamic mode from DLB to non DLB. [PR1579245](#)
- On QFX5220-128C, FEC mode does not come into effect after manual configuration change. Link might go down after FEC mode change. [PR1603302](#)
- On the QFX5220-32cd platform, the PTP BC state machine can get into the freerun state (expected state is Phasee Aligned). This can happen when the configuration sequence is applied in the following order:

1. Configure PTP BC, then commit.
2. Configure IP address on the interface, then commit.

The workarund to avoid this happening is to have all the configurations in a single commit:

1. Configure PTP BC.
2. Configure IP address on the interface.
3. Commit.

[PR1604699](#)

- On `evo-pfmand` application restart, at some rare occasions some of the Interface creation might fail or interface might stop forwarding traffic. [PR1608004](#)
- The `clksyncd` core-dump occurs sometimes due to the IFDO is in pending delete state before issuing the firewall bind API. So, firewall code will assert while binding. This happens during deactivation

interface/ptp configuration continuously. Issue doesn't have any side effect to functionality.

[PR1608841](#)

- On QFX5130 and QFX5220 platforms, priority flow control feature might not work properly after packet forwarding engine process (evo-pfemand) restart. [PR1614035](#)
- On QFX5220-32CD platform, interfaces are going down after modifying the MTU on QFX5220-32CD and peer device simultaneously. This issue happens when QFX5220-32CD and peer-side interface configurations are deleted together. This problem is not seen when configurations are deleted on one side keeping the other side untouched. For example: 1. Delete configuration on QFX5220-32CD 2. Check the interface state on both sides 3. Wait for sometime (10 seconds) till the interface become stable 4. Delete the configuration on the peer device. [PR1617245](#)
- Enabling MPLS traffic engineering will cause LDP session not to come up, the reason behind is that the underlying TCP connection stays at SYN-SENT state. Disabling or deactivating the MPLS traffic engineering will solve this issue. [PR1617629](#)
- The **snapshot banner** message when booted from snapshot partition is not getting displayed because /etc/motd file is not getting updated. To check if a system is booted from a snapshot partition, then run cli command `show system software list`. [PR1618946](#)

## Infrastructure

- If a CLI configuration is committed that simultaneously creates a routing instance and configures a tunnel IFL that belongs to that instance, the tunnel may fail to come up properly. In this condition, it will not be possible to send traffic over the interface. This fault can be detected by the fact that a `show interfaces <ifl-name> extensive` command will list the protocol MTU as "unlimited" for each protocol configured on that IFL. To recover from this condition, deactivate the IFL configuration and commit, then activate the IFL configuration and commit again. [PR1616920](#)

## Resolved Issues

### IN THIS SECTION

- [Resolved Issues: 21.3R1](#) | 57

Learn about the issues fixed in this release for QFX Series switches.

For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online [Junos Problem Report Search](#) application.

## Resolved Issues: 21.3R1

### IN THIS SECTION

- [General Routing | 57](#)
- [Infrastructure | 57](#)
- [User Interface and Configuration | 58](#)

## General Routing

- The QFX series Junos Evolved OS platforms, the OSPF routes might not be learned from the neighbors. [PR1570498](#)
- The BGP sessions might intermittently flap if the egress sFlow sampling is enabled at a high sampling rate. [PR1571636](#)
- On QFX5700s platforms, peer interfaces are showing up and LEDs are glowing during device reboot for DAC connections. [PR1574342](#)
- Existing configuration does not get overwritten while configuring the device using ZTP. [PR1577004](#)
- The traffic related to native VLAN might be dropped. [PR1581075](#)
- Port mirroring instance might be down on the Junos OS Evolved based platforms. [PR1593276](#)
- The interface might not learn mac-address if it is configured with `vlan-id-list` starting with VLAN id 1 and `native-vlan-id`. [PR1597013](#)

## Infrastructure

- The alarm **Host 0 Active Disk Usage Exceeded** might be generated due to large files which were already marked as deleted. [PR1601251](#)
- In certain circumstances `journalctl` can be flooded with **No TTP\_TLV\_VRF** related log messages. [PR1610313](#)

## User Interface and Configuration

- The `file copy` command does not accept HTTPS URLs. [PR1596881](#)

# Upgrade Your Junos OS Evolved Software

Products impacted: ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220-32CD, QFX5220-128C, and QFX5700.

Follow these steps to upgrade your Junos OS Evolved software:

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. In the Find a Product box, enter the Junos OS platform for the software that you want to download.
3. Select Junos OS Evolved from the OS drop-down list.
4. Select the relevant release number from the Version drop-down list.
5. In the **Install Package** section, select the software 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. Review and accept the End User License Agreement.
8. Download the software to a local host.

**NOTE:** We don't recommend that you download the Services Profile 1 image to use the lean rpd profile. We will deprecate this image in Junos OS Evolved 21.4R1. For more information about the types of Junos OS Evolved installation package prefixes, see [Junos OS Evolved Installation Packages](#).

9. Copy the software to the device or to your internal software distribution site.
10. Install the new package on the device.

**NOTE:** We recommend that you upgrade all software packages out of band using the console because in-band connections are lost during the upgrade process.

For more information about software installation and upgrade, see [Software Installation and Upgrade Overview \(Junos OS Evolved\)](#). For more information about EOL releases and to review a list of EOL releases, see <https://support.juniper.net/support/eol/software/junosevo/>.

# Licensing

In 2020, Juniper Networks introduced a new software licensing model. The Juniper Flex Program comprises a framework, a set of policies, and various tools that help unify and thereby simplify the multiple product-driven licensing and packaging approaches that Juniper Networks has developed over the past several years.

The major components of the framework are:

- A focus on customer segments (enterprise, service provider, and cloud) and use cases for Juniper Networks hardware and software products.
- The introduction of a common three-tiered model (standard, advanced, and premium) for all Juniper Networks software products.
- The introduction of subscription licenses and subscription portability for all Juniper Networks products, including Junos OS and Contrail.

For information about the list of supported products, see [Juniper Flex Program](#).

## Finding More Information

- **Feature Explorer**—Juniper Networks Feature Explorer helps you to explore software feature information to find the right software release and product for your network.

<https://apps.juniper.net/feature-explorer/>

- **PR Search Tool**—Keep track of the latest and additional information about Junos OS open defects and issues resolved.

<https://prsearch.juniper.net/InfoCenter/index?page=prsearch>

- **Hardware Compatibility Tool**—Determine optical interfaces and transceivers supported across all platforms.

<https://apps.juniper.net/hct/home>

**NOTE:** To obtain information about the components that are supported on the devices and the special compatibility guidelines with the release, see the Hardware Guide for the product.



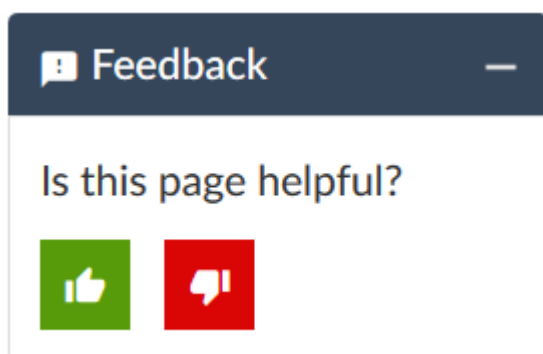
- **Juniper Networks Compliance Advisor**—Review regulatory compliance information about [Common Criteria](#), [FIPS](#), [Homologation](#), [RoHS2](#), and [USGv6](#).

<https://pathfinder.juniper.net/compliance/>

## Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can provide feedback by using either of the following methods:

- Online feedback system—Click TechLibrary Feedback, on the lower right of any page on the [Juniper Networks TechLibrary](#) site, and do one of the following:



- Click the thumbs-up icon if the information on the page was helpful to you.
- Click the thumbs-down icon if the information on the page was not helpful to you or if you have suggestions for improvement, and use the pop-up form to provide feedback.
- E-mail—Send your comments to [techpubs-comments@juniper.net](mailto:techpubs-comments@juniper.net). Include the document or topic name, URL or page number, and software version (if applicable)

## Requesting Technical Support

### IN THIS SECTION

- [Self-Help Online Tools and Resources](#) | 61
- [Creating a Service Request with JTAC](#) | 62

Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active Juniper Care or Partner Support Services support contract, or are covered under warranty, and need post-sales technical support, you can access our tools and resources online or open a case with JTAC.

- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the JTAC User Guide located at <https://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf>.
- Product warranties—For product warranty information, visit <https://www.juniper.net/support/warranty/>.
- JTAC hours of operation—The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

## Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: <https://www.juniper.net/customers/support/>
- Search for known bugs: <https://prsearch.juniper.net/>
- Find product documentation: <https://www.juniper.net/documentation/>
- Find solutions and answer questions using our Knowledge Base: <https://supportportal.juniper.net/s/knowledge>
- Download the latest versions of software and review release notes: <https://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <https://supportportal.juniper.net/s/knowledge>
- Join and participate in the Juniper Networks Community Forum: <https://www.juniper.net/company/communities/>
- Create a service request online: <https://supportportal.juniper.net/>

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: <https://entitlementsearch.juniper.net/entitlementsearch/>

# Creating a Service Request with JTAC

You can create a service request with JTAC on the Web or by telephone.

- Visit <https://support.juniper.net/support/requesting-support/>
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see <https://support.juniper.net/support/requesting-support/>.

## Revision History

10 August 2023—Revision 13 Junos OS Evolved Release 21.3R1 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220, and QFX5700 Devices.

20 July 2023—Revision 12, Junos OS Evolved Release 21.3R1 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220, and QFX5700 Devices.

1 June 2023—Revision 11, Junos OS Evolved Release 21.3R1 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220, and QFX5700 Devices.

6 April 2023—Revision 10, Junos OS Evolved Release 21.3R1 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220, and QFX5700 Devices.

24 November 2022—Revision 9, Junos OS Evolved Release 21.3R1 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220, and QFX5700 Devices.

8 August 2022—Revision 8, Junos OS Evolved Release 21.3R1 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220, and QFX5700 Devices.

29 July 2022—Revision 7, Junos OS Evolved Release 21.3R1 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220, and QFX5700 Devices.

16 December 2021—Revision 6, Junos OS Evolved Release 21.3R1 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220, and QFX5700 Devices.

8 December 2021—Revision 6, Junos OS Release 21.3R1 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220, and QFX5700 Devices.

29 November 2021—Revision 5, Junos OS Evolved Release 21.3R1 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220, and QFX5700 Devices.

28 October 2021—Revision 4, Junos OS Evolved Release 21.3R1 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, and QFX5220 Devices.

13 October 2021—Revision 3, Junos OS Evolved Release 21.3R1 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220 Devices.

30 September 2021—Revision 2, Junos OS Evolved Release 21.3R1 for the ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220 Devices.

23 September 2021—Revision 1, Junos OS Evolved Release 21.3R1 for the ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220 Devices.