

# Release Notes: Junos<sup>®</sup> OS Evolved Release 19.2R1 for the PTX10003 and QFX5220 Devices

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# Introduction

Junos OS Evolved is the next-generation Junos OS. It has the same CLI, the same features, and, in some cases, even the same processes as previous versions of Junos OS. But its infrastructure is entirely modernized.

Use these release notes to find new and updated features, software limitations, and open issues for Junos OS Evolved Release 19.2R1.

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 19.2R1

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## Junos OS Evolved Release Notes for PTX10003 Devices

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These release notes accompany Junos OS Evolved Release 19.2R1 for PTX10003 Packet Transport Routers. They describe new and changed features, limitations, and known and resolved problems in the hardware and software.

## What's New

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Learn about new features introduced in Junos OS Evolved Release 19.2R1 for the PTX10003.

### ***Class of Service***

- **Support for Class-of-Service (CoS) features for 25G interfaces (PTX10003)**—Starting with Junos OS Evolved 19.2R1, support is provided for Class-of-Service (COS) features at 25G port speeds on PTX Series routers.

[See [Understanding Class of Service](#).]

### ***General Routing***

- **IPv6 traffic can transport over IPv4 MPLS core network (PTX10003)**—Starting in Junos OS Evolved Release 19.2R1, the provider edge (PE) routers can hold all the advertised IPv6 routes in the PE router's global IPv6 table.
- **Segment routing (PTX10003)**—Starting in Junos OS Evolved Release 19.2R1, segment routing is supported. Source packet routing or segment routing is a control-plane architecture that enables an ingress router to steer a packet through a specific set of nodes and links in the network without relying on the intermediate nodes in the network to determine the actual path it should take. In this context, the term *source* means “the point at which the explicit route is imposed.” The following subfeatures of segment routing are supported in Junos OS Evolved Release 19.2R1:
  - Advertising MPLS labels in IS-IS
  - Advertising MPLS labels in OSPF
  - Configurable Segment Routing Global Blocks Label Ranges for SPRING protocols (ISIS only)
  - Support for SPRING anycast and prefix segments in ISIS
  - Adjacency segment identifier (SID) support for different use cases (ISIS)
  - BGP binding SID (draft-previdi-idr-segment-routing-te-policy)
  - LDP mapping client/server support (LDP, SPRING, ISIS)
  - Static segment routing (SR) LSP with label stack (non-color)
  - Topology independent loop free alternate (TI-LFA) procedures for Link, SR-LG protection (ISIS)

[See [Understanding Source Packet Routing in Networking \(SPRING\)](#).]

- **PCEP support (PTX10003)**—Starting in Junos OS Evolved Release 19.2R1, PCEP is supported on the PTX10003.

[See [PCEP Overview](#).]

### *Interfaces and Chassis*

- **Support for 25-Gigabit Ethernet (PTX10003)**—Starting with Junos OS Evolved release 19.2R1, the PTX10003-80C now supports 25-Gigabit Ethernet in addition to 40-Gigabit Ethernet, 100-Gigabit Ethernet and 2x100-Gigabit Ethernet. Using QSFP-28 optical transceivers, you can channelize a 100-Gigabit Ethernet port into four independent 25-Gigabit Ethernet interfaces and then use breakout cables to connect the channelized ports to other devices. Similarly, using QSFP28-DD optical transceivers, you can channelize a 2x100-Gigabit Ethernet port into eight independent 25-Gigabit Ethernet interfaces. The 25-Gigabit Ethernet ports support FEC modes FEC74, FEC91 and NONE.

[See [Channelizing Interfaces on PTX10003 Routers](#)

- **Virtual routing and forwarding (VRF) support (PTX10003)**—Starting in Junos OS Evolved Release 19.2R1, there is VRF table and L3VPN support.
- **Support for physical interface damping (PTX10003)**—Starting with Junos OS Evolved Release 19.2R1, the physical interfaces on your device support interface damping to address periodic flapping with long up and down durations (in seconds). Interface hold timers can address very short-duration, instantaneous flapping (in milliseconds), but not the longer duration flaps. When you configure interface damping, an exponential back-off algorithm suppresses reporting of interface up and down events to the upper-level protocols.

To configure damping on a physical interface, include the damping statement at the **[edit interfaces interface-name]** hierarchy level. To view the damping values and link state, run the **show interfaces extensive** command.

[See [Damping Longer Physical Interface Transitions](#).]

- **25-Gbps channelized interfaces (PTX10003)**—Starting with Junos OS evolved Release 19.2R1, you can channelize QSFP28 and QSFP-DD ports on your PTX10003 routers to achieve the following interface speed configurations:
  - Four 25-Gbps interfaces on the 100-Gigabit Ethernet QSFP28 ports
  - Eight 25-Gbps interfaces on the 200-Gigabit Ethernet (2x100-Gbps) QSFP-DD ports

To configure the port speed as 25 Gbps, use the **set chassis fpc fpc-slot pic pic-slot port port-num number-of-subports (4|8) speed 25g** command.

[See [Channelizing Interfaces on PTX10003 Routers](#).]

### *Junos Telemetry Interface*

- **Support for JTI (PTX10003)**—Starting in Junos OS Evolved Release 19.2R1, Junos telemetry interface (JTI) supports the remote collection of statistics using gRPC services through BGP neighbors, LSP, and RSVP sensors.

### *Management*

- **Open-R (PTX10003)**—Starting in Junos OS Evolved Release 19.2R1, Open-R (a third-party application developed by Facebook) runs on platforms running Junos OS Evolved.

### *Multicast*

- **Multicast-related features (PTX10003)**—Starting in Junos OS Evolved Release 19.2R1, the following multicast features are supported:

- IP multicast (PIM/IGMP)
- Protocol Independent Multicast sparse mode (PIM SM) for IPv4 and IPv6
- Protocol Independent Multicast source-specific multicast (PIM SSM)
- MLDP Protocol Independent Multicast (PIM) for IPv6 multicast
- BGP link state distribution

The following multicast features are not supported:

- MPLS P2MP/ P2MP
- Bidirectional PIM support (PTX5000)

### *Network Management and Monitoring*

- **Syslog clients in Routing-Instance (PTX10003)**—A new configuration for routing-instance is introduced at appropriate hierarchies that lets you specify the routing instance through which the remote server is reachable. The syslog client can now send log messages to servers that are reachable through user defined VRFs.

[See [Management Interface in a Nondefault Instance.](#)]

### *Routing Protocols*

- **BGP flow specification (PTX10003)**—Starting in Junos OS Evolved Release 19.2R1, BGP can carry flow-specification network layer reachability information (NLRI) messages on PTX10003 routers. Propagating firewall filter information as part of BGP enables you to propagate firewall filters against denial-of-service (DOS) attacks dynamically across autonomous systems.

The following match conditions are not supported:

- ICMP Codes alone [INET/INET6]
- Source/Destination Prefix with offset [ASIC Limitation] for INET6

- Flow label [ASIC Limitation] for INET6
- Fragment [for INET6]

The following actions are not supported:

- Traffic Marking (INET6) [ASIC Limitation]
- **Distributed BFD and BFD-triggered local repair support (PTX10003)**—Starting with Junos OS Evolved Release 19.2R1, the distributed BFD.  
[See [Understanding Distributed BFD](#)]
- **BGP Service APIs support (PTX10003)**—Starting with Junos OS Evolved Release 19.2R1, the following BGP service APIs are supported:
  - BGP-labeled unicast (BGP-LU) and segment routing policy for traffic engineering (SRTE)—BGP-LU is the label signaling and routing protocol that provides the edge-to-edge or PE to PE reachability. SRTE uses a policy to steer traffic through the network and its support with BGP simplifies the data center network operation.
  - Community based BGP lookup
  - Implement RFC 7947—Attribute transparency and multiple route server routing tables sections
  - Provide programmability for external BGP routes (EBGP) and for injecting routes into route server client routing tables
  - Route server functionality to applicable address families. The virtual route server (vRS) specifically requires support for IPv4, IPv6, and VPNv4.

[See [Junos OS routing IDL - Protocol Documentation](#).]

## Software Installation and Upgrade

- **Component-level upgrade available (PTX10003)**—The command for upgrade provides for restarting applications and nodes in an optimal manner. You use one upgrade command, **request system software add**, and by default, the upgrade process identifies and upgrades only those components that differ in the target release. An option to the upgrade command allows you to perform the equivalent of a cold boot upgrade should it be required. Output specifies whether the software is upgraded using cold boot or by application restart.

[See [request system software add](#).]

## What's Changed

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Learn about what changed in Junos OS Evolved Release 19.2R1 for the PTX10003.

### Changes in CLI Statements and Commands

- To see the list of CLI statements and commands changed in Junos OS Evolved, see *How Junos OS Evolved Differs from Junos OS* in the *Introducing Junos Os Evolved Guide*.
- **The [edit system extensions extension-service] configuration is deprecated (Junos OS Evolved)**—This configuration was used to configure and run Junos extension service scripts (e.g., Python scripts) from the CLI. You can run the same scripts from the shell mode by preloading libsi.so.0 library with the **etenv LD\_PRELOAD libsi.so.0** command and then running the file with **python filename.py**.

[See [extension-service \(System Extensions\)](#).]

- **Change in output for the show system uptime command (PTX10003)**—The **show system uptime** command is a little different in how it displays output in Junos OS Evolved. The **show system uptime** command by itself shows system-wide uptime information.

[See [show system uptime](#).]

- **Support for full inheritance paths of configuration groups to be built into the database by default (PTX Series)**—Starting with Junos OS Evolved Release 19.2R1, the **persist-group-inheritance** option at the



[**edit system commit**] hierarchy is enabled by default. To disable this option, use **no-persist-groups-inheritance**.

[See [commit \(System\)](#).]

### General Routing

- **Output MPLS filters not supported (PTX10003)**—The PTX10003-80C router does not support MPLS firewall filters that are applied on the output interface.

[See [filter \(Applying to an Interface\)](#).]

- **Junos OS Evolved does not support use of an interactive password (PTX10003)**—You must set up the password-less login between two devices to use jcs:open to open a connection to the remote device using junoscript, netconf, junos-netconf. if you do not, junoscript, netconf, and junos-netconf fail with following error:

```
hello packet:1:(0) Start tag expected, '<' not found
error: netconf: could not read hello
error: did not receive hello packet from server
error: Error in creating the session with "evoeventtesta" server
error: Session for server "local" does not exist
```

- **Change in empty regex results (PTX10003)**—When the regular expression is to return empty matches, no error is thrown.
- **Support for full inheritance paths of configuration groups to be built into the database by default (PTX10003 and QFX5220)**—Starting with Junos OS Evolved Release 19.2R1, the **persist-group-inheritance** option at the [**edit system commit**] hierarchy level is enabled by default. To disable this option, use **no-persist-groups-inheritance**.

[See [commit \(System\)](#).]

### Interfaces and Chassis

- **DSCP action is not supported when a filter is bound to the input of the lo0 interface (PTX10003)**—In Junos OS Evolved Release 19.2R1, on the PTX10003 device, when a filter with DSCP is bound to the input of the lo0 interface, a commit error occurs.
- **Management interface name changed (PTX10003)**—In Junos OS Evolved, the management interface name is mgmtre0.

[See [Understanding Management Ethernet Interfaces](#).]

- **Change in what happens when a new interface is added as a member to an AE bundle (PTX10003)**—In Junos OS Evolved when a new interface is added to an AE bundle, the physical interface is deleted as a regular interface and then added back in as an AE member. This differs from how this is handled in Junos OS: When a new interface is added as a member to an AE bundle, the child interface is not deleted and added but every thing below it is.

[See [open\(\) Function \(SLAX and XSLT\)](#).]

### **Routing Policies and Firewall Filters**

- **Change in behavior for matching fragmented packets (PTX10003)**—In Junos OS Evolved, all fragmented packets, including the first fragment of a fragmented packet, will match on a firewall filter term containing an "is-fragment" match. This is slightly different behavior compared to other Junos platforms in which the first fragment of fragmented packets do not match on a firewall filter term containing an "is-fragment" match.

[See [Firewall Filter Match Conditions for IPv4 Traffic](#).]

### **System Management**

- **Messages logged when using the restart command**—Starting in Junos OS Evolved Release 19.2R1, The following message will be logged when **restart command** is used:

**App restarting <app name>. Related apps that may be impacted - <related-app name> .**

For example: Jan 14 11:42:08 RE0 sysman[5100]: SYSTEM\_APP\_RESTARTING\_WITH\_RELAPPS\_EVENT:  
**App restarting re0-ifmand. Related apps that may be impacted - aggd**

- **Change in where core-dump files are stored**—For Junos OS Evolved, a core-dump file during early bootup is stored in `/var/core/re`. But a core-dump file later in the bootup, for example, after the Routing Engine slot number can be determined, is stored in `/var/core/re0` or `/var/core/re1`. The command **show system core-dumps** continues to show all cores generated.

[See [show system core-dumps](#).]

### **User Interface**

- **View core-dump files (PTX10003)**—Use the **request system core-dump** command instead of the **request system live-core** command.

[See [show system core-dumps](#).]

- **Change in error message (PTX10003)**—For op scripts run with the **max-datasize** statement configured for the minimum, an error occurs. In Junos OS Evolved, the error is "Out of memory." In Junos OS, the error is "Memory allocation failed."

[See [max-datasize](#).]

### **Known Limitations**

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Learn about limitations in this release for the PTX10003. For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online [Juniper Problem Report Search](#) application.

#### **Uncategorized**

- When you execute the **<kill-session>** NETCONF operation and the session identifier is equal to the current session ID, the values of the **<error-type>** and **<error-tag>** elements in the resulting **<rpc-error>** are **application** and **invalid-value**, respectively. In earlier releases, the **<error-type>** and **<error-tag>** values are **protocol** and **operation-failed**.
- When firewall filter containing interface-match is applied on output interfaces, match happens for interface on which packets go out (and not for interface on which packets have come in). This behavior would be different from some of the existing platforms. [PR1403263](#)
- Static link protection is not supported on the PTX10003. [PR1382692](#)
- After you insert an optical transceiver, the LINK UP LED flashes more than once during the first 60 seconds. [PR1403833](#)
- If the internal Ethernet switch becomes inaccessible over PCIe, the marvell-cpss-app might encounter an intermittent core when trying to access the bus. Should this occur, the marvell-cpss-app will restart, detect the missing switch during the restart, and fail to configure or access the switch. Traffic in the host path will not be dropped due to the core/restart. [PR1405373](#)
- In its current form, the evo-cda-zx process can consume a relatively high amount (more than RPD) of CPU in idle state. This is related to periodic statistics gathering. [PR1412651](#)
- The FPC offline reason does not show as "Offlined due to major errors" in the show chassis fpc output when the system is brought down due to a CM error infra offline action. [PR1412871](#)
- PTX10003-80C/160C: ~0.4% drops are seen at line rate when packet sizes are below 170b [PR1415012](#)
- When you change the severity for a URI, the old severity error statistics are getting updated under the new severity. [PR1417191](#)
- Restart of certain processes like CDA, AFTMAN, resilD will cause the system to reboot. [PR1421993](#)
- If you apply a filter with a term 1514 applied on full PFEs, the full line rate at the PFE level cannot be achieved from a 168-190 packet type. [PR1424351](#)

- The following XML tags are missing in Junos OS Evolved for the show system buffers CLI:  
 <memory-statistics> <current-mbufs> <cached-mbufs> <total-mbufs> <current-mbuf-clusters>  
 <cached-mbuf-clusters> <total-mbuf-clusters> <max-mbuf-clusters> <packet-count> <packet-free>  
 <current-jumbo-clusters-4k> <cached-jumbo-clusters-4k> <total-jumbo-clusters-4k>  
 <max-jumbo-clusters-4k> <current-jumbo-clusters-9k> <cached-jumbo-clusters-9k>  
 <total-jumbo-clusters-9k> <max-jumbo-clusters-9k> <current-jumbo-clusters-16k>  
 <cached-jumbo-clusters-16k> <total-jumbo-clusters-16k> <max-jumbo-clusters-16k>  
 <current-bytes-in-use> <cached-bytes> <total-bytes> <mbuf-failures> <cluster-failures> <packet-failures>  
 <jumbo-cluster-failures-4k> <jumbo-cluster-failures-9k> <jumbo-cluster-failures-16k>  
 <sdbuf-requests-denied> <sdbuf-requests-delayed> <io-initiated> [PR1429626](#)
- There are differences in xml tags for cli "show system directory-usage." [PR1429629](#)
- For cli show system uptime, there are output xml tag differences compared to Junos. [PR1429636](#)
- The following XML tags are missing in Junos OS Evolved for the show system virtual-memory CLI:  
 <system-virtual-memory-information> <vmstat-memstat-malloc> <vmstat-memstat-info>  
 <memstat-name> <inuse> <memuse> <high-use> <memstat-req> <memstat-size>  
 <vmstat-memstat-zone> <vmstat-zone-info> <zone-name> <zone-size> <count-limit> <used> <free>  
 <zone-req> <vmstat-sumstat> <cpu-context-switch> <dev-intr> <soft-intr> <traps> <sys-calls>  
 <kernel-thrds> <fork-calls> <vfork-calls> <rfork-calls> <swap-pageins> <swap-pagedin> <swap-pageouts>  
 <swap-pagedout> <vnode-pageins> <vnode-pagedin> <vnode-pageouts> <vnode-pagedout>  
 <page-daemon-wakeup> <page-daemon-examined-pages> <pages-reactivated> <copy-on-write-faults>  
 <copy-on-write-optimized-faults> <zero-fill-pages-zeroed> <zero-fill-pages-prezeroed>  
 <transit-blocking-page-faults> <total-vm-faults> <page-faults-requiring-io>  
 <pages-affected-by-kernel-thrd-creat> <pages-affected-by-fork> <pages-affected-by-vfork>  
 <pages-affected-by-rfork> <pages-cached> <pages-freed> <pages-freed-by-deamon>  
 <pages-freed-by-exiting-proc> <pages-active> <pages-inactive> <pages-in-vm-cache>  
 <pages-wired-down> <pages-free> <bytes-per-page> <total-name-lookups> <positive-cache-hits>  
 <negative-cache-hits> <pass2> <cache-deletions> <cache-falsehits> <toolong> <vmstat-intr>  
 <vmstat-intr-info> <intr-name> <intr-cnt> <intr-rate> <vm-kernel-state> <vm-kmem-map-free>  
[PR1429639](#)
- The following XML tags are missing in Junos OS Evolved for the show system queues CLI:  
 <queues-statistics> <interface-queues-statistics> <interface-queue> <name> <octets-in-queue>  
 <max-octets-allowed> <packets-in-queue> <max-packets-allowed> <number-of-queue-drops>  
 <protocol-queues-statistics> <protocol-queue> [PR1433449](#)
- More than one link-flap can be seen within 60 seconds, when DAC optics is jacked out and jacked-in, before the link stabilizes. [PR1438770](#)
- NETCONF GET for JTI telemetry is not supported on PTX10003-80C [PR1439175](#)

### General Routing

- RIP and RIPv6 is currently not supported on PTX10003-80C [PR1437544](#)
- The show/clear igmp snooping hierarchy option missing in Junos OS Evolved. [PR1439755](#)

### Infrastructure

- Traceroute fails to list the complete paths b/w spoke CEs w/ and w/o no-vrf-propagate-ttl configured. [PR1436638](#)

### Network Management and Monitoring

- For commit scripts in Junos OS Evolved, tracing is always-enabled (like flight recorder mode). Therefore, the command hierarchy for enabling tracing options for commit scripts in Junos OS Evolved has been removed. There will be no updated command to replace the old one. [PR1423291](#)
- If you use IPv6 via two different user-specified routing instances to configure two remote servers belonging to different VRFs, Junos OS Evolved forwarding syslog messages fail. The messages only fail when you change the configuration several times during setup. The syslog messages do not fail for manual cases. [PR1436314](#)

### Routing Policy and Firewall Filters

- When an firewall filter with counters action is binded on AE interface, and AE interface doesnt have any child member links, counters of filter are not shown in "show firewall" cli command. [PR1433501](#)

### User Interface and Configuration

- Junos OS Evolved uses the **request system shutdown (reboot | power-off | halt)** commands. This is different than the Junos commands for same functionality.
- If management instance is configured and then you do a load override of another configuration (which has management instance in a different VRF), the management instance gets deleted. When committing this, the commit hangs indefinitely. This happens as the management instance now moves to a different VRF and the current connectivity to the device is lost. This is the expected behavior. The user has to log back in again and then the device will work normally. [PR1421947](#)
- If you commit "set interfaces ae0 gigether-options 802.3ad ae0" without checking "Invalid configuration," the command will commit without an error message. This may cause an ifmand process core. [PR1426018](#)

## Open Issues

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Learn about open issues in this release for the PTX10003. For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online [Juniper Problem Report Search](#) application.

#### **Uncategorized**

- ```
str_value: & key: values are filling wrongly on Brackla.

Currently: (Issue)

str_value:/components/component[name='FPC0:CC0']/properties/property[name='ts-output-packets']/

key:state/value,

Fix:
str_value:/components/component[name='FPC0:CC0']/
key:properties/property[name='ts-output-packets']/state/value,
```

#### **PR1419283**

- Following sensor values are not published in the current Junos OS Evolved release:

```
/junos/system/linecards/optics and a few of the sensor values of
/junos/system/linecards/interfaces;
In errors;
In discards;
Out errors;
Out discards;
  In unicast pkts;
Out unicast pkts;
In broadcast pkts;
Out broadcast pkts;
```

```

In multicast pkts;
Out multicast pkts;
In pause pkts;
Out pause pkts.

```

#### PR1419811

- Static link protections is not supported on the PTX10003. [PR1382695](#)
- The PTX10003-80C supports FPC Offline but does not support FPC Online at runtime. The only way to bring up the offlined FPC is to reboot the chassis. [PR1386385](#)
- PTX10003: Fabric stats PFE stats counter is always displayed as zero. No value is populated. [PR1389157](#)
- 'Show chassis fpc' will not show any CPU/Mem Utilization. This is because the FPC doesn't have a dedicated CPU for the PTX10003, which is a fixed form factor chassis. [PR1389199](#)
- Packets sent with an incorrect IPV6 hop-by-hop type are not dropped. Same issue with IPv4. [PR1403686](#)
- uncorrectable pci error will not reboot the Router [PR1415221](#)
- Existing error counters should be cleared before making any CMemory configuration changes. [PR1417171](#)
- "show pfe statistics traffic" works fine. But "show pfe statistics traffic fpc <0/1>" only works for fpc 0, not for any other FPC number shown in "show chassis fpc". [PR1419268](#)
- PTX10003-160C and PTX10003-80C: COS AE Queue stats for the "show interfaces queue ae0" CLI command is displayed as zero (where as the rate/pps/bps stats are displayed correctly) after the "clear interfaces statistics all" commands and when one AE member link flaps (24x10G ae0) [PR1423134](#)
- Show system core-dumps | display xml output format is different in Junos OS Evolved than in Junos OS. [PR1423650](#)
- show system directory-usage | display xml has variation in the display between Junos OS and Junos OS Evolved. [PR1423660](#)
- Show system queues output display is different from Junos OS. [PR1423673](#)
- Show system reboot cli output xml tags are different from Junos OS. [PR1423675](#)
- On PTX10003-80C Junos OS Evolved platforms, the L3VPN traffic might be dropped if one core-facing interface gets down in the L3VPN multipath scenario. [PR1423980](#)
- When Highly Accelerated Life Test is carried out on PTX10003 FPC Error messages "pgq\_intr\_misctrntr\_qsn\_skip" will be seen on the console [PR1424539](#)
- The following XML tags are missing in Junos OS Evolved for the show pfe statistics traffic CLI:  
 <pfe-fabric-input> <pfe-fabric-input-pps> <pfe-fabric-output> <pfe-fabric-output-pps>  
 <tcp-header-error-discard> [PR1430821](#)
- Additional and missing XML tags for Junos OS Evolved need to be documented. [PR1433459](#)

- If BGPRouteMonitor JET application is killed from Linux shell from where it was invoked while the application is receiving route change notifications, temporary metadata leak error messages are seen from router. If the BGP routeMonitor application is multithreaded and one thread is used to unregister the monitor session while other thread is receiving BGP route change notifications 'Assertion Failed: pthread\_mutex\_lock(mu) == 0 Abort' message is seen. In both of these case BGPRouteMonitor application can be restarted and it executes as expected. [PR1435164](#)
- There are differences in xml tags for "show system storage" compared to Junos. [PR1438092](#)
- There are differences in xml tags for "show system uptime" compared to Junos. [PR1438094](#)
- Software upgrade from Junos OS Evolved release 19.1R1 to 19.2R1 using 'request system add <package> restart' is not supported because when the two releases are different in many repositories, the object from imgd to orchestrator was bigger than PUB\_BUFFER\_SIZE and orchestrator would crash. [PR1438194](#)
- SW upgrade infrastructure requires manual checks to handle applications which are offline at the time of the upgrade. We are documenting the user workflow for restart upgrade. 1. check alarms (and online any offline apps which will alarm). 2. upgrade. 3. V2 will get activated. 4. check alarms (and online any offline apps which will alarm) [PR1438686](#)
- [EVO COS][25G][PTX10003-160c] [PTX10003-80c]: With IPv4 and IPv6 CoS Classifier and Rewrite, the following AftCore specific evo-aftmand syslog Error messages are observed during the negative triggers i.e. disable/enable and deactivate/activate of CoS interfaces: "AftCore: AftValidate: Validation failed for token", "AftCore: AftValidate: Entry failed local validation:parentToken" and "AftCore: root: AftInsert destroyed with active state". [PR1439519](#)
- The "clear ike" command stanza missing in Junos OS Evolved. [PR1439872](#)
- Show Queue Stats should display tail-drop bytes apart from tail-drop packets [PR1440152](#)
- Some fields are missing in the CLI "show system statistics arp." For example, "Current Public ARP nexthops present." [PR1440447](#)
- There is an issue with the PFE for MPLS auto bandwidth feature. The PFE is returning the traffic counter value wrongly. As a result, the auto bandwidth calculation is not correct; it is going to the MAX bandwidth. Therefore, do not use the MPLS auto bandwidth feature in this release. [PR1444784](#)

### **Authentication and Access Control**

- The CLI "show system login lockout" will not display the locked out users. There is no functional impact. [PR1175430](#)

### **Class of Service (COS)**

- This is harmless error message. Not functional impact [PR1437717](#)
- For the PTX10003-160C (25 G), the "show class-of-service code-point-aliases <name>" command doesn't display the specific code-point-alias name requested in the command. Instead, it displays all the code-point-aliases details. [PR1443930](#)



- For the PTX10003-160C (25 G), the "show class-of-service rewrite-rule type <type-name>" commands also display other rewrite types (just the rule name in one line). [PR1444174](#)
- Junos OS Evolved: PTX10003 (25G): The "Jexpr: CoS Queue Stats:" evo-aftmand Error messages are observed upon cosd restart and the cos mib objects querying (both on AE and non AE cases) [PR1445134](http://prsearch.juniper.net/PR1445134)
- PTX10003 (25G): cosd is cored starting  
CosBundleCHandler::onModify()->ClassifierCBQEvents::NotifyDelete()->ClassifierCEvents::OnDelete()->Resolver::resolve() [PR1446041](#)

### ***Flow-based and Packet-based Processing***

- JFLOW is not supported on the PTX10003. If you configure it the system may generate EvoAftMan-main and/or rpd-agent cores [PR1393101](#)

### ***General Routing***

- The convergence time will be of the order of 3508 ms for OSPF/ISIS (50K routes scale which will be equivalent to 14253 routes/sec). In the case of BGP, it will be of the order of ~17K routes/sec. [PR1379961](#)
- The Junos OS Evolved output for the CLI "show LLDP neighbors" is different than in Junos OS. Some of the XML tags for the CLI "show lldp neighbors interface" and "show lldp" are missing. [PR1430795](#)
- Filters associated with the run show ipv6 neighbor command are not working [PR1439354](#)

### ***Infrastructure***

- The following XML tags are missing in Junos OS Evolved for the show route forwarding-table CLI:  
<address-family> <enabled-protocols> <to> [PR1429413](#)
- The following telnet commands are not available in this release: telnet bypass-routing; telnet interface; telnet logical-system; telnet no-resolve; telnet source. With the exception of the telnet source command, these commands are not available in the native Linux telnet client. For reference, here is the Linux man page: <https://linux.die.net/man/1/telnet> [PR1438735](#)
- scaled l3vpn configuration taking near about 30 minutes to come up. [PR1438955](#)

### **Interfaces and Chassis**

- request chassis routing-engine master switch, should give warning message [PR1228051](#)

### **Multiprotocol Label Switching (MPLS)**

- Link-protection/Node-link-protection configuration under label-switched-path template is not honored for PCE Initiated RSVP based P2P LSPs and hence these LSPs are not protected. [PR1443672](#)

### **Network Management and Monitoring**

- The snmpd runs as a 64 bit application in Junos OS Evolved. So when the 4294967295678 value is passed to counter32, it takes the lower order 4 bytes and returns that value. In this case, it is 4294966974 (4294967295678 & FFFFFFFF). [PR1370735](#)

### **Routing Protocols**

- The PTX10003-80C doesn't support RP and FHR in this release. [PR1414780](#)
- In some scenarios immediately after a software upgrade, the host name in the IS-IS database shows up as "localhost". Flapping the IS-IS session will clear this. This problem will not be seen in subsequent reboots after the software upgrade. [PR1419006](#)
- ipv6-adj sid doesn't get enabled after flapping family inet6 on the link [PR1432146](#)
- TI-LFA backup NH, for ipv4 node-sid doesn't contain the explicit null label [PR1448175](#)
- [EVO] RPD process crashes and restarts after a router reboot [PR1448839](#)

### **Software Installation and Upgrade**

- Route add using BGP APIs can be relatively slow if route monitor register happens when bgp routes are already present in the router. Conditions: BGP route add performance is impacted when BGP route monitor is configured [PR1389212](#)
- If the disk is partitioned with a non 'dos' partition type, follow these steps to erase/format and partition with a 'msdos' partition type: 1. Issue the parted/dev/sdb mklabel msdos command. 2. Reboot the box. 3. Request a system snapshot. [PR1402409](#)
- There are differences in the xml tags for the cli "show version" as compared to Junos. [PR1429640](#)

### **User Interface and Configuration**

- Show system subscriber-management summary gives an error. [PR1438809](#)
- Changing any attribute under archive sites will have no effect after provisioning, example:

```
Initial Config:
set system syslog file messages archive archive-sites
"scp://root@[abcd::10:216:129:105]:/tmp" routing-instance mgmt_junos

New Commit - (will not have any effect):
```

```
delete system syslog file messages archive archive-sites
"scp://root@[abcd::10:216:129:105]:/tmp" routing-instance mgmt_junos
```

[PR1444733](#)

## Resolved Issues

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- [Routing Policy and Firewall Filters | 21](#)
- [User Interface and Configuration | 21](#)

Learn which issues were resolved in Junos OS Evolved Release 19.2R1 for the PTX10003.

### **General Routing**

- Use the request system core-dump node <> app <> command to obtain an application live core dump. [PR1392747](#)
- In AFT, the table names do not display properly in the show route summary. [PR1407174](#)
- When multiple BGP session flaps happen in the system, the memory used for the evo-aftmand process increases gradually and is not released back to the system once the flaps stop happening. [PR1409261](#)
- Traffic on ports may fail if you change the port speed or offline/online the PIC while traffic flowing through the ports. To recover, reboot the box. [PR1416639](#)
- Interface hold up timers (which keep the interface up if the physical interface goes down for a time period smaller than the hold up timer) will work properly for timeouts only up to 4 sec. Timeouts larger than 4 sec may not work if the interface goes down due to optics Rx reporting down. [PR1416669](#)
- Below transient alarm set/clear messages may be seen during the system bootup time. No functional impact. Alarm set message: Alarm set: RE color=red, class=CHASSIS, reason=Host 0 Ethernet Interface Link Down Alarm set: PWRZONE color=red, class=CHASSIS, reason=Zone 0 No Redundant Power Alarm set: PWRZONE color=yellow, class=CHASSIS, reason=Zone 0 N+2 Power redundancy missing Alarm cleared messages: Alarm cleared: RE color=red, class=CHASSIS, reason=Host 0 Ethernet Interface Link Down Alarm cleared: PWRZONE color=red, class=CHASSIS, reason=Zone 0 No Redundant Power Alarm

cleared: PWRZONE color=yellow, class=CHASSIS, reason=Zone 0 N+2 Power redundancy missing [PR1418111](#)

- If traffic is more than 85% and terms applied on PFE traffic is more than 1516 then PFE is not able to carry traffic and it drops to 0%. [PR1424344](#)
- If an interface flap occurs, the IPv6 address configured on the management ethernet port may be deactivated. [PR1425160](#)
- On continuous triggers of Deactivate /Activate Member Links of an AE bundle with SFLOW configured, evo-aftmand core may be observed, leading to a router reboot. [PR1425914](#)
- If the SSH session under which 'monitor interface traffic' is being run is stopped, the iftop utility will stay at 100% CPU utilization. [PR1426069](#)
- evo-aftmand core at jprds\_encap\_desc\_add and router went for a reboot after continous triggers of MTU change and rollback [PR1426270](#)
- On SIB Offline, Minor Alarm "SIB <> Not Online" will be generated. In this state, restarting the hardware application and then onlining the SIB, will not clear the Minor Alarm "SIB <> Not Online" [PR1426406](#)
- sflowd core seen when few interface related operations are performed. [PR1426902](#)
- ZTP file transfer will fail when using an FTP server that requires binary transfer mode to be explicitly defined, such as ProFTP. [PR1432727](#)
- With this commit updated the trace level of some messages to correct level. [PR1437555](#)
- Cmerror reporting for all FPCs in some cmerror infra CLIs is not working in Junos OS Evolved. Other FRUs also exhibit the same behavior. [PR1439211](#)
- Under rare circumstances, an interface on PTX10003 may fail to come up because of continuous SerDes retunes. This can be detected by examining the "tune cnt" for the interface in "cli-pfe show picd serdes summary" command. The workaround is to disable the tune retry logic via command test picd channel fpc <fpc-slot> pic <pic-slot> port <port-num> chan <channel-num> cmd serdes-op-retry-logic-disable [PR1439240](#)
- For INET6 family DSCP action is not supported for BGP Flowspec filters. If such a config is tried INET6 family filtering will not happen for BGP Flowspec rules. [PR1439366](#)
- In case NSR is enabled in l3vpn scenarios, After restart routing, vpn table wouldn't be created [PR1447435](#)

### **Infrastructure**

- The SSH and telnet servers are accessible via the management interface. However, these servers are not available from the WAN interfaces. [PR1310556](#)
- Rebooting the PTX10003 during a broadcast storm on the management port may cause a fault on the PTX10003. [PR1423216](#)
- If multiple interfaces are configured with IPv6 addresses, a server may fail to accept a connection made on an IPv6 link-local address (fe80::/64). [PR1445177](#)

### **Network Management and Monitoring**

- When snmpd is polled continuously, snmpd/mib2d may restart due to memory leak. [PR1424034](#)
- Querying for entPhysicalEntryTable may result in an snmp-subagent crash. [PR1425253](#)

### **Routing Policy and Firewall Filters**

- In PR 1430158 ASAN reported a global buffer overflow while running firewall unit tests. This issue is fixed and verified. [PR1430158](#)

### **User Interface and Configuration**

- set date/time should invoke ntpdate to set the system time. ntpdate should be customized to work with Junos OS Evolved. [PR1397699](#)
- configd core is observed when scaling prefix list for S/A and DA address. [PR1421793](#)

## **Junos OS Evolved Release Notes for QFX5220 Devices**

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These release notes accompany Junos OS Evolved Release 19.2R1 for QFX5220-32CD and QFX5220-128C Switches. They describe new and changed features, limitations, and known and resolved problems in the hardware and software.

### **What's New**

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Learn about new features introduced in Junos OS Evolved Release 19.2R1 for the QFX5220.

### ***Class of Service***

- **Layer 3 COS support extended for Junos OS 19.2R1 (QFX5220-32CD, QFX5220-128C)**—Starting in Junos OS Release 19.2R1, Layer 3 COS support has been extended to the QFX5000 Series of switches. Both IPv4 and IPv6 unicast routing are supported. Other COS features supported include FC to queue mapping, BA classifier - DSCP, fixed classifier and MF classifier, rewrite - DSCP, scheduling, WRED, ECN, and shared buffer.

[See [Understanding Class of Service](#).]

### ***General Routing***

- **Support for IRB (QFX5220-32CD, QFX5220-128C)**—Starting in Junos OS Evolved Release 19.2R1, the QFX5220-128C switch supports basic integrated routing and bridging (IRB) functionality. However, the following features are not supported in this release:
  - VPLS
  - VXLAN or EVPN
  - Tunnel interfaces as Layer 2 interfaces
  - Pseudo-interfaces other than aggregated Ethernet interfaces as Layer 2 logical interfaces
  - Management VLAN functionality
  - IRB on private VLAN and IRB over MPLS-based core
- **Layer 3 Unicast Forwarding Protocols support (QFX5000)**—Starting with Junos OS Evolved Release 19.2R1, the Layer 3 unicast forwarding protocol VRF lite is supported.

## Hardware

- **QFX5220-128C switch**—As of Junos OS Evolved 19.2R1, the QFX5220 line of switches adds the QFX5220-128C. The new switch offers 128 ports of 100 Gigabit Ethernet in a 4 U form factor. With 12.8 terabits per second (Tbps) bandwidth, the QFX5220-128C is optimally designed as data aggregation or top of rack switch in small to medium size data centers and MSDC (Massively Scalable Data Center) deployments. The 100 Gigabit Ethernet ports can be configured either for 100 Gbps or 40 Gbps speeds. The 100 Gbps ports can also be channelized into 4 x 25 Gbps, or 4 x 10 Gbps. There are two dedicated small form factor plus (SFP+) for 10 Gigabit or 1 Gigabit Ethernet support.

An Intel Xeon D-1500 processor drives the QFX5220 control plane, which runs the Junos OS Evolved software. The Junos OS Evolved software image is stored on two internal 50 GB solid-state drives (SSDs). The QFX5220-128C is available with ports-to-FRUs airflow, (airflow out), and with AC or DC power supplies.

[See [QFX5220 System Overview](#).]

## Interfaces and Chassis

- **Support for Layer 2 bridging (QFX5220)**—Starting with Junos OS Evolved Release 19.2R1, QFX5220 switches support Layer 2 bridging. You create a bridge domain by adding a set of Layer 2 logical interfaces (on your QFX5220 switch) to represent a broadcast domain. All the member ports of the bridge domain participate in Layer 2 learning and forwarding. You can configure one or more bridge domains to perform Layer 2 bridging. You can optionally disable learning on a bridge domain. You can configure the layer 2 interfaces only by configuring the access and trunk port of ethernet-switching family.

[See [Configuring Layer 2 Bridging Interfaces](#).]

- **Support for QFX5220-128C**—Starting in 19.2R1, Junos OS Evolved Release supports QFX5220-128C, a fixed configuration switch that provides a maximum bandwidth of 12.8 Tbps. The QFX5220-128C switch, which comes in a 4 RU form factor, provides 128 QSFP28 user ports (128 ports of 100 Gigabit Ethernet or 64 ports of 40 Gigabit Ethernet). In this release, the QSFP28 ports support a speed configurations of 25 Gbps (4x25 Gbps). The QFX5220-128C supports features such as chassis management, power management, environment monitoring, and error handling and alarms.

[See [QFX5220 System Overview](#).]

- **Support for Layer 2 ALD (QFX5220-32CD, QFX5220-128C)**—Starting with Junos OS Evolved Release 19.2R1, the QFX5220-128C switch supports layer 2 address learning process (ALD) including integrated routing and bridging (IRB) functionality.
- **Layer 2 forwarding support (QFX5220)**—Starting in Junos OS Evolved Release 19.2R1, there is support for Layer 2 forwarding and changes for Layer 2 protocols specific to the Packet Forwarding Engine.

## Layer 2 Protocols

- **Layer 2 Protocols (QFX5220 switch)**—You can configure the following Layer 2 protocols:
  - Class of Service
  - Integrated Routing and Bridging

- MAC address filtering, MAC address aging, and static MAC address assignment for interfaces
- Static and dynamic link aggregation with Link Aggregation Control Protocol (fast and slow)
- Link Layer Discovery Protocol

[See [Ethernet Switching User Guide](#).]

## **MPLS**

- **Support for MPLS (QFX5220-32CD, QFX5220-128C)**—Starting in Junos OS Evolved Release 19.2R1, the QFX5220 switch supports all MPLS features that enable IP data center networks to interconnect over an IP fabric cloud.

The supported MPLS features include:

- LDP and RSVP
- Layer 3 VPN (IPv4 and IPv6)
- Penultimate hop popping
- MPLS with equal-cost multipath
- MPLS over link aggregation group (LAG)
- Static and dynamic LSP
- 6VPE (IPv6 over MPLS)

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

- Ethernet VPN (EVPN) MPLS
- Layer 2 VPN
- MPLS class of service (CoS)
- MPLS firewalls
- Point-to-multipoint LSP
- Source Packet Routing in Networking (SPRING) or Segment routing MPLS

[See [MPLS Applications User Guide](#).]

## **Network Management and Monitoring**

- **Read Junos OS network information using Linux tools (QFX5220)**—On devices running Junos OS Evolved, preload the intercept library libnli.so in order to obtain network information in the same format as the output you get on a device running Junos OS. The one difference is the name of the logical interface. Junos interface names must be translated into a different form, which is accomplished by a translation rule.

[See [Running Linux Tools on Junos OS Evolved](#).]

- **Mirroring support (QFX5220)**—Mirroring is supported on Layer 2 and Layer 3 interfaces.



## Routing Protocols

- **Bidirectional Forwarding Detection (BFD) support (QFX5220-128C)**—Starting with Junos OS Evolved Release 19.2R1, BFD is supported on QFX5220-128C switches.

[See [Understanding Bidirectional Forwarding Detection \(BFD\)](#)]

## Routing Policy and Firewall Filters

- **Firewall filter support on Layer 2 interfaces (QFX5220-32CD)**—You can now configure a firewall filter on the switch and apply it to a port or VLAN. Firewall filters provide rules that define whether to accept or discard packets that are transiting an interface. To configure the filter, specify the family address type **ethernet-switching**. Then specify the match conditions and actions to take on a packet that matches the term. You configure firewall filters at the **[edit firewall]** hierarchy level. This feature was previously supported in an "X" release of Junos OS.

[See [Firewall Filter Match Conditions and Actions \(QFX5220\)](#).]

- **Firewall filter support on Layer 2 and Layer 3 interfaces (QFX5220-128C)**—You can now configure a firewall filter and apply it to a Layer 2 port or VLAN , or a Layer 3 IPv4 or IPv6 interface. Firewall filters provide rules that define whether to accept or discard packets that are transiting an interface. To configure the filter, specify the family address **ethernet-switching** for a Layer 2 interface or **inet or inet6** for a Layer 3 interface. Then specify the match conditions and actions to take on a packet that matches the term. You configure firewall filters at the **[edit firewall]** hierarchy level. This feature was previously supported in an "X" release of Junos OS.

[See [Firewall Filter Match Conditions and Actions \(QFX5220\)](#).]

## Services Applications

- **GRE features supported (QFX5220)**—You can configure the following Layer 2 protocols:
  - GRE tunnels over GigE, LAG, and VLAN
  - Tagged subinterfaces
  - Payload protocol for IPv4 and IPv6
  - Delivery protocol for IPv4
  - Multicast over GRE tunnels
  - Tunnel statistics
  - VRF with GRE
  - Time-to-live
  - IPv4 as GRE delivery header
  - IPv4 and IPv6 over GRE
  - ISO over GRE

- Traffic class configuration
- Copying TOS to outer-IP for Routing Engine traffic

### Software Installation and Upgrade

- **Component-level upgrade available (QFX5220)**—The upgrade command provides for restarting applications and nodes in an optimal manner. You use one upgrade command, **request system software add**, and by default, the upgrade process identifies upgrades only those components that differ in the target release. An option to the upgrade command allows you to perform the equivalent of a cold boot upgrade should it be required. Output specifies whether the software is upgraded using cold boot or by application restart.

[See [request system software add](#).]

- **Zero touch provisioning (ZTP) support (QFX5220-128C)**—ZTP can dramatically reduce the time to provision the network in a data center and decrease the opportunity for introduction of human error into the network. The image and configuration files are placed centrally in a network server. The device is shipped with factory default configuration along with ZTP configuration. Upon booting up, the device downloads the image from the central location, upgrades itself and, upon rebooting, applies the configuration which it fetched from the network server.

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

## What's Changed

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Learn about what changed in Junos OS Evolved Release 19.2R1 for the QFX5220.

### Changes in CLI Statements and Commands

- To see the list of CLI statements and commands changed in Junos OS Evolved, see *How Junos OS Evolved Differs from Junos OS* in the *Introducing Junos Os Evolved Guide*.
- **The [edit system extensions extension-service] configuration is deprecated (Junos OS Evolved)**—This configuration was used to configure and run Junos extension service scripts (e.g., Python scripts) from the CLI. You can run the same scripts from the shell mode by preloading libsi.so.0 library with the **etenv LD\_PRELOAD libsi.so.0** command and then running the file with **python filename.py**.

[See [extension-service \(System Extensions\)](#).]

- **Change in output for the show system uptime command (QFX5220)**—The **show system uptime** command is a little different in how it displays output in Junos OS Evolved. The **show system uptime** command by itself shows system-wide uptime information.

[See [show system uptime](#).]

### General Routing

- **Support for full inheritance paths of configuration groups to be built into the database by default (PTX10003 and QFX5220)**—Starting with Junos OS Evolved Release 19.2R1, the **persist-group-inheritance** option at the **[edit system commit]** hierarchy level is enabled by default. To disable this option, use **no-persist-groups-inheritance**.

[See [commit \(System\)](#).]

### System Management

- **Change in where core-dump files are stored**—For Junos OS Evolved, a core-dump file during early bootup is stored in **/var/core/re**. But a core-dump file later in the bootup, for example, after the Routing Engine slot number can be determined, is stored in **/var/core/re0** or **/var/core/re1**. The command **show system core-dumps** continues to show all cores generated.

[See [show system core-dumps](#).]

## Known Limitations

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Learn about limitations in this release for the QFX5220. For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online [Junos Problem Report Search](#) application.

### Uncategorized

- Linkscan status reflects correctly and Interface state gets updated accordingly, but the RxLOS alarm gets set sometimes randomly even after link goes down. [PR1404144](#)
- In an MPLS network where the QFX5220 acts as MPLS PE or P router, traffic loss can be seen during FRR triggers like node/link failure. The duration of the loss depends on the number of routes and next-hops in the switch and varies between 300 milliseconds to 1 second [PR1416946](#)
- During frequent route updates or link flaps, the system may not achieve the full scale of 4K ECMP next-hops. [PR1419943](#)
- Available Firmware version for all non supported firmware upgrade components will be shown as 0 in system firmware output. Firmware components not supported are TMC FPGA and CPLD components. Also there are redundant values shown under CHASSIS and RE for all the firmware components. [PR1422023](#)
- When the disk is Full, we should get an alarm indicating disk partition is Full to avoid re-writes / slowness in performance [PR1428750](#)
- The following XML tags are missing in Junos OS Evolved for the show system buffers CLI:  
 <memory-statistics>, <current-mbufs>, <cached-mbufs>, <total-mbufs>, <current-mbuf-clusters>, <cached-mbuf-clusters>, <total-mbuf-clusters>, <max-mbuf-clusters>, <packet-count>, <packet-free>, <current-jumbo-clusters-4k>, <cached-jumbo-clusters-4k>, <total-jumbo-clusters-4k>, <max-jumbo-clusters-4k>, <current-jumbo-clusters-9k>, <cached-jumbo-clusters-9k>, <total-jumbo-clusters-9k>, <max-jumbo-clusters-9k>, <current-jumbo-clusters-16k>, <cached-jumbo-clusters-16k>, <total-jumbo-clusters-16k>, <max-jumbo-clusters-16k>, <current-bytes-in-use>, <cached-bytes>, <total-bytes>, <mbuf-failures>, <cluster-failures>, <packet-failures>, <jumbo-cluster-failures-4k>, <jumbo-cluster-failures-9k>, <jumbo-cluster-failures-16k>, <sdbuf-requests-denied>, <sdbuf-requests-delayed>, <io-initiated>. [PR1429626](#)
- There are differences in xml tags for cli "show system directory-usage." [PR1429629](#)
- Fragmentation doesn't happen for IPv4 packets on transit Junos Evolved-based devices when the outgoing MTU is less than the packet size. The packet is dropped. [PR1429634](#)
- For cli show system uptime, there are output xml tag differences compared to Junos. [PR1429636](#)
- The following XML tags are missing in Junos OS Evolved for the show system virtual-memory CLI:  
 <system-virtual-memory-information> <vmstat-memstat-malloc> <vmstat-memstat-info>  
 <memstat-name> <inuse> <memuse> <high-use> <memstat-req> <memstat-size>  
 <vmstat-memstat-zone> <vmstat-zone-info> <zone-name> <zone-size> <count-limit> <used> <free>  
 <zone-req> <vmstat-sumstat> <cpu-context-switch> <dev-intr> <soft-intr> <traps> <sys-calls>  
 <kernel-thrds> <fork-calls> <vfork-calls> <rfork-calls> <swap-pageins> <swap-pagedin> <swap-pageouts>  
 <swap-pagedout> <vnode-pageins> <vnode-pagedin> <vnode-pageouts> <vnode-pagedout>  
 <page-daemon-wakeup> <page-daemon-examined-pages> <pages-reactivated> <copy-on-write-faults>  
 <copy-on-write-optimized-faults> <zero-fill-pages-zeroed> <zero-fill-pages-prezeroed>  
 <transit-blocking-page-faults> <total-vm-faults> <page-faults-requiring-io>  
 <pages-affected-by-kernel-thrd-creat> <pages-affected-by-fork> <pages-affected-by-vfork>

<pages-affected-by-rfork> <pages-cached> <pages-freed> <pages-freed-by-daemon>  
 <pages-freed-by-exiting-proc> <pages-active> <pages-inactive> <pages-in-vm-cache>  
 <pages-wired-down> <pages-free> <bytes-per-page> <total-name-lookups> <positive-cache-hits>  
 <negative-cache-hits> <pass2> <cache-deletions> <cache-falsehits> <toolong> <vmstat-intr>  
 <vmstat-intr-info> <intr-name> <intr-cnt> <intr-rate> <vm-kernel-state> <vm-kmem-map-free>  
[PR1429639](#)

- It takes up to 600s in QFX5220-128C for interfaces to come up after reboot when all ports are channelized. The time taken is around 520 without channelization of interfaces. The higher time is due to the time taken to download firmware to all 64 dies [PR1433083](#)
- The following XML tags are missing in Junos OS Evolved for the show system queues CLI:  
 <queues-statistics> <interface-queues-statistics> <interface-queue> <name> <octets-in-queue>  
 <max-octets-allowed> <packets-in-queue> <max-packets-allowed> <number-of-queue-drops>  
 <protocol-queues-statistics> <protocol-queue> [PR1433449](#)
- While doing channelization (4x25G or 4x10G) with only the following config (for example): # "set chassis fpc 0 pic 0 port 20 speed 25g number-of-sub-ports 4", only ONE sub-channel IFD will be created which is "et-0/0/20:0". Rest of the sub-channel IFDs will NOT be created. And also no ERROR is shown.  
[PR1433586](#)
- After dechannelization/channelization of 100G to 25G, one interface remains in the down state.  
[PR1434534](#)
- While doing channelization, with 1st committing the "channelized" config of port and then followed by "unused" config on subsequent ports, the sub-channel IFDs might stay down. For example: IF FOR channelization (4x25G or 4x10G) on port 20 with the following config done 1st: # set chassis fpc 0 pic 0 port 20 speed 25g number-of-sub-ports 4 # commit AND THEN followed by the "unused" config on sub-sequent ports like below: # set chassis fpc 0 pic 0 port 21 unused # set chassis fpc 0 pic 0 port 22 unused # set chassis fpc 0 pic 0 port 23 unused # commit THEN , the sub-channel IFDs might stay down.  
[PR1434584](#)
- TrafficControlProfile could trigger code dump, this is unsupported feature. [PR1437319](#)
- 40G interface stays down after configuring the correct speed when the very next port has 100G optics/DAC plugged in. And after the reboot the same 40G link comes UP and the 100G link goes down.  
[PR1437700](#)
- With unknown unicast traffic is transmitted from all the ports at line rate totaling 12.8 TBPS for system , packet drops are expected till frame size 1200 bytes. [PR1441632](#)
- SW to update [PR1446214](#)
- interfaces will disappear if configure interfaces speed as 25g and interface will remain (but not disappear) if config the speed as 40g. [PR1447775](#)
- evo-pfemand application utilises 100% CPU for 10-15 mins when evo-pfemand app is restarted with channelized configuration , during this time few of the cli command o/p might be sluggish . [PR1447849](#)

- channelized interfaces went down with config /delete with unused config in separate or config channelized port without config other 3 ports in block to unused will lead to interface down or missing interface issue. [PR1448451](#)
- QFX5220-128C: Interfaces OIR might take up 50 seconds to come up on 19.2R1 release. [PR1449416](#)

### **General Routing**

- After few triggers we see this core. There wont be any impact to system, ipv6 traffic will restore. Triggers: AE members: delete-add, deactivate-activate, disable-enable AE: delete-add, disable-enable, deactivate-activate clear rsvp, bgp, OSPF, ospf3, arp database, neighbors deactivate-activate protocols restart ifmand , lacpd , configd, pcmd, ndp, ifstatsd, arpd, clear arp, interface stats all MTU change <<< cores observed at this time [PR1449071](#)

### **Infrastructure**

- When USB is plugged in, image is not picked from the USB in the boot-order by default. [PR1399311](#)

### **Multiprotocol Label Switching (MPLS)**

- As Broadcom TH3 chipset has a label space of only 8000, the next-hop scale is limited to approximate 7500. Beyond this next-hop programming may fail and result in traffic drop. [PR1416624](#)

### **Routing Policy and Firewall Filters**

- A mustd core will be seen if filter based GRE decap is configured in the 19.2R1-EVO image. This feature is not supported in 19.2R1-EVO. [PR1443692](#)

### **User Interface and Configuration**

- Junos OS Evolved uses the **request system shutdown (reboot | power-off | halt)** commands. This is different than the Junos commands for same functionality.
- Executing the CLI 'show version and haiku' causes the CLI session to quit abruptly. There is no functional impact to the device. A new CLI session can be started to continue working on the device. [PR1448486](#)

## **Open Issues**

### **IN THIS SECTION**

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Learn about open issues in this release for the QFX5220. For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online [Junos Problem Report Search](#) application.

### **Uncategorized**

- ICMP mib table is not implemented in Junos OS Evolved and as such SNMP walk/get on this table will not yield any values. [PR1378659](#)
- picd and clksyncd apps are not supported for ISSU upgrade on a QFX5220. To upgrade these apps, you need to reboot the system. [PR1423150](#)
- After reboot, fan trays are not detected on the system if plugged in before 72 seconds. [PR1426298](#)
- Arp learning rate is below expected rate of 500 in 19.2R1-EVO release. Enhancements in software to improve the learning will be available in next software releases. [PR1428483](#)
- Linux kernel has this property, where if on an interface, if the primary IP is deleted, the secondary addresses get flushed. Sysctl is available to toggle this behavior, and promote the secondary addresses. [PR1429460](#)
- The following XML tags are missing in Junos OS Evolved for the show pfe statistics traffic CLI:  
 <pfe-fabric-input> <pfe-fabric-input-pps> <pfe-fabric-output> <pfe-fabric-output-pps>  
 <tcp-header-error-discard> [PR1430821](#)
- On the QFX5220 switch, LLDP neighbours are not formed if the interface does not have a family configuration associated with it. For example, the statement "set interface ge-0/0/0 unit 0" alone is not enough to have LLDP neighbours. The family configuration is also required. "set interface ge-0/0/0 unit 0 family inet" or "set interface ge-0/0/0 unit 0 family ethernet-switching" [PR1433295](#)
- Additional and missing XML tags for Junos OS Evolved need to be documented. [PR1433459](#)
- There are differences in xml tags for "show system storage" compared to Junos. [PR1438092](#)
- There are differences in xml tags for "show system uptime" compared to Junos. [PR1438094](#)
- Sapphire-128c: REV marked as "EV" or "V" with missing letters in show chassis hardware for QSFP28-100G-CU1M 740-061000 [PR1439926](#)
- QFX5220-128C: The channelization ports might be marked as down or missing with rapid add/delete configuration multiple times on the interface. To fix the issue, configure all whole block 4 ports to unused and delete the unused ports. This should bring up the interfaces. [PR1442657](#)
- Intermittently one or more channelized interfaces may not come up after a reboot. [PR1446755](#)

- packets might get dropped or delayed for few minutes , counter might displayed as negative time in ping result after Insert optics or deleted unused commands... [PR1450255](#)
- "show interfaces statistics" doesn't show updated FEC stats. Ethernet FEC Mode and all Ethernet FEC statistics show default values. [PR1450948](#)

### ***Authentication and Access Control***

- The CLI "show system login lockout" will not display the locked out users. There is no functional impact. [PR1175430](#)

### ***Class of Service (COS)***

- Validation checks will not be considered for Default Forwarding Class with no-loss config [PR1439282](#)
- For the QFX5220-128C (L2 COS) and the PTX10003-160C (25 G), the "show class-of-service code-point-aliases <name>" command doesn't display the specific code-point-alias name requested in the command. Instead, it displays all the code-point-aliases details. [PR1443930](#)
- For the QFX5220-128C (L2 COS) and the PTX10003-160C (25 G), the "show class-of-service rewrite-rule type <type-name>" commands also display other rewrite types (just the rule name in one line). [PR1444174](#)

### ***General Routing***

- The Junos OS Evolved output for the CLI "show LLDP neighbors" is different than in Junos OS. Some of the XML tags for the CLI "show lldp neighbors interface" and "show lldp" are missing. [PR1430795](#)

### ***Infrastructure***

- The following XML tags are missing in Junos OS Evolved for the show route forwarding-table CLI: <address-family>, <enabled-protocols>, <to>. [PR1429413](#)

### ***Interfaces and Chassis***

- The show chassis in-service-upgrade and show chassis nonstop-upgrade cli commands are not applicable to this Junos Evolved release. [PR1425575](#)
- For any event of DC PSM insertion or removal , snmp traps are not getting recorded [PR1450037](#)



### **Routing Protocols**

- QFX5220 supports 200 GRE ifl interfaces in this release. The scale will be uplifted to 2000 in upcoming releases. [PR1418278](#)

### **Software Installation and Upgrade**

- There are differences in the xml tags for the cli "show version" as compared to Junos. [PR1429640](#)

## **Resolved Issues**

### **IN THIS SECTION**

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Learn which issues were resolved in Junos OS Evolved Release 19.2R1 for the QFX5220.

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

### **Uncategorized**

- PCEP configuration and operational commands are visible in Junos OS Evolved Release 19.1R1 profile image but are not supported. [PR1387980](#)
- 100G PSM4 optics are not supported in this release [PR1406553](#)
- Traffic on ports may fail if you change the port speed or offline/online the PIC while traffic flowing through the ports. To recover, reboot the box. [PR1416639](#)
- As per MSA standards, link training needs to be enabled and that is reason behind link between Spirent and QFX5220-32CD is not UP. [PR1417749](#)
- "Queues in use:" CLI output always shows the value as 8 when the CLI command "show interfaces queue" is executed. [PR1421176](#)
- If the SSH session under which 'monitor interface traffic' is being run is stopped, the iftop utility will stay at 100% CPU utilization. [PR1426069](#)

- When physical links were removed and plugged back in immediately under a sec, there is intermittent chance that link might not be UP. [PR1426541](#)
- sflowd core seen when few interface related operations are performed. [PR1426902](#)
- ZTP file transfer will fail when using an FTP server that requires binary transfer mode to be explicitly defined, such as ProFTP. [PR1432727](#)
- The 40G/100G ports (inserted 40G into even port and inserted the following (odd) port into 100G) might be marked as down internally with rapid add/delete configuration multiple times on the interface. To fix the issue, configure both 40G/100G ports or all whole block 4 ports to unused and delete the unused port configuration. This should bring up the interfaces. An alternative workaround is to reboot the system, to recover the links to proper state. [PR1442654](#)
- In dual stack mode(IPv4 and IPv6) configuration, separate MTU for IPv4 family and IPv6 family is not supported by platform. Customer need to configure same MTU for both IPv4 and IPv6, if not using default MTU. [PR1447183](#)

### **Network Management and Monitoring**

- Querying for entPhysicalEntryTable may result in an snmp-subagent crash. [PR1425253](#)

### **Routing Policy and Firewall Filters**

- This is new CLI. set firewall family ethernet-switching filter <filter-name> term <term-name> from source-port-match-optimize <port> set firewall family ethernet-switching filter <filter-name> term <term-name> from destination-port-match-optimize <port> Please document this [PR1395131](#)

### **Routing Protocols**

- the command "show pfe route summary" is not supported [PR1405448](#)

### **Software Installation and Upgrade**

- When software upgrade is performed wherein a set of components get upgraded, the customer may potentially notice that the versions of some other components change across the upgrade even though they were not really upgraded. There is no functional impact here and the the components that did not get upgraded for which the versions show up as changed, wont be impacted during the upgrade process. [PR1422573](#)

### **User Interface and Configuration**

- set date/time should invoke ntpdate to set the system time. ntpdate should be customized to work with Junos OS Evolved. [PR1397699](#)
- Huge cmd daemon anomalies seen when system is stressed with multiple events and when OCST is being used. [PR1424050](#)
- Configd core is seen sometimes when MTU configuration is changed on the AE interface. [PR1424326](#)
- IP is not getting assigned to the interface after delete and add interface [PR1424442](#)

# Upgrade Your Junos OS Evolved Software

Products impacted: PTX10003, QFX5220-32CD, QFX5220-128C.

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 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:** Download the Services Profile 1 image to use the lean rpd profile.

For more information about the types of Junos OS installation package prefixes, see [Installation Packages Prefixes](#).

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](#).

For more information about EOL releases and to review a list of EOL releases, see <https://support.juniper.net/support/eol/software/junosevo/>.

## Finding More Information

Learn about more information on Junos OS Evolved and other Juniper products.

- Feature Explorer—The Juniper Networks Feature Explorer is a Web-based app that helps you to explore and compare Junos OS and Junos OS Evolved feature information to find the right software release and hardware platform for your network. <https://pathfinder.juniper.net/feature-explorer/>
- PR Search Tool—Keep track of the latest and additional information about Junos OS Evolved open defects and issues resolved. [prsearch.juniper.net](https://prsearch.juniper.net)
- Hardware Compatibility Tool—Determine optical interfaces and transceivers supported across all platforms. [apps.juniper.net/hct/home](https://apps.juniper.net/hct/home)

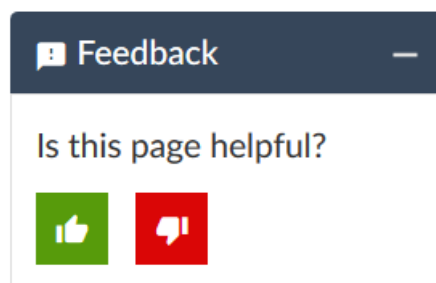
**NOTE:** To obtain information about the components that are supported on the devices, and the special compatibility guidelines with the release, see the Hardware Guide for the product.

- Juniper Networks Compliance Advisor—Review regulatory compliance information about Common Criteria, FIPS, Homologation, RoHS2, and USGv6 for Juniper Networks products. [apps.juniper.net/compliance/](https://apps.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

Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active J-Care or Partner Support Service 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 <http://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://kb.juniper.net/>
- 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://kb.juniper.net/InfoCenter/>
- Join and participate in the Juniper Networks Community Forum: <https://www.juniper.net/company/communities/>
- Create a service request online: <https://myjuniper.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://myjuniper.juniper.net>.
- 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

30 July 2020—Revision 7, Junos OS Evolved Release 19.2.R1 for the PTX10003 and QFX5220 Devices.

16 July 2020—Revision 6, Junos OS Evolved Release 19.2.R1 for the PTX10003 and QFX5220 Devices.

14 May 2020—Revision 5, Junos OS Evolved Release 19.2.R1 for the PTX10003 and QFX5220 Devices.

18 December 2019—Revision 4, Junos OS Evolved Release 19.2.R1 for the PTX10003 and QFX5220 Devices, added feature description for Junos OS Evolved and filter on loopback.

21 November 2019—Revision 3, Junos OS Evolved Release 19.2.R1 for the PTX10003 and QFX5220 Devices, added a few feature descriptions.

1 October 2019—Revision 2, Junos OS Evolved Release 19.2.R1 for the PTX10003 and QFX5220 Devices, fixed broken links.

1 August 2019—Revision 1, Junos OS Evolved Release 19.2.R1 for the PTX10003 and QFX5220 Devices.

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