Release Notes

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Junos OS Evolved Release 23.4X100-D20

Introduction

Use these release notes to find new features, software limitations, and open issues for Junos OS Evolved Release 23.4X100-D20.

For more information on this release of Junos OS Evolved, see Introducing Junos OS Evolved.

NOTE: Junos OS Evolved 23.4X100-D20 is a controlled release available only on the following platforms:

- QFX5220-32CD or 128C
- QFX5230-64CD
- QFX5240-OD or QFX5240-QD

If you are looking for this release, contact your Juniper Networks Account Team for more information.

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Junos OS Evolved Release Notes for QFX Series

IN THIS SECTION

These release notes accompany Junos OS Evolved Release 23.4X100-D20 for QFX5220-32CD, QFX5220-128C, QFX5230-64CD, QFX5240-OD, and QFX5240-QD switches. They describe new and changed features, limitations, and known and resolved problems in the hardware and software.

What's New

IN THIS SECTION

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

Authentication and Access Control

- **802.1X support with ISSU (QFX5240-64OD and QFX5240-64QD)** —Starting in Junos OS Evolved Release 23.4X100-D20, we support 802.1x authentication with unified in-service software upgrade

(ISSU). With this feature, you can upgrade between two different Junos OS releases with minimal disruption on the control plane and the traffic .

[See 802.1X Authentication.]

Chassis

- **Supported transceivers, optical interfaces, and DAC cables (QFX5240-64OD and QFX5240-64QD)**—Select your product in the Hardware Compatibility Tool to view the supported transceivers, optical interfaces, and direct attach copper (DAC) cables for your platform or interface module. We update the HCT and provide the first supported release information when the optic becomes available.

Forwarding Options

- **Forwarding mode support (QFX5130, QFX5220, QFX5230-64CD, QFX5240, and QFX5700)**—Starting in Junos OS Evolved Release 23.4X100-D20, we support configuring forwarding mode. By default, packets are forwarded using store-and-forward mode. You can configure all the interfaces to use cut-through mode instead.

  [See Configuring Forwarding Mode on Switches.]

Platform and Infrastructure

- **NIST media sanitization support for NVMe disks (QFX5240-64OD and QFX5240-64QD)**—Starting in Junos OS Evolved Release 23.4X100-D20, we've extended NIST media sanitization support to NVMe solid-state drives (SSDs) to sanitize the drives using:

  - Cryptographic scramble, block erase, and NVMe format with user data erase priorities for the purge method.
  - NVMe format priority for the clear method.

  For example, you can use this high level of data destruction when you pull a device from production. To maintain data security, you want to sanitize any drives in the device before it leaves your premises. The *NIST Special Publication 800-88* specifies the priority levels for sanitizing drives. In Junos OS Evolved, you sanitize an NVMe drive using the `request system zeroize` command. The sanitization process starts at the highest NIST sanitization priority level that the drive supports. If that attempt fails, the process uses the method associated with the next lowest NIST priority level, and so on, until the drive is sanitized either using one of the NIST methods or using the Linux `dd` command.

  [See NIST Special Publication 800-88, Guidelines for Media Sanitization.]

Additional Features

We have extended support for the following features to the platforms shown in parentheses:

- **Support for EVPN-VXLAN Layer 2 gateway** (QFX5240-64OD and QFX5240-64QD):
  - Multihoming
  - Address Resolution Protocol (ARP) suppression
  - Layer 3 IPv4 underlay with integrated routing and bridging (IRB) and LAG
  - Core isolation
  - Broadcast, unknown unicast, and multicast (BUM) traffic forwarding by ingress replication only
  - MAC move limits

  [See Understanding EVPN with VXLAN Data Plane Encapsulation, EVPN Proxy Arp and Arp Suppression, and Proxy NDP and NDP Suppression, IP Fabric Underlay Network Design and Implementation, overlay-ecmp, Edge-Routed Bridging Overlay Design and Implementation, Layer 2 Interface Status Tracking and Shutdown Actions for EVPN Core Isolation Conditions, and mac-move-limit.]

- **Support for EVPN-VXLAN Layer 3 gateway** (QFX5230-64CD, QFX5240-64OD, and QFX5240-64QD):
  - Layer 3 VXLAN gateway in edge-routed bridging fabric
  - Up to 256 integrated routing and bridging (IRB)-enabled VLANs
  - Layer 3 underlay that supports IRB and LAG
  - ECMP in the underlay
  - IPv4 and IPv6 virtual gateway MAC address support for IRB interfaces
  - In-service software upgrade (ISSU) for Layer 3 gateway functionality

  [See Understanding EVPN with VXLAN Data Plane Encapsulation, Example: Configuring an EVPN-VXLAN Edge-Routed Bridging Fabric with a Virtual Gateway, Understanding the MAC Addresses For a Default Virtual Gateway in an EVPN-VXLAN or EVPN-MPLS Overlay Network, and IP Fabric Underlay Network Design and Implementation.]

- **Support for EVPN-VXLAN Type 5 stitching** (QFX5230-64CD, QFX5240-64OD, and QFX5240-64QD):
  - Overlay and underlay ECMP
  - Type 5 stitching

- Type 2 and Type 5 route coexistence
- Symmetric integrated routing and bridging (IRB)
- In-service software upgrade (ISSU)

[See Understanding EVPN with VXLAN Data Plane Encapsulation, IP Fabric Underlay Network Design and Implementation, overlay-ecmp, Understanding EVPN Type 5 Routes, EVPN Type 2 and Type 5 Route Coexistence with EVPN-VXLAN, NSR and Unified ISSU Support for EVPN, and irb-symmetric-routing.]

- **Support for CoS, and firewall filtering and policing on EVPN-VXLAN network** (QFX5240-64OD and QFX5240-64QD)

  [See CoS Support on EVPN VXLANs, and Firewall Filter Match Conditions and Actions (QFX and EX Series Switches).]

- **Support for port mirroring and analyzers over the Ethernet switching interface on EVPN-VXLAN network** (QFX5240-64OD and QFX5240-64QD)

  [See Port Mirroring and Analyzers in an EVPN-VXLAN Environment.]

- **Support for port-level sFlow monitoring technology on EVPN-VXLAN network** (QFX5240-64OD and QFX5240-64QD)

  [See Overview of sFlow Technology.]

What's Changed

There are no changes in behavior and syntax in this release for QFX Series switches.

Known Limitations

IN THIS SECTION

Learn about known limitations in Junos OS Evolved Release 23.4X100-D20 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

- When a VXLAN encapsulated IP packet, or an IP packet with UDP port matching the VXLAN UDP port, is received on a vlan-tagging enabled interface, the switch drops the frame. This issue is not seen if the incoming port is an untagged interface, or if the interface is actually doing VXLAN encap/decap operations. In such cases, the device forwards the frame correctly.PR1805922

- IPv4 or IPv6 reserved multicast and L2 multicast traffic received over VXLAN access port is flooded out of all ports of the VXLAN except vtep. PR1811158

- On Junos OS Evolved QFX5000 platforms when PFC watchdog configured with detection parameter as 1, there is possibility of false detection of PFC storm. This is happening due to timer design of underlying hardware. PR1824104

- The PFC watchdog can be triggered when it is set with a very low detection timer value, like 4 ms, while continuously receiving PFC XOFF frames from the peer device. On the peer device, two different priorities have been configured for PFC. One priority has a very high PFC XON offset (greater than 10,000), while the other priority uses the default PFC XON offset (20).

  As part of the PFC feature, BCM supports a PFC refresh functionality. When a priority experiences congestion and the current buffer utilization exceeds the PFC XOFF threshold, a PFC XOFF frame is sent. If the buffer utilization does not fall back to the PFC XON threshold within the default PFC refresh time, the port will generate a new PFC XOFF refresh frame to the peer device. For a 100G port, the default refresh time is 262 microseconds. This is why multiple PFC XOFF frames may be observed before a PFC XON frame is sent.

  This behavior is expected for the priority with the higher XON offset. However, due to hardware design limitations, the PFC refresh timer operates on a per-port basis. Therefore, when the per-port PFC refresh timer expires, the port triggers PFC refresh XOFF frames for all priorities that are in the XOFF state at that time. The hardware cannot distinguish which priority's refresh timer has expired. As a result, even for a priority with the default XON offset, multiple refresh XOFF frames may be sent continuously due to the expiration of the port-level PFC refresh timer. This could cause the peer device to detect a PFC storm for that priority as well. Since this is a hardware limitation, it cannot be resolved. Aside from the continuous XOFF frames that may trigger PFC watchdog detection on the peer, there are no other functional impacts due to this design.

  The recommendation is that if a user sets a very high XON offset for any priority on a port, which could lead to PFC refresh timer expiry and continuous XOFFs, the peer device should be configured with a longer PFC watchdog detection timer. For instance, if a PFC XON offset of 10,000 is set for a priority, the peer device should have a PFC watchdog detection timer of at least 10 ms. PR1833562

Open Issues

IN THIS SECTION

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 QFX5230 and QFX5240 switches, configuring the `native-vlan-id` stanza on a trunk port results in traffic egressing as untagged for all the vlans. If this CLI is not configured, the correct vlan tags are sent for tagged traffic, however, access traffic arriving on the port is discarded. PR1827669
- On the QFX5230 and QFX5240 platforms, host injected control protocol frames are accounted under the egress port's best-effort queue (Q0 by default) even though they are sent on the network control queue. This is only a display issue of the show command output and does not affect the actual prioritization of traffic. PR1835046
- When PFE is 100% busy with workloads, some show CLI commands timeout with an error message and some CLIs silently exit without any error. The following commands might return empty output when PFE is 100% busy:
  - show pfe filter hw
  - show pfe
  - show forwarding-options hash-key
  - show forwarding-options enhanced-hash-key

  PR1836490
- Junos OS Evolved Packet Forwarding Engine cores might be observed on doing configuration changes and restarting pfe process within a short period of time. PR1844123
- For EVPN-VXLAN fabric, the base/from build for unified ISSU is 23.4X100-D20. System might go in a cold boot state if unified ISSU is done from a build prior to 23.4X100-D20 if the `set system packet-forwarding-options overlay` hierarchy is configured. PR1844692

- In a large scaled VXLAN fabric involving more than 200 Vteps and more than 64K MACs, partition mode settings (set system forwarding-options overlay <> ") result in a Packet Forwarding Engine restart which results in large number of BD, VENH and flood NH delete events which takes time. Customer should include profile and partition mode settings in the default configuration itself instead of switching to and from baseline configuration to avoid this issue. PR1845230

Resolved Issues

IN THIS SECTION

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.

Class of Service (CoS)

- QFX5000 Junos OS Evolved switches support ECN-marked packet counters. One at the Interface level and another at the Queue level. Even though the packet is already ECN-CE, if it undergoes congestion it is accounted under Queue counters, and the same is not accounted under `show interface extensive`.

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/

Requesting Technical Support

IN THIS SECTION

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/content/dam/www/assets/resource-guides/us/en/jtac-user-guide.pdf.
- Product warranties—For product warranty information, visit https://support.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://support.juniper.net/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://support.juniper.net/support/downloads/
- 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

6 November 2024—Revision 2, Junos OS Evolved Release 23.4X100-D20

28 October 2024—Revision 1, Junos OS Evolved Release 23.4X100-D20