Release Notes: Junos® OS Release 18.4R3 for the ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion

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Contents

Introduction

Junos OS runs on the following Juniper Networks® hardware: ACX Series, EX Series, M Series, MX Series, NFX Series, PTX Series, QFabric systems, QFX Series, SRX Series, T Series, and Junos Fusion.

These release notes accompany Junos OS Release 18.4R3 for the ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion. They describe new and changed features, limitations, and known and resolved problems in the hardware and software.

> **NOTE:** The recommended release for Junos Fusion Data Center is 18.1R2-S2. The subsequent 18.xRx mainline releases (18.2, 18.3, and 18.4) do not support Junos Fusion Data Center.

Junos OS Release Notes for ACX Series

IN THIS SECTION

These release notes accompany Junos OS Release 18.4R3 for the ACX Series. They describe new and changed features, limitations, and known and resolved problems in the hardware and software.

You can also find these release notes on the Juniper Networks Junos OS Documentation webpage, located at https://www.juniper.net/documentation/product/en_US/junos-os.

New and Changed Features

IN THIS SECTION

This section describes the features and enhancements in Junos OS Release 18.4R3 for ACX Series Universal Metro Routers.

New and Changed Features: 18.4R3

There are no new features or enhancements to existing features for ACX Series in Junos OS Release 18.4R3.

New and Changed Features: 18.4R2

Interfaces and Chassis

- **Support for 100-Mbps and 1-Gbps speeds on Tri-Rate Copper SFP (ACX5448)**—In Junos OS Release 18.4R2, ACX5448 routers support 100-Mbps and 1-Gbps speeds on Tri-Rate Copper SFP optics (740-013111). Note that 100-Mbps speed is supported only from ports xe-0/0/24 through xe-0/0/47.

  > **NOTE:** 10-Mbps speed is not supported on Tri-Rate Copper SFP transceivers due to hardware limitations.
  >
  > - To set the speed for the optics, issue the **set interfaces *interface-name* speed auto** command. See speed for more details.
  > - To enable autonegotiation, issue the **set interfaces *interface-name* gigether-options auto-negotiation** command. See auto-negotiation.

Software Installation and Upgrade

- **Zero Touch Provisioning (ACX5448)**—Starting in Junos OS Release 18.4R2, Zero Touch Provisioning (ZTP) automates the provisioning of the device configuration and software image with minimal manual intervention on management interface **em0**.

  When you physically connect a router to the network and boot it with a factory configuration, the router upgrades the Junos OS software image automatically and autoinstalls configuration file from the network through the management interface.

Timing and Synchronization

- **Transparent clock over IPv6 support (ACX5448)**—Starting with Junos OS Release 18.4R2, ACX5448 routers support transparent clock functionality for PTP over IPv6.

  To configure the transparent clock functionality, you must include the **e2e-transparent** statement at the **[edit protocol ptp]** hierarchy level.

  Use the **show ptp global-information** command to check the status of the transparent clock functionality configured on the router.

  [See Understanding Transparent Clocks in Precision Time Protocol.]

New and Changed Features: 18.4R1

Authentication, Authorizing, and Accounting (AAA)

- **Support for password change policy enhancement (ACX Series)**—Starting in Junos OS Release 18.4R1, the Junos OS password change policy for local user accounts is enhanced to comply with additional password policies. As part of the policy improvement, you can configure the following:

- **maximum-lifetime-value**—The maximum duration of a password. The password expires after the maximum is reached.
- **minimum-lifetime-value**—The minimum duration of a password. You cannot change the password until the minimum duration is reached.

[See password.]

Interfaces and Chassis

- **Multichassis link aggregation groups, configuration synchronization, and configuration consistency check (MC-LAG) (ACX5448 routers)**—Starting in Junos OS Release 18.4R1, MC-LAG enables a client device to form a logical LAG interface using two switches. MC-LAG provides redundancy and load balancing between the two switches, multihoming support, and a loop-free Layer 2 network without running spanning tree protocols (STP).

  [See Multichassis Link Aggregation Features, Terms, and Best Practices .]

MPLS

- **Support for topology independent loop-free alternate (TI-LFA) for IS-IS, advertising MPLS labels (ISIS, OSPF), and configuring SRGB for SPRING (ISIS, OSPF) (ACX5448)**—Starting with Junos OS Release 18.4R1, ACX5448 router support topology independent (TI)-loop-free alternate (LFA), advertise MPLS labels (ISIS, OSPF), and segment routing global block (SRGB) for SPRING (ISIS, OSPF).

  Topology independent (TI)-loop-free alternate (LFA) with segment routing provides fast reroute (FRR) backup paths corresponding to the post-convergence path for a given failure. You can enable TI-LFA for IS-IS by configuring **use-post-convergence-lfa** statement at the **[edit protocols isis backup-spf-options]** hierarchy level.

  You can configure SRGB range label used by source packet routing in networking (SPRING). The labels from this SRGB range is used for SPRING in IS-IS domain. This way the labels advertised in the segment routing is more predictable and deterministic across the segment routing domain.

  - To configure the starting index value of the SRGB label block, use the **start-label *start-label-block-value*** statement at the **[edit protocols isis source-packet-routing srgb]** hierarchy level.
  - To configure the index range of the SRGB label block, use the **index-range *value*** configuration statement at the **[edit protocols isis source-packet-routing srgb]** hierarchy level.

  ACX5448 router supports IS-IS and OSPF segment routing enabled through MPLS. IS-IS and OSPF creates an adjacency segment per IS-IS and OSPF neighbor, for a given interface, adjacency, and area. A separate MPLS label is allocated for each adjacency segment created.

  To configure OSPF segment routing, use the following configuration statements at the **[edit protocols ospf]** hierarchy level:

  - **source-packet-routing**—Enable the source packet routing feature.
  - **node-segment**—Enable the node segment.

To configure IS-IS segment routing, use the following configuration statements at the **[edit protocols isis]** hierarchy level:

- **source-packet-routing**—Enable the source packet routing feature.
- **node-segment**—Enable source packet routing at all levels.

[See Understanding Topology-Independent Loop-Free Alternate with Segment Routing for IS-IS, Understanding Source Packet Routing in Networking (SPRING), and source-packet-routing (Protocols IS-IS and OSPF).]

Platform and Infrastructure

- **DMA recovery mechanism (ACX Series)**—A recovery mechanism has been introduced that is triggered in case the router enters an Idle state on any DMA channels. The recovery mechanism reboots the PFE to recover from Idle state.

  The following recovery message is logged in the RE syslog message:

  ```
  CHASSISD_FPC_ASIC_ERROR: <FPC 0> ASIC Error detected errorno 0x0000ffff FPC
  restart initiated
  ```

  The following recovery message is logged in the PFE syslog message:

  ```
  BCM DMA channel error detected
  Resetting the PFE
  ```

Routing Protocols

- **Metro Ethernet services over segment routing infrastructure (ACX5448 routers)**—Starting with Junos OS Release 18.4R1, Metro Ethernet services are supported over a segment routing infrastructure.

  The following features are supported or can be configured:

  - IPv4 OSPF segment routing enabled through MPLS.
  - IS-IS segment routing enabled through MPLS.
  - Segment routing global block (SRGB) range label, which is used by Source Packet Routing in Networking (SPRING).
  - Anycast segment identifiers (SIDs) and prefix SIDs in SPRING are supported.
  - Topology independent loop-free alternate (TI-LFA) with segment routing, which provides fast reroute (FRR) backup paths corresponding to the post-convergence path for a given failure.

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

Timing and Synchronization

- **Support for PTP boundary clocks for phase and time synchronization (ACX5448)**—Starting with Junos OS Release 18.4R1, ACX5448 routers support PTP boundary clocks for phase and time synchronization using IEEE-1588 Precision Timing Protocol (PTP). This feature also supports:
  - PTP over IPv4 (IEEE-1588v2)
  - PTP ordinary and boundary clocks
  - One-step clock mode operation for the PTP master clock
  - 10-MHz and 1-PPS output for measurement purpose

  All PTP packets use the best-effort queue instead of the network control queue.

  The ACX5448 router does not support the following features:

  - Hybrid mode
  - Boundary clock performance complying with G.8273.2
  - Dual-tagged PTP over IPv4

  [See IEEE 1588v2 PTP Boundary Clock Overview.]

VPNs

- **Support to control traceroute over Layer 3 VPN (ACX Series)**—Starting in Junos OS Release 18.4R1, in a Layer 3 VPN topology with **vrf-table-label** configured and multiple customer edge (CE) routers configured in the same VPN routing and forwarding (VRF) routing instance, when traceroute is performed to a remote provider edge (PE) router for a CE-facing network, the ICMP time exceeded packet determines the correct IP address as the source address.

  To control the traceroute over Layer 3 VPN topology with vrf-table-label configured and multiple CE routers configured in the same VRF, you can configure **allow-l3vpn-traceroute-src-select** at the**[edit system]** hierarchy level that determines the correct IP source address by reviewing the destination routing instance and destination IP address.

  [See allow-l3vpn-traceroute-src-select.]

SEE ALSO

Changes in Behavior and Syntax | 17

Known Behavior | 20

Changes in Behavior and Syntax

IN THIS SECTION

This section lists the changes in behavior of Junos OS features and changes in the syntax of Junos OS statements and commands from Junos OS Release 18.4R3 for the ACX Series routers.

Changes in Behavior and Syntax: 18.4R3

IN THIS SECTION

Interfaces and Chassis

- **Support for disabling RS-FEC (ACX6360-OX)**—By default, Junos OS enables or disables forward error correction based on plugged-in optics. Starting with Junos OS Release 18.4R3, on ACX6360-OX transponders, you can now disable Ethernet FEC, also known as RS-FEC or FEC91. In releases before Junos OS Release 18.4R3, RS-FEC is enabled by default and cannot be disabled.

  [See fec.]

Routing Protocols

- **Advertising /32 secondary loopback addresses to traffic engineering database as prefixes (ACX Series, EX Series, MX Series, PTX Series, QFX Series, and SRX Series)**—We've made changes to export multiple loopback addresses to the lsdist.0 and lsdist.1 routing tables as prefixes. This eliminates the issue of advertising secondary loopback addresses as router IDs instead of prefixes. In earlier releases, multiple secondary loopback addresses in the traffic engineering database were added to the lsdist.0 and lsdist.1 routing tables as part of node characteristics and advertised them as the router ID.

Changes in Behavior and Syntax: 18.4R2

IN THIS SECTION

Interfaces and Chassis

- **Support for creating layer 2 logical interface independently (ACX Series, EX Series, MX Series, PTX Series, and QFX Series)**—In Junos OS Releases 18.4R1, 18.4R2 and later, ACX Series routers support creating Layer 2 logical interfaces independent of the Layer 2 routing-instance type. That is, you can configure and commit the Layer 2 logical interfaces separately and add the interfaces to the bridge domain or Ethernet VPN (EVPN) routing instance separately. Note that the Layer 2 logical interfaces work fine only when they are added to the bridge domain or EVPN routing instance.

  In earlier Junos OS releases, when you use a Layer 2 logical interface configuration (units with **encapsulation vlan-bridge** configuration), then you must add the logical interface as part of a bridge domain or EVPN routing instance for the commit to succeed.

Operation, Administration, and Maintenance (OAM)

- **Performance monitoring history data is lost when a change in number of supported history records is detected (ACX Series and MX Series)**—In Junos OS Release 18.4R2, when Ethernet connectivity fault management starts, it detects the number of history records supported by the existing performance monitoring history database and if there is any change from the number of history records supported (that is, 12) in Release 18.4R2, then the existing performance monitoring history database is cleared and all performance monitoring sessions are restarted with mi-index 1.

Routing Protocols

- **Change in the default behavior of advertise-from-main-vpn-tables configuration statement**—BGP now advertises EVPN routes from the main bgp.evpn .0 table. You can no longer configure BGP to advertise the EVPN routes from the routing instance table. In earlier Junos OS Releases, BGP advertised EVPN routes from the routing instance table by default.

  [See advertise-from-main-vpn-tables.]

Changes in Behavior and Syntax: 18.4R1

IN THIS SECTION

Network Management and Monitoring

- **The NETCONF server omits warnings in RPC replies when the rfc-compliant statement is configured and the operation returns <ok/> (ACX Series)**—Starting in Junos OS Release 18.4R1, when you configure the **rfc-compliant** statement at the **[edit system services netconf]** hierarchy level to enforce certain behaviors by the NETCONF server, the server must not return an RPC reply that encloses both an **<rpc-error>** element and an **<ok/>** element. If the operation is successful, but the server reply would

enclose one or more **<rpc-error>** elements of severity warning in addition to the **<ok/>** element, then the warnings are omitted. In earlier releases, or when the **rfc-compliant** statement is not configured, the NETCONF server might issue an RPC reply that encloses both an **<rpc-error>** element of severity warning and an **<ok/>** element.

- **SNMP customization configuration introduced (ACX Series)**—In Junos OS Release 18.4R1, we have introduced the CLI configuration command **set snmp customization ether-stats-ifd-only**. When **ether-stats-ifd-only** is configured, the **show snmp mib walk etherstatsTable** command displays data only for physical interfaces.

  [See customization (SNMP).]

SEE ALSO

New and Changed Features | 12

Known Behavior | 20

Known Issues | 22

Resolved Issues | 24

Documentation Updates | 30

Migration, Upgrade, and Downgrade Instructions | 30

Known Behavior

IN THIS SECTION

This section lists known behavior, system maximums, and limitations in hardware and software in Junos OS Release 18.4R3 for the ACX Series.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

General Routing

- When Layer 3 packets are classified, DiffServ code points are not preserved but are getting lost at the egress interface because of a chipset limitation. PR1322142
- ARP learning rate is very low. PR1343221
- All PTP packets goes to the best-effort queue instead of Network Control queue. This is because of the limitation on Qumran where DSCP values are not preserved. PR1361315
- ACX6360 Junos telemetry interface or telemetry infrastructure does not support the interface-filtering capability. Therefore, after you enable a particular sensor for telemetry, it is turned on for all the interfaces. PR1371996
- For et-interfaces, only PRE_FEC_SD defect is raised and no OTN alarm is raised. PR1371997
- The CLI **static-cak** command encryption does not work between two ACX-OX transpoder nodes. PR1389802
- For ACX6360 TIC beacon port-range needs to be updated to 0-7 instead of 0-15. PR1399335
- If the user configures an invalid speed configuration on TIC ports (PIC slot 1) on ACX6360-OR/OX, the TIC interfaces are not created. PR1403546
- Junos OS does not perform VLAN IDcheck at egress and VLAN ID check is performed only at ingress. PR1403730
- Single physical interface and logical interface for both ICCP and ICL are not supported on ACX5448 platform. Only in this model, static ARP configuration to peer IRB IP is required. PR1410971
- ACX5448 forwarding-class defaults setup in schema file for ACX5448. Therefore, it is expected to see a firewall process **LIBCOS_COS_** errors are seen while upgrading the devices with latest software image/build when it is attempted to read pvidb db. PR1422284
- On Ethernet bridge, L2 filters might not work as expected when trying to match VLAN-based fields for untagged packets. PR1423214
- Some TPIDs (for example, TPID 9200) are not supported with VLAN-CCC and some of the other features. As these TPIDs are not supported, rewrite is not possible on those TPIDs. PR1433500
- ACX Series routers support only 900 joins of IGMPv3 users per second. PR1448146

Routing Protocols

- When multiple adjacencies are coming-up or flapping, some routes might not have remote-lfa backup next hops. They will appear only after next SPF trigger either manually or through network event. PR1389392

SEE ALSO

Known Issues

IN THIS SECTION

This section lists the known issues in hardware and software in Junos OS Release 18.4R3 for the ACX Series Router.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

General Routing

- Forwarding when using a non-existing SSM map source address in IGMPv3 instead of pruning. PR1126699
- ACX5448: When 1G SFP is plugged in the router, autonegotiation is enabled by default. There is no functional impact. Only the CLI **show interfaces *intf-name* extensive** command will show the autonegotiation field as disabled. PR1343679
- Loopback status is not shown for OT interfaces on CLI (available from vty only). PR1358017

- Dedicated minimum buffers are reserved for some queues according to the Junos OS working model. These buffers are always available to those queues irrespective of the traffic pattern throughout the system. When the **clearing stat** statement is used, these values are visible. This cosmetic or minor issue has no functional impact is seen. PR1367978
- The SD (Signal Degrade) threshold is normally lower than the SF threshold (that is, so that as errors increase, SD condition is encountered first). For the ACX6360 optical links there is no guard code to prevent the user from setting the SD threshold above the SF threshold, which would cause increasing errors to trigger the SF alarm before the SD alarm. This will not cause any issues on systems with correctly provisioned SD/SF thresholds. PR1376869
- Enhancement is needed for FRR BER threshold SNMP support. PR1383303
- On ACX6360 router, Tx power cannot be configured using + sign. PR1383980
- The switchover time observed was more than 50 ms under certain soak test conditions with an increased scale with a multi-protocol multi-router topology. PR1387858
- The ccc logs are not compressed after rotation. PR1398511
- A jnxIfOtnOperState trap notification is sent for all ot-interfaces. PR1406758
- High CPU use for FXPC processes with class-of-service changes on aggregated Ethernet interfaces. PR1407098
- Layer 2 rewrite is happening on regular bridge domain and VLAN interfaces, though there are some service dependencies (VPLS in this case) in which egress interface map table is not updated properly with Layer 2 rewrite map ID that causes rewrite not to be working. PR1414414
- On ACX5448 devices, the zero-touch provisioning (ZTP) process will proceed with image upgrade even in situations when there is a mismatch in platform name of the software image stored on FTP or ZTP servers and the actual platform where the ZTP process is being run. PR1418313
- It is an interoperability issue between ACX5448 router and MX Series router. Configure the speed on remote end before LACP configurations. PR1429106
- Issue is seen when restart routing is triggered in both the MC-LAG peers, which means both the MC LAG peers go down. Also, the issue is seen when there is a burst of traffic due to rapid IGMP joins sent from a Spirent device. These two scenarios are highly unlikey in field/customer site. PR1431935
- Protocols get forwarded when using non-existing SSM map source address in IGMPv3 instead of pruning. PR1435648
- On ACX5448 router, after issuing deactivate/activate **class-of-service**, traffic drop might be seen. PR1436494
- Core file from **dcpfe_pd** can be triggered when IFD detach happens on MACsec enabled interface. IFD detach happens when interface speed changes, Flexible PIC Concentrator (FPC) restarts, or PIC restarts. PR1452275

- It is not possible to form 125,000 IGMP groups with ACX5448 router receiving 125,000 IGMP v2 reports per second. This is a product limitation from BCM and CPU host path queuing model. PR1454465
- Link does not come up when 100-Gigabit Ethernet is channelized to 4x25-Gigabit Ethernet interfaces. PR1479733

SEE ALSO

Resolved Issues

IN THIS SECTION

This section lists the issues fixed in Junos OS 18.4R3 for ACX Series.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Resolved Issues:18.4R3

General Routing

- On ACX5000, an internal error **MacDrainTimeOut and bcm_port_update failed** is observed. PR1284590
- The bcmDPC task is high even though interrupt **START_BY_START** flag set to 0. PR1329656

- The aggregated Ethernet interface with LACP stays down after the router reboots if link-speed is configured. PR1357012
- On ACX Series routers, the LED on a Gigabit Ethernet interface goes down when 10-Mbps speed is configured. PR1385855
- Link Fault Signaling (LFS) is not working on ACX5448 routers with 10-Gigabit Ethernet, 40-Gigabit Ethernet, or 100-Gigabit Ethernet interfaces. PR1401718
- The optic comes with Tx enabled by default. As the port is administratively disabled, the port is stopped but as the port has not been started, it does not disable Tx. PR1411015
- The 40-GIgabit Ethernet FEC on ACX5448 is ON by default. Need to align with MX Series and QFX Series platforms where FEC is NONE. PR1414649
- 96,000 ARPs get populated and only 47,000 next-hop entries are present. So, around 50 percent packet drop is observed. PR1426734
- On ACX5448 devices, up on reboot of an MC_LAG peer, when the peer comes up (but before hardware comes up), there is a 10–20 second traffic hit on node1. PR1430910
- The l2cpd process might crash and generate a core file when interfaces flap. PR1431355
- ACX5448 might malfunction in encapsulating small packets if egress link is 40G/100G. PR1434900
- In ACX Series platforms, **no-vrf-propagate-ttl** might not work after activating or deactivating CoS configuration. PR1435791
- Interface on ACX1100 router remains down when SFP-1FE-FX (740-021487) is used. PR1439384
- On ACX5448 routers, DHCP packets are not transparent over Layer 2 circuit. PR1439518
- On ACX5448 routers, packet buffer error from Packet Forwarding Engine is leading to memory leak when IGMP is sent from NNI AC in L2 circuit and VPLS. PR1442901
- RED drops might be seen after link flaps or CoS configuration changes. PR1443466
- Encapsulation flexible VLAN tagging not supported with MPLS family, need to provide commit ERROR. PR1445046
- On ACX5448 routers, Junos OS Release 18.3R1-S4.1 does not perform proper dot1p CoS rewrite on interfaces configured with **l2circuit/local-switching/family ccc**. PR1445979
- In ACX Series platforms, auto exported route between VRFs might not reply to ICMP echo requests. PR1446043
- Fans on an ACX5448-M might not be running at the correct speed. PR1448884
- On ACX5448 routers, Layer 2 circuit stops forwarding traffic after LDP flap. PR1448899
- The Layer 2 circuit with **backup-neighbor** (hot-standby) configured might stop forwarding traffic after failovers. PR1449681
- An FPC core file might be seen after changing the configuration of PTP/SyncE. PR1451950

- ACX5448 FPC crashed due to segmentation fault. PR1453766
- Enable gigether option to configure Ethernet FEC on client ports. PR1456293
- The ACX5448 Layer 2 VPN with encapsulation type Ethernet stops passing traffic after adding a random port with VLAN configuration. PR1456624
- The traffic might get silently dropped or discarded during link recovery in an open Ethernet access ring with ERPS configured. PR1459446
- On the ACX5000 routers, SNMP MIB walk for jnxOperatingTemp does not return any values for FPC in the new versions. PR1460391
- On ACX Series platform, LLDP neighbor does not recover on a LAG after the software is upgraded to Junos OS Release 18.2R3-S1. PR1461831
- RED drop on interface, no congestion. PR1470619

Class of Service (CoS)

- CoS is incorrectly applied on Packet Forwarding Engine, leading to egress traffic drop. PR1329141
- When the forwarding-class is configured under firewall policer, the dfwd might crash. PR1436894

Interfaces and Chassis

- Upgrading to Junos OS Release 17.4R1 results in generating cfmd process core file. PR1425804

Layer 2 Ethernet Services

- DHCP request might get dropped in a DHCP relay scenario. PR1435039

Platform and Infrastructure

- The REST API process becomes non-responsive when a number of requests come with a high rate. PR1449987

Routing Protocols

- On ACX Series platforms, the loopback address exported into another VRF instance might not work. PR1449410
- MPLS LDP might still use the stale MAC of the neighbor even after the LDP neighbor's MAC changes. PR1451217
- The rpd might crash continuously because of memory corruption in the IS-IS setup. PR1455432

Resolved Issues:18.4R2

Class of Service (CoS)

- Error message **STUCK_BUFF : port_sp not empty for port 35 sp 1 pkts:1** is seen. PR1346452

General Routing

- SNMP MIB walk/get/set on jnxDomCurrentTable and jnxDomNotifications might fail on ACX Series platforms. PR1076943
- The 1-Gigabit copper module interface shows **Link-mode: Half-duplex** on QFX10000 line platforms. PR1286709
- On an ACX Series ring topology, after link between ACX Series and MX Series flap, VPLS RI on PE (MX) have no MAC of CE over l2 circuit. PR1360967
- On ACX5000, **fpc0 (acx_rt_ip_uc_lpm_install:LPM route add failed) Reason : Invalid parameter** error is seen after configuring **lpm-profile**. PR1365034
- On ACX5448, **LIBCOS_COS_TVP_FC_INFO_NOT_FOUND: Forwarding-class information not specified** prints while commit on configuration prompt. PR1376665
- On ACX5448 channelized ET interface of 25-Gigabit interface might not come up after chassis-control restart. PR1379288
- The L2 circuit might stop forwarding traffic when one core interface flap. PR1381487
- On ACX 5448, 100-Gigabit link FEC enabled by default on 100-Gigabit LR4. PR1389518
- On ACX Series platforms the **forwarding-option dhcp-relay forward-only** configuration statement stops working and the DHCP packets are dropped. PR1392261
- On ACX Series, MTU is not properly applied and output of **ping mpls l2circuit sweep** is giving lower values than expected. PR1393947
- On ACX5048, the rpm rfc2544-benchmarking test fails to start. PR1395730
- Error message **ACX_PFE_ERROR: dnx_cfm_bd_endpoint_create: Failed to destroy the remote endpoint, Endpoint id 0x2001001, Entry not found** is logged. PR1397878
- CFM adjacency is not going down with distinct intervals. PR1397883
- Error message **ACX_ASIC_PROGRAMMING_ERROR: dnx_cfm_bd_endpoint_create: Failed to create the local endpoint Invalid parameter** been logged on peer node. PR1397951
- **Output packet error Count** incrementing on 100GE, 40GE ports. PR1398270
- High jsd or na-grpcd CPU usage might be seen even JET or JTI is not used. PR1398398
- Dynamic tunnels are not supported on ACX Series routers. PR1398729
- FPC might crash after offline/online MIC-3D-16CHE1-T1-CE-H. PR1402563
- VLAN tagged traffic arriving on VPLS interface might get dropped. PR1402626

- The ot/et interface is not created when invalid speed is configured. PR1403546
- On ACX 5448, TrTCM policer configuration parameters are as per RFC4115. PR1405798
- **show services inline stateful-firewall flow** or **show services inline stateful-firewall flow extensive**ccommand might cause the memory leak. PR1408982
- ACX Series routers drops DNS responses which contain an underscore. PR1410062
- The aggregated Ethernet interface Twamp history statistics verification on client is not as expected getting **Request Timed Out** error. PR1411344
- VPLS traffic might stop across ACX5000 with the aggregated Ethernet interface. PR1412042
- Junos PCC might reject PCUpdate/PCCreate message if there is metric type other than type 2. PR1412659
- Number of inet-arp policers implemented on ACX 5000 is increased from 16 to 64. PR1413807
- The swap memory does not get initialized on boot on ACX5048. PR1415898
- Commit error while configuring firewall with term having log/syslog and accept actions. PR1417377
- On ACX5448 routers, BFD timer values are not as per the configured 900ms with multiplier 3, its showing 6.000 with multiplier 3 instead for most of the sessions. PR1418680
- CoS table error can sometimes cause traffic outages and SNMP timeouts if the optic is plugged out and inserted back. PR1418696
- Copying images from WAN interface to Routing Engine of ACX5448 takes long time. PR1422544
- The FPC or fxpc crash might be observed on an ACX Series platforms. PR1427362

Interfaces and Chassis

- Upgrading to Junos OS Release 17.4R1 results in generating cfmd process core file. PR1425804

MPLS

- MPLS ingress LSP's for LDP link protection are not coming up after disabling or enabling MPLS. PR1432138

Services Applications

- The spd might crash when **any-ip** is configured in the 'from' clause of the NAT rule with the static translation type. PR1391928

Resolved Issues:18.4R1

General Routing

- Incorrect packet statistics are reported in the ifHCInUcastPkts OID. PR1306656
- ACX Series routers support from dual-tagged through untagged packets Layer 3 traffic. PR1307666
- Port xe-0/3/0 did not come up. PR1328207

- ACX Series routers are incorrectly allowing to configure higher values in **burst-size-limit** than what is supported by the hardware. PR1361482
- ACX Series routers autonegotiation shows incorrect values for link-partner when using SFP-LH or SFP-SX transceivers in combo-ports or SFP ports. PR1362490
- FEC PM error counters are accumulated instead of resetting after bin rollover. PR1363270
- VPLS with **vlan-id-list** is not working properly in some releases when the link between a PE device and a CE device is an aggregated Ethernet interface with a single member link and child physical interface flap. PR1365894
- The **commit** or **commit check** operation might fail because of the error **cannot have lsp-cleanup-timer without lsp-provisioning**. PR1368992
- The fxpc might crash after an interface is changed on ACX5000 routers. PR1378155
- Timestamp is incorrect for BER statistics after clearing. PR1386253
- The **request chassis beacon** CLI command is not working for pic-slot 1 (that is, CFP2 ports). PR1386711
- Certain builds of Junos OS do not allow you to upgrade or commit configuration changes when the SI service interface is used. PR1393729
- ACX Series routers does not support **physical-interface-filter** semantic in egress direction for any filters. It supports **interface-specific** command only. PR1395362
- High jsd or na-grpcd CPU usage might be seen when JET or JTI is not used. PR1398398

Platform and Infrastructure

- On Junos OS, the next-hop index allocation fails and private index space get exhausted through incoming ARP requests to management interface (CVE-2018-0063). PR1360039

SEE ALSO

New and Changed Features | **12**
Changes in Behavior and Syntax | **17**
Known Behavior | **20**
Known Issues | **22**
Documentation Updates | **30**
Migration, Upgrade, and Downgrade Instructions | **30**

Documentation Updates

There are no errata or changes in Junos OS Release 18.4R3 for the ACX Series documentation.

SEE ALSO

Migration, Upgrade, and Downgrade Instructions

IN THIS SECTION

This section contains the upgrade and downgrade support policy for Junos OS for the ACX Series Router. Upgrading or downgrading Junos OS might take several minutes, depending on the size and configuration of the network.

For information about software installation and upgrade, see the Installation and Upgrade Guide.

Upgrade and Downgrade Support Policy for Junos OS Releases

Support for upgrades and downgrades that span more than three Junos OS releases at a time is not provided, except for releases that are designated as Extended End-of-Life (EEOL) releases. EEOL releases provide direct upgrade and downgrade paths—you can upgrade directly from one EEOL release to the next EEOL release even though EEOL releases generally occur in increments beyond three releases.

You can upgrade or downgrade to the EEOL release that occurs directly before or after the currently installed EEOL release, or to two EEOL releases before or after. For example, Junos OS Releases 17.1,

17.2 and 17.3 are EEOL releases. You can upgrade from Junos OS Release 17.1 to Release 17.2 or from Junos OS Release 17.1 to Release 17.3.

You cannot upgrade directly from a non-EEOL release to a release that is more than three releases ahead or behind. To upgrade or downgrade from a non-EEOL release to a release more than three releases before or after, first upgrade to the next EEOL release and then upgrade or downgrade from that EEOL release to your target release.

For more information about EEOL releases and to review a list of EEOL releases, see https://www.juniper.net/support/eol/junos.html.

For information about software installation and upgrade, see the Installation and Upgrade Guide.

SEE ALSO

Junos OS Release Notes for EX Series Switches

IN THIS SECTION

These release notes accompany Junos OS Release 18.4R3 for the EX Series. They describe new and changed features, limitations, and known and resolved problems in the hardware and software.

You can also find these release notes on the Juniper Networks Junos OS Documentation webpage, located at https://www.juniper.net/documentation/product/en_US/junos-os.

New and Changed Features

IN THIS SECTION

This section describes the new features and enhancements to existing features in Junos OS Release 18.4 for the EX Series.

> **NOTE:** The following EX Series switches are supported in Release 18.4R3: EX2300, EX2300-C, EX3400, EX4300, EX4600-40F, EX4650, EX9200, EX9204, EX9208, EX9214, EX9251, and EX9253.

Release 18.4R3 New and Changed Features

There are no new features or enhancements to existing features for EX Series in Junos OS Release 18.4R3.

Release 18.4R2-S3 New and Changed Features

EVPNs

- **Layer 2 and 3 families, encapsulation types, and VXLAN on the same physical interface (EX4600 switches)**—You can configure and commit the following on a physical interface of an EX4600 switch in an EVPN-VXLAN environment:
  - Layer 2 bridging (**family ethernet-switching**) on any logical interface unit number (unit 0 and any nonzero unit number).
  - VXLAN on any logical interface unit number (unit 0 and any nonzero unit number).
  - Layer 2 bridging (**family ethernet-switching** and **encapsulation vlan-bridge**) on different logical interfaces (unit 0 and any nonzero unit number).
  - Layer 3 IPv4 routing (**family inet**) and VXLAN on different logical interfaces (unit 0 and any nonzero unit number).

  For these configurations to be successfully committed and to work properly, you must specify the **encapsulation flexible-ethernet-services** configuration statement at the physical interface level—for example, **set interfaces xe-0/0/5 encapsulation flexible-ethernet-services**.

  [See Understanding Flexible Ethernet Services Support With EVPN-VXLAN.]

Release 18.4R2 New and Changed Features

EVPNs

- **Layer 2 and Layer 3 VXLAN gateways (EX4650 and QFX5120 switches)—**Starting with Junos OS Release 18.4R2, you can deploy EX4650 and QFX5120 switches as follows:
  - As a Layer 2 VXLAN gateway, or a Layer 2 and Layer 3 VXLAN gateway in an EVPN overlay network
  - (QFX5120 switches only) As a Layer 2 or Layer 3 VXLAN gateway in an Open vSwitch Database (OVSDB) overlay network

VXLAN is an overlay technology that allows you to stretch Layer 2 connections over an intervening Layer 3 network by encapsulating (tunneling) Ethernet frames in a VXLAN packet that includes IP addresses. Using VXLANs to connect Layer 2 domains over a Layer 3 network means that you do not need to use the Spanning Tree Protocol (STP) to converge the topology (so no links are blocked) but can use more robust routing protocols in the Layer 3 network instead.

[See Understanding VXLANs.]

- **EVPN control plane and VXLAN data plane support (EX4650 and QFX5120 switches)—**Starting with Junos OS Release 18.4R2, EX4650 and and QFX5120 switches support EVPN-VXLAN. By using a Layer 3 IP-based underlay network coupled with an EVPN-VXLAN overlay network, you can place endpoints anywhere in the network and remain connected to the same logical Layer 2 network.

  EVPN-VXLAN is commonly deployed over the following physical underlay architectures:

  - A two-layer IP fabric that includes spine devices (Layer 3 VXLAN gateways) and leaf devices (Layer 2 VXLAN gateways). You can deploy EX4650 or QFX5120 switches as spine or leaf devices in this fabric.
  - An edge-routed briding overlay, which is a one-layer IP fabric that includes leaf devices that function as both Layer 2 and Layer 3 VXLAN gateways. You can deploy EX4650 or QFX5120 switches as leaf nodes in this fabric.

  [See Understanding EVPN with VXLAN Data Encapsulation.]

- **EVPN pure type-5 route support (EX4650 and QFX5120 switches)—**Starting with Junos OS Release 18.4R2, you can configure pure type-5 routing in an EVPN-VXLAN environment. Pure type-5 routing is used when the Layer 2 domain does not exist at the remote data centers. A pure type-5 route advertises the summary IP prefix and includes a BGP extended community called a router MAC, which is used to carry the MAC address of the sending switch and to provide next-hop reachability for the prefix. To configure pure type-5 routing, include the **ip-prefix-routes advertise direct-nexthop** statement at the **[edit routing-instances routing-instance-name protocols evpn]** hierarchy level. To enable two-level equal-cost multipath (ECMP) next hops in an EVPN-VXLAN overlay network, you must also include the **overlay-ecmp** statement at the **[edit forwarding-options vxlan-routing]** hierarchy level.

  [See ip-prefix-routes.]

- **Features supported on EX4650 and QFX5120 switches—**Starting with Junos OS Release 18.4R2, the following Junos OS features are supported on EX4650 and QFX5120 switches:

  - Automatically generated Ethernet segment identifiers (ESIs) in EVPN-VXLAN and EVPN-MPLS networks.

    [See Understanding Automatically Generated and Assigned ESIs in EVPN Networks.]

  - Firewall filtering and policing on EVPN-VXLAN traffic.

    [See Understanding VXLANs and Overview of Firewall Filters.]

  - Graceful restart on EVPN-VXLAN.

    [See Graceful Restart in EVPN.]

  - IGMPv2 snooping for EVPN-VXLAN in a multihomed environment.

[See Overview of IGMP Snooping in an EVPN-VXLAN Environment.]

- IPv6 data traffic support through an EVPN-VXLAN overlay network.

  [See Routing IPv6 Data Traffic through an EVPN-VXLAN Network with an IPv4 Underlay.]

- Layer 2 and 3 families, encapsulation types, and VXLAN on the same physical interface.

  [See Understanding Flexible Ethernet Services Support with EVPN-VXLAN.]

- MAC limiting, storm control, and port mirroring support in EVPN-VXLAN overlay networks.

  [See MAC Limiting, Storm Control, and Port Mirroring Support in an EVPN-VXLAN Environment.]

- Multihomed proxy advertisement.

  [See EVPN Multihoming Implementation.]

- Selective multicast forwarding and SMET route support in EVPN-VXLAN.

  [See Overview of Selective Multicast Forwarding.]

- Standard class-of-service (CoS) features—classifiers, rewrite rules, and schedulers—are supported on VXLAN interfaces.

  [See Understanding CoS on OVSDB-Managed VXLAN Interfaces.]

- VMTO for ingress traffic.

  [See Ingress Virtual Machine Traffic Optimization.]

Software Defined Networking

- **Layer 2 and Layer 3 VXLAN gateways (EX4650 and QFX5120 switches)—**Starting with Junos OS Release 18.4R2, you can deploy EX4650 and QFX5120 switches as follows:

  - As a Layer 2 VXLAN gateway, or a Layer 2 and Layer 3 VXLAN gateway in an EVPN overlay network
  - (QFX5120 switches only) As a Layer 2 or Layer 3 VXLAN gateway in an Open vSwitch Database (OVSDB) overlay network

  VXLAN is an overlay technology that allows you to stretch Layer 2 connections over an intervening Layer 3 network by encapsulating (tunneling) Ethernet frames in a VXLAN packet that includes IP addresses. Using VXLANs to connect Layer 2 domains over a Layer 3 network means that you do not need to use the Spanning Tree Protocol (STP) to converge the topology (so no links are blocked) but can use more robust routing protocols in the Layer 3 network instead.

[See Understanding VXLANs.]

Release 18.4R1 New and Changed Features

Hardware

- **2-port QSFP+/1-port QSFP28 uplink module for EX4300-48MP and EX4300-48MP-S switches**—Starting with Junos OS Release 18.4R1, EX4300-48MP and EX4300-48MP-S switches support the 2-port QSFP+/1-port QSFP28 uplink module. The 2-port QSFP+/1-port QSFP28 uplink module can house two QSFP+ transceivers or one QSFP28 transceiver.

  [See EX4300 Switch Hardware Guide.]

Authentication, Authorization and Accounting (AAA) (RADIUS)

- **Support for password change policy enhancement (EX Series)**—Starting in Junos OS Release 18.4R1, the Junos OS password change policy for local user accounts is enhanced to comply with additional password policies. As part of the policy improvement, you can configure the following:

  - **maximum-lifetime-value**—The maximum duration of a password. The password expires after the maximum is reached.
  - **minimum-lifetime-value**—The minimum duration of a password. You cannot change the password until the minimum duration is reached.

  [See password.]

EVPNs

- **Support for graceful restart on EVPN-VXLAN (EX9200)**—Starting in Junos OS Release 18.4R1, Junos OS supports graceful restart on EVPN-VXLAN on EX9200 and QFX Series switches and MX Series Routers. Graceful restart allows the device to recover from a routing process restart or Routing Engine switchover without nonstop active routing (NSR) enabled.

  [See NSR and Unified ISSU Support for EVPN Overview.]

- **Support for VMTO for ingress traffic (EX9200)**—Starting in Junos OS Release 18.4R1, you can configure a leaf or spine device that is configured as a Layer 3 gateway to support virtual machine traffic optimization (VMTO) for ingress traffic. VMTO eliminates the unnecessary ingress routing to default gateways when a virtual machine is moved from one data center to another.

  To enable VMTO, configure **remote-ip-host** routes at the **[edit routing-instances routing-*instance-name* protocols evpn]** hierarchy level. You can also filter out the unwanted routes by configuring an import policy under the **remote-ip-host routes** option.

  [See Configuring EVPN Routing Instances.]

- **Support for multihomed proxy advertisement (EX9200)**—Starting in Junos OS Release 18.4R1, Junos OS now provides enhanced support to proxy advertise the MAC address and IP route entry from all leaf devices that are multihomed to a customer edge (CE) device. Using proxy advertisement prevents traffic

loss when one of the connections to the leaf device fails. To support the multihomed proxy advertisement, all multihomed provider edge (PE) devices should have the same multihomed proxy advertisement bit value. The multihomed proxy advertisement feature is enabled by default, and Junos OS uses the default multihomed proxy advertisement bit value of 0x20.

[See EVPN Multihoming Overview.]

- **MLD snooping support for EVPN-MPLS (EX9200)**—Starting with Junos OS Release 18.4R1, you can configure Multicast Listener Discovery (MLD) protocol snooping on EX9200 switches in an EVPN over an MPLS network. Enabling MLD snooping helps to constrain IPv6 multicast traffic to interested receivers in a broadcast domain. Multicast sources and receivers in the EVPN instance (EVI) can each be single-homed to one provider edge (PE) device or multihomed in all-active mode to multiple PE devices.

  MLD snooping support in this environment includes:

  - Either MLDv1 and MLDv2 with any-source multicast (*,G) or MLDv2 with source-specific multicast (S,G) (configurable)
  - MLD state synchronization among multihoming PE devices using BGP EVPN Type 7 (Join Sync Route) and Type 8 (Leave Sync Route) network layer reachability information (NLRI)
  - Inclusive multicast forwarding from the ingress PE device into the EVPN core to reach all other PE devices
  - Forwarding across bridge domains (VLANs) using IRB interfaces and PIM operating in passive and distributed designated router (PIM-DDR) modes

  [See Overview of Multicast Forwarding with IGMP or MLD Snooping in an EVPN-MPLS Environment.]

Forwarding and Sampling

- **Support for activating or deactivating static routes on the basis of RPM test results (EX Series)** —Starting in Junos OS 18.4R1, you can use RPM probes to detect link status, and change the preferred-route state on the basis of the probe results. Tracked routes can be IPv4 or IPv6, and support a single IPv4 or IPv6 next hop. For example, you can send RPM probes to an IP address to determine whether the link is up, and if it is so, take the action of installing a static route in the route table. RPM-tracked routes are installed with preference 1 and are thus preferred over any existing static routes for the same prefix.

  [See Configuring RPM Probes , rpm-tracking, and show route rpm-tracking.]

Interfaces and Chassis

- **Support for uplink module with two 40-Gigabit Ethernet ports and one 100-Gigabit Ethernet port (EX4300-48MP)**—Starting with Junos OS Release 18.4R1, the 2-port QSFP+/1-port QSFP28 uplink module on EX4300-48MP switches can be configured to operate either two 40-Gigabit Ethernet ports or one 100-Gigabit Ethernet port. By default, the uplink module operates only the two 40-Gbps ports. To enable 100-Gbps speed, issue the **set chassis fpc 0 pic 2 port 0 speed 100g** command. The uplink module then enables the 100-Gigabit Ethernet port and disables the adjacent 40-Gigabit Ethernet ports.

  > **NOTE:**
  > - You can install the 2-port QSFP+/1-port QSFP28 uplink module only in PIC slot 2 on the switch.
  > - You can configure 100-Gbps speed only on port 0 of PIC 2 (which is the uplink module slot on the switch).

  You can also channelize 40-Gigabit Ethernet interfaces, to four independent 10-Gigabit Ethernet interfaces using breakout cables.

  [See Setting the Mode on 2-port QSFP+/1-port QSFP28 Uplink Module (CLI Procedure).]

Junos Telemetry Interface

- **Packet Forwarding Engine and Routing Engine sensor support for Junos Telemetry Interface (JTI) (EX4600 switches)**—Starting in Junos OS Release 18.4R1, JTI supports Packet Forwarding Engine and Routing Engine statistics for EX4600 switches:

  The following Routing Engine statistics are supported through JTI:

  - LACP state export
  - Chassis environmentals export
  - Network discovery chassis and components
  - LLDP export and LLDP model
  - BGP peer information (RPD)

- RSVP interface export
- RPD task memory utilization export
- LSP event export
- Network Discovery ARP table state
- Network Discovery NDP table state

The following Packet Forwarding Engine statistics are supported through JTI:

- Congestion and latency monitoring
- Logical interface
- Filter
- Physical interface
- LSP
- NPU/LC memory
- Network Discovery NDP table state

To provision a sensor to export data through gRPC, use the **telemetrySubscribe** RPC to specify telemetry parameters. Streaming telemetry data through gRPC also requires the OpenConfig for Junos OS module. Starting in Junos OS Release 18.3R1, OpenConfig and Network Agent packages are bundled into the Junos OS image by default. Both packages support the Junos Telemetry Interface (JTI).

[See Configuring a Junos Telemetry Interface Sensor (CLI Procedure), Configure a Telemetry Sensor in Junos and Guidelines for gRPC Sensors (Junos Telemetry Interface).]

Multicast

- **Multicast VLAN registration (MVR) (EX2300 and EX3400 switches and Virtual Chassis)**—Starting in Junos OS Release 18.4R1, EX2300 and EX3400 switches and Virtual Chassis support multicast VLAN registration (MVR). MVR efficiently distributes IPTV multicast streams across an Ethernet ring-based Layer 2 network, reducing the bandwidth required for this traffic by using a multicast VLAN (M-VLAN) over which multicast traffic is forwarded to interested listeners on other VLANs that are configured as MVR receiver VLANs. You can configure MVR at the **[edit protocols igmp-snooping vlan *vlan-name* data-forwarding] source** and **receiver** hierarchy levels, and use the **show igmp snooping data-forwarding** CLI command to view configured M-VLAN and MVR receiver VLAN associations. **(The feature described above is documented but not supported on EX2300 and EX3400 switches and Virtual Chassis in Junos OS Release 18.4R1.)**

  [See Understanding Multicast VLAN Registration.]

Port Security

- **Support for DHCP snooping and other access port security features on private VLANs (EX2300 and EX3400 switches and Virtual Chassis)**—Starting in Junos OS Release 18.4R1, you can enable Dynamic

Host Configuration Protocol (DHCP) snooping for security purposes on access ports that are in a private VLAN (P-VLAN). You can also protect those ports with DHCP options, dynamic ARP inspection (DAI), IP source guard, and neighbor discovery inspection.

PVLANs provide Layer 2 isolation between ports within a VLAN, splitting a broadcast domain into multiple discrete broadcast subdomains by creating secondary VLANs. PVLANs are useful for restricting the flow of broadcast and unknown unicast traffic and for limiting the communication between known hosts.

Ethernet LANs are vulnerable to attacks such as address spoofing (forging) and Layer 2 denial of service (DoS) on network devices. The following port security features help protect access ports on your device against loss of information and productivity that such attacks can cause:

- DHCP snooping—Filters and blocks ingress DHCP server messages on untrusted ports. DHCP snooping builds and maintains a database of DHCP lease information, which is called the DHCP snooping database.
- DHCPv6 snooping—DHCP snooping for IPv6.
- DHCP option 82—Also known as the DHCP Relay Agent Information option. This option helps protect the switch against attacks such as spoofing of IP addresses and MAC addresses and DHCP IP address starvation.
- DHCPv6 option 37—Remote ID option for DHCPv6. The option is used to insert information about the network location of the remote host into DHCPv6 packets.
- DHCPv6 option 18—Circuit ID option for DHCPv6. The option is used to insert information about the client port into DHCPv6 packets.
- DHCPv6 option 16—Vendor ID option for DHCPv6. The option is used to insert information about the vendor of the client hardware into DHCPv6 packets.
- DAI—Prevents Address Resolution Protocol (ARP) spoofing attacks. ARP requests and replies are compared against entries in the DHCP snooping database, and filtering decisions are made on the basis of the results of those comparisons.
- IP source guard—Mitigates the effects of IP address spoofing attacks on the Ethernet LAN. The source IP address in the packet sent from an untrusted access interface is validated against the DHCP snooping database.
- IPv6 source guard—IP source guard for IPv6.
- IPv6 neighbor discovery inspection—Prevents IPv6 address spoofing attacks. Neighbor discovery requests and replies are compared against entries in the DHCPv6 snooping database, and filtering decisions are made on the basis of the results of those comparisons.

[See Putting Access Port Security on Private VLANs.]

- **Untrusted mode on trunk interfaces for DHCP snooping (EX2300, EX3400, EX4300 and EX4600 switches)—**Starting in Junos OS Release 18.4R1, you can configure a trunk interface as untrusted for DHCP security. Trunk interfaces in untrusted mode support DHCP snooping and DHCPv6 snooping, dynamic ARP inspection (DAI), and IPv6 neighbor discovery (ND) inspection.

[See Understanding Trusted and Untrusted Ports.]

Virtual Chassis

- **Virtual Chassis support (EX2300-24MP, EX2300-48MP)**—Starting in Junos OS Release 18.4R1, multigigabit EX2300 switches can be interconnected into a Virtual Chassis with other EX2300 model switches as follows:
  - Any combination of up to four EX2300-24MP, EX2300-48MP, EX2300, and EX2300-C switches is supported.
  - You do not need to set mixed mode.
  - Any models of EX2300 switches can be in the master or backup Routing Engine roles.
  - Any 10-Gbps uplink ports installed with SFP+ transceivers can be configured as Virtual Chassis ports (VCPs) to interconnect member switches.
  - Use the same steps as for configuring any other EX2300, EX3400, or EX4300 Virtual Chassis.

  [See Understanding EX Series Virtual Chassis.]

VPNs

- **Support to control traceroute over Layer 3 VPN (EX Series)**—Starting in Junos OS Release 18.4R1, in a Layer 3 VPN topology with **vrf-table-label** configured and multiple customer edge (CE) routers configured in the same VPN routing and forwarding (VRF) routing instance, when you perform traceroute to a remote provider edge (PE) router for a CE-facing network, the ICMP time exceeded packet determines the correct IP address as the source address.

  To control the traceroute, configure **allow-l3vpn-traceroute-src-select** at **[edit system]** hierarchy level This configuration determines the correct IP source address by reviewing the destination routing instance and destination IP address.

  [See allow-l3vpn-traceroute-src-select.]

SEE ALSO

Changes in Behavior and Syntax

IN THIS SECTION

This section lists the changes in behavior of Junos OS features and changes in the syntax of Junos OS statements and commands from Junos OS main release and the maintenance releases for the EX Series.

Changes in Behavior and Syntax: 18.4R3-S6

Platform and Infrastructure

- **Updates to ON-CHANGE and periodic dynamic subscriber interface metadata sensors (MX Series routers and EX9200 line of switches)**—We've made the following updates to the **/junos/system/subscriber-management/dynamic-interfaces/interfaces/meta-data/interface[sid='*sid-value*']/** sensor:
- Notifications are sent when subscribers log in on either IP demux or VLAN demux interfaces. In earlier releases, login notifications are sent only for IP demux logins.
- The **interface-set** end path has been added to the logical interface metadata. The interface-set field appears in both ON-CHANGE and periodic notifications. In earlier releases, this field is not included in the sensor metadata or notifications.

[See gRPC Sensors for Subscriber Statistics and Queue Statistics for Dynamic Interfaces and Interface-Sets (Junos Telemetry Interface).]

Changes in Behavior and Syntax: 18.4R3

Routing Protocols

- **Advertising /32 secondary loopback addresses to traffic engineering database as prefixes (ACX Series, EX Series, MX Series, PTX Series, QFX Series, and SRX Series)**—We've made changes to export multiple loopback addresses to the lsdist.0 and lsdist.1 routing tables as prefixes. This eliminates the issue of advertising secondary loopback addresses as router IDs instead of prefixes. In earlier releases, multiple secondary loopback addresses in the traffic engineering database were added to the lsdist.0 and lsdist.1 routing tables as part of node characteristics and advertised them as the router ID.

Changes in Behavior and Syntax: 18.4R2

IN THIS SECTION

Interfaces and Chassis

- **No support for performance monitoring on aggregated Ethernet Interfaces (EX4300)**—EX4300 switches do not support Y.1731 performance monitoring (PM) over aggregated Ethernet Interfaces.

  [See sla-iterator-profile.]

- **Logical Interface is created along with physical Interface by default (EX Series switches)**—In Junos OS Release 18.4R2 and later, by default, logical interfaces are created on ge-, et-, xe- interfaces along with the physical interface. In earlier Junos OS releases, by default, only physical interfaces are created.

  For example, in earlier Junos OS releases, if you run the **show interfaces** command for ge- interfaces, then by default, only the physical interface (**ge-0/0/0**) is displayed. From Junos OS Release 18.4R2 onward, the logical interface (**ge-0/0/0.16386**) is also displayed.

Routing Protocols

- **Change in the default behavior of advertise-from-main-vpn-tables configuration statement**—BGP now advertises EVPN routes from the main bgp.evpn .0 table. You can no longer configure BGP to advertise the EVPN routes from the routing instance table. In earlier Junos OS Releases, BGP advertised EVPN routes from the routing instance table by default.

  [See advertise-from-main-vpn-tables.]

Security

- **Syslog or log action on firewall drops packets (EX4600 switches)**—Starting in Junos OS Release 18.4R2, if you configure syslog and log references to the actual action terms configured in a firewall filter, control packets and ICMP packets sent to the Routing Engine might be dropped.

Changes in Behavior and Syntax: 18.4R1

IN THIS SECTION

Interfaces and Chassis

- **Enhanced AC PEM in high-line power configuration supplies 2400 W power (EX9204)**—Starting in Junos OS Release 18.4R1, on EX9204 switches, the enhanced AC PEM in ahigh-line power configuration provides a power output of 2400 W. On Junos OS releases before Release 18.4R1, the PEM provided only 2050 W of power output.

  [See show chassis power.]

- **Support for creating Layer 2 logical interface independently (ACX Series, EX Series, MX Series, PTX Series, and QFX Series)**—In Junos OS Releases 18.4R1, 18.4R2 and later, EX Series switches support creating Layer 2 logical interfaces independent of the Layer 2 routing-instance type. That is, you can configure and commit the Layer 2 logical interfaces separately and add the interfaces to the bridge domain or Ethernet VPN (EVPN) routing instance separately. Note that the Layer 2 logical interfaces work fine only when they are added to the bridge domain or EVPN routing instance.

  In earlier Junos OS releases, when you use a Layer 2 logical interface configuration (units with **encapsulation vlan-bridge** configuration), then you must add the logical interface as part of a bridge domain or EVPN routing instance for the commit to succeed.

Network Management and Monitoring

- **The NETCONF server omits warnings in RPC replies when the rfc-compliant statement is configured and the operation returns <ok/> (EX Series)**—Starting in Junos OS Release 18.4R1, when you configure the **rfc-compliant** statement at the **[edit system services netconf]** hierarchy level to enforce certain behaviors by the NETCONF server, the server must not return an RPC reply that encloses both an **<rpc-error>** element and an **<ok/>** element. If the operation is successful, but the server reply would enclose one or more **<rpc-error>** elements of severity warning in addition to the **<ok/>** element, then the warnings are omitted. In earlier releases, or when the **rfc-compliant** statement is not configured, the NETCONF server might issue an RPC reply that encloses both an **<rpc-error>** element of severity warning and an **<ok/>** element.

- **SNMP customization configuration introduced (EX Series)**—In Junos OS Release 18.4R1, we have introduced the CLI configuration command **set snmp customization ether-stats-ifd-only**. When **ether-stats-ifd-only** is configured, the **show snmp mib walk etherstatsTable** command displays data only for physical interfaces.

  [See customization (SNMP).]

Security

- **Firewall warning message (EX2300 switches)**—Starting in Junos OS Release 18.4R1, a warning message is displayed whenever a firewall term includes **log** or **syslog** with the **accept** filter action.

SEE ALSO

New and Changed Features | 32

Known Behavior | 45

Known Issues | 47

Resolved Issues | 52

Documentation Updates | 66

Migration, Upgrade, and Downgrade Instructions | 67

Known Behavior

IN THIS SECTION

This section lists known behavior, system maximums, and limitations in hardware and software in Junos OS Release 18.4R3 for the EX Series.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Class of Service (CoS)

- On EX4650 switches, if the CoS configurations are modified when egress traffic is shaped at a very low rate (< 50 Mbps), packets might get stuck in the MMU buffers permanently. This might cause ingress or egress traffic drops. When low rate shapers (< 50 Mbps) are applied on egress queues, we recommend you to deactivate shaping before any CoS modification or ensure traffic is stopped before modifying the CoS configuration. PR1367432

EVPN

- When a VLAN uses an IRB interface as the routing interface, the **vlan-id** parameter must be set to **none** to ensure proper traffic routing. This issue is platform independent. PR1287557

General Routing

- When **vlan** is added as an action for changing the VLAN in both ingress and egress filters, the filter will not be installed. PR1362609
- A few error messages related to the function **rt_mesh_group_add_check()** are seen during reboot. These errors are harmless. PR1365049
- Automatic channelization is not supported for 40GBASE-BXSR, QSFP+40GE-LX4, QSFP-100G-PSM4, and 100GBASE-BXSR optics. PR1366103
- On the EX4300-MP switch, the et-0/2/* (100-Gigabit Ethernet) interface multicast queue in strict-priority mode gets the priority treatment only across other multicast queues. PR1377692

Infrastructure

- If Junos OS panics with a file-system-related panic, such as 'dup alloc', recovery through the OAM shell might be needed. From the OAM shell, run **fsck** on the root volume until it is marked clean. Only at this point it is safe to reboot to the normal volume. PR1444941

Routing Protocols

- On EX4650 switches, 254 neighbors and 200,000 routes can be scaled for IS-IS v4. Beyond 200,000 routes with 254 neighbors, adjacency flaps and traffic drop will be seen. However, with 40 neighbors, scaling of 351,000 routes is achieved. PR1368106

Virtual Chassis

- A Virtual Chassis internal loop might occur on a node coming up from a reboot. During nonstop software upgrade (NSSU) on a EX4600 or EX4300 Virtual Chassis, minimal traffic disruption or a traffic loop (greater than 2 seconds) might occur. PR1347902

SEE ALSO

New and Changed Features | 32
Changes in Behavior and Syntax | 42
Known Issues | 47
Resolved Issues | 52
Documentation Updates | 66
Migration, Upgrade, and Downgrade Instructions | 67

Known Issues

IN THIS SECTION

This section lists the known issues in hardware and software in Junos OS Release 18.4R3 for the EX Series.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Authentication and Access Control

- Before running the **load ssl-certificate path PATHNAME** command, configure the path using the **set protocols dot1x ssl-certificate-path PATHNAME** command, if the default pathname is not **/var/tmp/**. PR1431086

General Routing

- ARP queue limit has been changed from 100 pps to 3000 pps. PR1165757
- When you run **request system reboot**, the box undergoes zeroization, which triggers zero-touch provisioning (ZTP). During the mounting stage, **/var/db/scripts/import** does not get created, which later causes the configuration to be committed partially. This is seen in the warning **Warning: Commit failed, activating partial configuration. Warning: Edit the router configuration to fix these errors.**. PR1289782
- On an EX2300 switch, the output of the **show chassis routing-engine** command might display an incorrect value of **mac reset** for the **last reboot reason** field. PR1331264
- There is no support of interface range for channelized interfaces on an EX9253 switch. The user has to configure interfaces individually. PR1350635
- On an EX4650 switch, if lcmd is restarted, a chassisd core file will be generated with traffic drop for a few seconds. PR1363652
- On an EX4300 switch configured with a firewall filter on lo0 and DHCP security on a VLAN simultaneously might drop legitimate DHCP renew requests from clients on the corresponding VLANs. This occurs because of the implementation design and chipset limitation. PR1376454
- On EX2300 and EX3400 switches, image upgrade might fail due to insufficient space issue. PR1376488

- On an EX9208 switch, few xe- interfaces are going down with the error message **if_msg_ifd_cmd_tlv_decode ifd xe-0/0/0 #190 down with ASIC Error** . PR1377840
- PXE installation might fail due to a failure in image upgrade post PXE initialization. PR1406743
- On an EX9200 switch with MC-LAG configuration and other features enabled, there is a loss of approximately 20 seconds during restart of routing daemon. This traffic loss varies with the configuration that is done. PR1409773
- The error **smic_bcm8238x_set_phy_mode: unable to set front panel mode (err -11)** is observed while rebooting the AD-2 with base configurations. PR1417121
- On EX2300-24T and EX4650 platforms, uRPF check in strict mode might not work properly. PR1417546
- Issue with installing EFL license on EX4300-XXMP switches only. When adding the license, the license fails to add. For example: **{master:0} root@d06-34> request system license add terminal Mar 01 12:03:05 [Type ^D at a new line to end input, enter blank line between each license key] EmergencyJUNOS285602007 aeaqia qmlbjd amrrha 2tcmbr gayaqb ycsbdm mjggim gbastv nzuxaz lsebew 45dfoj xgc3ah fbo6ct 7vv3hl ykp4zq 5g6xch szi7aq 3pek5e vh4myw jdi5wq dxyi3c rkgydi 3crzkr szq terminal:1 error: EmergencyJUNOS285602007: license not valid for this product add license failed (1 errors)**. This issue affects only EFL licenses (AFL is not affected) and EX4300-MP devices. As a workaround, upgrade to Junos OS Release 18.3R3 and later or to Junos OS Release 18.4R2 and later. PR1421033
- BUM traffic rate limiting is done after removing Ethernet headers. **L1 TX rate on ingress interface: 1G Tx rate with headers: 865Mbps Rx rate on the egress interface:800M L1 RX rate on egress interface: 925Mbps**. Storm control functionalities in MX-L card is achieved by poilcer and hence the below mentioned policer inaccuracy is applicable for storm control feature as well. Since XM sprays packets to 4 different LUs, each LU will be processing packets of varying sizes.XM does not do strict round-robin, so even if all the incoming packets were to be of exact same sizes (which is not a practical scenario), each LU will still be loaded differently, hence there will be some periods where some LUs policing limit may reach sooner than the others (either due to processing more packets or due to processing larger packets). Hence, it is possible that, some LUs, who see the policing limit reached sooner may drop the packet or color them differently that might result into eventual drop while the other LUs could queue the packets for transmission; We could see this behavior within a single flow as well. Hence the policier functionality can be unpredictable at times. In an extreme case, a packet flow might be sent to a single LU and the policer result is 1/4th of what it is expected. Since the policer functionality, in general, might not work correctly, we will see the impact on all the policing features - for example, input-policer, three-color-policer (srTCM, trTCM), output-policer. PR1442842
- MAC addresses learned on redundant trunk group (RTG) might not be aged out after aging time if the source interface is configured as RTG. PR1461293

- On EX3400 Virtual Chassis, during reboot or upgrade, because of a high CPU load in slow path of FXPC, TCP keep alive message is not sent. Hence, it is observed that sometimes a few Virtual Chassis members might take longer to join the Virtual Chassis. PR1467707
- On EX3400 switches, traffic loss is seen when SFP-T is connected because of autonegotiation failure. PR1469750

Infrastructure

- Junos OS might hang when trying to acquire the SMP IPI lock while rebooting when it is running as a VM on Linux and QEMU hypervisor. PR1359339
- When an SNMP poll is performed for the following OIDs, the backup Routing Engine returns the value 6 (6=down) for the fan and 1 (1=unknown) for the PSUs, even though the fan and PSUs are up. Fan: 1.3.6.1.4.1.2636.3.1.13.1.6 PSU: 1.3.6.1.4.1.2636.3.1.13.1.6.2. For a permanent fix, upgrade the chassis to Junos OS Release 15.1R8 or later. PR1360962
- On EX3400 and EX2300 switches, during zero-touch provisioning (ZTP) with configuration and image upgrade with FTP as file transfer, image upgrade is successful, but sometimes VM core file might be generated. PR1377721
- On EX Series switches, if configuring large-scale number of firewall filters on some interfaces, the FPC crash with core files might be seen. PR1434927
- On an EX4300 switch, the CLI configuration **set chassis routing-engine on-disk-failure disk-failure-action (reboot | halt)** is not supported. PR1450093

Interfaces and Chassis

- On GRES, VSTP port cost on aggregated Ethernet interfaces might get changed, leading to a topology change. PR1174213

Multicast

- IGMP query packets might be duplicated between Layer 2 interfaces with IGMP snooping enabled. PR1391753

Network Management and Monitoring

- In a rare case, where trace files are not properly closed by the OS, traceoption logs might stop writing to a log file. PR1380764

Platform and Infrastructure

- On EX4300 or EX4300 Virtual Chassis, if the VLAN Spanning Tree Protocol (VSTP) is configured, when some operations with VSTP (for example, deactivating/activating VSPT interface, deactivating/activating VSPT VLAN, and so on) are done, it might cause a pfex process crash. PR1178539
- There are multiple failures when an event, such as node reboot, ICL flap, or ICCP flap occurs; and even with enhanced convergence configured there is no guarantee that subsecond convergence will be achieved. PR1371493
- On EX2300 and EX3400 platforms, when doing an upgrading operation, as image size grows over a period of time and subsequently storage is insufficient to install images, the upgrade might fail with the error message **not enough space to unpack**. PR1464808

Routing Protocols

- Error messages **pimd_rtrequest_v4(1133), IS_MASTER_RE: 1, Process: rpd, RTM_ID: 5, error: 17, errmsg: rt exists; ifindex = 340** are cosmetic and expected logs. These logs are not harmful and have no functional impact, it just shows the state of PIM register messages. These logs are already LOG_DEBUG for external builds, you do not need to do any change in any of the components. PR1371431
- mcsnoopd might crash when all the core-facing interfaces that are part of the Layer 2 domain have flapped and it is attempting to flood a packet received over a CE interface, over the core-facing interfaces. PR1470183

Subscriber Access Management

- The authd reuses address too quickly before jdhcpd completely cleans up the old subscriber, which results in syslog errors: : **jdhcpd: %USER-3-DH_SVC_DUPLICATE_IPADDR_ERR: Failed to add 10.1.128.3 as it is already used by 1815**. PR1402653

SEE ALSO

New and Changed Features | 32

Changes in Behavior and Syntax | 42

Known Behavior | 45

Resolved Issues | 52

Documentation Updates | 66

Migration, Upgrade, and Downgrade Instructions | 67

Resolved Issues

IN THIS SECTION

This section lists the issues fixed in the Junos OS Release 18.4R3 for EX Series switches.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Resolved Issues: 18.4R3

Resolved Issues

General Routing

- Certain EX Series devices are vulnerable to 'Etherleak' memory disclosure in Ethernet padding data (CVE-2017-2304). PR1063645
- Transit OSPF traffic over Q-in-Q tunneling might be dropped if a firewall filter is applied to lo0 interface. PR1355111
- l2ald process might crash and generate a core file on EX2300 Virtual Chassis when a trunk is converted port to a dot1x access port with tagged traffic flowing. PR1362587
- The interface on a failed member FPC of EX2300 and EX3400 Virtual Chassis might stay up 120 seconds. PR1422507
- IPv6 multicast traffic received on one Virtual Chassis member might be dropped when exiting an other Virtual Chassis member if MLD snooping is enabled. PR1423310
- MAC overlapping between different switches. PR1425123
- Virtual Chassis split after network topology changed. PR1427075
- The FXPC or Packet Forwarding Engine might crash on EX2300 and EX3400 switches. PR1427391
- Rebooting or halting Virtual Chassis member might cause traffic on redundant trunk group (RTG) link to be down for about 30 seconds. PR1427500
- On EX2300-24P switches, l2ald core file is observed after removal and re-addition of multiple supplicant mode with PVLAN on interface. PR1428469
- Verification of ND inspection with a dynamically bound client, moved to a different VLAN on the same port is failing. PR1428769
- The delay in transmission of BPDUs after GRES might result in loss of traffic on EX2300 and EX3400 Virtual Chassis. PR1428935
- EX4300-48MP switch cannot learn MAC address through some access ports that are directly connected to a host when auto-negotiation is used. PR1430109
- Disabling DAC QSFP port might not work on EX9251 switches.PR1430921
- Erroneous log messages and chassis environment output related to fan tray in EX4300MP-EX4300-48P Virtual Chassis. PR1431263
- The l2cpd process might crash and generate a core file when interfaces are flapping. PR1431355
- Packet drop might be seen if native VLAN is configured along with flexible VLAN tagging. PR1434646
- Micro-BFD session might flap upon inserting a QSFP to other port. PR1435221
- The MC-AE interface might get stuck in waiting state in dual MC-AE scenario. PR1435874
- I40e NVM upgrade support for EX9200 platform. PR1436223

- IRB over VTEP unicast traffic might get dropped on EX9200 switches. PR1436924
- GE/MGE SFP-T interface might not come up on EX2300, EX3400, and EX4300 switches. PR1438078
- Commit check error for VSTP on EX9200 switches: **xSTP:Trying to configure too many interfaces for given protocol**. PR1438195
- LEDs turn on even after the Virtual Chassis members are powered off. PR1438252
- The DHCP snooping table might be cleared for VLAN ID 1 after adding a new VLAN ID to it. PR1438351
- RPD might generate core file during router boot up because of a file pointer issue as there are two code paths that can close the file. PR1438597
- The dot1x might not work when captive port is also configured on the interface on backup or non-master FPC. PR1439200
- DHCPv6 relay binding is not up while verifying the DHCP snooping along with DHCPv6 relay. PR1439844
- EX4600 Virtual Chassis does not come up after fiber connection on Virtual Chassis port is replaced with DAC cable. PR1440062
- CPU might hang or interface might be stuck down on particular 100-Gigabit Ethernet port on EX Series switches. PR1440526
- MAC addresses learned on redundant trunk group (RTG) might not be aged out after a Virtual Chassis member is rebooted. PR1440574
- Clients in isolated VLAN might not get IP addresses after completing authentication when both **dhcp-security** and **dot1x** are configured. PR1442078
- EX3400 fan alarm (Fan X not spinning) appears and disappears repeatedly after the fan tray (absent) is removed. PR1442134
- The rpd might crash when BGP sends a notification message. PR1442786
- DHCPv6 client might fail to get an IP address. PR1442867
- Non-designated port is not moving to backup port role. PR1443489
- The **/var/host/motd does not exist** message is flooded every 5 seconds in chassisd logs. PR1444903
- [EX4300-MP] Log generated continuously **rpd[6550]: task_connect: task AGENTD I/O.128.0.0.1+9500 addr 128.0.0.1+9500: Connection refused**. PR1445618
- Major alarm log messages for temperature conditions for EX4600 switch at 56 degrees Celsius. PR1446363
- The traffic might be dropped when a firewall filter rule uses **then vlan** as the action in a Virtual Chassis scenario. PR1446844
- Phone home on EX3400 switches fails because sysctl cannot read the device serial number. PR1447291
- EX3400 Virtual Chassis might hang when a disk error occurs on EX3400 switches. PR1447853
- Unicast ARP requests are not replied to with **no-arp-trap** option. PR1448071

- On EX3400 switches, IPv6 routes received through BGP do not show the correct age time. PR1449305
- Except one aggregated Ethernet member link, the other links do not send out sFlow sample packets for ingress traffic. PR1449568
- Tunneling-encapsulated packets are dropped on Layer 3 VPN MPLS PE-CE interface. PR1451032
- DHCP snooping static binding does not take effect after deleting and re-adding the entries. PR1451688
- On EX3400 switches with half-duplex mode on 10-Mbps or 100-Mbps speed at medium traffic egress traffic flow might stop on the port and MAC pause frames will be incrementing on receive direction. PR1452209
- The l2ald and eventd are hogging 100 percent after the **clear ethernet-switching table** command is issued. PR1452738
- Configuration change in VLAN-all option might affect the per-VLAN configuration. PR1453505
- Version compare in PHC might fail making PHC download the same image. PR1453535
- A firewall filter might not be able to be applied in a particular Virtual Chassis or Virtual Chassis Fabric member as TCAM is running out of space. PR1455177
- Packet drop might be seen after removing and reinserting the SFP of the 40G Uplink Module ports. PR1456039
- Link up delay after rebooting one of Flexible PIC Concentrator (FPC) in EX4600 Switch Virtual Chassis. PR1456336
- Timeout connecting to peer 'database-replication'. PR1457284
- Overtemperature SNMP trap messages are displayed after update even though the temperatures are within the system thresholds. PR1457456
- The correct VoIP VLAN information in LLDP-MED packets might not be sent after commit if dynamic VoIP VLAN assignment is used. PR1458559
- The FXPC process might crash due to several BGP IPv6 session flaps. PR1459759
- Storage space limitation leads to image installation failure during Phone home on EX2300 and EX3400 switches. PR1460087
- Configure any combination of VLANs and interfaces under VSTP/MSTP might cause VSTP/MSTP related configuration cannot be committed. PR1463251
- There are some command lines to disable MAC learning and some of them were not working. PR1464797
- On EX2300 switches, an FXPC core file is seen after mastership election based on user's priority. PR1465526
- The MAC move message might have an incorrect "from" interface when MAC moves rapidly. PR1467459
- Optics measurements might not be streamed for interfaces of a PIC over JTI. PR1468435

- EX3400 switch is advertising only 100 Mbps when a speed of 100 Mbps is configured with autonegotiation enabled. PR1471931
- On EX4600 switches, the shaping of CoS does not work after reboot. PR1472223

Authentication and Access Control

- Without 802.1x configuration, the syslog message **dot1xd[2192]: task_connect: task PNACAUTH./var/run/authd_control addr /var/run/authd_control: Connection refused** is generated repeatedly. PR1406965

Class of Service (CoS)

- CoS is incorrectly applied on Packet Forwarding Engine, leading to egress traffic drop. PR1329141
- Shaping does not work after the reboot if **shaping-rate** is configured. PR1432078
- The traffic is placed in network-control queue on extended port even if it comes in with different DSCP marking. PR1433252

EVPN

- EVPN or MPLS IRB logical interfaces might not come up when the local Layer 2 interface is down. PR1436207
- Configuring ESI on a single-homed 25-Gigabit Ethernet port might not work. PR1438227
- ARP request or NS might be sent back to the local segment by DF router. PR1459830
- The rpd might crash after changing EVPN related configuration. PR1467309

Forwarding and Sampling

- Enable interface with input or output vlan-maps to be added to a routing instance configured with a vlan-id or vlan-tags (instance type virtual-switch/vpls). PR1433542
- The l2ald process might observe memory leak on Junos OS. PR1455034
- Type 1 ESI/AD route might not be generated locally on EVPN PE in the **all-active** mode. PR1464778

Infrastructure

- The operations on console might not work if the **system ports console log-out-on-disconnect** statement is configured. PR1433224
- Certain EX Series platforms might generate VM core file by panic and reboot. PR1456668
- Error messages related to soft reset of port due to queue buffers being stuck could be seen on EX4600 and EX4300 Virtual Chassis. PR1462106
- On EX2300 Virtual Chassis scenario, continuous **dcpfe** error messages and **eventd** process hog might be seen. PR1474808

Interfaces and Chassis

- EX9214 switches show an unexpected **duplicate VLAN-ID** commit error . PR1430966
- VRRPv6 state is flapping with init and idle states after configuring **vlan-tagging**. PR1445370
- The traffic might be forwarded to wrong interfaces in an MC-LAG scenario. PR1465077
- Executing commit might hang up due to stuck device control process. PR1470622

J-Web

- Some error messages might be seen when using J-Web. PR1446081

Junos Fusion Enterprise

- Reachability issue of the host connected to the SD might be affected in a Junos fusion enterprise environment with EX9200 devices as ADs. PR1447873

Junos Fusion Satellite Software

- The dpd crash might be observed on satellite devices in Junos fusion for enterprise. PR1460607

Layer 2 Features

- Ethernet ring protection switching (ERPS) nodes might not converge to IDLE state after failure recovery or reboot. PR1431262
- Physical layer and MAC/ARP learning might not work for copper base SFP-T onEX4600 switches. PR1437577
- The Link Layer Discovery Protocol (LLDP) function might fail when a Juniper device connects to a non-Juniper device. PR1462171
- FXPC core file might be seen when committing the configuration all together, for example, after the reboot. PR1467763

Layer 2 Ethernet Services

- The DHCP DECLINE packets are not forwarded to DHCP server when forward-only is set within dhcp-reply. PR1429456
- The jdhcpd_era log files constantly consume 121M of space out of 170M, resulting into file system full and traffic impact. PR1431201
- DHCP request might get dropped in DHCP relay scenario. PR1435039
- On EX9200 switches, DHCP-Relay is stripping the 'GIADDR' field in messages towards the DHCP clients. PR1443516

Platform and Infrastructure

- LACP DDOS policer is incorrectly triggered by other protocol traffic on all EX92XX/T4000 platforms. PR1409626
- EX4300-48MP-18.3R1.9: Overtemperature SNMP trap generated wrongly for LC (EX4300-48P) based on master Routing Engine (EX4300-48MP) temperature threshold value. PR1419300
- On EX4300 switches, runt counter never incremented. PR1419724
- SNMP (ifHighSpeed) value is not getting displayed properly only for VCP interfaces, and appears as zero. PR1425167
- Packet drops, replication failure, or ksyncd crashes might be seen on the logical system of a device running Junos OS after Routing Engine switchover. PR1427842
- IPv6 traffic might be dropped when static /64 IPv6 routes are configured. PR1427866
- EX4300 switches do not drop FCS frames with CRC error on xe- interfaces. PR1429865
- Unicast ARP requests are not replied to with the **no-arp-trap** option. PR1429964
- EX4300 switches without soft error recovery (parity check, correction and memscan) enable. PR1430079
- The device might not be accessible after the upgrade. PR1435173
- The FPC or PFEX crash might be observed because of DMA buffer leaking. PR1436642
- The **/var/db/scripts** directory might be deleted after executing **request system zeroize**. PR1436773
- The laser TX might be enabled while the interface is disabled. PR1445626
- The PoE might not work after upgrading the PoE firmware on EX4300 switches. PR1446915
- The firewall filters might not be created due to TCAM issues. PR1447012
- NSSU cause a traffic loss again after the backup to master transitions. PR1448607
- On certain MPC line cards, cm errors need to be reclassified. PR1449427
- REST API process will become non-responsive when the number of requests is high. PR1449987
- The OSPF neighbor might go down when mDNS/PTP traffic is received at a rate higher than 1400 pps. PR1459210
- ERP might not revert to IDLE state after reload or reboot of multiple switches. PR1461434
- Traffic loss might be observed longer than 20 seconds when performing NSSU on EX4300 Virtual Chassis. PR1461983
- IGMP reports are dropped with mixed enterprise or SP configuration styles on EX4300 switches. PR1466075
- The switch might not be able to learn MAC address with **dot1x** and **interface-mac-limit** configured. PR1470424

Routing Protocols

- Host-destined packets with filter log action might not reach the Routing Engine if log or syslog is enabled. PR1379718
- EX9208: BGP v4/v6 convergence and RIB install/delete time degraded in 19.1R1/19.2R1/19.3R1/19.4R1. PR1414121
- The traffic with destination UDP port 521 (RIPng) gets dropped on EX4600 switches. PR1429543
- The FXPC core file might be seen during the reboot of device on EX4600 switches. PR1432023
- Error message **RPD_DYN_CFG_GET_PROF_NAME_FAILED: Get profile name for session XXX failed: -7**, might be seen in syslog after restarting routing daemon. PR1439514
- The bandwidth value of the DDOS-protection might cause packet loss after a device reboot. PR1440847
- Traffic might be dropped after the Q-in-Q enabled interface is flapped or a change is made to **vlan-id-list**. PR1441402
- IPv6 connectivity between MC-LAG peers might fail when multiple IRB interfaces are present. PR1443507
- Junos OS BFD sessions with authentication flaps after a certain time. PR1448649
- Loopback address exported into other VRF instance might not work on EX Series platforms. PR1449410
- MPLS LDP might still use stale MAC of the neighbor even the LDP neighbor's MAC changes. PR1451217

User Interface and Configuration

- EX4600 switches were unable to commit baseline configuration after zeroization. PR1426341
- Problem with access to J-Web after update from Junos OS Release 18.2R2 to 18.2R3. PR1454150

Virtual Chassis

- Current MAC address might change when deleting one of the multiple Layer 3 interfaces. PR1449206

VPNs

- MVPN using PIM dense mode does not prune the OIF when PIM prune is received. PR1425876

Resolved Issues: 18.4R2

EVPN

- The device might proxy the ARP probe packets in an EVPN environment. PR1427109
- Configuring ESI on a single-homed 25G port might not work. PR1438227

General Routing

- On QFX5120 and EX4650, the convergence delay between PE1 and P router link is more than the expected delay value. PR1364244
- OAM Ethernet **connectivity-fault-management** configured on aggregated Ethernet interfaces is not supported but there is no commit error. PR1367588
- IPv6 router advertisement (RA) messages can increase internal kernel memory usage. PR1369638
- RIPv2 update packets might not be sent with IGMP snooping enabled. PR1375332
- EX-4300 Virtual Chassis : Commit error is observed for the first time while loading the Mini-PDT base configurations. PR1383469
- On QFX5120 and EX4650, occasionally two of the channelized 25Gbps Ethernet ports using 4x25-Gigabit breakout cable do not come up after Junos OS reboot. PR1384898
- EX3400-Virtual Chassis: The **Error tvp_status_led_set** and **Error:tvp_optics_diag_eeprom_read** logs are seen. PR1389407
- The **Input rate pps** is not increased on EX2300-MP uplink ports if the packet is a pure Layer 2 packet such as non-etherII or non-EtherSnap. PR1389908
- Interface flapping on an EX3400 Virtual Chassis causes interface-generated IGMP query packets 224.0.0.1 to be sent to all the members ports, except the master FPC. PR1393405
- PTP over Ethernet traffic might be dropped if IGMP and PTP TC are configured together. PR1395186
- On EX2300 the MAC table is not populated after the **interface-mode** value is changed. PR1396422
- The fxpc core file might be seen if scaled number of filter-based forwarding (FBF) filters are configured. PR1398256
- High jsd or na-grpcd CPU usage might be seen when JET or JTI is not used. PR1398398
- EX3400 might not learn 30,000 MAC addresses while sending MAC learning traffic. PR1399575
- MAC limit with persistent MAC does not after reboot. PR1400507
- The authd process might crash when you issue **show network-access requests pending** command during the restarting of authd. PR1401249
- The TCP connection between ppmd and ppman might be dropped due to a kernel issue. PR1401507
- The **adt7470_set_pwm** message is continuously getting displayed after upgrade to Junos OS Release 18.1R3.3. PR1401709
- The STP does not work when the aggregated Ethernet interfaces number is AE1000 or above in QFX5000 and AE480 or greater in other QFX Series or EX Series switches. PR1403338
- The DHCP discover packets are forwarded out of an interface incorrectly if DHCP snooping is configured on that interface. PR1403528
- EX4300-48MP: Packets are dropped after the traffic filter and routing instance are configured. PR1407424

- MAC address movement might not happen in Flexible Ethernet Services mode when family inet/inet6 and vlan-bridge are configured on the same physical interface. PR1408230
- The l2cpd might crash if the **vstp traceoptions** and **vstp-vlan-all** commands are configured. PR1407469
- EX3400 PSU status continues to be **check** even though the PSU module has been removed. PR1408675
- On EX2300-24P, the error message **dc-pfe: BRCM_NH-,brcm_nh_resolve_get_nexthop(),346:Failed to find if family**. PR1410717
- On EX Series and QFX Series switches, PEM Alarm for the backup FPC remains on Master FPC although backup FPC was detached from the Virtual Chassis. PR1412429
- On EX4300-48MP, the chassis Status LED shows yellow instead of amber. PR1413194
- chassisd output power budget received continually every 5 seconds without any alarm after upgrade to Junos OS 18.1R3 PR1414267
- VXLAN Encapsulation next hop (VENH) doesnt get installed during BGP flap or restart routing. PR1415450
- On EX3400, the **show chassis environment** repeats **OK** and **Failed** at short intervals. PR1417839
- The EX3400 Virtual Chassis status might be unstable during the bootup of the Virtual Chassis or after the Virtual Chassis port flaps. PR1418490
- Virtual Chassis might become unstable and FXPC core files when there are multiple configured filter entries. PR1422132
- On EX3400, autonegotiation status shows incomplete on ge-0/2/0 using SFP-SX. PR1423469
- MACsec connection on EX4600 will not come back up after interface disconnect while traffic is passing. PR1423597
- On MX204 optics **SFP-1GE-FE-E-T** I2C read errors are seen when an SFP-T is inserted into a disabled-state port. PR1423858
- Incorrect model information while polling through SNMP from Virtual Chassis. PR1431135

Infrastructure

- IfSpeed and IfHighSpeed erroneously reported as zero on EX2300. PR1326902
- The Packet Forwarding Engine is flooded with messages: **pkt rx on ifd NULL unit 0** PR1381151
- The dot1x could not work when dot1x is configured with isolated VLAN on one interface. PR1404664

Interfaces and Chassis

- Missing mandatory ICCP configuration statement **redundancy-group-id-list** produces misleading error message. PR1402606
- The IFLs in EVPN routing instances might flap after committing configurations. PR1425339

Junos Fusion Enterprise

- PoE over LLDP negotiation is not supported on a Junos Fusion Enterprise setup. PR1366106
- **error: peer_daemon: bad daemon: scpd** error is seen on EX9251 running Junos OS Releases 18.1R1 and 18.1R2. PR1369646
- Juniper Fusion Enterprise: Cannot log in to SD cluster although it is recognized by AD properly. PR1395570
- The l2ald might crash if you issue the **clear ethernet-switching table persistent-learning** command. PR1409403
- Extended ports in Junos Fusion Enterprise do not adjust the MTU value when VoIP is enabled. PR1411179
- Traffic might get discarded silently in a Junos Fusion Enterprise scenario with dual aggregation devices. PR1417139

Layer 2 Features

- On EX2300/EX3400 LLDP packets are dropped at L2PT NNI port when the configuration is applied for the first time. PR1362173

Layer 3 Features

- The l2ald might crash when you issue the **clear ethernet-switching table persistent-learning** command. PR1381739

Layer 2 Ethernet Services

- The malfunction of the core isolation feature in EVPN-VXLAN scenarios causes traffic to be discarded silently. PR1417729

Network Management and Monitoring

- Overtemperature trap is not sent out even though there is a Temperature Hot alarm. PR1412161

Platform and Infrastructure

- Ping does not go through device after WTR timer expires in ERPS scenario. PR1132770
- EX4300 upgrade fails during validation of the SLAX script during upgrade. PR1376750
- ECMP route installation failure with log messages such as unilist install failure might be observed on the EX4300 switch. PR1376804
- Unicast DHCP request get misforwarded to backup RTG link on EX4300 Virtual Chassis. PR1388211
- Continuous log messages get displayed on EX4300 after upgrading to a Junos OS Release 17.4 or later release. PR1391942
- EX4300 OAM LFM might not work on an extended VLAN bridge interface with native VLAN configured. PR1399864

- Traffic drop is seen on EX4300 when the 10-Gigabit Ethernet fiber port is using 1-gigabit Ethernet SFP optics with autonegotiation enabled. PR1405168
- The policer might not work when it is applied through the dynamic filter. PR1410973
- EX4300 QinQ - untagged UNI Traffic egress as single-tagged on NNI Interface. PR1413700
- EX4300 does not send **fragmentation needed** message when MTU is exceeded with DF bit set. PR1419893
- The traffic to the NLB server might not be forwarded if the NLB cluster works in multicast mode. PR1411549
- The pfex process might crash and core files generated when a SFP transceiver is reinserted. PR1421257
- Traffic might be lost when one of the logical interfaces on the LAG is deactivated or deleted. PR1422920
- The authd process crashes when the Accounting RADIUS server is not reachable. PR1424030
- EX9200-12QS switch sends tagged packets through the access interface and through the trunk interface with a native VLAN ID. PR1424174
- Interface flapping scenario might lead to ECMP next hop install failure on EX4300s. PR1426760
- VIP might not forward the traffic if VRRP is configured on an aggregated Ethernet interface. PR1428124
- The ERPS failover does not work as expected on EX4300 device. PR1432397

Routing Protocols

- EX4300 might drop incoming IS-IS hello packets when IGMP or MLD snooping is configured. PR1400838
- Host-generated ICMPv6 RA packets might be dropped on the backup member of a Virtual Chassis if IGMP snooping is configured. PR1413543
- The QFX Series and EX Series switch might not install all IRB MAC addresses when the device is initialized. PR1416025
- Sometimes, IGMP snooping might not work. As a workaround, restart the multicast-snooping process. PR1420921

Subscriber Access Management

- EX4300 **/var** file is showing full as the **var/log/dfcd_enc** file grows in size. PR1425000

Resolved Issues: 18.4R1

General Routing

- On the EX4300-32F, the MACsec session stays down on 1-Gigabit and 10-Gigabit Ethernet links after certain events, when events are performed with traffic running. PR1299484
- On EX2300 and EX3400 switches, the bridge ID is assigned to **02:00:00:00:00:10** irrespective of the base-MAC addresses. PR1315633

- Incorrect value of optical power is displayed. PR1326642
- On EX3400 and EX2300 switches, a redirect message is sent from the switch even when **no-redirect** is set for the specified interface. PR1333153
- The fxpc process might crash after Q-in-Q VLAN is added to or deleted from an interface on EX2300 or EX3400 switches. PR1334850
- Consideration of relaxing P-VLAN conflict rules during VLAN change for reauthentication and CoA scenarios. PR1346936
- The 40-Gigabit Ethernet interfaces might not forward traffic. PR1349675
- On EX2300, EX3400, and EX4300MP switches in a Virtual Chassis setup, dynamic Arp inspection might fail after Virtual Chassis switchover when VSTP is enabled along with **no-mac-table-binding**. PR1359753
- The traffic uses the original IRB MAC address if you are configuring a MAC address for an IRB interface. PR1359816
- On EX2300MP switches, the fan count is wrong in jnxFruName,jnxFilledDescr and jnxContainersCount.4. PR1361025
- The EX4300-MP MACsec AES-GCM-128-XPN and AES-GCM-256-XPN cipher suites are not supported for MGE ports. PR1362035
- FPM board status is missing in the SNMP MIB walk result. PR1364246
- The l2cpd process might crash when you configure MVRP with private VLAN and RSTP **interface-all**. PR1365937
- Virtual Chassis split followed by generation of fxpc core files might occur when VLAN members are scaled. PR1369678
- Unicast ARP packet loop might be observed in a DAI scenario. PR1370607
- NTP broadcast packets are not forwarded out on Layer 2 ports. PR1371035
- MAC refresh packet might not be sent out from the new primary link after an RTG failover. PR1372999
- BOOTP packets might be dropped if **BOOTP-support** is not enabled at the global level. PR1373807
- FPC might crash when the output interface flaps with analyzer or sampling configured. PR1374861
- The port access list group is not properly reallocating the TCAM slices. PR1375022
- The interface AE480 or above might be in STP discarding state on EX9200 switches. PR1378272
- On EX4300-48MP, the IP transit traffic hits the lo0 filter. PR1379328
- All interfaces belonging to a certain FPC might be lost after multiple GRES in Virtual Chassis. PR1379790
- The 802.1X configuration does not work with Microsoft NPS server. PR1381017
- On EX4300-48MP, as the session-option configuration under the access profile hierarchy is not applicable for EX Series and QFX Series, do not use that statement and options under it PR1385229

- On EX9200, a warning message **prefer-status-control-active is used with status-control standby** is seen whenever you commit a configuration. PR1386479
- On an EX2300 with Q-in-Q (**flexible-vlan-tagging**), you are unable to obtain the DHCP IP for the IRB interface after power-cycling the device. PR1387039
- The smid process might generate core files during sanity script execution on QFX5100 and EX4300. PR1391909

EVPN

- Proxy ARP might not work as expected in an EVPN environment. PR1368911

High Availability (HA) and Resiliency

- The backup Routing Engine might go to database prompt after performing configurations such as remove and restore are performed. PR1269383

Infrastructure

- Core files might be generated upon attempt to commit a configuration. PR1376362

Junos Fusion Enterprise

- The **peer_daemon: bad daemon: scpd** error message is seen on EX9251 running Junos OS Releases 18.1R1 and 18.1R2. PR1369646

Layer 2 Features

- The firewall filter might not work correctly with the match condition of **dot1q-tag** on an EX Series switch. PR1369592
- RTG MAC refresh packets are sent out from non-RTG ports if the RTG interface belonging to the Virtual Chassis master flaps. PR1389695

Network Management and Monitoring

- On EX4600 switches, unsupported CLI configurations and show commands from the **cfm** hierarchy or sub-hierarchy are allowed. PR1359052
- While toggling multiple times between baseline and CFM configurations, all 30 CFM sessions are not up. PR1360907
- The event-policy generated traps are sent with UTC, even though the time zone is defined under the system hierarchy. PR1380777

Platform and Infrastructure

- Interface flapping is seen on an EX4300 switch. PR1361483
- Some interfaces cannot be added under the MSTP configuration. PR1363625
- On EX4300 and EX4600 switches, the l2ald process might crash in an 802.1x scenario. PR1363964

- The Packet Forwarding Engine might crash if frequent MAC moves are encountered. PR1367141
- The LLDP TLV with the wrong switch port capabilities might be sent. PR1372966
- Login lockout might never expire because the timestamps of **Lockout start** and **Lockout end** are same. PR1373803
- On EX4300-48MP, unsupported 1-gigabit optics in the 10-gigabit uplink module might cause interface traffic to be dropped. PR1374390
- Traffic might be silently discarded with indirect next hop and load balancing. PR1376057
- The IRB interface does not go down when the master Virtual Chassis is rebooted or halted. PR1381272
- On the EX4300 switch, if a loss priority value of **high** is set for multicast packets by a classifier at the ingress interface, the configuration is overridden by the storm-control filter. PR1382893
- The EX4300 device chooses a wrong bridge ID as the RSTP Bridge ID. PR1383356
- On EX4300-48MP mixed Virtual Chassis, the Power over Ethernet interface maximum power configuration on a member EX4300 gives an error if the power is configured to be more than 30 W. PR1383717
- Layer 3 IP route is destroyed after the Layer 2 next hop is changed. PR1389688

Routing Protocols

- On EX4300-48MP, stale VLAN entries might be seen after a script involving split or merge reboots is run continuously. PR1363739

SEE ALSO

New and Changed Features | **32**
Changes in Behavior and Syntax | **42**
Known Behavior | **45**
Known Issues | **47**
Documentation Updates | **66**
Migration, Upgrade, and Downgrade Instructions | **67**

Documentation Updates

There are no errata or changes in Junos OS Release 18.4R3 documentation for the EX Series switches.

SEE ALSO

Migration, Upgrade, and Downgrade Instructions

IN THIS SECTION

This section contains the upgrade and downgrade support policy for Junos OS for the EX Series. Upgrading or downgrading Junos OS can take several hours, depending on the size and configuration of the network. For information about software installation and upgrade, see the Installation and Upgrade Guide.

Upgrade and Downgrade Support Policy for Junos OS Releases

Support for upgrades and downgrades that span more than three Junos OS releases at a time is not provided, except for releases that are designated as Extended End-of-Life (EEOL) releases. EEOL releases provide direct upgrade and downgrade paths—you can upgrade directly from one EEOL release to the next EEOL release even though EEOL releases generally occur in increments beyond three releases.

You can upgrade or downgrade to the EEOL release that occurs directly before or after the currently installed EEOL release, or to two EEOL releases before or after. For example, Junos OS Releases 17.1, 17.2 and 17.3 are EEOL releases. You can upgrade from Junos OS Release 17.1 to Release 17.2 or from Junos OS Release 17.1 to Release 17.3.

You cannot upgrade directly from a non-EEOL release to a release that is more than three releases ahead or behind. To upgrade or downgrade from a non-EEOL release to a release more than three releases before or after, first upgrade to the next EEOL release and then upgrade or downgrade from that EEOL release to your target release.

For more information about EEOL releases and to review a list of EEOL releases, see https://www.juniper.net/support/eol/junos.html.

SEE ALSO

Junos OS Release Notes for Junos Fusion Enterprise

IN THIS SECTION

These release notes accompany Junos OS Release 18.4R3 for Junos Fusion Enterprise. Junos Fusion Enterprise is a Junos Fusion that uses EX9200 switches in the aggregation device role. These release notes describe new and changed features, limitations, and known problems in the hardware and software.

> **NOTE:** For a complete list of all hardware and software requirements for a Junos Fusion Enterprise, including which Juniper Networks devices can function as satellite devices, see Understanding Junos Fusion Enterprise Software and Hardware Requirements .

You can also find these release notes on the Juniper Networks Junos OS Documentation webpage, located at https://www.juniper.net/documentation/product/en_US/junos-os.

New and Changed Features

There are no new features in Junos OS Release 18.4R3 for Junos fusion for the enterprise.

> **NOTE:** For more information about the Junos fusion for the enterprise features, see the Junos Fusion for the Enterprise User Guide.

SEE ALSO

- Changes in Behavior and Syntax | 69
- Known Behavior | 70
- Known Issues | 70
- Resolved Issues | 71
- Documentation Updates | 72
- Migration, Upgrade, and Downgrade Instructions | 73

Changes in Behavior and Syntax

There are no changes in behavior of Junos OS features and changes in the syntax of Junos OS statements and commands in Junos OS Release 18.4R3 for Junos fusion for the enterprise.

SEE ALSO

- New and Changed Features | 69
- Known Behavior | 70
- Known Issues | 70
- Resolved Issues | 71
- Documentation Updates | 72
- Migration, Upgrade, and Downgrade Instructions | 73

Known Behavior

There are no known behaviors, system maximums, and limitations in hardware and software in Junos OS Release 18.4R3 for Junos fusion for the enterprise.

For the most complete and latest information about known Junos OS problems, use the Juniper Networks online Junos Problem Report Search application.

SEE ALSO

Known Issues

IN THIS SECTION

This section lists the known issues in hardware and software in Junos OS Release 18.4R3 for Junos fusion for the enterprise.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Junos fusion for the enterprise

- Junos fusion is not able to add new satellite devices when MC-LAG is configured on EX Series platforms. PR1374982

- On EX4300 when 10-Gigabit Ethernet fiber port is using 1-Gigabit Ethernet SFP optics, autonegotiation is enabled by default. BCM recommendation is to disable the autonegotiation for PHY84756 ports to bring up the satellite device. PR1420343
- In a Junos fusion for the enterprise environment with EX2300-48P or EX2300-48T acting as satellite devices, the loop-detect feature does not work for ports 0—23, because the loop-detect filter is not properly applied. PR1426757

SEE ALSO

Resolved Issues

IN THIS SECTION

This section lists the issues fixed in Junos OS Release 18.4R3.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Resolved Issues: Release 18.4R3

- The dpd process might generate a core file on satellite devices in Junos fusion for the enterprise. PR1460607

- Reachability issue of the host connected to the satellite device might be affected in a Junos fusion for the enterprise environment with EX9200 series devices as aggregation devices. PR1447873

Resolved Issues: Release 18.4R2

- PoE over LLDP negotiation is not supported on Junos fusion for the enterprise. PR1366106
- error: peer_daemon: bad daemon: scpd on EX9251 running Junos OS Releases 18.1R1 and 18.1R2. PR1369646
- Juniper fusion for the enterprise: Cannot log in to satellite device cluster although it is recognized by the aggregation device. PR1395570
- The l2ald process might generate a core file if the **clear ethernet-switching table persistent-learning** command is issued. PR1409403
- Extended ports in JFE do not adjust MTU when VoIP is enabled. PR1411179
- The traffic might get dropped in a Junos fusion for the enterprise with dual aggregation devices. PR1417139

Resolved Issues: Release 18.4R1

- In a Junos fusion for the enterprise, the scpd process does not run on the EX9251. PR1369646

SEE ALSO

New and Changed Features | 69

Changes in Behavior and Syntax | 69

Known Behavior | 70

Known Issues | 70

Documentation Updates | 72

Migration, Upgrade, and Downgrade Instructions | 73

Documentation Updates

There are no errata or changes in Junos OS Release 18.4R3 for Junos fusion for the enterprise documentation.

SEE ALSO

Migration, Upgrade, and Downgrade Instructions

IN THIS SECTION

This section contains the procedure to upgrade or downgrade Junos OS and satellite software for a Junos fusion for the enterprise. Upgrading or downgrading Junos OS and satellite software might take several hours, depending on the size and configuration of the Junos fusion for the enterprise topology.

Basic Procedure for Upgrading Junos OS on an Aggregation Device

When upgrading or downgrading Junos OS for an aggregation device, always use the **junos-install** package. Use other packages (such as the **jbundle** package) only when so instructed by a Juniper Networks support representative. For information about the contents of the **junos-install** package and details of the installation process, see the Installation and Upgrade Guide.

NOTE: Before upgrading, back up the file system and the currently active Junos OS configuration so that you can recover to a known, stable environment in case the upgrade is unsuccessful. Issue the following command:

```
user@host> request system snapshot
```

The installation process rebuilds the file system and completely reinstalls Junos OS. Configuration information from the previous software installation is retained, but the contents of log files might be erased. Stored files on the routing platform, such as configuration templates and shell scripts (the only exceptions are the **juniper.conf** and **ssh** files), might be removed. To preserve the stored files, copy them to another system before upgrading or downgrading the routing platform. See the Junos OS Administration Library.

To download and install Junos OS:

1. Using a Web browser, navigate to the Download Software URL on the Juniper Networks webpage:

   https://www.juniper.net/support/downloads/

2. Log in to the Juniper Networks authentication system using the username (generally your e-mail address) and password supplied by Juniper Networks representatives.

3. Select **By Technology > Junos Platform > Junos Fusion** to find the software that you want to download.

4. Select the release number (the number of the software version that you want to download) from the Version drop-down list on the right of the page.

5. Select the **Software** tab.

6. Select the software package for the release.

7. Review and accept the End User License Agreement.

8. Download the software to a local host.

9. Copy the software to the routing platform or to your internal software distribution site.

10. Install the new **junos-install** package on the aggregation 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.

Customers in the United States and Canada, use the following commands, where *n* is the spin number.

`user@host>` **request system software add validate reboot *source*/junos-install-ex92xx-x86-64-18.3B1.*n*.tgz**

All other customers, use the following commands, where *n* is the spin number.

`user@host>` **request system software add validate reboot *source*/junos-install-ex92xx-x86-64-18.3B1.*n*-limited.tgz**

Replace ***source*** with one of the following values:

- ***/pathname***—For a software package that is installed from a local directory on the router.
- For software packages that are downloaded and installed from a remote location:
  - **ftp://*hostname/pathname***
  - **http://*hostname/pathname***
  - **scp://*hostname/pathname*** (available only for Canada and U.S. version)

The **validate** option validates the software package against the current configuration as a prerequisite to adding the software package to ensure that the router reboots successfully. This is the default behavior when the software package being added is a different release.

Adding the **reboot** command reboots the router after the upgrade is validated and installed. When the reboot is complete, the router displays the login prompt. The loading process might take 5 to 10 minutes.

Rebooting occurs only if the upgrade is successful.

Upgrading an Aggregation Device with Redundant Routing Engines

If the aggregation device has two Routing Engines, perform a Junos OS installation on each Routing Engine separately to minimize disrupting network operations as follows:

1. Disable graceful Routing Engine switchover (GRES) on the master Routing Engine and save the configuration change to both Routing Engines.
2. Install the new Junos OS release on the backup Routing Engine while keeping the currently running software version on the master Routing Engine.

3. After making sure that the new software version is running correctly on the backup Routing Engine, switch over to the backup Routing Engine to activate the new software.
4. Install the new software on the original master Routing Engine that is now active as the backup Routing Engine.

For the detailed procedure, see the *Installation and Upgrade Guide*.

Preparing the Switch for Satellite Device Conversion

There are multiple methods to upgrade or downgrade satellite software in your Junos fusion for the enterprise. See Configuring or Expanding a Junos fusion for the enterprise.

For satellite device hardware and software requirements, see Understanding Junos fusion for the enterprise Software and Hardware Requirements.

Use the following command to install Junos OS on a switch before converting it into a satellite device:

`user@host>` **request system software add validate reboot *source/package-name***

> **NOTE:** The following conditions must be met before a Junos switch that is running Junos OS Release 14.1X53-D43 can be converted to a satellite device when the action is initiated from the aggregation device:
>
> - The switch running Junos OS can be converted only to SNOS 3.1 and later.
> - Either the switch must be set to factory-default configuration by using the **request system zeroize** command, or the following command must be included in the configuration: **set chassis auto-satellite-conversion**.

When the interim installation has completed and the switch is running a version of Junos OS that is compatible with satellite device conversion, perform the following steps:

1. Log in to the device using the console port.

2. Clear the device:

   ```
   [edit]
   user@satellite-device# request system zeroize
   ```

   > **NOTE:** The device reboots to complete the procedure for resetting the device.

If you are not logged in to the device using the console port connection, your connection to the device is lost after you enter the **request system zeroize** command.

If you lose connection to the device, log in using the console port.

3. (EX4300 switches only) After the reboot is complete, convert the built-in 40-Gbps QSFP+ interfaces from Virtual Chassis ports (VCPs) into network ports:

   `user@satellite-device>` **request virtual-chassis vc-port delete pic-slot 1 port *port-number***

   For example, to convert all four built-in 40-Gbps QSFP+ interfaces on an EX4300-24P switch into network ports:

   `user@satellite-device>` **request virtual-chassis vc-port delete pic-slot 1 port 0**
   `user@satellite-device>` **request virtual-chassis vc-port delete pic-slot 1 port 1**
   `user@satellite-device>` **request virtual-chassis vc-port delete pic-slot 1 port 2**
   `user@satellite-device>` **request virtual-chassis vc-port delete pic-slot 1 port 3**

   This step is required for the 40-Gbps QSFP+ interfaces that will be used as uplink interfaces in a Junos Fusion topology. Built-in 40-Gbps QSFP+ interfaces on EX4300 switches are configured into VCPs by default, and the default settings are restored after the device is reset.

After this initial preparation, you can use one of three methods to convert your switches into satellite devices—autoconversion, manual conversion, or preconfiguration. See Configuring or Expanding a Junos fusion for the enterprise for detailed configuration steps for each method.

Converting a Satellite Device to a Standalone Switch

If you need to convert a satellite device to a standalone device, you must install a new Junos OS software package on the satellite device and remove it from the Junos Fusion topology. For more information, see Converting a Satellite Device to a Standalone Device.

Upgrade and Downgrade Support Policy for Junos OS Releases

Support for upgrades and downgrades that span more than three Junos OS releases at a time is not provided, except for releases that are designated as Extended End-of-Life (EEOL) releases. EEOL releases provide direct upgrade and downgrade paths—you can upgrade directly from one EEOL release to the next EEOL release even though EEOL releases generally occur in increments beyond three releases.

You can upgrade or downgrade to the EEOL release that occurs directly before or after the currently installed EEOL release, or to two EEOL releases before or after. For example, Junos OS Releases 17.1, 17.2, and 17.3 are EEOL releases. You can upgrade from Junos OS Release 17.1 to Release 17.2 or from Junos OS Release 17.1 to Release 17.3.

You cannot upgrade directly from a non-EEOL release to a release that is more than three releases ahead or behind. To upgrade or downgrade from a non-EEOL release to a release more than three releases before or after, first upgrade to the next EEOL release and then upgrade or downgrade from that EEOL release to your target release.

For more information about EEOL releases and to review a list of EEOL releases, see https://www.juniper.net/support/eol/junos.html

Downgrading from Junos OS

Junos fusion for the enterprise is first supported in Junos OS Release 16.1, although you can downgrade a standalone EX9200 switch to earlier Junos OS releases.

> **NOTE:** You cannot downgrade more than three releases.
>
> For more information, see the Installation and Upgrade Guide.

To downgrade a Junos fusion for the enterprise from Junos OS Release 18.3R1, follow the procedure for upgrading, but replace the 18.3 **junos-install** package with one that corresponds to the appropriate release.

SEE ALSO

Junos OS Release Notes for Junos Fusion Provider Edge

IN THIS SECTION

These release notes accompany Junos OS Release 18.4R3 for the Junos Fusion Provider Edge. They describe new and changed features, limitations, and known and resolved problems in the hardware and software.

You can also find these release notes on the Juniper Networks Junos OS Documentation webpage, located at https://www.juniper.net/documentation/product/en_US/junos-os.

New and Changed Features

IN THIS SECTION

This section describes the new features and enhancements to existing features in the Junos OS main release and the maintenance releases for Junos Fusion Provider Edge.

Release 18.4R3 New and Changed Features

There are no new features or enhancements to existing features for Junos Fusion Provider Edge in Junos OS Release 18.4R3.

Release 18.4R2 New and Changed Features

There are no new features or enhancements to existing features for Junos Fusion Provider Edge in Junos OS Release 18.4R2.

Release 18.4R1 New and Changed Features

Class of Service (CoS)

- **CoS support for Broadband Edge Subscriber Management functionality on Junos Fusion Provider Edge**—Starting with Junos OS 18.4R1, standard CoS feature support is provided for broadband edge subscriber management functionality on Junos Fusion Provider Edge, including classifiers and rewrite rules for subscriber interfaces and up to four levels of hierarchical scheduling, depending on hardware used.

  [See Understanding CoS on an Aggregation Device in Junos Fusion Provider Edge.]

Junos Fusion

- **Support for broadband edge subscriber management (Junos Fusion Provider Edge)**—Starting in Junos OS Release 18.4R1, Junos Fusion Provider Edge supports broadband edge subscriber management where the aggregation device functions as the broadband network gateway (BNG). The aggregation device is used as a single point of management to provision and manage the broadband services on the extended ports on the satellite devices. The extended ports function as access ports on the BNG and are connected to customer premise equipment.

  [See Broadband on Junos Fusion and Junos OS Broadband Subscriber Management and Services Library.]

- **Connectivity fault management (Junos Fusion Provider Edge)**—Starting in Junos OS Release 18.4R1, Junos Fusion Provider Edge supports distributed and inline connectivity fault management (CFM) on the extended ports on the satellite devices. The aggregation device initiates and processes the continuity check messages (CCMs) that are sent and received on the extended ports on the satellite devices. This feature supports CCMs for multiple up MEPs, Ethernet loopback and linktrace for a MEP, and delay measurement and synthetic loss measurement for performance monitoring between two MEPs.

  [See Connectivity Fault Management in Junos Fusion.]

SEE ALSO

Changes in Behavior and Syntax | 81

Changes in Behavior and Syntax

IN THIS SECTION

This section lists the changes in behavior of Junos OS features and changes in the syntax of Junos OS statements and commands from Junos OS main release and the maintenance releases for Junos Fusion Provider Edge.

Release 18.4R3 Changes in Behavior and Syntax

There are no changes in default behavior and syntax for Junos Fusion Provider Edge in Junos OS Release 18.4R3.

Release 18.4R2 Changes in Behavior and Syntax

There are no changes in default behavior and syntax for Junos Fusion Provider Edge in Junos OS Release 18.4R2.

Release 18.4R1 Changes in Behavior and Syntax

There are no changes in default behavior and syntax for Junos Fusion Provider Edge in Junos OS Release 18.4R1.

SEE ALSO

Known Behavior

IN THIS SECTION

This section lists known behavior, system maximums, and limitations in hardware and software in Junos OS Release 18.4R3 for Junos Fusion Provider Edge.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Junos Fusion Provider Edge

- mix of virtual gateway configs on irb associated with vlan for vrrp and vxlan together are not supported in QFX 10k, even if the configs exists vxlan configurations takes precedence. PR1413878

SEE ALSO

Known Issues

IN THIS SECTION

There are no known issues in the Junos OS Release 18.4R3 for Junos Fusion Provider Edge.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Junos Fusion Provider Edge

- igmp membership is not getting learnt by the AD fully even when the igmp queries are been sent out. PR1419265
- In Junos Fusion scenario, if there are more than 12 cascade-ports configured to a satellite device (SD), the satellite discovery and provisioning process (sdpd) may continuously crash after committing, as a result, the SD cannot be managed from the aggregation device (AD). Traffic loss may not be observed right after sdpd crash, and since it's continuous to crash if there is no interruption, the related FPCs on AD device may reach 100% CPU utilization. PR1437387
- On MX Junos Fusion setup with AE (Aggregated Ethernet) interface configured with link-speed, the AE interface might flap whenever a new IFL (Logical Interface, e.g. subinterface) is added to it and commit. The issue results in service on the AE interface flap. PR1441869

Junos Fusion Satellite Software

- When using QFX5100/5110/5200/5210 as a satellite device (SD), configuring a copper small form-factor pluggable (SFP) may cause the SD to restart unexpectedly. PR1369062

SEE ALSO

- New and Changed Features | 79
- Changes in Behavior and Syntax | 81
- Known Behavior | 82

Resolved Issues

IN THIS SECTION

This section lists the issues fixed in the Junos OS main release and the maintenance releases.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Resolved Issues: 18.4R3

Junos Fusion Provider Edge

- Incorrect power values are seen for extended optical ports. PR1412781
- Deprecate Junos Fusion Support on QFX10000. PR1448245

Resolved Issues: 18.4R2

Junos Fusion Provider Edge

- BUM traffic might get dropped on peer Fusion Aggregation Device when the link between Satellite Device and local Aggregate Device goes down. PR1384440
- QFX5110 : auto-negotiation is not disabled in hardware after setting no-auto-negotiation option in CLI. PR1411852

Junos Fusion Satellite Software

- Extended Port (EP) LAG might go down on the Satellite Devices (SDs) if the related Cascade Port (CP) links to an Aggregation Device (AD) goes down. PR1397992

Resolved Issues: 18.4R1

Junos Fusion Provider Edge

- In a Junos Fusion, the aggregation device LAG interface might flap during satellite device upgrade or downgrade. PR1321575
- The laser receive power of the extended ports is higher than the output power of the peer link. PR1358007
- The ppmd process on AD might crash when using authentication key-chain with BFD. PR1375647
- The spmd core process might generate a core file after the **request support information** command is executed on the aggregation device. PR1375732

Junos Fusion Satellite Software

- The shutdown of the cascade port might lead to the invalidation of the MPC. PR1360876
- QFX satellite device might restart in Junos OS Fusion solutions when copper SFP is used. PR1369062

SEE ALSO

New and Changed Features | 79
Changes in Behavior and Syntax | 81
Known Behavior | 82
Known Issues | 83
Documentation Updates | 85
Migration, Upgrade, and Downgrade Instructions | 86

Documentation Updates

There are no errata or changes in Junos OS Release 18.4R3 documentation for Junos Fusion Provider Edge.

SEE ALSO

Migration, Upgrade, and Downgrade Instructions

IN THIS SECTION

This section contains the procedure to upgrade Junos OS, and the upgrade and downgrade policies for Junos OS for Junos Fusion Provider Edge. Upgrading or downgrading Junos OS might take several hours, depending on the size and configuration of the network.

Basic Procedure for Upgrading an Aggregation Device

When upgrading or downgrading Junos OS, always use the **jinstall** package. Use other packages (such as the **jbundle** package) only when so instructed by a Juniper Networks support representative. For information about the contents of the **jinstall** package and details of the installation process, see the Installation and Upgrade Guide.

NOTE: Before upgrading, back up the file system and the currently active Junos OS configuration so that you can recover to a known, stable environment in case the upgrade is unsuccessful. Issue the following command:

```
user@host> request system snapshot
```

The installation process rebuilds the file system and completely reinstalls Junos OS. Configuration information from the previous software installation is retained, but the contents of log files might be erased. Stored files on the routing platform, such as configuration templates and shell scripts (the only exceptions are the **juniper.conf** and **ssh** files), might be removed. To preserve the stored files, copy them to another system before upgrading or downgrading the routing platform. See the Junos OS Administration Library.

The download and installation process for Junos OS Release 18.R1 is different from that for earlier Junos OS releases.

1. Using a Web browser, navigate to the Download Software URL on the Juniper Networks webpage:

   https://www.juniper.net/support/downloads/

2. Log in to the Juniper Networks authentication system by using the username (generally your e-mail address) and password supplied by Juniper Networks representatives.

3. Select **By Technology > Junos Platform > Junos Fusion** to find the software that you want to download.

4. Select the release number (the number of the software version that you want to download) from the Version drop-down list to the right of the page.

5. Select the **Software** tab.

6. Select the software package for the release.

7. Review and accept the End User License Agreement.

8. Download the software to a local host.

9. Copy the software to the routing platform or to your internal software distribution site.

10. Install the new **jinstall** package on the aggregation 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.

Customers in the United States and Canada, use the following commands.

- For 64-bit software:

> **NOTE:** We recommend that you 64-bit Junos OS software when implementing Junos Fusion Provider Edge.

```
user@host> request system software add validate reboot
source/jinstall64-18.R1.SPIN-domestic-signed.tgz
```

- For 32-bit software:

```
user@host> request system software add validate reboot
source/jinstall-18.R1.SPIN-domestic-signed.tgz
```

All other customers, use the following commands.

- For 64-bit software:

> **NOTE:** We recommend that you 64-bit Junos OS software when implementing Junos Fusion Provider Edge.

```
user@host> request system software add validate reboot
source/jinstall64-18.R1.SPIN-export-signed.tgz
```

- For 32-bit software:

```
user@host> request system software add validate reboot
source/jinstall-18.R1.SPIN-export-signed.tgz
```

Replace ***source*** with one of the following values:

- ***/pathname***—For a software package that is installed from a local directory on the router.

- For software packages that are downloaded and installed from a remote location:
  - **ftp://*hostname/pathname***
  - **http://*hostname/pathname***
  - **scp://*hostname/pathname*** (available only for the Canada and U.S. version)

The **validate** option validates the software package against the current configuration as a prerequisite for adding the software package to ensure that the router reboots successfully. This is the default behavior when the software package being added is for a different release.

Adding the **reboot** command reboots the router after the upgrade is validated and installed. When the reboot is complete, the router displays the login prompt. The loading process might take 5 to 10 minutes.

Rebooting occurs only if the upgrade is successful.

> **NOTE:** After you install a Junos OS Release 18.R **jinstall** package, you cannot return to the previously installed software by issuing the **request system software rollback** command. Instead, you must issue the **request system software add validate** command and specify the **jinstall** package that corresponds to the previously installed software.

Upgrading an Aggregation Device with Redundant Routing Engines

If the aggregation device has two Routing Engines, perform a Junos OS installation on each Routing Engine separately as follows to minimize disrupting network operations:

1. Disable graceful Routing Engine switchover (GRES) on the master Routing Engine and save the configuration change to both Routing Engines.
2. Install the new Junos OS release on the backup Routing Engine while keeping the currently running software version on the master Routing Engine.
3. After making sure that the new software version is running correctly on the backup Routing Engine, switch over to the backup Routing Engine to activate the new software.
4. Install the new software on the original master Routing Engine that is now active as the backup Routing Engine.

For the detailed procedure, see the *Installation and Upgrade Guide*.

Preparing the Switch for Satellite Device Conversion

Satellite devices in a Junos Fusion topology use a satellite software package that is different from the standard Junos OS software package. Before you can install the satellite software package on a satellite

device, you first need to upgrade the target satellite device to an interim Junos OS software version that can be converted to satellite software. For satellite device hardware and software requirements, see Understanding Junos Fusion Software and Hardware Requirements

> **NOTE:** The following conditions must be met before a standalone switch that is running Junos OS Release 14.1X53-D43 can be converted to a satellite device when the action is initiated from the aggregation device:
>
> - The switch can be converted to only SNOS 3.1 and later.
> - Either the switch must be set to factory-default configuration by using the **request system zeroize** command, or the following command must be included in the configuration: **set chassis auto-satellite-conversion**.

Customers with EX4300 switches, use the following command:

```
user@host> request system software add validate reboot
source/jinstall-ex-4300-14.1X53-D43.3-domestic-signed.tgz
```

Customers with QFX5100 switches, use the following command:

```
user@host> request system software add reboot
source/jinstall-qfx-5-14.1X53-D43.3-domestic-signed.tgz
```

When the interim installation has completed and the switch is running a version of that is compatible with satellite device conversion, perform the following steps:

1. Log in to the device by using the console port.

2. Clear the device:

   ```
   [edit]
   user@satellite-device# request system zeroize
   ```

   > **NOTE:** The device reboots to complete the procedure for resetting the device.

   If you are not logged in to the device by using the console port connection, your connection to the device is lost after you enter the **request system zeroize** command.

   If you lose your connection to the device, log in using the console port.

3. (EX4300 switches only) After the reboot is complete, convert the built-in 40-Gbps QSFP+ interfaces from Virtual Chassis ports (VCPs) into network ports:

   `user@satellite-device>` **request virtual-chassis vc-port delete pic-slot 1 port *port-number***

   For example, to convert all four built-in 40-Gbps QSFP+ interfaces on an EX4300-24P switch into network ports:

   `user@satellite-device>` **request virtual-chassis vc-port delete pic-slot 1 port 0**
   `user@satellite-device>` **request virtual-chassis vc-port delete pic-slot 1 port 1**
   `user@satellite-device>` **request virtual-chassis vc-port delete pic-slot 1 port 2**
   `user@satellite-device>` **request virtual-chassis vc-port delete pic-slot 1 port 3**

   This step is required for the 40-Gbps QSFP+ interfaces that will be used as uplink interfaces in a Junos Fusion topology. Built-in 40-Gbps QSFP+ interfaces on EX4300 switches are configured into VCPs by default, and the default settings are restored after the device is reset.

After this initial preparation, you can use one of three methods to convert your switches into satellite devices—autoconversion, manual conversion, and preconfiguration. See Configuring Junos Fusion Provider Edge for detailed configuration steps for each method.

Converting a Satellite Device to a Standalone Device

If you need to convert a satellite device to a standalone device, you must install a new Junos OS software package on the satellite device and remove the satellite device from the Junos Fusion topology.

> **NOTE:** If the satellite device is a QFX5100 switch, you need to install a PXE version of Junos OS. The PXE version of Junos OS is software that includes *pxe* in the Junos OS package name when it is downloaded from the Software Center—for example, the PXE image for Junos OS Release 14.1X53-D43 is named install-media-pxe-qfx-5-14.1X53-D43.3-signed.tgz . If the satellite device is an EX4300 switch, you install a standard jinstall-ex-4300 version of Junos OS.

The following steps explain how to download software, remove the satellite device from Junos Fusion, and install the Junos OS software image on the satellite device so that the device can operate as a standalone device.

1. Using a Web browser, navigate to the Junos OS software download URL on the Juniper Networks webpage:

   https://www.juniper.net/support/downloads

2. Log in to the Juniper Networks authentication system by using the username (generally your e-mail address) and password supplied by Juniper Networks representatives.

3. Select **By Technology > Junos Platform > Junos Fusion** from the drop-down list and select the switch platform series and model for your satellite device.

4. Select the Junos OS Release 14.1X53-D30 software image for your platform.

5. Review and accept the End User License Agreement.

6. Download the software to a local host.

7. Copy the software to the routing platform or to your internal software distribution site.

8. Remove the satellite device from the automatic satellite conversion configuration.

   If automatic satellite conversion is enabled for the satellite device's member number, remove the member number from the automatic satellite conversion configuration. The satellite device's member number is the same as the FPC slot ID.

   `[edit]`
   `user@aggregation-device#` **delete chassis satellite-management auto-satellite-conversion satellite *member-number***

   For example, to remove member number 101 from Junos Fusion:

   `[edit]`
   `user@aggregation-device#` **delete chassis satellite-management auto-satellite-conversion satellite 101**

   You can check the automatic satellite conversion configuration by entering the **show** command at the **[edit chassis satellite-management auto-satellite-conversion]** hierarchy level.

9. Commit the configuration.

   To commit the configuration to both Routing Engines:

   `[edit]`
   `user@aggregation-device#` **commit synchronize**

Otherwise, commit the configuration to a single Routing Engine:

```
[edit]
user@aggregation-device# commit
```

10. Install the Junos OS software on the satellite device to convert the device to a standalone device.

    ```
    [edit]
    user@aggregation-device> request chassis satellite install URL-to-software-package fpc-slot member-number
    ```

    For example, to install a PXE software package stored in the **/var/tmp** directory on the aggregation device onto a QFX5100 switch acting as the satellite device using FPC slot 101:

    ```
    [edit]
    user@aggregation-device> request chassis satellite install /var/tmp/install-media-pxe-qfx-5-14.1X53-D43.3-signed.tgz fpc-slot 101
    ```

    For example, to install a software package stored in the **var/tmp** directory on the aggregation device onto an EX4300 switch acting as the satellite device using FPC slot 101:

    ```
    [edit]
    user@aggregation-device> request chassis satellite install /var/tmp/jinstall-ex-4300-14.1X53-D30.3-domestic-signed.tgz fpc-slot 101
    ```

    The satellite device stops participating in the Junos Fusion topology after the software installation starts. The software upgrade starts after this command is entered.

11. Wait for the reboot that accompanies the software installation to complete.

12. When you are prompted to log back into your device, uncable the device from the Junos Fusion topology. See *Removing a Transceiver from a QFX Series Device* or *Remove a Transceiver*, as needed. Your device has been removed from Junos Fusion.

    > **NOTE:** The device uses a factory-default configuration after the Junos OS installation is complete.

Upgrading an Aggregation Device

When you upgrade an aggregation device to Junos OS Release 18.R, you must also upgrade your satellite device to Satellite Device Software version 3.1R1.

Upgrade and Downgrade Support Policy for Junos OS Releases

Support for upgrades and downgrades that span more than three Junos OS releases at a time is not provided, except for releases that are designated as Extended End-of-Life (EEOL) releases. EEOL releases provide direct upgrade and downgrade paths—you can upgrade directly from one EEOL release to the next EEOL release even though EEOL releases generally occur in increments beyond three releases.

You can upgrade or downgrade to the EEOL release that occurs directly before or after the currently installed EEOL release, or to two EEOL releases before or after. For example, Junos OS Releases 17.1, 17.2, and 17.3 are EEOL releases. You can upgrade from Junos OS Release 17.1 to Release 17.2 or from Junos OS Release 17.1 to Release 17.3.

You cannot upgrade directly from a non-EEOL release to a release that is more than three releases ahead or behind. To upgrade or downgrade from a non-EEOL release to a release more than three releases before or after, first upgrade to the next EEOL release and then upgrade or downgrade from that EEOL release to your target release.

For more information about EEOL releases and to review a list of EEOL releases, see https://www.juniper.net/support/eol/junos.html.

Downgrading from Junos OS Release 18.

To downgrade from Release 18. to another supported release, follow the procedure for upgrading, but replace the 18. **jinstall** package with one that corresponds to the appropriate release.

> **NOTE:** You cannot downgrade more than three releases.

For more information, see the Installation and Upgrade Guide.

SEE ALSO

- New and Changed Features | **79**
- Changes in Behavior and Syntax | **81**
- Known Behavior | **82**
- Known Issues | **83**
- Resolved Issues | **84**
- Documentation Updates | **85**

Junos OS Release Notes for MX Series 5G Universal Routing Platform

IN THIS SECTION

These release notes accompany Junos OS Release 18.4R3 for the MX Series. They describe new and changed features, limitations, and known and resolved problems in the hardware and software.

You can also find these release notes on the Juniper Networks Junos OS Documentation webpage, located at https://www.juniper.net/documentation/product/en_US/junos-os.

New and Changed Features

IN THIS SECTION

This section describes the new features and enhancements to existing features in the Junos OS main release and the maintenance releases for MX Series.

New and Changed Features: 18.4R3

There are no new features or enhancements to existing features for MX Series in Junos OS Release 18.4R3.

Release 18.4R2 New and Changed Features

Network Management and Monitoring

- **Support for optimizing the SNMP walk execution time for IPsec statistics (MX Series)**—In Junos OS Release 18.4R2, you can optimize the SNMP walk execution time for IPsec statistics. To achieve this optimization, increase the cache lifetime of the IPsec-related information (for example statistics and SA information) so that a single SNMP walk request is served for *N* number of IPsec security associations (SAs) with *N* number of queries made to the service PIC. IPsec statistics are now fetched by the burst mode, thereby reducing the load on the Routing Engine daemon, kmd. For different scale needs, we may have to tweak the hidden SNMP configuration parameters, for example, with Dead Peer detection (DPD) having more number of tunnels without traffic and simultaneous SNMP walks.

Subscriber Management and Services

- **Additional encapsulations added to pseudowire subscriber logical interfaces (MX Series with MPC and MIC)**—Currently, the supported encapsulation type on the pseudowire subscriber interfaces include:
  - **Transport logical interfaces**—Circuit cross-connect (CCC) encapsulation.
  - **Service logical interfaces**:
    - Ethernet VPLS encapsulation
    - VLAN bridge encapsulation
    - VLAN VPLS encapsulation

    Starting in Junos OS Release 18.4R2, in addition to the existing encapsulation types, the following support is provided:

    - **Transport logical interfaces**—Ethernet VPLS encapsulation, and provision for terminating the interface on the l2backhaul-vpn routing-instance.
    - **Service logical interfaces**—Circuit cross-connect (CCC) encapsulation, and provision for terminating the interface on locally switched Layer 2 circuits.

[See Pseudowire Subscriber Logical Interfaces Overview.]

Release 18.4R1 New and Changed Features

Authentication, Authorization and Accounting (AAA) (RADIUS)

- **Support for password change policy enhancement (MX Series)**—Starting in Junos OS Release 18.4R1, the Junos OS password change policy for local user accounts is enhanced to comply with additional password policies. As part of the policy improvement, you can configure the following:
  - **maximum-lifetime-value**—The maximum duration of a password. The password expires after the maximum is reached.
  - **minimum-lifetime-value**—The minimum duration of a password. You cannot change the password until the minimum duration is reached.

  [See password.]

Class of Service (CoS)

- **Support for five-level hierarchical CoS with dynamic interface set over dynamic interface sets (MX Series)** — Starting in Junos OS Release 18.4R1, five-level hierarchical CoS with the ability to configure dynamic interface sets over dynamic interface sets is supported on NG-MPC2E, NG-MPC3E, MPC5, and MPC7 line cards.

  [See stacked-interface-set (Dynamic Profiles).]

- **Support for dynamic and static logical interfaces in the same dynamic interface set (MX Series)** — Starting in Junos OS Release 18.4R1, you can apply dynamic and static logical interfaces in the same dynamic interface set on all MPCs that support four-level and five-level hierarchical CoS.

  [See Understanding Hierarchical CoS for Subscriber Interfaces.]

EVPN

- **Support for VMTO for ingress traffic (MX Series)**—Starting in Junos OS Release 18.4R1, you can configure a leaf or spine device that is configured as a Layer 3 gateway to support virtual machine traffic optimization (VMTO) for ingress traffic. VMTO eliminates the unnecessary ingress routing to default gateways when a virtual machine is moved from one data center to another.

  To enable VMTO, configure **remote-ip-host** routes at the **[edit routing-instances *routing-instance-name* protocols evpn]** hierarchy level. You can also filter out the unwanted routes by configuring an import policy under the **remote-ip-host routes** option.

  [See Ingress Virtual Machine Traffic Optimization.]

- **Support for multihomed proxy advertisement (MX Series)**—Starting in Junos OS Release 18.4R1, Junos OS now provides enhanced support to proxy advertise the MAC address and IP route entry from all leaf devices that are multihomed to a CE device. This can prevent traffic loss when one of the connections to the leaf device fail. To support the multihomed proxy advertisement, all multihomed PE devices should

have the same multihomed proxy advertisement bit value. The multihomed proxy advertisement feature is enabled by default, and Junos OS uses the default multihomed proxy advertisement bit value of 0x20.

[See EVPN Multihoming Overview.]

- **Automatically generated and assigned Ethernet segment identifiers in EVPN-VXLAN and EVPN-MPLS Networks (MX240, MX480, QFX5100, and QFX5110)—**Starting in Junos OS Release 18.4R1, you can configure aggregated Ethernet interfaces and aggregated Ethernet logical interfaces on which LACP is enabled to automatically generate and assign Ethernet segment identifiers (ESIs) to themselves. We support this feature in the following environments:
  - On MX240 or MX480 routers that are multihomed in active-standby or active-active mode in an EVPN-MPLS network.
  - On QFX5100 or QFX5110 switches that are multihomed in active-active mode in an EVPN-VXLAN network.
- **MLD snooping support for EVPN-MPLS (MX Series and vMX)**—Starting with Junos OS Release 18.4R1, you can configure Multicast Listener Discovery (MLD) protocol snooping on MX Series routers with MPCs and vMX routers in an EVPN over an MPLS network. Enabling MLD snooping helps to constrain IPv6 multicast traffic to interested receivers in a broadcast domain. Multicast sources and receivers in the EVPN instance (EVI) can each be single-homed to one provider edge (PE) device or multihomed in all-active mode to multiple PE devices.

  MLD snooping support in this environment includes:
  - Either MLDv1 and MLDv2 with any-source multicast (*,G) or MLDv2 with source-specific multicast (S,G) (configurable)
  - MLD state synchronization among multihoming PE devices using BGP EVPN Type 7 (Join Sync Route) and Type 8 (Leave Sync Route) network layer reachability information (NLRI)
  - Inclusive multicast forwarding from the ingress PE device into the EVPN core to reach all other PE devices
  - Forwarding across bridge domains (VLANs) using IRB interfaces and PIM operating in passive and distributed designated router (PIM-DDR) modes

  [See Overview of Multicast Forwarding with IGMP or MLD Snooping in an EVPN-MPLS Environment.]
- **Support for graceful restart on EVPN-VXLAN (MX Series)**—Starting in Junos OS Release 18.4R1, Junos OS supports graceful restart on EVPN-VXLAN on EX9200 and QFX Series switches and MX Series Routers. Graceful restart allows the device to recover from a routing process restart or Routing Engine switchover without nonstop active routing (NSR) enabled.

  [See NSR and Unified ISSU Support for EVPN Overview.]

Forwarding and Sampling

- **Support for activating or deactivating static routes on the basis of RPM test results (MX Series)**—Starting in Junos OS 18.4R1, you can use RPM probes to detect link status, and change the preferred-route state on the basis of the probe results. Tracked routes can be IPv4 or IPv6, and support a single IPv4 or IPv6 next hop. For example, RPM probes can be sent to an IP address to determine if the link is up, and if so, take the action of installing a static route in the route table . RPM-tracked routes are installed with preference 1 and thus are preferred over any existing static routes for the same prefix.

  [See Configuring RPM Probes , rpm-tracking, and show route rpm-tracking.]

General Routing

- **Avoid jlock hogs by configuring jlock hold time (MX Series)**—Starting with Junos OS Release 18.4R1, users can configure a jlock hold time threshold value via sysctl. This helps avoid jlock hogs (tight loops) in **ifd_walk** by dropping the jlock after the threshold time is reached. The default hold time is 50ms.

  [See sysctl() Function]

Hardware

- **Smart SFP and smart SFP+ support (MX Series)**—Starting in Junos OS Release 18.4R1, the smart SFP transceivers and smart SFP+ transceiver in Table 1 on page 99 and Table 2 on page 100 are supported on the listed MX Series routers.

  Table 1: SFP Transceiver Support on the MX Series

SFP Model	Supported MPCs, MICs, and Platforms
SFP-GE-TDM-T1 SFP-GE-TDM-DS3 SFP-GE-TDM-E1 SFP-GE-TDM-STM1 SFP-GE-TDM-STM4	Supported MPCs: • MX-MPC1E-3D (with MIC) • MX-MPC1E-3D-Q (with MIC) • MX-MPC2E-3D (with MIC) • MX-MPC2E-3D-Q (with MIC) • MX-MPC2E-3D-NG (with MIC) • MX-MPC3E-3D-NG (with MIC)
	Supported MICs: • MIC-3D-20GE-SFP • MIC-3D-20GE-SFP-E • MIC-MACSEC-20GE
	Supported platforms: • MX80 (with MIC) • MX104 (fixed interfaces as well as MIC) • MX240, MX480, and MX960 (with MPC+ MIC)

Table 2: SFP+ Transceiver Support on the MX Series

SFP+ Model	Supported MPCs, MICs, and Platforms
SFPP-XGE-TDM-STM16	Supported MPCs: • MX-MPC1E-3D (with MIC) • MX-MPC1E-3D-Q (with MIC) • MX-MPC2E-3D (with MIC) • MX-MPC2E-3D-Q (with MIC) • MX-MPC2E-3D-NG (with MIC) • MX-MPC3E-3D-NG (with MIC)
	Supported MICs: • MIC-MACSEC-20GE
	Supported platforms: • MX80 (with MIC) • MX104 (fixed interfaces as well as MIC) • MX240, MX480, and MX960 (with MPC+ MIC)

See the [Hardware Compatibility Tool].

- **Support for 40-Gbps ports to operate at 1-Gbps or 10-Gbps speed (MX10008)**—Starting in Junos OS Release 18.4R1, you can use the Mellanox pluggable adapter (QSFP+ to SFP+ adapter or QSA; model number: MAM1Q00A-QSA) to convert quad-lane based ports to a single-lane based SFP+ port. The QSA adapter has the QSFP+ form factor with a receptacle for the SFP+ module. Use the QSA adapter to convert a 40-gigabit port to a 1-Gbps or a 10-Gbps port. You can plug-in a 10-Gbps SFP+ transceiver into the QSA adapter, which is inserted into the QSFP or QSFP+ ports of the MX10K-LC2101 line cards of the MX10008 router.

High Availability and Resiliency

- **BFD Client for segment routing (MX Series)**—This feature is not supported on Junos OS Release 18.4R1. You can configure Junos OS to run Seamless Bidirectional Forwarding Detection (S-BFD) over non colored segment routing tunnels and use S-BFD as a fast mechanism to detect path failures. You can configure **bfd-liveness-detection** at the **[edit protocols source-packet-routing segment-list]** hierarchy level for enabling path-level S-BFD for a segment list.

  [See Understanding Bidirectional Forwarding Detection (BFD).]

Interfaces and Chassis

- **Support for enhanced Switch Control Board (MX240, MX480, and MX960)**—Starting in Release 18.4R1, Junos OS supports the Enhanced Switch Control Board SCBE3-MX (model number: SCBE3-MX-S) on the MX240, MX480, and MX960 routers. The SCBE3-MX-S supports a pluggable Routing Engine and

provides a control plane and data plane interconnect to each line card slot. The SCBE3-MX provides a fabric bandwidth of up to 480Gbps, using four fabric planes (with MPC7 line cards).

The following Routing Engines are supported on SCBE3-MX: RE-S-1800x2, RE-S-1800x4, RE-S-X6-64G, and RE-S-X6-128G.

The SCBE3-MX interoperates with the following existing line cards: MS-MPC, MPC2-NG, MPC3, MPC3-NG, MPC4, MPC5, and MPC7.

SCBE3-MX supports fabric hardening. It supports configuration of per fpc **bandwidth-degradation** and per fpc **blackhole-action**.

The SCBE3-MX does not interoperate with any previous-generation SCBs (SCB, SCBE, and SCBE2). Also, the SCBE3-MX does not support smooth upgrade.

[See SCBE3-MX Description]

- **VRF-aware syslog client (MX Series)**—Starting in Junos OS Release 18.4R1, the system log (syslog) client is completely VRF aware. If a server is reachable through a virtual routing and forwarding (VRF) instance, the syslog client can send log messages to the server. To specify the routing instance through which the remote server is reachable, use the **routing-instance** statement (introduced at appropriate hierarchies).

  In previous releases, the syslog client could send log messages to a server reachable through a VRF instance only if the server could be looked up using the default (inet.0 or inet6.0) routing table. If you set the **management-instance** statement, the server was reachable through that VRF instance but the syslog client could not send syslog messages to the server.

  [See Management Interface in a Non-Default Instance and routing-instance (Syslog).]

- **Layer 2 and Layer 3 protocols, platforms, and service features supported on MX10008**— Starting in Junos OS Release 18.4R1, MX10008 routers support the following features:

  - SFLOW—Overview of sFlow Technology
  - Inline Active Flow Monitoring—Understanding Inline Active Flow Monitoring and bridge-template
  - Two-Way Active Management Protocol (TWAMP)—See Understanding Two-Way Active Measurement Protocol on Routers
  - MPLS—MPLS Overview
  - RSVP—RSVP Overview
  - MPC—MX Series MPC Overview
  - IPv4, IPv6, OSPF, and BGP—IPv6 Overview, Understanding IPv4 Addressing, OSPF Overview, and Understanding BGP.
  - Network Time Protocol (NTP)—NTP Overview
  - IGMP Snooping—IGMP Snooping Overview
  - BGP persistence for IPv4 and IPv6 and Segregation between interface specific code and DCD core code—Understanding the Long-Lived BGP Graceful Restart Capability and dcd

- Connectivity Fault Management (CFM)—Ethernet OAM Connectivity Fault Management
- Integrated Routing and Bridging (IRB)—Understanding Integrated Routing and Bridging
- gnMI—Enabling "ON CHANGE" Sensor Support Through Network Management Interface (gNMI)
- Rewrite of the first three bits of IPv6 DSCP value—inet6-precedence (CoS Rewrite Rules)
- NSR—Nonstop Active Routing Concepts
- TACACS+ Authentication and TACACS+ System Accounting— Configuring TACACS+ Authentication and Configuring TACACS+ System Accounting

Junos Telemetry Interface

- **Export of subscriber accounting and dynamic interface and interface-set queue statistics through Junos Telemetry Interface (JTI) (MX Series Routers)** —Starting in Junos OS Release 18.4R1, you can export statistics associated with dynamic subscriber interface stacking through remote procedure calls (gRPC). Accurate statistics (actual transit statistics) sensor for the subscriber interface includes IP (total) and IPv6 ingress and egress packets and bytes. Queue statistics for dynamic interface and interface sets include include counts of transmitted and dropped packets and bytes. The queue statistics sensors are maintained per contributing slot (as in the case with AE). Separate metadata sensors convey more contextual information about the dynamic interface and interface sets are available. The metadata sensors are also eligible for ON_CHANGE streaming.

  To enable subscriber and queue statistics for telemetry, include the **subscriber-statistics** and **queue-statistics** statements at the **[edit dynamic-profiles *profile-name* telemetry]** hierarchy level.

  [See dynamic-profiles and Guidelines for gRPC Sensors (Junos Telemetry Interface).]

- **Expanded ON_CHANGE support for Junos Telemetry Interface (JTI) (MX960, MX2010, MX2020, PTX5000, PTX1000, and PTX10000)**—Starting in Junos OS Release 18.4R1, OpenConfig support through remote procedure call (gRPC) and JTI is extended to support additional ON_CHANGE sensors.

  Periodical streaming of OpenConfig operational states and counters collects information at regular intervals. ON_CHANGE support streams operational states as events (only when there is a change), and is preferred over periodic streaming for time-sensitive missions.

  These paths, previously supporting periodical streaming only, now also support ON_CHANGE streaming:

  - **/components/component**
  - **/components/component/name/**
  - **/components/component/state/type**
  - **/components/component/state/id**
  - **/components/component/state/description**
  - **/components/component/state/serial-no**
  - **/components/component/state/part-no**

ON_CHANGE notification will be supported on all the hardware components displayed in the Junos OS CLI operational mode command **show chassis hardware**.

To provision a sensor to export data through gRPC, use the **telemetrySubscribe** RPC to specify telemetry parameters. To enable ON_CHANGE support, configure the sample frequency in the subscription as zero.

[See Guidelines for gRPC Sensors (Junos Telemetry Interface) and show chassis hardware.]

- **Support for NTF agent (MX240, MX480, MX960, MX2010, MX2020, PTX1000, PTX5000, PTX10000, and VMX)**—Junos OS exposes telemetry data over gRPC and UDP as part of the Junos Telemetry Interface (JTI). One way to stream JTI data into your existing telemetry and analytics infrastructure requires managing an external entity to convert the data into a compatible format. Starting in Junos OS Release 18.4R1, the NTF agent feature provides an on-box solution that allows you to configure and customize to which endpoint (such as IPFIX and Kafka) the JTI data is delivered and in which format (such as AVRO, JSON, and MessagePack) the data is encoded.

  [See NTF Agent Overview.]

- **Abstracted fabric interface support on Junos Telemetry Interface (JTI) (MX480, MX960, MX2008, MX2010, MX2020, and MX-ELM)**—Starting in Junos OS Release 18.4R1, JTI sensor support is available for abstracted fabric interfaces. An abstracted fabric interface is a pseudointerface that represents a first class Ethernet interface behavior. This sensor is only supported for node virtualization configurations on MX routers with an abstract fabric Interface as the connecting link between guest network functions (GNFs). JTI sensors will report interface-specific load-balancing and fabric queue statistics. They also will report aggregated statistics across all abstracted fabric interfaces hosted on a source Packet Forwarding Engine of local guest network functions (GNFs) along with the fabric statistics for all traffic ingressing from and egressing to the fabric from that Packet Forwarding Engine.

  JTI sensor support is for both gRPC sensors and native (UDP) sensors. Use the following resource path to configure JTI sensors:

  - **/junos/system/linecard/node-slicing/af-fab-stats/**

  To provision the sensor to export data through gRPC, use the **telemetrySubcribe** RPC to specify telemetry parameters. Streaming telemetry data through gRPC also requires the OpenConfig for Junos OS module. Starting in Junos OS Release 18.3R1, OpenConfig and Network Agent packages are bundled into the Junos OS image by default. Both packages support the Junos Telemetry Interface (JTI).

  For exporting statistics using UDP native sensors, configure parameters at the **[edit services analytics]** hierarchy level.

  [See sensor (Junos Telemetry Interface), Configuring a Junos Telemetry Interface Sensor (CLI Procedure), and Guidelines for gRPC Sensors (Junos Telemetry Interface).]

- **Enhanced IS-IS sensor support for Junos Telemetry Interface (JTI) (MX960, MX2020, PTX5000, PTX1000, and PTX10000)**—Starting in Junos OS Release 18.4R1, JTI supports OpenConfig Version v0.3.3 (from v0.2.1) for resource paths related to IS-IS link-state database (LSDB) streaming. The difference between

the two versions results in changes, additions, deletions, or non-support for leaf devices related to the following IS-IS type length value (TLV) parameters and IS-IS areas:

- TLV 135: extended-ipv4-reachability
- TLV 236: ipv6-reachability
- TLV 22: extended-is-reachability
- TLV 242: router-capabilities
- IS-IS interface attributes
- IS-IS adjacency attributes

To provision the sensor to export data through gRPC streaming, use the **telemetry Subscribe** RPC to specify telemetry parameters. Streaming telemetry data through gRPC also requires the OpenConfig and Network Agent packages, both of which are bundled into the Junos image in a default package named **junos-openconfig**.

[See Configuring a Junos Telemetry Interface Sensor (CLI Procedure) and Guidelines for gRPC Sensors (Junos Telemetry Interface).]

Layer 2 VPN

- **Group VPN on AMS interface (MX Series)**—Starting in Junos OS Release 18.4R1, Junos OS supports load-balancing Group VPN services on AMS interfaces. AMS interfaces are a bundle of interfaces that function as a single interface and can be configured to load-balance traffic among the group members. To configure load balancing of Group VPN services on AMS interfaces, include the **ipsec-group-vpn** in the **[edit services service-set *service-set-name*]** hierarchy level to configure the service set and the **load-balancing-option** statements in the **service-interface** hierarchy of the AMS interface to enable load balancing.

  For more information on configuring AMS interfaces, see Configuring Aggregated Multiservices Interfaces.

  [See Group VPN on AMS Interfaces.]

MPLS

- **Track IGP metric for install prefixes (MX Series)**—Starting in Junos OS Release 18.4R1, you can let the install prefixes follow the metric of their corresponding IGP prefix so that the various RSVP protocol routes installed for the LSP can now each have their indivdual metric value. The **install-prefix** IGP metric tracking feature can be configured for all LSPs at the **[edit protocols mpls]** level or on a per-LSP basis at the **[edit protocols mpls label-switched-path]** hierarchy level.

  [See Install Prefix IGP Overview.]

- **Support for IP-based filtering and port mirroring of MPLS traffic (MX Series with MPC and MIC)**—Starting in Junos OS Release 18.4R1, you can apply inbound and outbound filters for MPLS family based on MPLS-tagged IPv4 and IPv6 parameters using inner payload match conditions, and enable selective port mirroring of MPLS traffic unto a monitoring device.

To enable IP-based filtering, additional match conditions, such as IPv4 and IPv6 source and destination addresses, protocol, source and destination ports, and IPv4 and IPv6 source and destination prefix list, are added under the MPLS filter term **from** parameter.

To enable port mirroring, additional actions, such as **port-mirror** and **port-mirror-instance**, are added for all the match conditions under the filter term **then** parameter.

[See Understanding IP-Based Filtering and Selective Port Mirroring of MPLS Traffic.]

- **Static egress LSP with IPv6 next-hop**—Starting in Junos OS Release 18.4R1, you can configure static LSP on the egress router with the IPv6 as a nexthop address to forward IPv6 traffic. Static LSP supports nexthop indirection and link protection.

  [See Configuring Static Label Switched Paths for MPLS.]

Network Management and Monitoring

- **New major alarms on MX Series routers with MPC1 and MPC2**—Starting in Junos OS Release 18.4R1, on MX Series routers with MPC1 and MPC2 line cards, a major chassis alarm is raised when the following transient hardware errors occur:

  - CPQ SRAM parity error
  - CPQ RLDRAM double bit ECC error

  In the **Description** column of **show chassis alarm** outputs, these errors are described as “FPC <slot number> Major Errors”; for example:

  `user@host>` **show chassis alarms**

```
5 alarms currently active
Alarm time                          Class   Description
2018-10-05 18:48:06 PDT             Major   FPC 9 Major Errors
```

  By default, these errors result in the Packet Forwarding Engine interfaces on the FPC being disabled. You can use the **show chassis fpc errors** command to view the default or user-configured action that resulted from the error.

  You can check the syslog messages to learn more about the errors. See the following examples:

```
Oct  5 15:58:02  codeine fpc1 MQCHIP(0) CPQ RLDRAM double bit ECC error, bank 0
 addr 0x0
Oct  5 15:58:02  codeine fpc1 MQCHIP(0) CPQ Sram parity error, errlog 0x0
```

To resolve the error, restart the line card. If the error is still not resolved, open a support case using the Case Manager link at https://www.juniper.net/cm/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).

Operation, Administration, and Maintenance (OAM)

- **Support for inline link fault management (MX Series)**—Starting in Junos OS Release 18.4R1, Junos OS supports inline mode for OAM link fault management (LFM) on MX Series routers. Inline LFM delegates the transmission and receipt of LFM keepalive packets from the periodic packet management (**ppm**) process on the line card to the forwarding ASIC (that is, to the hardware). Inline LFM reduces the load on the ppm process and can support LFM in-service software upgrade (ISSU) for non-Juniper peers (for a keepalive interval of 1 second). You can enable inline LFM by including the **hardware-assisted-keepalives** configuration statement at the **[edit protocols oam ethernet link-fault-management]** hierarchy level. To disable inline LFM, delete the **hardware-assisted-keepalives** statement. The **show oam ethernet link-fault-management detail** command displays the keepalive packet statistics. Starting from Release 18.4R1, when inline LFM is enabled, the keepalive packet statistics are not updated. In earlier releases, the **show oam ethernet link-fault-management detail** command displayed the keepalive packet statistics.

  [See Enabling Inline Transmission of LInk Fault Management Keepalives for Maximum Scaling.]

Routing Policy and Firewall Filters

- **Support for next-filter as a firewall filter action (MX Series)—**Starting in Junos OS Release 18.4R1, firewall filters can be configured to execute a sequence of firewall *filter* actions. The new **next-filter** option allows you to deploy a filter list and run a series of filters, similar to what is already available with **next-term** actions, and provides filter scale optimization. Up to eight filters can be chained in this way. The feature is not supported on logical systems, or on loopback and pseudo-interfaces.

  You can use a filter list to implement a mix of multifield-classification and firewall filter rules. For example, the first filter in the list can be used to perform a generic filter classification, and the subsequent filters can then do the actual filtering.

  [See input-chain and output-chain.]

- **Filter-based GRE encapsulation (MX Series)**—Starting in Junos OS Release 18.4R1, you can use **tunnel-end-point** commands to enable line-rate, filter-based, GRE tunneling of IPv4 and IPv6 payloads across IPv4 networks.

  This GRE encapsulation is not supported for logical systems or for MPLS traffic, and the route lookup for GRE encapsulated traffic is supported on the default routing instance only.

  The following commands are introduced for this feature:

  set firewall tunnel-end-point *tunnel-name* gre

  set firewall tunnel-end-point *tunnel-name* ipv4

  set firewall tunnel-end-point *tunnel-name* ipv6

  [See tunnel-end-point and Filter-Based Tunneling Across IPv4 Networks.]

Routing Protocols

- **Support for BGP flowspec redirect to IP (MX Series)**—Starting in Junos OS Release 18.4R1, BGP flow specification as described in BGP Flow-Spec Internet draft draft-ietf-idr-flowspec-redirect-ip-02.txt, *Redirect to IP Action* is supported. Redirect to IP action uses extended BGP community to provide traffic filtering options for DDoS mitigation in service provider networks. Legacy flow specification, as specified in the Internet draft draft-ietf-idr-flowspec-redirect-ip-00.txt, *BGP Flow-Spec Extended Community for Traffic Redirect to IP Next Hop*, redirect to IP uses the BGP nexthop attribute to support interoperability of devices. Junos OS advertises redirect to IP flow specification action using the extended community by default. Redirect to IP action allows you to divert matching flow specification traffic to a globally reachable address. This feature is required to support service chaining in virtual service control gateway (vSCG).

  To configure a static IPv4 flow specification route, include the **redirect *ipv4-address*** statement at the **[edit routing-options flow route then]** hierarchy level in the configuration.

  To configure a static IPv6 specification route, include the **redirect *ipv6-address*** statement at the **[edit routing-options flow route then]** hierarchy level in the configuration.

  To configure legacy flow specification include **legacy-redirect-ip-action** at the **[edit group *bgp-group* neighbor *bgp neighbor* family inet flow]** hierarchy level.

  To configure BGP to use VRF.inet.0 table to resolve VRF flow specification routes, include **secondary-independent-resolution** statement at the **[edit protocols bgp neighbor family flow]** hierarchy level.

  [See legacy-redirect-ip-action.]

  [See Configuring BGP Flow Specification Action Redirect to IP to Filter DDoS Traffic.]

- **Support for 64 BGP add-path routes (MX Series)**—Starting in Junos OS Release 18.4R1, support is extended to 64 BGP add-path routes. Currently Junos OS supports six add-path routes and BGP can advertise up to 20 add-path routes through policy configuration. If you enable advertisement of multiple paths to a destination or if you increase the add-path prefix policy send count, BGP can now advertise up to 64 add-path routes.

  To advertise all add-paths, up to 64 add-paths or only equal-cost paths, include the **path-selection-mode** statement at the **[edit protocols bgp group *group-name* family *name* addpath send]** hierarchy level. You cannot enable both **multipath** and **path-selection-mode** at the same time.

  To advertise a second best path as a backup path in addition to the multiple ECMP paths include the **include-backup-path *backup_path_name*** statement at the **[edit protocols bgp group *group-name* family *name* addpath send]]** hierarchy level.

  [See path-selection-mode.]

  [See include-backup-path.]

- **Support for BGP egress peer engineering (MX Series)**—Starting in Junos OS Release 18.4R1, BGP LS extensions are enhanced to export segment routing topology information to the controller. A centralized controller in a software-defined network (SDN) can program any egress peer policy at ingress border

routers or at hosts within the domain in a segment routing network. The egress router advertises SID labels for all its peers, and the controller advertises these SID labels to the ingress router. The SID label can be a node segment, or an adjacency segment, or a set segment label. Thus the ingress router can select these SID labels to transfer data packets to the egress peers. The path that the controller derives can override the network derived best path. This feature can also be used in an inter domain scenario.

To configure a peer node SID, include **egress-te-node-segment-label** at the **[edit protocols bgp group *group-name* neighbor *neighbor-name*]** hierarchy level.

To configure a peer adjacency SID, include **egress-te-adj-segment *adj-segment-name*** at the **[edit protocols bgp group *group-name* neighbor *neighbor-name*]** hierarchy level.

To create a peer set SID, include **egress-te-set-segment *set-segment-name* label *label-name*** at the **[edit protocols bgp]** hierarchy level.

[See egress-te-node-segment.]

[See egress-te-adj-segment.]

[See egress-te-set-segment.]

- **Support for IPv4 VPN unicast and IPv6 VPN unicast address families in BGP (MX Series)**—Starting in Junos OS Release 18.4R1, the following address families are supported to enable advertisement or reception, or both, of multiple paths to a destination to and from the same BGP peer, instead of advertising and receiving only the active path to and from the same BGP peer, under the **[edit protocols bgp group *group-name*]** hierarchy.
  - IPv4 VPN unicast (**family inet-vpn**)
  - IPv6 VPN unicast (**family inet6-vpn**)

  [See Understanding the Advertisement of Multiple Paths to a Single Destination in BGP.]

- **BGP add path support for eBGP (MX Series)**—Starting in Junos OS Release 18.4R1, add path receive is now supported for eBGP under the [edit logical-systems *logical-system-name* protocols bgp group *group-name* family *family*].

  [See Understanding BGP.]

Services Applications

- **Support for MPLS-IPv6 inline active flow monitoring (MX Series)**—Starting in Junos OS Release 18.4R1 on MX Series routers, you can perform inline flow monitoring for MPLS-IPv6 traffic. Both IPFIX and version 9 templates are supported. If you are running inline flow monitoring on a Lookup (LU) card, you must enable sideband mode to create MPLS-IPv6 flow records.

  [See Configuring Inline Active Flow Monitoring Using Routers, Switches or NFX250.]

- **MX Series Virtual Chassis NAT support on BNG (MX240, MX480, and MX960 routers with MS-MPCs and MS-MICs)**—Starting in Junos OS Release 18.4R1, you can configure a two-member MX Series Virtual Chassis to use the Juniper broadband network gateway (BNG) with IPv4-to-IPv4 basic NAT, dynamic NAT, static destination NAT, dynamic NAT with port mapping, and stateful NAT64. A two-member MX

Series Virtual Chassis configuration supports a maximum of four MS-MPCs and four MS-MICs per Virtual Chassis.

[See Protocols and Applications Supported by the MS-MIC and MS-MPC.]

- **MX Series Virtual Chassis DS-Lite support (MX240, MX480, and MX960 routers with MS-MPCs and MS-MICs)**—Starting in Junos OS Release 18.4R1, you can configure DS-Lite on a two-member MX Series Virtual Chassis. A two-member MX Series Virtual Chassis configuration supports a maximum of four MS-MPCs and four MS-MICs per Virtual Chassis.

  [See Protocols and Applications Supported by the MS-MIC and MS-MPC.]

Software Defined Networking (SDN)

- **New features supported on Junos Node Slicing (MX Series)—**Starting in Junos OS Release 18.4R1, Junos Node Slicing supports the following features:
  - Support for device family and release in Junos OS YANG modules. [See Understanding Junos OS YANG Modules.]
  - Support for adding user-defined YANG files that provide mappings between the XML path and the OpenConfig path for data streamed through the Junos Telemetry Interface. [See Configurable NETCONF Proxy for Junos Telemetry Interface.]
  - Support for multiple, smaller configuration YANG modules. [See Understanding the YANG Modules That Define the Junos OS Configuration.]
  - Support for bidirectional authentication (client and server authentication) for gRPC for Junos Telemetry Interface. [See gRPC Services for Junos Telemetry Interface.]
  - Junos events sensor for the Junos Telemetry Interface. [See Overview of the Junos Telemetry Interface.]
  - Input streaming for gRPC Network Management Interface. [See Understanding OpenConfig and gRPC on Junos Telemetry Interface.]
  - ON_CHANGE support for Junos Telemetry Interface. [See Understanding OpenConfig and gRPC on Junos Telemetry Interface.]
  - Enhanced TACACS+ behavior to support the management interface in a non-default virtual routing and forwarding (VRF) instance. [See Management Interface in a Non-Default Instance.]

- TACACS+ authorization for operational commands using regular expressions. [See Using Regular Expressions on a RADIUS or TACACS+ Server to Allow or Deny Access to Commands.]
- Enhanced support for the nondefault management instance mgmt_junos. [See Management Interface in a Non-Default Instance.]

Subscriber Management and Services

> **NOTE:** Subscriber management is not ready for deployment in Junos OS Release 18.4R1. You can use this release for testing and qualification, but we recommend you wait for a later 18.4 maintenance or service release for deployment.

- **Limit subscriber sessions per user and access profile (MX Series)**—Starting in Junos OS Release 18.4R1, you can configure a limit on the number of sessions that can be active for a given username in an access profile.

  The **show network-access aaa statistics session-limit-per-username** command displays the number of active sessions and of blocked requests for usernames in each access profile. The **clear network-access aaa statistics session-limit-per-username** command enables you to clear blocked requests for debugging subscriber session limits.

  [See Understanding Session Options for Subscriber Access.]

- **New BBE statistics collection and management process (MX Series)**—Starting in Junos OS Release 18.4R1, the BBE statistics collection and management process, bbe-statsd, is introduced to take advantage of high-performance Routing Engines to increase the frequency of statistics collection and improve statistics processing in highly scaled environments. The **bbe-stats-service** option has been added to the **restart** command for restarting this statistics process.

  To collect subscriber and service statistics, you now must enable the **actual-transit-statistics** statement. If you do not configure this statement, subscriber statistics are not collected; the **show subscribers accounting-statistics** command displays a value of zero for subscriber statistics; and the subscriber statistics are reported to RADIUS with values of zero.

  [See Enabling the Reporting of Accurate Subscriber Accounting Statistics to the CLI.]

- **Subscriber secure policy information not revealed in core file dumps (MX Series)**—Starting in Junos OS Release 18.4R1, subscriber secure policy (SSP) information that might identify subscribers or mediation devices is automatically encrypted when the authd, bbe-smgd, or dfcd process generates core error files. Unauthorized persons examining the error files are unable to view the SSP information. The SSP information that might be present in the core error file includes the source and destination IP address for the mediation device, device ports, and intercept ID. No configuration is required or possible.

  [See Subscriber Secure Policy Overview.]

- **Increased number of IP addresses in DHCPv4 server groups (MX Series)**—Starting in Junos OS Release 18.4R1, DHCPv4 server groups support up to 32 active server IP addresses. In earlier releases, only 5 servers are supported.

  [See Configuring Active Server Groups to Apply a Common DHCP Relay Agent Configuration to Named Server Groups.]

- **Address allocation method determines behavior when address pool is deleted or drained (MX Series)**—Starting in Junos OS Release 18.4R1, additional checking is performed to determine the subsequent behavior when authd notifies the DHCP process that an address pool is deleted or being drained:

  - When addresses are allocated on demand, the family with the address in that pool is logged out immediately when the pool is deleted, or logged out gracefully by the draining process when a DHCP renew or rebind message is received.
  - When the addresses are preallocated, the addresses for both families are deleted immediately when the pool is deleted, or deleted gracefully by the draining process when a DHCP renew or rebind message is received.

  [See Single-Session DHCP Dual-Stack Overview and Configuring DHCP Local Address Pool Rapid Drain.]

- **Enhanced support for forwarding ACKs from trusted servers (MX Series)**—Starting in Junos OS Release 18.4R1, the **allow-server-change** option of the **active-server-group** statement enables the DHCPv4 relay agent to forward ACKs to DHCP information request (DHCPINFORM) messages from any server in the active server group to the client. In earlier releases, only ACKs to DHCP request (renew or rebind) messages can be forwarded from trusted servers.

  [See Configuring Active Server Groups to Apply a Common DHCP Relay Agent Configuration to Named Server Groups.]

- **Support for DHCPv6 NotOnLink status code (MX Series)**—Starting in Junos OS Release 18.4R1, the DHCPv6 server can return to the client a status code of NotOnLink in the Reply PDU IA field during reauthentication when the subscriber IP or IPv6 address changes. This code means that at least one address in the client's request IA is not appropriate for the client's connection link. In earlier releases, only a NoAddrsAvail or NoPrefixAvail status code can be returned when there is an issue with requested addresses.

  [See RADIUS Reauthentication As an Alternative to RADIUS CoA for DHCP Subscribers.]

- **Reassign IPv4 address to a new subscriber (MX Series)**—Starting in Junos OS Release 18.4R1, you can enable a new subscriber to be reassigned an IPv4 address that is currently assigned to an existing subscriber by including the **reassign-on-match** option with the **address-protection** statement. The new subscriber request is rejected, but the existing subscriber is disconnected. The address is assigned to the new subscriber when it renegotiates the session

  [See Configuring Duplicate IPv4 Address Protection for AAA.]

- **New predefined variables and RADIUS VSAs for interface and set targeted distribution (MX Series)**—Starting in Junos OS Release 18.4R1, when you target an interface or an interface set for

distribution on aggregated Ethernet member links, you can use a Juniper Networks predefined variable to source the weight value from the RADIUS Access-Accept message on a per-subscriber basis, or from Diameter AVPs during NASREQ processing:

- $junos-interface-target-weight corresponds to Juniper Networks VSA 26-214, Interface-Targeting-Weight.
- $junos-interface-set-target-weight corresponds to Juniper Networks VSA 26-213, Interface-Set-Targeting-Weight.

[See Junos OS Predefined Variables That Correspond to RADIUS Attributes and VSAs.]

- **Support for exporting BNG sensor data to an IPFIX collector (MX Series)**—Starting in Junos OS Release 18.4R1, the input-jti-ipfix plug-in collects a limited set of sensor data from the local BNG Junos Telemetry Interface and translates it to the appropriate IPFIX records for export to an IPFIX collector.

  [See Telemetry Data Collection on the IPFIX Mediator for Export to an IPFIX Collector.]

- **Detection and autogeneration of logical interface sets representing logical access nodes (MX Series)**—Starting in Junos OS Release 18.4R1, you can configure the router to parse the ANCP Access-Aggregation-Circuit-ID-ASCII attribute (TLV 0x0003). When the TLV string begins with a **#** character, the entire string is a backhaul line identifier. The portion of the string after the **#** delimiter represents a logical intermediate node (DPU-C or PON tree) in the access network to which the subscriber is attached. This portion is used to set the value of the $junos-aggregation-interface-set-name variable, and is used as the name of a CoS Level 2 interface set that groups subscribers. Enable parsing with the **hierarchical-access-network-detection** option of the **access-line** statement.

  [See Detection of Backhaul Line Identifiers and Autogeneration of Intermediate Node Interface Sets.]

- **BGP support over dynamic PPPoE interfaces (MX Series)**—Starting in Junos OS Release 18.4R1, BGP is supported over dynamic PPPoE interfaces. PPPoE subscriber clients correspond to BGP neighbors, so you configure the PPPoE subscriber client IP addresses as the BGP neighbor addresses with the **[edit protocols bgp group *name* neighbor]** stanza.

  You must enable routing services in both the PPPoE subscriber dynamic profile and the dynamic profile for the underlying VLAN interface with the new **routing-service** statement. This statement replaces the deprecated **routing-services** statement.

  You can also selectively enable or disable routing services per subscriber through RADIUS by using the new $junos-routing-services predefined variable. The action is determined by the value of the new Routing-Services VSA (26-212) returned in the RADIUS Access-Accept message.

  [See Junos OS Enhanced Subscriber Management.]

- **Support for Layer 2 services provisioning on the services side of pseudowire service logical interface anchored on redundant logical tunnel interface (MX Series with MPC and MIC)**—Starting in Junos OS Release 18.4R1, Layer 2 services provisioning such as bridge and VPLS, is supported on the services side of the pseudowire service logical interface anchored to redundant logical tunnel interface. With this support, the chassis-wide scaling numbers available for the physical interfaces over redundant logical tunnels is extended to pseudowire service interfaces anchored over redundant logical tunnel interfaces.

[See Layer 2 Services on Pseudowire Service Interface Overview.]

- **Support of single-hop BFD sessions for pseudowire redundant logical interfaces (MX Series)**—Junos OS supports inline distribution of single-hop Bidirectional Forwarding Detection [protocol] (BFD) sessions for pseudowire subscriber logical tunnel interfaces by default, as these interfaces are anchored on a single Flexible PIC Concentrator (FPC). With pseudowire redundant logical interfaces, the member logical tunnel interfaces can be hosted on different linecards. As a result, single-hop BFD sessions are operated in a centralized mode because the distribution address is not available for these logical interfaces.

  Starting in Junos OS Release 18.4R1, the support for inline distribution of single-hop BFD sessions is extended to pseudowire subscriber over redundant logical tunnel interfaces, thereby improving the scaling (number of sessions) and performance (detection time) of single-hop BFD sessions.

  [See Anchor Redundancy Pseudowire Subscriber Logical Interfaces Overview.]

- **ARP enhancements for subscriber management (MX Series)**—Starting in Junos OS Release 18.4R1, the following ARP enhancements are supported only for framed routes on dynamic VLANs:

  - Dynamic layer 2 MAC address resolution works for network (non-host) IPv4 framed routes. The non-host framed route is coupled with the dynamic Layer 2 address associated with a host route.
  - You can enable the router to compare the source MAC address received in a gratuitous ARP request or reply packet with the value in the ARP cache. The router updates the cache with the received MAC address if it determines this address is different from the cache entry.
  - You can enable dynamic ARP to resolve the MAC address for IPv4 framed host (32-bit) routes. By default, the framed route is permanently associated with the source MAC address received in the packet that triggered creation of the dynamic VLAN.

    [See Junos OS Enhanced Subscriber Management.]

System Management

- **Secure copy (scp) support on Junos OS CLI with the "source address" and "routing instance" options (MX240, MX480, MX960, MX2010, MX2020, and vMX)**— Starting in Junos OS Release 18.4R1, MX Series routers support the **scp** command from the CLI, along with two additional options: **source address** and **routing instance**. The **source address** option specifies the local address to use in originating the connection and **routing instance** option specifies the name of routing instance for the scp session. These two options are also added in the following CLI commands where the scp URL is supported: **file copy**, **file archive**, **save**, **show|save**, **show|compare**, **load merge**, **load override**, **load patch**, **load replace**, **load set**, and **load update**. The functionality of these commands remains the same with the **source address** and **routing instance** options added.

  > **NOTE:** The scp command is available under operational mode and configuration mode.

  [See scp , file copy, file archive, load, and save.]

Timing and Synchronization

- **Synchronous Ethernet support for enhanced Switch Control Board (MX240, MX480, and MX960)**—Starting in Junos OS Release 18.4R1, MX Series routers with the enhanced Switch Control Board (SCBE3-MX) support synchronous Ethernet. Synchronous Ethernet is a physical layer technology that functions regardless of the network load and supports hop-by-hop frequency transfer. This enables you to deliver synchronization services that meet the requirements of modern-day mobile network, and future Long Term Evolution (LTE)–based infrastructures.

  [See Synchronous Ethernet Overview.]

VPN

- **Support to control traceroute over Layer 3 VPN (MX Series)**—Starting in Junos OS Release 18.4R1, in a Layer 3 VPN topology with **vrf-table-label** configured and multiple customer edge (CE) routers configured in the same VPN routing and forwarding (VRF) routing instance, when traceroute is performed to a remote provider edge (PE) router for a CE-facing network, the ICMP time exceeded packet determines the correct IP address as the source address.

  To control the traceroute over Layer 3 VPN topology with vrf-table-label configured and multiple CE routers configured in the same VRF, you can configure **allow-l3vpn-traceroute-src-select** at the**[edit system]** hierarchy level that determines the correct IP source address by reviewing the destination routing instance and destination IP address.

  [See allow-l3vpn-traceroute-src-select.]

SEE ALSO

Changes in Behavior and Syntax

IN THIS SECTION

This section lists the changes in behavior of Junos OS features and changes in the syntax of Junos OS statements and commands from Junos OS main release and the maintenance releases for the MX Series routers.

Release 18.4R3-S6 Changes in Behavior and Syntax

Infrastructure

- **Change in support for interface-transmit-statistics statement (MX Series)**—You cannot configure aggregated Ethernet interfaces to capture and report the actual transmitted load statistics by using the **interface-transmit-statistics** statement. Aggregated Ethernet interfaces do not support reporting of the transmitted load statistics. The **interface-transmit-statistics** statement is not supported in the aggregated Ethernet interfaces hierarchy. In earlier releases, the **interface-transmit-statistics** statement was available in the aggregated Ethernet interfaces hierarchy but not supported.

  [See interface-transmit-statistics.]

Platform and Infrastructure

- **Updates to ON-CHANGE and periodic dynamic subscriber interface metadata sensors (MX Series routers and EX9200 line of switches)**—We've made the following updates to the **/junos/system/subscriber-management/dynamic-interfaces/interfaces/meta-data/interface[sid='*sid-value*']/** sensor:
- Notifications are sent when subscribers log in on either IP demux or VLAN demux interfaces. In earlier releases, login notifications are sent only for IP demux logins.
- The **interface-set** end path has been added to the logical interface metadata. The interface-set field appears in both ON-CHANGE and periodic notifications. In earlier releases, this field is not included in the sensor metadata or notifications.

[See gRPC Sensors for Subscriber Statistics and Queue Statistics for Dynamic Interfaces and Interface-Sets (Junos Telemetry Interface).]

Release 18.4R3 Changes in Behavior and Syntax

Interfaces And Chassis

- **Enhancement to the show interfaces mc-ae extensive command**—You can now view additional LACP information about the LACP partner system ID when you run the **show interfaces mc-ae extensive** command. The output now displays the following two additional fields:
  - Local Partner System ID—LACP partner system ID as seen by the local node.
  - Peer Partner System ID—LACP partner system ID as seen by the MC-AE peer node.

  Previously, the **show interfaces mc-ae extensive** command did not display these additional fields.
- **Change in error severity (MX960, MX240, MX2020, MX480, MX2008, and MX2010)**—Starting in Junos OS Release 18.4R3, the severity of the CRC errors (XR2CHIP_ASIC_JGCI_FATAL_CRC_ERROR) has been reduced from Fatal to Major. Earlier, these errors caused the line card to be reset, if the **interasic-linkerror-recovery-enable** knob was configured. Now, these errors will only disable the Packet Forwarding Engines that are affected. With this change, the **interasic-linkerror-recovery-enable** knob has no effect in case of these errors because severity of these errors has been reduced to Major.

NOTE: This behavior change is applicable to the following line cards only: MPC5E, MPC6 MPC7, MPC8, and MPC9.

Junos OS XML API and Scripting

- **Root XML tag change for show rsvp pop-and-forward | display xml command (MX480)—**We've changed the root XML tag for the show rsvp pop-and-forward | display xml command to rsvp-pop-and-fwd-information to make it consistent with the XML tag convention. In earlier releases, the command output displays rsvp-pop-and-fwd-info XML tag. Update the scripts with the rsvp-pop-and-fwd-info XML tag to reflect the new rsvp-pop-and-fwd-information XML tag.

  [See Junos XML API Explorer - Operational Tags.]

Junos Telemetry Interface

- **Automatic installation of YANG-based CLI for RIFT protocol (MX Series, QFX Series, and vMX with 64-bit and x86-based servers)**—In Rift 1.2 Release, installation of the CLI for RIFT protocol occurs automatically along with the installation of the junos-rift package. In the pre-1.0 releases of the junos-rift package, the RIFT CLI had to be installed separately using **request system yang** command after installation of the junos-rift package.

Platform and Infrastructure

- **Change in startup notification after GRES (MX Series routers)—**The master Routing Engine sends a coldStart notification when a device comes up. The master Routing Engine also sends warmStart notifications for subsequent restarts of the SNMP daemon. After graceful routing engine switchover (GRES) the new master Routing Engine sends a single warmStart notification and the backup Routing Engine does not send any notification. In earlier releases, after GRES, the new master RE would sometimes send two notifications or a single notification. Of these, the first notification was always a coldStart notification and the second was either a coldStart notification or a warmStart notification.

  [See Standard SNMP Traps Supported by Junos OS.]

Routing Protocols

- **Advertising /32 secondary loopback addresses to traffic engineering database as prefixes (ACX Series, EX Series, MX Series, PTX Series, QFX Series, and SRX Series)—**We've made changes to export multiple loopback addresses to the lsdist.0 and lsdist.1 routing tables as prefixes. This eliminates the issue of advertising secondary loopback addresses as router IDs instead of prefixes. In earlier releases, multiple secondary loopback addresses in the traffic engineering database were added to the lsdist.0 and lsdist.1 routing tables as part of node characteristics and advertised them as the router ID.

Services Applications

- **Change in NAT port block syslog message display(MX Series Routers)**—When you configure a softwire prefix other than 128, all the JSERVICES_NAT_PORT_BLOCK logs now displays the prefixed B4 address. The following JSERVICES_NAT_PORT_BLOCK are modified:
  - JSERVICES_NAT_PORT_BLOCK_ALLOC
  - JSERVICES_NAT_PORT_BLOCK_RELEASE
  - JSERVICES_NAT_PORT_BLOCK_ACTIVE

In earlier releases of Junos OS, when a softwire prefix was configured, some of the B4 addresses displayed in the JSERVICES_NAT_PORT_BLOCK log were /128 addresses(irrespective of the configured prefix). This change is not observed when the softwire prefix is not configured.

Subscriber Management And Services

- **Support for managing PCRF server errors (MX Series)**—Starting in Junos OS Release 18.4R3, you can configure the router to reinitialize the PCRF session when triggered by certain PCRF server errors that result in a state mismatch between the server and the router. You can also configure the router to generate an extended session ID that is universally unique by appending a 32-bit session-stamp based on the current UTC time when the router creates the CCR-GX-I.

  Configure local reinitialization with the **reinit-on-failure**, **reinit-on-rar**, and **reinit-timeout** options with the **local-decision** statement at the **[edit access pcrf partition *partition-name*]** hierarchy level. Enable the session-stamp with the **use-session-stamp** option with the **partition** statement at the **[edit access pcrf]** hierarchy level.

- **Enhancement to commands to display reason for Routing Engine disconnect (MX Series)**—Starting in Junos OS Release 18.4R3, several commands display the reason when the master and standby Routing Engines disconnect because of a memory mismatch error. On a chassis with two Routing Engines, a DRAM size mismatch error can result when both of the following are true:

  - The Routing Engines have different amounts of DRAM.
  - A 64-bit Junos OS image is loaded on the chassis.

  You can avoid this problem by doing either of the following:

  - Ensure that both Routing Engines have the same amount of DRAM.
  - Load a 32-bit image.

  The **show database-replication summary** and **show system subscriber-management summary** commands display the DRAM mismatch as the reason in the Disconnection field. The **request chassis routing-engine master switch check** command displays an error message if the DRAM size is different for the two Routing Engines.

- **Prevent queue-based throttling from stopping subscriber login (MX Series)**—Starting in Junos OS Release 18.4R3, you can specify a value of 0 with the **high-cos-queue-threshold** statement. This value prevents any subscriber from being throttled by queue-based throttling.

- **XML output format change for test aaa *type* user commands (MX Series)**—Starting in Junos OS Release 18.4R3, the XML output format changes for the **test aaa authd-lite user**, **test aaa dhcp user**, and **test aaa ppp user** commands. Each RADIUS server attribute name has an associated attribute value. Each of these pairs is now enclosed by the <radius-server-data> tag. The new tag makes it easier to recognize the name/value pairs, both for operators and API clients. You may have to change any scripts that use the XML output to work properly with the new format.

  [See AAA Testing and Troubleshooting.]

Release 18.4R2-S1 Changes in Behavior and Syntax

Software Defined Networking (SDN)

- **Increase in the maximum value of delegation-cleanup-timeout (MX Series)**—You can now configure a maximum of *2147483647* seconds as the delegation cleanup time for a Path Computation Client (PCC). This extends the time taken by the PCC to retain the last provided path over a PCEP session from the last session down time.

  With the increase in maximum value of **delegation-cleanup-timeout** from *600* to *2147483647* seconds, you can benefit during a Path Computation Element (PCE) failover, or other network issues that may disrupt the PCEP session with the main active stateful PCE.

  [See delegation-cleanup-timeout.]

Release 18.4R2 Changes in Behavior and Syntax

EVPN

- **Support for an VNI of zero**—Starting with Release 18.4R2, Junos OS supports using a VXLAN Network Identifier (VNI)=0 when configuring a bridge domain or VLAN in an EVPN-VXLAN network.
- **Changes in encoding the ESI label field (MX Series)**—Starting in 18.4R2, Junos OS switched from using lower-order bits to higher-order bits in encoding the ESI label field. This results in BUM traffic loss and duplication in traffic. If you encounter this, and you wish to use a mix of Junos OS releases, you must include the **es-label-oldstyle** statement at the **[edit routing-instances *routing-instance-name* protocols evpn]** hierarchy on the device that is running the Junos OS release that supports higher-order bit encoding of the ESI label.
- **Support for disabling automatic ESI generation (MX Series and QFX Series)**—Starting with Junos OS Release 18.4R2, Junos OS supports disabling the automatic ESI generation for virtual gateway addresses. We recommend that you disable the automatic ESI generation for EVPN networks with edge-routed bridging to improve performance. To disable automatic ESI generation, include the **no-auto-virtual-gateway-esi** statement at the **[edit interfaces name irb unit logical-unit-number]** hierarchy level.

General Routing

- **User confirmation prompt for configuring the sub-options of request vmhost commands (MX Series and PTX series)**—While configuring the following **request vmhost** commands, the CLI now prompts you to confirm a **[yes,no]** for the sub-options also.
  - **request vmhost reboot**
  - **request vmhost poweroff**
  - **request vmhost halt**

In previous releases, the confirmation prompt was available for only the main options.

Interfaces and Chassis

- **Logical Interface is created along with physical Interface by default (MX Series routers)**—In Junos OS Release 18.4R2 and later, logical interface is created on **ge**, **et**, **xe** interfaces along with the physical interface, by default. In earlier Junos OS Releases, by default, only physical interfaces are created.

  For example, for **ge** interfaces, earlier when you view the **show interfaces** command, by default, only the physical interface (**ge-0/0/0**), is displayed. Now, the logical interface (**ge-0/0/0.16386**) is also displayed.

- **New XML tag element <lacp-hold-up-state> added in show lacp interfaces XML display (MX Series)**—In Junos OS Release 18.4R2, the **show lacp interfaces | display xml** command displays a new XML tag element **<lacp-hold-up-state>**. The **<lacp-hold-up-state>** displays the time interval before an interface changes state from down to up. In earlier Junos OS releases, the LACP hold-up the information for all interfaces was in a single **<lacp-hold-up-information>** XML tag. Now, the hold-up information for each interface is displayed in a separate **<lacp-hold-up-information>** XML tag.

- **Support for MAP-E de-encapsulation and decapsulation on inline service interfaces (MX2010)**—In Junos OS Releases 18.2R3, 18.3R2, and 18.4R2, MX2010 routers support encapsulation and de-encapsulation of the following ICMP message types for inline service (si) interfaces:

  - Time exceeded (type 11)
  - Destination unreachable (type 3)
  - Source quench (type 4)
  - Parameter problem (type 12)
  - Address mask request and address mask reply (type 17 and type 18)
  - Redirect (type 5)

- **IRB not supported on pseudowire subscriber (PS) logical interface in bridge-domain (MX Series)**—In Junos OS Releases 17.4R3, 18.1R4, 18.2R3, 18.3R2, and 18.4R2, Integrated routing and bridging (IRB) is not supported on Pseudowire Subscriber (PS) Logical Interface. Thus you cannot add an IRB to bridge domain with a pseudowire subscriber interface–that is, you cannot configure IRB and the pseudowire subscriber interface in the same bridge domain.

  Note that adding IRB to a bridge domain having a pseudowire subscriber logical interface causes kernel crash and continuous reboot of the router until the configuration is rolled back.

  > **NOTE:** IRB is not supported on pseudowire subscriber interfaces only in bridge domain.

[See bridge-domain.]

- In MX204 routers, error messages are logged when **vlan-tagging** for a trunk interface that is not configured. These error messages were previously logged with the severity level "critical" even though they were not critical enough to require immediate action. The maximum transmission unit (MTU) of interface with or without VLAN-tagging is now logged in as an informational error message (instead of an critical error message).

MPLS

- **New debug statistics counter (MX Series)**—The **show system statistics mpls** command has a new output field, called **Packets dropped, over p2mp composite nexthop**, to record the packet drops over composite point-to-multipoint next hops.

Operation, Administration, and Maintenance (OAM)

- **Performance monitoring history data is lost when a change in number of supported history records is detected (ACX Series and MX Series)**—In Junos OS Release 18.4R2, when Ethernet connectivity fault management starts, it detects the number of history records supported by the existing performance monitoring history database if there is any change from the number of history records supported (that is, 12) in Release 18.4R2, then the existing performance monitoring history database is cleared and all performance monitoring sessions are restarted with mi-index 1.

Services Applications

- **New syslog message displayed during NAT port allocation error (MX Series Routers with MS MPC)**—With address pooling paired (APP) enabled, an internal host is mapped to a particular NAT pool address. If all the ports under a NAT pool address are exhausted, further port allocation requests from the internal host results in a port allocation failure. The following new syslog message is displayed during such conditions:

  JSERVICES_NAT_OUTOF_PORTS_APP

  This syslog message is generated only once per NAT pool address.

- **Support for host-generated traffic on a GRE-over-GRE tunnel (MX Series)**—In Junos OS Release 18.4R2, you can send host-generated traffic on a GRE-over-GRE tunnel. However, when the path maximum transmission unit (path MTU) is updated for the outer GRE tunnel, MTU for the inner GRE tunnel is not corrected.

- **Deprecated IPsec manual security association option (MX Series)**—In Junos Release 18.4R2 and later releases, the option **hmac-sha2-256** under the **services ipsec-vpn rule *rule-name* term *term-name* then manual direction (bidirectional | inbound | outbound) authentication algorithm** statement is deprecated. Use the **hmac-sha-256-128** option instead.

- **Change in error message displayed while fragmenting or de-fragmenting IPv6 GRE tunnel interface (MX Series routers)**—In Junos OS Release 18.4R2, on an IPv6 GRE tunnel interface, when you enable fragmentation using the **allow-fragmentation** command or disable fragmentation using the **do-not-fragment** command, the following error message is displayed:

Fragmentation for V6 tunnels is not supported

In releases before Junos OS 18.4R2 release, the following message is displayed:

dcd_config_ifl_tunnel: Fragmentation for V6 tunnels is not supported

Subscriber Management and Services

- **Out-of-address SNMP trap requires thresholds to be configured (MX Series)**—Starting in Junos OS Release 18.4R2, the behavior has changed for generating an out-of-address SNMP trap for an address pool configured at the **[edit access address-assignment]** or **[edit routing-instance *name* address-assignment]** hierarchy level. You must now configure both the high-utilization and abated-utilization thresholds. When the number of assigned addresses surpasses the high-utilization threshold, a high-utilization trap is generated. If all the addresses are assigned from the pool, an out-of-address trap is generated and an out-of-address syslog message is sent.

  In earlier releases, an out-of-address trap is generated when the address pool is exhausted, regardless of whether the thresholds are configured.

  If the number of assigned addresses subsequently drops below the abated-utilization threshold, an abate-high-utilization trap is generated; this behavior is unchanged.

- **Subscribers allowed to log in with bad framed route (MX Series)**—Starting in Junos OS Release 18.4R2, users are allowed to log in if the framed route received from RADIUS is bad–for example, if the format is incorrect. In earlier releases, the subscriber is not allowed to log in. For customers that use multiple framed routes, the new behavior enables the subscriber to have partial access to the network using the routes that are accepted instead of not being allowed any access.

- **Changing attributes of physical interface with active subscribers (MX Series)**—Starting in Junos OS Release 18.4R2, the commit check fails when you change any attribute of the physical interface, such as the MTU, when subscribers are active. This affects only aggregated Ethernet physical interfaces with targeted distribution configured. In earlier releases, the commit check does not fail and the attribute change brings down the physical interface and all subscribers using that interface.

- **ICMP error message rate limit increased (MX Series)**—Starting in Junos OS Release 18.4R2, the maximum rate limit for generating ICMP messages for IPv4 and IPv6 packet errors is increased from 50 pps to 1000 pps. The rate limit applies only to non-TTL-expired packets.

Release 18.4R1 Changes in Behavior and Syntax

General Routing

- **Zero MAC address (00:00:00:00:00:00) treated as "my mac" (MX-Series)**—When an Ethernet packet arrives in ingress, pre-classifier engine will perform a lookup of MAC address. If the MAC address matches an entry in the pre-classifier Ternary Content Addressable Memory (TCAM) and the entry has “my mac” attribute, pre-classifier engine will set the “my mac” bit in the cookie prepended to the incoming packet. In current implementation, MAC address “00:00:00:00:00:00” (zero MAC) is programmed as default value for “my mac” TCAM entries when the pre-allocated entries are not used or configured. Hence the packets with zero MAC are marked as “my mac” in the packet cookie. Forwarding engine will check “my mac” bit in the packet cookie. If “my mac” bit is 0, the packet will be dropped. If “my mac” bit is 1, further L2, L3, MPLS lookup will be performed. The “my mac” behavior is applicable since the day one release.

Interfaces and Chassis

- **New option to configure IP address to be used when the Routing Engine is the current master**—Starting in Junos OS Release 18.4R1, a new option, **master-only**, is supported on routers with RE-MX-X6, RE-MX-X8, and RE-PTX-X8 Routing Engines at the following hierarchies:

  - **[edit vmhost interfaces management-if interface (0|1) family inet address *IPv4 address*]**
  - **[edit vmhost interfaces management-if interface (0|1) family inet6 address *IPv6 address*]**

  In routing platforms with dual Routing Engines and VM host support, the **master-only** option allows you to configure the IP address to be used for the VM host when the Routing Engine is the current master. The master Routing Engine and the backup Routing Engine can have independent host IP addresses configured. In earlier releases, same IP address would be applied on master and backup Routing Engines resulting in configuration issues.

- **TLV status for Layer 2 protocols (MX480)**—Starting in Junos OS Release 18.4R1, the output fields **Next-hop** and **vpls-status** are displayed in the **show interfaces *interface name* detail** command, only for Layer 2 protocols on MX480 routers.

- **Enhanced AC PEM in high-line power configuration supplies 2400 W power (MX240)**—Starting in Junos OS Release 18.4R1, on MX240 routers, the enhanced AC PEM in high-line power configuration provides a power output of 2400 W. On Junos OS versions prior to 18.4R1, the PEM provided only 2050 W of power output.

  [See show chassis power.]

- **Support for creating layer 2 logical interface independently (ACX Series, EX Series, MX Series, PTX Series, and QFX Series)**—In Junos OS Releases 18.4R1, 18.4R2, and later, MX Series routers support creating Layer 2 logical interfaces independent of the Layer 2 routing-instance type. That is, you can configure and commit the Layer 2 logical interfaces separately and add the interfaces to the bridge domain or Ethernet VPN (EVPN) routing instance separately. Note that the Layer 2 logical interfaces work fine only when they are added to the bridge domain or EVPN routing instance.

In earlier Junos OS releases, when you use a Layer 2 logical interface configuration (units with **encapsulation vlan-bridge** configuration), then you must add the logical interface as part of a bridge domain or EVPN routing instance for the commit to succeed.

- **Error message displayed due to configuration changes in live system**—Starting in Junos OS Release 18.4R1, on MX Series routers with the RE-S-X6-64G and RE-MX2K-X8-64G Routing Engines, when you change the router configuration on a live system, or when you delete an interface that has active traffic, the message **select: protocol failure in circuit setup** is randomly displayed. However, there is no known functional impact.

MPLS

- Previously, when you configured zero (*0*) as the bandwidth of an RSVP interface, the bandwidth value was overwritten with the default interface bandwidth (raw hardware bandwidth), leading to unexpected behavior in the LSP setup. Starting with Junos OS Release 18.4R1, when you configure zero as the bandwidth, **0** is applied as the RSVP bandwidth.

  [See bandwidth (Protocols RSVP).]

- Starting in Junos OS Release 18.4R1, the remote procedure call (RPC) protocol XML tag for **mpls-label-value** is renamed as **mpls-history-label-value**, **mpls-usage-label-value**, and **mpls-label-id-value** depending on the context of command usage.

- **Change in command syntax**—Starting in Junos OS Release 18.4R1, the **show ldp database label-requests** command name is changed to **show ldp database-label-requests** with no change to command functionality.

- **Loss of traffic over bypass MPLS LSPs**—If RSVP link or node protection is enabled along with global RSVP authentication, there is loss of traffic over bypass MPLS LSPs at the time of local repair, when the point of local repair (PLR) and the merge point devices have different versions of the Junos OS software installed on them. That is, one device is running a release prior to Junos OS Release 16.1, and the other device is running a release starting with Junos OS Release 16.1R4-S12.

Network Management and Monitoring

- **SSHD process authentication logs timestamp (MX Series)**—Starting in Junos OS Release 18.4R1, the SSHD process authentication logs use only the time zone defined in the system time zone. In the earlier releases, the SSHD process authentication logs sometimes used the system time zone and the UTC time zone.

  [See Overview of Junos OS System Log Messages.]

- **SNMP customization configuration introduced (MX Series)**—As of Junos OS Release 18.4R1, the CLI configuration command **set snmp customization ether-stats-ifd-only** is introduced. When **ether-stats-ifd-only** is configured, the **show snmp mib walk etherstatsTable** command displays data only for physical interfaces (IFDs).

  [See customization (SNMP).]

- **The NETCONF server omits warnings in RPC replies when the rfc-compliant statement is configured and the operation returns <ok/> (MX Series)**—Starting in Junos OS Release 18.4R1, when you configure

the **rfc-compliant** statement at the **[edit system services netconf]** hierarchy level to enforce certain behaviors by the NETCONF server, the server must not return an RPC reply that encloses both an **<rpc-error>** element and an **<ok/>** element. If the operation is successful, but the server reply would enclose one or more **<rpc-error>** elements of severity warning in addition to the **<ok/>** element, then the warnings are omitted. In earlier releases, or when the **rfc-compliant** statement is not configured, the NETCONF server might issue an RPC reply that encloses both an **<rpc-error>** element of severity warning and an **<ok/>** element.

- **Change in severity level of XQSS errors (MX Series)**—Starting in Junos OS Release 18.4R1, on MX series routers with the MPC7E-10G, MPC7E-MRATE, MPC8E, and MPC9E line cards, the severity level of the following errors have been changed from Fatal to Major.

  - XQSS_CMERROR_CPQW_ERR_INT_FSET_SLOW_DEQ_DRY_ERR
  - XQSS_CMERROR_CPQW_ERR_INT_FSET_FAST_DEQ_DRY_ERR

  With this change, the above errors no longer cause the entire FPC to go offline by default. Instead, these errors cause the affected Packet Forwarding Engine (PFE) to be disabled, because **disable-pfe** is the default action associated with Major errors on MX Series routers.

  Additionally, the severity level of the correctable error **XQSS_CMERROR_CORRECTABLE_MEM_ERR** has been changed from Fatal to Minor.

  You can use the commands **show chassis errors active detail fpc-slot *slot*** and **show chassis fpc errors *slot*** to view more details of, and the default actions associated with, these errors.

  [See show chassis fpc errors.]

Routing Protocols

- **BGP PIC determines MPLS fast reroute (FRR) using BPG multipath**—Starting in Junos OS Release 18.4R1, when you configure BGP Prefix-Independent Convergence (PIC) with the **protect-core** statement, a forwarding route with an MPLS fast reroute (FRR) next hop is created using BGP multipath.

  In earlier releases, when the BGP PIC feature is configured, a backup path is determined using protocol-independent load balancing multipath and installed in the forwarding table as an active path, which might cause routing loops.

  We recommend that you update scripts that count active routes because BGP multipath contributors are also counted and the active route count goes up. We have also modified the output of the **show route** command to reflect this behavior change.

  [See Configuring BGP Prefix Independent Convergence for Inet.]

Security

- **Syslog updated when configuring XPN cipher suite on a non-xpn supported interface (MX Series)**—In Junos OS Release 18.4R1, on MX Series Routers, if you attempt to configure XPN cipher suite (gcm-aes-xpn-128 or gcm-aes-xpn-256) for a connectivity association and attach the connectivity association to an interface on the PIC that does not support XPN cipher suite, then during runtime, a syslog is logged as below (and default non-xpn cipher suite is used):

  macsec_ciphersuite_is_supported MACSec: ifd *ifd_id (ifd_name)*, Cipher suite *cipher id (cipher name)* NOT SUPPORTED.

Software Defined Networking (SDN)

- **Installation or upgrade using remotely located installation package (MX480, MX960, MX2010, MX2020, MX2008)**—While performing Junos installation or upgrade on the base system (BSYS) or guest network function, if you provide a URL to the remotely located installation package (for example, an ftp file) in the command **request system software add *package-file-path***, the router locally copies the package, performs checks such as multi-version compatibility checks on the package, and then installs the package. The installation process is aborted if any errors are found during the checks. Previously, if you tried to perform installation or upgrade using a remotely located file, the router would skip multi-version checks and display an error message, but would not abort the installation process.

  [See Junos Node Slicing Upgrade]

Software Installation and Upgrade

- **ZTP is supported on MX PPC platforms (MX Series)**—As of Junos OS Release 18.4R1, zero touch provisioning (ZTP) is supported on MX PPC platforms (which are MX5, MX10, MX40, MX80, and MX104 routers). Before the fix, the ZTP process did not start to load image and configuration for MX PPC routers.

  [See Junos OS Installation Package Names.]

Subscriber Management and Services

- **Flat-file service accounting support ends (MX Series)**—Starting in Junos OS Release 18.4R1, flat-file service accounting to a local file is no longer supported. If included in a configuration, it is ignored.

  [See Flat-File Accounting Overview.]

SEE ALSO

Known Behavior

IN THIS SECTION

This section contains the known behavior, system maximums, and limitations in hardware and software in Junos OS Release 18.4R3 for MX Series routers.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

General Routing

- CFM is not supported for an L2-over-GRE tunnel. CCM can pass through as transit traffic through GRE interfaces transparently using the data path. Link trace functionality uses MAC-learning and re-injecting LTM on the GRE interfaces in case the bridge is configured with CFM. PR1275833
- An underflow error is seen during FPC cold boot and initial traffic start cases. But these errors are limited and should not appear after traffic is stabilized. PR1306280
- Support for enterprise profile is provided only for 10-Gigabit Ethernet interfaces. Use of 40-Gigabit Ethernet and 100-Gigabit Ethernet interfaces might result in a phase alignment issue. PR1310048
- Inline JFlow vMX: InputInt field of MPLS-V4 data records report SNMP index value of LSI interface instead of ingress physical interface. PR1312047
- When cmerror disables the Packet Forwarding Engine, it does not power off the EA and HCM chips. Temperature monitoring continues on the HMC and other devices, and the system can take proper actions, such as increasing the fan speed or shutting down the systems. PR1324070
- The Routing Engine boots from the secondary disk when you:
  - Press the reset button on the RCB front panel while the Routing Engine is booting up but before Junos OS is up.
  - Upgrade software by booting from the network using the **request vmhost reboot network** command, and the system fails to boot from the network.
  - Upgrade BIOS and the upgrade fails.
  - Reboot, and the system hangs before Junos OS is up. PR1344342
- The first packet pertaining to the J-Flow Packet Forwarding Engine sensor in UDP mode is missing after a line-card reboot. PR1344755
- If MTU is configured to a value higher than 9500, which is the maximum permissible value, configuration succeeds. However, the actual value will be set back to 1518 without any error. DCD log can be checked to verify the occurrence. PR1372690
- The MIC-MACSEC-20G MIC supports 10-Gbps speed through the **set chassis fpc x pic y pic-mode** 10-Gigabit configuration applied to both the PICs in that MIC. Other PIC mode configuration should be removed before you apply the **10G** PIC mode configuration. PR1374680
- IDS aggregate configuration statement is not considered for the installation of the IDS dynamic filter. PR1395316
- Junos OS does not perform the VLAN ID check at the egress; the VLAN ID check is performed only at ingress. PR1403730
- In Junos PTP deployment with the configured child logical interface in the PTP configuration and aggregated Ethernet in the interface configuration during Packet Forwarding Engine initialization, the Packet Forwarding Engine microcode is not able to find the correct output identifier of the outgoing

interface to send the packet to and takes the host route path leading to congestion and bringing down the interfaces administratively. PR1412093

- In a large-scale setup such as a large number of routing instances or interfaces, if there are frequent changes in configuration and interface flaps when the rpd is restarted because of logical-system deactivation or activation or through restart routing, the rpd might crash. PR1438049
- Layer 2 TPv3 is not supported for flow caching and load balancing in RIOT code. RIOT I/O does not fully understand the header so only one worker thread is used. PR1468647

Forwarding and Sampling

- LTS subscriber statistics are reported to RADIUS. PR1383354
- In Junos OS Release 18.4R1 and Release 18.3R2, if an IPv4 prefix is added to a prefix list referred to by an IPv6 firewall filter, the following log message is not seen: **Prefix-List [Block-Host] in Filter [Protect_V6] not having any relevant prefixes , Match [from prefix-list Block-Host] might be optimized** . PR1395923

Interfaces and Chassis

- During JDM installation, each JDM instance generates pseudorandom MAC addresses to be used for JDM's own management interface and for the associated GNFs' management interfaces. At the time of creation of GNFs, each GNF instance generates pseudorandom MAC addresses to be used as the chassis MAC address pool for the forwarding interfaces of that GNF. Once generated, JDM and GNF MAC addresses are persistent, and are deleted only when the JDM or GNF instance itself is deleted.

  At a GNF, the Junos OS CLI command **show chassis mac-addresses** can be used to examine its chassis MAC address pool, and the Junos OS CLI command **show interfaces fxp0** can be used to examine the MAC address of its management interface.

  At JDM, the CLI command **show interfaces jmgmt0** can be used to examine the MAC address of its management interface.

  In case of MAC address duplication across JDM or GNF instances, you must delete and then reinstall the respective JDM or GNF instance and check again for duplication.
- In large-scale subscriber environment, changing an aggregated Ethernet member link configuration might cause two Routing Engines to generate core files. PR1375638
- The two SFP+ ports on the Routing Control Board (RCB) of an MX2008 router have two port LEDs each—one **Link Status** LED and one **Link Activity** LED per port. On an MX2008 router, which is connected to an external x86 server in a Junos node slicing setup, behavior of these LEDs with regard to Junos Node Slicing configuration is as follows:

- The **Link Status** LEDs and **Link Activity** LEDs on both the ports are unlit when Junos node slicing is disabled or not configured.
- When you have configured **network-slices** on the router (also called base system or BSYS) but have not configured guest network functions (GNFs) on the server, the **Link Status** LED on each port turns green (steady glow). In this case, the **Link Activity** LED on each port is unlit.
- When you have configured Junos node slicing (including GNFs), the **Link Activity** LED on each port is amber (blinking), while the **Link Status** LED on each port remains green (steady glow).
- **Error thrown when router configuration is updated on live system**—In Junos OS Release 18.4R1, on MX Series routers with the RE-S-X6-64G and RE-MX2K-X8-64G Routing Engines, when you change the router configuration on a live system, or when you delete an interface that has active traffic, the message **select: protocol failure in circuit setup** is randomly displayed. However, there is no known functional impact.

Platform And Infrastructure

- On all devices running Junos OS, execution of Python scripts through enhanced automation does not work on veriexec images. PR1334425
- A few transient FI Cell underflow errors are normal during unified ISSU, but they should not persist. PR1353904
- On QFX10000 and MX480 switches configured as type-5 route peers, when only peer 1 advertises routes, that peer might not install the de-encapsulated next-hop route. As a result, type-5 encapsulated traffic sent by peer 2 is dropped until peer 2 advertises any type-5 route. As a workaround, configure a static route pointing to discard on peer 2 and advertise that route as a type-5 route to peer 1. PR1386423
- In some cases, pseudowire interfaces over a redundant logical tunnel (RLT) might be shown as up but they might not pass traffic. Log messages reporting ASIC errors and a chassis alarm reporting hard FPC errors may also be seen. PR1400269

Routing Protocols

- When multiple adjacencies are coming up or flapping, some routes may not have remote LFA backup next hops. They will appear only after the next SPF trigger, either manually or as a result of a network event. PR1389392

Services Applications

- The **MS-DPC** and **MS-MPC** service cards drop TCP-based DNS traffic when you use the **junos-dns-tcp** ALG. The junos-dns-alg is not not supported on the **MS-DPC** or **MS-MPC** service. PR1361021

Subscriber Management And Services

- Before you make any changes to the underlying interface for a demux0 interface, you must ensure that no subscribers are currently present on that underlying interface. If any subscribers are present, you must remove them before you make changes.
- For dual-stacked clients over the same PPP over L2TP LNS session, enhanced subscriber management does not support configurations where both of the following are true:
  - The CPE sends separate DHCPv6 solicit messages for the IA_NA and the IA_PD.
  - The solicit messages specify a type 2 or type 3 DUID (link-layer address).

  As a workaround, you must configure the CPE to send a single solicit message for both IA_NA and IA_PD when the other configuration elements are present.

SEE ALSO

New and Changed Features | **95**
Changes in Behavior and Syntax | **115**
Known Issues | **133**
Resolved Issues | **148**
Documentation Updates | **200**
Migration, Upgrade, and Downgrade Instructions | **201**

Known Issues

IN THIS SECTION

This section lists the known issues in hardware and software in Junos OS Release 18.4R3 for MX Series routers.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Class of Service (CoS)

- Configuration of the hidden **rate-limit-burst** statement in the **[edit class-of-service]** hierarchy might lead to FPC core on the MX Series routers with TRIO chipset and channelized interfaces (DS3, E3, DS1, E1, and DS0). The internal interface attributes for the channelized interfaces are freed at an earlier point but packet forwarding engine accesses the memory that causes core dump. To avoid this issue, fix was added to de-reference only if the pointer is not null. PR1425667

EVPN

- The issue is applicable to MAC-in-MAC PNN-EVPN and does not affect any other scenario. When the provider backbone bridging (PBB) EVPN configuration is reloaded on MX Series routers, error logs are seen while deleting interfaces related to the backbone bridge component. These errors do not result in any functional issues. PR1323275
- In an Ethernet Virtual Private Network-Virtual Extensible LAN core isolation scenario, the server is multi-homed to the leaf devices through LACP interfaces. If GR is enabled, upon system reboot or restart routing on the leaf device, the core isolation does not work. In the system reboot case, the issue results in the leaf device discarding silently the traffic sent from the server during the time window between LACP and BGP that are coming up. In the restart routing case, there might be no traffic drop because of the GR. PR1461795
- In an Ethernet Virtual Private Network-Virtual Extensible LAN scenario with scaled bridge domains configured (for example, 4000 bridge domains), if the core-facing link on the VXLAN tunnel endpoint (VTEP) comes up (Down >> Up), the traffic received from the customer edge (CE) might be dropped by the VTEP for a period of time before it becomes normal. PR1408840

Forwarding and Sampling

- The **skip-service** configuration does not work with IPv6 NDP negotiation or ping. PR1074853
- Heap memory leaks occur on the DPC when the flow specification route is changed. PR1305977
- On a Junos fusion, ingress policing on an SD is broken. For ingress policing on AD and SD, the **set interfaces layer2-policer input-policer *policer-name*** command is not supported in this release. PR1395217
- For Junos OS Releases 18.4R1 and 18.3R2, if an IPv4 prefix is added to a prefix-list referenced by an IPv6 firewall filter, the following log message does not appear in this release: **Prefix-List [Block-Host] in Filter [Protect_V6] not having any relevant prefixes , Match [from prefix-list Block-Host] might be optimized**. PR1395923
- Error of traffic does not get policied as expected after locally switched for VLAN 100 and 101, while verifying the selective local-switching functionality with 4000 VLANs. PR1436343
- After routing is restarted, the remote mask (indicating from which remote PE devices MAC-IP entries are learned), which the routing daemon sends, might be different from the existing remote mask that

the Layer 2 learning daemon had prior to restart. This causes a mismatch between the Layer 2 learning and the routing daemon's interpretation as to where the MAC-IP entries are learnt, which can be local or remote, leading to the mac-ip table being out of synchronization. PR1452990

General Routing

- The **nexthop** attribute in a framed route is not applicable anymore. Because the subscriber's IP address is used as the next hop in all cases, there is no need to have an additional **nexthop** attribute for framed routes. PR1186046
- On all Junos OS platforms, when DHCP relay is configured with forward only and DHCP client is terminated on logical tunnel interface that multiple logical interfaces under this lt- interface have same VLAN. The DHCP relay might fail to send OFFER messages. PR1471161
- New AE member interface is installed in FIB when micro BFD session down for static LAG. PR1474300
- Core files are generated in **clksyncd_validate_gcfg ()** at **../../../../../src/junos/usr.sbin/clksyncd/clksyncd_gencfg.c:1418**. PR1472643
- When dynamic list next hop is referenced by more than 1 route, it could result in an early delete of the next hop from kernel, thereby observing nhindex as 0 ("Next hop type: Dynamic List, Next hop index: 0" in the **show route** command). This would not result in crash, but an early delete from kernel. As a workaround restart the routing. This would solve the issue and NH index would be reassigned properly. PR1477140
- Commit script does not apply changes in private mode unless a commit full is performed. PR1465171
- IPv6 accounting stop attributes are not correct for the MLPPP subscribers. PR1455175
- You cannot collect shmlog entries and statistics on MX5, MX10, or MX40 platforms. The code changes also include improvements that should prevent the generation of shmlogctl process core files due to a timing issue. PR1297818
- If a Layer 3 interface is receiving a GRE-encapsulated packet and the interface has two filters attached at ingress as follows:

  1.**family any** with action as **mirror**.

  2.**family inet** with action as **decapsulate gre**, then the expected behavior is that the mirrored copy must have the GRE headers as well. However, that is not working as expected (and is a bug) due to the presence of the **family inet** filter. If you are interested in mirroring the entire packet that came on the interface, which includes the GRE header as well, then as a workaround you can deactivate or disable the **decapsulate gre** action of the filter. PR1090854
- ALG-SIP64: SIP session fails when the IPv4 SIP client in public network initiates a SIP call with the IPv6 SIP client in the private network. PR1139008

- On Junos OS Release 16.2R1 and later, if **commit** statement is executed after **commit check** statement, the daemon (for example, dhcpd and sampled) might not be started even the related configuration is successfully committed. PR1468119
- On the MX104 device, core file is generated in **clksyncd_validate_gcfg ()** at **../../../../../src/junos/usr.sbin/clksyncd/clksyncd_gencfg.c:1418**. PR1471466
- The following core file is generated **VMCORE-/../src/junos/bsd/sys/netjsr/jsr_prl.c:2128**. PR1472519
- During a Routing Engine switchover (without NSR), the l2cpd process might report a slip (delay) of 1–10 seconds in its scheduled run, and the following log message might be displayed: **Aug 1 10:41:21 mx9601 l2cpd[32770]: JTASK_SCHED_SLIP: 8 sec scheduler slip, user: 0 sec 2180 usec, system: 0 sec, 2188 usec.** This delayed run has no functionality nor operational effect on any of the Layer 2 protocols controlled by l2cpd because the STP task delegates transmit/receive BPDUs to a separate dedicated ppmd process, and the LLDP task's transmit/receive PDUs are dealt with the daemon itself but the advertisement interval is 30 seconds, with the hold timer for the neighbors' LLDP PDU being 120 seconds. Thus, the time to recover the few seconds of delay is plenty and enough to absorb the delay. PR1203977
- In a BGP or an MPLS scenario, if the next-hop type of the label route is indirect, then the following changing events related to the **family mpls** configuration of the next-hop interface might cause the route to be in dead state, and the route remains dead even when the **family mpls** configuration is again activated.
  - Deactivating and activating the **family mpls** configuration.
  - Deleting and adding back the interface's **family mpls** configuration.
  - Changing the **maximum-labels** setting for the next-hop interface.
  - When a labeled route is resolved over an interface, that interface must have **family mpls** configured for the route to be successfully resolved. Otherwise the route does not get resolved. PR1242589
- The following cosmetic error is observed as the output: **mspmand[190]: msvcs_session_send: Plugin id 3 not present in the svc chain for session. Please open a JTAC case to confirm.** PR1258970
- If a VM host snapshot is taken on the alternate disk and there is no further VM host software image upgrade, the expectation is that if the current VM host image gets corrupted, the system will boot from the alternate disk so that the user can recover the primary disk to restore the state. However, if the host root file system is corrupted, the node boots with the previous VM host software instead of booting from the alternate disk. PR1281554
- The following error message is observed while testing with the Junos OS Release 17.4R1-S3.3 image: **Jun 16 08:17:17 banaswadi rpd[51849]: Error creating dynamic logical interface from sub-unit 1051592: Device busy Jun 16 08:17:17 banaswadi rpd[51849]: Error creating dynamic logical interface from sub-unit 1051593: Device busy error message: rpd[51849]: Error creating dynamic logical interface from sub-unit 1051680: Device busy.** PR1286042
- In some MX Series deployments running Junos OS, the following random syslog messages are observed for FPCs: **fpcx ppe_img_ucode_redistribute Failed to evict needed instr to GUMEM - xxx left**. These messages might not have a service impact. These messages are addressed as INFO level messages. On a Packet Forwarding Engine, there are dedicated UMEM and shared GUMEM memory blocks. This

informational message indicates some evicting events between UMEN and GUMEN and can be safely ignored. PR1298161

- The **show dynamic-tunnels database summary** command does not show accurate tunnels summary during the time the anchor Packet Forwarding Engine line card is not in up state. Use the following commands as a workaround: **show dynamic-tunnels database** and **show dynamic-tunnels database terse**. PR1314763
- As a vendor does not use chained CNH, using the feature does not bring in a lot of gain because TCNH is based on an ingress rewrite premise. Without this feature, things work just fine. PR1318984
- In JDM that is running on the secondary server, the jdmd daemon might generate core files if adding an image for the GNF is aborted by pressing CTRL-C. PR1321803
- With regard to FPC restarts or Virtual Chassis splits, the design of MX Series Virtual Chassis infra relies on the integrity of the TCP connections, and the reactions to failure situations might not be handled in a graceful way. TCP connection timeout because of jlock hog crossing the boundary value (5 seconds) causes bad consequences in the MX Series Virtual Chassis. Currently, there are no other easy solutions that can reduce this jlock hog other than enabling the marker infra in the MX Series Virtual Chassis setup. Unfortunately, there is no immediate plan on enabling marker as it was causing a lot of issues in the MX Series Virtual Chassis when we tried to enable it. PR1332765
- The first packet pertaining to the J-Flow Packet Forwarding Engine sensor in UDP mode is missing after a line-card reboot. PR1344755
- With graceful Routing Engine switchover (GRES) enabled in a subscriber environment, if subscribers are logging in and logging out very quickly, the service sessions in the session database of the backup Routing Engine sessions might be leaked. If the problem is not detected for long enough, the backup Routing Engine might not be able to synchronize with the master Routing Engine and thus will not be ready for GRES. PR1346300
- Backup Routing Engine might crash after ten consecutive GRES occurrences. PR1348806
- During a unified ISSU that warrants host upgrade, if the router is configured with 8 million IPv4 or IPv6 routes or more, upgrade might fail, resulting in FPC restart. PR1348825
- In some cases, online insertion and removal (OIR) of a MIC on an FPC can lead to silent discarding of traffic that was destined to the MPC. The only way to recover from this situation is to restart the MPC. The issue is not seen if you use the corresponding CLI commands to take the MIC offline and then bring it back online. PR1350103
- The EX9253 and MX10003 switch does not support interface ranges for channelized interfaces. You need to configure the interfaces individually. PR1350635
- During stress conditions, error log messages regarding addition, modification, or deletion of routes might be incorrect. PR1350713
- If an aggregated Ethernet interface is configured with **link-protection backup-state down**, the AE operational state of the interface is still up even though the member interfaces configured under the

aggregated interface are down. This issue is specific to the **link-protection backup-state down** configuration for the aggregated Ethernet interface. PR1354686

- The configurations of bridging routing instances that has aggregated Ethernet logical interfaces (6400 logical interfaces) and IRB instances, all from a single FPC, the CPU utilization of the FPC stays at 100 percent for 4 minutes. PR1359286
- In rare circumstances, a faulty SFP transceiver installed in an MX104 might cause the FEB associated with MX104 devices to be offline. The backup Routing Engine and the fan tray generate alarms. PR1360426
- Syslog is updated when the user tries to configure an XPN cipher over a non-XPN supported line card such as MIC-MACSEC-20G even though the commit is successful. PR1367722
- When an FPC is booting up (either during unified ISSU or router reboot or FPC restart), I2C timeout errors for the SFP transceiver is noticed. These errors occur because the I2C action is not completed as the device was busy. After the line card is up and all the I2C transactions to the device are all right, no periodic failure is observed. There is no functional impact and these errors can be ignored. PR1369382
- I/O session used for communicating between threads is freed due to FSM state transition. After freeing the memory, the fields of the I/O session are used for tracing, which leads to the generation of rpd core files. PR1374759
- Continuous display of log messages on the MPC console indicates the presence of a faulty SFP or SFP+ transceiver, which is causing an I2C transaction from the main board CPU. There is no software recovery available for this situation. The following logs also indicate potential I2C transaction failure with any of the 10 ports available with Gigabit Ethernet MIC with 256b-AES MACsec in PIC 0 resulting in unexpected behaviors such as link not coming up or the MIC itself not booting up on restart: **I2C Failed device: group 0xa0 address 0x70Failed to enable PCA9548(0x70):grp(0xa0)->channel(0)mic_sfp_select_link:MIC(0/0) - Failed to enable PCA9548 channel, PCA9548 unit:0, channel ID: 0, SFP link: 0mic_sfp_id_read: Failed to select link 0 Only way to recover from these failures is to detect & replace faulty SFP/SFP+ plugged into the GMIC2 ports**. PR1375674
- On MX Series, few 10-Gigabit Ethernet (xe-) interfaces go down with the following error message: **if_msg_ifd_cmd_tlv_decode ifd xe-0/0/0 #190 down with ASIC Error.** PR1377840
- Commit should not be allowed if we try to delete the **physical-cores** configuration statement. However, there is no functional impact. PR1384014
- In low-end 32-bit systems, rpd has a lower level of available memory. We need a log message to alert the user when the average memory usage or transient memory usage exceeds thresholds. PR1387465
- On an MX Series device enabled with enhanced subscriber management, if the filter service is enabled for each subscriber, and there is a large scale of Broadband Edge (BBE) subscribers (for example, 10,000) logging in and out repeatedly, the FPC might crash due to this rare issue. PR1388120
- The FPC might restart if the commit with fpc max-queues are changed before the FPC is fully online or offline. PR1388487
- The virtio throughput remains the same for multiqueue and single-queue deployments. PR1389338

- If the **persist-groups-inheritance** statement is configured when you try to add additional sites to an existing group and routing-instance configuration, errors might be observed leading to failure to commit after issuing commit check. PR1391668
- On MX2008 routers with MPC9E, in a line-rate traffic with a redundant SFB2 scenario, if you take one redundant SFB2 offline, there might be tail drops or sometimes WRED drops in the MPC9E, resulting in partial traffic loss. Under normal circumstances, the SFBs should automatically fail over if one of the SFBs fails, and there should be only a few packets dropped momentarily. PR1395591
- The interface link stays down when we deactivate and then activate the channelized xe- (10-Gigabit Ethernet) interface configured with speed 1-Gbps speed (when using QSA adaptor) on MX10008 (JNP10K-LC2101 MPC) with line-rate traffic flowing. As a workaround, we need to take the MIC offline and then bring it online to recover the link; this is a known issue. PR1397202
- The CLI command **show system firmware** might provide an unexpected output on some MX Series platforms such as the MX104. The current version might be displayed as ?? instead of the correct version number. PR1398022
- Router is advertising the ESMC QL of PRC even though the current clock status is holdover. PR1398129
- The **$junos-framed-route-ipv6-address-prefix** variable for programming IPv6 routes is permitted only under the **routing-options rib access** configuration. PR 1384523 changed the code to avoid the incorrect mixing of IPv4 and IPv6 framed routes in the same configuration and force the v6 framed routes to be parsed only if they were in their correct **routing-options rib access** stanza. Additionally, runtime warnings for invalid configuration IPv6 framed routes configuration were added in PR 1388737.PR1401144
- 1-Gigabit configuration mode is not a unified ISSU-supported configuration on the MX10003 router. If that configuration is present on the MX10003 box, then the user has to remove that configuration before attempting unified ISSU. Otherwise the 1-Gigabit Ethernet configurations does not behave as expected after unified ISSU and traffic loss can be expected. Currently, there is no warning or error message alerting the customer about the issue. This is applicable on MX10003 platform only. PR1405527
- On MX150, the log severity level changes. PR1411846
- A small number of tunneled subscribers might be terminated during unified ISSU because of momentary loss of IP connectivity between the LAC and LNS devices. PR1414928
- After powering on the MPC JNP10K-LC2101 chassis, 1345 mV through 1348mV voltage for about 20 seconds are read and this gets stabilized to 1493mV. During this period, the **FPC x Voltage Tolerance Exceeded** major alarm is reported. PR1415671
- In some scenarios with PTP hybrid mode and MPC5E, the log message **Resetting the Playback Engine** is continuously issued. The Playback Engine resides inside MPC5E FPGA and it is responsible for maintaining the corresponding PTP states. PR1420335
- After changing the power feeds to either turn off or turn on, the **show chassis power** output does not match the real condition, and incorrect syslog information is recorded. PR1420571
- If HTTP Header Enrichment function is used, the traffic throughput decreases when traffic passes through Header Enrichment. PR1420894

- On all platforms running Junos OS, when the file system gets into full state and there is not enough spare disk space, a problematic system condition might arise in some corner case while doing configuration commit. After that, if consecutive commits are still done in such a problematic status, commit-check failure logs might be seen eventually. Due to this issue, some processes might not run even if those are configured. PR1423500
- On MX480, multiple interfaces on a specific FPC go down after baseline profile configuration verification. PR1437221
- On the MPC7E, MPC8E, and MPC9E cards, egress stream flush failure and silent dropping of traffic might occur in a rare occasion for a repeatedly flapping link. PR1441816
- Establishing a BGP session over the GRE tunnel fails when the router receives the BGP packets encapsulated as GRE and uses the firewall filter action to de-capsulate the GRE header. PR1443238
- Subscriber access facing FPC's CPU utilization remains 100% for 5–6 minutes after making changes to the service firewall filter configuration. PR1447003
- On the Junos fusion environment, intermediate traffic drop is seen between Aggregation device and Satellite device when sFlow is enabled on the ingress interface. This is not seen always. When sFlow is enabled, the original packet is getting corrupted for those packets that hit the sFlow filter. This is because few packets transmitted from the egress of AD1 are short of FCS (4 bytes) + 2 bytes of datas, due to which the drops occur. It is seen that the normal data packets are of size 128 bytes (4 bytes FCS + 14 bytes Ethernet header + 20 bytes IP header + 90 bytes data), while the corrupted packet is 122 byte (14 bytes Ethernet header + 20 byte IP header + 88 bytes data). PR1450373
- When you use the **replace pattern** command to replace the name in the apply-group, the mgd crashes. PR1452136
- Changing VLAN manipulation configuration on vMX running with SR-IOV and **vlan-offload** enabled leads to complete traffic loss on that physical interface. PR1453950
- When you edit a command and run the command from CLI command history, the timestamp might not appear. PR1454387

High Availability and Resiliency

- If you perform GRES with the interface em0 (or fxp0) disabled on the master Routing Engine, when you enable the interface on the new backup Routing Engine, you might not be able to access the network. PR1372087

Infrastructure

- When there is a high route churn or a high rate of route updates being pushed to the kernel, the display of the **show interface** command output might be delayed or the output might not show all. PR1250328
- On the MX devices, the following messages are seen during FTP: **ftpd[14105]: bl_init: connect failed for `/var/run/blacklistd.sock' (No such file or directory)**. PR1315605
- When Junos OS is running as a VM on Linux and QEMU hypervisor, the Junos OS might become nonresponsive trying to acquire the SMP IPI lock while rebooting. PR1359339
- When the 32-bit Routing Engine memory exhausts, it causes the kernel to crash. PR1378313

Interfaces and Chassis

- Out-of-sequence packets are seen with LSQ interfaces. PR1258258
- Upgrading Junos OS Release 14.2R5 and later maintenance releases and Junos OS Release 16.1 and later mainline releases with CFM configuration might cause the cfmd process to crash after the upgrade. This is because of the old version of **/var/db/cfm.db**. PR1281073
- Commit error is not thrown when member link is added to multiple aggregation group with different interface specific options. When member interface added to bundle with both ether and gig-ether interface specific options, gig-ether option takes precedence over ether options. PR1475634
- On EVPN active or active software design, disabling the ESI logical interface might affect the designated forwarder election of EVPN when this IFD physical logical interface has ESI configured. In such configuration, disabling the ESI logical interface, type-1 routes (AD/EVI and AD/ES) are not generated from this PE. With ESI configured at IFD level, as one of the logical interface in the IFD is down, DF election cannot occur for the ESI. Also, AD/EVI and AD/ESI routes are deleted. The following warning message upon commit appears, where this configuration might cause DF ellection issues and undesired unicast/BUM traffic drop: **DCD_PARSE_CFG_WARNING: aex.y : Disabling the IFL may affect the Designated Forwarder election of EVPN when IFD is having ESI configured**. PR1467855
- In MX Series Virtual chassis, flooding of the following error message can be seen with LACP-enabled aggregated Ethernet interfaces on MPC7, MPC8, and MPC9: **CHASSISD_CONFIG_ACCESS_ERROR: pic_parse_ifname: Check fpc rnage failed**. The errors have an impact only for DWDM PICs, which does not affect these MPCs. Hence, this syslog message can be safely suppressed. PR1349277

- The following error message is observed in some cases: **ppman_cfm_start_inline_adj: Failed to add Inline adj for CFM, pkt-len=0**. However, there is no functional impact. Sessions or adjacency would get programmed inline subsequently. PR1358236
- With **ppp-service traceoptions** configured as **user@router> show configuration protocols ppp-service traceoptions file jtac-jpppd.log size 1g files 10; level all; flag all; filter {user {"subscriber@domain.com";} }**, it is expected to see only PPP negotiation events belonging to the subscriber defined in the filter section. However, in releases affected by this issue, several stings of logs related to other (noninterested) subscribers might be seen. PR1370994
- LFM sessions toward scaled peers might flap during the switchover phase of a unified ISSU. PR1377761
- If an aggregated Ethernet (ae-) interface has VRRP configuration, in the following use cases, member logical interfaces are not created after the member physical interface comes up and the ae- interface is in down state:

  1. FPC restart **(request chassis fpc restart slot <>)**.
  2. Chassis-control restart **(restart chassis-control)**.
  3. Reboot both Routing Engine **(request system reboot both-routing-engines)**.

  So, before performing these operations, it is advisable to remove the VRRP configuration from the aggregated Ethernet interface. PR1429045

Layer 2 Ethernet Services

- On MX Series devices, if a static demux interface is configured over an underlying interface, after subscriber logout, the accounting statistics are not cleared. PR1383265
- PPPoE dual-stack having stale DHCPv6 PD addresses in the SDB causing DHCPv6 binding fails because of the presence or duplicate addresess. PR1466125

MPLS

- With nonstop active routing (NSR), when the rpd restarts on the master Routing Engine, the rpd on the backup Routing Engine might also restart. PR1282369
- In the following topology, the ingress MX10k3 MPLS generates core files DUT MX104 RI with vt interface p2mp lsp branch. After re-configuring (delete/add) on DUT and subsequent switch overs (NSR/GRES) and LSP flaps due to the LSP being stuck into the incorrect state while flipping VT- to LSI- configuration. PR1454987
- While setting LSP BW constraint and signalling LSP, the remaining BW can be less than expected like in the following example does not allow further reservation through this link: **user@router> show rsvp interface RSVP interface: 2 active Active Subscr- Static Available Reserved Highwater Interface State resv iption BW BW BW mark et-0/1/0.0 Up 1 90% 100Gbps 4.99999Gbps 85Gbps 90Gbps <<<<<<**. So, if you try to signal a new LSP with BW 5G through this link it fails. PR1458527

- In case of CSPF-disabled LSPs, if the primary path of the Explicit Route Object is changed to an unreachable strict hop, sometimes the primary path stays up with the old Explicit Route Object. The LSP does not switch to standby secondary. PR1284138
- For an SR-TE path with "0" explicit NULL as the innermost label, the SR-TE path does not get installed with the label "0". PR1287354
- Root XML tag in the output has been changed from **rsvp-pop-and-fwd-info** to **rsvp-pop-and-fwd-information** to be consistent with the XML tag convention. PR1365940
- On devices running Junos OS, with transit chaining mode enabled, if RSVP link/node protection is enabled and **sensor-based-stats** is used, a single-hop bypass label-switched path (LSP) next hop might not be installed in the forwarding information base (FIB) even it is in the routing information base (RIB). Hence the single-hop bypass LSP might fail to forward traffic when needed. PR1401152
- With NSR enabled, when the master rpd is restarted, occasionally, out-of-order add and delete messages can arrive on the backup Routing Engine, causing label assignment that can result in rpd crash on the backup Routing Engine. PR1401813
- On MX Series platforms, in MPLS Layer 2 circuit or Layer 2 VPN with FAT (Flow-Aware Transport of Pseudowires) Flow Labels scenario, the flow label is not pushed when the **chained-composite-next-hop ingress l2ckt/l2vpn** configuration is enabled. The issue results in load-balancing problems for the Layer 2 circuit or Layer 2 VPN service. PR1439453
- After configuring the credibility, the new credibility preference value is stored internally and is not considered by the CSPF module. If the previous **traffic-engineering credibility-protocol-preference** configuration was deleted or if you configure **traffic-engineering credibility-protocol-preference** under another protocol---for example, IS-IS. PR1460283

Network Management and Monitoring

- The SNMP cold start trap might be observed after the Routing Engine switchover. PR1461839

Platform and Infrastructure

- In configurations with IRB interfaces, during times of interface deletion (for example, FPC reboot), the Packet Forwarding Engine might log errors stating **nh_ucast_change:291Referenced l2ifl not found**. This condition should be transient, with the system re-converging on the expected state. PR1054798
- In NTP with the boot-server scenario, when the router or switch boots, the NTP daemon will send a ntpdate request to poll the configured NTP boot-server to determine the local date and time. If the ntpdate is not be activated correctly while the device booting, the ntpdate might not work successfully. Then the system time might not get updated with the configured NTP boot-server. PR1463622

- An accuracy issue occurs with three-color policers of both types single-rate and two-rate, in which the policer rate and burst-size combination of the policer accuracy vary. This issue is present starting in Junos OS Release 11.4 on all platforms that use MX Series ASIC. PR1307882
- With Junos OS Release 17.3R3 on MX Series, on moving from the baseline configuration to an EVPN scaled (4000 VLANs) configuration with multihoming, the newly elected designated forwarder might take up to 90 seconds to resume forwarding BUM traffic. The time required for convergence is proportional to the scale used, so a lower scale incurs a smaller dark window. Workaround for faster convergence with high scale: Distributing the configuration across several FPCs can potentially bring down the BUM traffic drop from 90 seconds to a significantly lower value. PR1362934
- There are multiple failures when events such as node reboots, ICL flaps, and ICCP flaps occur. Even with enhanced convergence configured, there is no guarantee that subsecond convergence will be achieved. PR1371493
- In some cases, pseudowire interfaces over redundant logical tunnels (RLT) might be shown as up but they might not pass traffic. Log messages reporting an ASIC error and a chassis alarm reporting hard FPC errors may also be seen. PR1400269
- In some cases, the status bit of the RPF next hop appears as disabled when it should have been enabled. The trigger for the issue is not known yet. PR1404240
- On MX Series routers with MS-MPCs, when the MPC restarts or the routing-instance type is changed (for example, **virtual-router** to **vrf**), or RD is changed, the traffic from a group VPN tunnel to an MPLS-over-UDP tunnel might fail to get decrypted on the MS-MPC, causing complete service loss. PR1422242
- On all platforms running Junos OS, with NSR enabled, the BGP session with a hold time of 6 seconds or smaller flaps if the backup Routing Engine is powered off ungracefully. PR1428518
- The heap memory usage increases during the subscribers flap test and new subscribers fails to login after multiple iterations of the subscribers flap test. PR1442770
- A dual Routing Engine Junos node slicing GNF with no GRES configured and with **system internet-options no-tcp-reset drop-all-tcp** configured could enter dual backup Routing Engine state upon manual GNF Routing Engine mastership switchover attempt with the **request chassis routing-engine master [acquire|release|switch]** command from either of the two GNF configurations. PR1456565

Routing Protocols

- In rare cases, the rpd might generate a core file with the error **rt_notbest_sanity: Path selection failure on ...**. The core file is soft, which means there should be no impact to traffic or routing protocols. PR946415
- Cosmetic and expected logs are observed. These logs are not harmful and have no functional impact, it simply shows the state of PIM register messages. PR1371431

- When interoperating with other vendors in a draft-rosen multicast VPN, by default Junos OS attaches a route target to multicast distribution tree (MDT) subsequent address family identifier (SAFI) network layer reachability information (NLRI) route advertisements. But some vendors do not support attaching route targets to the MDT-SAFI route advertisements. In this case, the MDT-SAFI route advertisement without route-target extended communities will be excluded from propagating if the BGP route target filtering is enabled on a device running Junos OS. Note that **draft-rosen-idr-rtc-no-rt** has been created in IETF to document this issue and carry the proposed fix through standards. PR993870
- In both GR helper and GR restarter scenarios, BFD down packets are not immediately sent. It might cause an issue where BGP session down is notified before the BFD is down. PR1432440
- Junos OS shows an obsolete session description in the output of **show route multicast extensive** for several multicast registry addresses. PR1022288
- **JTASK_SCHED_SLIP** for rpd might be seen when you perform **restart routing** or **ospf protocol disable** with scaled BGP routes on an MX104 router. PR1203979
- Certain BGP traceoption flags (for example, open, update, and keepalive) might result in (trace) logging of debugging messages that do not fall within the specified traceoption category, which results in some unwanted BGP debug messages being logged to the BGP traceoption file. PR1252294
- LDP OSPF are in the in-sync state and the reason observed for this is IGP interface down with LDP synchronization enabled for OSPF. **user@host> show ospf interface ae100.0 extensive Interface State Area DR ID BDR ID Nbrs ae100.0 PtToPt 0.0.0.0 0.0.0.0 0.0.0.01Type: P2P, Address: 10.0.60.93, Mask: 255.255.255.252, MTU: 9100, Cost: 1050Adj count: 1Hello: 10, Dead: 40, ReXmit: 2, Not StubAuth type: MD5, Active key ID: 1, Start time: 1970 Jan 1 00:00:00 UTCProtection type: NoneTopology default (ID 0) -> Cost: 1050LDP sync state: in sync, for: 00:04:03, reason: IGP interface downconfig holdtime: infinity**. According to the current analysis, IGP interface down is observed as the reason because although LDP notified OSPF that LDP synchronization was achieved, OSPF was not able to take note of the LDP synchronization notification because the OSPF neighbor was not up yet. PR1256434
- In rare cases, RIP replication might fail as a result of performing NSR Routing Engine switchovers when the system is not NSR ready. PR1310149
- The rpd might crash and generate core files if distributed IGMP (Internet Group Management Protocol) is configured. PR1314679
- BGP I/O threading was added in Junos OS Release 16.1R1 whereby BGP writes were batched to improve efficiency. This might sometimes lead to some latency in sending BGP updates while reacting to certain network events. PR1332301
- When 32,000 SR-TE policies are configured at once, scheduler slips might occur during the configuration. PR1339829
- There are scenarios where an application allocates and caches next-hop templates. This causes the next-hop template cache to grow continuously. But when the application clears its local cache, memory is freed to the next-hop template cache. But the next-hop template cache does not have the code to shrink the cache and free memory back. So the next-hop template memory is trapped in the cache and

cannot be used for other purposes. But if the same BGP routes and next-hops come up again, they will reuse the templates from the cache and not consume additional memory. PR1346984

- SCP command with routing option (-JU) is not supported. PR1364825
- It is possible for a GNF with rosen6 multicast to display stuck KRT queue entries after recovery from a dual Routing Engine reboot at the BSYS. PR1367849
- At scale, a GNF with PS over RLT and multiple MPCs might show BFD flap at recovery. PR1386574
- On all devices running Junos OS, with GRES and nonstop routing (NSR) enabled, if Routing Engine switchover is executed, the Border Gateway Protocol (BGP) peers in the new master Routing Engine might flap due to hold-timer expiry after GRES. PR1390113
- It is possible that under certain scenarios when the **legacy-redirect-ip-action** configuration of the existing BGP routes advertised might not be refreshed. Because of this, the routes might still contain communities not aligned with the configured **legacy-redirect-ip-action** option. Clear routes as described in workaround. PR1396787
- Users that replace simple VLAN interfaces with PS over RTL might notice an increase in FPC CPU usage. This is in keeping with the increased processing and resources needed to support these types of interfaces, which are similar in this regard to that of an aggregated Ethernet interface. PR1396925
- When the multicast-only fast reroute (MoFRR) feature is used in a scaled environment (in terms of number of routes and next hops), the actual convergence of multicast traffic might reach hundreds of milliseconds because of suboptimal handling of MoFRR forwarding states at the Packet Forwarding Engine level. PR1399457
- Change in route selection process: when you want to select the better route between a non-BGP and BGP route, if you are at Step 7 of the route selection process (https://www.juniper.net/documentation/en_US/junos/topics/reference/general/routing-protocols-address-representation.html), then the BGP route is always the better one. PR1415468
- An aggregate route with BGP contributing routes may flap in some scenarios as expected The reasons is, by default, the aggregate route carries some BGP attributes such as, AS-PATH, originator, and cluster. The aggregate route inherits those attributes from active contributing routes. If one or a few contributing routes are added, deleted, or changed, while other contributing routes are still stable, the aggregate route might refresh because its attributes were changed. If this aggregate route is exported into BGP, a BGP update will be sent to a downstream router with updated attributes, causing a service impact. See: Understanding Route AggregationPR1457955

Services Applications

- MX L2TP LTS fails to forward the agentCircuitId and agentRemoteId AVP received from the LAC toward the LNS.

Subscriber Access Management

- The authd reuses address too quickly before jdhcpd can completely clean up the old subscriber that is flooding with the following error log: **:jdhcpd: %USER-3-DH_SVC_DUPLICATE_IPADDR_ERR: Failed to add 10.1.128.3 as it is already used by 1815**. PR1402653

User Interface and Configuration

- Test configuration **/config/rescue.conf.gz** fails commit check for a dynamic profile when a subscriber is active. PR1376689
- Even though the applied nested apply-groups is deleted, the logical interface under the nested groups is not removed. PR1427962

VPNs

- Core is observed due to a double free of a label. The issue occurs in BGP-based VPLS setup where BGP has a RR configuration due to which, the BGP-VPLS label routes are exported into the **bgp.l2vpn** table. PR1379621

SEE ALSO

New and Changed Features | **95**
Changes in Behavior and Syntax | **115**
Known Behavior | **128**
Resolved Issues | **148**
Documentation Updates | **200**
Migration, Upgrade, and Downgrade Instructions | **201**

Resolved Issues

IN THIS SECTION

Learn which issues were resolved in Junos OS main and maintenance releases for MX Series routers.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Resolved Issues: 18.4R3

Application Layer Gateways (ALGs)

- SIP messages that need to be fragmented might be dropped by SIP ALG. PR1475031

Class of Service (CoS)

- CoS is incorrectly applied on the Packet Forwarding Engine, leading to egress traffic drop. PR1329141
- Unexpected traffic loss might be seen in certain conditions under Fusion environment scenario. PR1472083
- MX10008 and MX100016 might generate **cosd** core files after executing the **commit** or **commit check** statement if the **policy-map** configuration is set. PR1475508
- The host-inbound packets might be dropped when you configure the host-outbound FC. PR1428144
- The dfwd crash is observed with forwarding-class configuration in policers. PR1436894

EVPN

- Unexpected next-hop operation error from kernel to l2ald in a Layer 2 gateway during the MAC movement operation is observed. PR1430764
- Incorrect MAC count with **show evpn/bridge statistics** output is observed. PR1432293
- Asynchronous between ARP table and Ethernet switching table occurs if EVPN ESI link flaps multiple times. PR1435306
- EVPN/MPLS IRB logical interface might not come up when the local Layer 2 interface is down. PR1436207
- Configuring ESI on a single-homed 25-Gigabit Ethernet port might not work. PR1438227

- On EVPN/VXLAN setup, the specific source ports of UDP packets are dropped. PR1441047
- Restarting Layer 2 learning might cause some remote MAC addresses to move into forwarding dead state. PR1441565
- Traffic drop might be observed in an EVPN Layer 3 gateway scenario. PR1442319
- On MX Series platform, the core-isolation feature does not work after setting and then deleting the **no-core-isolation** statement. This feature can be enabled after restarting rpd. PR1442973
- The EVPN Type-2 routes might not be advertised properly in logical systems. PR1443798
- The localhost address is not present in the EVPN database and the **mac-ip-table** table. PR1443933
- The bridge mac-table age timer does not expire for rbeb interfaces. PR1453203
- Instance type is changed from VPLS to EVPN, which results in loss of packet. PR1455973
- ARP request or NS might be sent back to the local segment by the DF router. PR1459830
- Traffic received from VTEP gets dropped if the VNI value used for Type-5 routes is greater than 65,535. PR1461860
- rpd might crash with EVPN-related configuration changes in a static VXLAN to MPLS stitching scenario. PR1467309

Forwarding and Sampling

- More information to the firewall flexible match syntax are needed. PR1389103
- On Junos OS platforms, the l2ald process might observe memory leak.PR1455034
- The SRRD might crash when memory corruption occurs. PR1414568
- EVPN enhancement for MAC flush mechanism in Junos OS. PR1421018
- DT_BNG: **rt-delay-threshold** can be set below one second. However, **rt-marker-interval** is limited to one second. PR1425544
- Type 1 ESI/AD route might not be generated locally on EVPN PE in the all-active mode. PR1464778
- Enable interface with input or output VLAN maps to be added to a routing instance configured with a VLAN ID or VLAN tags with the virtual-switch instance type and VPLS protocol. PR1433542
- High CPU utilization of l2ald is observed after replacing the EVPN configuration. PR1446568
- On MX204, input/output counters of an aggregated Ethernet bundle or member links configured on nondefault logical systems are not updated. PR1446762
- JDI-RCT:M/MX: ARP packets are dropped by the Packet Forwarding Engine after chassis-control restarts in the MX Series chassis. PR1450928
- On the PTX Series or TVP platforms, the pfed might crash and might not be able to come up. PR1452363
- Commit error and dfwd core files might be observed when you apply a firewall filter with the **then traffic-class** or **then dscp** action. PR1452435

- With the MX Series devices, the following logs are seen: **L2ALD_MAC_IP_LIMIT_REACHED_IF: Limit on learned MAC+IP bindings reached for .local.1048605; current count is 1024** PR1462642
- An output **bandwidth-percent** policer with **logical-bandwidth-policer** applied to an aggregated Ethernet bundle along with an **output-traffic-control-profile** has an incorrect effective policing rate. PR1466698

General Routing

- Load balancing is uneven across aggregate Ethernet member links when the aggregated Ethernet bundle is part of an equal cost multipath (ECMP) path. The member links needs to span Virtual Chassis members. PR1255542
- DHCP-server: RADIUS given mask is being reversed. PR1474097
- A hierarchical-scheduler must not be configured on a **ps** interface. PR1470049
- UID might not be released properly in some scenario after service session deactivation. PR1188434
- Need to change the default parameters for resource-monitor rtt-parameters. PR1407021
- The physical interface of aggregated Ethernet might take time to come up after disabling or enabling it. PR1465302
- The interfaces on MPC-3D-16XGE-SFPP card does not get created after upgrading the system to Junos OS Release 18.1 and later. PR1471429
- Service accounting statistics does not get updated after making change to the firewall filters. PR1472334
- SDB goes down very frequently if the **reauthenticate lease-renewal** statement is enabled for DHCP. PR1473063
- QSA adapter lane 0 port might be also brought down when disabling one of the other lanes. PR1474231
- clksyncd core file is generated after performing GRES. PR1474987
- The RADIUS accounting updates of service session have incorrect statistics of data. PR1475729
- On NATT scenario the IKE version 2, IPsec tunnel might flap if the tunnel initiator is not behind NAT. PR1477483
- On MPC2E-NG, MPC3E-NG, MPC5, MPC6, MPC7, MPC8, and MPC9, the Packet Forwarding Engine might be disabled due to major error. PR1478028
- MX2000 CB 19.44MHz clock failure is fatal and must trigger a CB switchover. PR1463169
- The **show system subscriber-management summary** command to include failure reason for standby disconnect when primary and back Routing Engine memories do not match. PR1422976
- The **show subscriber extensive** command incorrectly displays the DNS (Domain Name Server) address provided to DHCP clients. PR1457949
- The filter service might fail to get installed for the subscriber in a scaled BBE scenario. PR1374248
- Interface with Tri Rate Copper SFP (P/N:740-013111) in **MIC 3D 20x 1GE(LAN)-E,SFP** stops forwarding traffic after the ISSU. PR1379398

- The **high-cos-queue-threshold** range is changed to **[uint 0 .. 90;]**. PR1390424
- FPC might reboot on vMX in subscriber scenario. PR1393660
- Layer 3 gateway does not update the ARP entries if IP or MAC quickly move from one router to another router in an EVPN-VXLAN environment. PR1395685
- The PPPoE subscribers are unable to reconnect after FPC reboots. PR1397628
- The traffic might be always taking the backup path even though the primary path is available in a BGP-PIC scenario. PR1401322
- The rpd might crash or duplicated routes might be seen when you change the configuration with BGP multipath and flapping routes. PR1406070
- When inline J-Flow is used, FPC crashes and slows convergence upon HMC fatal error condition. PR1407506
- The configuration database might not be unlocked automatically if the related user session is disconnected when the commit operation is in progress. PR1410322
- Slow SNMP response time on entityMIB might be seen in the fully loaded setup with many SFPs. PR1411062
- Parity error might cause FPC alarm. PR1411610
- J-Flow: Need to reduce maximum flow table size when you use **flex-flow-sizing**. PR1413513
- The DHCP or DHCPv6 subscribers might fail to establish sessions on PowerPC-based MX Series platforms. PR1414333
- The PTX1000, PTX10002, or QFX10002 might stop forwarding packets after the **chassis-control** process restarts. PR1414434
- The JSU package installation might fail. PR1417345
- The rpd process might crash when you restart the device or deactivate the logical system. PR1418192
- SPC3 storage and hard disc error log messages are observed. PR1420800
- Certain JNP10008-SF and JNP10016-SF manufactured between July 2018 and March 2019 might have incorrect core voltage settings. The issue can be corrected by reprogramming the core voltage and updating the setting in NVRAM memory. PR1420864
- MX Series LNS might fail to forward the traffic on the subscriber access route. PR1421314
- After the control plane event, a few IPsec tunnels fail to send traffic through the tunnel. PR1421843
- RPT_REG_SERVICES: RPM syslogs are not get generated after deactivating the aggregate interface. PR1421934
- The size of the RSI on VM host platforms is bloated by log files. PR1422354
- On MX Series platforms, issuing the **show forwarding-options load-balance ..** command might cause a Packet Forwarding Edge wedge after a certain number of attempts (fewer than 200 in test), if the

destination-address statement of the command matches the default route with the **discard** action. This is because a defect code causing internal flow errors is involved in that scenario. PR1422464

- The XML output might be not hierarchically structured when you run the **show security group-vpn member ipsec statistics** command. PR1422496
- Ports might get incorrectly channelized if they are channelized to 10-Gbps and they are again channelized to 10 Gbps. PR1423496
- The PTP asymmetry change needs PTP bouncing. PR1423860
- The system does not reboot or halt as configured when disk error is encountered. PR1424187
- The rpd keeps crashing after the configuration is changed. PR1424819
- Interface with FEC disabled might flap after Routing Engine mastership switchover. PR1425211
- The mspmand process might crash and restart with a mspmand core file that is created after committing a change to deactivate and activate the service set. PR1425405
- On MX204 or MX10003, MPC reboot or Routing Engine mastership switchover might occur. PR1426120
- Some CFM and BFD sessions might flap while collecting the MPLS statistics. PR1426727
- The decoding of telemetry data at collector might not be proper if you configure the sensors. PR1426871
- ENTITY MIB has incorrect containedIn values for some fixed MPCs with built-in PICs. PR1427305
- Rebooting or halting VC member might cause the RTG link to go down for 30 seconds. PR1427500
- When broadband edge PPPoE and DHCP subscribers coming up over Junos fusion satellite ports are active, the **commit full** and **commit synchornization full** commands fail. PR1427647
- On MX Series platforms, the PPP sessions does not work properly. PR1428212
- **global-mac-limit** and **global-mac-ip-limit** might allow more entries than the configured values. PR1428572
- On an MX10003 platform, fabric drops might be seen when two FPCs come online together. PR1428854
- Incorrect IGMP interface is countered for dynamic PPP interfaces. PR1429018
- The **emitted XML is INVALID** message is thrown for **show virtual-network-functions**. PR1429090
- The aggregated Ethernet interface does not come up after rebooting the FPC or device even though the physical member link is up. PR1429917
- Protect core configured router might send IPFIX sampling packets with the wrong next-hop information. PR1430244
- On MX10008 and MX100016, performance degradation is observed for about 20 seconds after fabric board is taken offline. PR1430739
- On MX204, MX10003, or EX9251, disabling the DAC QSFP port might not work. PR1430921
- Traceoptions file exceeds the configured file size limit as the file keeps on growing. PR1431033

- Inline LSQ might not work when it is configured on the same FPC where MIC-3D-16CHE1-T1 is slotted. PR1431069
- Error might be observed when using a script to load the configuration. PR1431198
- The l2cpd process might crash and generate a core file when interfaces flap. PR1431355
- The **SIB Link Error** error detected on a specific Packet Forwarding Engine might cause a complete service impact. PR1431592
- Dual Stack Subscriber Accounting Statistics are not baselined when one stack logs out. PR1432163
- Traffic might be sent on the standby link of an aggregated Ethernet bundle and might drop when LACP f**ast-failover** is enabled. PR1432449
- Changing to in-use parameterized filter prefix list might result in bbe-smgd core on backup Routing Engine. PR1432655
- Output traffic statistics might be incorrect with Routing Engine generated traffic. PR1432724
- Traffic is dropped if **sa-multicast** is in the configuration. PR1433306
- jvision-firewall: Collected service statistic are all 0 after ISSU for MPC2. PR1433589
- Lawful intercept for subscriber might not get activated by RADIUS access-accept. PR1433911
- MX URLF: Need to support URL case sensitivity. PR1434004
- On MX10003-LC2103, the syslog message **Wrong PLUGGABLE ID 17** is observed. PR1434183
- When the policy is removed, the rpd generates core files during route flash. PR1434243
- Packet Forwarding Engine memory leak might be seen if MLPPP links are flapped. PR1434980
- Micro-BFD session might flap upon inserting a QSFP transceiver in another. PR1435221
- DHCPv6 advertisement to client might use an incorrect destination MAC address. PR1435694
- Total number of packets mirrored after adding the DTCP trigger and DTCP enable is not in the expected range while verifying traffic on the mirror port after DTCP drop policy is enabled. PR1435736
- The MPC7, MPC8, MPC9, MX10003 MPC, EX9200-12QS, and EX9200-40XS line cards might crash in a scaling setup. PR1435744
- The mc-ae interface might get stuck in the waiting state in a dual mc-ae scenario. PR1435874
- The local route in the secondary routing table gets stuck in the KRT. PR1436080
- The **ifHCInOctets** counter on an aggregated Ethernet interface becomes zero when **snmp mib walk** is executed. PR1436201
- It is observed that FRU insertion SNMP trap is sent. PR1436212
- The static PPP/PPPoE subscribers are stuck in the init state permanently and the following error message might be displayed: **Failed to create client session, err=SDB data corrupted.** PR1436350

- Subscriber interim statistic might reset to zero and idle-timeout does not work in the MX Series Virtual Chassis setup. PR1436419
- MX10003 is not reachable after downgrading from a higher Junos OS version. PR1436832
- The CPU utilization on a daemon might be around 100% or the backup Routing Engine might crash in rare conditions. PR1437762
- LNS router might send the router-advertisement packet with NULL source link-layer option field. PR1437847
- The chassisd might crash after enabling hash-key. PR1437855
- The rpd might generate core files during router boot up due to a file pointer issue as there are two code paths that can close the file. PR1438597
- Subscriber flows might not be synchronized between aggregated Ethernet members on MX Series Virtual Chassis. PR1438621
- The FPC might crash when the Packet Forwarding Engine memory is exhausted. PR1439012
- The are incorrect values in JUNIPER-TIMING-NOTFNS-MIB. PR1439025
- FPC on Virtual Chassis backup router might reboot in a an MX Series Virtual Chassis scenario. PR1439170
- The vlan all interface all configuration does not work as expected under VSTP. PR1439583
- When a group is applied at a non-root level, updating statements inside the group does not update the hierarchies. PR1439805
- The bbe-smgd core files are observed after every restart. PR1439905
- CoS-related errors are observed and subscribers are not able to get the service. PR1440381
- CPU or interface might not get responsive on a particular 100-Gigabit Ethernet port. PR1440526
- DHCP offers packet toward IRB over LT interface that gets dropped in the DHCP relay environment. PR1440696
- The Layer 2 dynamic VLAN might be missed when an interface is added or removed for an aggregated Ethernet interface. PR1440872
- The ports of the EX Series device might stay in the up state even if the EX46XX or QFX51XX series device reboots. PR1441035
- For a route that is received through EBGP, the AIGP value might not be considered as expected. PR1441438
- The rpd might crash or consume full utilization of CPU after flapping routes. PR1441550
- The newly added OID calculates the buffer utilization where inactive memory is not considered as free memory. PR1441680
- On a PTX Series or QFX Series device, the aggregated Ethernet outgoing traffic might be dropped after making changes to the aggregated Ethernet interface configuration. PR1441772

- The SNMP trap for removal is observed twice if the FRU is removed. PR1441857
- The packets originating from the IRB interface might get dropped in a VPLS scenario. PR1442121
- The chassisd is unable to power off a faulty FPC after a Routing Engine switchover leading to a chassisd restart loop. PR1442138
- The operational status of the interface in hardware and software might be out of synchronization in an EVPN setup with the proxy ARP feature enabled. PR1442310
- In the **enhanced-ip** or **enhanced-ethernet** mode with DCU **(destination-class-usage)** accounting enabled, MS-DPC might drop all the traffic that should exit the aggregated Ethernet interface. PR1442527
- EVENT UpDown interface logs are partially collected in the syslog messages. PR1442542
- Different formats of the B4 addresses might be observed in the **SERVICES_PORT_BLOCK_ALLOC/RELEASE/ACTIVE** log messages. PR1442552
- Few Path Computation Element Protocol (PCEP) logs are marked as error even though they are not an error. The severity of those logs are corrected as INFO. PR1442598
- The interface might go into admin down state after the FPC restarts with PTP configuration enabled. PR1442665
- DHCPv6 client might fail to get an IP address. PR1442867
- The kmd process might crash and restart with a **kmd** core file generated if there is a change in the IP address of the NAT mapping for the IPsec-VPN remote peer. PR1444183
- On MX204 platforms, GRE packets that are larger than the MTU gets dropped when sampling is enabled on the egress interface. PR1444186
- High CPU utilization might be observed for eventd along with error logs. PR1444462
- Inline-keepalive might stop working for LNS subscribers if the **routing-services** statement is enabled. PR1444696
- Routing Engine-generated jumbo frames might get dropped. PR1444963
- Access route might be stuck in bbe-smgd and the rpd does not get cleared. PR1445155
- The cpcdd process might crash continuously if the **captive-portal-content-delivery** service is activated for a dual-stack PPPoE/DHCPv6 subscriber. PR1445382
- Detached LACP member link makes the LACP state as enabled in the Packet Forwarding Engine when switchover occurs due to device reboot. PR1445428
- The 1-Gigabit Ethernet interface on MX204 might stay down after the device reboots. PR1445508
- The l2ald might crash when the FPC restarts. PR1445720
- The mspmand process might crash if URL filtering is configured and one blacklisted domain name is a substring of another blacklisted domain name in URL filter database file. PR1445751

- The jdhcpd process might crash after issuing the **show access-security router-advertisement-guard** command. PR1446034
- The MX Series device rewrites the HTTPS request with the destination port as 80 when converged CPCD is used. PR1446085
- The static route for NAT might never come up if service interface switchover occurs when the interface has NAT and graceful restart configured. PR1446267
- The rpd process might crash when it is terminated immediately after it has started. PR1446320
- Accurate statistics might not include packets forwarded during the last two seconds before subscriber termination. PR1446546
- NAT service set in certain scale might fail to get programmed. PR1446931
- All MPCs-based on Trinity chipset might crash and restart during ISSU with large-scale logical interfaces. PR1446993
- The J-Flow version 5 stops working after changing the input rate value. PR1446996
- The rpd process might crash if BGP is activated or deactivated multiple times. PR1448325
- The vehostd application fails to set minor alarm. PR1448413
- Interface attributes might cause high CPU usage of dcd. PR1448858
- FPC reboots is being taken offline when PIC-0. PR1449067
- The DHCP relay feature might not work as expected when **helpers bootp** is configured. PR1449201
- Increase in the maximum value of **delegation-cleanup-timeout** is observed. PR1449468
- Changing the hostname triggers LSP on-change notification and not an adjacency on-change notification. Additionally, IS-IS sends the hostname instead of the system ID in the OC paths. PR1449837
- The **No localhost ifl for rtt 65535** message is seen on an MX Series device running Junos OS enhanced subscriber management feature. PR1450057
- Interfaces might flap forever after deleting the **interface disable** configuration. PR1450263
- VLAN configuration changes with l2ald restart might cause kernel synchronization issues and might impact forwarding. PR1450832
- JNP10K-LC2101: FPC generates the **Voltage Tolerance Exceeded** major alarm for EA_chip_2V5 sensors. PR1451011
- Configuring a new burst size under **traffic-control-profile** does not have any effect. PR1451033
- Main chassisd thread at a JNS GNF might experience stalls upon GNF SNMP polling for hardware-related OIDs. PR1451215
- IPsec SNMP: SNMP query for IPsec decrypted or enrypted packets does not fetch right values and the following error message is observed: **KMD_SNMP_FATAL_ERROR** PR1451324
- FPC core files might be seen after changing the configuration of PTP or Synchronous Ethernet. PR1451950

- Error dropped packets are observed on MQ/XM-based MPC cards even though there is no traffic flowing through the system. PR1451958
- PLL errors might be seen after FPC reboots or restarts. PR1452604
- Framing errors and packet loss might be seen when high-throughput traffic passes through a MACsec-enabled device. PR1452851
- Incorrect output in **how snmp mib walk jnxTimingNotfnsMIB.3** is observed. PR1453436
- PTP is out of synchronization when HWDB is not accessible during initialization. PR1453531
- On MX10003 platform, alarms are not sent to syslog. PR1453533
- Delay in freeing processed defragments buffers leads to prolonged flow control and could lead to crash. PR1453811
- The ANCP interface-set QoS adjusts might not be processed. PR1453826
- ANCP subscriber information gets lost after the daemon restarts. PR1453837
- The FPC might crash when the severity of error is modified. PR1453871
- On the MX204, RADIUS interim accounting statistics are not populated. PR1454541
- The 100-Gigabit Ethernet interfaces might not come up again after going down on MPC3E-NG. PR1454595
- The access request for a Layer 2 BSA port might not be retransmitted if the RADIUS server is unreachable. PR1454975
- JNS/GNF: CRAFTD logs fatal errors along with junk characters in syslog upon its startup and exits after four startup attempts. PR1454985
- SmiHelperd process is not initialized in Junos OS PPC releases. PR1455667
- Device chooses incorrect source address for locally originated IPv6 packets in a routing instance when destination address is reachable through a static route with the **next-table** statement. PR1455893
- There is high temperature from the **show chassis environment** output after MPC4E is inserted in slot 5. PR1456457
- The **invoke-on** and **display xml rpc** options in a command result in unexpected multiple RPC commands. PR1456578
- The **bbe-statsd** process continuously crashes if any parameter is set to zero in the **mx_large.xml** file. PR1457257
- The default value of 2^32 replay-window size results in framing errors at an average of one in 2^32 frames received. PR1457555
- The chassisd process and all FPCs might restart after Routing Engine switchovers. PR1457657
- The subscriber routes are not cleared from the backup Routing Engine when the session aborts. PR1458369

- Subscribers are unable to log in after activating more than two million multicast subscribers. PR1458419
- The correct VoIP VLAN information in LLDP-MED packets might not be sent after committing if dynamic VoIP VLAN assignment is used. PR1458559
- The **FPC X major errors** alarm might be raised after committing the PTP configuration change. PR1458581
- The traffic might get stuck on MS-MPC or MS-MIC with sessions receiving a huge number of affinity packets. PR1459306
- The following error message might be seen after restarting the chassisd: **create_pseudos: unable to create interface device for pip0 (File exists)** PR1459373
- Telemetry streaming of mandatory TLV 'ttl' learned from LLDP neighbor is not available. PR1459441
- The traffic might be silently discarded during link recovery in an open Ethernet access ring with configured ERPS. PR1459446
- In an MC-LAG scenario, traffic destined to VRRP virtual MAC gets dropped. PR1459692
- Silent dropping of traffic upon interface flaps after DRD auto-recovery. PR1459698
- The PPTP does not work with destination NAT. PR1460027
- If VLAN offload is configured on the vMX platform, **input-vlan-map** might not work. PR1460544
- IPv6 prefix might be hidden when received over an IPv4 BGP session. PR1460786
- The **ppman** thread starvation with PTP or Synchronous Ethernet is not configured properly. PR1461031
- bbe-smgd core files might be seen when all RADIUS servers are unreachable. PR1461340
- Traffic might be impacted because the fabric hardening is stuck. PR1461356
- In an EVPN scenario, memory leak might be observed when **proxy-macip-advertisement** is configured. PR1461677
- The repd core files are generated during system boot up. PR1461796
- Memory leak causes **bbe-statsd** and **bbe-smgd** to crash. PR1461821
- CHASSISD_SNMP_TRAP6: SNMP trap generates the following error message when both DIP switches and the power switch are turned off: **Power Supply failed** PR1462065
- On MX204, RADIUS interim accounting statistics are not populated. PR1462325
- On certain MX Series platform, an interface might get stuck in the down state. PR1463015
- The subscribers might not pass traffic after making some changes to the dynamic-profiles filter. PR1463420
- The MPC2E-NG and MPC3E-NG line cards with specific MICs might crash after a high rate of interface flaps. PR1463859
- On MX Series platforms with MS-MIC or MS-MPC, the mspmand might crash when a stateful firewall and RPC ALG are used. PR1464020

- The IPoE subscriber route installation might fail. PR1464344
- Observed following error **bbe-smgd-core (0x000000000088488c** in **bbe_autoconf_delete_vlan_session_only (session_id=918) at ../../../../../../src/junos/usr.sbin/bbe-svcs/smd/plugins/autoconf/bbe_autoconf_plugin.c:3115)**. PR1464371
- The PPP IPv6CP might fail if the **routing-services** statement is enabled. PR1464415
- The CPU utilization on the mgd process might be stuck at 100% after the NETCONF session is interrupted by flapping the interface. PR1464439
- The HSL2 error occurs when the MS-MIC is taken offline and brought back online multiple times. PR1464477
- The PPPoE session gets in the terminated state and the accounting stops for the session, which is delayed. PR1464804
- MPC5E or MPC6E might crash due to internal thread hogging the CPU. PR1464820
- On MPC7, MPC8, and MPC9, WO packet error and FPC major alarm are observed when reassembling the small fragments. PR1465490
- NGRE: Internal ixlv1 interface are not up after the PXE/network is installed. PR1465547
- MS-MPC/MIC might generate core files due to the **mspmand** race conditions and DNS sinkhole. PR1466567
- The PPPoE subscribers become nonresponsive due to the PPPoE inline keepalives. PR1467125
- Layer 2 wholesale are not forwarding all the client requests with stacked VLAN. PR1467468
- The rpd might crash after making several changes to the flow-spec routes. PR1467838
- DNS sinkhole: Crypto code might cause high CPU utilization. PR1467874
- Optics measurements might not be streamed for interfaces of a PIC over JTI. PR1468435
- Memory leak on l2cpd process might lead to l2cpd crash. PR1469635
- SNMP interface MIB stops working for PPPoE clients. PR1470664

Infrastructure

- The duplex status of the management interface might not be updated in the output of the **show** command. PR1427233
- The operations on the console might not work if the **system ports console log-out-on-disconnect** statement is configured. PR1433224
- The scheduled tasks might not be executed if the **cron** daemon goes down without restart automatically. PR1463802

Interfaces and Chassis

- Unrelated aggregated Ethernet interfaces might go down if committing configuration changes. PR1409535
- MX Series Virtual Chassis ISSU is not supported when redundant logical tunnel (RLT) is configured. PR1411729
- Executing commit might become unresponsive due to the stuck dcd process. PR1470622
- The demux interfaces might be brought down after changing the MTU of the underlying et-interface. PR1424770
- Upgrade from pre Junos OS Release 17.4R1 release results in cfmd core files. PR1425804
- The NCP session might be brought down after IPCP Configure-Reject is sent. PR1431038
- VRRP mastership might flap when the tracked route is deleted or the tracked interface goes down. PR1432361
- In an MX Series platform where PPPoE is used, the router might not send LCP Termination-Request or LCP Terminate-Ack. PR1433489
- Mixed link-speed aggregated Ethernet bundle is not able to add a new subinterface successfully. PR1437929
- Targeted distribution for static demux interface over an aggregate Ethernet interface does not take the correct LACP link status into consideration when choosing primary and backup links. PR1439257
- The number of mgd processes increases as the mgd processes are not closed properly. PR1439440
- The cfmd process might crash after a restart in Junos OS Release 17.1R1 and later. PR1443353
- Need to enhance adding or deleting of a single VLAN in **vlan-id-list** under **family bridge** interface. PR1443536
- When the logical interface is associated to a routing instance inside an LR is removed from the routing instance, the logical interface is not added to the default routing instance. PR1444131
- The OAM CCM messages are sent with single-tagged VLAN even when configuring with two VLANs. PR1445926
- Continuous VRRP state transition, that is, VRRP master or backup flapping, is observed when one device drops the VRRP packets. PR1446390
- In the MX-VC on MX10003 senario, the MX Series Virtual Chassis is not able to connect to the newly installed Routing Engine from other Routing Engines. PR1446418
- Initiating a Routing-Engine switchover on a VRRP backup router through a CLI command might cause the VRRP state for aggregated Ethernet bundle interface transitions to the Master state even configured with **protocols vrrp delegate-processing ae-irb** statement, then very shortly afterward to backup again. PR1447028
- The l2ald might fail to update composite NH. PR1447693
- The ifinfo daemon might crash on the execution of the **show interface extensive** command. PR1448090

- Interface descriptions might be missing under logical systems CLI. PR1449673
- Dual VRRP mastership might be seen after an ungraceful Routing Engine switchover. PR1450652
- LACP daemon crashes continuously. PR1450978
- The severity level log might be flooded when QSFP-100GE-DWDM2 is inserted. PR1453919
- The CFM UP MEP session might get stuck in the failed state in the scenario of CFM UP MEP over Layer 2 VPN or Layer 2 circuit service. PR1454187
- The VRRP traffic loss is longer than one second for some backup groups after performing GRES. PR1454895
- Mismatched MTU value causes the RLT interface to flap. PR1457460
- Need two knobs for EOAM CFM interoperability between MX10003 and Ciena CPE. PR1465608
- The **MIC Error code: 0x1b0002** alarm might not be cleared for a MIC on MPC5E when the voltage returns to normal. PR1467712

J-Web

- Some error messages might be seen when you use J-Web. PR1446081

Junos Fusion Provider Edge

- In Junos fusion environment, incorrect power values for extended optical ports are observed. PR1412781
- The sdpd process might continuously crash if there are more than 12 cascade ports configured to a satellite device. PR1437387
- The aggregated Ethernet interface might flap whenever a new logical interface is added to it. PR1441869

Layer 2 Features

- LSI interface might not be created that causes remote MACs not being learned with the following error log: **RPD_KRT_Q_RETRIES: ifl iff add: Device busy** PR1295664
- VPLS neighbors might stay in the down state after changing the configuration in **vlan-id**. PR1428862
- After disabling and enabling the aggregate interface, the next-hop of CE-facing aggregate interface might be in a wrong state. PR1436714
- In a Virtual Chassis scenario, traffic drop might be seen when one Virtual Chassis member reboots and rejoins the Virtual Chassis. PR1453430

Layer 2 Ethernet Services

- JDI-RCT:BBE:DHCP subscribers on a nondefault routing instance goes down after ISSU. PR1420982
- The DHCP DECLINE packets are not forwarded to the DHCP server when forward-only is set within dhcp-reply. PR1429456
- DHCP request might get dropped in a DHCP relay scenario. PR1435039

- The jdhcpd process might go into an infinite loop and cause full utilization of CPU. PR1442222
- On MX10008 and MX10016 platforms, the **dhcp-relay** statement might not work. PR1447323
- Some additional information can be provided in DHCPv6 option 17. This option can be in SOLICIT or REQUEST messages. BNG should relay the information from this option to RADIUS servers in the ACCESS REQUEST message in the attribute 26-207. PR1448100
- PPPoE holding DHCPv6 prefix causes DHCPv6 binding failure due to a duplicate prefix. PR1453464
- DHCP subscriber might not come online after rebooting the router. PR1458150
- DHCP packet might not be processed correctly if DHCP option 82 is configured. PR1459925
- The ISSU might fail during subscriber inflight login. PR1465964

MPLS

- Stale LSPs might exist if the primary LSP goes down immediately after bypass LSP. PR1242558
- The FPC might get stuck in the ready state after changing the configuration that removes RSVP and triggers FPC restart. PR1359087
- The rpd crash might be seen after committing operations that could affect the RSVP ingress routes. PR1471281
- A device might use the local-computed path for the PCE-controlled LSPs after the link o node fails. PR1465902
- The rpd might restart after an MPLS LSP flap if **no-cspf** and **fast-reroute** are configured in an LSR ingress router. PR1368177
- The traffic might be discarded silently after the LACP time outs. PR1452866
- RSVP LSP might get stuck in the down state in an OSPF Multiarea topology. PR1417931
- On the MX2010, continuous rpd core file are generated at l2ckt_alloc_label, l2ckt_standby_assign_label, and l2ckt_intf_change_process in the new backup during GRES. PR1427539
- The LDP might withdraw a label for an FEC once the IGP route is inactive in inet.0. PR1428843
- SRLG entry shows uknown after removing it from the configuration in the **show mpls lsp extensive** or **show mpls srlg** output. PR1433287
- The P2MP LSP branch traffic might be dropped for a while when the sender PE switch overs. PR1435014
- Traffic loss might be seen after the LDP session flaps rapidly. PR1436119
- The rpd might crash after executing the **ping mpls ldp** command. PR1436373
- The LDP route and LDP output label are not shown in the **inet.3** table and LDP database, respectively, if you enable the OSPF rib-group. PR1442135
- LINX:lsi intf/Layer 2 Virtual Chassis goes down on one router in a VPLS domain althrough the MPLS path is still available in inet.3. Reason shows as MPLS label out of range. PR1442495

- The backup LSP path messages are rejected if the bypass tunnel path is an inter-area LSP. PR1442789
- RSVP Path message with long refresh interval is dropped between Junos pre-16.1 and 16.1+ nodes. PR1443811
- P2MP LSP might get stuck in the down state after link flaps. PR1444111
- The rpd memory leak might be seen when the interdomain RSVP LSP is in the down state. PR1445024
- Silent discarding of traffic might occur if two consecutive PLRs along the LSP perform local repair simultaneously under certain misconfigured conditions. PR1445994
- On an MX Series device, the transit packets might be dropped if an LSP is added or changed. PR1447170
- Traffic drop might be seen after traceoption configuration is committed in an RSVP P2MP scenario. PR1447480
- The LDP route timer resets when committing unrelated configuration changes. PR1451157
- High CPU usage and rpd core files might be observed if l**dp track-igp-metric** is configured and an IGP metric is changed. PR1460292

Network Address Translation (NAT)

- The nsd process might crash when SNMP queries deterministic NAT pool information. PR1436775

Network Management and Monitoring

- On MX10000, jail socket errors are reported. PR1442176
- Incorrect error messages might be observed for the **hrProcessorFrwID** object. PR1446675

Platform and Infrastructure

- A nested filter used by multiple filters in the same filter list causes FPCs to crash continuously. PR1357531
- Modifying the REST configuration might cause the system to become unresponsive PR1461021
- On all MX Series platforms, LACP DDOS policer is incorrectly triggered by other protocol's traffic. PR1409626
- FPC crash might be observed with scaled subscribers login attempts. PR1409879
- Error logs might be observed after performing ISSU. PR1412463
- Packet drops, replication failure, or ksyncd crashes might be observed on the logical system of a device running Junos OS after a Routing Engine switchover. PR1427842
- With CNH for 6PE, MPLS EXP rewrite rule for non-VPN IPv4 over MPLS traffic might not work. PR1430878
- The FPC might crash when the firewalls filter manager deals with the firewall filters. PR1433034
- Traffic from the same physical interface cannot be forwarded. PR1434933
- The device might not be accessible after the upgrade. PR1435173

- The IPv4 packet larger than mtu-v6 might be dropped by the MAP-E BR device. PR1435362
- MAP-E encapsulation or de-encapsulation with specific parameters might work incorrectly. PR1435697
- The RPM http-get probe always returns the HTTP 400 error. PR1436338
- The **/var/db/scripts** directory might be deleted after executing the **request system zeroize** command. PR1436773
- The BGP session might flap after Routing Engine switchovers simultaneously on both boxes of BGP peer in a scaled BGP session setup. PR1437257
- The next-hop MAC address in the output of the **show route forwarding-table** command might be incorrect. PR1437302
- The multicast traffic is dropped while multicast ingress replication is configured with **local-latency-fairness**. PR1438180
- A certain combination of allow-commands/deny-commands does not work properly after Junos OS Release 18.4R1. PR1438269
- The inner IPv4 packet might get fragmented using the same size as mtu-v6 setting that is used for the MAP-E softwire tunnel in an MAP-E configuration. PR1440286
- The RPM udp-ping probe does not work in a multiple routing instance scenario. PR1442157
- When host-bound packets are received in MAP-E BR router, service interface statistics counter shows incorrect number of bytes. PR1443204
- Packets are dropped due to missing destination MAC address in the Packet Forwarding Engine. PR1445191
- Python op scripts executed as user **nobody** if started from NETCONF session and not as a logged-in user. This results in failure of the PyEZ connection to the device. PR1445917
- On certain MPC line cards, cm errors must be reclassified. PR1449427
- Some hosts behind unnumbered interfaces are unreachable after the router or FPC restarts. PR1449615
- FPC might reboot with VM core files due to memory leak. PR1449664
- The DF flag BGP packets are dropped over MPLS LSP path. PR1449929
- The REST API process become nonresponsive when a number of requests arrive with a high rate. PR1449987
- In an EVPN-VXLAN scenario, sometimes host-generated packets are getting dropped as hitting reject route in the Packet Forwarding Engine. PR1451559
- The Routing Engine-originated IPv6 packets might be dropped when an **interface-group** rule is configured under an IPv6 filter. PR1453649
- The MPC might drop packets after enabling the firewall fast lookup filter. PR1454257
- The ddos-protection does not stop logging when remote tracing is nabled. PR1459605

- The NTP time synchronization does not happen with NTP Boot Server configuration. PR1463622
- MX80 EVPN-VXLAN RT5 does not work properly and the **ip-prefix-routes** routes are not reachable. PR1466602
- Layer 2 traffic sent from one member to another member is corrupted on MX Series Virtual Chassis. PR1467764

Routing Policy and Firewall Filters

- The route-filter-list with noncontinuous match might not work as expected after being updated. PR1419731
- The rpd might crash after Routing Engine switch overs when prefix-list is configured. PR1451025
- Policy matching RD changes the next hop of the routes that do not carry RD. PR1433615
- The rib-group might not process the exported route correctly. PR1450123
- Routes resolution might be inconsistent if any route is resolving over the multipath route. PR1453439

Routing Protocols

- The rpd crashes in Junos OS Release 16.1 or later during BGP convergence. PR1351639
- The rpd process might crash with the BGP multipath and damping configured. PR1472671
- The rpd might crash after configuring the **independent-domain** configuration under the master routing-instance. PR1469317
- Routing Engine-based micro-BFD packets does not go with configured source IP when the interface is in logical-system. PR1370463
- BGP peers might flap if the parameter of hold-time sets is small. PR1466709
- Must install all possible next hops for OSPF network LSAs. PR1463535
- The rpd might crash under a rare condition if GR helper mode is triggered. PR1382892
- Processing a large scale as-path regex causes the flapping of the route protocols. PR1396344
- BFD link-failure detection of the broken path is delayed when IGP link-state update is received from the same peer through an alternate path. PR1410021
- BGP might get stuck in the idle state when the peer triggers a GR restart event. PR1412538
- The Layer 3 VPN link protection does not work after flapping the CE-facing interface. PR1412667
- TI-LFA cannot find backup path when IS-IS overload bit is set on the computing node. PR1412923
- BFD crashes after GRES is complete. @ __assert (func=0x831a40e "bfdd_link_session", file=0x831a24a "../../../../../../src/junos/usr.sbin/bfdd/bfdd_session.c" PR1420694
- Route churn might be seen after changing the **maximum-prefixes** configuration from value A to value B. PR1423647
- The rpd might crash while handling the withdrawal of an imported VRF route. PR1427147

- MVPN traffic might get lost for around 30 seconds during Routing Engine switchover. PR1427720
- The next hop of an IPv6 route remains empty when a new IS-IS link comes up. PR1430581
- The BGP **multipath multiple-as** statement does not work in a specific scenario. PR1430899
- IPv6 aggregate routes are hidden. PR1431227
- Unsupported configuration---that is, EPE with dynamic-next-hop GRE tunnels---continuously causes the rpd to generate to core files. PR1431536
- The **show isis adjacency extensive** output misses state transition details. PR1432398
- Per-prefix LFA might not work as expected where the last hop needs to be protected on the penultimate node. PR1432615
- PIM-SM join message might be delayed with MSDP enabled. PR1433625
- With SR enabled, 6PE next hop is not installed. PR1435298
- The rpd might crash during the best path changes in BGP-L3VPN when multipath and **no-vrf-propagate-ttl** are enabled. PR1436465
- Wrong next hop might be observed when BGP PIC Edge is enabled. PR1437108
- The rpd process crash might be observed if leaking multipath BGP routes from a routing instance to another routing table. PR1437837
- Removing SSH Protocol version 1 from configuration. PR1440476
- RIP routes might be discarded by the Juniper device over a 31-subnet interface. PR1441452
- The rpd process might crash in an inter-AS option B Layer 3 VPN scenario if CNHs are used. PR1442291
- The rpd might crash with a change in the SRTE configuration. PR1442952
- IPv6 connectivity between MC-LAG peers might fail when multiple IRB interfaces are present. PR1443507
- The rpd crash might be seen after configuring OSPF NSSA area-range and summaries. PR1444728
- The rpd might crash in an OSPF scenario due to invalid memory access. PR1445078
- The BGP route prefixes are not being advertised to the peer. PR1446383
- The as-external route might not work in an OSPF overload scenario for a VRF instance. PR1446437
- The rpd utilization reaches 100 percent due to an incorrect path selection. PR1446861
- The multicast traffic might be dropped in a PIM with BGP PIC setup. PR1447187
- The rpd crashes and commit fails when trying to commit configuration changes. PR1447595
- On MX2000 platforms, Layer 3 VPN PE-CE link protection exhibits an unexpected behavior. PR1447601
- Junos OS BFD sessions with authentication flap after a certain time. PR1448649
- The connection between ppmd(RE) and ppman(FPC) might get lost due to session timeout. PR1448670

- The BGP routes might fail to be installed in the routing instance if the **from next-hop** policy match condition is used in the VRF import policy. PR1449458
- SSH login might fail if a user account exists in both local database and RADIUS/TACACS+. PR1454177
- The rpd scheduler slip for BGP GR might be up to 120 seconds after the peer goes down. PR1454198
- The rpd memory might leak in a certain MSDP scenario. PR1454244
- The rpd might crash when multipath is used. PR1454951
- The rpd might crash continuously due to memory corruption in the IS-IS setup. PR1455432
- Prefix SID conflict might be observed in IS-IS. PR1455994
- The rpd might crash when the OSPF router ID gets changed for NSSA with area-range configured. PR1459080
- The rpd memory leak might be observed on backup Routing Engine due to BGP flap. PR1459384
- The rpd scheduler slips might be observed on RPKI route validation-enabled BGP peering router in a scaled setup. PR1461602
- The IS-IS IPv6 routes might flap when there is an unrelated commit under protocol stanza. PR1463650
- The BFD client session might flap when removing BFD configuration from the peer end, which is from another vendor, of the BFD session. PR1470603

Services Applications

- The kmd process might crash when DPD timeout for some IKEv2 SAs happens. PR1434521
- The **show subscriber user-name** output on LTS shows only one session instead of two. PR1446572
- The kmd might crash due to the incorrect IKE SA establishment after changing the remote peer NAT mapping address. PR1477181
- The jl2tpd process might crash during the restart procedure. PR1461335

Subscriber Access Management

- In the PCRF/Gx-Plus scenario, RAR message are not able to change the subscriber service profile. PR1417987
- Subscriber filtering for general authentication services traceoptions reports debug messages for other users. PR1431614
- Incorrect Acct-Session-Time-Acct-Session-Time is not zero even though the Start event did not occur. PR1433251
- Subscriber deactivation might get stuck in the terminated state. PR1437042
- Test tput enhancement for test aaa ppp. PR1444438
- On the MX Series platforms, a false error might be received for SAE policy activation or deactivation failure. PR1447632

- Subscriber login fails when the PCRF server is unreachable. PR1449064
- DHCPv6 subscribers might be stuck in a state after the authd process crashes. PR1460578
- The subscriber address allocated might fail after deleting the pool link in the middle of the chain. PR1465253
- No volume of attribute in accounting stops for the service session when activated services session is configured. PR1470434
- Some address relevant fields are missing when the **test aaa ppp** command is executed. PR1474180

User Interface and Configuration

- The **show chassis hardware satellite** command is not available in Junos OS Release 17.3. PR1388252

VPNs

- The Layer 2 circuit or the CE-facing interface might flap repeatedly and cause the packets to drop, if the **asynchronous-notification** configuration is configured on the PE. PR1282875
- The Layer 2 circuit connections might be stuck in the OL state after changing the Layer 2 circuit community and flapping the primary LSP path. PR1464194
- An rpd crash might be observed if Layer 2 circuit or local-switching connections flap continuously. PR1418870
- MPLS LSP ping over Layer 2 circuit might not work when flow-label is enabled. PR1421609
- MVPN using PIM dense mode does not prune the OIF when PIM prune is received. PR1425876
- The rpd might crash when the link-protection is added or deleted from LSP for MVPN ingress replication selective provider tunnel. PR1469028
- P1 configuration delete message is not sent on loading the baseline configuration if there has been a prior change in the VPN configuration. PR1432434
- The resumed multicast traffic for certain groups might be stopped in an overlapping MVPN scenario. PR1441099
- Memory might leak if PIM messages are received over an MDT (mt- interface) in a Draft-Rosen MVPN scenario. PR1442054
- The rpd process might crash due to memory leak in the **MVPN RPF Src PE** block. PR1460625

Resolved Issues: 18.4R2

Application Layer Gateways (ALGs)

- DNS requests with EDNS options might be dropped by the DNS ALG. PR1379433

Authentication and Access Control

- Push-to-JIMS now supports push auth entry to all online JIMS servers. PR1407371

Class of Service (CoS)

- The cosd process might crash while committing configuration through NETCONF. PR1403147
- Traffic drop occurs when deleting MPLS family or disabling an interface that has nondefault EXP rewrite rules. PR1408817

EVPN

- The EVPN implementation does not follow RFC-7432. PR1367766
- The rpd process crashes if the Autonomous-System (AS) is a deactivated in an EVPN scenario. PR1381940
- The RA packets might be sent out without using the configured virtual gateway address. PR1384574
- EVPN-VXLAN VTEP tunnel does not get deleted when the EVPN peer goes down. PR1390965
- The rpd process might crash with EVPN type-3 route churn. PR1394803
- The BUM traffic might not be flooded in an EVPN-MPLS scenario. PR1397325
- IPv6 link-local address for the virtual-gateway address is marked as duplicate in EVPN. PR1397925
- When committing a configuration for adding a VLAN adding to an EVPN instance and an aggregated Ethernet interface, respectively, the newly added VLAN interface count might be zero (0) in that bridge domain. PR1399371
- EVPN type 2 MAC+IP route is stuck when the route advertisement has two MPLS labels and route withdrawal has 1 label. PR1399726
- ARP refresh functionality might fail in an EVPN scenario. PR1399873
- RPD core files upon Routing Engine switchover with scaled EVPN configuration. PR1401669
- The rpd crash because of the memory corruption in EVPN. PR1404351
- EVPN database and bridge MAC table are out of sync due to flapping of the interface. PR1404857
- The rpd might crash on a leaf node when handling the withdrawal of remote or local MAC addresses in an EVPN-VXLAN scenario. PR1405681
- The next hop is not cleaned up properly when one of the multihomed CE-PE links goes down. PR1412051
- Local l2ald proxy MAC+IP advertisements accidentally delete MAC+IP EVPN database state from remotely learned type 2 routes. PR1415277

- EVPN-MPLS single active :[EVPN/7] /32 host route always appears on non-DF PE if CNH is ON, **remote-ip-host-routes** has no effect. PR1419466
- rpd crash on backup Routing Engine after enable nonstop-routing with EVPN. PR1425687
- The device might proxy the ARP probe packets in an EVPN environment. PR1427109
- IP address is missing in **mac-ip-table** of the EVPN database but is present in the EVPN database when the CE interface has two primary IP addresses. PR1428581
- Extra incorrect MAC move might be seen when the host moves continuously between the different ESIs. PR1429821
- Configuration is prevented from being applied on MX in subscriber scenario. PR1430360
- Incorrect MAC count with **show evpn/bridge statistics**.PR1432293
- Stale MAC addresses are present in the bridge MAC table in an EVPN-MPLS scenario. PR1432702
- Configuring ESI on a single-homed 25G port might not work. PR1438227

Forwarding and Sampling

- In an EVPN A-A scenario with an MX Series router or an EX Series switch acting as a PE device, flood next hops to handle BUM traffic might not get created or miss certain branches when the configuration is performed in a particular sequence. PR1377749
- The LSI binding for the IPv6 neighbor is missing. PR1388454
- Junos OS: Firewall filter terms named **internal-1** and **internal-2** being ignored (CVE-2019-0036). PR1394922
- In Junos OS Release 13.3R9.13, the firewall filter action "decapsulate gre", de-encapsulates GRE, IP-over-IP, and IPv6-over-IP, but in Junos OS Release 17.3R3.9, it only de-encapsulates GRE. PR1398888

General Routing

- Error drops in XM/MQSS fabric streams (q-node stats) are not accounted for in class-of-service fabric statistics. PR1338647
- Large-scale users' login and logout might cause mgd memory leak. PR1352504
- Traffic loss might be seen on the new master after the interface flaps followed by Routing Engine switchover in a VRRP scenario. PR1353583
- Packets might be dropped when they go through MX104 built-in interface. PR1356657
- MPC5E, MPC2E-NG, or 3E-NG might crash and restart during unified ISSU. PR1369635
- The dot1xd might crash when it receives an incorrect reply length from the authd. PR1372421
- Core files are seen in **ifinfo at pif_af_fe_info pif_af_ifd** when displaying af interface information. PR1373436
- MS-MPC might have performance degradation under scaled fragmented packets. PR1376060

- **NFX3/ACX5448:LIBCOS_COS_TVP_FC_INFO_NOT_FOUND: Forwarding-class information not specified** is displayed during commit on configuration prompt. PR1376665
- MQSS errors might cause FPC restart. PR1380183
- The routes learned over an interface will be marked as "dead" next hop after changing the prefix length of an IPv6 address on that interface. PR1380600
- Traffic silently dropped because of an offline FPC in an MC-LAG scenario. PR1381446
- The unicast traffic from IRB interface toward LSI might be dropped due to Packet Forwarding Engine mismatching at egress processing. PR1381580
- PDT: MSE high CPU utilization for chassisd on BSYS, 20% st steady state. PR1383335
- The Virtual Chassis could not come up after upgrading to QFX5E platforms (TVP-based platforms for QFX5100 or QFX5200 switches). PR1383876
- Disable reporting of correctable single-bit error on Hybrid Memory Cube (HMC) and prevent Major Alarm. PR1384435
- Subscriber connection setup is 30% lower than expected. PR1384722
- The rpd might crash when switchover is performed along with configuration changes being committed. PR1385005
- The device with more than five IP addresses configured in the DHCP server-group goes into Amnesiac mode after reboot. PR1385902
- The rpd end up with stuck krt queue might be seen in a VRF scenario. PR1386475
- Behavior of the CLI **set interfaces ams0 service-options session-limit rate <integer value>** command has changed. PR1386956
- Migrate from syslog API to Errmsg API - VM host messages on Junos OS. PR1387099
- On MX2000 platforms, backup CB's chassis environment status keeps 'Testing' after backup CB becomes online by removal/insert operation. PR1387130
- Chassisd process might have random memory corruption and will result in chassisd restart. PR1387338
- Some SFBs might go down when one of the PSMs in the chassis generates a bad output voltage that is out-of-range. PR1387737
- IPsec IKE keys are not cleared when delete/clear notification is received. PR1388290
- BBE SMGD generates core files if MTU is changed while subscribers are logged in on the physical interface. PR1389611
- The jnxFruState might show incorrect PIC state after replacing an MPC is replaced with another MPC with fewer PICs. PR1390016
- Traffic destined to VRRP VIP gets dropped as filter is not updated to the related logical interface. PR1390367

- Delete chassis redundancy will not give commit warning. PR1390575
- The BNG might not respond with PADO and create any demux interface when PPPoE PADI packet is received. PR1390989
- The Packet Forwarding Engine might not respond with ICMP time exceeded error when a packet arrives from subscriber. PR1391932
- Third-generation FPC reboot loop because of having internal interface issues. PR1393643
- Junos OS enhancement configuration statement to modify mcontrol watchdog timeout. PR1393716
- IPv6 next-hop programming issue might be observed on QFX10000, PTX1000, and PTX10000 devices. PR1393937
- The FPCs might not come up during unified ISSU on MX10003. PR1393940
- CI-PR:Expected entries **UI_COMMIT_PROGRESS** are not getting populated while checking with Junoscript session for obtaining syslog output. PR1394780
- The l2ald process might crash during **commit check** for some specific configurations. PR1395368
- The minor alarm of "Bottom Fan Tray Pred Fail" might be incorrectly raised when the fan is at high speed on MX960. PR1395539
- Layer 3 gateway did not update ARP entries if IP or MAC quickly move from one router to another router in EVPN-VXLAN environment. PR1395685
- MPC7, MPC8, and MPC9 might not boot in MX Series Virtual Chassis. PR1396268
- The subscriber bindings might not be successful on QFX Series or EX Series platforms. PR1396470
- Adding IRB to bridge-domain with PS interface causes kernel crash. PR1396772
- The MS-MPC might generates core files when mspmand receives a non-syn packet of TCP. PR1396785
- Subscriber flapping may cause SMID resident memory leak. PR1396886
- Seeing **VMHost RE 0 Secure BIOS Version Mismatch** and **VMHost RE 1 Secure Boot Disabled** alarms. PR1397030
- mspmand core file is seen when committing configuration NAT pool changes to active NAT pool. PR1397294
- smid process memory leak and not coming down from 100%. PR1397643
- PFT MX10008: Inline-services Enabling the Flex-Flow-Sizing takes more than 12 minutes to move to steady state. PR1397767
- [jinsight] [generic_jinsight] show system errors active is not showing the error for MPC3E NG HQoS. PR1398084
- MPLSoUDP/MPLSoGRE tunnel might not come up on interface route. PR1398362
- High jsd or na-grpcd CPU usage might be seen even JET or JTI is not used. PR1398398
- IPsec tunnel cannot be established because the tunnel SA and rule are not installed in the PIC. PR1398849

- Incorrect timestamp is displayed in the jvision collector log file. PR1399829
- JET/PRPD incompatibility for the rib_service.proto field RouteGateway.weight from Junos OS Release 18.4R1 to 18.4R2 onward. PR1400563
- The mgd-api crashes due to memory leak. PR1400597
- Only one Packet Forwarding Engine could be disabled on an FPC with multiple Packet Forwarding Engines in error/wedge condition. PR1400716
- Config option forwarding-options enhanced-hash-key family mpls ether-pseudowire zero-control-word Does Not Take Affect in Junos Node Slicing. PR1400881
- The framed route beyond the first might not be installed in a DHCP subscriber management environment. PR1401148
- The authd might crash while restarting when you issue **show network-access requests pending**. PR1401249
- The command **show | compare** output on global group changes loses the difference context after a rollback or load update is performed. PR1401505
- The subscriber route installation failed because of improper installation of some interfaces states. PR1401506
- The TCP connection between ppmd and ppman might be dropped due to a kernel issue. PR1401507
- FPC core files are seen due to a corner case scenario (race condition between RPF, IP flow). PR1401808
- The **na-grpcd** log file is not rotated and keeps growing until Routing Engine is out of disk space. PR1401817
- JET authentication does not work for usernames and passwords of certain lengths. PR1401854
- Traffic loss is seen in IGMP subscribers after GRES. PR1402342
- The MPC might crash due to CPU overuse by dfw thread. PR1402345
- The device is in Amnesiac mode after ISSU with "mgd: error: configuration check-out failed" generate. PR1432664
- Some error logs might be seen on FPC when reading attempt from uninitialized memory location. PR1402484
- FPC might crash after MIC-3D-16CHE1-T1-CE-H is taken offline and brought back online. PR1402563
- DHCP subscriber cannot reconnect over dynamic VLAN demux interfaces due to RPF check failure. PR1402674
- Host outbound traffic might be dropped on MPC7, MPC8, and MPC9. PR1402834
- uncolored SRTE stats : MX: Observed rpd core files when a few colored LSPs were changed to uncolored LSPs. The core files are at **<<< #0 tag_cmp_tag (tag1=0x0, tag_label1=0x0, tag2=0x98b6628, tag_label2=0x98b6644) at**

../../../../../../../../../src/junos/usr.sbin/rpd/lib/mpls/label_mgr/core/mpls_label.c:473 473 if (tag1->tagt_mtu != tag2->tagt_mtu) >>>PR1403208

- Reported log variance might be incorrect if the PTP profile is changed from G.8275.2 to SMPTE or other multicast IP profile. PR1403219
- The smg service could become unresponsive when doing some GRE-related CLI operations. PR1403480
- The time synchronization through PTPoE might not work when Enhanced Subscriber Management is enabled on MX Series routers.PR1404002
- Continuous kernel crashes might be observed in backup Routing Engines or VC-bm. PR1404038
- With MS-MPC and MS-MIC service cards syslog messages for port block interim may show 0.0.0.0 as the private IP address and PBA release messages may show the NAT'd IP as the private IP. PR1404089
- The FPC might crash in a CoS scenario. PR1404325
- the repd continues to generate core files on Virtual Chassis-Bm when there are too many IPv6 addresses on one session (hit PR1384889). PR1404358
- Incorrect output of the assigned prefixes to the subscriber in the output of **show interface < dynamic demux interface>**PR1404369
- Configuring load override or load replace resets ANCP neighbors. PR1405318
- Voltage read failed for rail LTC3887-EA1-VDD0V9R2-CH0. PR1405787
- When using aggregated Ethernet bundle with active subscribers, FPC might crash if existing leg is replayed (after FPC restart). PR1405876
- NAT64 translation issues of ICMPv6 Packet Too Big message with MS-MPC/MS-PIC. PR1405882
- The FPC crash might be observed in an MS-MPC HA environment. PR1405917
- Fabric performance drop on MPC7/8/9E and SFB2-based MX2000 platforms. PR1406030
- The rpd might crash due to a race condition with the combination of community actions done at both BGP import policy and a forwarding-table policy. PR1406357
- Traffic impact might be seen if **auto-bandwidth** is configured for RSVP LSPs. PR1406822
- MX10003 cosmetic message: **ALARMD_CONNECTION_FAILURE: after 60 attempts craftd connect returned error: Connection refused**. PR1406952
- FPC might crash during the subscriber-related stresstests. PR1407285
- L2 VPN might flap repeatedly after the link between the PE and CE devices starts coming up. PR1407345
- The rpd might crash when a commit check is executed on LDP trace options. PR1407367
- Ephemeral DB might get stuck during commit. PR1407924
- Traffic forwarding failed when crossing VCF members. PR1408058
- openconfig-network-instance: network-instances support for IS-IS must be hidden unless supported. PR1408151

- The ToS/DSCP and TTL fields might not be copied into the outer IP header in a Group VPN scenario. PR1408168
- Alarm **Mismatch in total memory detected** after **request reboot vmhost routing-engine both** . PR1408480
- The MPCs might crash when performing unified ISSU to Junos OS Release 19.1R1 or later. PR1408558
- Python script might stop working due to **Too many open files** error. PR1408936
- MX-Service templates are not cleaned up. PR1409398
- MX-MPC2-3D-EQ and MPC-3D-16XGE-SFPP will now show "Exhaust A" temperature, rather than Intake temperature. PR1409406
- Telemetry: interface-set metadata needs to include the CoS TCP names in order to aid collector reconciliation with queue-stats data. PR1409625
- The CPU might be overused by jsd process in JET scenario. PR1409639
- The nonexistent subscribers might appear in the **show system resource-monitor subscribers-limit chassis extensive** output. PR1409767
- FPC might crash during next-hop change when using MPLS inline J-flow. PR1409807
- When using SFP+, the Interface optic output might be non-zero even after the interface has been disabled. PR1410465
- Traffic loss may be seen on MPC8E/MPC9E after you request one of the SFB2s that has gone offline to be brought back online. PR1410813
- Kernel replication failure might be seen if an IPv6 route next hop points to an **ether-over-atm-llc** ATM interface. PR1411376
- Packet Forwarding Engines heap memory leak might happen by frequent flapping of thousands of PPPoE subscribers. PR1411389
- Virtual route reflector may report DAEMON-3-JTASK_SCHED_SLIP_KEVENT error on some hypervisor or host machine because of NTP synchronization. Routing protocol may be impacted. PR1411679
- **file copy /var/tmp/file.name ftp://anonymous@< ip>/pub/** could not work properly after upgrade. PR1412033
- MX10003: The rpd crashes when the **switchover-on-routing-crash** does not trigger Routing Engine switchover and the rpd on the master Routing Engine goes into STOP state. PR1412322
- Junos PCC may reject PCUpdate/PCCreate message if there is a metric type other than type 2. PR1412659
- PPPoE subscribers might not be able to log in after unified ISSU. PR1413004
- The rpd memory leak might be seen due to an incorrect processing of a transient event. PR1413224
- During unified ISSU from Junos OS Release 16.1R4-S11.1 to Release 18.2R2-S1.2, CoS GENCFG write failures observed [COS(cos_rewrite_do_pre_bind_add_action:676): Binding of table 44226 to ifl 1073744636 failed, table already bound to ifl] PR1413297

- The support of **inet6** filter attribute for ATM interfaces is broken in the Junos OS Release 17.2R1 onward. PR1413663
- The services load balance might not be effective for AMS if the hash key under the **forwarding-options** hierarchy is configured. PR1414109
- FPC crash might be observed if it reaches heap utilization limit. PR1414145
- NPC might not apply configured resource-monitor thresholds after NPC restart. PR1414650
- Firewall filters are not getting programmed into Packet Forwarding Engine. PR1414706
- The user might not enter configure mode as mgd is in lockf status. PR1415042
- **ICMP MTU exceeded error** generated from Packet Forwarding Engine does not reach the expected source. PR1415130
- The bbe-smgd process might have memory leak when you run **show system subscriber-management route route-type <> routing-instance <>**. PR1415922
- Some IPsec tunnels might fail to pass traffic after GRES on an MX Series platform. PR1417170
- The ECMP fast reroute protection feature might not work on MX5, MX10, MX40, MX80, and MX104. PR1417186
- An IPv4 packet with a zero checksum might not be translated to an IPv6 packet properly under NAT64 scenario. PR1417215
- Some subscribers might be offline when doing GRES or daemon restart. PR1417574
- Observed zero tunnel stats on the soft-gre tunnel. PR1417666
- The BGP session might flap after Routing Engine switchover. PR1417966
- CGNAT with MS-MPC card does not account for AP-P out of port errors or generate a syslog message when this condition is met. PR1418128
- There is no SNMP Trap message generated for **jnxHardDiskMissing/jnxHardDiskFailed** MX.PR1418461
- **sp-cleanup-timer** is not being honored when **lsp-cleanup-timer** is configured to be greater than 2147483647. PR1418937
- The reserved PPPoE ssession ID 65535 might also be assigned, which is in conflict with RFC 2516. PR1418960
- RX alarms are not set as according to the threshold value configured for the DCO Tunable optics. PR1419204
- A PPP session under negotiation might be terminated if another PPPoE client bears the same session ID. PR1419500
- CPU usage on Service PIC may spike while forming an IPsec tunnel in a DEP/NAT-T scenario. PR1419541
- A new tunnel could not be established after changing the NAT mapping IP address until the IPEC SA Clear command is run. PR1419542

- **rtsock_peer_unconsumed_obj_free_int**: unable to remove node from list logged extensively. PR1419647
- **bbe-mibd** memory leak causing daemon crash when having live subscribers and SNMP OIDs query. PR1419756
- In the scenario where the MX Series devices and the peer device both try to bring an IPsec tunnel up, so both sides are acting as an initiator, if the peer side does not answer the MX ISAKMP requests, the MX Series device can bring the peer-initiated tunnel down. PR1420293
- MX: PTP phase aligned but TE/cTE not good. PR1420809
- Failed to reload keyadmin database for **/var/etc/keyadmin.conf**. PR1421539
- **bbemg_smgd_lock_cli_instance_db** should not be logged as error messages. PR1421589
- MX Series Virtual Chassis: VCP port reports MTU value 9152 in the ICMP MTU exceeded message while the VCP port MTU is set to 9148. PR1421629
- The ps access interface is not marked ccc down on standby/non-designated PE. PR1421648
- **RPT_REG_SERVICES: RPM** syslogs are not getting generated after deactivating the aggregate interface. PR1421934
- Remote gateway address change is not effective on MX150 platform when it is an initiator. PR1421977
- The CoS IEEE 802.1 classifier might not get applied when it is configured with service activation on the underlying interface. PR1422542
- While committing a huge configuration, the user might see the error **error: mustd trace init failed**. PR1423229
- **set forwarding-options enhanced-hash-key symmetric** is not effective on MX10003. PR1423288
- IP packet drop might be seen under Layer2 circuit scenario. PR1423628
- Traffic is dropped after FPC reboot with aggregated Ethernet member links deactivated by remote device. PR1423707
- On MX204 optics "SFP-1GE-FE-E-T" I2C read errors are seen when an SFP-T is inserted into a disabled state port. PR1423858
- The bbe-smgd process might crash after the command **"show system subscriber-management route prefix** is executed. PR1424054
- The port configured for 1-Gbps speed flaps after Routing Engine switchover. PR1424120
- The interface configured with 1-Gbps speed on JNP10K-LC2101 cannot come up. PR1424125
- [vMX]Continous disk error logs on VCP Console (Requesting switchover due to disk failure on ada1). PR1424771
- Interface with FEC disabled is flapping after Routing Engine mastership switchover. PR1425211
- In WAG scenario, soft-gre tunnel route lost after reboot/GRES or upgrade. PR1425237

- RPT_BBE_Regressions : Getting Unisphere-UpStream-Calc-Rate as 0 while verifying L2BSA RADIUS accounting stop packets after performing GRES. PR1425512
- All interfaces creation failed after NSSU. PR1425716
- IFL Targeting: 18000 phantom distributed interfaces are displayed for aggregated Ethernet interface with the targeted distribution enabled on it, when there are no active subscribers. PR1426157
- Interfaces might come to down after device reboots. PR1426349
- PEMs lose DC output power load sharing after PEM power-off and power-on operation on MX Series. PR1426350
- Traffic loss might be seen when multiple IPsec tunnels are established with the remote peer. PR1426975
- Traffic might not flow through MACsec interface even after an unsupported cipher-suite is removed. PR1427294
- When broadband edge PPPoE and DHCP subscribers coming up over Junos fusion satellite ports are active, **commit full** and **commit synchornization full** commands fail. PR1427647
- When installing YANG package without the **proxy-xml** configuration, the CLI environment did not work well. PR1427726
- The subscriber IP route may get suck in bbe-smgd if the subscriber IP address is the same as the local IP address. PR1428428
- PTSP subscriber stuck in configured state. Auto-clear-timer did not work as well. PR1428688
- Incorrect IGMP statistics for dynamic PPP interfaces. PR1428822
- L2TP subscriber and MPLS Pseudowire Subscriber volume accounting stats value remains unchanged after ISSU. PR1429692
- Destination unreachable counter was counting up without receiving traffic. PR1431384
- During the stresstests, bbe-smgd process might crash on backup Routing Engine when performing GRES. PR1431455
- The bbe-smgd might crash if subscribers are trying to log in or log out and a configuration commit activity happens at the same time. PR1431459
- Allow installation of three identical framed-routes in the same routing-instance. PR1431891
- MX10003 - **PEM not present** alarm raised when minimum required PEM exist in the system. PR1431926
- RSI & RSI brief should not include **show route forwarding-table** when Tomcat enabled. PR1433440
- On MPC2 Junos telemetry interfaces services, statistics might not be available after the unified ISSU.PR1433589
- Lawful intercept for subscriber traffic is not programmed in Packet Forwarding Engine if it is activated by Access-Accept. PR1433911

- Total number of packets mirrored , after DTCP trigger add and DTCP enable is not in expected range while verifying traffic on mirror port after DTCP drop policy enable. PR1435736
- MPC7, MPC8, MPC9, MX10003 MPC, EX9200-12QS, EX9200-40XS line card might crash in a scaling setup. PR1435744

Infrastructure

- SNMP OID IFOutDiscards are not updated when drops increase. PR1411303
- The traffic to the NLB server might not be forwarded if the NLB cluster works on multicast mode. PR1411549

Interfaces and Chassis

- Constant dcpfe process crash might be seen if you are using an unsupported GRE interface configuration. PR1369757
- The pfe_disable action does not disable the logical tunnel interfaces belonging to the affected Packet Forwarding Engine. PR1380784
- Changing the value of **mac-table-size** to default may lead all FPCs to reboot. PR1386768
- DCD core files are seen after FPC restart if channelized interfaces are configured. PR1387962
- All DPCs might crash while adding or deleting a logical interface from the aggregated Ethernet bundle. PR1389206
- Decoupling of L2 logical interface configuration from bridge domain or EVPN configuration. PR1390823
- The dcd memory leak might be seen when committing configuration change on static route tag. PR1391323
- Error message might be seen if GR interface is configured. PR1393676
- The dcd crash might be seen after deleting the sub-interface from VPLS routing-instance and mesh-group. PR1395620
- **MIC Error code: 0x1b0002** alarm might not be cleared for MIC on MPC6 when the voltage has returned to normal. PR1398301
- The backup Routing Engine might get stuck in Amnesiac mode after reboot. PR1398445
- All dcd operations might be blocked if profile-db is corrupt. PR1399184
- Certain OTN options cause interface flapping during commit. PR1402122
- Missing mandatory ICCP configuration statement **redundancy-group-id-list** produces misleading error message. PR1402606
- The **targeted-broadcast** statement does not work on an IRB interface. PR1404442
- The subscriber may not access the device due to the conflicting assigned address. PR1405055
- The cfmd might fail to start after it is restarted. PR1406165

- The **aaa-options** configuration statement for PPPoE subscribers does not work on the MX80 and MX104 platforms. PR1410079
- OAM CFM MEP flaps might occur when hardware-assisted keepalives are enabled. PR1417707
- Monitor ethernet loss-measurement command returns an invalid ETH-LM request for unsupported outgoing logical interface. PR1420514
- Invalid speed value on an interface might cause other interface configuration loss. PR1421857
- The syslog message **/kernel: %KERN-3: pointchange for flag 04000000 not supported on IFD aex** upon LFM related config commit on aggregated Ethernet interfaces. PR1423586
- The cfmd might crash on DPCE. PR1424912
- The logical interfaces in EVPN routing instances might flap after committing configurations. PR1425339
- **flexible-queuing-mode** is not working on MPC5E of VC member1. PR1425414
- Upgrade from releases before Junos OS Release 17.4R1 to releases having PR-1425804 fix results in cleanup of existing ECFM PM-history and PM-sessions restarts freshly with MI index as 1. PR1425804
- CFM message flooding. PR1427868
- The vrrpd process might crash after deleting VRRP sessions for several times. PR1429906

Layer 2 Features

- The rpd crashes after an iw0 interface is configured under a VPLS instance. PR1406472
- In a Layer 2 domain, there might be unexpected flooding of unicast traffic at every 32-40s interval toward all local CE-facing interfaces. PR1406807
- Broadcast traffics might be discarded in a VPLS local-switching scenario. PR1416228
- Commit error is seen but the commit is processed if adding more than o. PR1420082

Layer 2 Ethernet Services

- The SNMP query on LACP interface might lead to lacpd crash. PR1391545
- On EVPN setups, incorrect destination MAC addresses starting with 45 might show up when the **show arp hostname** command is used. PR1392575
- Log messages **dot1xd[]: task_connect: task ESP CLIENT:...: Connection refused** might be reported in Junos OS Release 17.4 or later. PR1407775
- Packets might be dropped if the traffic is forwarded on an LT interface. PR1410970
- The IRB interface might flap after configuration change is committed on any interface. PR1415284
- The IPv6 neighbor might become unreachable after the primary link goes down in a VPLS scenario. PR1417209
- jdhcpd becomes aware about some of the existing configurations only after 'commit full' or jdhcpd restart. PR1419437

- Change the nd6 next hops to reject next hop once L2 interfaces gets disassociated with IPv6 entries. PR1419809
- The jdhcpd process might consistently run at 100% CPU and not provide service if the **delay-offer** is configured for the DHCP local server. PR1419816
- jdhcpd daemon might crash during continuous stress test. PR1421569

MPLS

- DSCP bit marking of LSP self-ping is not compliant with rfc7746. PR1371486
- The rpd might crash on backup Routing Engine after switchover. PR1382249
- A RSVP-signaled LSP might stay in down state after a link in the path flaps. PR1384929
- The rpd process might keep crashing repeatedly if the LSP destination address is set to be 0.0.0.0. PR1397018
- The rpd might crash when an LDP route with an indirect next hop is deleted. PR1398876
- The Layer 2 circuit information is not advertised over the LDP session if **ldp dual-transport inet-lsr-id** is different from the router ID. PR1405359
- Resources might be reserved for stale RSVP LSP when RSVP is disabled on the interface. PR1410972
- The rpd might crash in BGP-LU with egress protection while committing configuration changes. PR1412829
- The rpd might crash if **longest-match** is configured for LDP. PR1413231
- LDP route is not present in inet6.3 if IPv6 interface address is not configured. PR1414965
- Rpd memory might leak when RSVP LSP is cleared/re-signaled. PR1415774
- LDP routes might flap if committing any configuration changes. PR1416032
- Traffic might be silently discarded due to a long LSP switchover duration in an RSVP-signaled LSP scenario. PR1416487
- Bad length for Sub-TLV 34 (RFC 8287) in MPLS Echo Request. PR1422093
- Bypass dynamic RSVP LSP tears down too soon when being used for protecting LDP LSP with the **dynamic-rsvp-lsp**. PR1425824
- mpls ping sweep stops working and the CLI stops responding. PR1426016
- MPLS LSP auto-bandwidth statistics miscalculations may lead to high bandwidth reservation. PR1427414
- When MBB for P2MP LSP fails, it is stuck in the old path. PR1429114
- MPLS ingress LSPs for LDP link protection are not coming up after of MPLS is disabled/enabled. PR1432138

Network Management and Monitoring

- The sub-agent such as mib2d might crash and restart after the AGENTX session timeout between master(snmpd) and sub-agent. PR1396967
- Child link missed from mib id dot3adAggPortAttachedAggID (OID - 1.2.840.10006.300.43.1.2.1.1.13). PR1410439
- The snmp query might not get data in scaled L2circuits environment.PR1413352
- Syslog match filtering does not work if a single line of **/etc/syslog.conf** is more than 2048 bytes. PR1418705

Platform and Infrastructure

- The kernel and ksyncd generate core files after dual CB flap at **rt_nhfind_params: rt_nhfind() found an nh different from that onmaster 30326**. PR1372875
- Jlock hog might be reported at restart routing. PR1389809
- Individual command authorization might cause mgd crash. PR1389944
- Traffic is dropped when passing through MS-DPC to MPC. PR1390541
- MX: RFC2544 is not functioning as expected due to platform validation getting skipped for the MX Series device (chassis based boxes). PR1396751
- RVT interface might flap. PR1399102
- In a scaled scenario (500 TWAMP control sessions and 500 TWAMP test sessions), a few TWAMP connections might fail to establish. PR1399547
- Syslog error messages: **[LOG: Err] COS_HALP(cos_halp_get_fabric_stats_per_pfe:3211): pfe_id 0 cchip 0[LOG: Err] COS_HALP(cos_halp_get_fabric_stats_per_pfe:3272): No PFE found for pfe_id_start 0** . PR1402377
- MAP-E some ICMP Types cannot be encapsulated or de-encapsulated on SI interface. PR1404239
- Some files are missing during log archiving. PR1405903
- Abnormal **Queue-depth** counters in **show interface queue** output on interfaces that are associated to XM2 and 3. PR1406848
- IPv6 traffic might be dropped between VXLAN bridgedomain and IP/MPLS network. PR1407200
- Class-of-service configuration changes might lead to traffic drop on cascade port in Junos fusion setup. PR1408159
- Traffic is getting dropped when there is a combination of DPC/MX-FPC card and MPC card on egress PE router in L3VPN. PR1409523
- Junos OS: Insufficient validation of environment variables in telnet client might lead to stack-based buffer overflow (CVE-2019-0053). PR1409847

- The VLAN tag is incorrectly inserted on the access interface if the packet is sent from an IRB interface. PR1411456
- The MPC might crash when a MIC is pulled out when this MIC is booting up. PR1414816
- op url command cannot run a script with libs from **/config/scripts**. PR1420976
- ARP request is not replied to although **proxy-arp** is configured. PR1422148
- show jnh trap-info with incorrect LU instance caused a crash and generated core files on FPC. PR1423508
- The native VLAN ID of packets might fail to be removed when leaving out. PR1424174
- The policer bandwidth might be incorrect for the aggregate interface after activating the configuration statement **shared-bandwidth-policer**. PR1427936
- Pre-fragmented ICMP IPv4 packets might fail to arrive at the destination. PR1432506
- Enabling sensor **/junos/system/linecard/qmon/** causes continuous **ppe_error_interrupt** errors. PR1434198
- BR for MAP-E does not return ICMP Type=3/Code=4 when over MTU sized packet comes with DF bit. PR1435362
- A certain combination of allow and deny commands does not work properly after Junos OS Release 18.4R1. PR1438269

Routing Policy and Firewall Filters

- MX Series: CLI configuration **as-path-expand last-as**:commit failure. PR1388159
- The rpd process might crash when the **routing-options flow** configuration is removed. PR1409672

Routing Protocols

- BGP might not advertise routes on the existing BGP peer after a Layer 3 VPN instance is added. PR1237006
- The VRF static route might not be exported when **route-distinguisher-id** is used on RR in a BGP Layer 3 VPN scenario. PR1341720
- Qualified next hop of static route might not be withdrawn when BFD is down. PR1367424
- The static route might persist even after its BFD session goes down. PR1385380
- BGP sessions might keep flapping on the backup Routing Engine if **proxy-macip-advertisement** is configured on an IRB interface for EVPN-VXLAN. PR1387720
- Unexpected packet loss might be seen for some multicast groups during failure recovery with both MoFRR and PIM automatic MBB join load-balancing features enabled. PR1389120
- In rare cases rpd might crash after Routing Engine switchover when BGP multipath and Layer 3 VPN **vrf-table-label** are configured. PR1389337
- BGP IPv6 routes with IPv4 next hop causes rpd crash. PR1389557

- The ppmd on the Routing Engine might run with high CPU utilization after Routing Engine switchover. PR1392704
- Rpd core files on the backup Routing Engine during neighborship flap when using **authentication-key** with size larger than 20 characters. PR1394082
- Snoop-pseudowires enabled MCSNOOPD at an H-VPLS hub PE might drop an LSI for the spoke neighbour pseudowire off the control NH for IGMP query flooding upon this pseudowire active->standby->active transition followed by mcsnoopd restart at the hub. PR1394213
- The best and the second-best routes might have the same weight value if BGP PIC is enabled. PR1395098
- BGP DMZ LINK BANDWIDTH - not able to aggregate bandwidth, when applying the policy. PR1398000
- The rpd soft core files and inappropriate route selection might be seen when Layer 2 VPN is used. PR1398685
- The rpd process might crash in a BGP setup with NSR enabled. PR1398700
- Junos OS: BGP packets can trigger rpd crash when BGP tracing is enabled. (CVE-2019-0019) PR1399141
- The UHP behavior is not supported for LDP to SR stitching scenario. PR1401214
- There might be unexpected packet drops in MoFRR scenario if the active RPF path is disabled. PR1401802
- The rpd might crash when BGP **add-path send** is configured and NSR is enabled. PR1401948
- The rpd might be stuck at 100% when **auto-export** and BGP **add-path** are configured. PR1402140
- BGP router on the same broadcast subnet with its neighbors might cause IPv6 routing issue on the neighbor from other vendors. PR1402255
- Sometimes when a new logical router is configured, logical router core files might be seen on the system. PR1403087
- The rpd memory leak might be seen in IS-IS segment routing scenario. PR1404134
- Extended traffic loss might be seen after link recovery when source packet routing is used on OSPF P2P links. PR1406440
- IGMP join through PPPoE sub not propagated to upstream PIM. PR1407202
- M Series, MX Series, QFX Series: mcsnoopd core files generated immediately after the commit change related to EVPN-VXLAN configuration. PR1408812
- SID label operation might be performed incorrectly in an OSPF SPRING environment. PR1413292
- The unexpected AS prepending action for AS path might be seen after the **no-attrset** statement is configured or deleted with the **vrf-import/vrf-export** configuration. PR1413686
- Dynamic routing protocol flapping with VM host Routing Engine switchover on NG-RE. PR1415077
- The IS-IS-SR route sent by the mapping server might be broken for ECMP. PR1415599
- Route information might be inconsistent between the RIB and OSPF databases when using the OSPF LFA feature. PR1416720

- Junos OS: OpenSSL Security Advisory [26 Feb 2019]. PR1419533
- A memory leak in rpd might be seen if source packet routing is enabled for the IS-IS protocol. PR1419800
- IPv6 IS-IS routes might be deleted and not be reinstalled when the MTU is changed at the logical interface level for family inet6. PR1420776
- The rpd might crash in a PIM scenario with **auto-rp** enabled. PR1426711
- The rpd might crash while handling the withdrawal of an imported VRF route. PR1427147
- The rpd might generate core files due to improper handling of graceful restart stale routes. PR1427987
- RPD might crash with OSPF overload configuration. PR1429765

Services Applications

- ms- used for IPSEC PIC is listed in show services ha detail as standby, cosmetic issue. PR1383898
- The spd might crash when **any-ip** is configured in the **from** clause of the NAT rule with the static translation type. PR1391928
- **SPD_CONN_OPEN_FAILURE: spd_svc_set_summary_query: unable to open connection to si-0/0/0 (No route to host)** PR1397259
- IP ToS bits are not copied to the outer IPsec header. PR1398242
- Invalid Layer 4 checksum might be observed in IPv4 packets generated by NAT64 with MS-DPC after translating fragmented IPv6 UDP/TCP packets. PR1398542
- The ICMPv6 packet with embedded IPv6 fragment might not be translated correctly to IPv4 ICMP packet in a NAT64 with MS-DPC deployment. PR1402450
- Inconsistent content might be observed to the access line information between ICRQ and PPPoE messages. PR1404259
- The stale si- logical interface might be seen when L2TP subscribers with duplicated prefixes or framed-route log in. PR1406179
- The kmd process might crash on MX Series and ACX Series platforms when IKEv2 is used. PR1408974
- [technology/subscriber_services/jl2tpd] [all] RPT BBE Regressions : ERA value does not match configured values while verify new ERA settings are reflected in messages log. PR1410783
- jpppd core files on LNS. PR1414092
- L2TP LAC might fail to tunnel static pp0 subscriber to the desired LNS. PR1416016
- IPsec SA might not come up when the local gateway address is a VIP for a VRRP configured interface. PR1422171
- In a subscriber with L2TP scenario, subscribers are stuck in INIT state forever. PR1425919
- Some problems might be seen if the client negotiates LCP with no PPP-options to LAC. PR1426164
- Traffic gets dropped when the end behind NAT is the responder. PR1435182

Software Installation and Upgrade

- JSU might be deactivated from FPC in case of power cycle. PR1429392

Subscriber Access Management

- The DHCPv6-PD client connection might be terminated after commit when RADIUS-assigned address is not defined within the range of a local pool. PR1401839
- Adding a firewall filter service using the **test aaa** command causes a crash in dfwd. PR1402051
- JSRC used RADIUS Service accounting protocol instead of JSRC for SRC installed service. PR1403835
- Continuous log message **authd[18454]: %DAEMON-3-LI: liPollTimerExpired returned 0**. PR1407923
- Authd telemetry: Linked pool head attribute is incorrect for single pools. PR1413293
- CoA-NACK is not sent when peforming negative COA Request tests by sending incorrect session ID. PR1418144
- Subscribers might not be able to re-login in Gx-plus provisioning scenario. PR1418579
- PPPoE session might be disconnected when LI attributes are received in access-accept with invalid data. PR1418601
- Address allocation issue with linked pools when using linked-pool-aggregation. PR1426244
- RADIUS authentication server might always be marked as DEAD. PR1429528

User Interface and Configuration

- The **show configuration** and **rollback compare** commands cause high CPU usage. PR1407848

VPNs

- The receivers belonging to a routing instance might not receive multicast traffic in an Extranet next-generation MVPN scenario. PR1372613
- High rpd CPU utilization on the backup Routing Engine might be observed in an MVPN+NSR scenario. PR1392792
- Downstream interface is not removed from multicast route after getting PIM prune. PR1398458
- Routes with multiple communities being rejected in inter-AS NG-MVPN scenario. PR1405182
- The multicast traffic drop might be seen when **static-umh** is configured in NGMVPN scenario. PR1414418
- The rpd might crash in rosen MVPN scenario when the same provider tunnel source address is being used for both IPv4 and IPv6. PR1416243
- The deletion of (S,G) entry might be skipped after the PIM join timeout. PR1417344
- The rpd process might crash in rare conditions when Extranet NG-MVPN is configured. PR1419891

Resolved Issues: 18.4R1

Application Layer Gateways (ALGs)

- DNS requests with EDNS options might be dropped by DNS ALG. PR1379433

Authentication and Access Control

- MAC move might occur in DHCP security scenario. PR1369785
- IPv4 or IPv6 DHCP-security client entries will be recorded on trusted ports as well. PR1390676

Class of Service (CoS)

- The 802.1P rewrite might not work on inner VLAN. PR1375189
- FPC card might reboot when changing CoS mode from hierarchical-scheduler to per-unit-scheduler. PR1387987

EVPN

- EVPN/VXLAN: MAC entry is incorrectly programmed in the Packet Forwarding Engine, leading to some traffic being silently dropped or discarded. PR1231402
- MPLS label leak leads to label exhaustion and rpd process crash. PR1333944
- EVPN type-5 route might be lost if **chained-composite-next-hop** command is configured. PR1362222
- The l2ald memory might cross the threshold in an EVPN scenario. PR1368492
- Proxy ARP might not work as expected in an EVPN environment. PR1368911
- The rpd might crash in EVPN scenarios when configuring EVPN. PR1369705
- EVPN active or active multi homed PE device occasionally prefers to route to a directly connected prefix using LSPs toward the multi homed peer instead of going directly out the IRB interface (which is up). PR1376784
- The RA packets might be sent out without using the configured virtual gateway address. PR1384574

Flow-based and Packet-based Processing

- PIM register message might be dropped on SRX Series devices. PR1378295

Forwarding and Sampling

- Junos OS allows firewall filters with the same name under **[edit firewall]** and **[edit firewall family inet]** hierarchy levels. PR1344506
- L2ald crashes when trying to adjust mac-table-size configuration. PR1383665
- The filter counter is not written to the accounting file when accounting is enabled on the bridge firewall filter. PR1392550

General Routing

- TACACS access does not work after upgrade. PR1220671
- Routing Engine and Packet Forwarding Engine out-of-sync errors are seen in syslog. PR1232178
- The mspmand process might generate a core file in rare conditions due to a high rate of TCP traffic. PR1253862
- The wrong TBB Packet Forwarding Engine component's temperature might be reported on MX80. PR1259379
- On MX Series routers, the **show chassis led** command should not be displayed in possible completions of the **show chassis** command. PR1268848
- Flexible PIC concentrator (FPC) crash/reboot is observed when bringing up about 12,000 Layer 2 Bit Stream Access (L2BSA) subscribers simultaneously. PR1273353
- Error messages might be seen if flapping the aggregated Ethernet interface hosted on MPC-3D-16XGE card. PR1279607
- Migrate from syslog API to Errmsg API;/src/junos/usr.sbin/mobiled. PR1284625
- Migrate from syslog API to Errmsg API;/src/junos/usr.sbin/mspmand. PR1284643
- Migrate from syslog API to Errmsg API;/src/junos/usr.sbin/mspsmd. PR1284654
- PPPoE canot dial in due to all PADI dropped as "unknown iif" when the aggregated Ethernet configuration is deactivated or activated. PR1291515
- Wrong packet statistics are reported in ifHCInUcastPkts OID. PR1306656
- In a few cases it was seen that RS are all up but virtual service is down. This was seen mainly in configuration load overriride conditions. PR1313009
- Migrate from syslog API to Errmsg API - /src/junos/usr.sbin/subinfo. PR1327262
- Migrate from syslog API to Errmsg API - /src/junos/usr.sbin/aaad. PR1327266
- Migrate from syslog API to Errmsg API - /src/junos/usr.sbin/smihelperd. PR1327271
- Tc_count counters in filter with the **scale-optimized** command are not incrementing. PR1334580
- With certificate hierarchy, where intermediate CA profiles are not present on the device, in some corner cases, the PKI daemon can become busy and stop responding. PR1336733
- AI-script does not get automatically upgraded unless it is manually done after a Junos OS upgrade. PR1337028
- Routing Engine does not have MAC map for MAC type 7. PR1345637
- Additional **show** commands are called when the **request support information** command is issued. PR1346129
- The rpd might crash when the dynamic-tunnels next-hop resolving migrates to a more specific IGP route. PR1348027

- Routing Engine mastership keepalive timer is not updated after the GRES configuration is removed. PR1349049
- The MPC might crash when the MIC is removed. PR1350098
- Migrate from syslog API to Errmsg API - /bbe-svcs/smd/plugins/cos/. PR1353179
- Some of the inline service interfaces cannot send out packets with the default bandwidth value (100 Gbps). PR1355168
- Chassis alarm is not reflecting the correct state when INP0 and INP1 have AC voltage out-of-range. PR1355803
- The mpls-ipv4 template does not have correct src AS and dst AS as 4294967295 src Mask and DstMask as 0 after adding the mpls-flow table size on the fly. PR1356118
- Link stays up unexpectedly on MX204 with copper cable removed. PR1356507
- MPC/FPC might be unable to reply request messages to the Routing Engine in a high subscriber scale scenario. PR1358405
- **show chassis ethernet-switch** on PTX10000. PR1358853
- The **show chassis fpc** command output might show "Bad Voltage" for FPC powered off by configuration or CLI command after the command **show chassis environment fpc** is executed. PR1358874
- Bbe-smgd restarts unexpectedly while performing graceful Routing Engine switchover (GRES). PR1359290
- PluginExit() function is never called. PR1359610
- FPC core file might be observed after GRES switchover. PR1361015
- IP over VPLS traffic is affected by EXP rewrite rule on the core-facing MPLS interface. PR1361429
- The MX Series router functioning as a BNG does not generate ESMC/SSM Quality Level failed snmp trap. PR1361430
- Rpd struck at 100 percent after clear bgp neighbor operation. PR1361550
- Migrate from syslog API to Errmsg API;usp/usr.sbin/nsd/common/nsd_tpm.c. PR1361986
- Spontaneous bbe-smgd core file might be seen on the backup Routing Engine. PR1362188
- The MS-MPC might reset continuously on MX Series platforms. PR1362271
- M/Mx: Traffic loss of 1 percent is seen during GRES phase of unified ISSU from 17.3-20180527.0 to17.3-20180527.0. PR1362324
- Executing **show route prefix proto ip detail** during route churm in a route scale scenario might lead to FPC crash. PR1362578
- The inline-J-Flow sampling configuration might cause FPC crash on MX Series platforms. PR1362887
- MX-VC: Request to record VCCP heartbeat state change in syslog by default. PR1363565
- xmlproxyd for internal interfaces is reporting uint32 instead of uint64. PR1363766

- The multicast route update might get stuck in KRT queue and the rpd might crash if rpd and kernel go out of sync. PR1363803
- FPM board is missing in SNMP MIB walk. PR1364246
- A traffic loop might occur even though that port is blocked by RSTP in a ring topology. PR1364406
- The kernel might crash after repeatedly deactivating/activating interfaces/filter/class-of-services configurations due to accessing stale memory entry. PR1364477
- Configuration commit might be delayed by 30 seconds. PR1364621
- AF's operational state moves to down state in a node virtualized environment where GNFs are connected through AF interface. PR1364921
- The traffic is still forwarded through the member link of an aggregated Ethernet bundle interface even with "Link-Layer-Down" flag set. PR1365263
- Default adapter type changed from E1000 to VMXNET3. PR1365337
- Traffic drops seen if training failure is seen on a line card for three of more planes. PR1365668
- MPC7E: ukern crash and FPC reboot with vty command **show agent sensors verbose**. PR1366249
- MS-MPC/MS-PIC might crash in NAT scenario. PR1366259
- MX150: Upgrade to Junos OS Release 18.1R1.9 fails. Installing package **nfx-2-routing-data-plane-1.0-0.x86_64** needs 76 MB on the file system. PR1366324
- Migrate from syslog API to Errmsg API - junos/lib/liboiu-ffp/. PR1366546
- The next hop of MPLS path might be stuck in hold state, which could cause traffic loss. PR1366562
- Snmp MIB walk for UDP flood gives different output statistics than CLI. PR1366768
- Syslog errors seen **LOG : Err] Failed to allocate 2 jnh-dwords for encap-ptr(ether-da)!,LOG: Err] gen_encap_common: jnh-alloc failed! 8**. PR1366811
- Offline of the fabric links of Packet Forwarding Engine 4 and Packet Forwarding Engine 5 is not supported. PR1367412
- The bbe-smgd process might crash during the authentication phase for L2BSA subscriber. PR1367472
- The **show system resource-monitor fpc** output might show a non existing Packet Forwarding Engine. PR1367534
- RTG interface status might be shown as incorrect status with **show interface**. PR1368006
- Multiple provisioning and deprovisioning cycles cause rdmd memory leak. PR1368275
- JSA10893: 2018-10 Security Bulletin: MX Series: In BBE configurations, receipt of a crafted IPv6 exception packet causes a denial of service (CVE-2018-0058). PR1368599
- RPD API **rt_nexthops_extract_gateway_convert_unnumbered_gf_dli()** rectification. PR1368855
- The **commit** or **commit check** might fail due to the error of **not having lsp-cleanup-timer without lsp-provisioning**. PR1368992

- SNMP MIB walk causes KMD errors. PR1369938
- L2TP subscriber firewall filter might not be removed from the Packet Forwarding Engine when routing services are enabled in the dynamic profile. PR1369968
- Kernel crash might be seen after committing demux-related configuration. PR1370015
- The rpd might crash after Routing Engine switchover is performed or the rpd is restarted if interface-based dynamic GRE tunnel is configured. PR1370174
- Packet that exceed 8000 bytes might be dropped by MS-MPC in ALG scenario. PR1370582
- GMIC2 : SFP-1FE-FX optics does not come up on GMIC. PR1370962
- All the MX150 devices running VRRP on a LAN are stuck in master state. PR1371838
- BBE SMGD generates a core file on FPC restart. PR1371926
- FPC high CPU utilization or crashes occur during hot-banking condition. PR1372193
- SMGD generates a core file after essmd restart with reference to **mmf_ensure_mapped** (mmf=0xe8f0200, offset=4294967295, len=108) at **../src/junos/lib/libmmf/mmf.c:1972**. PR1372223
- Need a way to verify the session IDs above the 32-bit limit to check if this is working. PR1385237
- With very high scale l3vpn, traffic is dropped when egressing on an AF interface. PR1372310
- Image installation on SD fails with error **Unable to read reply from software add command to re1; error 1**. PR1372877
- The Routing Engine might crash after non-GRES switchover. PR1373079
- Core in ifinfo at pif_af_fe_info pif_af_ifd when displaying af interface information. PR1373436
- AOC Type Optics fail to initialize on MACsec TIC startup. PR1373572
- EDVT-GI-MIC2 : Interfaces do not come up for bidirection module SFP-100BASE-BX10-U and SFP-100BASE-BX10-D. PR1373795
- BOOTP packets might be dropped if BOOTP-support is not enabled at the global level. PR1373807
- LDP convergence delay might be seen after IGP metric change with **bgp-igp-both-ribs** command configured. PR1373855
- There is a vMX QoS performance issue in the Junos OS Release 18.3. PR1373999
- Cosmetic log **warning: [---] is protected, 'protocols ---' cannot be deleted** is seen after commit using **configure private** in a configuration with "protect" flag present. PR1374244
- FPC might be unable to work properly if one child interface is removed from an aggregated Ethernet bundle in a dynamic VLAN subscriber scenario. PR1374478
- Bbe-smgd generates a core file continously while deleting multicast group node from the tree. PR1374530
- PCE-initiated LSPs remain **Control status became local** after removing PCE configuration. PR1374596

- A few L2BSA subscriber logical interfaces are left behind in SMD infrastructure and kernel after logout. PR1375070
- SFB and PDM/PSU related information is missing in jnxBoxAnatomy MIB on high-end MX Series routers (MX2010/2020). PR1375242
- The bbe-smgd core file might be seen after doing GRES. PR1376045
- Interface optic output power is not zero when the port has been disabled. PR1376574
- CI: Not generating Power Supply failed trap. PR1376612
- Disabling OAM might cause the Broadband Edge daemon to crash. PR1377090
- Packets might be dropped on data plane in the inline J-Flow scenario. PR1377500
- MQTT keepalive timeout messages seen in case of slow JTI collectors. PR1378587
- After NAT64 router (with MS-MPC) translates an IPv6 fragment to IPv4 fragment, router is not inserting the right value in identification field of IPv4 header. PR1378818
- The ICMPv6 packets larger than 1024 might be dropped if **icmp-large-packet-check** is configured on IDS service. PR1378852
- Traffic might get silently dropped or discarded when CoS configuration is changed on a PS interface. PR1379530
- Protocol adjacency might flap and FPC might reboot if jlock hog happens. PR1379657
- Remove the chassisd alarms for FPCs exceeding 90 percent of power budget and exceeding 100 percent of power budget. PR1380056
- The software detects SDB STS lock deadlock and breaks the deadlock itself, and system resumes normally processing on its own. PR1380231
- CE_Customer: DT_BNG: ESSM model: rpd generates a core file during the fifth GRES, with reference to **task_kevent_udata_task (ev= <optimized out>) at ../../../../../../src/junos/lib/libjtask/base/platform/bsd/task_io_bsd.c:127**. PR1380298
- Encryption and decryption do not occur, because the Packet Forwarding Engine discards while testing that the group VPN member was established by using the authentication-method preshared key ASCII text. PR1381316
- Memory leak observed in MS-MPC card. PR1381469
- Subscribers not able to log in after double GRES, after reboot, or after configuration. PR1382050
- On MX3ru for Junos OS Release 18.3R1 release ISSU fails if QSA is plugged in. PR1382126
- The MPC6E might crash while fetching PMC device states. PR1382182
- Flows are getting exported before the active timeout. PR1382531
- PFT MX10008 expected **inline-ipv4-export-packet-failures** is not listed in show services accounting error. PR1382873

- MAC addresses might disappear, if the interface MTU of EVPN PE device is changed. PR1382966
- The kmd crashes with a core file after bringing up IPsec connection. PR1384205
- CoS attachment might be mistakenly removed for DHCPv4 stack when DHCPv6 stack fails to be brought up for single-session dual-stack subscriber. PR1384289
- MBFD flaps because clksync congest the scheduler for 100ms. PR1384473
- CE_Customer: DT_BNG: Bbe-smgd generates multiple core files with reference to **bbe_mcast_vbf_dist_policy_service_encoder (params= <opyimized out>) at ../src/junos/usr.sbin/bbe-svcs/smd/plugins/mcast/bbe_mcast_policy_config.c:159**. PR1384491
- RPT_REG_SERVICES: The MPLS packets with more than eight labels will not be processed by J-Flow. PR1385790
- IPsec VPN traffic might fail when passing through MS-MPC of MX Series routers with CGNAT enabled. PR1386011
- Representation of memory units is changed from gigabytes (GB) to gibibytes (GiB) in the help string under the resource template hierarchy. PR1386516
- RBU_REGRESSIONS_SERVICES ::IPv4 and IPv6 VIP Routes are not withdrawn after aggregated Ethernet and VLAN with IRB flap. PR1386713
- RBU_Services_Regressions: SFLOW : Agent ID in **show sflow** command is displaying lo interface IP instead of fxp0 IP. PR1386890
- In case a LSP is locally configured without an explicit path ERO, the object remains empty in the PCRpt generated by PCC. PR1386935
- Uninitialized EDMEM[0x400094] Read (0x6db6db6d6db6db6d) logs are seen with sampling applied to a subscriber with routing-service applied. PR1386948
- When tracing is enabled, having a lot of trace-flags set could result in an rpd core file due to buffer overflow. PR1387050
- The pccd might crash when changing delegation-priority. PR1387419
- The bbe-smgd daemon crashes and generates a core file when two DHCP subscribers with the same framed-route prefix and preference values try to log in. PR1387690
- Output of the **show class-of-service interface** command incorrectly shows adjusting application as PPPoE IA tags for DHCP subscribers. PR1387712
- FPC core file might be seen at **sensor_export_time_exceed_limit agent_health_monitor_data_reap** when Jinsight is configured. PR1388112
- Bbe-smgd does not respond to NS from SLAAC client on dynamic VLAN. PR1388595
- Incorrect values for flow packets/octets fields might be seen in inline J-Flow scenario. PR1389145
- The bbe-smgd process generates repeated core files and stops running as a result of long-term session database shared memory corruption. PR1388867

- IGMP group threshold exceed log message prints a wrong demux logical interface. PR1389457
- BFD flaps are seen on MX Series platforms with inline BFD. PR1389569
- MX204 - Excluding **speed** CLI option under the interface level. PR1389918
- Class of service adjustment-control-profile configuration for application DHCP tags does not get applied. PR1390101
- Delay in CLI output with second or more **show subscriber <> extensive** queries occur when the first session is sitting at -(more)- prompt displaying **show subscribers extensive**. PR1390762
- Trailing characters appear in the GNMI get API reply. PR1390967
- DT_BNG: DFW plug in NACKs DHCPv6/PPPoE requires ESSM subscriber re-login after ISSU. PR1391409
- The **routing-engine-power-off-button-disable** command does not work on MX204. PR1391548
- The bbe-smgd process might crash after committing configuration changes. PR1391562
- On MX Series routers serving as a DHCP server for dual-stack subscribers, BBE-SMGD process generates a core file. PR1391845
- On MX2000, fans start spinning at high speed upon inserting previously offlined FPC. PR1393256
- If FPGA on the new master CB has a specific hardware failure, the chassid might keep crashing after GRES switchover. PR1393884
- PFT MX10008: Inline-services enabling the Flex-Flow-Sizing takes more than 12 minutes to move to steady state. PR1397767
- The **show system errors active** is not showing the error for MPC3E NG HQoS. PR1398084
- Kernel core file occurs on vMX due to jlock assert. PR1398320
- High jsd or na-grpcd CPU usage might be seen even JET or JTI is not used. PR1398398
- The bbe-smgd process might generate a core file when executing **show pppoe lockout**. PR1398873
- FPC might crash after offline/online MIC-3D-16CHE1-T1-CE-H. PR1402563

High Availability (HA) and Resiliency

- Backup Routing Engine might go to db prompt after performing configuration remove and restore. PR1269383
- Observed **error: not enough space in /var on re1.** while doing unified ISSU upgrade from Junos OS Release 17.4-20180328.0 to Release 18.2-20180416.0. PR1354069
- VC-Bm cannot sync with VC-Mm when the Virtual Chassis splits the reforms. PR1361617

Interfaces and Chassis

- Aggregated Ethernet speed calculation changes according to 10 Gigabit Ethernet after post GRES. PR1326316
- Momentary dip in traffic occurs when a GRES is performed. PR1336455

- Native-vlan-id support on ps-interface. PR1352933
- The sonet interface will go down after enabling "keep-address-and-control" in L2VPN scenario. PR1354713
- The aggregated Ethernet interface might flap when the link speed of the aggregated Ethernet bundle is configured to oc192. PR1355270
- Approximately 50 percent of PPPoE subscribers (PTA and L2TP) and all ESSM subscribers are lost after ISSU during DT CST stress test. PR1360870
- Error messages like **ifname [ds-5/0/2:4:1] is chan ci candidate** are seen during a commit operation. PR1363536
- In case of MPLS , DMR packets are sent with different mpls exp bits if MX Series router receives CFM DMM packets with varying exp values on MPLS header. PR1365709
- In rare case, there might be L2TP subscribers stuck in terminated state. PR1368650
- The EOAM LTM messages might not get forwarded after system reboot in CFM scenario configured with CCC interface. PR1369085
- ISSU could be aborted at **Timed out Waiting for protocol backup chassis master switch to complete** with MX Series Virtual Chassis configuration. PR1371297
- The error **parse_remove_ifl_from_routing_inst() ERROR : No route inst on et-0/0/16.16386** is seen after restarting l2cpd daemon. PR1373927
- The dcd process might go down when **vlan-id none** is configured for the interface. PR1374933
- FTI logical interface VNI limits changed from (0..16777215) to (0..16777214). PR1376011
- Duplicate IP cannot be configured on both SONET (so-) interface and other interfaces. PR1377690
- Some error logs (Tx unknown LCP packet) might be reported by the bbe-smgd daemon on MX Series platforms. PR1378912
- Higher level OAM CFM between CE might not work in VPLS scenario. PR1380799
- The dcd restarted unexpectedly after committing a configuration with static demux interface stacking over ps interface. PR1382857
- The jpppd process might crash if the EPD value contains a format specifier. PR1384137
- DCD core can be seen after FPC restart if channelized interfaces are configured. PR1387962
- Interface-control thrashes and dcd does not restart after adding invalid demux interface to the configuration. PR1389461
- Decoupling of Layer 2 logical interface configuration from bridge-domain or EVPN configuration PR1390823

Layer 2 Ethernet Services

- STP status gets wrong after changing outer VLAN-tags. PR1121564
- The MAC address might not be learned due to spanning-tree state "discarding" in kernel table after Routing Engine switchover. PR1205373
- Migrate from syslog API to Errmsg API;/src/junos/usr.sbin/lacpd. PR1284592
- ZTP infra scripts are not included for MX Series PPC routers. PR1349249
- Migrate from syslog API to Errmsg API:PPMD client LACP. PR1358599
- The DHCP leasequery message is replied to with an incorrect source address. PR1367485
- JSA10889 2018-10 Security Bulletin: Junos OS: The jdhcpd process crashes during processing of specially crafted DHCPv6 message (CVE-2018-0055). PR1368377
- The kernel core might happen by commit operation in rare condition. PR1369459
- The subscriber's authentication might fail when the link-layer address encoded in the DHCPv6 DUID is different from the actual link-layer hardware address. PR1390422

Layer 2 Features

- The traffic might not be transmitted correctly in a large-scale VPLS scenario. PR1371994

MPLS

- When minimum-bandwidth and bandwidth commands are present in the configuration, the bandwidth selection of the LSP is inconsistent. PR1142443
- JDI-RCT: Rpd core file is seen on master Routing Engine after performing restart chassisd. PR1352227
- Layer 2 Circuit might flap after an interface goes down even if the LDP session stays up when **l2-smart-policy** is configured. PR1360255
- The rpd might crash in BGP LU and LDP scenario. PR1366920
- RSVP authentication might fail between some Junos OS releases and causes traffic loss during local repair. PR1370182
- The next hop of static LSP for MPLS might get stuck in dead state after changing the network mask of the outgoing interface. PR1372630
- The traceroute MPLS might fail when traceroute is executed from a Juniper Networks device to another device not supporting RFC 6424. PR1372924
- Rpd process eventually might crash after Routing Engine switchover with GRES/NSR enabled. PR1373313
- The traffic might not be load-balanced equally across LSPs with ldp-tunneling configured. PR1373575
- The rpd process might crash continuously if nsr-synchronization or all flag is used in RSVP traceoptions. PR1376354

- JSA10883: Junos OS: Receipt of a specifically crafted malicious MPLS packet leads to a Junos kernel crash (CVE-2018-0049). PR1380862
- Ingress LSPs go down due to CSPF failure. PR1385204
- Configured bandwidth 0 does not get applied on RSVP interface. PR1387277
- Bypass LSP is taking same SRLG colored path. PR1387497

Platform and Infrastructure

- MAC addresses are not learned on bridge-domains after XE/GE interface flap tests. PR1275544
- MQCHIP CPQ block should report major alarm. PR1276132
- Distributed multicast might not be forwarded to a subscriber interface. PR1277744
- **show igmp statistics** not including any statistics under interface aggregate for distributed multicast interfaces. PR1289415
- When chassis control restart is done with aggregated Ethernet and COS rewrite configuration, **Platform failed to bind rewrite** messages could be seen in syslog. PR1315437
- RLT subinterfaces are not reporting statistics. PR1346403
- lt- interface gets deleted with tunnel-services configuration still present. PR1350733
- Some linecards might crash in subscriber scenario enabled with distributed IGMP. PR1355334
- When **forwarding-class-accounting** command is enabled on an interface, inside of a routing-instance of instance-type vrf, aggregate input forwarding-class statistics do not increment (egress statistics work fine). PR1357965
- JSA10899 2018-10 Security Bulletin: Junos OS: Nexthop index allocation failed: private index space was exhausted through incoming ARP requests to management interface (CVE-2018-0063). PR1360039
- Select CLI functions are not triggering properly (set security ssh-known-hosts load-key-file, set system master-password). PR1363475
- Qmon sensors are not working with hypermode enabled. PR1365990
- Subscribers over aggregated Ethernet interface might have tail drops, which will affect the fragmented packets due to QXCHIP buffer getting filled up. PR1368414
- Forwarding is broken after adding protocol **evpn extended-vlan-id**. PR1368802
- The host outbound traffic might get dropped when the **class-of-service host-outbound-traffic ieee-802.1 rewrite-rules** command is configured. PR1371304
- Traffic might drop on new added interfaces on MX Series routers after unified ISSU. PR1371373
- The logical tunnel interface might be unable to send out control packets generated by Routing Engine. PR1372738
- JNH memory leaks in multicast scenario with MoFRR enabled. PR1373631

- Traffic traversing an IRB is not tagged with a VLAN if the packets go through an additional routing-instance. PR1377526
- FPC crash might be seen after FPC restarts. PR1380527
- lsi binding is missing upon nd6 entry refresh after l2ifl flap. PR1380590
- Packet drops on interface if the command **gigether-options loopback** is configured. PR1380746
- In certain Junos scenarios, DFWD memory corruption is seen due to large logical interface fstate messages. This can lead to log messages on dfwd traceoptions and occasionally DFWD core file. PR1380798
- Packet drops might be seen if the packet header is over 252 bytes. PR1385585
- RADIUS not working using management instance for IPv6 family. PR1391160
- The configuration through NETCONF session might fail. PR1383567
- L3VPN/ROSEN over PS over RLT: In Junos OS Release 18.4DCB after ifconfig goes down for PS logical interface, and its Link and Admin status are not going down as expected. PR1396335

Routing Policy and Firewall Filters

- Set metric multiplier offset might overflow/underflow. PR1349462
- The rpd process might crash if **then next-hop** is configured for LDP export policy. PR1388156

Routing Protocols

- Migrate from syslog API to Errmsg API;/src/junos/usr.sbin/ppmd. PR1284621
- Multihop eBGP peering session exchanging EVPN routes can result in rpd core file when BGP updates are sent. PR1304639
- The BGP session might be stuck with high BGP OutQ value after GRES on both sides. PR1323306
- The rpd might crash when BGP neighbor is flapping. PR1337304
- The bfd process memory leak might be observed if enabling multi-hop BFD session for a static route with multiple qualified-next-hop. PR1345041
- Rpd crash might be seen after executing Routing Engine switchover. PR1349167
- FPC might continuously crash on vMX platforms. PR1364624
- sBFD session flaps incrementally with 300 StaticSR clients configured with 100 ms as minimum-interval. PR1366124
- Static route gets unexpectedly refreshed on commit when configured with resolve configuration statement. PR1366940
- About 10 minutes of traffic loss is caused by BGP flap during MX Series unified ISSU. PR1368805
- TCP sessions might be taken down during Routing Engine switchover. PR1371045
- Route entry might be missing when IS-IS shortcut is enabled and MPLS link flaps. PR1372937

- SSH is not working if **[edit system services ssh hostkey-algorithms]** is set or in FIPS mode. PR1382485
- The rpd might crash after issuing operational command **show route detail** for RIP route. PR1386873
- Penultimate-hop router does not install BGP LU label, causing traffic to be silently dropped or discarded. PR1387746
- Next hop is not deleted by ukernel. However, the **delete** command is seen in rtsockmon. PR1389379
- The rpd process might crash when **rp-register-policy** is configured with more than 511 terms. PR1394259

Services Applications

- Selectively start ZLB Delay timer at the Packet Forwarding Engine for LAC tunnels. PR1338450
- L2TP Access Concentrator (LAC) tunnel connection request packets might be discarded on LNS device. PR1362542
- The L2TP subscribers might not be able to log in successfully due to the jl2tpd memory leak. PR1364774
- Accounting stop message is not sent to RADIUS server after bringing down the L2TP subscriber. PR1368840
- IPsec-VPN IKE security-associations might get stuck in "Not Matured" state. PR1369340
- Actual-Data-Rate-Downstream might not be included in the L2TP ICRQ message. PR1370699
- NAT64 does not translate ICMPv6 Type 2 packet (packet is too big) correctly when MS-DPC is used for NAT64. PR1374255
- FTP ALG is not supported with twice-nat. PR1383964
- L2TP subscribers might be stuck in init state in a corner case. PR1391847

Subscriber Access Management

- The authd process might not be started after executing Routing Engine switchover on the backup Routing Engine without GRES enabled. PR1368067
- RADIUS VSAs, Actual-Data-Rate-Downstream, and Actual-Data-Rate-Upstream values are not compliant with RFC 4679. PR1379129
- CoA updates subscriber with original dynamic-profile if RADIUS has returned a different dynamic-profile name. PR1381230
- Some subscribers fail to get SRL service as provided in the RADIUS accept message even though the RADIUS messages can be sent and received. PR1381383
- The value of **predefined-variable-defaults routing-instances** overrides the RADIUS-supplied VSA (26-1 Virtual-Router). PR1382074
- Log Message: authd: gx-plus: logout: wrong state for request session-id <xyz>. PR1384599

- Multiple IPv6 IANA addresses are assigned for one session in IPv6 PD binding failure scenarios. PR1384889
- Usage-Monitoring-Information AVP as part of PCRF gx-plus provisioning is causing service accounting activation. PR1391411

VPNs

- The rpd process might crash after configuration change in an L2VPN scenario. PR1351386
- EOAM group-down status does not work as expected. PR1361437
- In dual-homed next-generation MVPN, the receipt of type 5 withdrawal removes downstream join states for some routes. PR1368788
- In MVPN source site, a redundant environment primary site can generate type 5 routes for the sources from different sites without having real traffic, potentially causing an outage if the receiver PE devices accept those routes as preferable. PR1375716
- The rpd process crashes when LSP template for a provider tunnel is changed. PR1395353

SEE ALSO

New and Changed Features | **95**
Changes in Behavior and Syntax | **115**
Known Behavior | **128**
Known Issues | **133**
Documentation Updates | **200**
Migration, Upgrade, and Downgrade Instructions | **201**

Documentation Updates

IN THIS SECTION

This section lists the errata and changes in Junos OS Release 18.4R3 documentation for MX Series.

Subscriber Management Provisioning Guide

- The new topic, Subscriber Management RADIUS Dictionary Files, provides a link to the Juniper Networks RADIUS dictionary that is used by default with subscriber management for each supported release. The dictionary is updated only when software features that affect the file are added or changed. The dictionary is not updated for every Junos OS release.
- Starting in Junos OS Release 15.1, the *Broadband Subscriber Sessions User Guide* and the CLI Explorer incorrectly included information about the **show extensible-subscriber-services accounting** command. This command is not present in the CLI. Instead, you can use accounting profiles to collect statistics from the Packet Forwarding Engine for Extensible Subscriber Services Manager (ESSM) subscribers. See Flat-File Accounting Overview for information about accounting for ESSM subscribers.

Subscriber Management VLANs Interfaces Guide

- The *Broadband Subscriber VLANs and Interfaces User Guide* did not clearly indicate that only demux0 is supported for demux interfaces. If you configure a different demux interface, such as demux1, the configuration commit fails.

SEE ALSO

New and Changed Features | **95**
Changes in Behavior and Syntax | **115**
Known Behavior | **128**
Known Issues | **133**
Resolved Issues | **148**
Migration, Upgrade, and Downgrade Instructions | **201**

Migration, Upgrade, and Downgrade Instructions

IN THIS SECTION

This section contains the procedure to upgrade Junos OS, and the upgrade and downgrade policies for Junos OS for the MX Series. Upgrading or downgrading Junos OS might take several minutes, depending on the size and configuration of the network.

Starting in Junos OS 18.3R1 release, FreeBSD 11.x is the underlying OS for all Junos OS platforms which were previously running on FreeBSD 10.x based Junos OS. FreeBSD 11.x does not introduce any new Junos OS related modifications or features but is the latest version of FreeBSD.

The following table shows detailed information about which Junos OS can be used on which products:

Platform	FreeBSD 6.x-based Junos OS	FreeBSD 11.x-based Junos OS
MX5,MX10, MX40,MX80, MX104	YES	NO
MX240, MX480, MX960, MX2010, MX2020	NO	YES

Basic Procedure for Upgrading to Release 18.4

NOTE: Before upgrading, back up the file system and the currently active Junos OS configuration so that you can recover to a known, stable environment in case the upgrade is unsuccessful. Issue the following command:

```
user@host> request system snapshot
```

The installation process rebuilds the file system and completely reinstalls Junos OS. Configuration information from the previous software installation is retained, but the contents of log files might be erased. Stored files on the routing platform, such as configuration templates and shell scripts (the only exceptions are the **juniper.conf** and **ssh** files) might be removed. To preserve the stored files, copy them to another system before upgrading or downgrading the routing platform. For more information, see the Junos OS Administration Library.

For more information about the installation process, see Installation and Upgrade Guide and Upgrading Junos OS with Upgraded FreeBSD.

Procedure to Upgrade to FreeBSD 11.x based Junos OS

Products impacted: MX240, MX480, MX960, MX2010, and MX2020.

To download and install FreeBSD 11.x based Junos OS:

1. Using a Web browser, navigate to the **All Junos Platforms** software download URL on the Juniper Networks webpage:

   https://www.juniper.net/support/downloads/

2. Select the name of the Junos OS platform for the software that you want to download.

3. Select the release number (the number of the software version that you want to download) from the **Release** drop-down list to the right of the Download Software page.

4. Select the **Software** tab.

5. In the **Install Package** section of the **Software** tab, 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.

9. Copy the software to the routing platform or to your internal software distribution site.

10. Install the new **jinstall** package on the routing platform.

    > **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.

    All customers except the customers in the Eurasian Customs Union (currently composed of Armenia, Belarus, Kazakhstan, Kyrgyzstan, and Russia) can use the following package:

    - For 32-bit Routing Engine version:

```
user@host> request system software add no-validate reboot
source/junos-install-mx-x86-32-18.4R3.9-signed.tgz
```

- For 64-bit Routing Engine version:

```
user@host> request system software add no-validate reboot
source/junos-install-mx-x86-64-18.4R3.9-signed.tgz
```

Customers in the Eurasian Customs Union (currently composed of Armenia, Belarus, Kazakhstan, Kyrgyzstan, and Russia) can use the following package (Limited encryption Junos package):

- For 32-bit Routing Engine version:

```
user@host> request system software add no-validate reboot
source/junos-install-mx-x86-32-18.4R3.x-limited.tgz
```

- For 64-bit Routing Engine version:

```
user@host> request system software add no-validate reboot
source/junos-install-mx-x86-64-18.4R3.9-limited.tgz
```

Replace ***source*** with one of the following values:

- ***/pathname***—For a software package that is installed from a local directory on the router.
- For software packages that are downloaded and installed from a remote location:
  - **ftp://*hostname/pathname***
  - **http://*hostname/pathname***
  - **scp://*hostname/pathname***

Do not use the **validate** option while upgrading from Junos OS (FreeBSD 6.x) to Junos OS (FreeBSD 11.x). This is because programs in the **junos-upgrade-x** package are built based on FreeBSD 11.x, and Junos OS (FreeBSD 6.x) would not be able to run these programs. You must run the **no-validate** option. The **no-validate** statement disables the validation procedure and allows you to use an import policy instead.

Use the **reboot** command to reboot the router after the upgrade is validated and installed. When the reboot is complete, the router displays the login prompt. The loading process might take 5 to 10 minutes.

Rebooting occurs only if the upgrade is successful.

NOTE: You need to install the Junos OS software package and host software package on the routers with the RE-MX-X6 and RE-MX-X8 Routing Engines. For upgrading the host OS on these routers with VM Host support, use the junos-vmhost-install-x.tgz image and specify the name of the regular package in the **request vmhost software add** command. For more information, see the VM Host Installation topic in the Installation and Upgrade Guide.

NOTE: After you install a Junos OS Release 18.4 **jinstall** package, you cannot return to the previously installed Junos OS (FreeBSD 6.x) software by issuing the **request system software rollback** command. Instead, you must issue the **request system software add no-validate** command and specify the **jinstall** package that corresponds to the previously installed software.

NOTE: Most of the existing **request system** commands are not supported on routers with the RE-MX-X6 and RE-MX-X8 Routing Engines. See the VM Host Software Administrative Commands in the Installation and Upgrade Guide.

Procedure to Upgrade to FreeBSD 6.x based Junos OS

Products impacted: MX5, MX10, MX40, MX80, MX104.

To download and install FreeBSD 6.x based Junos OS:

1. Using a Web browser, navigate to the **All Junos Platforms** software download URL on the Juniper Networks webpage:

   https://www.juniper.net/support/downloads/

2. Select the name of the Junos OS platform for the software that you want to download.

3. Select the release number (the number of the software version that you want to download) from the **Release** drop-down list to the right of the Download Software page.

4. Select the **Software** tab.

5. In the **Install Package** section of the **Software** tab, 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.

9. Copy the software to the routing platform or to your internal software distribution site.

10. Install the new **jinstall** package on the routing platform.

> **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.

- All customers except the customers in the Eurasian Customs Union (currently composed of Armenia, Belarus, Kazakhstan, Kyrgyzstan, and Russia) can use the following package:

  `user@host>` **request system software add validate reboot *source*/jinstall-ppc-18.4R3.9-signed.tgz**

- Customers in the Eurasian Customs Union (currently composed of Armenia, Belarus, Kazakhstan, Kyrgyzstan, and Russia) can use the following package (Limited encryption Junos OS package):

  `user@host>` **request system software add validate reboot *source*/jinstall-ppc-18.4R3.9-limited-signed.tgz**

Replace ***source*** with one of the following values:

- ***/pathname***—For a software package that is installed from a local directory on the router.
- For software packages that are downloaded and installed from a remote location:
  - **ftp://*hostname/pathname***
  - **http://*hostname/pathname***
  - **scp://*hostname/pathname***

The **validate** option validates the software package against the current configuration as a prerequisite to adding the software package to ensure that the router reboots successfully. This is the default behavior when the software package being added is a different release.

Use the **reboot** command to reboot the router after the upgrade is validated and installed. When the reboot is complete, the router displays the login prompt. The loading process might take 5 to 10 minutes.

Rebooting occurs only if the upgrade is successful.

> **NOTE:** After you install a Junos OS Release 18.4 **jinstall** package, you cannot return to the previously installed software by issuing the **request system software rollback** command. Instead, you must issue the **request system software add validate** command and specify the **jinstall** package that corresponds to the previously installed software.

Upgrade and Downgrade Support Policy for Junos OS Releases

Support for upgrades and downgrades that span more than three Junos OS releases at a time is not provided, except for releases that are designated as Extended End-of-Life (EEOL) releases. EEOL releases provide direct upgrade and downgrade paths—you can upgrade directly from one EEOL release to the next EEOL release even though EEOL releases generally occur in increments beyond three releases.

You can upgrade or downgrade to the EEOL release that occurs directly before or after the currently installed EEOL release, or to two EEOL releases before or after. For example, Junos OS Releases 17.1, 17.2, and 17.3 are EEOL releases. You can upgrade from Junos OS Release 17.1 to Release 17.2 or from Junos OS Release 17.1 to Release 17.3.

You cannot upgrade directly from a non-EEOL release to a release that is more than three releases ahead or behind. To upgrade or downgrade from a non-EEOL release to a release more than three releases before or after, first upgrade to the next EEOL release and then upgrade or downgrade from that EEOL release to your target release.

For more information about EEOL releases and to review a list of EEOL releases, see https://www.juniper.net/support/eol/junos.html.

Upgrading a Router with Redundant Routing Engines

If the router has two Routing Engines, perform the following Junos OS installation on each Routing Engine separately to avoid disrupting network operation:

1. Disable graceful Routing Engine switchover (GRES) on the master Routing Engine, and save the configuration change to both Routing Engines.
2. Install the new Junos OS release on the backup Routing Engine while keeping the currently running software version on the master Routing Engine.
3. After making sure that the new software version is running correctly on the backup Routing Engine, switch over to the backup Routing Engine to activate the new software.
4. Install the new software on the original master Routing Engine that is now active as the backup Routing Engine.

For the detailed procedure, see the Installation and Upgrade Guide.

Downgrading from Release 18.4

To downgrade from Release 18.4 to another supported release, follow the procedure for upgrading, but replace the 18.4 jinstall package with one that corresponds to the appropriate release.

> **NOTE:** You cannot downgrade more than three releases.

For more information, see the Installation and Upgrade Guide.

SEE ALSO

- New and Changed Features | 95
- Changes in Behavior and Syntax | 115
- Known Behavior | 128
- Known Issues | 133
- Resolved Issues | 148
- Documentation Updates | 200

Junos OS Release Notes for NFX Series

IN THIS SECTION

These release notes accompany Junos OS Release 18.4R3 for the NFX Series. They describe new and changed features, limitations, and known and resolved problems in the hardware and software.

You can also find these release notes on the Juniper Networks Junos OS Documentation webpage, located at https://www.juniper.net/documentation/product/en_US/junos-os

New and Changed Features

IN THIS SECTION

This section describes the new features or enhancements to existing features in Junos OS Release 18.4R3 for NFX Series devices.

New and Changed Features: 18.4R3

There are no new features or enhancements to existing features in Junos OS Release 18.4R3 for NFX Series devices.

New and Changed Features: 18.4R2

There are no new features or enhancements to existing features in Junos OS Release 18.4R2 for NFX Series devices.

New and Changed Features: 18.4R1

Virtual Network Functions (VNFs)

- **vSRX Support**—Starting in Junos OS Release 18.4R1, vSRX 3.0 is supported on NFX250 devices.

SEE ALSO

Changes in Behavior and Syntax | 210

Changes in Behavior and Syntax

IN THIS SECTION

This section lists the changes in behavior of Junos OS features and changes in the syntax of Junos OS statements and commands in Junos OS Release 18.4R3 for the NFX Series.

Factory-default Configuration

- **Plug-and-play configuration (NFX150 and NFX250 devices)**—The factory default configuration for NFX Series devices is modified to include the secure router plug-and-play configuration.

SEE ALSO

Known Behavior

IN THIS SECTION

This section lists known behavior, system maximums, and limitations in hardware and software in Junos OS Release 18.4R3 for the NFX Series.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Interfaces

- On NFX150 devices, the TCP and ICMP RPM probes take the best-effort queue of the outgoing interface, instead of the network control queue. As a workaround, configure a DSCP value such as nc1 for the RPM probes to take the network control queue. PR1329643

Platform and Infrastructure

- On NFX250 NextGen devices running Junos OS Release 18.4R1, the memory values of vjunos0, flowd and ovs are as follows:

```
Component  S1E     LS1   S1           S2
Vjunos0     1.95 G  1.95 G 1.95 G 1.95 G
Flowd     2.02 G  2.02 G 2.02 G 2.02 G
OVS       4.10 G  4.10 G 4.10 G 4.10 G
```

  PR1366147

- Starting in Junos OS Release 18.4, NFX150 devices support two versions of disk layout. In the older version of the disk layout, you could upgrade or downgrade from Junos OS Release 18.4. With the new disk layout, a downgrade to releases later than Junos OS Release 18.4 is not possible. As a workaround, avoid operations that reformat the disk layout. PR1379983

SEE ALSO

Known Issues

IN THIS SECTION

This section lists the known issues in hardware and software in Junos OS Release 18.4R3 for the NFX Series.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

CoS

- On NFX150 devices, when you configure a CoS rewrite rule for the st0 interface, the CoS value is not applied on the corresponding forwarding class. Hence, CoS does not work as expected and network traffic is impacted. PR1439401

Interfaces

- When you issue a **show interface** command on NFX150 devices to check the interface details, the system will not check whether the interface name provided is valid or invalid. The system will not generate an error message if the interface name is invalid. PR1306191
- On NFX150 devices, when you reboot the fpc0 interface, a few error messages are seen in the VTY console. PR1326487
- On NFX250 devices, libvirt is hung due to which the console access to the device and JDM do not work. PR1341772
- Starting in Junos OS Release 18.3R1, the reboot time has increased for fpc0 and fpc1 interfaces on NFX150 devices.PR1355527
- On NFX250 NextGen devices running Junos OS release 18.4, the **show vmhost network nfv-back-plane** command output shows the **Link State/Admin State** as down. PR1375908
- On NFX150 devices, when the interface configuration has the encapsulation **flexible-ethernet-services** enabled on a 10G interface, traffic gets dropped. PR1425927
- The limit on maximum OVS interfaces is restored to the originally defined limit 25 for backward compatibility. As a workaround, reduce the number of OVS interfaces in the configuration to 20 or less. PR1439950

Platform and Infrastructure

- Starting in Junos Release 18.1, the file transfer rate from an external media over the network to an NFX150 device is around 40-50 Mbps. PR1290263
- On NFX150 devices, the following message is seen during FTP: **ftpd[14105]: bl_init: connect failed for /var/run/blacklistd.sock (No such file or directory)** PR1315605
- When you use the *init-descriptor filename vsrx.xml* to upgrade the software image from Junos OS Release 15.1X53-D47.4 to Junos OS Release 18.4R1, upgrades revert the file to default and the JDM subsystem becomes unavailable. PR1456900
- On NFX250 devices, upgrading the software image from Junos OS Release 15.1X53-D496 to Junos OS Release 18.4R2 fails. PR1468586

Virtual Network Functions (VNFs)

- When you issue the **show virtual-network-functions vnf-name** command, the system creates a defunct process due to the presence of popen() calls and pclose() calls that do not match. This issue is fixed in Junos OS Release 15.1X53-D497 onward by ensuring that pclose() calls match the popen() calls. PR1415210

SEE ALSO

Resolved Issues

IN THIS SECTION

This section lists the issues fixed in Junos OS 18.4R3 for NFX Series.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Resolved Issues:18.4R3

Interfaces

- On NFX150 devices, the WAN ports (heth-0-4 and heth-0-5) do not function properly if you remove a cable connected to these ports or flap the link. As a workaround, use one of the following options:

- Flap the link again
- Enable or disable the interface from the CLI

PR1449278

High Availability

- On an NFX150 high availability chassis cluster, the host logs updated in the system log messages might not show the correct time stamp. As a workaround, convert the UTC time stamp to local time zone. PR1394778

Platform and Infrastructure

- On NFX250 devices, when you issue the **request support information** command, the configuration and counter data are missing for JDM. PR1413674
- When you run the **show chassis fpc** or **show chassis fpc details** command, the **Temperature** field in the command output message is displayed as **Testing**. PR1433221
- On an NFX250 device, if the idle-timeout parameter for a user login class on JDM is configured in minutes, the system considers the configured idle timeout time in seconds. The user is logged out based on the idle timeout time in seconds. PR1435310
- On NFX Series devices, the IPsec-NM container does not start after the device reboots during an upgrade process. This issue is due to the inconsistency state of the docker engine storage during an upgrade. As a workaround, reboot the device again. PR1439577
- On NFX150 devices, the **show security dynamic-address** command does not work for port 3. PR1448594
- Version compare in PHC might fail, causing the PHC to download the same image. PR1453535
- On an NFX250 device with a secondary disk, the device reboots to the secondary disk during a password recovery process. PR1467569
- When the REST API receives several continuous HTTP requests, the REST service might become unresponsive. PR1449987

Protocols

- On NFX150 devices, SNMP does not work for the following commands:
  - **show snmp mib walk jnxIpSecTunMonOutEncryptedBytes**
  - **show snmp mib walk jnxIpSecTunMonOutEncryptedPkts**
  - **show snmp mib walk jnxIpSecTunMonInDecryptedBytes**
  - **show snmp mib walk jnxIpSecTunMonInDecryptedPkts**
  - **show snmp mib walk jnxIpSecTunMonLocalGwAddr**
  - **show snmp mib walk jnxIpSecTunMonLocalGwAddrType**

PR1386894

Resolved Issues:18.4R2

Interfaces

- On NFX250 devices, an SFP-T interface does not become active when it is plugged into a ge-12/0/0 or a ge-13/0/0 interface. PR1404756

Platform and Infrastructure

- JDM depends on the libvirtd deamon to manage the guest VM through cli. The libvirtd daemon was stuck and vjunos VM start up failed, which resulted in in-band connectivity issues, the guest VM could not start, and the console was hung. PR1314945
- Software upgrade does not delete all images from a previous installation. This occupies about 1GB of storage per upgrade and leads to depletion of storage after several upgrades. PR1408061
- The **NFX3/ACX5448:LIBCOS_COS_TVP_FC_INFO_NOT_FOUND: Forwarding-class information not specified** message is displayed when you commit the configuration on config prompt. As a workaround to exclude this from messages or syslogs, run the **set system syslog user * match "!(LIBCOS_COS_TVP_FC_INFO_NOT_FOUND: Forwarding-class information not specified)** and commit. PR1376665
- On NFX250 devices, the **request-load-configuration** command output from device does not match with 18.4 yang. PR1416106
- With VNF running when MTU is configured, the KVM crashes and VNF goes down. PR1417103

Resolved Issues:18.4R1

There are no fixed issues in Junos OS Release 18.4R1 for NFX Series.

SEE ALSO

Documentation Updates

There are no errata or changes in Junos OS Release 18.4R2 documentation for NFX Series.

SEE ALSO

Migration, Upgrade, and Downgrade Instructions

IN THIS SECTION

This section contains the procedure to upgrade Junos OS, and the upgrade and downgrade policies for Junos OS for the NFX Series. Upgrading or downgrading Junos OS might take several hours, depending on the size and configuration of the network.

Upgrade and Downgrade Support Policy for Junos OS Releases

Support for upgrades and downgrades that span more than three Junos OS releases at a time is not provided, except for releases that are designated as Extended End-of-Life (EEOL) releases. EEOL releases provide direct upgrade and downgrade paths—you can upgrade directly from one EEOL release to the next EEOL release even though EEOL releases generally occur in increments beyond three releases.

To upgrade or downgrade from a non-EEOL release to a release more than three releases before or after, first upgrade to the next EEOL release and then upgrade or downgrade from that EEOL release to your target release.

For more information on EEOL releases and to review a list of EEOL releases, see https://www.juniper.net/support/eol/junos.html.

Basic Procedure for Upgrading to Release 18.4

When upgrading or downgrading Junos OS, use the **jinstall** package. For information about the contents of the **jinstall** package and details of the installation process, see the Installation and Upgrade Guide. Use other packages, such as the **jbundle** package, only when so instructed by a Juniper Networks support representative.

> **NOTE:** The installation process rebuilds the file system and completely reinstalls Junos OS. Configuration information from the previous software installation is retained, but the contents of log files might be erased. Stored files on the device, such as configuration templates and shell scripts (the only exceptions are the juniper.conf and ssh files), might be removed. To preserve the stored files, copy them to another system before upgrading or downgrading the device. For more information, see the Junos OS Administration Library.

> **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.

To download and install Junos OS Release 18.4R3:

1. Using a Web browser, navigate to the **All Junos Platforms** software download URL on the Juniper Networks webpage:

   https://www.juniper.net/support/downloads/

2. Select the name of the Junos OS platform for the software that you want to download.

3. Select the **Software** tab.

4. Select the release number (the number of the software version that you want to download) from the **Version** drop-down list to the right of the Download Software page.

5. In the **Install Package** section of the **Software** tab, select the software package for the release.

6. Log in to the Juniper Networks authentication system by using the username (generally your e-mail address) and password supplied by Juniper Networks representatives.

7. Review and accept the End User License Agreement.

8. Download the software to a local host.

9. Copy the software to the device or to your internal software distribution site.

10. Install the new package on the device.

SEE ALSO

Junos OS Release Notes for PTX Series Packet Transport Routers

IN THIS SECTION

These release notes accompany Junos OS Release 18.4R3 for the PTX Series. They describe new and changed features, limitations, and known and resolved problems in the hardware and software.

You can also find these release notes on the Juniper Networks Junos OS Documentation webpage, located at https://www.juniper.net/documentation/product/en_US/junos-os.

New and Changed Features

IN THIS SECTION

This section describes the new features and enhancements to existing features in the Junos OS main release and the maintenance releases for the PTX Series.

Release 18.4R3 New and Changed Features

There are no new features or enhancements to existing features for PTX Series in Junos OS Release 18.4R3.

Release 18.4R2 New and Changed Features

There are no new features or enhancements to existing features for PTX Series in Junos OS Release 18.4R2.

Release 18.4R1 New and Changed Features

Hardware

- **New fixed-configuration packet transport router (PTX Series)**—Starting in Junos OS Release 18.4R1, the PTX10001-20C is a new fixed-configuration Macsec-enabled LSR core router. It features a compact, 1U form factor that is easy to deploy in space-constrained Internet exchange locations, remote central offices, and embedded peering points throughout the network. The PTX10001 has 20 QSFP28 ports, and you can add 16 more QSFP28 ports with the optional JNP10001-16C-PIC expansion module. The 36 QSFP28 ports can be configured as 10 Gbps, 40 Gbps, or 100 Gbps. The ports handle up to 3.6 Tbps of throughput and 2 Bpps of forwarding capacity.

  See PTX10001 Hardware Guide.

Authentication, Authorization and Accounting (AAA) (RADIUS)

- **Support for password change policy enhancement (PTX Series)**—Starting in Junos OS Release 18.4R1, the Junos OS password change policy for local user accounts is enhanced to comply with additional password policies. As part of the policy improvement, you can configure the following:

  - **maximum-lifetime-value**—The maximum duration of a password. The password expires after the maximum is reached.
  - **minimum-lifetime-value**—The minimum duration of a password. You cannot change the password until the minimum duration is reached.

  [See password.]

Class of Service (CoS)

- **Support for classifying Layer 2 frames based on Layer 3 information (PTX Series)**—Starting in Junos OS Release 18.4R1, PTX Series devices support classifying Layer 2 frames based on Layer 3 fields. You can match on DSCP bits in IPv4 packets (classifier type **dscp**), TOS bits in IPv6 packets (classifier type **dscp-ipv6**), EXP bits in MPLS frames (classifier type **exp**), and PCP bits in IEEE 802.1 frames (classifier type **ieee-802.1**). To do this, define classifiers as normal at the **[edit class-of-service classifiers *classifier-type classifier-name*]** hierarchy level and then apply the classifiers to a Layer 2 (**family ethernet-switching**) interface at the **[edit class-of-services interfaces *interface-name* unit 0]** hierarchy level.

  [See classifiers (Definition).]

- **Support for class of service (CoS) on PTX10001-20C routers**—Starting in Junos OS Release 18.4R1, PTX10001-20C routers support class-of-service (CoS) functionality.

  CoS is the assignment of traffic flows to different service levels. Service providers can use router-based CoS features to define service levels that provide different delay, jitter (delay variation), and packet loss characteristics to particular applications served by specific traffic flows.

  [See CoS Features and Limitations on PTX Series Routers.]

Forwarding and Sampling

- **Support for activating or deactivating static routes on the basis of RPM test results (PTX Series)** —Starting in Junos OS 18.4R1, you can use RPM probes to detect link status, and change the preferred-route state on the basis of the probe results. Tracked routes can be IPv4 or IPv6, and support a single IPv4 or IPv6 next hop. For example, RPM probes can be sent to an IP address to determine if the link is up, and if so, take the action of installing a static route in the route table. RPM-tracked routes are installed with preference 1 and thus are preferred over any existing static routes for the same prefix.

  [See Configuring RPM Probes , rpm-tracking, and show route rpm-tracking.]

Interfaces and Chassis

- **LACP hold-up timer configuration support on LAG interfaces (PTX Series)**—You can configure an LACP hold-up timer value for LAG interfaces to prevent excessive flapping of a child (member) link of a LAG interface due to transport layer issues.

  Because of transport layer issues, a link can be physically up and still cause LACP state-machine flapping. LACP state-machine flapping, which can adversely affect traffic on the LAG interface. With the hold-up timer configured, LACP monitors the PDUs received on the child link for the configured time value, but does not allow the member link to transition from the expired or default state to the current state. This configuration thus prevents excessive flapping of the member link.

  To configure the hold-up timer, use the **hold-time up *timer-value*** statement at the **[edit interfaces ae *aeX* aggregated-ether-options lacp]** hierarchy level.

  [See hold-time up and Configuring LACP Hold-UP Timer to Prevent Link Flapping on LAG Interfaces.]

Junos Telemetry Interface

- **Enhanced IS-IS sensor support for Junos Telemetry Interface (JTI) (MX960, MX2020, PTX5000, PTX1000, and PTX10000)**—Starting with Junos OS Release 18.4R1, JTI supports OpenConfig Version v0.3.3 (from v0.2.1) for resource paths related to IS-IS Link State Database (LSDB) streaming. The difference between the two versions results in changes, additions, deletions, or nonsupport for leaf devices related to the following IS-IS Type Length Value (TLV) parameters and IS-IS areas:

  - TLV 135: extended-ipv4-reachability
  - TLV 236: ipv6-reachability
  - TLV 22: extended-is-reachability
  - TLV 242: router-capabilities
  - IS-IS Interface Attributes
  - IS-IS Adjacency Attributes

  To provision the sensor to export data through gRPC streaming, use the **telemetry Subscribe** RPC to specify telemetry parameters. Streaming telemetry data through gRPC also requires the OpenConfig and Network Agent packages, both of which are bundled into the Junos OS image in a default package named junos-openconfig.

[See Configuring a Junos Telemetry Interface Sensor (CLI Procedure) and Guidelines for gRPC Sensors (Junos Telemetry Interface).]

- **Support for NTF agent (MX240, MX480, MX960, MX2010, MX2020, vMX, PTX1000, PTX5000, and PTX10000)**—Junos OS exposes telemetry data over gRPC and UDP as part of the Junos Telemetry Interface (JTI). One way to stream JTI data into your existing telemetry and analytics infrastructure requires managing an external entity to convert the data into a compatible format. Starting in Junos OS Release 18.4R1, the NTF agent feature provides an on-box solution that enables you to configure and customize to which endpoint (such as IPFIX and Kafka) the JTI data is delivered and in which format (such as AVRO, JSON, and MessagePack) the data is encoded.

  [See NTF Agent Overview.]

- **Expanded ON_CHANGE support for Junos Telemetry Interface (JTI) (MX960, MX2010, MX2020, PTX5000, PTX1000, and PTX10000)**—Starting in Junos OS Release 18.4R1, OpenConfig support through gRPC and JTI is extended to support additional ON_CHANGE sensors.

  Periodical streaming of OpenConfig operational states and counters collects information at regular intervals. ON_CHANGE support streams operational states as events (only when there is a change), and is preferred over periodic streaming for time-sensitive missions.

  The following paths, previously supporting periodical streaming only, now also support ON_CHANGE streaming:

  - **/components/component**
  - **/components/component/name/**
  - **/components/component/state/type**
  - **/components/component/state/id**
  - **/components/component/state/description**
  - **/components/component/state/serial-no**
  - **/components/component/state/part-no**

  ON_CHANGE notification will be supported on all the hardware components displayed in the Junos OS CLI operational mode command **show chassis hardware**.

  To provision a sensor to export data through gRPC, use the **telemetrySubscribe** RPC to specify telemetry parameters. To enable ON_CHANGE support, configure the sample frequency in the subscription as zero.

  [See Guidelines for gRPC Sensors (Junos Telemetry Interface) and show chassis hardware.]

Layer 2 Features

- **Support for Layer 2 and Layer 3 forwarding across VLANs (PTX1000, PTX10008, and PTX10016)**—Starting in Junos OS 18.4R1, PTX Series devices support Layer 2 and Layer 3 forwarding across VLANs. Layer 3 forwarding across VLANs by using Integrated Routing and Bridging (IRB) interface.

To provide Layer 3 forwarding across VLANs, you need to create layer 3 logical interface on IRB physical interface and associate it with the VLAN.

PTX Series routers support enabling IS-IS and OSPF protocols at the IRB level and also support iBGP and eBGP on the IRB interface. You can apply firewall filter and policer on the IRB interface.

[See Layer 2 Learning and Forwarding for VLANs Overview.]

- **Support for port mirroring (PTX10001)**—Starting in Junos OS Release 18.4R1, the PTX10001 supports firewall filter-based port mirroring for the IPv4 address family on the ingress interface.

  [See Configuring Port Mirroring on M, T MX, and PTX Series Routers.]

Layer 3 Features

- **Support for BFD on PTX10001-20C Packet Transport Router**—Starting in Junos OS Release 18.4R1, PTX10001-20C routers support Bidirectional Forwarding Detection (BFD) in centralized mode for clients operating under Layer 3 protocols such as OSPF, IS-IS, and BGP. BFD support is not extended to micro-BFD, IPv6, PIM, tunnel interfaces, or MPLS. [See bfd command.]
- **Support for ECMP on Layer 3 and MPLS routes on PTX10001-20C Packet Transport Router**—Starting in Junos OS Release 18.4R1, PTX10001-20C routers support equal-cost multipath (ECMP) load balancing for IPv4 and MPLS routes.
- **Support for Layer 3 unicast features on PTX10001-20C Packet Transport Router** —Starting in Junos OS Release 18.4R1, PTX10001-20C routers support the following Layer 3 forwarding features for unicast IPv4 traffic:
  - ICMPv4 messages (MTU exceeded, TTL expiry, host unreachable, IP redirect)
  - ICMPv4 host and longest prefix match (LPM) routing
  - IP packet exceptions (TTL error and IP-option)
  - IPv4 fragmentation
  - IPv4 ping and traceroute
  - Layer 3 protocols, such as:
    - OSPF
    - IS-IS with Bidirectional Forwarding Detection (BFD)
    - BGP
  - MTU check per port
  - Virtual router (VRF-lite)

MPLS

- **MPLS support (PTX10001-20C)**—Starting with Junos OS Release 18.4R1, MPLS is supported on the PTX10001-20C router. The following features are supported:

- Label Switching Routers (LSRs)
- LDP and RSVP MPLS routing protocols
- IS-IS interior gateway protocol (IGP) traffic engineering
- Object access method, including ping and Bidirectional Forwarding Detection (BFD)
- Fast reroute (FRR) MPLS local protection. Both one-to-one local protection and many-to-one local protection are supported.

This feature was previously supported in an "X" release of Junos OS. [See MPLS Overview.]

- **MPLS-TE Fast Reroute Link Protection (PTX10001-20C)**— Starting with Junos OS Release 18.4R1, you can enable fast reroute (FRR) to automatically reroute traffic on MPLS traffic engineering (TE) LSPs if a node or link in an LSP fails, thus reducing the loss of packets traveling over the LSP. When you enable fast reroute, detours are precomputed and pre-established along the LSP. In case of a network failure on the current LSP path, traffic is quickly routed to one of the detours. Fast reroute protects traffic against any single point of failure between the ingress and egress routers.

  This feature was previously supported in an "X" release of Junos OS. [See Fast Reroute Overview.]

Network Management and Monitoring

- **sFlow functionality introduced on PTX1000 and PTX10000**—Starting in Junos OS Release 18.4R1, the PTX1000 and PTX10000 routers support sFlow, a network monitoring protocol for high-speed networks. With sFlow, you can continuously monitor tens of thousands of ports simultaneously. The mechanism used by sFlow is simple, not resource intensive, and accurate. An sFlow agent embedded in a network device samples packets and gathers interface statistics and sends the information to a monitoring station called a *collector* for analysis. An sFlow agent can be implemented in a distributed model. In such a case, each subagent has a separate subagent ID and is responsible for monitoring a set of network ports. The subagents share a common agent address.

  [See Configuring sFlow Technology for Network Monitoring (CLI Procedure) and sflow.]

Port Security

- **Media Access Control Security (MACsec) support (PTX10001-20C routers)**—Starting in Junos OS Release 18.4R1, MACsec is supported on all twenty interfaces on the PTX10001-20C router and all sixteen interfaces on the TIC1 module. MACsec is an 802.1AE IEEE industry-standard security technology that provides secure communication for all traffic on point-to-point Ethernet links.

  [See Understanding Media Access Control Security (MACsec).]

- **Dynamic Host Configuration Protocol (DHCP) relay (PTX10001-20C routers)**—Starting in Junos OS Release 18.4R1, DHCP relay is supported on PTX10001-20C routers.

  [See Extended DHCP Relay Agent.]

Routing Protocols

- **Support for 64 add-path BGP routes (PTX Series)**—Starting in Junos OS Release 18.4R1, support is extended to 64 add-path BGP routes. Currently Junos OS supports six add-path routes and BGP can advertise upto 20 add-path routes through policy configuration. This feature allows BGP to advertise 64 add-path routes and a second best ECMP path as a backup in addition to the multiple ECMP paths.

  To advertise all add-paths up to 64 add-paths or only equal-cost paths, include the **path-selection-mode** statement at the **[edit protocols bgp group *group-name* family *name* addpath send]** hierarchy level. You cannot enable both **multipath** and **path-selection-mode** at the same time.

  To advertise a second best ECMP path as a backup path in addition to the multiple ECMP paths include the **include-backup-path *bacup_path_name*** statement at the **[edit protocols bgp group *group-name* family *name* addpath send]]** hierarchy level.

  [See add-path.]

  [See include-backup-path.]

- **Support for BGP flowspec redirect to IP (PTX Series)**—Starting in Junos OS Release 18.4R1, BGP flow specification as described in BGP Flow-Spec Internet draft draft-ietf-idr-flowspec-redirect-ip-02.txt, *Redirect to IP Action* is supported. Redirect to IP action uses extended BGP community to provide traffic filtering options for DDoS mitigation in service provider networks. Legacy flow specification, as specified in the Internet draft draft-ietf-idr-flowspec-redirect-ip-00.txt, *BGP Flow-Spec Extended Community for Traffic Redirect to IP Next Hop*, redirect to IP uses the BGP nexthop attribute to support interoperability of devices. Junos OS advertises redirect to IP flow specification action using the extended community by default. Redirect to IP action allows you to divert matching flow specification traffic to a globally reachable address. This feature is required to support service chaining in virtual service control gateway (vSCG).

  To configure a static IPv4 flow specification route, include the **redirect *ipv4-address*** statement at the **[edit routing-options flow route then]** hierarchy level in the configuration.

  To configure a static IPv6 specification route, include the **redirect *ipv6-address*** statement at the **[edit routing-options flow route then]** hierarchy level in the configuration.

  To configure legacy flow specification include **legacy-redirect-ip-action** at the **[edit group *bgp-group* neighbor *bgp neighbor* family inet flow]** hierarchy level.

  To configure BGP to use VRF.inet.0 table to resolve VRF flow specification routes, include **secondary-independent-resolution** statement at the **[edit protocols bgp neighbor family flow]** hierarchy level.

  [See legacy-redirect-ip-action.]

  [See Configuring BGP Flow Specification Action Redirect to IP to Filter DDoS Traffic.]

Security

- **Support for Ingress Firewall Filters (PTX10001-20C)**—Starting with Junos OS Release 18.4R1, you can configure firewall rules to filter incoming network traffic based on a series of user-defined rules. You can specify whether to accept, permit, deny, or forward packets before it enters an interface. If a packet is accepted, you can also configure additional actions to perform on the packet, such as class-of-service (CoS) marking (grouping similar types of traffic together and treating each type of traffic as a class with its own level of service priority) and traffic policing (controlling the maximum rate of traffic sent or received). Only ingress firewall filters are supported. You configure firewall filters under the **[edit firewall]** hierarchy level. This feature was previously supported in an "X" release of Junos OS.

  [See Firewall Filters Overview.]

Services Applications

- **Support for IPv4 and IPv6 inline active flow monitoring (PTX10002-60C router)**—Starting in Junos OS Release 18.4R1 on PTX10002-60C routers, you can perform inline active flow monitoring for IPv4 and IPv6 traffic. Both IPFIX and version 9 templates are supported.

  [See Configuring Inline Active Flow Monitoring on PTX Series Routers.]

System Management

- **Copy files between the Junos VM and Linux host (PTX10008)**—In Junos OS Release 18.4R1, two commands are introduced on the Enhanced Automation variant of Junos OS for PTX10008 routers: **request vmhost copy jnode-to-vjunos** and **request vmhost copy vjunos-to-jnode**. These commands enable you to copy files from the Linux host to the Junos VM and vice versa.

  [See request vmhost copy jnode-to-vjunos and request vmhost copy vjunos-to-jnode.]

VPN

- **Support to control traceroute over Layer 3 VPN (PTX Series)**—Starting in Junos OS Release 18.4R1, in a Layer 3 VPN topology with **vrf-table-label** configured and multiple customer edge (CE) routers configured in the same VPN routing and forwarding (VRF) routing instance, when traceroute is performed to a remote provider edge (PE) router for a CE-facing network, the ICMP time exceeded packet determines the correct IP address as the source address.

  To control the traceroute over Layer 3 VPN topology with vrf-table-label configured and multiple CE routers configured in the same VRF, you can configure **allow-l3vpn-traceroute-src-select** at the**[edit system]** hierarchy level that determines the correct IP source address by reviewing the destination routing instance and destination IP address.

  [See allow-l3vpn-traceroute-src-select.]

SEE ALSO

Changes in Behavior and Syntax | 228

Changes in Behavior and Syntax

IN THIS SECTION

This section lists the changes in behavior of Junos OS features and changes in the syntax of Junos OS statements and commands from Junos OS main release and the maintenance releases for the PTX Series.

Release 18.4R3 Changes in Behavior and Syntax

Routing Protocols

- **Advertising /32 secondary loopback addresses to traffic engineering database as prefixes (ACX Series, EX Series, MX Series, PTX Series, QFX Series, and SRX Series)**—We've made changes to export multiple loopback addresses to the lsdist.0 and lsdist.1 routing tables as prefixes. This eliminates the issue of advertising secondary loopback addresses as router IDs instead of prefixes. In earlier releases, multiple secondary loopback addresses in the traffic engineering database were added to the lsdist.0 and lsdist.1 routing tables as part of node characteristics and advertised them as the router ID.

Release 18.4R2-S1 Changes in Behavior and Syntax

Software Defined Networking

- **Increase in the maximum value of delegation-cleanup-timeout (PTX Series)**—You can now configure a maximum of *2147483647* seconds as the delegation cleanup time for a Path Computation Client (PCC). This extends the time taken by the PCC to retain the last provided path over a PCEP session from the last session down time.

  With the increase in maximum value of **delegation-cleanup-timeout** from *600* to *2147483647* seconds, you can benefit during a Path Computation Element (PCE) failover, or other network issues that may disrupt the PCEP session with the main active stateful PCE.

  [See delegation-cleanup-timeout.]

Release 18.4R2 Changes in Behavior and Syntax

General Routing

- **User confirmation prompt for configuring the sub-options of request vmhost commands (MX Series and PTX series)**—While configuring the following **request vmhost** commands, the CLI now prompts you to confirm a **[yes,no]** for the sub-options also.
  - **request vmhost reboot**
  - **request vmhost poweroff**
  - **request vmhost halt**

In previous releases, the confirmation prompt was available for only the main options.

Interfaces and Chassis

- **New XML tag element <lacp-hold-up-state> added in show lacp interfaces XML display (PTX Series)**—In Junos OS Release 18.4R2, the **show lacp interfaces | display xml** command displays a new XML tag element **<lacp-hold-up-state>**. The **<lacp-hold-up-state>** displays the time interval before an interface changes state from down to up. In earlier Junos OS releases, the LACP hold-up the information for all interfaces was in a single **<lacp-hold-up-information>** XML tag. Now, the hold-up information for each interface is displayed in a separate **<lacp-hold-up-information>** XML tag.

MPLS

- **New debug statistics counter (PTX Series)**—The **show system statistics mpls** command has a new output field, called **Packets dropped, over p2mp composite nexthop**, to record the packet drops over composite point-to-multipoint next hops.

Network Management and Monitoring

- **Change in error severity (PTX10016)**—Starting in Junos OS Release 18.4R2, on PTX10016 routers, the severity of the FPC error, shown in the syslog as **PE Chip::FATAL ERROR!! from PE2[2]: RT: Clear Fatal if it is detected LLMEM Error MEM:llmem, MEMTYPE: 1**, is changed from fatal to non-fatal (or minor). In case of this error, only a message is displayed for information purpose. To view the error details, you can use the show commands **show chassis fpc errors** and **show chassis errors active**.

  [See show chassis fpc errors.]

Routing Policy and Firewall Filters

- **Error caused by firewall filters with syslog and accept action (PTX1000 or PTX Series routers with type 3 FPCs)**—In Junos OS Release 18.4R2, under rare circumstances, the host interface may stop sending packets and the connections to and from the peer might fail if an outbound firewall filter is configured with the **syslog** and **accept** actions. This condition applies to IPv4 and IPv6 traffic families. We recommends that you do not use the **syslog** and **accept** actions in the output filter for these systems.

  Here's a sample configuration (shows IPv4):

  ```
  set interfaces interface name unit unit family inet filter output name
  set firewall family inet filter name term 1 then syslog
  set firewall family inet filter name term 1 then accept
  ```

  [See PR 1354580.]

Release 18.4R1 Changes in Behavior and Syntax

Interfaces and Chassis

- **New option to configure IP address to be used when the Routing Engine is the current master**—Starting in Junos OS Release 18.4R1, a new option, **master-only**, is supported on routers with RE-MX-X6, RE-MX-X8, and RE-PTX-X8 Routing Engines at the following hierarchies:
  - **[edit vmhost interfaces management-if interface (0|1) family inet address *IPv4 address*]**
  - **[edit vmhost interfaces management-if interface (0|1) family inet6 address *IPv6 address*]**

  In routing platforms with dual Routing Engines and VM host support, the **master-only** option enables you to configure the IP address to be used for the VM host when the Routing Engine is the current master. The master Routing Engine and the backup Routing Engine can have independent host IP addresses configured. In releases before Junos OS Release 18.4R1, the same IP address is applied on the master and backup Routing Engines, resulting in configuration issues.

- **Support for creating Layer 2 logical interface independently (ACX Series, EX Series, MX Series, PTX Series, and QFX Series)**—In Junos OS Releases 18.4R1, 18.4R2, and later, PTX Series routers support creating Layer 2 logical interfaces independent of the Layer 2 routing-instance type. That is, you can configure and commit the Layer 2 logical interfaces separately and add the interfaces to the bridge domain or Ethernet VPN (EVPN) routing instance separately. Note that the Layer 2 logical interfaces work fine only when they are added to the bridge domain or EVPN routing instance.

  In earlier Junos OS releases, when you use a Layer 2 logical interface configuration (units with **encapsulation vlan-bridge** configuration), then you must add the logical interface as part of a bridge domain or EVPN routing instance for the commit to succeed.

Network Management and Monitoring

- **SNMP customization configuration introduced (PTX Series)**—As of Junos OS Release 18.4R1, the CLI configuration command **set snmp customization ether-stats-ifd-only** is introduced. When **ether-stats-ifd-only** is configured, the **show snmp mib walk etherstatsTable** command displays data only for physical interfaces (IFDs).

  [See customization (SNMP).]

- **No chassis alarm when power consumption by an FPC exceeds 90% or 100% of the allocated power budget**—Starting in Junos OS Release 18.4R1, the PTX5000 routers do not raise a chassis alarm in the following events:
  - Power consumption by an FPC exceeds 90% of the allocated power budget.
  - Power consumption by an FPC exceeds 100% of the allocated power budget (in this case, a system log is registered).

- **The NETCONF server omits warnings in RPC replies when the rfc-compliant statement is configured and the operation returns <ok/> (PTX Series)**—Starting in Junos OS Release 18.4R1, when you configure the **rfc-compliant** statement at the **[edit system services netconf]** hierarchy level to enforce certain

behaviors by the NETCONF server, the server must not return an RPC reply that encloses both an **<rpc-error>** element and an **<ok/>** element. If the operation is successful, but the server reply encloses one or more **<rpc-error>** elements of severity warning in addition to the **<ok/>** element, then the warnings are omitted. In earlier releases, or when the **rfc-compliant** statement is not configured, the NETCONF server might issue an RPC reply that encloses both an **<rpc-error>** element of severity warning and an **<ok/>** element.

- **Deque Dry Interrupt error severity changed to fatal**—Starting in Junos OS Release 18.4R1, on PTX5000 routers, we have changed the severity of the error Deque Dry Interrupt (error code: 0x2100dd) from major to fatal. By default, this error disables the Packet Forwarding Engine on the FPC. You can use the **show chassis fpc errors** command to view the default or user-configured action that resulted from the error.

  To resolve the error, restart the line card. If the error is still not resolved, open a support case using the Case Manager link at https://www.juniper .net/support/ or call 1-888-31 4-JTAC (within the United States) or 1-408-7 45-9500 (from outside the United States).

SEE ALSO

New and Changed Features | 220

Known Behavior | 232

Known Issues | 235

Resolved Issues | 238

Documentation Updates | 245

Migration, Upgrade, and Downgrade Instructions | 246

Known Behavior

IN THIS SECTION

This section contains the known behavior, system maximums, and limitations in hardware and software in Junos OS Release 18.4R3 for the PTX Series.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Interfaces and Chassis

- On PTX10001-20C routers, the **show interfaces** command might display different values for the input and output packets per second (pps) for host-bound packets.

General Routing

- When an FPC goes offline or restarts, a source FPC sends traffic to a destination FPC. The following error messages are seen and a corresponding alarm is set on the destination FPC. Specific to PTX10000, the transient alarm gets set when this condition occurs. The alarm clears later because the source FPC goes offline. **Apr 09 10:31:24 [TRACE] [asta] Apr 9 10:19:59 asta fpc4 Error (0x210613), module: PE Chip, type: Apr 09 10:31:24 [TRACE] [asta] Apr 9 10:19:59 asta fpc4 Cmerror Op Set: PE Chip: PE1[1]: FO:core intr: 0x00000010: Grant spray drop due to unspray-able condition error Apr 09 10:31:24 [TRACE] [asta] Apr 9 10:19:59 asta fpc4 Error (0x210614), module: PE Chip, type: Apr 09 10:31:24 [TRACE] [asta] Apr 9 10:19:59 asta fpc4 Cmerror Op Set: PE Chip: PE1[1]: FO:core intr: 0x00000008: Request spray drop due to unspray-able condition error** PR1268678
- PTX1000-M20C - DHCP binding issue with DHCP relay configuration might be seen. PR1442494
- The Routing Engine boots from the secondary disk when you:

  Press the reset button, on the RCB front panel, while Routing Engine is booting up but before Junos is up.

  - Upgrade software, by booting from the network using the **request vmhost reboot network** command, and the system fails to boot from the network.
  - Upgrade BIOS and the upgrade fails.
  - Reboot and the system hangs before Junos is up PR1344342
- The ingress interface and the mirror interface should have the same MTU or you must set a higher MTU on the mirror interface than on the ingress interface. PR1372321
- Currently, PTX1000-M20C supports 128,000 transit LSPs; however, in a failover scenario, Argus can support a maximum of 192,000 LSPs, which means 64,000 backup LSPs are active. In a failover scenario and MBB case, 256,000 LSPs are required, but the ASIC can handle a maximum of 192,000 after optimization, so there is a limitation with backup LSPs. PR1375780
- PTX1000 and MX Series sFlow sampling output has different VLAN priority in extended switch data fields with the same dual-tag configuration when egress sampling is configured, the difference is due to

the sequence in which sampling and mac-rewrite happens. In MX Series, MAC rewrite occurs after sampling, and in the case of PTX Series sampling, happens after MAC rewrite. PR1387468

- **set interfaces *interface-name* gigether-options fec <fec74/fec91/none>** configuration is not supported on Argus platform. PR1388140
- 100 percent traffic loss is seen on all streams from PTX10001 to MX240 Series of devices. PR1435069
- PTX10000 devices will learn source MAC information even when the traffic is explicitly dropped through the Ethernet switching filter. This is because learning event is triggered in source lookup block of the ASIC that is, before the filter rule is executed. Therefore, the learning event cannot be avoided. Learning event generated in PTX Series routers is not dependent on forwarding decisions taken in subsequent stages of ASIC pipeline. PR1436377

User Interface and Configuration

- **Auto-complete caution for QFX10002-60c and PTX10002-60c personalities**—Starting in Junos OS Release 18.4R1, for QFX10002-60c and PTX10002-60c personalities, do not use auto-complete to display the list of arguments for the **request system software delete** command. You must look for the package name using the **show system software** command and then explicitly type the software package name in the **request system software delete** command.

  [See request system software delete].

SEE ALSO

Known Issues

IN THIS SECTION

This section lists the known issues in hardware and software in Junos OS Release 18.4R3 for the PTX Series.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Class of Service (CoS)

- Core files are generated when ports are channelized and dechannelized repeatedly, without delay. PR1370781

General Routing

- Control packets might get dropped when the Packet Forwarding Engine experiences a heavy congestion. PR1163759
- On a PTX Series PIC with the CFP2-DCO-T-WDM transceiver installed, after repeated configuration rollback, the link sometimes takes a long time to come up. PR1301462
- When CFP2-DCO-T-WDM-1 plugged in PTX PIC, after FPC restart sometimes carrier frequency offset tca is raised even when tca is not enabled. PR1301471
- In specific case of semigraceful RCB reboot initiated by the internal shell command **vhclient init 0**, GRES takes longer to complete, that is, 3 minutes as opposed to 21 seconds. The regular CLI command **request vmhost reboot** (graceful) and a jack-out-jack-in of the Routing Engine (ungraceful) do not exhibit this delay. PR1312065
- On a PTX Series router with a third-generation FPC, the error message is displayed when the FPC goes online or offline. PR1322491

- On PTX Series platform, whenever FPC reboots, the following error message will be seen in the Packet Forwarding Engine syslog: **SCHED: Thread 57 (CMSNGFPC) ran for 2002 ms without yielding or [...LOG: Emergency] SCHED: Thread 50 (CMSNGFPC) aborted, hogged 8899 ms**. There is no functional impact so can be ignored. PR1343256
- On PTX Series platforms, NETCONF over SSH traffic through TCP port 830 might hit the host path queue that is unclassified. This can result in DDoS violations in the unclassified queue. PR1345744
- PTX3000 reports Chip to Chip Link (CCL) CRC errors while FPC3-SFF-PTX-1X goes offline using the CLI command or pressing an offline button. The syslog error is generated by an FPC just before it goes offline. It is observed that there is no detectable traffic loss.PR1348733
- When an aggregated Ethernet configuration is committed, then there will be errors seen which are harmless. PR1365355
- When TIC goes offline and comes back online, the MPLS bidirectional traffic flow might stop working. PR1367920
- User might not be able to stop the ZTP bootstrap, when a PTX10016 and PTX10008 router with more number of line cards is powered on with factory default configuration. PR1369959
- The DHCP relay functionality does not work on PTX10001-20C devices. The DHCP requests and the DHCP offers are snooped by the box, the snooping occurs through a firewall. The firewall snoops all the DHCP packets ingressing the default route table and all the offers and requests are punted unto the host/control-plane. When a DHCP client sends the DHCP request, it gets intercepted by the filter block and punted up to the control plane. Upon receiving this packet, control-plane unicast (relay) this packet to DHCP server. DHCP server responds back with a DHCP offer, which again gets intercepted by the firewall block and punted up. Upon receiving the DHCP offer, control plane broadcast this DHCP offer to the clients VLAN and eventually client receives the DHCP offer. PR1407476
- The rx_power value streamed to the telemetry server is the raw value (mW) returned directly from the transceiver driver. The Junos OS CLI value has been transformed in the transportd daemon into different units: (Rx input total power(0.01dBm). PR1411023
- The firewall counter for lo0 interface might not increase. PR1420560
- After changing the power feed(s), either turn off or turn on, **show chassis power** outputs do not match real condition and there are also incorrect syslog information recorded. PR1420571
- On FPC, P2 interface might stay down after maintenance. Issue is usually observed on links connected to another vendors equipment. PR1412126
- On PTX1000, PTX10000, PTX3000, PTX5000 with FPC3 Series, if the prefix entries configured in prefix-list exceeds the limit what the Packet Forwarding Engine chipset supports, some unexpected behavior might be observed (for example, the host-bound traffic drops) after performing change operation related to the prefix-list configuration (for example, add a prefix to prefix-list which is associated with filter). PR1426539
- Upgrade broadcom retimer firmware version d00e to de2e is automatic, t6e-pic driver will check broadcom retimer firmware version is de2e or not, if firmware is not at version de2e pic driver will do firmware

update for all retimers on gladiator PIC. This process will take up to 5 minutes, before firmware upgrade complete interface will stay in down state. PR1445473

- On PTX10000 platforms, FPC might restart if there is some corruption in BCM switch (a small internal Ethernet switch, instead of Packet Forwarding Engine) inside the FPC. It is a timing issue. The reason is that the PCIe speed configuration for BCM switch is not correct. PR1464119
- On PTX Series platforms, when EBUF parity error occurs on FPC, EBUF parity interrupt might not be observed and only iCRC error gets printed in log message. PR1466532
- On all Junos OS platforms, when DHCP relay is configured with **forward-only**, and DHCP client is terminated on logical tunnel interface that multiple logical interfaces under this lt- interface have a same VLAN, DHCP relay might fail to send OFFER messages. PR1471161

Interfaces and Chassis

- Upgrading Junos OS Release 14.2R5 and later maintenance releases and Junos OS Release 16.1 and later mainline releases with CFM configuration might cause the cfmd process to crash after upgrade. This is because of the presence of an old version of **/var/db/cfm.db**. PR1281073

MPLS

- On Junos OS platforms with transit chaining mode enabled, if Resource Reservation Protocol (RSVP) link/node protection is enabled and **sensor-based-stats** is used, a single-hop bypass label-switched path (LSP) next hop might not be installed in forwarding information base (FIB) even it is in routing information base (RIB). Hence, the single-hop bypass LSP might fail to forward traffic when needed. PR1401152

Routing Protocols

- With Bidirectional Forwarding Detection (BFD) configured on an aggregated Ethernet interface, if you disable/enable the aggregated Ethernet interface, then that interface and the BFD session might not come up. PR1354409

SEE ALSO

New and Changed Features | **220**

Changes in Behavior and Syntax | **228**

Known Behavior | **232**

Resolved Issues | **238**

Documentation Updates | **245**

Migration, Upgrade, and Downgrade Instructions | 246

Resolved Issues

IN THIS SECTION

This section lists the issues fixed in the Junos OS Release 18.4R3 for the PTX Series.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Resolved Issues: 18.4R3

Forwarding and Sampling

- The pfed might crash and not be able to come up on the PTX Series routers or TVP platforms. PR1452363

General Routing

- In a rare race condition, multiple interrupts are not handled properly on PTX Series platform with FPC3-PTX-U2 and FPC3-PTX-U3, that might generate a core file. This condition is difficult to reproduce. As a workaround, the interrupt code is optimized to avoid the unnecessary call to prevent the issue. PR1208536
- On the third-generation PTX Series routers FPCs such as PTX3000 or PTX5000 FPC3 and PTX1000, if the **protocols mpls no-propagate-ttl** command is configured, the MPLS TTL field can be reset to 255 in the packets where a label swap operation is performed. PR1287473
- On next generation Routing Engine, a failure of the hardware random number generator (HWRNG) will leave the system in a state where not enough entropy is available to operate. PR1349373
- Unsuccessful connection attempts will not be logged on the backup SPMB. PR1369731
- When a Routing Engine reboots and comes up again it sends gratuitous ARP packets to the internal interfaces in order to advertise its MAC address. These packets get in to the UKERN running on the FPC, which drops these packets. The messages seen here are printed just before dropping these packets. These error messages are harmless and do not disrupt working of any feature. PR1374372

- When the ingress and egress interfaces are of "aggregate" type on PTX10000, you might see syslog messages about **expr_get_local_pfe_child_ifl** and **flowtb_get_cpu_header_fields**. These messages has no impact; but they will crowd syslog files and syslog servers. PR1379227
- The agentd sensor transmits multiple interface telemetry statistics per FPC slot. PR1392880
- The port at FPC (for example, JNP10K-LC1101) might fail to come up. PR1409585
- In the fully loaded setup with many SFPs, some SNMP queries might experience response delay because of the higher priority daemons utilizing CPU resources. PR1411062
- The PTX1000 and PTX10002 might stop forwarding packets after the chassis-control process restarts. PR1414434
- A core file **core-olympus-fpc3-sevfpc.elf.0.tgz** is generated after GRES in PTX3000. PR1415145
- Packet Forwarding Engine wedge might be observed after issuing the **show forwarding-options load-balance** command. PR1422464
- An aggregated Ethernet interface does not come up with LACP enabled over the ccc circuit between R0 and R3. PR1424553
- When an interface is configured with jumbo frames support (for example, MTU = 9216), the effective MTU size for locally sourced traffic is 24 bytes less than the expected value. PR1428094
- Interface does not come up after interface flapping and FPC reboot. PR1428307
- Inline J-Flow might cause PECHIP major error. PR1429419
- Reclassification policy applied on the route prefixes might not work on PTX Series platforms. PR1430028
- The l2cpd process might crash and generate a core file when the interfaces flap. PR1431355
- IPFIX Flow timestamp is not matching with NTP synchronized system time. PR1431498
- **SIB Link Error** detected on a specific Packet Forwarding Engine might cause complete service impact. PR1431592
- Traffic loss might be seen on the PTX10000 platforms using LC1105 line card. PR1433300
- The scaled filter might drop packets with the **flt.Dispatcher.flt_err error** on the PTX Series routers. PR1433648
- IPv6 neighbor solicitation packets are dropped on PTX Series routers. PR1434567
- Routing Engine switchover does not work as expected while SSD failure occurs. PR1437745
- On PTX10002, **No chassis alarm** is raised when a PEM is removed or power off to PEM. PR1439198
- CPU might hang or interface might be stuck down on a particular 100-Gigabit Ethernet port on PTX Series routers. PR1440526
- Interfaces on PTX Series routers might not come up after FPC restart or port flap. PR1442159
- The KRT queue might be stuck when more than 65000 IPv6 labeled-unicast routes are received on BGP-LU IPv6 session that is configured on PTX10000 Series platform. PR1442760

- BCM FW needs to be upgraded to DE2E. PR1445473
- The jdhcpd process might crash after issuing the **show access-security router-advertisement-guard** command. PR1446034
- Egress sampling for sflow might stop working for more than 8 interfaces on PTX Series platforms. PR1448778
- Currently, IS-IS is sending system host-name instead of system-id in OC paths in lsdb or adjacency xpaths in periodic streaming and on-change notification. PR1449837
- Interfaces might flap forever after deleting the interface disable configuration. PR1450263
- FPC generates **Voltage Tolerance Exceeded**, a major alarm for EACHIP 2V5 sensors. PR1451011
- Firewall filter applied at interface level might not work when MPLS label is present in certain scenarios. PR1452716
- The interface might not come up after flapping on PTX3000/PTX5000. PR1453217
- The FPC might crash when the severity of error is modified. PR1453871
- Traffic silently drops when interfaces flap after the DRD is auto-recovered. PR1459698
- The forwarding option is missed in routing instance type. PR1460181
- Hardware failure in CB2-PTX causes traffic interruption. PR1460992
- FPC might restart during run time on PTX10000 platforms. PR1464119
- EBUF parity interrupt is not seen on PTX Series platforms. PR1466532
- Packet Forwarding Engine error logs **prds_packet_classify_notification: Failed to find fwd nh for flabel 48** might be reported when IGMP packets are sampled on PTX5000 platform. PR1466995
- IPv6 traffic over Layer 3 VPN with **vrf-table-label** might fail. PR1466659
- Optics measurements might not be streamed for interfaces of a PIC over JTI. PR1468435

Infrastructure

- Junos packages may have incorrectly registered as "unsupported". PR1427344
- FPC might reboot if jlock hog occurs on all Junos VM based platforms. PR1439906

Interfaces and Chassis

- After member interface flapping AE remains down on 5X100GE DWDM CFP2-ACO PIC. PR1429279

Layer 2 Ethernet Services

- DHCP request might get dropped in DHCP relay scenario. PR1435039

MPLS

- RSVP Path error received on a new path calculated by CSPF is not treated as optimization when CSPF is computed and optimization retry is not honoring 2^retry + rsvp-error-hold-time. PR1416948

- Traffic loss might be seen after LDP session flaps rapidly. PR1436119
- The transit packets might be dropped if an LSP is added or changed on PTX Series routers. PR1447170

Platform and Infrastructure

- Use groups re0/re1 to configure the Routing Engine specific management interface. PR1375012
- Packet drops, replication failure or ksyncd crashes might be seen on the logical system of a Junos OS device after Routing Engine switchover. PR1427842
- REST API process will get non-responsive when a number of requests start coming at a high rate. PR1449987

Routing Protocols

- Routing Engine-based micro BFD packets do not go out with configured source IP when the interface is in logical system. PR1370463
- PTX Series device cannot intercept PIM BSR message. PR1419124
- Route churn might be seen after changing **maximum-prefixes** configuration from value A to value B. PR1423647
- The rpd might crash with SRTE configuration change. PR1442952
- The rpd CPU utilization is at 100 percent due to incorrect path-selection. PR1446861
- L3 VPN PE-CE link protection exhibits unexpected behavior on PTX10000 platforms. PR1447601
- On all Junos OS platforms, SSH login from automation tools to the Junos OS device is not successful if the username is configured both as a local user and also on a remote RADIUS/TACACS server. PR1454177

VPNs

- In a specific CE device environment in which asynchronous-notification is used, after the link between the PE and CE devices goes up, the L2 circuit flaps repeatedly. PR1282875
- Memory leak might be seen if PIM messages are received over an MDT (mt- interface) in draft-rosen MVPN scenario. PR1442054

Resolved Issues: 18.4R2

General Routing

- On PTX Series, multicast traffic packet drop of more than 50 percent is seen when a first-generation or second-generation FPC is used in the same chassis with a third-generation FPC. PR1339481
- Disable reporting of correctable single-bit errors on Hybrid Memory Cube (HMC) and prevent a major alarm. PR1384435
- Packet drop might be seen in lower-priority queues on PTX Series routers or on the QFX10000 line of switches. PR1385454

- The **show chassis fpc** command on PTX1000 routers and the PTX10000 line of routers shows incorrect buffer memory utilization. PR1397612
- High jsd or na-grpcd CPU usage might be seen even if JET or JTI is not used. PR1398398
- CPU overuse might be observed on PTX Series routers or on the QFX10000 line of switches. PR1399369
- The DHCPv6 relay-reply packet might be dropped by the DHCP relay. PR1399683
- Only one Packet Forwarding Engine could be disabled on an FPC with multiple Packet Forwarding Engines in an error or wedge condition. PR1400716
- The TCP connection between ppmd and ppman might be dropped because of a kernel issue. PR1401507
- Log message **JAM HW data base open failed for ptx5kpic_3x400ge-cfp8** during commit. PR1403071
- Incorrect mem stat message is seen in FPC logs of PTX Type 1 FPC. PR1404088
- RPT TPTX REGRESSIONS: While checking ethernet-switch verification ethernet-switch statistics is not in expected range. PR1404365
- On a PTX3000, FPCs are not able to come online for tens of minutes after a reboot of the chassis. PR1404611
- ZTP upgrade might fail if there are more than one 10-Gigabit Ethernet interfaces connected to the DHCP server. PR1404832
- On PTX3000 or PTX5000, the backup CB's chassis environment status is always**Testing** you remove and reinsert the backup CB. PR1405181
- 100-gigabit SR4 optics with part number 740-061405 should be displayed as **QSFP-100G-SR4-T2**. PR1405399
- No chassis alarm is raised on PTX1000 when the PEM is removed or power lost to PEM. PR1405430
- Layer2 VPN might flap repeatedly when the link between the PE device and CE device is coming up. PR1407345
- The Packet Forwarding Engine might get disabled unexpectedly due to a auto correctable non-fatal hardware error on PTX Series routers or QFX10002, QFX10008, or QFX10016. PR1408012
- openconfig-network-instance:network-instances support for IS-IS must be hidden unless supported. PR1408151
- PTX Inline J-flow: FPC went offline when sampling rate was changed at runtime to 80,000; dcpfe core file was also generated. PR1409502
- The CPU might be overused by jsd process in JET scenario. PR1409639
- Hostname is not updated at the FPC shell after a system configuration change on the CLI. PR1412318
- Junos PCC might reject PCUpdate/PCCreate message if there is metric type other than type 2. PR1412659
- The Layer 2 circuit egress PE device might drop the traffic in a FAT+CW-enabled Layer 2 circuit scenario when another FAT+CW enabled Layer 2 circuit PW flaps. PR1415614

- Traffic loss could be seen for the duration of the hold-time down timer when an interface, with the hold-time down timer configured, flaps. with hold-time down timer configured. PR1418425
- RX alarms are not set according to the threshold value configured for the DCO Tunable Optics. PR1419204
- An interface might go to down state on a QFX10000 or PTX10000 platform. PR1421075
- Virtual Chassis might become unstable and fxpc core files might be generated when there are a lot of configured filter entries. PR1422132
- 4x10G interfaces on the third-generation FPCs on PX3000 or PTX5000 might not come up after frequently flap ping for a long of time. PR1422535
- While committing a huge configuration, the user sees the error **error: mustd trace init failed**.PR1423229
- A Specific interface on the P3-15-U-QSFP28 PIC card remains down until another interface comes up. PR1427733

Infrastructure

- The **request system recover oam-volume** command might fail on PTX Series. PR1425003

Interfaces and Chassis

- The syslog message **/kernel: %KERN-3: pointchange for flag 04000000 not supported on IFD aex** upon LFM related configuration commit on aggregated Ethernet interfaces. PR1423586
- Some ports on PTX Series routers might remain down after rebooting the FPC or the device is rebooted at the remote side. PR1429315

MPLS

- An RSVP-signaled LSP might stay in down state after a link in the path flaps. PR1384929
- The rpd might crash when an LDP route with an indirect next-hop is deleted. PR1398876
- LDP routes might flap if committing any configuration changes. PR1416032
- Bypass dynamic RSVP LSP tears down too soon when being used for protecting an LDP LSP with **dynamic-rsvp-lsp** statement. PR1425824

Platform and Infrastructure

- Some files are missing during log archiving. PR1405903

Routing Protocols

- Rpd core files are seen on the backup Routing Engine during neighborship flapping when the **authentication-key** option with a size larger than 20 characters is used. PR1394082
- Syslog message is seen whenever the prefix SID coincides with the node SID. PR1403729
- An rpd memory leak might be seen in an IS-IS segment routing scenario. PR1404134

- Dynamic routing protocol flapping with VM host Routing Engine switchover on NG-RE. PR1415077
- Rpd might crash with ospf overload configuration. PR1429765

Resolved Issues: 18.4R1

Infrastructure

- The FPC might go down on some VM-host-based PTX Series or QFX Series devices. PR1367477

Interfaces and Chassis

- **PE Chip:pe0[0]: IPW: oversize_drop error** causes a major error on FPC. PR1375030

MPLS

- In Junos OS Release 18.2X75, IPv6 routes are dead in mpls.0 table S=0 leads to traffic loss in v6-indirect next-hop stitching. PR1355878
- LSP with **auto-bandwidth** enabled goes down as a result of an HMC error. PR1374102
- Bypass LSP is taking the same SRLG colored path. PR1387497

Platform and Infrastructure

- On a PTX1000, upgrade from Junos OS Release 16.1X65-D45 to Junos OS Release 17.3-20170721 fails frequently when sampling is enabled. PR1296533
- Repeated log messages **%PFE-3 fpcX expr_nh_index_tree_ifl_get** and **expr_nh_index_tree_ipaddr_get** are observed when the sampling packet is discarded with the log (or syslog) statement configured under the firewall filter. PR1304022
- The status LED on the chassis remains unlit on the QFX10002-60C. PR1332991
- The traffic-class-count values in a filter configured with the **scale-optimized** statement, are not incrementing. PR1334580
- Packet might be dropped by RPF during a Routing Engine switchover. PR1354285
- The host interface might stop sending packets on a PTX Series router with FPC3 or PTX1000 when you use an outbound firewall filter with **syslog** option. PR1354580
- PTX1000-M20C: FRR link-protection convergence time. PR1355953
- Traffic is still forwarded through the member link of an aggregated Ethernet bundle interface even with **Link-Layer-Down** flag set. PR1365263
- JSA10899 2018-10 Security Bulletin: Junos OS: Next-hop index allocation failed: private index space exhausted as a result of incoming ARP requests to the management interface (CVE-2018-0063). PR1360039
- The 'Normal discards' Packet Forwarding Engine statistics traffic counter might increase at a higher rate when Inline-Jflow or sFlow is enabled. PR1368208

- slu.l2_domain_lookup_failure traps might be observed when using sampling on FPC-P1/FPC-P2. PR1368381
- The IPLC card might take a long time to come up. PR1368637
- The 'commit or commit check operation' might fail because of the error **cannot have lsp-cleanup-timer without lsp-provisioning**.PR1368992
- On PTX10001 and ACX6360, 100G-LR4 optics and 100G-ER4 optics are not supported. PR1371590
- Packets might be dropped after a filter is deleted from an interface. PR1372957
- Inline BFD keeps flapping when inline samping is configured. PR1376509
- Traffic might be dropped on third-generation FPCs on PTX Series routers. PR1378392
- Layer 3 VPN traffic might be dropped because one core-facing interface is down. PR1380783
- BFD sessions bounced FPCs that have not been taken offline. PR1383703
- Packet Forwarding Engine-based local repair does not happen for IP routes pointing to a unilist of composites with Indirect next hops. PR1383965
- CPSM daemon memory leak is observed ion VM host. PR1387903
- BFD flaps are seen on PTX or QFX10000 platforms with inline BFD. PR1389569
- Forwarding issue on mixed link-speed aggregated Ethernet interface after FPC reloads. PR1390417
- High jsd or na-grpcd CPU usage might be seen even when JET or JTI is not used. PR1398398

SEE ALSO

New and Changed Features | 220
Changes in Behavior and Syntax | 228
Known Behavior | 232
Known Issues | 235
Documentation Updates | 245
Migration, Upgrade, and Downgrade Instructions | 246

Documentation Updates

There are no errata or changes in Junos OS Release 18.4R3 documentation for PTX Series.

SEE ALSO

Migration, Upgrade, and Downgrade Instructions

IN THIS SECTION

This section contains the procedure to upgrade Junos OS, and the upgrade and downgrade policies for Junos OS for the PTX Series. Upgrading or downgrading Junos OS might take several hours, depending on the size and configuration of the network.

Basic Procedure for Upgrading to Release 18.4

When upgrading or downgrading Junos OS, use the **jinstall** package. For information about the contents of the **jinstall** package and details of the installation process, see the Installation and Upgrade Guide. Use other packages, such as the **jbundle** package, only when so instructed by a Juniper Networks support representative.

NOTE: Back up the file system and the currently active Junos OS configuration before upgrading Junos OS. This allows you to recover to a known, stable environment if the upgrade is unsuccessful. Issue the following command:

```
user@host> request system snapshot
```

> **NOTE:** The installation process rebuilds the file system and completely reinstalls Junos OS. Configuration information from the previous software installation is retained, but the contents of log files might be erased. Stored files on the router, such as configuration templates and shell scripts (the only exceptions are the juniper.conf and ssh files), might be removed. To preserve the stored files, copy them to another system before upgrading or downgrading the routing platform. For more information, see the Junos OS Administration Library.

> **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.

To download and install Junos OS Release 18.4R2:

1. Using a Web browser, navigate to the **All Junos Platforms** software download URL on the Juniper Networks webpage:

   https://www.juniper.net/support/downloads/

2. Select the name of the Junos OS platform for the software that you want to download.

3. Select the release number (the number of the software version that you want to download) from the **Release** drop-down list to the right of the Download Software page.

4. Select the **Software** tab.

5. In the **Install Package** section of the **Software** tab, select the software package for the release.

6. Log in to the Juniper Networks authentication system by using the username (generally your e-mail address) and password supplied by Juniper Networks representatives.

7. Review and accept the End User License Agreement.

8. Download the software to a local host.

9. Copy the software to the routing platform or to your internal software distribution site.

10. Install the new **jinstall** package on the router.

> **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.

All customers except the customers in the Eurasian Customs Union (currently comprised of Armenia, Belarus, Kazakhstan, Kyrgyzstan, and Russia) can use the following package:

`user@host>` **request system software add validate reboot *source*/junos-install-ptx-x86-64-18.4R2.9.tgz**

Customers in the Eurasian Customs Union (currently comprised of Armenia, Belarus, Kazakhstan, Kyrgyzstan, and Russia) can use the following package (Limited encryption Junos OS package):

`user@host>` **request system software add validate reboot *source*/junos-install-ptx-x86-64-18.4R2.9-limited.tgz**

Replace the ***source*** with one of the following values:

- ***/pathname***—For a software package that is installed from a local directory on the router.
- For software packages that are downloaded and installed from a remote location:
  - **ftp://*hostname/pathname***
  - **http://*hostname/pathname***
  - **scp://*hostname/pathname***

The **validate** option validates the software package against the current configuration as a prerequisite to adding the software package to ensure that the router reboots successfully. This is the default behavior when the software package being added is a different release.

Adding the **reboot** command reboots the router after the upgrade is validated and installed. When the reboot is complete, the router displays the login prompt. The loading process might take 5 to 10 minutes.

Rebooting occurs only if the upgrade is successful.

> **NOTE:** You need to install the Junos OS software package and host software package on the routers with the RE-PTX-X8 Routing Engine. For upgrading the host OS on this router with VM Host support, use the junos-vmhost-install-x.tgz image and specify the name of the regular package in the **request vmhost software add** command. For more information, see the VM Host Installation topic in the Installation and Upgrade Guide.

NOTE: After you install a Junos OS Release 18.4 **jinstall** package, you cannot return to the previously installed software by issuing the **request system software rollback** command. Instead, you must issue the **request system software add validate** command and specify the **jinstall** package that corresponds to the previously installed software.

NOTE: Most of the existing **request system** commands are not supported on routers with RE-PTX-X8 Routing Engines. See the VM Host Software Administrative Commands in the Installation and Upgrade Guide.

Upgrade and Downgrade Support Policy for Junos OS Releases

Support for upgrades and downgrades that span more than three Junos OS releases at a time is not provided, except for releases that are designated as Extended End-of-Life (EEOL) releases. EEOL releases provide direct upgrade and downgrade paths—you can upgrade directly from one EEOL release to the next EEOL release even though EEOL releases generally occur in increments beyond three releases.

You can upgrade or downgrade to the EEOL release that occurs directly before or after the currently installed EEOL release, or to two EEOL releases before or after. For example, Junos OS Releases 17.4, 18.1, and 18.2 are EEOL releases. You can upgrade from Junos OS Release 17.1 to Release 17.2 or from Junos OS Release 17.1 to Release 17.3. However, you cannot upgrade directly from a non-EEOL release that is more than three releases ahead or behind.

To upgrade or downgrade from a non-EEOL release to a release more than three releases before or after, first upgrade to the next EEOL release and then upgrade or downgrade from that EEOL release to your target release.

For more information about EEOL releases and to review a list of EEOL releases, see https://www.juniper.net/support/eol/junos.html.

Upgrading a Router with Redundant Routing Engines

If the router has two Routing Engines, perform a Junos OS installation on each Routing Engine separately to avoid disrupting network operation as follows:

1. Disable graceful Routing Engine switchover (GRES) on the master Routing Engine and save the configuration change to both Routing Engines.
2. Install the new Junos OS release on the backup Routing Engine while keeping the currently running software version on the master Routing Engine.

3. After making sure that the new software version is running correctly on the backup Routing Engine, switch over to the backup Routing Engine to activate the new software.
4. Install the new software on the original master Routing Engine that is now active as the backup Routing Engine.

For the detailed procedure, see the Installation and Upgrade Guide.

SEE ALSO

Junos OS Release Notes for the QFX Series

IN THIS SECTION

These release notes accompany Junos OS Release 18.4R3 for the QFX Series. They describe new and changed features, limitations, and known and resolved problems in the hardware and software.

You can also find these release notes on the Juniper Networks Junos OS Documentation webpage, located at https://www.juniper.net/documentation/product/en_US/junos-os.

New and Changed Features

IN THIS SECTION

This section describes the new features and enhancements to existing features in the Junos OS main release and the maintenance releases for QFX Series.

> **NOTE:** The following QFX Series platforms are supported in Release 18.4R3: QFX5100, QFX5110, QFX5120, QFX5200, QFX5210, QFX10002, QFX10008, and QFX10016. Junos on White Box is also supported in Release 18.4R1.

New and Changed Features: 18.4R3

There are no new features in Junos OS Release 18.4R3 for QFX Series.

New and Changed Features: 18.4R2

EVPNs

- **Layer 2 and Layer 3 VXLAN gateways (EX4650 and QFX5120 switches)**—Starting with Junos OS Release 18.4R2, you can deploy EX4650 and QFX5120 switches as follows:

  - As a Layer 2 VXLAN gateway, or a Layer 2 and Layer 3 VXLAN gateway in an EVPN overlay network
  - (QFX5120 switches only) As a Layer 2 VXLAN gateway in an Open vSwitch Database (OVSDB) overlay network

  VXLAN is an overlay technology that allows you to stretch Layer 2 connections over an intervening Layer 3 network by encapsulating (tunneling) Ethernet frames in a VXLAN packet that includes IP addresses. Using VXLANs to connect Layer 2 domains over a Layer 3 network means that you do not need to use the Spanning Tree Protocol (STP) to converge the topology (so no links are blocked) but can use more robust routing protocols in the Layer 3 network instead.

[See Understanding VXLANs.]

- **EVPN control plane and VXLAN data plane support (EX4650 and QFX5120 switches)**—Starting with Junos OS Release 18.4R2, EX4650 and QFX5120 switches support EVPN-VXLAN. By using a Layer 3 IP-based underlay network coupled with an EVPN-VXLAN overlay network, you can place endpoints anywhere in the network and remain connected to the same logical Layer 2 network.

  EVPN-VXLAN is commonly deployed over the following physical underlay architectures:

  - A two-layer IP fabric that includes spine devices (Layer 3 VXLAN gateways) and leaf devices (Layer 2 VXLAN gateways). You can deploy EX4650 and QFX5120 switches as spine or leaf devices in this fabric.
  - A one-layer IP fabric that includes leaf devices that function as both Layer 2 and Layer 3 VXLAN gateways. You can deploy EX4650 and QFX5120 switches as leaf nodes in this fabric.

  [See Understanding EVPN with VXLAN Data Encapsulation.]

- **EVPN pure type-5 route support (EX4650 and QFX5120 switches)**—Starting with Junos OS Release 18.4R2, you can configure pure type-5 routing in an EVPN-VXLAN environment. Pure type-5 routing is used when the Layer 2 domain does not exist at the remote data centers. A pure type-5 route advertises the summary IP prefix and includes a BGP extended community called a router MAC, which carries the MAC address of the sending switch and provides next-hop reachability for the prefix. To configure pure type-5 routing, include the **ip-prefix-routes advertise direct-nexthop** statement at the **[edit routing-instances routing-instance-name protocols evpn]** hierarchy level. To enable two-level equal-cost multipath (ECMP) next hops in an EVPN-VXLAN overlay network, you must also include the **overlay-ecmp** statement at the **[edit forwarding-options vxlan-routing]** hierarchy level.

  [See ip-prefix-routes.]

- **Selective multicast forwarding and SMET support in EVPN-VXLAN (QFX5110 and QFX5120 switches)**—Starting in Junos OS Release 18.4R2, Junos OS supports selective multicast Ethernet forwarding in an EVPN-VXLAN network. IGMP snooping enabled devices on a bridge domain monitor and selectively forward traffic from the access interface to the core. Devices that support selective multicast Ethernet forwarding do not send multicast traffic to all devices. Instead, they replicate and forward multicast traffic only to the devices that indicate an interest. This feature is supported on a spine-and-leaf topology where the network can consist of a mix of devices that support selective multicast Ethernet and those that do not support this feature.

  [See Selective Multicast Forwarding.]

- **BPDU protection in EVPN-VXLAN (QFX5100, QFX5110, and QFX5200 switches)**—Starting in Junos OS Release 18.4R2, you can enable BPDU protection in an EVPN-VXLAN configuration. With a spanning tree protocol configured on an edge port, you can enable BPDU protection. If a BPDU is received on the edge port, the edge port is disabled and it stops forwarding all traffic. You can also configure BPDU protection on VXLAN interfaces without a spanning tree protocol configured, or enable BPDU protection and have other traffic forwarded. Only the BPDUs are dropped, and all other traffic is forwarded. Additionally, you can unblock an interface either automatically or manually.

- To enable BPDU protection with RSTP on an edge port on access and leaf devices:

  set protocols rstp interface *interface-name* edge

  set protocols rstp bpdu-block-on-edge

- To enable BPDU protection with a spanning tree protocol on access and leaf devices:

  set protocols layer2-control bpdu-block interface *interface-name*

- To enable BPDU protection but still forward other traffic on access and leaf devices:

  set protocols layer2-control bpdu-block interface *interface-name* drop

- To automatically unblock an interface using an expiry timer on access and leaf devices:

  set protocols layer2-control bpdu-block disable-timeout *time in seconds*

- To manually unblock an interface on access and leaf devices:

  run clear error bpdu interface all

- **Assisted replication in data centers with EVPN-VXLAN overlay networks (QFX Series switches)**—Starting in Junos OS Release 18.4R2, QFX Series switches support assisted replication (AR) in data centers with EVPN-VXLAN networks to optimize replication of BUM traffic being forwarded into the EVPN core. Instead of flooding BUM traffic using ingress replication, devices configured as AR leaf devices forward the traffic to an AR replicator device that can better handle the replication load, and only the AR replicator device replicates and forwards the traffic to the overlay tunnels. You can configure switches in the QFX10000 line as AR replicator devices and any QFX Series devices that support EVPN-VXLAN as AR leaf devices.

  AR devices advertise EVPN Type 3 (Inclusive Multicast Ethernet Tag [IMET]) routes that include special AR Type and Flags fields indicating AR device roles. The network can also include devices that do not support AR (regular network virtualization edge (RNVE) devices), which ignore AR routes and use ingress replication to forward BUM traffic toward the EVPN core.

  You can configure AR with IGMP snooping to further optimize BUM traffic replication and forwarding.

  To enable assisted replication and configure devices into AR replicator or AR leaf roles, use the **assisted-replication** configuration statement at the **[edit protocols evpn]** hierarchy level.

Software Defined Networking

- **Layer 2 and Layer 3 VXLAN gateways (EX4650 and QFX5120 switches)—**Starting with Junos OS Release 18.4R2, you can deploy EX4650 and QFX5120 switches as follows:

  - As a Layer 2 VXLAN gateway, or a Layer 2 and Layer 3 VXLAN gateway in an EVPN overlay network
  - (QFX5120 switches only) As a Layer 2 VXLAN gateway in an OVSDB overlay network

  VXLAN is an overlay technology that allows you to stretch Layer 2 connections over an intervening Layer 3 network by encapsulating (tunneling) Ethernet frames in a VXLAN packet that includes IP addresses. Using VXLANs to connect Layer 2 domains over a Layer 3 network means that you do not

need to use the Spanning Tree Protocol (STP) to converge the topology (so no links are blocked) but can use more robust routing protocols in the Layer 3 network instead.

[See Understanding VXLANs.]

- **OVSDB support with VMware NSX for vSphere (QFX5120 switches)**—Starting with Junos OS Release 18.4R2, the Open vSwitch Database (OVSDB) management protocol provides a control plane through which an NSX controller can provision QFX5120 switches. In an environment in which NSX Release 6.4.5 or later is deployed, an NSX controller and these switches can exchange control and statistical information, thereby enabling virtual machine (VM) traffic from entities in a virtualized network to be forwarded to entities in a physical network and the reverse.

  The physical underlay network over which OVSDB-VXLAN is commonly deployed is a two-layer IP fabric that includes spine and leaf devices. The spine devices function as Layer 3 VXLAN gateways, and the leaf devices function as Layer 2 VXLAN gateways. You can deploy QFX5120 switches as leaf devices in this fabric.

  [See Understanding the OVSDB Protocol Running on Juniper Networks Devices.]

New and Changed Features: 18.4R1

Authentication, Authorization, and Accounting (AAA)

- **Support for password change policy enhancement (QFX Series)**—Starting in Junos OS Release 18.4R1, the Junos OS password change policy for local user accounts is enhanced to comply with additional password policies. As part of the policy improvement, you can configure the following:

  - **maximum-lifetime-value**—The maximum duration of a password. The password expires after the maximum is reached.
  - **minimum-lifetime-value**—The minimum duration of a password. You cannot change the password until the minimum duration is reached.

  [See password.]

Class of Service (CoS)

- **Class of service support on VXLAN interfaces (QFX10000)**—Starting with Junos OS 18.4R1, standard class of service (CoS) features--classifiers, rewrite rules, and schedulers--are supported on VXLAN interfaces on the QFX10000 line of switches.

  [See Understanding CoS on OVSDB-Managed VXLAN Interfaces.]

- **Class of service support on VXLAN interfaces (QFX5100)**—Starting with Junos OS 18.4R1, standard class of service (CoS) features - classifiers, rewrite rules, and schedulers - are supported on VXLAN interfaces on QFX5100 switches.

  [See Understanding CoS on OVSDB-Managed VXLAN Interfaces.]

EVPNs

- **Support for graceful restart on EVPN-VXLAN (QFX Series)**—Starting in Junos OS Release 18.4R1, Junos OS supports graceful restart on EVPN-VXLAN on EX9200 and QFX Series switches and MX Series routers. Graceful restart allows the device to recover from a routing process restart or Routing Engine switchover without nonstop active routing (NSR) enabled.

  [See NSR and Unified ISSU Support for EVPN Overview.]

- **Selective multicast forwarding and SMET support in EVPN-VXLAN (QFX10002, QFX10008, and QFX10016)**—Starting in Junos OS Release 18.4R1, Junos OS supports selective multicast forwarding in a centrally EVPN-VXLAN network. Devices on a bridge domain with IGMP snooping enabled will monitor traffic on the access interfaces and selective forwarding towards the core. Devices that support selective multicast forwarding replicate and forward multicast traffic only to other interested devices. This feature is supported on a centrally-routed spine-and-leaf topology on QFX 10000 switches where the network can consist of a mix of SMET supported and non-SMET supported devices. This is achieved because the ingress devices can flood multicast traffic to the non-SMET capable devices while selectively forwarding the traffic among SMET capable devices. The ingress device can determine whether a device on the EVPN network is capable of supporting SMET by the presence or absences of the multicast flag community in a EVPN type 3 route message and will forward the traffic accordingly. Thus, the data center fabric can be upgraded in phases without disrupting existing multicast operations.

  [See Selective Multicast Forwarding .]

- **Support for VMTO for ingress traffic (QFX Series)**—Starting in Junos OS Release 18.4R1, you can configure a leaf or spine device that is configured as a Layer 3 gateway to support virtual machine traffic optimization (VMTO) for ingress traffic. VMTO eliminates the unnecessary ingress routing to default gateways when a virtual machine is moved from one data center to another.

  To enable VMTO, configure **remote-ip-host** routes at the **[edit routing-instances routing-*instance-name* protocols evpn]** hierarchy level. You can also filter out the unwanted routes by configuring an import policy under the **remote-ip-host routes** option.

  [See Configuring EVPN Routing Instances.]

- **Support for multihomed proxy advertisement (QFX Series)**—Starting in Junos OS Release 18.4R1, Junos OS now provides enhanced support to proxy advertise the MAC address and IP route entry from all leaf devices that are multihomed to a CE device. This can prevent traffic loss when one of the connection to the leaf device fails. To support the multihomed proxy advertisement, all multihomed PE devices should have the same multihomed proxy advertisement bit value. The multihomed proxy advertisement feature is enabled by default, and Junos OS uses the default multihomed proxy advertisement bit value of 0x20.

  [See EVPN Multihoming Overview.]

- **Layer 2 and 3 families, encapsulation types, and VXLAN on the same physical interface (QFX5100, QFX5110, and QFX5200 switches)**—You can configure and commit the following on a physical interface of a QFX5100, QFX5110, or QFX5200 switch in an EVPN-VXLAN environment:

- Layer 2 bridging (**family ethernet-switching**) on any logical interface unit number (unit 0 and any nonzero unit number).
- VXLAN on any logical interface unit number (unit 0 and any nonzero unit number).
- Layer 2 bridging (**family ethernet-switching** and **encapsulation vlan-bridge**) on different logical interfaces (unit 0 and any nonzero unit number).
- Layer 3 IPv4 routing (**family inet**) and VXLAN on different logical interfaces (unit 0 and any nonzero unit number).

For these configurations to be successfully committed and to work properly, you must specify the **encapsulation flexible-ethernet-services** configuration statement at the physical interface level—for example, **set interfaces xe-0/0/5 encapsulation flexible-ethernet-services**.

This feature was previously introduced in Junos OS Release 18.1R3.

[See Understanding Flexible Ethernet Services Support With EVPN-VXLAN.]

- **Automatically generated Ethernet segment identifiers in EVPN-VXLAN and EVPN-MPLS networks (MX240, MX480, QFX5100, and QFX5110)—**Starting in Junos OS Release 18.4R1, you can configure aggregated Ethernet interfaces and aggregated Ethernet logical interfaces to automatically derive Ethernet segment identifiers (ESIs) from the Link Aggregation Control Protocol (LACP) configuration. This feature is supported in the following environments:
  - On Juniper Networks devices that are multihomed in active-active mode in an EVPN-VXLAN overlay network.
  - On Juniper Networks devices that are multihomed in active-standby or active-active mode in an EVPN-MPLS overlay network.

  [See Understanding Automatically Generated and Assigned ESIs in EVPN Networks.]

- **MAC filtering, storm control, and port mirroring support in EVPN-VXLAN overlay networks (QFX5100 and QFX5110 switches)**—QFX5100 and QFX5110 switches support the following features in an EVPN-VXLAN overlay network:
  - MAC filtering
  - Storm control
  - Port mirroring and analyzers

  [See MAC Filtering, Storm Control, and Port Mirroring Support on EVPN-VXLAN Interfaces.]

- **MAC filtering and storm control support in EVPN-VXLAN overlay networks (QFX10002 and QFX10008 switches)**—QFX10002 and QFX10008 switches support the following features in an EVPN-VXLAN overlay network:
  - MAC filtering
  - Storm control

[See MAC Filtering, Storm Control, and Port Mirroring Support on EVPN-VXLAN Interfaces.]

- **IPv6 data traffic support through an EVPN-VXLAN overlay network (QFX10000 and QFX5110 switches)**—Starting with Junos OS Release 18.4R1, QFX10000 and QFX5110 switches that function as Layer 3 VXLAN gateways can route IPv6 data traffic through an EVPN-VXLAN overlay network. With this feature enabled, Layer 2 or 3 data packets from one IPv6 host to another IPv6 host are encapsulated with an IPv4 outer header and transported over the IPv4 underlay network. The Layer 3 VXLAN gateways in the EVPN-VXLAN overlay network learn the IPv6 routes through the exchange of EVPN type-2 and type-5 routes.

  This feature was previously introduced in Junos OS Release 15.1X53-D30 on QFX10000 switches.

  [See Routing IPv6 Data Traffic through an EVPN-VXLAN Network With an IPv4 Underlay.]

High Availability (HA) and Resiliency

- **VRRP scale improvements per aggregated Ethernet bundle (QFX Series)**—Starting in Junos OS Release 18.4R1, you can configure up to 4000 active VRRP sessions per aggregated Ethernet bundle on QFX Series routers. To configure VRRP support, include the **vrrp-group** statement at the **[edit interfaces *interface-name* unit *logical-unit-number* family inet address *ip-address*]** hierarchy level.

  [See Understanding VRRP]

Junos on White Box

- **Junos on White Box**—Starting with Junos OS Release 18.4R1, the Junos on White Box software provides a disaggregated Junos that decouples the Junos operating system from Juniper Networks switches and runs as independent software on Open Compute Project (OCP)-compliant network hardware, enabling you to use that hardware in your data center (DC) networks and providing a robust, feature-rich network operating system for enabling the DC Fabric buildout. Junos for White Box is standalone software providing standards-based network protocols such as ISIS and BGP, overlay technology such as VXLAN with EVPN control plane, and full automation capabilities and is similar to the reliable, high performance Junos OS that powers the Juniper Networks QFX Series Data Center portfolio.

  Key Junos OS features that enhance the functionality and capabilities of the White Box switches include:

  - Software modularity, with process modules running independently in their own protected memory space and with the ability to do process restarts.
  - Uninterrupted routing and forwarding, with features such as nonstop active routing (NSR) and nonstop bridging (NSB).
  - Commit and rollback functionality that ensures error-free network configurations.
  - A powerful set of scripts for on-box problem detection, reporting, and resolution.

  > **NOTE:** The feature above was previously introduced in Junos OS Release 18.1R3.

  [See Junos on White Box Documentation.]

The following features are supported in Junos on White Box in Junos OS Release 18.4R1:

- Class of service (CoS) support. [See Overview of Junos OS CoS.]
- Layer 2 VXLAN gateway and EVPN control plane and VXLAN data plane support. [See Understanding VXLANs; Understanding EVPN with VXLAN Data Plane Encapsulation.]
- Multichassis link aggregation (MC-LAG). [See Understanding Multichassis Link Aggregation Groups.]
- IPv4 GRE support. [See Understanding Generic Routing Encapsulation.]
- Link aggregation and resilient hashing support. [See Understanding the Use of Resilient Hashing to Minimize Flow Remapping in Trunk/ECMP Groups.]
- Channelizing Ethernet interfaces support. [See Channelizing Interfaces on Switches.]
- IPv6 protocols, including Neighbor Discovery Protocol; Virtual Router Redundancy Protocol (VRRP) for IPv6; Protocol Independent Multicast (PIM) for IPv6; BGP, IS-IS, and OSPFv3 for IPv6; unicast IPv6 for virtual-router instances; and DHCPv6. [See Example: Configuring IPv6 Interfaces and Enabling Neighbor Discovery; Verifying and Managing DHCPv6 Relay Configuration.]
- Layer 2 features: VLAN support; Link Layer Discovery Protocol (LLDP) support; Q-in-Q tunneling support; Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), and VLAN Spanning Tree Protocol (VSTP) support. [See Ethernet Switching User Guide.]
- Private VLANs (PVLANs)—including PVLANs with IRB interfaces—support. [See Understanding Private VLANs.]
- MPLS support. [See MPLS Overview.]
- Hierarchical ECMP and ECMP support on LSR. [See Overview of Hierarchical ECMP Groups; Configuring ECMP Next Hops for RSVP and LDP LSPs for Load Balancing.]
- Layer 2 and Layer 3 multicast support. [See Multicast Configuration Overview.]
- Junos Telemetry Interface (JTI) support. [See Overview of the Junos Telemetry Interface.]
- Services support: sFlow, analyzers/port mirroring, including remote port mirroring to an IP address (GRE encapsulation). [See Overview of sFlow Technology; Understanding Port Mirroring.]
- Firewall filter support and policers and counters support.

  [See Overview of Firewall Filters; Policer Implementation Overview.]
- Layer 3 unicast routing protocol support. [See BGP User Guide; IS-IS User Guide; OSPF User Guide; Protocol-Independent Routing Properties User Guide; RIP User Guide.]
- Access security features support. [See Overview of sFlow Technology; Understanding Port Mirroring.]
- Storm control support. [See Understanding Storm Control.]
- Distributed denial of service (DDoS) protection support. [See Distributed Denial-of-Service (DDoS) Protection Overview.]

- Open Network Install Environment (ONIE) support. [See Installing and Recovering Software Using the Open Network Install Environment (ONIE).]
- Zero Touch Provisioning (ZTP) support. [See Zero Touch Provisioning.]
- Support for Converged Enhanced Ethernet (CEE) features. [See Traffic Management User Guide for the QFX Series and EX4600 Switches.]

> **NOTE:** The features above were previously introduced in Junos OS Release 18.1R3.

- **Layer 2 and 3 families, encapsulation types, and VXLAN on the same physical interface (Junos on White Box)**—You can configure and successfully commit the following on a physical interface of a switch in an EVPN-VXLAN environment:
  - Layer 2 bridging (**family ethernet-switching**) on any logical interface unit number (unit 0 and any nonzero unit number).
  - VXLAN on any logical interface unit number (unit 0 and any nonzero unit number).
  - Layer 2 bridging (**family ethernet-switching** and **encapsulation vlan-bridge**) on different logical interfaces (unit 0 and any nonzero unit number).
  - Layer 3 IPv4 routing (**family inet**) and VXLAN on different logical interfaces (unit 0 and any nonzero unit number).

  For the above configurations to be successfully committed and work properly, you must specify the **encapsulation flexible-ethernet-services** configuration statements at the physical interface level—for example, **set interfaces xe-0 /0/5 encapsulation flexible-ethernet-services**.

  This feature was previously introduced in Junos OS Release 18.1R3.

  [See Understanding Flexible Ethernet Services Support With EVPN-VXLAN.]

- **Automatically generated Ethernet segment identifiers in EVPN-VXLAN networks (Junos on White Box)—**Starting in Junos OS Release 18.4R1, you can configure aggregated Ethernet interfaces and aggregated Ethernet logical interfaces to automatically derive Ethernet segment identifiers (ESIs) from the Link Aggregation Control Protocol (LACP) configuration. We support this feature on switches that are multihomed in active-active mode in an EVPN-VXLAN network.

  [See Understanding Automatically Generated and Assigned ESIs in EVPN Networks.]

Operation, Administration, and Maintenance (OAM)

- **Connectivity fault management (CFM) support (QFX5200 and QFX5210)**—IEEE 802.1ag CFM provides fault isolation and detection over large Layer 2 networks that may span several service provider networks. You can configure CFM to monitor, isolate, and verify faults in these interconnected provider bridge networks. Starting in Junos OS Release 18.4R1, Junos OS provides CFM support on QFX5200 and QFX5210.

CFM support on QFX5200 and QFX5210 has the following limitations:

- CFM support is provided via software using filters. This can impact scaling.
- Inline Packet Forwarding Engine mode is not supported. In Inline PFE mode, you can delegate periodic packet management (PPM) processing to the Packet Forwarding Engine which results in faster packet handling. The CCM interval supported is 10 milliseconds.
- Performance monitoring (ITU-T Y.1731 Ethernet Service OAM) is not supported.
- CCM interval of less than 1 second is not supported.
- CFM is not supported on routed interfaces and aggregated Ethernet (lag) interfaces.
- MIP half function, to divide the MIP functionality into two unidirectional segments to improve network coverage, is not supported.
- Up MEP is not supported.
- Total number of CFM sessions supported is 20.

[See Understanding Ethernet OAM Connectivity Fault Management for Switches.]

System Management

- **Passive Monitoring support (QFX10000 switches)**— Starting with Junos OS Release 18.4R1, you can enable passive monitoring on the switch to passively capture traffic from monitoring interfaces. Passive monitoring provides filtering capabilities for monitoring ingress and egress traffic at the Internet point of presence (PoP) where security networks are attached. With passive monitoring, the switch does not route packets from the monitored interface or run any routing protocols related to those interfaces. It only receives traffic flows, collects intercepted traffic, and exports it to monitoring tools like IDS servers and packet analyzers, or other devices such as routers or end node hosts. To enable this feature, include the **passive-monitor-mode** statement at the **[edit interface]** hierarchy level. This feature was previously supported in an "X" release of Junos OS.

  See [Understanding Passive Monitoring on QFX10000 Switches.]

- **IPv6 support added to Precision Time Protocol (PTP) G.8275.2) enhanced profile (QFX5110 and QFX5200 switches)**— Starting with Junos OS Release 18.4R1, the G.8275.2 enhanced profile supports IPv6 transport.

  To configure the G.8275.2 enhanced profile, enable the **g.8275.2.enh** statement at the **[edit protocols ptp profile-type]** Junos OS CLI hierarchy.

  To configure IPv6 transport, enable the **ipv6** statement at the **[edit protocols ptp master interface interface-name unicast-mode transport]** and **[edit protocols ptp slave interface interface-name unicast-mode transport]** Junos OS CLI hierarchies.

VPNs

- **Support to control traceroute over Layer 3 VPN (QFX Series)**—Starting in Junos OS Release 18.4R1, in a Layer 3 VPN topology with **vrf-table-label** configured and multiple customer edge (CE) routers configured in the same VPN routing and forwarding (VRF) routing instance, when traceroute is performed to a remote provider edge (PE) router for a CE-facing network, the ICMP time exceeded packet determines the correct IP address as the source address.

  To control the traceroute over Layer 3 VPN topology with vrf-table-label configured and multiple CE routers configured in the same VRF, you can configure **allow-l3vpn-traceroute-src-select** at the**[edit system]** hierarchy level that determines the correct IP source address by reviewing the destination routing instance and destination IP address.

  [See allow-l3vpn-traceroute-src-select.]

SEE ALSO

Changes in Behavior and Syntax

IN THIS SECTION

This section lists the changes in behavior of Junos OS features and changes in the syntax of Junos OS statements and commands from Junos OS main release and the maintenance releases for QFX Series.

Changes in Behavior and Syntax: 18.4R3-S4

Platform and Infrastructure

- **Priority-based flow control (PFC) support (QFX5120-32C)**—Starting with JunosOS 18.4R3-S4, QFX5120-32C switches support priority-based flow control (PFC) using Differentiated Services code points (DSCP) at Layer 3 for untagged traffic.
- **IGMP snooping in EVPN-VXLAN multihoming environments (QFX5110)—**In an EVPN-VXLAN multihoming environment on QFX5110 switches, you can now selectively enable IGMP snooping only on those VLANs that might have interested listeners. In earlier releases, you must enable IGMP snooping on all VLANs associated with any configured VXLANs because all the VXLANs share VXLAN tunnel endpoints (VTEPs) between the same multihoming peers and require the same settings. This is no longer a configuration limitation.

Changes in Behavior and Syntax: 18.4R3

IN THIS SECTION

Junos Telemetry Interface

- **Automatic installation of YANG-based CLI for RIFT protocol (MX Series, QFX Series, and vMX with 64-bit and x86-based servers)**—In Rift 1.2 Release, installation of the CLI for RIFT protocol occurs automatically along with the installation of the junos-rift package. In the pre-1.0 releases of the junos-rift package, the RIFT CLI had to be installed separately using **request system yang** command after installation of the junos-rift package.

Routing Protocols

- **Advertising /32 secondary loopback addresses to traffic engineering database as prefixes (ACX Series, EX Series, MX Series, PTX Series, QFX Series, and SRX Series)—**We've made changes to export multiple loopback addresses to the lsdist.0 and lsdist.1 routing tables as prefixes. This eliminates the issue of advertising secondary loopback addresses as router IDs instead of prefixes. In earlier releases, multiple secondary loopback addresses in the traffic engineering database were added to the lsdist.0 and lsdist.1 routing tables as part of node characteristics and advertised them as the router ID.

- **Precision Time Protocol (PTP) interface configuration (MX2020, MX2010, MX480, MX960, and MX240)**—Remove the aggregated Ethernet interface association and upgrade the device when configuring PTP interface.

Network Management and Monitoring

- **entPhysicalTable fetched on QFX10002**—In Junos OS Release 18.4R3, the MIB data for **entPhysicalTable** is fetched on a QFX10002-72Q or QFX10002-36Q switch.

  [See SNMP Explorer.]

Changes in Behavior and Syntax: 18.4R2-S1

Software-Defined Networking (SDN)

- **Increase in the maximum value of delegation-cleanup-timeout (QFX Series)**—You can now configure a maximum of *2147483647* seconds as the delegation cleanup time for a Path Computation Client (PCC). This extends the time taken by the PCC to retain the last provided path over a PCEP session from the last session down time.

  With the increase in maximum value of **delegation-cleanup-timeout** from *600* to *2147483647* seconds, you can benefit during a Path Computation Element (PCE) failover, or other network issues that may disrupt the PCEP session with the main active stateful PCE.

  [See delegation-cleanup-timeout.]

Changes in Behavior and Syntax: 18.4R2

IN THIS SECTION

EVPNs

- **New options in show evpn instance command (QFX series)**—Starting in Junos OS Release 18.4R2, you can use the **show evpn instance esi-info** command to display only the ESI information for a routing instance and **show evpn instance neighbor-info** to display only the IP address of the EVPN neighbor for a routing instance. Information associated with the ESI, such as the route distinguisher, bridge domain, and IRB are filtered out.

- **Changes to show evpn instance extensive command (QFX series)**—Starting in Junos OS Release 18.4R2, the output for **show evpn instance extensive** displays information on the core next hop for unknown multicast streams only. For known multicast streams, use the **show evpn igmp-snooping proxy** command.
- **Support for disabling automatic ESI generation (MX Series and QFX Series)**—Starting with Junos OS Release 18.4R2, Junos OS supports disabling the automatic ESI generation for virtual gateway addresses. We recommend that you disable the automatic ESI generation for EVPN networks with edge-routed bridging to improve performance. To disable automatic ESI generation, include the **no-auto-virtual-gateway-esi** statement at the **[edit interfaces name irb unit logical-unit-number]** hierarchy level.

Interfaces and Chassis

- **Commit error when GRE interface and tunnel source interface configured in different routing instances (QFX Series)**—In Junos OS Releases 17.3R4, 17.4R3, 18.1R4, 18.2R3, 18.3R2, and 18.4R2, QFX Series switches do not support configuring a GRE interface and the underlying tunnel source interface in two different routing instances. If you try this configuration, it will result in a commit error with the following error message:

  error: GRE interface (gr-0/0/0.0) and its underlying tunnel source interface are in different routing-instances

  error: configuration check-out failed

  [See Understanding Generic Routing Encapsulation .]

- **New XML tag element <lacp-hold-up-state> added in show lacp interfaces XML display (QFX Series)**—In Junos OS Release 18.4R2, the **show lacp interfaces | display xml** command displays a new XML tag element **<lacp-hold-up-state>**. The **<lacp-hold-up-state>** displays the time interval an interface holds before it changes state from down to up. In earlier Junos OS releases, the LACP hold-up the information for all interfaces were in a single **<lacp-hold-up-information>** XML tag. This information for each interface is now displayed in a separate **<lacp-hold-up-information>** XML tag.

- **The resilient-hash statement is no longer available under aggregated-ether-options (QFX5200 and QFX5210 switches)**—Starting in Junos OS Release 18.4R2, the **resilient-hash** statement is no longer available at the **[edit interfaces aex aggregated-ether-options**] hierarchy level. Resilient hashing is not supported on LAGs on QFX5200 and QFX5210.

  [See aggregated-ether-options.]

- **Logical interface is created along with physical interface by default (QFX10000 and QFX5000 line of switches)**—In Junos OS Release 18.4R2, on the QFX10000 line of switches, by default, logical interface are created on et-, sxe-, and non-channelized xe- interface along with the physical interface. In earlier Junos OS Releases, by default, only physical interfaces are created.

  On QFX5000 line of routers, by default logical interface is created on channelized xe- interfaces. In earlier Junos OS releases, by default, channelized interfaces (xe-0/0/0:1, xe-0/0/0:2, and so on) do not

have logical interfaces by default and only the nonchannelized et- and xe- interfaces and sxe- creates logical interfaces.

- **Logical Interface is created along with physical Interface by default (QFX Series switches)**—In Junos OS Release 18.4R2 and later, logical interface is created on **ge**, **et**, **xe** interfaces along with the physical interface, by default. In earlier Junos OS Releases, by default, only physical interfaces are created.

  For example, for **ge** interfaces, earlier when you view the **show interfaces** command, by default, only the physical interface (**ge-0/0/0**), is displayed. Now, the logical interface (**ge-0/0/0.16386**) is also displayed.

Security

- **Syslog or log action on firewall drops packets (QFX5000 switches)**—Starting in Junos OS Release 18.4R2, if you configure a syslog or log action on an ingress firewall filter, control packets and ICMP packets sent to the Routing Engine might be dropped.
- **Firewall warning message (QFX5000 switches)**—Starting in Junos OS Release 18.4R2, a warning message is displayed whenever a firewall term includes **log** or **syslog** with the **accept** filter action.

Services Applications

- **Commit check for incomplete tunnel encapsulation configuration on flexible tunnel interface (FTI)**—Tunnel encapsulation configuration is mandatory for FTI interfaces. In Junos OS Release18.4R2, when you try to commit any incomplete tunnel encapsulation configuration on an FTI, the CLI displays a commit error message.

Changes in Behavior and Syntax: 18.4R1

IN THIS SECTION

Interfaces and Chassis

- **Change in default action for fatal errors (QFX10002, QFX10008, and QFX10016 switches)**—Starting in Junos OS Release 18.4R1, by default, for all fatal errors on the QFX10000 line of switches, Junos OS raises an alarm and disables all Packet Forwarding Engine interfaces that raised the error.
- **Support for creating layer 2 logical interface independently (ACX Series, EX Series, MX Series, PTX Series, and QFX Series)**—In Junos OS Releases 18.4R1, 18.4R2, and later, QFX Series switches support creating Layer 2 logical interfaces independent of the Layer 2 routing-instance type. That is, you can configure and commit the Layer 2 logical interfaces separately and add the interfaces to the bridge

domain or Ethernet VPN (EVPN) routing instance separately. Note that the Layer 2 logical interfaces work fine only when they are added to the bridge domain or EVPN routing instance.

In earlier Junos OS releases, when you use a Layer 2 logical interface configuration (units with **encapsulation vlan-bridge** configuration), then you must add the logical interface as part of a bridge domain or EVPN routing instance for the commit to succeed.

Network Management and Monitoring

- **The NETCONF server omits warnings in RPC replies when the rfc-compliant statement is configured and the operation returns <ok/> (QFX Series)**—Starting in Junos OS Release 18.4R1, when you configure the **rfc-compliant** statement at the **[edit system services netconf]** hierarchy level to enforce certain behaviors by the NETCONF server, the server must not return an RPC reply that encloses both an **<rpc-error>** element and an **<ok/>** element. If the operation is successful, but the server reply would enclose one or more **<rpc-error>** elements of severity warning in addition to the **<ok/>** element, then the warnings are omitted. In earlier releases, or when the **rfc-compliant** statement is not configured, the NETCONF server might issue an RPC reply that encloses both an **<rpc-error>** element of severity warning and an **<ok/>** element.

- **SNMP customization configuration introduced (QFX Series)**—In Junos OS Release 18.4R1, we've introduced the CLI configuration command **set snmp customization ether-stats-ifd-only**. When **ether-stats-ifd-only** is configured, the **show snmp mib walk etherstatsTable** command displays data only for physical interfaces

  [See customization (SNMP).]

SEE ALSO

New and Changed Features | **251**

Known Behavior | **267**

Known Issues | **271**

Resolved Issues | **282**

Documentation Updates | **301**

Migration, Upgrade, and Downgrade Instructions | **301**

Known Behavior

IN THIS SECTION

This section lists known behavior, system maximums, and limitations in hardware and software in Junos OS Release 18.4R3 for the QFX Series.

For the most complete and latest information about known Junos OS problems, use the Juniper Networks online Junos Problem Report Search application.

Class of Service (CoS)

- On QFX5120 and EX4650 switches, if the CoS configurations are modified when egress traffic is shaped at a very low rate (less than 50 Mbps), packets might get stuck in the MMU buffers permanently. This condition might cause ingress or egress traffic drops. When low-rate shapers (less than 50 Mbps) are applied on egress queues, we suggest that you deactivate shaping before any CoS modification or ensure that traffic is stopped before doing CoS modification. PR1367432

EVPN

- When a VLAN uses an IRB interface as the routing interface, the **VLAN-ID** parameter must be set to "none" to ensure proper traffic routing. This issue is platform independent. PR1287557

Infrastructure

- If Junos OS panics with a filesystem-related panic, such as **dup alloc**, recovery through the OAM shell might be needed. From the OAM shell, run 'fsck' on the root volume until it is marked clean. Only at this point is it safe to reboot to the normal volume. PR1444941

Interfaces and Chassis

- When you commit a configuration change for an IRB interface from VRRP to non-VRRP and also change the IRB address to VRRP VIP, Junos OS loses direct route from the IRB interfaces. This is a limitation, and this issue was logged in PR1191371. PR1319124
- Multicast traffic can be flooded for 15 to 20 seconds to both MC-LAG peers, after the following sequence of steps:

  1. Disable or enable ICL.

  2. Reboot one of MC-LAG peers.

  3. Disable or enable a member link of ICL. This will result in no traffic loss, and one of the MC-LAG nodes will be processing duplicate packets during this time period. PR1422473

Layer 2 Features

- The **show multicast snooping route extensive** command is currently not supported on QFX devices. PR1386905
- In MH scenarios, a QFX5000 device does not support transition of the Remote Learnt Mac (DR) to Locally Learnt MAC (DL) when the traffic hashes to MH PE where the MAC is programmed as DR. Due to this, during MAC/MAC-IP aging, the MAC entry on both the PE devices will be deleted and re-learned. PR1419988

- With QFX5110/5200 platforms, if storm control enabled on the interfaces along VXLAN configuration, storm control will not get effected with ARP REQ packets coming more than storm control threshold. PR1469837

MPLS

- There will not be any warning message about Packet Forwarding Engine restart when MPLS tunnel extend configuration is deleted. PR1394722

Platform and Infrastructure

- Port LEDs on the QFX5100 do not work. If a device connects to a port on the QFX5100, the port LED stays unlit. PR1317750
- In QFX10002, based on memory availability, it can scale up to 300 remote PE with a total of 600 tunnels. It is not recommended to go beyond this scale to avoid exceeding memory. PR1329243
- When the sFlow collector can be reached only through the Routing Engine, large samples because the heavy traffic might cause the Routing Engine CPU to become busy. PR1332337
- In an IPCLOS topology, when a spine/leaf is rebooted, you might see around 100 seconds of traffic loss. The reason for this is that, Junos OS will start advertising routes before Packet Forwarding Engine route programming is completed, which can cause traffic loss. This is mainly a design trade-off. If we wait for Packet Forwarding Engine programming to complete, then route convergence will suffer. PR1341398
- Hardware watchdog does not work on QFX10008 and QFX10002-60C/PTX10002-60C. PR1343131
- The 100-Gigabit Ethernet interface goes down after you configure and delete the Ethernet loopback configuration. PR1353734
- When VLAN is added as an action for changing the VLAN in both ingress and egress filters, the filter is not installed. PR1362609
- A few error messages related to function **rt_mesh_group_add_check()** will be seen during reboot and are harmless. PR1365049
- Autochannelization is not supported for "40GBASE-BXSR", "QSFP+40GE-LX4", "QSFP-100G-PSM4" and "100GBASE-BXSR" optics. PR1366103
- The **pm4x25_line_side_phymod_interfa** statement might throw the error **ERROR: u=0 p=81 interface type 16 not supported by internal SERDES for this speed 50000**. This error message is seen when channelization is detected in Junos OS Release 18.1R3. PR1366137
- When the **egress-to-ingress** option is enabled to use ingress TCAM for the egress filters, it is expected that the egress counters will count the packets on the ingress side as well. PR1369048
- Error logs are expected when routes point to the target next hop, which in turn point to hold next hops. These error logs are present for a short time. Later, when the next hop changes from a hold next hop

to a valid next hop, unilist next hops will be walked again and updated with the appropriate weight and reroute counters, and no more error logs will be seen. PR1387559

- On Junos OS Release 18.4R1 branch, intermittent traffic loss is observed with RTG streams while flapping the RTG primary interface. PR1388082
- Re-ARP request is sent without VLAN ID (so RE-ARP fails). PR1390794
- With WRL7 on QFX5000 devices, there is a possibility in a reboot scenario of the system going to DB prompt. This is due to a known issue in the QEMU version in WRL7. As of now there is no plan to update the WRL version on QFX5000. PR1411826
- If the commit fails with **statements constraint check failed** even though the dependent configuration is in place, there is a possibility that main and dependent configurations are configured through different groups. It is due to system constraints. PR1437047
- CRC errors will be observed on VCP links with the QSFP-100G-SR4 transceiver. PR1455388
- QFX5100 sends arp reply with vmac after remove vrrp and use same vip as RVI. PR1457087
- The issue occurs because of a PECHIP limitation when underlay is tagged. After Decap when inner packet is recirculated it still retains the vlan tag property from outer header since outer header was tagged. Thus 4 bytes of inner tag got overwritten in inner packet and packet got corrupted which will result in EGP chksum trap seen in PECHIP. Fixing PECHIP limitation in software has high risk. It will be accommodated in future release. As a workaround, enable **encapsulate-inner-vlan** configuration. PR1435864

Routing Protocols

- QFX5120: 254 neighbors and 200000 routes can be scaled for IS-ISv4. Beyond 200000 routes with 254 neighbors, adjacency flaps and traffic drop will be seen. However, with 40 neighbors and 351000 routes got scaled. PR1368106
- Targeted broadcast functionality with VXLAN is not supported yet on QFX5000 platforms. In a non-vxlan case, broadcast destination IP lookup results in next hop with destination MAC of all 0xffs and gives the class-id for IFP to match and action to redirect to IPMC with VLAN membership check. In VXLAN case, Layer 3 egress interface, egr l3 next hop, ingress l3 entry creations are failing. PR1397086
- QFX10002: After applying firewall family ethernet-switching filter from ether-type ARP, the firewall does not filter the ARP request and the counter does not increment. The configuration works if we disable the **user-clan-id** match from the term. PR1426590
- On QFX5120 switches with VXLAN configured, user-configured ACLs are limited to only one type (iRACL, iVACL or iPACL). PR1464567

Virtual Chassis

- A Virtual Chassis internal loop might happen on a node coming up from a reboot. During nonstop software upgrade (NSSU) on a QFX5100 Virtual Chassis, a minimal traffic disruption or traffic loop (greater than 2 seconds) might occur. PR1347902

SEE ALSO

New and Changed Features | 251

Changes in Behavior and Syntax | 261

Known Issues | 271

Resolved Issues | 282

Documentation Updates | 301

Migration, Upgrade, and Downgrade Instructions | 301

Known Issues

IN THIS SECTION

This section lists the known issues in hardware and software for the QFX Series switches in Junos OS Release 18.4R3.

For the most complete and latest information about known Junos OS problems, use the Juniper Networks online Junos Problem Report Search application.

Class of Service (CoS)

- On QFX5100 Series platforms, in some cases, CoS configuration is not applied appropriately in the Packet Forwarding Engine, leading to unexpected egress traffic drop on some interfaces. PR1329141
- In a Junos fusion scenario, when traffic from AD (aggregation device) to SD (satellite device) is exported with a different DSCP marking, it might be changed into network-control queue on the extended port of SD. PR1433252

EVPN

- Mac-move-shutdown stops working if a **physical loop** is introduced continuously in quick succession of 10 minutes. The issue is not seen every time but can occur only if a physical loop is introduced at least four times. If the loops span a long period, the issue is not seen. A test is performed to check the overall impact on basic features. There is no issue seen on basic learning or major impact on any protocol. This is a negative scenario, but it is unlikely to occur in a customer network where the multiple loops occur within a short time span. We need to fix the loop once occurred, as it can have multiple implications on network performance. PR1284315
- At times, when l2ald is restarted, a race condition occurs where VTEP notification comes in from the kernel before lo0. As a result, l2ald is unable to process the VTEP add request and gets stuck in an indefinite loop. PR1384022
- On a QFX10000 with nonstop routing enabled and running EVPN, if Routing Engine switchover occurs, EVPN traffic could see significant traffic loss. PR1394099
- [evpn_vxlan] [virtual_switch] IRB mac/ip information will be deleted from ethernet-switching arp/nd table when **no-arp-suppression** is configured. PR1394959
- To filter and see the output of desired ESI or neighbor information of an EVPN instance, we created two new choices, namely **show evpn instance <> esi-info esi <> show evpn instance <> neighbor-info neighbor <>**. PR1402175
- In an assisted replication(AR)-enabled network, there will be blackholing of multicast traffic toward AR-leaf devices that do not support snooping if the AR replicators are snooping enabled. PR1403292
- OVSDB-managed QFX5100 or QFX5110 is encapsulating VXLAN traffic and sending to the incorrect destination MAC when multiple remote VTEPs are in the same subnet and reachable via an IRB interface in a stretched vlan. This issue is planned to be resolved on the QFX5110 but will not be resolved on the QFX5100. Resolution is still pending for the QFX5110. PR1424698
- In Ethernet Virtual Private Network - Virtual Extensible LAN (EVPN-VXLAN) Core Isolation scenario, the server is multihomed to the leaf devices through LACP (Link Aggregation Control Protocol) interfaces. If GR (graceful restart) is enabled, upon system reboot or restart routing on the leaf device, the Core

Isolation will not work. In the system reboot case, the issue results in the leaf device silently dropping the traffic sent from the server during the time window between LACP coming up and BGP (Border Gateway Protocol) coming up. In the restart routing case, there might be no traffic drop because of the GR. PR1461795

Forwarding and Sampling

- Commit failure with error might be seen and the dfwd crashes when applying a firewall filter with action **then traffic-class** or **then dscp** to an interface. PR1452435

Infrastructure

- When there is a high route churn or when there is a high rate of route updates being pushed to the kernel, the **show interface** command might show delay or not show all statistics due to route updates being prioritized over statistics messages. PR1250328
- The following messages are seen during FTP: **ftpd[14105]: bl_init: connect failed for `/var/run/blacklistd.sock** (No such file or directory). PR1315605

Interfaces and Chassis

- Traffic drop observed when trying to configure ae interface description. PR1305794
- Customers might notice the flooding of ARP reply unicast packets as a result of an ARP request sent for the device's VRRP MAC address. This should not cause major issues. The ARP reply that is flooded in the VLAN by the device has the correct DMAC of the originator of the ARP request. In other words, the ARP reply is flooded but with the correct unicast DMAC. The ARP reply is not broadcast. PR1454764

Layer 2 Features

- In QFX5000 platforms, when a scaled configuration (with greater than 3000 bridge domains and greater than 8000 ESI FILS) is overwritten with a functional configuration (with 4 bridge domains and less than 10 ESI IFLs), using **load override** command, it takes around 2 minutes for cleanup and adding of the new configuration. Without waiting for 2 minutes, if overwrite of the configuration is done multiple times, then some bridge domains are not cleaned up in CLI. PR1363410
- On QFX Series platforms, if **vlan-id-lists** are configured under a single IFD (a physical interface), QinQ might be malfunctioning for certain vlan-id-list(s). PR1395312
- On QFX Series , on the interfaces where LLDP is already disabled (commit) and there is any change on any interface in the next commit, l2cpd sends the message to disable LLDP on the all the interfaces to the kernel and the kernel tries to remove the implicit filters, which return ENOENT, since entries were already disabled during the first commit. The following messages are harmless to the system. PR1400606

- On QFX5000 platforms, the FPC crashes when a firewall filter is applied on a logical unit of a DSC interface. This issue has traffic impact. PR1428350
- On QFX5000 platforms with Ethernet Virtual Private Network (EVPN) and Virtual Extensible LAN (VXLAN) scenario, if there are underlying interface flaps for the core network side, all the ingress traffic might be silently dropped by the VXLAN Tunnel Endpoint (VTEP) due to this issue. PR1469596
- With QFX5110/5200 platforms, if storm control is enabled on the interfaces along VXLAN configuration, storm control will not get affected with ARP REQ packets coming more than the storm control threshold. PR1469837
- If a dummy interface (which is not on the system) is a part of an AE on which IPACL VxLAN filters are installed, we might see a DCPFE core file while deleting the dummy interface from under the AE. PR1476768

Layer 2 Ethernet Services

- In MC-LAG with force-up scenario, the LACP PDU loop might be seen when both MC-LAG nodes and the access device are using same admin key. PR1379022
- On the QFX5000 line of devices , when some (two or more than two) underlay interfaces with ECMP are brought down on leaf devices, the multihop BFD overlay sessions between spine and leaf devices might flap. And if BFD flaps, the protocols depending on BFD (typically, IBGP protocols) would also flap, which leads to traffic impact. PR1416941

MPLS

- There could be some lingering RSVP state that would keep some labeled routes programmed in the Packet Forwarding Engine longer than they should be. This RSVP state will eventually expire and then delete the RSVP MPLS routes from FIB. However, traffic loss is not anticipated due to this lingering state or the corresponding label routes in the FIB. In the worst case, in a network, where there is persistent link flapping going on, this lingering state could interfere with the LSP scale being achieved. PR1331976
- Statistics of transit traffic does not increment LSP statistics signaled by RSVP-TE. PR1362936
- On QFX5000 switches, when ECMP resilient hash is enabled, the list of unicast next-hop entries may not be programmed correctly. This will impact traffic flow. After the fix applied in the software through this PR, resilient hash feature and hierarchical ECMP feature can't be used together. You must disable hierarchical ECMP, which is, default behavior in QFX5000, to enable the **resilient-hash** feature. PR1442033

Platform and Infrastructure

- In configurations with IRB interfaces, during times of interface deletion (for example, FPC reboot), the Packet Forwarding Engine might log the error **nh_ucast_change:291Referenced l2ifl not found**. This condition should be transient, with the system reconverging on the expected state. PR1054798
- Certain QFX Series devices do not pad Ethernet packets with zeros, and thus some packets can contain fragments of system memory or data from previous packets. This issue is also known as 'Etherleak' and often detected as CVE-2003-0001. Refer to JSA10773 for more information. PR1063645
- Layer 3 multicast traffic does not converge to 100 percent and continuous drops are observed after the downstream interface goes down or comes up or while an FPC comes online after restarting. This happens with multicast replication for 1000 VLAN/IRB interfaces. PR1161485
- When you issue **request system reboot**, the box undergoes zeroization, which triggers ZTP. During the mounting stage, **/var/db/scripts/import** does not get created, which later causes the configuration to be committed partially. This is seen in the warning **Warning: Commit failed, activating partial configuration**. Warning: Edit the router configuration to fix these errors. Root cause has not been identified for this problem. PR1289782
- Port LEDs on the QFX5100 do not work. If a device connects to a port on the QFX5100, the port LED stays unlit. PR1317750
- The error message is displayed when the FPC goes online or offline. PR1322491
- Interface uptime has increased by 8 seconds from Junos OS Release 17.4R1 to Junos OS Release 18.1R1. Also, SDK upgrades across releases can impact the parameters such as login prompt appear time, FPC up time, and interface up time after switch reboot. PR1324374
- On the QFX10002-60C, filter operation with log action is not supported for protocols other than Layer 2, IPv4, and IPv6. The following message is seen in firewall logs: **Protocol 0 not recognized**. PR1325437
- This issue applies to QFX10002-60C platform only. When the user configures a Layer 2 filter with mixed Layer 2 and Layer 3/Layer 4 match conditions, error syslog is displayed to the user. The above has been corrected. With this fix, Junos OS software denies a commit when mixed Layer 2 and Layer 3/Layer 4 match conditions are configured on an Layer 2 filter. PR1326715
- The BFD session over an aggregated Ethernet interface flaps when a member link carrying the BFD Tx flaps. PR1333307
- On QFX10002, QFX10008, and QFX10016, ND is incorrectly working on an IRB/Layer 3 interface with a discard filter. PR1338067
- While downgrading a device running Junos OS from a later release, the box goes into amnesiac state with the following error: during system boot up: Creating initial configuration: mgd: error: commit-script mgd: error: could not open translation script: /var/db/scripts/translation/openconfig-policy.slax: No such file or directory mgd: error: 1 error reported by translation scripts mgd: error: translation script failure Warning: Commit failed, activating partial configuration. Warning: Edit the router configuration to fix these errors. PR1341650

- On the QFX10000 line of switches, NETCONF over SSH traffic through TCP port 830 might hit the host path queue that is unclassified. This can result in DDoS violations in the unclassified queue. PR1345744
- Backup Routing Engine might crash when GRES happens continuously for more than 10 times. PR1348806
- QFX10000 platform drops the vendor's wireless access point (AP) heartbeat packets. As a result, the Aruba wireless AP cannot work. PR1352805
- mib2d core file in mib2d_write_snmpidx at snmpidx_sync.c on both ADs while bringing. PR1354452
- When MC-LAG is configured with force-up enabled on MC-LAG nodes, the LACP admin key should not match the key of the access or CE device. PR1362346
- On QFX5000 platforms, if lcmd is restarted, a chassisd core file will be generated with traffic drop for a few seconds. PR1363652
- On the QFX5100, if a scaled configuration involving a LAG interface, more than 3000 VLANs, and the corresponding next hops, is removed and a new configuration involving a LAG interface is applied at the same time, the new configuration might not take effect until the previous configuration has been deleted. During this time, the fxpc process might consume high CPU resources. No other system impact is observed. PR1363896
- QFX52100: Filter with **then routing-instance** applied to family inet IFL causes traffic to be discarded on unrelated interfaces. PR1364020
- From Junos OS Release 17.3R1, on a QFX10002 platform, in a rare condition, the IPFIX flow statistics (packet/byte counters) are incorrect in the exported record. Because the statistics are not collected properly, the flow might time out and get deleted because of an inactive timeout, causing exported records to be sent out unexpectedly. Traffic spikes generated by IPFIX might be seen. PR1365864
- On the QFX5200, an error might be encountered when upgrading from Junos OS Release 15.1X53-D230.3 (the image with enhanced automation support [flex]) to an Junos OS Release 18.1R1.9 image without the enhanced automation. PR1366080
- The **pm4x25_line_side_phymod_interfa** statement might throw the error **ERROR: u=0 p=81 interface type 16 not supported by internal SERDES for this speed 50000**. This error message is seen when channelization is detected in the Junos OS Release 18.1R3. PR1366137
- On the QFX10000 line of switches, with EVPN-VXLAN, the following error is seen: **expr_nh_fwd_get_egress_install_mask:nh type Indirect of nh_id: # is invalid**. PR1367121
- Dedicated minimum buffers are reserved for some queues according to the Junos OS working model. These buffers are always available to those queues irrespective of the traffic pattern throughout the system. When the **clearing stat** statement is used, these values are visible. This cosmetic or minor issue has no functional impact. PR1367978
- User might not be able to stop the ZTP bootstrap, when a QFX10016 or QFX10008 router with more number of line cards is powered on with factory-default configuration. PR1369959

- If both the local and remote ends are auto-channelized and the local port QSFP is removed, then the 100-Gigabit Ethernet interface does not come up on port 62 after removing SFP on port 30, which is channelized. PR1370887
- The DSCP values for IPv6 PTP packets exiting the QFX5110 have the DSCP value set as 111,000 and go out only in network control queue. PR1371064
- Changing the bridge-domain name breaks the communication for that particular bridge domain (ATTip45186). PR1371495
- MAC learning does not happen after restart of l2-learning daemon for interfaces on backup. Traffic still gets forwarded. PR1372220
- USB upgrade of NOS image is not supported. PR1373900
- When CBF (CoS-based forwarding) is enabled, due to the indexed next hop installation issue in kernel, the rpd process might crash upon route flap and LSP flap. PR1374558
- In Junos OS Release 18.1R3, when one 50-Gigabit Ethernet port is taken down using the **ifconfig** command, the other one also goes down. PR1376389
- When you sample flows for which the ingress and egress interfaces are of **aggregate** type on QFX10000 switches, you might see syslog messages about **expr_get_local_pfe_child_ifl** and **flowtb_get_cpu_header_fields**. Even though these messages are non-impact messages, they will crowd syslog files and syslog servers. PR1379227
- On QFX5110, interface FEC counter does not work though FEC function has been supported. Added statistics counter support through this PR. PR1382803
- On QFX10008 and QFX10016 platforms, traffic loss might be observed because of switch modular failure on the Control Board (CB). This failure further causes all SIBs to be marked as faulty and causes FPCs to restart until Routing Engine switchover occurs. PR1384870
- With MLD-snooping enabled and when we have two receivers in the same VLAN interested in the same group address but from a different source, traffic is received on only one receiver that sent the lastest MLD report. This is because we do not install S, G routes in H/w when MLD snooping is enabled. PR1386440
- On 18.4R1 branch, intermittent traffic loss is observed with RTG streams while flapping the RTG primary interface. PR1388082
- When the show command is taking a long time to display results, the STP might change states as BPDUs are no longer processed and cause lots of outages. PR1390330
- If PTP transparent clock is configured on the QFX5200, and if IGMP snooping is configured for the same VLAN as PTP traffic, the PTP over Ethernet traffic might be dropped. The fix enables the forwarding of this traffic. PR1395186
- Layer 2 multicast and broadcast convergence is high while deleting and adding back the scale configurations of VLANs and VXLANs. PR1399002

- Layer 3 gateway is not supported on QFX5110 with SP style of configuration in Junos OS Release 18.1R3-S2 and Junos OS Release 18.4R1. PR1399131
- On QFX5100, traffic initiated from a server connected to an interface is dropped at the interface on the switch if the interface is configured with **family ethernet-switching** with VXLAN and the configuration is changed to **family inet**. PR1399733
- On QFX5000 switches with scaled setup of the aggregated ethernet (AE) bundles and VLANs, if Link Aggregation Control Protocol (LACP) is enabled, and there are scaled configuration changes, for example, delete 4000 vlans/vxlan and reapply them again, some interfaces of the AE bundle might go to the detached state. Due to this issue, the running routing protocols (for example, LACP and BGP) will get down over the affected AE bundles. PR1406691
- PXE installation might fail due to a failure in image upgrade post PXE initialization. PR1406743
- When IPv4 and IPv6 are programmed at the same time, most of the IPv6 routes are not installed due to the hardware route table getting full. PR1412873
- Layer 2 logical interfaces configuration can now be committed separately from the bridge domain or EVPN configuration. PR1414363
- On QFX5110 and QFX5120 platforms, unicast RPF check in strict mode might not work properly. PR1417546
- ERSPAN traffic is not tagged when the output interface is a trunk port. PR1418162
- libvirtMib_suba core file might be observed during installation of images. There is no functional impact due to this issue, since the core files are generated the libvirtMib_subagent. PR1419536
- When a bad optics is connected to the device, which could inhibit EEPROM failure conditions or I2C read failure conditions, the device could end-up in this condition. PR1420874
- On the QFX10000 line of switches, if the prefix entries configured in the prefix list exceeds the limit that the Packet Forwarding Engine (PFE) chipset supports, some unexpected behavior might be observed (for example, the host-bound traffic drops) after performing change operation related to the prefix-list configuration (for example, add a prefix to the prefix list that is associated with filter). PR1426539
- The **show ptp lock-status** command is not supported on QFX5110-48s-4c device from Junos OS Release 19.3. PR1426863
- On QFX10002-60C/PTX10002-60C platforms, if there is a **SIB Link Error** detected on specific Packet Forwarding Engines, all the Packet forwarding Engines might not forward traffic to one another. The error may be caused by a hardware condition such as any bad optics connected. PR1431592
- On QFX5110/QFX5120, optical interfaces such as 1G/10G SFP/SFP+ may take almost 3 minutes to reduce the Tx power to "0" on the other end of the interface, after issuing the **request system reboot at now** command. PR1431900
- On the QFX10000 line of switches, if a firewall filter with multiple match conditions is configured on interfaces that are up and the firewall filter is modified (either a new action is added or the condition is

added/removed , or for any other reason), the FPC might crash and restart. It might affect the service/traffic. PR1432116

- Issue in the current PR is because of PECHIP limitation when underlay is tagged. After Decap when the inner packet is recirculated it still retains the VLAN tag property from the outer header since the outer header was tagged. Thus 4 bytes of inner tag got overwritten in the inner packet and the packet got corrupted, which resulted in EGP chksum trap seen in PECHIP. Fixing PECHIP limitation in software has high risk. As a workaround, enable the **encapsulate-inner-vlan** statement. PR1435864
- On QFX10002, QFX10008, and QFX10016 Series platforms with enhanced convergence configured in an MC-LAG scenario, if a line card that has MC-LAG links is rebooted, the MC-LAG might not function correctly after the line card comes back up. The impact is that it might not block the BUM traffic received on the interchassis link (ICL) and might cause MAC movement and packet loss on the downstream devices. PR1444100
- Error log **DCBCM[bcore_init]: ioctl call failed ret:0** can be seen on FPC start/restart in FPC log messages. This error has no functional impact and can be ignored if observed. This error log can occur from Junos OS Release 18.3 onward on QFX-5e series platforms, except QFX5120. PR1445855
- On QFX10000 platforms and in an EVPN-VXLAN (spine-leaf) scenario, the QFX10000 spine switches are configured with VXLAN Layer 3 gateway (utilizing the virtual gateway) on an IRB interface. if you enable and then subsequently remove the VXLAN Layer 3 gateway on this IRB interface on one or some of these spine switches, traffic drop might be observed. If all virtual gateways are configured with an unique IPv4 or IPv6 MAC address, this issue would not happen. This is also the workaround. PR1446291
- In QFX5100 Virtual Chassis scenario, CRC (Cyclic Redundancy Check) error might be seen on the VCPs (Virtual Chassis ports) when the VCPs are "BCM84328 PHY" ports. The CRC error indicates there is data corruption or corrupted data, and the issue might degrade the system performance. The issue can be avoided by using non-"BCM84328 PHY" ports as VCPs to build the Virtual Chassis. PR1449406
- On QFX10000 platforms, under the scale scenario with more than 500 aggregated Ethernet logical interfaces, if the classifier configuration frequent churns or link flaps, the CoS classification will not work on the impacted interfaces. PR1450265
- On QFX10000 platforms, DHCP offer packet with unicast flag set gets dropped if anycast IP is used in a VXLAN multihomed setup. PR1452870
- On a QFX5100 Virtual Chassis VGD process overuses the CPU without **switch-options vtep-source-interface lo0.0** configuration. PR1454014
- On QFX5110-32Q Virtual Chassis with 100-Gigabit Ethernet VCP links, if the master switch with the lowest MAC address is rebooted, it might come up in the master state again instead of backup. This can have outage of around ten minutes and packet loss. PR1454343
- On a QFX5120, ARP does not get resolved for an untagged packet coming on an interface with **encapsulation ethernet-bridge**' and when this interface is in a VXLAN with **encapsulate-inner-vlan** configuration. PR1454804

- On QFX platforms with Link Aggregation Group (LAG) interfaces, if periodic **SFP diagnostic** is configured with a short interval (**test sfp periodic diagnostic-interval 3**), the LAG interfaces might have intermittent flaps and therefore cause service impact due to this issue. PR1458363
- On QFX5100 platforms, the fxpc (Packet Forwarding Engine manager) process might crash when multiple BGP IPv6 sessions (for instance, around 500) are flapped and then restored at the same time. PR1459759
- When you try to apply a firewall filter that contains a **then dscp** action to a Layer 3 inet subinterface, you will get an error when trying to commit. Applying the same filter to an IRB interface succeeds as does applying the same filter to a Layer 3 subinterface on QFX5100-48S. PR1464883
- On QFX5210 platforms, due to a firmware issue on the power supplies (PEMs) of the switch, the Routing Engine may spontaneously misread the status registers of a power supply. This produces erroneous messages of PEM not present. Although the power supply is present and can deliver power, the system may then deactivate the power supply believing it not to be present. PR1465183
- 10-Gbps speed on QFX5100-48T negotiates with 1-Gbps speed with BRCM 10G/GbE 2+2P 57800-t rNDC on Junos OS Release 19.1R2. PR1465196
- On QFX5200 or QFX5110 platforms, when frequent hot swap of optics module happens, the QSFP-100G-PSM4 could become undetected and related links will not come up. PR1465214
- On devices running Junos OS, the physical interface of AE might come up after a long delay (4 mins) if there are millions of BGP routes learned on the device. This delay is happening because the Packet Forwarding Engine Manager thread is busy processing the routing updates from the Routing Engine. These routing updates are the result of AE interface going down at the first step of disabling the interface. PR1465302
- When tunnel services are configured on a PIC, the optics measurements that subscribed through gRPC might not be streamed. PR1468435
- IP loop is observed at MPLS PHP node with continuous interface flaps at ingress/egress PE devices. This is observed with MPLS link protection configuration on all nodes. PR1469998

Routing Protocols

- In an MC-LAG setup, when status-control standby is rebooting and status-control active is down, and if the ICCP session-establishment timer is configured less than or equal to the init-delay-timer on status-control standby, then the mcae status of status-control standby might not come as active until the peer node is up. To avoid this, during these cases, ICCP session-establishment timer should be configured greater than init-delay-timer with preferably 100s or more. PR1348648
- In a scaled setup, when the host table is full and the host entries are installed in the LPM table, OSPF sessions might take more time to come up. PR1358289
- Value added in Hexa after Unknown Ext-Community is getting reset to 0. PR1371448

- On QFX-5100 VC/VCF, the following error is observed: **BRCM_NH-,brcm_nh_bdvlan_ucast_uninstall(), 128:l3 nh 6594 unintsall failed in h/w** with mini-PDT base configurations. There is no functionality impact because of this error message. PR1407175
- QFX5100: BGP v4/v6 convergence and RIB install or delete time degraded in 19.1R1, 19.2R1, 19.3R1, and 19.4R1. PR1414121
- On QFX5110/QFX5200 platforms, the dcpfe might crash if any interface flaps. PR1415297
- On QFX5000 with SP (service provider) style VLAN configuration (in this method, each VLAN-ID is locally significant to a physical interface), if interface-mac-limit/mac-table-size is configured (that is, software MAC learning is enabled) and the scale of MAC addresses on the box is more than 2000, traffic might be dropped after the QinQ enabled interface is flapped or a change is made to the vlan-id-list. PR1441402
- When applying a firewall filter, which has a modifier to change the DSCP value of a packet, to an IRB interface, the action modifier has no effect. PR1441444
- On a QFX5120 platform acting as a transit node, it might drop all the tunnel encapsulated packets like MPLS over GRE, MPLS over Generic Network Virtualization Encapsulation (GNVE) / MPLS over Generic Protocol Extension (GPE) packets. PR1447128
- With **protocol igmp-snooping** configured, if some receiver joins/leaves a group, a few seconds of traffic drop might be seen on the existing receivers. PR1457228
- Multicast statistics-related errors such as **brcm_ipmc_route_counter_delete:3900Multicast stat destroy failed (-10:Operation still running)** will be observed during unified ISSU, and these messages are harmless and do not affect multicast functionality. PR1460791

SEE ALSO

New and Changed Features | **251**

Changes in Behavior and Syntax | **261**

Known Behavior | **267**

Resolved Issues | **282**

Documentation Updates | **301**

Migration, Upgrade, and Downgrade Instructions | **301**

Resolved Issues

IN THIS SECTION

This section lists the issues fixed for the QFX Series switches in the Junos OS main release and the maintenance releases.

For the most complete and latest information about known Junos OS defects, use the Juniper online Junos Problem Report Search application.

Resolved Issues: 18.4R3

Authentication and Access Control

- Without dot1x configuration, the syslog **dot1xd[2192]: task_connect: task PNACAUTH./var/run/authd_control addr /var/run/authd_control: Connection refused** is generated repeatedly. PR1406965

Class of Service (CoS)

- QFX10008: FPC0 generated core files after running the Packet Forwarding Engine command **show cos sched-usage**. PR1449645
- The **show cos scheds-per-pfe** and **show cos pfe-scheduler-ifds** Packet Forwarding Engine commands will restart forwarding planes on QFX10008 switches. PR1452013

EVPN

- Unexpected next-hop operation error from kernel to l2ald in a Layer 2 gateway during the MAC movement operation. PR1430764
- Asynchronous between ARP table and Ethernet switching table happens if the EVPN ESI link flaps multiple times. PR1435306
- The multihomed mac-ip table entry might not be cleaned when the host MAC is deleted from the MAC table. PR1436712
- Configuring ESI on a single-homed 25 Gigabit Ethernet port might not work. PR1438227

- When using **no-arp-suppression**, an ARP request might not be sent out when an ARP entry ages out. PR1441464
- ARP and IPv6 neighbor entries cannot be cleared when they are learned from EVPN multihome ESI. PR1446957
- EVPN-VXLAN NON-COLLAPSED: ARP will get resolved on QFX5100 for VXLAN with VLAN ID of 2. PR1453865
- ARP request/NS might be sent back to the local segment by DF router. PR1459830

Interfaces and Chassis

- VRRP-V6 state is flapping with init and idle states after configuring vlan-tagging. PR1445370
- On QFX10000 ARP entries might not be synced between mc-lag devices. PR1449806
- The traffic might be forwarded to wrong interfaces in an MC-LAG scenario. PR1465077

Layer 2 Features

- Packet loss might be seen when one of the spine switch fails or reboots. PR1421672
- Ethernet ring protection switching (ERPS) nodes might not converge to IDLE state after failure recovery or reboot. PR1431262
- EVPN-VXLAN NON-COLLAPSED: JTASK and multimove depth failed errors are seen after HALT. PR1434687
- Transit DHCPv6 packets might be dropped on QFX5100/QFX5200 platforms. PR1436415
- Physical layer and MAC/ARP learning might not work for copper base SFP-T on QFX5100/QFX5110/EX4600. PR1437577
- The traffic leaving QFX5000 and EX4600 switches might not be properly load-balanced over AE interfaces. PR1448488
- Unequal LAG hashing might happen on QFX Series devices. PR1455161
- The **fxpc.core** might be seen when committing the configuration all together, for example, after the reboot. PR1467763

Layer 2 Ethernet Services

- The DHCP DECLINE packets are not forwarded to the DHCP server when forward-only is set within **dhcp-reply**. PR1429456

MPLS

- The l2circuit traffic might be silently dropped at EVPN SPINE/MPLS LSP TRANSIT device if VXLAN access interface flaps on remote PE node (QFX5110). PR1435504
- [QFX10002]: The command **show mpls static-lsp | display xml** produces INVALID XML. PR1469378
- MPLS LDP ping or trace route fails over QFX5100 as transit PHP node. PR1477301

Platform and Infrastructure

- On QFX5100 platforms, LR4 QSFP can take up to 15 minutes to come up after Virtual Chassis reboot. PR1337340
- When powering off an individual FPC, the other FPC Packet Forwarding Engine might go offline too. PR1344395
- The backup member switch might fail to become the master switch after switchover on QFX5100 and QFX5200 Virtual Chassis platform. PR1372521
- New CLI configuration to enable copying of Open vSwitch Database (OVSDB) to RAM on Virtual Chassis backup Routing Engine instead of SSD. PR1382522
- QSFP-100GBASE-SR4/LR4 might take a long time to come up after disabling interface or reboot. PR1402127
- The MTU might change to a Jumbo default size on Packet Forwarding Engine side after deleting and re-adding the interface. PR1402588
- Ping over loopback might not work over TYPE 5 tunnel on QFX10000 platforms. PR1405786
- QFX5200 and QFX5100 might not be able to send out control plane traffic to the peering device. PR1406242
- No inner VLAN tag is added even with **input-vlan-map push** configured on QFX10000 platforms. PR1407347
- QFX5000 : Transit traffic loss when one of LAG child interfaces is deleted or deactivated. PR1408178
- The optic comes with Tx enabled by default. As the port is administratively disabled, the port is stopped but as the port has not been started, it does not disable Tx. PR1411015
- Storm control is not shutting down mc-ae interface. PR1411338
- The QFX10002 might stop forwarding packets after the **chassis-control** process restarts. PR1414434
- QFX5120-32C: DHCP binding on client might fail when QFX5120-32C is acting as DHCP server. This is seen only for a channelized port. PR1421110
- IPv6 multicast traffic received on one Virtual Chassis member might be dropped when exiting another other Virtual Chassis member if MLD snooping is enabled. PR1423310
- Ports might get incorrectly chanalized if they are configured as 10-Gbps ports already and they are channelized to 10 Gbps again. PR1423496
- On QFX5000 and QFX10000 switches, packet drops might be seen for the traffic that has to go over Type-5 overlay tunnel. PR1423928
- The dcpfe/Packet Forwarding Engine might not start on AS7816-64X and QFX5000 TVP devices. PR1426737
- QFX5210: Received LLDP frames on em0 are not displayed in LLDP neighbor output. PR1426753

- Rebooting or halting Virtual Chassis member might cause traffic on RTG link to be down for about 30 seconds. PR1427500
- QFX5100-VCF - rollback for uncommitted configuration takes 1 hour. PR1427632
- Packet drops, replication failure, or ksyncd crashes might be seen on the logical system of a device running Junos OS after Routing Engine switchover. PR1427842
- The dcpfe process might crash and restart in an MC-LAG scenario when the ARP/NDP next-hop is changed. PR1427994
- The jumbo frame size packets are dropped when maximum MTU size is configured. PR1428094
- Licenses used flag for OVSDB on **show system license** won't be flagged even though OVSDB is configured and working. PR1428207
- The **global-mac-limit** and **global-mac-ip-limit** might allow more entries than the configured values. PR1428572
- [QFX10008] After Routing Engine switchover, LED status is not set for missing fan tray. PR1429309
- DHCP relay might not work in an EVPN-VXLAN scenario. PR1429506
- DHCP relay might not work in an EVPN-VXLAN scenario. PR1429536
- Traffic impact might be seen on QFX10000 platforms with interface **hold-down** timer configured. PR1430722
- The l2cpd process might crash and generate a core file when interfaces are flapping. PR1431355
- The dcpfe might crash on all line cards on QFX10000 in a scaled setup. PR1431735
- All ingress traffic might be dropped on 100-Mbps fixed speed port with **no-auto-negotiation** enabled. PR1431885
- Layer 2 traffic drop on QFX10000 with interface MTU size lower than 270 bytes. PR1431902
- Outer VLAN tag might not be pushed in the egress VXLAN traffic toward the host for QinQ scenario. PR1432703
- Line card might crash due to plugged in unsupported SFP-T module. PR1432809
- Traffic loss might be seen on QFX10000/PTX10000 platforms using line card LC1105. PR1433300
- Layer 3 filters applied to PVLAN IRB interface might not work after unified ISSU. PR1434941
- QFX5100-Virtual Chassis : NSSU: There might be approximate 1 minute traffic loss during NSSU with LACP link protection configuration. PR1435519
- SIB/FPC Link Error alarms might be observed on QFX10000 due to a single CRC. PR1435705
- The mc-ae interface might get stuck in waiting state in a dual mc-ae scenario. PR1435874
- QFX5200 NSSU: dcpfe core files are seen after NSSU upgrade of backup followed by reboot. PR1435963
- Laser TX remained enabled while interface is disabled using the Routing Engine CLI configuration. PR1436286

- DHCP discover packets sent to IP addresses in the same subnet as irb interface cause the QFX5110 to send bogus traffic out of **dhcp-snooping** enabled interfaces. PR1436436
- Unknown SNMP trap (1.3.6.1.4.1.2636.3.69.1.0.0.1) sent on QFX5110 restart. PR1436968
- The FPC might crash if both the AE bundle flapping on a local device and the configuration change on peer device occur at the same time. PR1437295
- QFX5110, QFX5200, QFX5210: There is no jnxFruOK SNMP trap message when only the power cable is disconnected and connected back. PR1437709
- Routing Engine switchover does not work as expected while SSD failure occurs. PR1437745
- BGP neighborship might not come up if the MACsec feature is configured. PR1438143
- The DHCP Snooping table might be cleared for VLAN ID 1 after adding a new VLAN ID to it. PR1438351
- Interfaces configured with **flexible-vlan-tagging** might lose connectivity. PR1439073
- The xSTP recognizes 1G SFP-T optic interface as LAN type resulting in slow STP convergence. PR1439095
- LACP MUX state struck in "Attached" after disabling peer active members when link protection is enabled on local along with force-up. PR1439268
- DHCPv6 relay binding is not up while verifying the DHCP snooping along with DHCPv6 relay. PR1439844
- QFX Series Virtual Chassis does not comes up after replacing Virtual Chassis port from fiber connection to DAC cable. PR1440062
- MAC addresses learned on RTG might not be aged out after a Virtual Chassis member is rebooted. PR1440574
- QFX10002 MCLAG PDT: Layer 2, Layer 3 Traffic drop seen when you disable and then enable MC-LAG. PR1440732
- The Layer 3 communication might break on an interface that is configured with **flexible-ethernet-services**. PR1441690
- The operational status of the interface in hardware and software might be out of synchronization in an EVPN setup with the **arp-proxy** feature enabled. PR1442310
- Flow control does not work as expected on a 100-Gigabit Ethernet interface of QFX5110. PR1442522
- The PMTUD might not work for both IPv4 and IPv6 if the ingress Layer 3 interface is an IRB. PR1442587
- DHCPv6 client might fail to get an IP address. PR1442867
- On QFX10008 traffic impact might be seen when the JSRV interface is used. PR1445939
- CoS classifier might not work as expected. PR1445960
- Traffic discarded for only specified VLAN in IPACL_VXLAN filters. PR1446489
- Long IPv6 addresses are not displayed fully on IPv6 neighbor table. PR1447115
- Unicast ARP requests are not replied to with **no-arp-trap** option. PR1448071

- Rebooting QFX5120-48Y using **request system reboot** doesn't take physical links offline immediately. PR1448102
- Except one AE member link, the other links do not send out sFlow sample packets for ingress traffic. PR1449568
- FPC does not restart immediately after rebooting the system. That might cause packet loss. PR1449977
- REST API process will get non-responsive when a number of request come with a high rate. PR1449987
- Tunneling-encapsulated packets are dropped on a Layer 3 VPN MPLS PE-CE interface. PR1451032
- FPC core files might be seen after changing the configuration of PTP or Synchronized Ethernet. PR1451950
- vgd core files might be generated when the tunnel gets deleted twice. PR1452149
- There might be interface reachability issues on AS7816. PR1452433
- Configuration change in VLAN all option might affect the per-VLAN configuration. PR1453505
- The classifier configuration doesn't get applied to the interface in an EVPN/VXLAN environment. PR1453512
- The **show chassis led** shows incorrect status. PR1453821
- In a 16+ member QFX5100 VCF, the **FROM** column under the **show system users** output reports feb0/1/2/3 for fpc16/17/18/19, respectively. PR1455201
- The PFC feature doesn't work on QFX10000 Series platforms. PR1455309
- The laser from the 10G SFP+ interface is still on when the interface is disabled or the device is rebooted. PR1456742
- The Packet Forwarding Engine process might crash after Routing Engine switchover on QFX10000 platforms. PR1457414
- Overtemperature SNMP trap messages are shown up after update even though the temperatures are within the system thresholds. PR1457456
- Dual tag Q-in-Q not working with EVPN-VXLAN. PR1458206
- The BPDU packet might be looped between leaf DF switch and non-DF switch and causes traffic blocking. PR1458929
- DHCPv6 LDRA relay bounded count is not as expected after DHCP configured. PR1459499
- The **forwarding** option is missed in routing-instance type. PR1460181
- The **accept-source-mac** feature with VXLAN is not working on QFX5000 platforms. PR1460885
- The "entPhysicalTable" MIB is not fetching expected data on QFX10002-72Q / 36Q platforms. PR1462582
- The fxpc process might generate core files when changing MTU in a VXLAN scenario with firewall filters applied on QFX5000 platforms. PR1462594

- QFX 5100 VC/VCF : Observing error **BRCM-VIRTUAL,brcm_vxlan_walk_svp(),6916:Failed to find L2-iff for ifl:** while cleanup Evpan-VxLAN configs with Mini-PDT base configurations. PR1463939
- The dcpfe might crash when changing the firewall filter on QFX5000 platforms. PR1464352
- BGP open messages with specific types of BGP Optional Capabilities causing BMP messages not to be encoded correctly when sent to the BMP Collector. PR1466477
- Slow packet drops might be seen on QFX5000 platforms. PR1466770
- Ingress drops to be included at CLI from interface statistics and added to InDiscards. PR1468033
- l2ald core is seen (**l2ald_mem_free, l2ald_update_comp_vmenh**) after restarting dc-pfe in Virtual Chassis devices. PR1473521

Routing Protocols

- Some storm control error logs might be seen on QFX Series platforms. PR1355607
- Invalid VRRP mastership election on QFX5110-VC peers. PR1367439
- The IRB transit traffic might not be counted for EVPN/VXLAN traffic. PR1383680
- The same traffic flow might be forwarded to different ECMP next-hops on QFX5000 platforms. PR1422324
- The traffic with destination UDP port 521 (RIPng) gets dropped on QFX5000 platforms. PR1429543
- BGP configuration **multipath multiple-as** does not work in a specific scenario. PR1430899
- The fxpc core files might be seen during the reboot of QFX5100/EX4600 switches. PR1432023
- The IPv4 fragmented packets might be broken if PTP transparent clock is configured. PR1437943
- The bandwidth value of the DDoS protection might cause packets loss after a device reboot. PR1440847
- The rpd process might crash in an inter-AS option B Layer 3 VPN scenario if CNHs is used. PR1442291
- IPv6 connectivity between MC-LAG peers might fail when multiple IRB interfaces are present. PR1443507
- PIM (S,G) joins can cause MSDP to incorrectly announce source active messages in some cases. PR1443713
- Loopback address exported into other VRF instance might not work on QFX Series platforms. PR1449410
- MPLS LDP might still use stale MAC of the neighbor even the LDP neighbor's MAC changes. PR1451217
- The egress interface in Packet Forwarding Engine for some end-hosts might not be correct on the Layer 3 gateway switch after it is rebooted. PR1460688
- When deleting IRB on the Layer 3 gateway, IRB does not get removed from Packet Forwarding Engine and will silently drop traffic to IRB MAC address. PR1463092

User Interface and Configuration

- QFX5100 is unable to commit the baseline configuration after zeroization. PR1426341

Resolved Issues: 18.4R2

Class of Service (CoS)

- Error message **STUCK_BUFF : port_sp not empty for port 35 sp 1 pkts:1** is seen when a lag bundle is configured with 64 lag links. PR1346452

EVPN

- The rpd process might crash with EVPN type 3 route churn. PR1394803
- VNI is not updated on default route 0.0.0.0/0 advertised by EVPN type 5 prefix when the local configuration is changed. PR1396915
- ARP refresh functionality might fail in an EVPN scenario. PR1399873
- EVPN: In the non-collapsed (centralized) topology, when one of the two spines deactivates the underlay protocol (OSPF), the leaf still points the virtual gateway MAC next hop to the spine that is down. PR1403524
- ARP entry is still pointing to the failed VTEP after the PE-CE link fails for a multihomed remote ESI PR1420294
- Multicast MAC addresses are learned in the Ethernet switching table with VXLAN through an ARP packet in a pure L2 configuration PR1420764
- The device might proxy the ARP probe packets in an EVPN environment PR1427109
- Extra incorrect MAC move might be seen when the host moves continuously between the different ESIs PR1429821

Forwarding and Sampling

- On Junos OS, firewall filter terms named "internal-1" and "internal-2" are ignored. PR1394922

General Routing

- The 1iGigabit copper module interface shows **Link-mode: Half-duplex** on QFX10000 line platforms. PR1286709
- On QFX5120, convergence delay between PE1 and P router links is more than the expected delay value. PR1364244
- RIPv2 update packets might not be sent with **IGMP snooping** enabled. PR1375332
- EM policy update is needed on QFX5210-64C. PR1380077
- The overlay ECMP might not work as expected on QFX5110 in an EVPN-VXLAN environment PR1380084

- There is an inconsistency in applying a scheduler map with excess rate on the physical interface and aggregated Ethernet interface. PR1380294
- Traffic is silently dropped and discarded when the FPC is taken offline in an MC-LAG scenario. PR1381446
- The QFX-QSFP-40G-SR4 transceiver might not be recognized after upgrading Junos OS on QFX5100e. PR1381545
- Static default route with next-table inet.0 does not work. PR1383419
- The log of **RPD_KRT_Q_RETRIES: list nexthop ADD: No such file or directory** might be continuously shown after the rpd process restart. PR1383426
- DMA failure errors might be seen when the cache is flushed or the cache is full. PR1383608
- DHCP packets might be dropped in a Junos fusion data center scenario (QFX10000 line of devices). PR1383623
- Last reboot reason is not correct if the device is rebooted because of power cycling. PR1383693
- The Virtual Chassis could not come up after upgrading to QFX5E platforms . PR1383876
- Disable reporting of correctable single-bit error on Hybrid Memory Cube (HMC) and prevent a major alarm. PR1384435
- QFX5120 occasionally two of the channelized 25-Gigabit ports using 4x25-Gigabit breakout cable will not come up after Junos OS reboot. PR1384898
- The spine EVPN routes might be stuck in a hidden state with the next hop as unusable after the FPC is offline in the spine. PR1386147
- The **show chassis errors active detail** command is not supported on QFK5000 platforms. PR1386255
- The rpd process might end up with stuck krt queue entries in a VRF scenario. PR1386475
- Traffic drop might be seen on QFX10000 platforms with EVPN-VXLAN configured. PR1387593
- QFX5100, QFX5110, QFX5200, and QFX5210 Virtual Chassis could not be formed normally. PR1387730
- On QFX5100 Virtual Chassis, ARP received on SP-Style interface is not sent to all RVTEPs. Normal BUM traffic works fine. PR1388811
- FPC might crash on QFX5100 platforms in a large-scale scenario PR1389872
- Input rate pps does not increase on QFX5200-48Y uplink ports when the packet is a pure L2 packet like non-etherII or non-EtherSnap. PR1389908
- An incorrect error message might be seen when Jflow sensors are configured with reporting rate less than 30 seconds. PR1390740
- 10-Gigabit copper link flapping might happen during a TISSU operation of QFX5100-48T switches. PR1393628
- IPv6 next hop programming issue might be observed on QFX10000 devices. PR1393937
- On QFX5110 Virtual Chassis, fan tray output is not displayed for backup Routing Engine. PR1394655

- PTP-over-Ethernet traffic could be dropped if IGMP and PTP TC are configured together. PR1395186
- Unable to install licenses automatically on QFX Series platforms. PR1395534
- **BRCM_NH-,brcm_bcm_mpls_tunnel_initiator_clear(),226:bcm_mpls_tunnel_initiator_get failed intf = 4 failure** error logs might seen in syslog. PR1396014
- The subscriber bindings might not be successful on QFX Series platforms. PR1396470
- On QFX5110, the fan LED turns amber randomly. PR1398349
- High jsd or na-grpcd CPU usage might be seen even when JET or JTI is not used. PR1398398
- CPU interrupt process is high because of the intr{swi4: clock (0)} on QFX5100-48T-6Q running a QFX 5e Series image and Junos OS 18.x code. PR1398632
- The DHCPv6 relay packets are dropped when both the UDP source and destination ports are 547. PR1399067
- CPU hog might be observed on QFX10000 Series platform. PR1399369
- The DHCPv6 relay packets might be dropped by the DHCP relay. PR1399683
- SFP-LX10 does not work on QFX5110 PR1399878
- PEM I2C failure alarm might be shown incorrectly as failed. PR1400380
- MAC limit with persistent MAC is not working after reboot PR1400507
- Only one Packet Forwarding Engine might be disabled on an FPC with multiple PFEs in error/wedge condition. PR1400716
- The authd might crash when issuing **show network-access requests pending** command during the authd restart. PR1401249
- File permissions are changed for **/var/db/scripts** files after reboot. PR1402852
- The STP does not work when aggregated interfaces number is "ae1000" or above in QFX5000 and "ae480" or above in other QFX Series platforms. PR1403338
- The DHCP discover packets are forwarded out of an interface incorrectly if DHCP snooping is configured on that interface. PR1403528
- The VRRP VIP might not work when it is configured on the LAG interface. PR1404822
- ARP/ND will not be resolved if a native VLAN ID is configured for an LAG access interface. PR1404895
- Commit warning message occurs on QFX5100. PR1405138
- Executing the command **request system configuration rescue save** might fail with error messages. PR1405189
- DHCP does not work for some clients in Junos fusion aggregated device (AD) setup on EP ports. PR1405495
- On QFX5120, in a VXLAN-EVPN configuration, transition from collapsed to non-collapsed L2 or L3 gateway and vice versa needs a switch reload. PR1405956

- VXLAN transit traffic over a tagged underlay L3 interface and underlay IRB gets dropped due to a hardware limitation. PR1406282
- The ARP request might not be resolved successfully if the arp-suppression is enabled and **vlan-id-list** is configured on the spine node. PR1407059
- The Packet Forwarding Engine might get disabled unexpectedly because of a auto correctable non-fatal hardware error on QFX10002, QFX10008, and QFX10016. PR1408012
- DHCP discover packets might be dropped over a VXLAN tunnel if DHCP relay is enabled for other VXLAN or VLANs. PR1408161
- MAC address movement might not happen in flexible Ethernet services mode when **family inet/inet6** and **vlan-bridge** are configured on the same physical interface. PR1408230
- Fan failure alarms might be seen on QFX5100-96S after an upgrade to Junos OS Release 17.3R1. PR1408380
- Restarting a line card on QFX10008 and QFX10016 with MC-LAG enhanced-convergence might cause intra-VLAN traffic to get silently dropped and discarded. PR1409631
- The FPC might crash and might not come up if **interface-num** or next hop is set to the maximum value under **vxlan-routing** on QFX Series platforms. PR1409949
- LLDP memory leak occur when IEEE DCBX packet is received in autonegotiation mode followed by another DCBX packet with none of **ieee_dcbx tlvs** present. PR1410239
- On QFX5100-48T and QFX5100-6Q, the error message **dc-pfe: BRCM_NH-,brcm_nh_resolve_get_nexthop(),346:Failed to find rt table** is seen. PR1410717
- Traffic loss might be observed after VXLAN configuration change PR1411858
- The spfe on a satellite device in a Junos fusion setup might crash and it might cause the satellite device to go offline. PR1412279
- On QFX Series platform, PEM alarm for backup FPC will be remained on master FPC though backup FPC is detached from Virtual Chassis. PR1412429
- The Junos OS device acting as the PCC might reject PCUpdate or PCCreate message if there is a metric type other than type 2. PR1412659
- On the QFX5000 line of switches, the EVPN-VXLAN multicast next-hop limit is 4000. PR1414213
- Virtual Chassis ports using DAC might not establish a link on QFX5200. PR1414492
- DC output information is missing in the **show chassis environment pem** output for whitebox. PR1414703
- VXLAN encapsulation next hop (VENH) does not get installed during BGP flapping or when routing is restarted. PR1415450
- FEC change from FEC91 to NONE does not taked effect on 100-Gigabit Ethernet interfaces with QSFP-100GBASE-SR4 optics. PR1416376
- Two instances of Junos OS are running after an upgrade to Junos OS Release 18.1R3-S3.7. PR1416585

- In Junos OS Release 18.1R3-S3, restarting routing on spine devices leads to the dcpfe generating a core file at **nh_composite_change**. PR1416925
- Rebooting QFX5200-48Y using **request system reboot** does not take physical links offline immediately. PR1419465
- During QFX5120-48Y or QFX5120-32C power cycling tests, 100-Gigabit PSM4 optics connected ports went down randomly PR1419826
- An interface might go to down state on QFX10000 and PTX10000 platforms. PR1421075
- On QFX5120-32C, DHCP binding on the client might fail when the QFX5120-32C acts as the DHCP server. This is seen only for channelized ports. PR1421110
- Fusion: ETS configuration is not applied on non-cascade ports when the AD is rebooted. PR1421429
- BFD might get stuck in slow mode on QFX10002/QFX10008/QFX100016 platform PR1422789
- QFX5100-48T 10G interface might be autonegotiated at 1-Gbps speed instead of 10Gbps. PR1422958
- The interface cannot come up when the remote-connected interface only supports 100M in QFX5100 Virtual Chassis setup. PR1423171
- ON QFX5120-32C , BUM traffic coming over irb underlay interface gets dropped on destination vtep in PIM-based VXLAN. PR1423705
- Traffic is dropped after FPC reboot with AE member links deactivated by remote device. PR1423707
- Ping over an EVPN type-5 route to QFX10000 does not work. PR1423928
- All interfaces will be down and the dcpfe might crash if SFP-T is inserted in a QFX5210. PR1424090
- IPv6 neighbor solicitation packets for link-local addresses are dropped when passing through QFX10002-60C. PR1424244
- All interfaces creation fails after NSSU. PR1425716
- Heap memory leak might be seen on QFX10000 platforms. PR1427090
- The rpd process might generate a core file because of the improper handling of graceful restart stale routes. PR1427987
- QFX5120-48Y interface with the optic QSFP-100GBASE-ER4L does not come up in "18.3R1-S2.1" PR1428113
- On QFX Series EVPN-VXLAN, the l2ald process crashes and generates a core file when the number of hardware VXLAN IFBDS exceeds the maximum limit of 16382. PR1428936
- DHCP relay might not work in an EVPN VXLAN scenario. PR1429506
- An interface on a QFX Switches does not come up after the transceiver is replaced with one having different speed. PR1430115
- In collapsed VGA4 script ping on shared ESI R6 to R7 IRB address fails. PR1430327

- On QFX Series switches, the **Validation of metadata files failed** message is seen on the hypervisor. PR1431111
- QFX5110 SFP-T: All ingress traffic is dropped on 100M fixed speed port with no-autonegotiation. PR1431885
- Transit DHCPv6 packets might be dropped on QFX5000 platforms PR1436415
- On QFX5110, QFX5200, QFX5210, there is no jnxFruOK SNMP trap message when only the power cable is disconnected and connected back. PR1437709

Interfaces and Chassis

- Constant dcpfe process crash might be seen when an unsupported GRE interface configuration is used. PR1369757
- Changing the value of **mac-table-size** to default might lead all FPCs to reboot. PR1386768
- Missing mandatory ICCP configuration statement **redundancy-group-id-list** produces a misleading error message. PR1402606
- The logical interfaces in EVPN routing instances might flap after committing configurations PR1425339

Junos Fusion Satellite Software

- Extended port (EP) LAG might go down on the satellite devices (SDs) if the related cascade port (CP) links to an aggregation device (AD) go down. PR1397992

Layer 2 Ethernet Services

- The malfunction of the core isolation feature in EVPN-VXLAN scenarios causes traffic to be silently dropped and discarded. PR1417729

Layer 2 Features

- VXLAN next hop entry leak issue is seen on EX4600 and QFX5000 platforms. PR1387757
- With **IGMP snooping** enabled on the leaf switches, multicast traffic is forwarded to VLAN/VNI that does not have an active receiver. PR1388888
- On QFX Series, the error message **Failed with error (-7) while deleting the trunk 1 on the device 0** is seen. PR1393276
- On QFX5000 platforms, symmetric hashing can be done though it can not be enabled and stored in the Junos OS configuration. PR1397229
- On EVPN-VXLAN, dcpfe is restarted at the _bcm_field_td_counter_last_hw_val_update routine after upgrading spine with the latest image. PR1398251
- ARP response packets might include an incorrect VLAN ID and VNI PR1400000
- On QFX5000, dcpfe process crash might be observed during restart of Packet Forwarding Engine on a system with scaled EVPN-VXLAN configuration. PR1403305

- On QFX Series EVPN-VXLAN, the unicast IPv6 NS message gets flooded on L3GW. Both IPv4 and IPv6 traffic drops on L2SW. PR1405814
- The IPv6 NS/NA packets received over VTEP from an ESI host are incorrectly flooded back to the host. PR1405820
- IGMP snooping on EVPN-VXLAN might impact OSPF hello packets flooding after a VTEP leaf reboot. PR1406502
- QFX5110VC generates DDOS messages of different protocols on inserting a 1G/10G SFP or forming VCP connection PR1410649
- With **arp-suppression** enabled, the QFX5000 might not forward IPv6 router solicitations or advertisement packets. PR1414496

Network Management and Monitoring

- The chassisd might crash and restart after the AGENTX session between master(snmpd) and sub-agent timeout. PR1396967
- Log files might not get compressed during the upgrade. PR1414303

Routing Protocols

- BUM packets might get looped if EVPN multihoming interface flaps PR1387063
- EVPN-VXLAN NON-COLLAPSED: AUTONEG errors and flush operation failed errors are seen after the device is power cycled. PR1394866
- On QFX5110 and QFX5200, EVPN-VXLAN NON-COLLAPSED: dcfpe generates a core file at **brcm_pkt_tx_flush, l2alm_mac_ip_timer_handle_expiry_event_loc**, after a random event. PR1397205
- On QFX5110, firewall filter applied on a VXLAN mapped VLAN is not supported in a EVPN-VXLAN scenario. PR1398237
- The rpd generates a core file and inappropriate route selection might be seen when L2VPN is used PR1398685
- The FPC/dcpfe process might crash because of interface flapping. PR1408428
- Host-generated ICMPv6 RA packets might be dropped on the backup member of VC if **IGMP-snooping** is configured. PR1413543
- The QFX Series switch might not install all IRB MAC addresses in the initialization PR1416025
- After an IRB logical interface is deleted, the MAC entry for the IRB interface is deleted for the IRB hardware address, and packets destined to other IRB logical interfaces where MAC is not configured are impacted. PR1424284

Spanning Tree Protocols

- The l2cpd might crash if the VSTP traceoptions and VSTP VLAN all commands are configured. PR1407469

Resolved Issues: 18.4R1

EVPN

- The QFX10000 might drop transited traffic coming from the MPLS network to VXLAN-EVPN. PR1360159
- Proxy ARP might not work as expected in an EVPN environment. PR1368911
- QFX10000 or import default IPv6 route to VRF causes infinite entries to get created in **evpn ip-prefix-database** and become unstable. PR1369166
- VTEP's MAC address might not be learned in the Ethernet switching table. PR1371995

General Routing

- After clearing the QFX5100 is treating 40G AOC uplink as 4x10g breakout with auto-channelization enabled. PR1317872
- Status LED on the chassis does not show up on QFX10002-60c. PR1332991
- AI-script does not get auto-upgrade unless it is manually done after a Junos OS upgrade. PR1337028
- On QFX5100 platforms, LR4 QSFP can take up to 15 minutes to come up after a Virtual Chassis reboot. PR1337340
- QFX5100 40G port has an interoperability issue with some other vendors. PR1349664
- ARP learning might fail after changing the interface MAC address. PR1353241
- On EVPN-VXLAN, the VXLAN traffic might be lost in EVPN type 2 and type 5 scenario. PR1355773
- The QFX5120-48Y cannot match on user-vlan-id for tunnel terminated packets. PR1358669
- On the QFX10000 line of switches, packets will be dropped when **virtual-gateway-address** is configured on an IRB interface associated with a non-vxlan VLAN. PR1360646
- FEC is incorrectly displayed on QFX10002-36Q and QFX5110. PR1360948
- VME interface might be unreachable after link flap of em0 on master FPC. PR1362437
- Traffic might not be forwarded when the member link of the aggregated Ethernet interface is added or deleted. PR1362653
- A 1G interface might stop working when autonegotiation is off by default. PR1362977
- The following log messages are seen: **kernel: tcp_timer_keep: Dropping socket connection**. PR1363186
- On QFX10008 and QFX10016 platforms, MPLS exp rewrite might not work for IPv6 and IPv4 traffic. PR1364391
- Traffic loss is observed when unified ISSU is performed with aggregated Ethernet interfaces configured with LACP protocol. PR1365316

- Root password recovery process does not work. PR1365740
- The l2cpd process might crash when configuring MVRP with private VLAN and RSTP interface all. PR1365937
- QFX5110-5100 VCF / 1G link does not come up. PR1366218
- The tagged traffic is dropped in the untagged EVPN/VXLAN scenario. PR1366336
- On QFX10002-60C and QFX10000-30C platforms, some interfaces do not come up during initialization after a reboot. PR1368203
- On QFX Series switches, IS-IS adjacency with Cisco might go down. PR1368913
- The **commit** or **commit check** might fail due to the error **cannot have lsp-cleanup-timer without lsp-provisioning**. PR1368992
- In certain routing topologies with sFlow configured, sampled packets might be duplicated and sFlow records are not sent to the collector. PR1370464
- The first 2 characters out of 14 of AS7816-64 serial number are truncated. PR1371126
- For Junos OS Release 18.1R1 and earlier releases, the USB image installation on QFX5210-64C, AMI bios upgrade needs to be done. PR1371199
- On the QFX10000 line of switches, before the Junos OS Release 17.3R3 code, the maximum number of ESI logical interfaces was 4000 in the Packet Forwarding Engine. PR1371414
- On QFX5100, the IPv6 routed packet will be transmitted though VRRP state in transition to master. PR1372163
- Packets might be dropped after deleting a filter from an interface. PR1372957
- MAC refresh packet might not be sent out from the new primary link after RTG failover. PR1372999
- TPI-50840 BUM traffic received on 5110 is not flooded to all remote VTEPs. PR1373093
- BOOTP packets might be dropped if BOOTP support is not enabled at the global level. PR1373807
- LLDP might stop fully working between a QFX10000 line switch and a non-Juniper Network device. PR1374321
- On QFX5110, Ethernet switching flood group shows incorrect information. PR1374436
- Only the loopback interface is supported under VRF routing instances. PR1375130
- Packet Forwarding Engine wedge might be observed if there are interfaces going to down state. PR1376366
- The same address family (subnet logical interface or IRB logical interface, but not both) needs to be configured for establishing VTEPs. PR1376996
- The autonegotiation interface might go down if the opposite device supports only 10/100M autonegotiation. PR1377298

- Debug logs are printed as error logs in **/var/log/messages**. **expr_nh_flabel_check_overwrite: Caller nh_id params** message is classified as error log when it should be LOG_INFO. PR1377447
- Deleting an IRB interface might affect other IRB interfaces if the same custom MAC address is configured. PR1379002
- LOC and Diag system LED's on the front panel are not defined yet. PR1380459
- L3VPN traffic might be dropped due to one core-facing interface being down. PR1380783
- A QFX5xxx Packet Forwarding Engine might show DISCARD next-hop for overlay-bgp-lo0-ip in a spine-and-leaf topology. PR1380795
- Virtual Chassis master is copying **/var/db/ovsdatabase** to backup every 10 seconds, which causes a high write IO and shortens the SSD lifetime in Open vSwitch Database (OVSDB) environment. PR1381888
- EVPN-VXLAN ARP/NDP proxy is not working. PR1382483
- The Packet Forwarding Engine might crash if the GRE destination IP is resolved over another GRE tunnel. PR1382727
- The functionality under the license "JUNOS-FP-C2" might take effect even it does not get installed properly. PR1383274
- The 'force-host' upgrade is required for QFX5110-48S-4C in Junos OS Release 18.4 if the PTP over IPv6 G.8275.2 feature configured. PR1384073
- The Layer 3 interface might stop pinging directly connected link address after deleting Layer 2 on a physical interface. PR1384144
- On QFX5110 platforms, SFPP-10G-DT-ZRC2 and SFPP-10G-CT50-ZR transceivers might not be tunable and remain 1550.10nm by default in the hardware. PR1384524
- Port-mirroring-instance or analyzer-based mirroring does not work with input as VLAN ingress when VLAN is mapped to VXLAN. PR1384732
- All 1G SFP copper and 1G fiber optic links remain up on QFX10008 after all SIBs/FPCs are offline. PR1385062
- The IPv6 packet might not be routed when IPv6 packet is encapsulated over IPv4 GRE tunnel on QFX10000. PR1385723
- CPSM daemon memory leak occurs in VMHOST. PR1387903
- On the QFX10000 line of switches, MAC learning might stop working on some LAG interfaces after frequent MAC moves. PR1389411
- FPC might crash on QFX5100 platforms in a large-scale scenario. PR1389872
- The vmcore might be seen when routing changes are made on the peer spine in an EVPN-VXLAN scenario. PR1390573
- The smid core file is seen during sanity script execution on QFX5100. PR1391909
- The l2ald core file is seen when a Layer 2 learning traceoptions were enabled. PR1394380

- DRAM and buffer utilization fields are not correct for QFX10000 platforms. PR1394978
- DOT1XD core file is found at pnac_bd_create pnac_bdm_handler knl_async_receive_and_process. PR1395384
- On QFX5110 Virtual Chassis, after Routing Engine switchover, LACP will be brought down on the peer device and never recover automatically. PR1395943
- The Juniper Extension Toolkit (JET) or Junos Telemetry Interface (JTI) is not used, because of a bug in the GRPC stack which is used by jsd and na-grpcd daemons. PR1398398

Interfaces and Chassis

- Stating in Junos OS 17.2R1, on QFX Series products, the CLI allows you to configure more logical interfaces than the limit of 2048 logical interfaces on the LAG interface. PR1361689
- On QFX5200 MC-LAG parse_remove_ifl_from_routing_inst() **ERROR : No route inst on et-0/0/16.16386**, error is seen after restarting l2cpd daemon. PR1373927

Layer 2 Features

- On QFX5100, storm control profile is missing for interfaces in hardware. PR1354889
- LACP packets are getting dropped with **native-vlan-id** configured after reboot. PR1361054
- QFX5000 the Virtual Chassis acting as EVPN-VXLAN ARP proxy might cause ARP resolution to fail. PR1365699
- Hashing does not work for the IPv6 packet encapsulated in VXLAN scenario. PR1368258
- When **native-vlan-id** is configured for aggregated Ethernet interface, the LACP session to the multihomed server goes down. PR1369424
- DHCP discover packets might be dropped if VXLAN is configured. PR1377521
- Packets might be dropped on AD in a Junos Fusion Data Center environment. PR1377841
- The dcpfe process might crash while changing MTU of physical ports for GRE. PR1384517
- The LACP might be in detached state when deleting **native-vlan-id** on aggregated Ethernet interface with **flexible-vlan-tagging** configured. PR1385409
- On QFX5000 line switches, if EVPN-TYPE 5 routes are present, when doing "restart routing" or a BGP session to a neighbor device flaps, the dcpfe core file might be seen. PR1387360
- On QFX5000, EVPN-VXLAN failed to forward the IPv6 NS packet from remote VTEP to local host. PR1387519
- The dcpfe process might crash after VXLAN overlay ping. PR1388103
- RTG MAC refresh packets will be sent out from non-RTG ports if the RTG interface belonging to the Virtual Chassis master flaps. PR1389695
- Cisco Discovery Protocol (CDP) packets are not forwarded by QFX10000 line switches. PR1389829

MPLS

- LSP might not be established properly between QFX5000 line switch and other devices. PR1351055
- NO-propogate-TTL acts on MPLS swap operation. PR1366804
- LSP with auto-bandwidth enabled goes down during HMC error condition. PR1374102
- LSP "statistics" and "auto-bandwidth" functionality might not take effect with single-hop LSPs. PR1390445

Network Management and Monitoring

- For QFX5110, the returned SNMP values of module temperature-HighAlarmThreshold, LowAlarmThreshold, and HighWarningThreshold are not as same as the one shown in the CLI. PR1369030

Platform and Infrastructure

- When chassis control restart is done with aggregated Ethernet and CoS rewrite configuration, the **Platform failed to bind rewrite** messages might be seen in the syslog. PR1315437
- When Junos OS next hop index allocation fails, the private index space get exhausted through the incoming ARP requests to the management interface. PR1360039
- Forwarding is broken after adding protocol EVPN **extended-vlan-id**. PR1368802
- Traffic is silently dropped or discarded with indirect next hop and load balancing. PR1376057
- LSI binding is missing upon nd6 entry refresh after Layer 2 logical interface flap. PR1380590
- IRB interface does not turn down when master of Virtual Chassis is rebooted or stopped. PR1381272

Routing Protocols

- On QFX5100 platforms, the parity errors in Layer 3 IPv4 table in the Packet Forwarding Engine memory might cause traffic to be silently dropped and discarded. PR1364657
- On QFX5120 platforms, the command output for the configuration statement **show pfe route summary hw** shows different scale values for the IPv4 and IPv6 lpm routes rather than the supported scale. PR1366579
- The dcpfe might crash and all interfaces flap. PR1369011
- When **ecmp-resilient-hash** is configured for the existing ECMP route, the update to the next hop in hardware fails. PR1387713
- The **show evpn igmp-snooping database extensive** command output needs to be modified as per the SMET functionality. PR1391406

User Interface and Configuration

- Adding or deleting the VLAN member starting with a VLAN-ID number might cause many errors. PR1362535

SEE ALSO

New and Changed Features | 251

Changes in Behavior and Syntax | 261

Known Behavior | 267

Known Issues | 271

Documentation Updates | 301

Migration, Upgrade, and Downgrade Instructions | 301

Documentation Updates

There are no documentation errata or changes for the QFX Series switches in Junos OS Release 18.4R3.

SEE ALSO

New and Changed Features | 251

Changes in Behavior and Syntax | 261

Known Behavior | 267

Known Issues | 271

Resolved Issues | 282

Migration, Upgrade, and Downgrade Instructions | 301

Migration, Upgrade, and Downgrade Instructions

IN THIS SECTION

This section contains the procedure to upgrade Junos OS, and the upgrade and downgrade policies for Junos OS. Upgrading or downgrading Junos OS can take several hours, depending on the size and configuration of the network.

Upgrading Software on QFX Series Switches

When upgrading or downgrading Junos OS, always use the jinstall package. Use other packages (such as the jbundle package) only when so instructed by a Juniper Networks support representative. For information about the contents of the jinstall package and details of the installation process, see the Installation and Upgrade Guide and Junos OS Basics in the QFX Series documentation.

If you are not familiar with the download and installation process, follow these steps:

1. In a browser, go to https://www.juniper.net/support/downloads/junos.html.

   The Junos Platforms Download Software page appears.

2. In the QFX Series section of the Junos Platforms Download Software page, select the QFX Series platform for which you want to download the software.

3. Select **18.4** in the Release pull-down list to the right of the Software tab on the Download Software page.

4. In the Install Package section of the Software tab, select the QFX Series Install Package for the 18.4 release.

   An Alert box appears.

5. In the Alert box, click the link to the PSN document for details about the software, and click the link to download it.

A login screen appears.

6. Log in to the Juniper Networks authentication system using the username (generally your e-mail address) and password supplied by Juniper Networks representatives.

7. Download the software to a local host.

8. Copy the software to the device or to your internal software distribution site.

9. Install the new jinstall 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.

Customers in the United States and Canada use the following command:

`user@host>` **request system software add *source*/jinstall-host-qfx-5-x86-64-18.4-R3.n-secure-signed.tgz reboot**

Replace ***source*** with one of the following values:

- ***/pathname***—For a software package that is installed from a local directory on the switch.
- For software packages that are downloaded and installed from a remote location:
  - **ftp://*hostname/pathname***
  - **http://*hostname/pathname***
  - **scp://*hostname/pathname*** (available only for Canada and U.S. version)

Adding the **reboot** command reboots the switch after the upgrade is installed. When the reboot is complete, the switch displays the login prompt. The loading process can take 5 to 10 minutes.

Rebooting occurs only if the upgrade is successful.

> **NOTE:** After you install a Junos OS Release 18.4 **jinstall** package, you can issue the **request system software rollback** command to return to the previously installed software.

Installing the Software on QFX10002-60C Switches

This section explains how to upgrade the software, which includes both the host OS and the Junos OS. This upgrade requires that you use a VM host package—for example, a **junos-vmhost-install-x.tgz** .

During a software upgrade, the alternate partition of the SSD is upgraded, which will become primary partition after a reboot .If there is a boot failure on the primary SSD, the switch can boot using the snapshot available on the alternate SSD.

> **NOTE:** The QFX10002-60C switch supports only the 64-bit version of Junos OS.

> **NOTE:** If you have important files in directories other than /config and /var, copy the files to a secure location before upgrading. The files under /config and /var (except /var/etc) are preserved after the upgrade.

To upgrade the software, you can use the following methods:

If the installation package resides locally on the switch, execute the **request vmhost software add *<pathname><source>*** command.

For example:

```
user@switch> request vmhost software add /var/tmp/junos-vmhost-install-qfx-x86-64-18.4R3.9.tgz
```

If the Install Package resides remotely from the switch, execute the **request vmhost software add *<pathname><source>*** command.

For example:

```
user@switch> request vmhost software add
ftp://ftpserver/directory/junos-vmhost-install-qfx-x86-64-18.4R3.9.tgz
```

After the reboot has finished, verify that the new version of software has been properly installed by executing the **show version** command.

```
user@switch> show version
```

Installing the Software on QFX10002 Switches

> **NOTE:** If you are upgrading from a version of software that does not have the FreeBSD 10 kernel (15.1X53-D30, for example), you will need to upgrade from Junos OS Release 15.1X53-D30 to Junos OS Release 15.1X53-D32. After you have installed Junos OS Release 15.1X53-D32, you can upgrade to Junos OS Release 15.1X53-D60 or Junos OS Release 18.4R3.

> **NOTE:** On the switch, use the **force-host** option to force-install the latest version of the Host OS. However, by default, if the Host OS version is different from the one that is already installed on the switch, the latest version is installed without using the **force-host** option.

If the installation package resides locally on the switch, execute the **request system software add *<pathname><source>* reboot** command.

For example:

```
user@switch> request system software add
/var/tmp/jinstall-host-qfx-10-f-x86-64-18.4R3.n-secure-signed.tgz reboot
```

If the Install Package resides remotely from the switch, execute the **request system software add *<pathname><source>* reboot** command.

For example:

```
user@switch> request system software add
ftp://ftpserver/directory/jinstall-host-qfx-10-f-x86-64-18.4R3.n-secure-signed.tgz reboot
```

After the reboot has finished, verify that the new version of software has been properly installed by executing the **show version** command.

```
user@switch> show version
```

Upgrading Software from Junos OS Release 15.1X53-D3X to Junos OS Release 15.1X53-D60, 15.1X53-D61.7, 15.1X53-D62, and 15.1X53-D63 on QFX10008 and QFX10016 Switches

> **NOTE:** Before you install the software, back up any critical files in **/var/home**. For more information regarding how to back up critical files, contact Customer Support at https://www.juniper.net/support.

The switch contains two Routing Engines, so you will need to install the software on each Routing Engine (re0 and re1).

If the installation package resides locally on the switch, execute the **request system software add *<pathname><source>*** command.

To install the software on re0:

```
user@switch> request system software add
/var/tmp/jinstall-host-qfx-10-m-15.1X53-D60.n-secure-domestic-signed.tgz re0
```

If the Install Package resides remotely from the switch, execute the **request system software add *<pathname><source>* re0** command.

For example:

```
user@switch> request system software add
ftp://ftpserver/directory/jinstall-host-qfx-10-m-15.1X53-D60.n-secure-domestic-signed.tgz re0
```

To install the software on re1:

```
user@switch> request system software add
/var/tmp/jinstall-host-qfx-10-m-15.1X53-D60.n-secure-domestic-signed.tgz re1
```

If the Install Package resides remotely from the switch, execute the **request system software add *<pathname><source>* re1** command.

For example:

```
user@switch> request system software add
ftp://ftpserver/directory/jinstall-host-qfx-10-m-15.1X53-D60.n-secure-domestic-signed.tgz re1
```

Reboot both Routing Engines.

For example:

```
user@switch> request system reboot both-routing-engines
```

After the reboot has finished, verify that the new version of software has been properly installed by executing the **show version** command.

```
user@switch> show version
```

Installing the Software on QFX10008 and QFX10016 Switches

Because the switch has two Routing Engines, perform a Junos OS installation on each Routing Engine separately to avoid disrupting network operation.

> **NOTE:** Before you install the software, back up any critical files in **/var/home**. For more information regarding how to back up critical files, contact Customer Support at https://www.juniper.net/support.

> **WARNING:** If graceful Routing Engine switchover (GRES), nonstop bridging (NSB), or nonstop active routing (NSR) is enabled when you initiate a software installation, the software does not install properly. Make sure you issue the CLI **delete chassis redundancy** command when prompted. If GRES is enabled, it will be removed with the **redundancy** command. By default, NSR is disabled. If NSR is enabled, remove the nonstop-routing statement from the **[edit routing-options]** hierarchy level to disable it.

1. Log in to the master Routing Engine's console.

   For more information about logging in to the Routing Engine through the console port, see the specific hardware guide for your switch.

2. From the command line, enter configuration mode:

   `user@switch>` **configure**

3. Disable Routing Engine redundancy:

   `user@switch#` **delete chassis redundancy**

4. Disable nonstop-bridging:

   `user@switch#` **delete protocols layer2-control nonstop-bridging**

5. Disable nonstop-routing (if enabled):

   `user@switch#` **delete routing-options nonstop-routing**

6. Save the configuration change on both Routing Engines:

   `user@switch#` **commit synchronize**

7. Exit the CLI configuration mode:

   `user@switch#` **exit**

After the switch has been prepared, you first install the new Junos OS release on the backup Routing Engine, while keeping the currently running software version on the master Routing Engine. This enables the master Routing Engine to continue operations, minimizing disruption to your network.

After making sure that the new software version is running correctly on the backup Routing Engine, you are ready to switch routing control to the backup Routing Engine, and then upgrade or downgrade the software version on the other Routing Engine.

8. Log in to the console port on the other Routing Engine (currently the backup).

   For more information about logging in to the Routing Engine through the console port, see the specific hardware guide for your switch.

9. Install the new software package using the **request system software add** command:

   `user@switch>` **request system software add validate /var/tmp/jinstall-host-qfx-10-f-x86-64-18.4R3.n-secure-signed.tgz**

   For more information about the **request system software add** command, see the CLI Explorer.

10. Reboot the switch to start the new software using the **request system reboot** command:

    `user@switch>` **request system reboot**

    > **NOTE:** You must reboot the switch to load the new installation of Junos OS on the switch.
    >
    > To abort the installation, do not reboot your switch. Instead, finish the installation and then issue the **request system software delete *<package-name>*** command. This is your last chance to stop the installation.

    All the software is loaded when you reboot the switch. Installation can take between 5 and 10 minutes. The switch then reboots from the boot device on which the software was just installed. When the reboot is complete, the switch displays the login prompt.

    While the software is being upgraded, the Routing Engine on which you are performing the installation is not sending traffic.

11. Log in and issue the **show version** command to verify the version of the software installed.

    `user@switch>` **show version**

    Once the software is installed on the backup Routing Engine, you are ready to switch routing control to the backup Routing Engine, and then upgrade or downgrade the master Routing Engine software.

12. Log in to the master Routing Engine console port.

    For more information about logging in to the Routing Engine through the console port, see the specific hardware guide for your switch.

13. Transfer routing control to the backup Routing Engine:

    `user@switch>` **request chassis routing-engine master switch**

    For more information about the **request chassis routing-engine master** command, see the CLI Explorer.

14. Verify that the backup Routing Engine (slot 1) is the master Routing Engine:

    `user@switch>` **show chassis routing-engine**

```
Routing Engine status:
  Slot 0:
    Current state                  Backup
    Election priority              Master (default)
Routing Engine status:
  Slot 1:
    Current state                  Master
    Election priority              Backup (default)
```

15. Install the new software package using the **request system software add** command:

    `user@switch>` **request system software add validate /var/tmp/jinstall-host-qfx-10-f-x86-64-18.4R3.n-secure-signed.tgz**

    For more information about the **request system software add** command, see the CLI Explorer.

16. Reboot the Routing Engine using the **request system reboot** command:

    `user@switch>` **request system reboot**

    > **NOTE:** You must reboot to load the new installation of Junos OS on the switch.
    >
    > To abort the installation, do not reboot your system. Instead, finish the installation and then issue the **request system software delete jinstall** ***<package-name>*** command. This is your last chance to stop the installation.

    The software is loaded when you reboot the system. Installation can take between 5 and 10 minutes. The switch then reboots from the boot device on which the software was just installed. When the reboot is complete, the switch displays the login prompt.

    While the software is being upgraded, the Routing Engine on which you are performing the installation does not send traffic.

17. Log in and issue the **show version** command to verify the version of the software installed.
18. Transfer routing control back to the master Routing Engine:

    `user@switch>` **request chassis routing-engine master switch**

    For more information about the **request chassis routing-engine master** command, see the CLI Explorer.

19. Verify that the master Routing Engine (slot 0) is indeed the master Routing Engine:

    `user@switch>` **show chassis routing-engine**

    ```
    Routing Engine status:
      Slot 0:
        Current state                  Master
        Election priority              Master (default)
    outing Engine status:
      Slot 1:
        Current state                  Backup
        Election priority              Backup (default)
    ```

Performing a Unified ISSU

You can use unified ISSU to upgrade the software running on the switch with minimal traffic disruption during the upgrade.

> **NOTE:** Unified ISSU is supported in Junos OS Release 13.2X51-D15 and later.

Perform the following tasks:

- Preparing the Switch for Software Installation on page 312
- Upgrading the Software Using Unified ISSU on page 312

Preparing the Switch for Software Installation

Before you begin software installation using unified ISSU:

- Ensure that nonstop active routing (NSR), nonstop bridging (NSB), and graceful Routing Engine switchover (GRES) are enabled. NSB and GRES enable NSB-supported Layer 2 protocols to synchronize protocol information between the master and backup Routing Engines.

  To verify that nonstop active routing is enabled:

  > **NOTE:** If nonstop active routing is enabled, then graceful Routing Engine switchover is enabled.

  ```
  user@switch> show task replication
          Stateful Replication: Enabled
          RE mode: Master
  ```

  If nonstop active routing is not enabled (**Stateful Replication** is **Disabled**), see *Configuring Nonstop Active Routing on Switches* for information about how to enable it.

- Enable nonstop bridging (NSB). See *Configuring Nonstop Bridging on Switches (CLI Procedure)* for information on how to enable it.
- (Optional) Back up the system software—Junos OS, the active configuration, and log files—on the switch to an external storage device with the **request system snapshot** command.

Upgrading the Software Using Unified ISSU

This procedure describes how to upgrade the software running on a standalone switch.

To upgrade the switch using unified ISSU:

1. Download the software package by following the procedure in the Downloading Software Files with a Browser section in *Installing Software Packages on QFX Series Devices*.
2. Copy the software package or packages to the switch. We recommend that you copy the file to the **/var/tmp** directory.
3. Log in to the console connection. Using a console connection allows you to monitor the progress of the upgrade.
4. Start the ISSU:
   - On the switch, enter:

     ```
     user@switch> request system software in-service-upgrade /var/tmp/package-name.tgz
     ```

     where ***package-name*.tgz** is, for example, **jinstall-host-qfx-10-f-x86-64-18.4R3.n-secure-signed.tgz**.

     > **NOTE:** During the upgrade, you cannot access the Junos OS CLI.

     The switch displays status messages similar to the following messages as the upgrade executes:

     ```
     warning: Do NOT use /user during ISSU. Changes to /user during ISSU may get
     lost!
     ISSU: Validating Image
     ISSU: Preparing Backup RE
     Prepare for ISSU
     ISSU: Backup RE Prepare Done
     Extracting jinstall-host-qfx-5-f-x86-64-18.4R2.n-secure-signed.tgz ...
     Install jinstall-host-qfx-5-f-x86-64-18.4R2.n-secure-signed.tgz completed
     Spawning the backup RE
     Spawn backup RE, index 0 successful
     GRES in progress
     GRES done in 0 seconds
     Waiting for backup RE switchover ready
     GRES operational
     Copying home directories
     Copying home directories successful
     Initiating Chassis In-Service-Upgrade
     Chassis ISSU Started
     ISSU: Preparing Daemons
     ISSU: Daemons Ready for ISSU
     ```

```
ISSU: Starting Upgrade for FRUs
ISSU: FPC Warm Booting
ISSU: FPC Warm Booted
ISSU: Preparing for Switchover
ISSU: Ready for Switchover
Checking In-Service-Upgrade status
  Item           Status                  Reason
  FPC 0          Online (ISSU)
Send ISSU done to chassisd on backup RE
Chassis ISSU Completed
ISSU: IDLE
Initiate em0 device handoff
```

NOTE: A unified ISSU might stop, instead of abort, if the FPC is at the warm boot stage. Also, any links that go down and up will not be detected during a warm boot of the Packet Forwarding Engine (PFE).

NOTE: If the unified ISSU process stops, you can look at the log files to diagnose the problem. The log files are located at **/var/log/vjunos-log.tgz**.

5. Log in after the reboot of the switch completes. To verify that the software has been upgraded, enter the following command:

   user@switch> **show version**

6. Ensure that the resilient dual-root partitions feature operates correctly, by copying the new Junos OS image into the alternate root partitions of all of the switches:

   user@switch> **request system snapshot slice alternate**

   Resilient dual-root partitions allow the switch to boot transparently from the alternate root partition if the system fails to boot from the primary root partition.

Upgrade and Downgrade Support Policy for Junos OS Releases

Support for upgrades and downgrades that span more than three Junos OS releases at a time is not provided, except for releases that are designated as Extended End-of-Life (EEOL) releases. EEOL releases

provide direct upgrade and downgrade paths—you can upgrade directly from one EEOL release to the next EEOL release even though EEOL releases generally occur in increments beyond three releases.

You can upgrade or downgrade to the EEOL release that occurs directly before or after the currently installed EEOL release, or to two EEOL releases before or after. For example, Junos OS Releases 17.1, 17.2 and 17.3 are EEOL releases. You can upgrade from Junos OS Release 17.1 to Release 17.2 or from Junos OS Release 17.1 to Release 17.3.

You cannot upgrade directly from a non-EEOL release to a release that is more than three releases ahead or behind. To upgrade or downgrade from a non-EEOL release to a release more than three releases before or after, first upgrade to the next EEOL release and then upgrade or downgrade from that EEOL release to your target release.

For more information about EEOL releases and to review a list of EEOL releases, see https://www.juniper.net/support/eol/junos.html.

SEE ALSO

Junos OS Release Notes for SRX Series

IN THIS SECTION

These release notes accompany Junos OS Release 18.4R3 for the SRX Series. They describe new and changed features, limitations, and known and resolved problems in the hardware and software.

You can also find these release notes on the Juniper Networks Junos OS Documentation webpage, located at https://www.juniper.net/documentation/product/en_US/junos-os.

> **NOTE:** The SRX5K-SPC3 Services Processing Card was introduced in Junos OS Service Release 18.2R1-S1 and is supported in all subsequent Junos OS Releases. The features and functionalities of the SRX5K-SPC3 card are supported in Junos OS Release 18.4R1. Going forward, future improvements for SRX5K-SPC3 will be included in upcoming Junos OS Maintenance Releases.

New and Changed Features

IN THIS SECTION

This section describes the new features and enhancements to existing features in Junos OS Release 18.4R3 for the SRX Series devices.

Junos OS Release 18.4R3 supports the following Juniper Networks security platforms: vSRX, SRX300/320, SRX340/345, SRX550HM, SRX1500, SRX4100/4200, SRX4600, SRX5400, SRX5600, and SRX5800. Most security features in this release were previously delivered in Junos OS for SRX Series “X” releases from 12.1X44 through 15.1X49-D150. Security features delivered in Junos OS for SRX Series “X” releases after 15.1X49-D150 are not available in 18.4 releases.

Release 18.4R3 New and Changed Features

There are no new features in Junos OS Release 18.4R3 for the SRX Series devices.

Release 18.4R2-S1 New and Changed Features

Chassis Clustering

- **Increase in the maximum number of child links (SRX4600)**—Starting in Junos OS Release 18.4R2-S1, you can configure eight child link interfaces in a redundant ethernet bundle on each node of the chassis cluster.
- **Dedicated fabric ports support (SRX4600)**—Starting in Junos OS Release 18.4R2-S1, you can use the built-in dedicated fabric ports as fabric link ports in chassis cluster mode.

  [See Understanding Chassis Cluster Slot Numbering and Physical Port and Logical Interface Naming, SRX Series Chassis Cluster Configuration Overview, and Chassis Cluster Control Plane Interfaces.]

Release 18.4R2 New and Changed Features

There are no new features in Junos OS Release 18.4R2 for the SRX Series devices.

Release 18.4R1 New and Changed Features

Application Security

- **CLI enhancements to support J-Web (SRX Series and vSRX)**—Starting in Junos OS Release 18.4R1, the **show service application-identification** command is enhanced to display applications and application group details in J-Web.

  The **show service application-identification** command used with the new **entries** option provides the following functionality:

  - Alphabetical list application and application group details.
  - Pagination support to limit the number of entries in output.
  - Display of details in a sorted order.
  - Using filters on output columns to search applications easily.

  [See show services application-identification entries.]

- **SSL decryption port mirroring (SRX Series and vSRX)**—Junos OS Release 18.4R1 introduces SSL decryption mirroring for SSL forward and reverse proxy. SSL decryption mirroring enables you to forward a copy of SSL decrypted traffic to a configured mirror port on a server that is acting as a traffic collection tool.

  To use the decryption mirroring feature, configure the mirror interface and the MAC address of the port in the SSL proxy profile, and apply the SSL proxy profile as the application service in the security policy. Traffic matching the policy rule is decrypted, and a copy of SSL-decrypted traffic is forwarded to the configured mirror port.

  [See SSL Proxy.]

- **Application path selection based on link preference and priority (SRX300, SRX320, SRX340, SRX345, SRX550M, SRX1500, SRX4100 SRX4200, and vSRX)**—Starting in Junos OS Release 18.4R1, you can configure Application Quality of Experience (AppQoE) to select an application path based on the link priority and the link type when multiple links are available.

  For application path selection, a list of paths to a specific destination, which meets SLA requirements, is made available. From the list, AppQoE selects a path that matches the configured link preference. Paths are WAN links used for forwarding application traffic. You can select an MPLS or Internet link as the preferred path, and assign a priority from the range 1-255 (value of 1 indicates highest priority).

  [See Application Quality of Experience.]

- **Schedulers support for APBR (SRX Series and vSRX)**—Starting in Junos OS Release 18.4R1, support for configuring policy schedulers for an advanced policy-based routing (APBR) policy is available. Using a policy scheduler, you can schedule APBR policy execution at a specified time and enforce the policy for a specified duration.

  To use a scheduler for an APBR policy, you must create a scheduler and refer to scheduler in your APBR policy configuration. The policy scheduler activates and deactivates a policy according to the scheduled time. When the scheduler times out, the associated policy is deactivated.

  [See Advanced Policy-Based Routing.]

Chassis Cluster

- **Chassis cluster resiliency (SRX5400, SRX5600, and SRX5800)**—Starting in Junos OS Release 18.4R1, a three-layered model is introduced to detect software and hardware failures that impact chassis cluster performance. Flapping of em0 and control path software or hardware failures are detected and state transitions and failovers are triggered using this model. Following are the three layers:

  - **Layer 1** : Identifies and detects the components that are causing the failures.
  - **Layer 2** : Detects the failures that are not detected by Layer1.
  - **Layer 3** : Shares the health information of the system between the two nodes over control and fabric links.

  The **set chassis cluster health-monitoring** command is introduced to enable monitoring the health of chassis cluster.

[See Chassis Cluster Resiliency.]

Flow-Based and Packet-Based Processing

- **SRX5K-SPC3 card with flow support in chassis cluster mode (SRX5400, SRX5600, and SRX5800)**—Starting in Junos OS Release 18.4R1, the SRX5K-SPC3 and SRX5K-SPC-4-15-320 (SPC2) cards can operate together in a mixed-mode configuration on the SRX5000 line of devices using the same slot number in both nodes. If you are adding the SPC3 SPCs to the SRX5000 devices, you must install the new SPCs in the lowest-numbered slot of any SPC that provides central point functionality. SPC3 interoperates with the SRX5000 I/O cards (IOC2, IOC3), Switch Control Boards (SCB2, SCB3), Routing Engines, and SPC2 cards.

  [See Understanding Flow support on SRX5K-SPC3 Platforms.]

General Packet Radio Service (GPRS)

- **IPv6 support on GTP (SRX1500, SRX4100, SRX4200, SRX4600, SRX4800, SRX5400, SRX5600, SRX5800, and vSRX)**—Starting in Junos OS Release 18.4R1, GPRS tunneling protocol (GTP) traffic security inspection is supported on IPv6 addresses along with existing IPv4 support. With this enhancement, a GTP tunnel using either IPv4 and IPv6 addresses is established for individual user endpoints (UEs) between a Serving GPRS Support Node (SGSN) in 3G or a Service Gateway (S-GW) and a Gateway GPRS Support Node (GGSN) in 3G or a PDN Gateway (P-GW) in 4G.

  [See GPRS Overview.]

- **Enhancements to GTP-C Tunnel (SRX5400, SRX5600, and SRX5800)**—Starting in Junos OS Release 18.4R1, the GTP-C tunnel is enhanced to support tunnel-based session distribution to speed up the tunnel setup process and load-balance the sessions between the SPUs. The GTP-C tunnels and the GTP-C tunnel sessions are distributed by the SGSN tunnel endpoint identifier (TEID) of the tunnel. Use the **set security forwarding-process application-services enable-gtpu-distribution** command to enable the tunnel-based session distribution where the GTP-C traffic of different tunnels is spread across different SPUs.

  [See GPRS Overview.]

Interfaces and Chassis

- **Support for up and down delay timers on reth interfaces (SRX5400, SRX5600, and SRX5800)**—Starting in Junos OS Release 18.4R1, you can configure up and down delay timers for redundant Ethernet (reth) interfaces. The delay timers keep the reth interfaces up or down, respectively, to prevent the routing protocols from reconverging and to avoid loss of traffic during a crash or when links flap.

  On SRX series devices, the default delay timer for down hold-time is 11 seconds, and the default delay timer for up hold-time is 0 seconds. To configure the timers, include the **reth 1 hold-time down *timer*** and **reth 1 hold-time up *timer*** statements at the **[edit interfaces]** hierarchy level.

  [See hold-time (Redundant Ethernet Interfaces)].

- **Half-duplex link support (SRX340 and SRX345)**—Starting in Junos OS release 18.4R1, half-duplex mode is supported on SRX340 and SRX345 devices. Half duplex enables bidirectional communication, but

signals can flow in only one direction at a time. Full-duplex communication means that both ends of the communication can send and receive signals at the same time. By default, half duplex is configured. If the link partner is set to autonegotiate the link, then the link is autonegotiated to full duplex or half duplex. If the link is not set to autonegotiation, then the link defaults to half duplex unless the interface is explicitly configured for full duplex.

[See link-mode.]

Intrusion Detection and Protection (IDP)

- **Support for custom time bindings in a time-binding custom attack (SRX Series)**—Starting in Junos OS Release 18.4R1, you can configure the maximum time interval between any two instances of a time-binding custom attack. The range for the maximum time interval is 0 minutes and 0 seconds through 60 minutes and 0 seconds. In Junos OS releases before 18.4R1, the maximum time interval between any two instances of a time-binding attack is 60 seconds.

  The **interval *time-interval*** statement is introduced at the **[edit security idp custom-attack *attack-name* time-binding]** hierarchy to configure a custom time-binding.

  [See Understanding Custom Attack Objects and time-binding.]

- **User visibility improvements for IDP attacks within an IDP Policy (SRX Series and vSRX)**—Starting in Junos OS Release 18.4R1, you can view and validate the complete set of attacks that are configured for an IDP policy (predefined, dynamic, and custom attacks).

  Use the **show security idp attack attack-list policy *policy-name*** command to view the attacks that are configured for an IDP policy.

  [See show security idp attack attack-list policy.]

- **IDP policy rematch (SRX Series)**—Starting in Junos OS Release 18.4R1, when a new IDP policy is loaded, the existing sessions are inspected using the newly loaded policy and are not ignored for IDP processing.

  [See IDP Policies Overview.]

Logical Systems and Tenant Systems

- Starting in Junos OS Release 18.4R1, the following features that are supported on the logical systems are now extended to tenant systems:

  - **Dynamic address support for tenant systems (SRX Series)**—Starting in Junos OS Release 18.4R1, the tenant system user can create dynamic address entries within a tenant system. A dynamic address entry contains IP ranges extracted from external sources. The security policies use the dynamic address in the **source-address** or **destination-address** field. The tenant system administrator can view the dynamic address information, including name, feeds, properties, and number of IPv4 and IPv6 entries for tenant systems, by using the **show security dynamic-address** command.

    [See Security Policies for Tenant Systems.]

  - **DHCP support for tenant systems (SRX Series)**—Starting in Junos OS Release 18.4R1, DHCP provides support for DHCP clients, DHCP relay agents, and IPv6 dynamic servers for prefix delegation for

tenant systems. The DHCP relay agent operates as the interface between DHCP clients and IPv6 dynamic server for tenant systems, and also relays DHCP messages between DHCP clients and DHCP servers on different IP address networks.

[See DHCP for Tenant Systems.]

- **SRX5K-SPC3 card support for tenant systems (SRX5400, SRX5600, and SRX5800)**—Starting in Junos OS Release 18.4R1, support for the SRX5K-SPC3 services processing card is introduced for tenant systems.

  [See Tenant Systems Overview.]

- **Application firewall support on tenant systems (SRX Series)**—Starting in Junos OS Release 18.4R1, the tenant system administrator can configure the application firewall profile, trace options, and resources **appfw-rule-set** and **appfw-rule** in a tenant system. The application firewall rules can be reordered using the command **insert tenants *tenant-id* security application-firewall rule-sets *ruleset-name* rule *rule-name1* after rule *rule-name2***.

  Application firewall is a group of fine-grained application control policies to allow or deny the traffic based on the dynamic application name or the group names. It enhances security policy creation and enforcement based on the applications rather than traditional port and protocol analysis.

  [See Application Firewall Services for Tenant Systems.]

- **Interfaces support enhancement on tenant systems (SRX1500, SRX4100, SRX4200, SRX4600, SRX5400, SRX5600, and SRX5800)**—Starting in Junos OS Release 18.4R1, support for interfaces is enhanced on tenants systems with the following changes:

  - You can configure an interface in the tenant system similar to how you configure an interface in a logical system.
  - All types of interfaces that can be configured in a logical system can also be configured in a tenant system.
  - All the interfaces that are configured in a tenant system are associated with the routing instance configured for that tenant system.

  [See Tenant Systems Overview.]

Network Management and Monitoring

- **RPM probe enhancement (SRX Series)**—Starting in Junos OS Release 18.4R1, if the result of a probe or test exceeds the packet loss threshold, the real-time performance monitoring (RPM) test probe is marked as failed. The test probe also fails when the round-trip time (RTT) exceeds the configured threshold ranges from 0 through 60000000 ms. As a result, the device generates an SNMP notification (trap) and marks the RPM test as failed.
  RPM allows you to perform service-level monitoring. When RPM is configured on a device, the device calculates network performance based on packet response time, jitter, and packet loss.

  [See RPM Overview.]

- **SNMP support for monitoring the 4G LTE Mini-Physical Interface Module (Mini-PIM) status (SRX300, SRX320, SRX340, SRX345, and SRX550M)**—Starting in Junos OS Release 18.4R1, you can monitor 4G LTE Mini-PIM status by using SNMP remote network management.

  You can use the following commands to monitor the 4G LTE Mini-PIM status:

  show snmp mib walk ascii jnxWirelessWANNetworkInfoTable

  show snmp mib walk ascii jnxWirelessWANFirmwareInfoTable

  In previous releases, the **show modem wireless network interface *interface-name*** and **show modem wireless firmware interface *interface-name*** commands are used to check the 4G LTE Mini-PIM status.

  [See Enterprise-Specific SNMP MIBs Supported by Junos OS.]

Routing Protocols

- **ARP policer support to protect Routing Engine (SRX Series)**—Starting in Junos OS Release 18.4R1, you can apply policers on Address Resolution Protocol (ARP) traffic on SRX Series devices. You can configure rate limiting for the policer by specifying the bandwidth and the burst-size limit. Packets exceeding the policer limits are discarded.
  The traffic to the Routing Engine is controlled by applying the policer on ARP traffic. Using policers helps prevent network congestion caused by broadcast storms.

  [See ARP Policer Overview.]

Security

- **New operational commands for security policy configuration (SRX Series and vSRX)**—Starting in Junos OS Release 18.4R1, the following operational commands are introduced:

  - **show security policies information**
  - **show security policies checksum**
  - **request security policies check**
  - **request security policies resync**

  The **show security policies information** command provides detailed information about the policies configured on SRX Series devices and on vSRX. The **show security policies checksum**, **request security policies check**, and **request security policies resync** commands are used to synchronize security policies between the Routing Engine and the Packet Forwarding Engine.

  [See show security policies information, show security policies checksum, request security policies check, and request security policies resync.]

- **URL category-based security with unified policies (SRX Series)**—Starting from Junos OS Release 18.4R1, the unified policies feature is enhanced to include URL categories as match criteria for traffic flowing through the firewall. The URL category for Web filtering enables redirecting the traffic based on configured URL Category policy for further processing on the SRX Series devices. URL categories can be configured for unified policies with or without **dynamic-application** applied.

A URL category can be configured as **url-category any** and **url-category none**. If **url-category** is not configured, the functionality is similar to **url-category none**.

[See Configuring Unified Security Policies.]

Juniper Sky Advanced Threat Prevention

- **Juniper Sky ATP Logical Domain Support**—Starting in Junos OS 18.4, SRX Series devices support logical domains for anti-malware and security-intelligence policies. When you associate a logical domain with a realm in Juniper Sky ATP, that domain receives the threat management features configured for the realm. The SRX Series device will then perform policy enforcement based on logical domain and the associated Juniper Sky ATP realm. See *Tenant Systems: Security-Intelligence and Anti-Malware Policies* in the Juniper Sky Advanced Threat Prevention Administration Guide for details.

Software Licensing

- **Support to stop log messages on throughput overuse (SRX4100)**—Starting with Junos OS Release 18.4R1, the enhanced performance upgrade license is required to stop the log messages that are generated if the Internet mix (IMIX) throughput exceeds 20 Gbps and 7 Mpps on the SRX4100 device.

  [See Log File Sample Content.]

UTM

- **Avira scan engine support on antivirus module (SRX1500, SRX4100, SRX4200, and SRX4600)**—Starting in Junos OS Release 18.4R1, SRX Series devices support an on-device antivirus scan engine. The on-device scan engine Avira scans the data by accessing the virus pattern database. The antivirus scan engine is provided as a UTM module that you can download and install on your SRX Series device either manually (using the **request security utm anti-virus avira-engine** command) or by using the Internet to connect to a Juniper Networks-hosted URL or a user-hosted URL.

  [See On-Device Antivirus Scan Engine.]

VPN

- **Port-mirrored traffic support on an IPsec interface (SRX Series)**—Starting in Junos OS Release 18.4R1, if the output X2 interface of a mirror filter is configured for an st0 interface to filter traffic that you want to analyze, the packet is duplicated and encrypted by the IPsec tunnel bound to the st0 interface. This enhancement supports SRX Series devices in sending traffic mirrored from a port on an IPsec tunnel.

  [See Monitoring X2 Traffic.]

- **PowerMode IPsec (SRX4100 and SRX4200)**—Starting in Junos OS Release 18.4R1, PowerMode IPsec (PMI) is a new mode of operation that provides IPsec performance improvements using Vector Packet Processing (VPP) and Intel AES-NI instructions. PMI utilizes a small software block inside the Packet Forwarding Engine that bypasses flow processing and utilizes the AES-NI instruction set for optimized performance of IPsec processing.

  You can enable PMI processing by using the **set security flow power-mode-ipsec** command.

  The following features are supported with PMI:

- Auto Discovery VPN (ADVPN)
- Internet Key Exchange (IKE) functionality
- AutoVPN
- High availability
- IPv6
- Stateful firewall
- st0 interface
- Traffic selectors

[See Understanding PowerMode IPsec.]

- **SRX5K-SPC-4-15-320 (SPC2) and SRX5K-SPC3 (SPC3) support for IPsec VPN (SRX5400, SRX5600, and SRX5800)**—Starting in Junos OS Release 18.4R1, all IPsec VPN features that were previously supported only on SPC3 (model number: SRX5K-SPC3) are now supported on both SPC2 (model number: SRX5K-SPC-4-15-320) and SPC3 installed in the SRX5000 line of devices operating in chassis cluster mode or in standalone mode.

  [See Understanding VPN Support for Inserting Services Processing Cards.]

SEE ALSO

Changes in Behavior and Syntax

IN THIS SECTION

This section lists the changes in behavior of Junos OS features and changes in the syntax of Junos OS statements and commands from Junos OS Release 18.4R3 for the SRX Series.

Release 18.4R3 Changes in Behavior and Syntax

Authentication and Access Control

- **Enabling and disabling SSH login password or challenge-response authentication (SRX Series)**—Starting in Junos OS Release 18.4R3, you can disable either the SSH login password or the challenge-response authentication at the [**edit system services ssh**] hierarchy level.

  In Junos OS releases earlier than Release 18.4R3, you can enable and disable both the SSH login password and the challenge-response authentication simultaneously at the [**edit system services ssh**] hierarchy level.

  [See Configuring SSH Service for Remote Access to the Router or Switch.]

- **SSH protocol version v1 option deprecated from CLI (SRX Series)**—Starting in Junos OS Release 18.4R3, the nonsecure SSH protocol version **v1** option is not available at the [**edit system services ssh protocol-version**] hierarchy level. The SSH protocol version **v2** is the default option to remotely manage systems and applications. The deprecation of the SSH protocol version **v1** enables Junos OS to be compatible with OpenSSH 7.4 and later versions.

  Junos OS Release 18.4R2 and earlier releases support the SSH protocol version **v1** option to remotely manage systems and applications.

  [See protocol-version.]

Interfaces and Chassis

- **Change in output of show interfaces (SRX300, SRX320, SRX340, SRX345, SRX550M)**—Starting in Junos OS Release 18.4R3, the output of the **show interfaces** command on the SRX300 line of devices and on the SRX550M no longer displays **vlan** as the value of the **Physical interface** field. On these devices, the value of the **Physical interface** field in the command output appears as **irb** instead of **vlan**.

Juniper Sky ATP

- **Dynamic address entries on SRX Series devices in chassis cluster mode**—Starting in Junos OS Release 18.4R3, for SRX Series devices in chassis cluster mode, the dynamic address entry list is retained on the device even after the device is rebooted following a loss of connection to Juniper Sky Advanced Threat Prevention (ATP).

Unified Threat Management

- **Increase in the utm scale number (SRX1500, SRX4100, SRX4200, SRX4600, SRX4800, SRX5400, SRX5600, and SRX5800)**—Starting with Junos OS Release 18.4R3, on SRX Series devices, UTM policies, profiles, MIME patterns, filename extensions, protocol commands, and custom messages, are increased up to 1500. Custom URL patterns and custom URL categories are increased up to 3000.

  [See Unified Threat Management overview.]

VPNs

- **IKE gateway dynamic distinguished name (DN) attributes (SRX Series devices)**—Starting in Junos OS Release 18.4R3, you can now configure only one dynamic distinguished name (DN) attribute among **container-string** and **wildcard-string** at **[edit security ike gateway *gateway_name* dynamic distinguished-name]** hierarchy. If you try configuring the second attribute after you configure the first attribute, the first attribute is replaced with the second attribute. Before your upgrade your device, you must remove one of the attributes if you have configured both the attributes.

  [See distinguished-name (Security) and Understanding IKE Identity Configuration.]

- **COS Forward Class name (SRX Series devices)**—Starting in Junos OS Release 18.4R3, we have deprecated the CLI option **fc-name** (COS Forward Class name) in the new **iked** process that displays security associations (SAs) under show command **show security ipsec sa**.

  [See show security ipsec security-associations.]

Release 18.4R2 Changes in Behavior and Syntax

Application Security

- Starting in Junos OS Release 18.4R2, the SSL decryption mirroring feature is supported on redundant Ethernet (reth) interface on SRX Series devices operating in a chassis cluster.

- Starting in Junos OS Release 18.4R2, the format for setting up an automatic update of the application signature package is changed. Now you can use the YYYY-MM-DD.hh:mm format to configure the time

for automatic download for application signatures. For example, following statement sets the start time as 10 AM on June 30, 2019:

```
user@host# set services application-identification download automatic start-time 2019-06-30.10:00:00
```

You can configure the automatic updates using the new format once you upgrade your previous Junos OS version to the supported Junos OS version (Junos OS Release 18.4R2).

Network Management and Monitoring

- **NSD Restart Failure Alarm (SRX Series)**—Starting in Junos OS Release 18.4R2, a system alarm is triggered when the Network Security Process (NSD) is unable to restart due to the failure of one or more NSD subcomponents. The alarm logs about the NSD are saved in the messages log. The alarm is automatically cleared when NSD restarts successfully.

  The **show chassis alarms** and **show system alarms** commands are updated to display the following output when NSD is unable to restart - **NSD fails to restart because subcomponents fail**.

  [See Alarm Overview.]

VPN

- **Encryption algorithm (SRX Series)**—Starting in Junos OS Release 18.4R2, when AES-GCM 128-bit or AES-GCM 256-bit encryption algorithms are configured in the IPsec proposal, it is not mandatory to configure AES-GCM encryption algorithm in the corresponding IKE proposal.

  [See IPsec VPN Configuration Overview and encryption-algorithm (Security IKE).]

Release 18.4R1-S2 Changes in Behavior and Syntax

VPN

- **Encryption algorithm (SRX Series)**—Starting in Junos OS Release 18.4R1-S2, when AES-GCM 128-bit or AES-GCM 256-bit encryption algorithms are configured in the IPsec proposal, it is not mandatory to configure AES-GCM encryption algorithm in the corresponding IKE proposal.

  [See IPsec VPN Configuration Overview and encryption-algorithm (Security IKE).]

Release 18.4R1 Changes in Behavior and Syntax

Application Security

- **Changes to show security advance-policy-based-routing statistics command**—Starting from Junos OS Release 18.4R1, the **AppID Requested**, **Rule matches**, and **AppID cache hits** options are deprecated in the **show security advance-policy-based-routing statistics** command.

  The new options **App rule hit on cache hit**, **URL cat rule hit on cache hit**, **App rule hit midstream** and **URL cat rule hit midstream** are included to provide the details as shown in Table 3 on page 328:

Table 3: show security advance-policy-based-routing statistics

Field Name	Field Description
App rule hit on cache hit	The number of times the rule with a matching entry in the application system cache (ASC) is found.
URL cat rule hit on cache hit	The number of times the rule with defined URL categories is matched.
App rule hit midstream	The number of times a route is changed in the middle of a session because of the rule with defined application is matched.
URL cat rule hit midstream	The number of times a route is changed in the middle of a session because of the rule with defined URL categories is matched.

The modified **show security advance-policy-based-routing statistics** command provides the output as shown in the following sample:

`user@host>` **show security advance-policy-based-routing statistics**

```
Advance Profile Based Routing statistics:
  Sessions Processed                    2
  App rule hit on cache hit             1
  URL cat rule hit on cache hit         0
  App rule hit midstream                1
  URL cat rule hit midstream            0
  Route changed on cache hits           1
  Route changed midstream               1
  Zone mismatch                         0
  Drop on zone mismatch                 0
  Next hop not found                    0
```

Chassis Cluster

- **Chassis cluster information detail operational command (SRX Series)**—Starting in Junos OS Release 18.4R1, use the **show chassis cluster information detail** command to view the chassis cluster information details for each node.

  [See show chassis cluster information.]

Flow-Based and Packet-Based Processing

- **New configuration options for flow configuration**—Starting from Junos OS 18.4R1, the **log dropped-illegal-packet** and **log dropped-icmp-packet** options are introduced under the [**edit security flow**] hierarchy-level.

  [See flow (Security Flow).]

- **Multiple collector support for J-Flow version 9 (SRX Series)**—Starting in Junos OS Release 18.4R1, for J-Flow version 9, up to four collectors can be configured under family inet and the PFE to export the flow record, flow record template, option data, and option data template packet to all configured collectors. Earlier to this release, only one collector could be configured under family inet and inet6.

Installation and Upgrade

- **Autoinstallation support (SRX1500)**—Starting in Junos OS Release 18.4R1, SRX1500 devices support autoinstallation to automate the configuration process for loading configuration files onto new or existing devices automatically over the network. Use the CLI Editor in configuration mode to configure the device for autoinstallation. The factory-default setting has been changed to support autoinstallation.

  [See Configuring Autoinstallation on an SRX1500 Device.]

Network Management and Monitoring

- **The NETCONF server omits warnings in RPC replies when the rfc-compliant statement is configured and the operation returns <ok/> (SRX Series)**—Starting in Junos OS Release 18.4R1, when you configure the **rfc-compliant** statement at the **[edit system services netconf]** hierarchy level to enforce certain behaviors by the NETCONF server, the server must not return an RPC reply that encloses both an **<rpc-error>** element and an **<ok/>** element. If the operation is successful, but the server reply would enclose one or more **<rpc-error>** elements of severity warning in addition to the **<ok/>** element, then the warnings are omitted. In earlier releases, or when the **rfc-compliant** statement is not configured, the NETCONF server might issue an RPC reply that encloses both an **<rpc-error>** element of severity warning and an **<ok/>** element.

- **SSHD process authentication logs timestamp (SRX Series)**—Starting in Junos OS Release 18.4R1, the SSHD process authentication logs use only the time zone defined in the system time zone. In the earlier releases, the SSHD process authentication logs sometimes used the system time zone and the UTC time zone.

  [See Overview of Junos OS System Log Messages.]

UTM

- **security log message enhancement [SRX Series and vSRX]**— Starting in Junos OS Release 18.4R1, the security log information is enhanced to include source zone and destination zone for Web filtering, content filtering, antispam filtering, and antivirus features of UTM.

  [See Understanding Unified Policies [Unified Threat Management (UTM)].]

- **UTM default policy enhancement (SRX1500, vSRX)**—Starting with Junos OS Release 18.4R1, on SRX1500 Services Gateways and vSRX instances, UTM policies, profiles, MIME patterns, filename extensions, customer message, and protocol-command numbers of values are increased from 500 to 1500. The custom URL patterns and custom URL category values are increased from 1000 to 3000.

  [See UTM Overview.]

- **Antivirus profiles enhancement (SRX Series)**— Starting in Junos OS Release 18.4R1, you can create a common antivirus profile for different antivirus types. While you are creating a UTM policy for an antivirus

profile, the UTM policy configuration page provides common antivirus profile selection fields for each supported protocol.

In Junos OS Release 18.3R1 and earlier releases, separate antivirus profiles are created for every antivirus protocol. While you are creating a UTM policy for an antivirus profile, the UTM policy configuration page provides separate antivirus profile selection fields for every supported protocol.

[See Full Antivirus Protection.]

SEE ALSO

Known Behavior

This section contains the known behaviors, system maximums, and limitations in hardware and software in Junos OS Release 18.4R3 for the SRX Series.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Flow-Based and Packet-Based Processing

- When you configure an interface to a zone under a tenant or under a root system, interfaces that are rented by other tenants are listed with a question mark. PR1370255

Interfaces and Chassis

- On SRX4600 devices, the USB storage device is available only for the host OS (Linux) with full access and for the boot process (install and recovery functions). PR1283618

J-Web

- CLI terminal is not working in Java version 1.8 due to a security restriction in the running applet. PR1341956

Platform and Infrastructure

- USB stops working if the USB is removed while it is in initialization state. To avoid this issue, wait for a few seconds before removing the USB. PR1332360

Unified Threat Management (UTM)

- From Junos OS Release 18.3 onward, categories in the APBR module based on destination IP address are supported. Category classification occurs and the APBR action takes place. UTM Web filtering provides information about the category to the APBR module for the matched and received destination IP address. But currently there is a limitation from web filtering, which states that category classification is inaccurate for IP address and leads to non-APBR route. PR1365931
- To make the APBR custom category work, you need to create a local UTM profile. PR1366528

VPNs

- When multiple traffic selectors are configured on a particular VPN, the iked process checks for a maximum of 1 DPD probe that is sent to the peer for the configured DPD interval. The DPD probe will be sent to the peer if traffic flows over even one of the tunnels for the given VPN object. PR1366585
- On an existing tunnel, if the DPD values are changed, then they are not applied until rekeying for that tunnel happens. PR1375963
- When using the operational mode **request security ike debug-enable** for IKE debugging after having used IKE traceoptions with a filename specified in the configuration, the debugs are still being written to the same filename. PR1381328

SEE ALSO

Known Issues

IN THIS SECTION

This section lists the known issues in hardware and software in Junos OS Release 18.4R3 for SRX Series devices.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Chassis Cluster

- After sub-sequential reboot of the RG0, the primary tunnel entries are getting deleted. PR1396513

- On SRX5400, SRX5600, and SRX5800 devices, during in-service software upgrade (ISSU), the IPsec tunnels flap, causing a disruption of traffic. The IPsec tunnels recover automatically after the ISSU process is completed. PR1416334

Class of Service (CoS)

- On NFX Series platforms, when a CoS rewrite rule is configured for the st0 interface, the CoS value will not take effect on the corresponding forwarding class. It causes CoS not to work as expected. PR1439401

Flow-Based and Packet-Based Processing

- On SRX Series devices, traffic identification might fail and unidentified traffic might pass through the device when the AppID feature is used. PR1357093
- Invalid sessions timeout over 48 hours with stress TCP in the backup node. PR1383139
- On all SRX Series platforms, in chassis cluster with Z mode traffic and local (non-reth) interfaces configured, when using ECMP routing between multiple interfaces residing on both node0 and node1, if a session is initiated through one node and the return traffic comes in through the other node, packets may get dropped due to reroute failure. PR1410233
- While PMI is on, IPsec-encrypted statistics on the Routing Engine **show security ipsec statistics** are not working anymore for fragment packets. PR1411486
- Within an SSL-proxy configuration, if **trusted-ca** and **root-ca** have the same name, then it will result in the associated SSL-T and I profiles not getting pushed to the Packet Forwarding Engine and thereby impacting the SSL-proxy functionality. As a workaround, ensure to have different IDs or names for **trusted-ca** and **root-ca**.

  If already in the scenario, do the following to recover:

  1. Configure different name for **trusted-ca** and **root-ca**.
  2. From the CLI, restart the NSD process using the **restart network-security** command.

  PR1420859
- The rtlogd process on the two Routing Engine HA nodes go into deadlock state when rtlogd on both nodes are busy sending data to each other in the single thread context. PR1435352
- On SRX Series devices with SSL proxy service used, a memory leak issue might occur, which results in the flowd or srxpfe process stops. PR1450829
- TCP session cannot time out properly upon receiving the TCP RESET packet, and the session timeout does not change to two second. PR1467654

Interfaces and Chassis

- On SRX Series devices, when doing an ISSU upgrade, the reth interface might flap and cause traffic loss in rare occasions. PR1381475
- On SRX Series platforms, sometimes the mgd processes are not properly closed. As a result, many mgd instances are unnecessarily left running. PR1439440

Intrusion Detection and Prevention (IDP)

- Rogue .gz files in **/var/tmp/sec-download/** might fail offline secpack update. PR1466283

J-Web

- On SRX Series platforms, the root password configured at the first J-Web access (Skip to J-Web) does not work if the password length is shorter than eight characters. PR1371353
- Support for intelligent CLI-based autocomplete is added to secure-wire. PR1372825
- On the SRX300 line of devices, an IPS installation failure message is displayed when the uploading IPS signature package using the TAP mode quick setup wizard. This is an intermittent issue and occurs when IPS is installed immediately after the **system zeroized** command. PR1404296

Network Management and Monitoring

- The snmpd process leaks memory in the SNMPv3 query path and crashes. The issue is caused by a memory leak when the request PDU is dropped by SNMP when the **snmp filter-duplicates** configuration is enabled. Each request PDU has a structure pointer for the SNMPv3 security details. This is allocated when the PDU is created or cloned. But while dropping the duplicate requests, the corresponding structure is not freed, which causes the memory leak. PR1392616

Platform and Infrastructure

- Multiple **Monitor-failures** errors are seen on the rg1 interface after ISSU completion from Junos OS Release 17.4R1-S3 to Junos OS Release 18.1R1.9. PR1354395
- On an SRX4600 device, Packet Forwarding Engine stops are seen due to the segmentation problem. PR1422466
- On the SRX300 line of devices, the interface LED does not work properly. PR1446035

Routing Policy and Firewall Filters

- On all SRX Series devices, there might be a traffic outage if failover happens between node0 and node1 and the network security process (NSD) fails to read the security policies from the configuration file. PR1182591
- In rare case, a specific domain is not resolved by the SRX Series devices when using the DNS address book. This is because the DNS library resolver fails to identify the pointer with a big offset in the compressed DNS name. PR1471408

Unified Threat Management (UTM)

- From Junos OS Release 18.4 onwards, the UTM log will include source and destination zone information. PR1326271

VPNs

- On SRX Series devices, if multiple traffic selectors are configured for a peer with IKEv2 reauthentication, only one traffic selector is rekeyed at the time of IKEv2 reauthentication. The VPN tunnels of the remaining traffic selectors are cleared without immediate rekeying. New negotiation of these traffic selectors is triggered through other mechanisms such as traffic or by peer. PR1287168
- On an SRX4600 device, when the next hop is set to the st0 interface, the output of the **show route forwarding-table** command displays the next-hop IP address twice. PR1290725
- On SRX Series devices, with NCP as client, sometimes IKE SA might not be displayed in the CLI output after RG1 failover. PR1352457
- VPN tunnels flap after adding or deleting a group in **edit private** mode on a clustered setup. PR1390831
- On SRX5400, SRX5600, and SRX5800 devices with an SPC3 card, if an existing IKE gateway configuration is changed from AutoVPN to Site-to-Site VPN, the IKE negotiation behavior remains in **responder-only** mode. PR1413619
- On SRX5400, SRX5600, and SRX5800 devices, during in-service software upgrade (ISSU), the IPsec tunnels flap, causing a disruption of traffic. The IPsec tunnels recover automatically after the ISSU process is completed. PR1416334
- On the SRX5000 line of devices with SPC3 cards, sometimes IKE SA is not seen on the device when st0 binding on VPN configuration object is changed from one interface to another (for example, st0.x to st0.y). PR1441411
- On SRX Series devices with more than 500 IPsec VPN tunnels configured, the IPsec VPN might flap if establishing a connection for the first time. PR1455951
- On SRX Series devices with chassis cluster configured, when the SRX Series device is acting as a hub device and AutoVPN point-to-multipoint mode is configured (**set interfaces st0 unit x multipoint** and

set security ike gateway xxx dynamic are configured), IPsec tunnels might lose connectivity after RG0 failover. PR1469172

SEE ALSO

New and Changed Features | 316

Changes in Behavior and Syntax | 324

Known Behavior | 330

Resolved Issues | 336

Documentation Updates | 356

Migration, Upgrade, and Downgrade Instructions | 356

Resolved Issues

This section lists the issues fixed in hardware and software in Junos OS Release 18.4R3 for SRX Series devices.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

Resolved Issues: 18.4R3

Application Layer Gateways (ALGs)

- Sometimes unexpected forwarding sessions appear for tenant ALG SIP traffic in cross tenant. PR1409748
- The H.323 connection might not be established when the H.323 packet passes SRX Series devices twice through different virtual routers. PR1436449
- Packet loss happens during cold synchronization from the secondary node after rebooting. PR1448252

Authentication and Access Control

- The CPU utilization of the uacd is high, about 100 percent, in the output of **show chassis routing-engine**. PR1424971
- The same source IP sessions are cleared when the IP entry is removed from the UAC table. PR1457570

Application Security

- The AAMW diagnostic script gives incorrect error : **Error: Platform does not support SkyATP: srx300**. PR1423378
- If automatic application-identification download is configured with a start-time specified, the automatic download stops when the time has progressed to the next year and a reboot is done before the start-time is reached that year. PR1436265
- The flowd or srxpfe process might crash when advanced anti-malware service is used. PR1437270
- The flowd process core files might be seen when the traffic hits an AppQoS policy. PR1446080

Chassis CLustering

- Hardware failure is seen on both nodes in **show chassis cluster status**. PR1452137
- On SRX Series devices with chassis cluster, the control link remains up even though the control link is actually down. PR1452488

Class of Service (CoS)

- Frequent use of the **show class-of-service spu statistics** command cause rtlogd busy. PR1438747

Flow-Based and Packet-Based Processing

- Throughput or latency performance of all traffic drops when TCP traffic is passing through from one logical system to another logical system. But it may occurs also when logical system is not used on SRX. PR1403727
- Juniper Sky ATP does not escape the \ inside the username before the metadata is sent to the cloud. PR1416093
- The flowd process stops on the SRX5000 or SRX4000 lines of devices when large-size packets go through IPsec tunnel with the post-fragment check. PR1417219
- Blacklist compilation failures are reported. PR1418980
- Group VPN IKE security associations cannot be established before RG0 failover. PR1419341
- SSL proxy did not correctly warn users about unsupported certificates. PR1419485
- SPC3 storage and hard disc error log messages. PR1420800
- FRU model number is not displayed. PR1422185
- Failed to clear sessions on SPC2 with error message **error: usp_ipc_client_recv_:ipc_pipe_read() failed read timed out after 5 second(s)**. PR1426090
- When configuring a GRE tunnel (GRE-over-IPsec-tunnel) or an IPsec tunnel on an SRX Series device, the MTU of the tunnel interface is calculated incorrectly. PR1426607
- The X2 traffic cannot be encrypted after the traffic is decrypted when PMI is enabled. PR1429473
- The flowd process might stop on the SRX5000 line of devices. PR1430804

- VPN traffic fails after primary node reboot or power off. PR1433336
- Intermittent packet drop might be observed if IPsec is configured. PR1434757
- On SRX Series, syslog severity level of **msg subtype is end of policy** is set to error although this message can be ignored. PR1435233
- On an SRX4600 device, core file generation might be observed and SPM might be in present state. PR1436421
- The second IPsec ESP tunnel might not be able to establish between two IPv6 IKE peers. PR1435687
- The ipfd process might crash when SecIntel is used. PR1436455
- Some webpages cannot be fully rendered. PR1436813
- When running SSL proxy on the firewall, the locally generated certificate is not validated by OpenSSL client. PR1436831
- Member of dynamically created VLANs information is not displayed by **show vlans** command. PR1438153
- The probe of Ethernet switching always shows down in a chassis cluster scenario. PR1438277
- The flowd process stops and generates core files. PR1438445
- Security logs cannot be sent to the external syslog server through TCP. PR1438834
- The local interface IPv6 address might be shown as **Tentative** if LACP is enabled on the reth interface. PR1438887
- When llmd is rotating database, there is possibility that reading a NULL db at the same time, which generates core files. PR1439186
- The wmic process might stop and restart when using user firewall with Active Directory. PR1439538
- The IKE pass-through packet might be dropped after source NATed. PR1440605
- The flowd process stops on the SRX550 or on the SRX300 line of devices when an SFP transceiver is plugged in. PR1440194
- While checking the flow session XML for source NAT under a tenant, there is no value identifier for **tenant-name (< tenant>< /tenant>)**. PR1440652
- Performance improvements were made to Screens, which benefit multi-socket systems. PR1440677
- SPC2 wrongly forwarded packet to SPC3 core0 and core14. PR1441234
- New CLI option to show only userful group information for an Active Directory user. PR1442567
- Core files are generated while using NAT PBA in AA mode. PR1443148
- On the SRX300 line of devices does not have MIB that can retrieve the fan status. PR1443649
- The flowd or srxpfe process might crash when processing fragmented packets. PR1443868
- Junos OS: SRX5000 Series: flowd process crash due to receipt of specific TCP packet (CVE-2019-0064) PR1445480

- The flowd process might stop on SRX Series devices with chassis cluster and IRB interface is configured. PR1446833
- The J-Flow version 5 stops working after changing input rate value. PR1446996
- Packet loss happens during cold sync from the secondary node after rebooting. PR1447122
- SPC3 Talus FPGA stuck on 0x3D or 0x69 golden version. PR1448722
- Host-inbound or host-outbound traffic on VR does not work when SRX5000 line of devices work at SPC3 mix mode. PR1449059
- All ingress packets are dropped if the traffic transit network is also the same network for LTE mPIM internal management. PR1450046
- AAWM policy rules for IMAP traffic sometimes might not get applied when passed through an SRX Series device. PR1450904
- FTP data cannot pass through SRX320 4G wireless from FTP server to client. PR1451122
- Traffic forwarding on Q-in-Q port and VLAN tagging are not observed properly on R0. PR1451474
- The rpd process might stop and restart and an rpd core file is generated when committing the configuration. PR1451860
- Update SRX300 traffic default logging to stream mode. PR1453074
- The **security flow traceoptions** fills in with RTSP ALG-related information. PR1458578
- Optimizations were made to improve the **connections-per-second** performance of an SPC3. PR1458727
- The tunnel packets might be dropped because gr0.0 or st0.0 interface is wrongly calculated after a GRE or VPN route change. PR1462825
- Fragmented traffic might get looped between the fab interface in Z mode. PR1465100
- The rpd process might stop after several changes to the **flow-spec** routes. PR1467838
- Server unreachable is detected; ensure that port 443 is reachable. PR1468114
- Tail drop on all ports is observed when any switch-side egress port gets congested. PR1468430
- LTE latest 17.5.515 build drops FTP data connection. PR1468570
- SRX300, SRX320, SRX340, SRX345, SRX550, and SRX550HM devices may not retrieve the complete **users** or **groups** and **user-group-mappings** if the DC includes more than 20,000 **users** or **groups**. Use JIMS solution on SRX300, SRX320, SRX340, SRX345, SRX550, and SRX550HM devices when the users or devices or groups are more than 20,000 in the AD deployment. PR1472601

Install and Upgrade

- IDP install fails on one node because AppID process gets stuck. PR1336145
- SRX Series devices go into DB mode after USB installation. PR1390577
- SPMC version mismatch errors after Junos OS install using USB method. PR1437065

- Junos OS upgrade fails when partition option is used on SRX Series devices. PR1449728
- The jbuf process usage may increase up to 99 percent after Junos OS upgrade. PR1467351

Interfaces and Chassis

- Both nodes in the SRX Series chassis cluster go into DB mode after downgrading to Junos OS Release 18.1. PR1407295
- MTU change after a CFM session is up can impact L2 Ethernet ping (loopback messages). If the new change is less than the value in the initial incarnation, then L2 Ethernet ping would fail. PR1427589
- LFM remote loopback is not working as expected. PR1428780
- The LACP interface might flap if performing a failover. PR1429712
- Certain interfaces may drop all unicast traffic when LTE PIM is used. PR1430403
- The fxp0 interface might redirect packets not destined to itself. PR1453154

Intrusion Detection and Prevention (IDP)

- The flowd or srxpfe process stops and generates core files when processing IDP packets. PR1416275
- NSD fails to push security zone to the Packet Forwarding Engine after reboot, if there is an active IDP rule configured with FQDN. PR1420787
- The flowd or srxpfe process stops and generates core files. PR1437569

J-Web

- Some error messages might be seen when using J-Web. PR1446081
- The idle-timeout for J-Web access doesn't work properly. PR1446990
- J-Web fails to display the traffic log in event mode when stream mode host is configured. PR1448541
- Editing a destination NAT rule in J-Web introduces a non-configured routing instance field. PR1461599

Layer 2 Ethernet Services

- DHCP request might get dropped in a DHCP relay scenario. PR1435039

Network Address Translation (NAT)

- The nsd process might crash during SNMP query for deterministic NAT pool information. PR1436775
- RTSP resource session is not found during NAT64 static mapping. PR1443222
- On SRX5000 line of devices with SPC3 card, when using source NAT, under high traffic load, a small fraction of TCP-SYN packets may be dropped due to the source NAT port failing to be allocated. Also, the NAT pool resources may leak over time. PR1443345
- A port endian issue in SPU messages between SPC3 and SPC2 results in one redundant NAT binding being created in the central point when one binding is allocated in SPC2 SPC. PR1450929
- Packet loss is observed when multiple source NAT pools and rules are configured. PR1457904

Network Management and Monitoring

- MIB OID **dot3StatsDuplexStatus** shows wrong status. PR1409979
- SNMPD might generate core files after restarting the NSD process by **restart network-security gracefully**. PR1443675
- Control links are logically down on SRX Series chassis cluster when software version is Junos OS Release 12.3X48. PR1458314

Platform and Infrastructure

- The **show security flow session** command fails with error messages when SRX4600 has over a million routing entries. PR1408172
- Packet drops, replication failure, or ksyncd crashes might be seen on the logical system of a Junos OS device after Routing Engine switchover. PR1427842
- The PICs might go offline and split-brain might be seen when an interrupt storm happens on the internal Ethernet interface em0 or em1. PR1429181
- Packet loss is caused by FPGA back pressure on SPC3. PR1429899
- REST API does not work properly. PR1430187
- Packet Forwarding Engine pause might be seen on the SRX1500 device. PR1431380
- The false license alarm may be seen even if there is a valid license. PR1431609
- When changing the decrypt mirror interface in the SSL proxy service configuration, it does not reflect properly in the Packet Forwarding Engine. PR1434595
- The interface using LACP flaps when the Routing Engine is busy. PR1435955
- LACP traffic is distributed evenly on ingress child links but not on egress links. PR1437098
- The ksyncd process might crash and restart on SRX Series devices. PR1440576
- The configured RPM probe server hardware timestamp does not respond with the correct timestamp to the RPM client. PR1441743
- The RPM **udp-ping** probe does not work in a multiple routing instance scenario. PR1442157
- The **show security flow session** command fails, generating an error message, when an SRX4100 or SRX4200 has around 1 million routing entries in the FIB. PR1445791
- LACP cannot work with the **encapsulation flexible-ethernet-services** configuration PR1448161
- Cm errors on certain MPC line cards are classified as major, which should be minor or non-fatal. PR1449427
- REST API process become nonresponsive when a number of requests come at a high rate. PR1449987
- Traffic loss might occur when there are around 80,000 routes in FIB. PR1450545
- The SRX Series devices stops and generates several core files. PR1455169

- When you try to reset the system configuration on an SRX1500 device using the **reset config** button, it does not work properly. PR1458323
- The AAMWD process exceeds 85 percent RLIMIT_DATA limitation due to memory leak. PR1460619
- A VM core might be observed if configuring a sampling rate of more than 65,535. PR1461487
- The AE interface cannot be configured on an SRX4600 device. PR1465159
- Static route through dl0.0 interface is not active. PR1465199
- On SRX300 line of devices, you might encounter **Authentication-Table** loading slowly while using user-identification. PR1462922

Routing Policy and Firewall Filters

- The NSD process might stop due to a memory corruption issue. PR1419983
- An SRX1500 device allows only a maximum of 256 policies with counting enabled. PR1435231
- Two ipfd processes appear in ps command and the process pauses. PR1444472
- Traffic log shows a wrong **custom-application** name when the **alg ignore** option is used in application configuration. PR1457029
- The NSD process might get stuck and cause problems. PR1458639
- Policy detail does not display policy statistics counter, even if policy count is enabled. PR1471621

Routing Protocols

- SSH login might fail if a user account exists in both local database and RADIUS or TACACS+. PR1454177

Services Applications

- The flowd process stops when SRX5800 devices work at SPC3 mix mode with 1 SPC3 card and 7 SPC2 cards. PR1448395
- In a rare condition, SRX device Packet Forwarding Engine might generate core file because corrupted or malformed HTTP long (over 64,000 bytes) messages hit security policy that is attached on ICAP redirect policy. PR1460035

Unified Threat Management (UTM)

- The command **show security utm web-filtering status** now provides additional context when the status of EWF is down. PR1426748
- Adjust core allocation ratio for on-box antivirus. PR1431780
- On SRX Series devices, memory might leak if Websense Redirect Web Filtering is configured. PR1445222
- Increase the scale number of UTM profile or policy for the SRX1500 device, and the SRX4000 and SRX5000 lines of devices. PR1455321

VPNs

- With a large number of IPsec tunnels established, a few tunnels might fail during rekey negotiation if the SRX Series device initiates the rekey. PR1389607
- IPsec VPN missing half of the IKE SA and IPsec SA showing incorrect port number when scaling to 1000 IKEv1 AutoVPN tunnels. PR1399147
- The IKE and IPsec configuration under groups is not supported. PR1405840
- On SRX5400, SRX5600, and SRX5800 devices with SPC3, when the SRX Series device is configured in IKEv1 and NAT traversal is active, after a successful IPsec rekey, the IPsec tunnel index might change. In such a scenario, there might be some traffic loss for a few seconds. PR1409855
- The IKED process stop due to a misconfiguration. PR1416081
- The IKED process might stop when IKE and IPsec SA rekey happens simultaneously. PR1420762
- The VPN tunnel might flap when IKE and IPsec rekey happen simultaneously PR1421905
- Old tunnel entries are also seen when a new tunnel negotiation happens from the peer device after a change in the IKE gateway configuration at peer side. PR1423821
- IPsec packet throughput might be impacted if NAT-T is configured and the fragmentation operation of post fragment happens. PR1424937
- The P1 configuration delete message is not sent on loading the baseline configuration if there has been a prior change in VPN configuration. PR1432434
- On the SRX5000 line of devices with SPC3, with P2MP and IKEv1 configured, if negotiation fails on the peer device, then multiple IPsec SA entries are created on the device if the peer keeps triggering a new negotiation. PR1432852
- IPsec rekey triggers for when sequence number in AH and ESP packet is about to exhaust is not working. PR1433343
- The kmd log shows resource temporarily unavailable repeatedly and VPNs might be down. PR1434137
- On SRX Series devices, fragments exit VPN traffic earlier than required by ingress packet sizes. PR1435700
- The IKED stops on the SRX5000 line of devices with SPC3 when IPsec VPN or IKE is configured. PR1443560
- IPsec VPN traffic drop might be seen on SRX Series platforms with NAT-T scenario. PR1444730
- IPsec tunnels with distribution profile configuration will be renegotiated after perform RG0 failover on the SRX5000 line of devices with SPC3. PR1446078
- After a long time (a few hours) of traffic during a mini PDT test, the number of IPsec tunnels is much higher than expected. PR1449296
- Some IPsec tunnels flap after RGs fail over on the SRX5000 line of devices. PR1450217
- The VPN flaps on the primary node after a reboot of the secondary node. PR1455389

- IPsec VPN tunnels are losing routes for the traffic selector randomly while the tunnel is still up, causing complete outage. PR1456301
- Traffic is not sent out through an IPsec VPN after update to Junos OS Release 18.2 or later. PR1461793
- The IPsec VPN tunnels cannot be established if overlapped subnets are configured in traffic selectors. PR1463880

Resolved Issues: 18.4R2

Application Firewall

- Fail to match permit rule in AppFW rule set. PR1404161

Application Layer Gateways (ALGs)

- DNS requests with the EDNS option might be dropped by the DNS ALG. PR1379433
- On all SRX Series platforms, SIP/FTP ALG does not work when SIP traffic with source NAT goes through the SRX Series devices. PR1398377
- H.323 voice packets might be dropped on SRX Series devices. PR1400630
- The TCP reset packet is dropped when any TCP proxy based feature and the **rst-invalidate-session** command are enabled simultaneously. PR1430685

Chassis Clustering

- The SNMP trap sends wrong information with **Manual failover**. PR1378903
- Traffic cannot pass through cross tenants after ISSU from Junos OS Release 18.3 to Junos OS Release 18.4. PR1382467
- Traffic with domain name address might fail for 3-5 minutes after RG0 failover on SRX Series platforms. PR1401925
- The flowd process stops when updating or deleting a GTP tunnel. PR1404317
- Mixed mode (SPC3 coexisting with SPC2 cards) high availability (HA) IP monitoring fails on secondary node with **secondary arp entry not found** error. PR1407056
- The SRX Series devices might be potentially overwritten with an incorrect buffer address when detailed logging is configured under the GTPv2 profile. PR1413718
- Starting with Junos OS Release 18.4, at most, 6 Packet Data Network Gateway (PGW) connections can be contained in a PDP context response; otherwise, the response will be dropped. PR1422877
- Memory leaks might be seen on the jsqlsyncd process on SRX chassis clusters. PR1424884
- RG0 failover sometimes causes FPC offline/present status. PR1428312

Flow-Based and Packet-Based Processing

- On SRX1500 devices, fan speed goes up and down continuously. PR1335523
- Application identification classification logic has been improved for NetBIOS and RPC. PR1357093
- Control traffic loss might be seen on SRX4600 platform. PR1357591
- When activating **security flow traceoptions**, the unfiltered traffic is captured. PR1367124
- SRX1500 continues to generate an alarm on fan **Tray 0 Fan 0 Spinning Degraded**. PR1367334
- The pkid process might stop after RG0 failover. PR1379348
- On SRX1500 devices, the activity LED (right LED) for 1-Gigabit Ethernet/10-Gigabit Ethernet port is not on although traffic is passing through that interface. PR1380928
- Password recovery menu is not shown on SRX Series devices. PR1381653
- Large file downloads slow down for many seconds. PR1386122
- Traffic might be processed by the VRRP backup when multiple VRRP groups are configured. PR1386292
- Junos OS release 18.3R1 cannot be installed through TFTP in boot loader on SRX300 line of devices. PR1390858
- Performance drops are seen in SRX345 and SRX340 platforms for IDP C2S policy. PR1395592
- These messages are seen: **/kernel tcp_timer_keep:Local(0x80000004:54652) Foreign(0x80000004:33160)**. PR1396584
- On SRX4600 platform, the 40-Gigabit Ethernet interface might flap continuously by MAC local fault. PR1397012
- 40-Gigabit Ethernet 100-Gigabit Ethernet ports might take a long time (about 30 seconds) to link up on SRX4600 platform. PR1397210
- SRX Series devices might not strip VLAN added by native VLAN ID command. PR1397443
- SRX Series devices connection to JIMS keeps flapping, causing failover to secondary JIMS. PR1398140
- High jsd or na-grpcd CPU usage might be seen even when JET or JTI is not used. PR1398398
- On SRX4600 and SRX5000 devices, BGP packets might be dropped under high CPU usage. PR1398407
- VLAN push might not work on SRX1500. PR1398877
- Increase DAG feed scale number to 256 from 63. PR1399314
- The authd might stop when issuing the **show network-access requests pending** command during the authd restart. PR1401249
- SRX Series device cannot obtain IPv6 address through DHCPv6 when using a PPPoE interface with a logical unit number greater than 0. PR1402066
- Unable to access SRX Series platforms if the messages **kern.maxfiles limit exceeded by uid 65534, please see tuning(7)** are seen. PR1402242

- CPU is hitting 100 percent with fragmented traffic. PR1402471
- On SRX5400, SRX5600, and SRX5800 devices with SPC3, when PowerMode IPsec is enabled, the **show security flow statistics** and **show security flow session tunnel summary** commands will not count or display the number of packets processed within PowerMode IPsec, because these packets do not go through regular flow path. PR1403037
- Downloads might stall and/or completely fail when utilizing services that are reliant on TCP proxy. PR1403412
- Transit UDP 500/4500 traffic might not pass across SRX5000 Series devices when using SPC3/SPC2. PR1403517
- The flowd process stops and all cards go offline. PR1406210
- The RG1 failover does not happen immediately when the SPC3 card crashes. PR1407064
- The flowd process might crash if the **enable-session-cache** command is configured under the SSL termination profile. PR1407330
- The kernel might crash on the secondary node when committing **set system management-instance**. PR1407938
- Memory leak occurs if AAMW is enabled. PR1409606
- Traffic might be lost and CPU might spike high if SSL proxy is enabled. PR1414467
- Any traffic originated from the device itself might be dropped in the IPsec tunnel. PR1414509
- The input and output bytes or bps statistic values might not be identical for the same size of packets. PR1415117
- The reth interfaces are now supported when configuring SSL Decryption Mirroring (mirror-decrypt-traffic interface). PR1415352
- Traffic might be dropped if SOF is enabled in a chassis cluster in active/active mode. PR1415761
- The command **show security firewall-authentication jims statistics** will output statistics of both the primary JIMS server and secondary JIMS server. PR1415987
- when enabling PMI on SRX5400, SRX5600, and SRX5800 devices with SPC3 card or SRX4100, SRX4200, and SRX46000 devices, the flowd process stops when large size packets go through IPsec tunnel with the post fragment check triggered. PR1417219
- Traffic logging shows service-name junos-dhcp-server for UDP destination port 68. PR1417423
- Traffic might be lost on the SRX Series device if IPsec session affinity is configured with **ipsec-performance-acceleration**. PR1418135
- On all SRX Series devices, if the traffic-log feature is configured, logs might incorrectly display IPv4 addresses in an IPv6 format. PR1421255
- The **show security flow session session-identifier < sessID>** is not working if the session ID is bigger than 10M on SRX4600 platform. PR1423818

- Alarms triggered due to high temperature when operating within expected temperatures. PR1425807
- PIM neighbors might not come up on SRX Series chassis cluster. PR1425884
- The IPsec traffic going through SRX5000 line of devices with SPC2 cards installed causes high SPU CPU utilization. PR1427912
- SPC3: Uneven distribution of CPU with high PPS on device. PR1430721
- SRX550M running Junos OS Release 18.4R1 shows PEM 1 output failure message, whereas with Junos OS Release 15.1X49 or Junos OS Release 18.1R3.3 it does not show any alarms. PR1433577

Interfaces and Chassis

- Switching interface mode between family ethernet-switching and family inet/inet6 might cause traffic loss. PR1394850
- On SRX1500 platform, traffic is blocked on all interfaces after configuring the **interface-mac-limit** command on one interface. PR1409018

Intrusion Detection and Prevention (IDP)

- IDP might crash with the custom IDP signature. PR1390205
- Unable to configure dynamic-attack-group. PR1418754

Installation and Upgrade

- ISSU failed from Junos OS Release 18.3R1.9 to Junos OS Release 18.4R1.4. PR1405556

J-Web

- In the J-Web dashboard, the **Security Resources** widget did not display absolute values. PR1372826
- The **Security Log Event Details** window size was increased to display all relevant information about an event. PR1373357
- J-Web now supports defining SSL Proxy and redirect (block page) profiles when a policy contains dynamic applications. PR1376117
- **Threat Assessment Report** shows overlapping text and data. PR1397884
- Special character used in the **pre-shared-key** is removed silently after a commit operation on J-Web. PR1399363
- Configuring using the CLI editor in J-Web generates an mgd core file. PR1404946
- The httpd-gk process stops, leading to dynamic VPN failures and high Routing Engine CPU utilization up to 100 percent. PR1414642
- J-Web configuration change for an address set using the search function results in a commit error. PR1426321
- User unable to view GUI when logged in as read-only user. User is presented with an empty page after logging in. PR1428520

- On SRX Series devices, J-Web incorrectly displays port mode access for the link aggregation interfaces despite them being configured with multiple VLAN IDs and port mode trunk. PR1430414
- IRB interface is not available in zone option of J-Web. PR1431428

Logical and Tenant Systems

- Tenant system administrator can change VLAN assignment beyond the allocated tenant system. PR1422058

Multiprotocol Label Switching (MPLS)

- The rpd might restart unexpectedly when **no-cspf** is configured and lo0 is not included under the RSVP protocol. PR1366575

Network Address Translation (NAT)

- On SRX Series devices with SPC3 in mixed mode NAT SPC3 core files are generated at **../sysdeps/unix/sysv/linux/raise.c:55**. PR1403583
- The nsd process stops and causes the Web filter to stop working. PR1406248

Network Management and Monitoring

- The **set system no-redirects** setting does not take effect for the reth interface. PR894194
- The chassisd might stops and restart after the AGENTX session timeout between master(snmpd) and subagent. PR1396967
- Partial traffic might get dropped on an existing LAG. PR1423989

Platform and Infrastructure

- High httpd utilization after reboot failover. PR1352133
- In chassis cluster redundancy group failover scenario, on SRX5600 and 5800 platforms, if the failover is caused by interface monitoring failure, the failover on PFE side (that is data plane) might be slow (example-impact on BFD session up to several seconds). PR1385521
- Memory leak might occur on the data plane during composite next-hop installation failure. PR1391074
- The flowd process might stop if there are too many IPsec tunnels. PR1392580
- The flowd process stops if it goes into a dead loop. PR1403276
- HA failed with the failure code **HW** after loading the image. PR1406029
- Session capacity of SRX340 device does not match with SRX345 device. PR1410801
- PEM 0 or PEM 1 or FAN, I2C Failure major alarm might be set and cleared multiple times. PR1413758
- HA packets might be dropped on SRX5000 line of devices with IOC3 or IOC2 cards. PR1414460
- Complete device outage might be seen when an SPU vmcore is generated. PR1417252

- Some applications might not be installed during upgrade from an earlier version that does not support FreeBSD 10 to FreeBSD 10 (based system). PR1417321
- On SRX Series device, flowd process stops might be seen. PR1417658
- Routing Engine CPU utilization is high and eventd is consuming a lot of resources. PR1418444
- On SRX4600 devices, commit failed while configuring 2047 VLAN IDs on the reth interface. PR1420685

Routing Policy and Firewall Filters

- The **show security flow session** command now fully supports the dynamic application. PR1387449
- Memory leak in nsd causes configuration change to not take effect after a commit. PR1414319
- The flowd process(responsible for traffic forwarding in SRX) stops on SRX devices while deleting a lot of policies from Junos Space. PR1419704
- A commit warning will now be presented to the user when a traditional policy is placed below a unified policy. PR1420471
- The dynamic-address summary's IP entry count does not include IP entries in root logical system. PR1422525
- One new alarm is created **NSD fails to restart because subcomponents fail**. PR1422738
- The ipfd generates a core file while scaling cases 6-1. PR1431861

Unified Threat Management (UTM)

- Whitelist and blacklist do not work for HTTPS traffic going through Web proxy. PR1401996
- On SRX Series devices, when configuring Enhanced Web Filtering on the CLI, the autocomplete function did not properly handle or suggest custom categories. PR1406512
- On SRX Series devices, when using Unified Policies and Web filtering (EWF) without SSL proxy, the Server Name Indication (SNI) might not be identified correctly and the RT_UTM logs were recorded incomplete information. PR1410981
- The device might not look up the blacklist first in the local Web filtering environment. PR1417330
- Unable to achieve better Avira AV TP on SRX4600 devices due to reaching mbuf high watermark. PR1419064
- UTM Web filtering status shows down when using hostname [**routing-instance synchronization failure**]. PR1421398
- When using unified policies, the base filter for certain UTM profiles might not be applied correctly. PR1424633
- The **custom-url-categories** are now pushed correctly to the Packet Forwarding Engine under all circumstances. PR1426189

User Interface and Configuration

- Tenant system administrator cannot view its configuration with **Empty Database** message when using **groups**. PR1422036

VPNs

- On SRX1500 device, when configuring IPsec VPN and BGP simultaneously, the kmd process might stop and generate a core file if BGP peers reach approximately 350. All of the VPN tunnels will be disconnected during the pause. PR1336235
- SPC3 **ike sa detail** output is not showing proper traffic statistics. PR1371638
- On SRX5400, SRX5600, and SRX5800 devices with SPC3, the **show security ike security-association detail** command does not display local IKE-ID field correctly. PR1388979
- A few VPN tunnels do not forward traffic after RG1 failover. PR1394427
- The kmd process might stop when SNMP polls for the IKE SA. PR1397897
- VPN tunnels flap after adding or deleting a configuration group in edit private mode on a clustered setup. PR1400712
- Syslog is not generated when the IKE gateway rejects a duplicate IKE ID connection. PR1404985
- Idle IPsec VPN tunnels without traffic and with ongoing DPD probes can be affected during RG0 failover. PR1405515
- Not all the tunnels are deleted when the authentication algorithm in IPsec proposal is changed. PR1406020
- Traffic drops on peer due to bad SPI after first reauthentication. PR1412316
- On SRX5400, SRX5600, and SRX5800 devices with SPC3, when the SRX Series device is configured to initiate IKEv2 reauthentication when NAT traversal is active, occasionally reauthentication might fail. PR1414193
- The flowd/srxpfe process might stop when traffic selector is used for IPsec VPN. PR1418984
- Group VPN IKE security associations cannot be established before RG0 failover. PR1419341
- The **show security ike sa detail** command shows incorrect value in the **IPSec security associations** column. PR1423249
- On SRX Series devices with SPC3, SRX Series device does not send IKE delete notification to the peer if the traffic selector configuration is changed. PR1426714
- The kmd process stops and generates a core file after running the **show security ipsec traffic-selector** command. PR1428029

Resolved Issues: 18.4R1

Application Layer Gateways (ALGs)

- When the IPsec ALG is used, the IPsec tunnel payload is dropped after the IKE or IPsec tunnel reestablishment because of a session conflict. PR1372232
- If the SIP ALG is disabled, the SIP active sessions are affected. PR1373420
- Sun RPC data traffic for previously established ALG sessions might be dropped because it matches the gate that contains old interface information. PR1387895
- A flowd process might generate core files when cross-tenant ALG traffic is sent. PR1388658
- DNS requests with the EDNS (extension mechanisms for DNS) option option might be dropped by the DNS ALG. PR1379433

Chassis Cluster

- On SRX340 and SRX345 devices, half-duplex mode is not supported because BCM53426 does not support half-duplex mode. BCM5342X SoC port configurations, BCM53426 does not have QSGMII interface. Only the QSGMII port supports half-duplex mode. PR1149904
- On an SRX4600 device with chassis cluster enabled, when a failover occurs the dedicated fabric link is down. PR1365969
- The device in chassis cluster might be unresponsive if IP monitoring is enabled. PR1366958
- The **show chassis environment fpc #** command, which is used to display the FPC voltage, is enhanced to show the current and power consumption for an SPC3. PR1368507
- On SRX Series devices in chassis cluster, the minor **Potential slow peers are: FWDD0 XDPC1 XDPC8 FWDD1** alarm is observed, which can be ignored. PR1371222
- Multiple flowd process files are seen on node 1 after an RG0 failover. PR1372761
- Traffic loss occurs when the primary node is rebooting. PR1372862
- On SRX Series devices in chassis cluster, if reroute occurs on the IPv4 wings of a NAT64 or NAT46 session, the active node sends RTO message to the backup session to update the rerouted interface. PR1379305
- On SRX4600 devices in a chassis cluster, the FPCs go offline if the chassis cluster IDs are more than 10. PR1390202

Class of Service (CoS)

- When the **host-outbound-traffic** statement is configured in class of service (CoS), the device stops working when a corrupted packet arrives on the Packet Forwarding Engine. PR1359767

Command-Line Interface (CLI)

- The following CLI command outputs are not displayed correctly: **show usp memory segment shm data module** and **show jsf shm module**. PR1387711

Flow-Based and Packet-Based Processing

- On SRX320, SRX340, SRX340, and SRX550 devices, the rpd process stops when you configure the **auto-bandwidth** option under the MPLS label-switched path (LSP). PR1331164
- The security logs for unified policies are improved to reflect the reason for a denied or rejected session. PR1338310
- The IPsec replay error for Z-mode traffic is observed. PR1349724
- When the output interface configured in the X2 mirrored filter is down, the flowd process might stop. PR1357347
- On SRX4200 and SRX4600 devices, when the device is being rebooted or powered on, control traffic loss is observed. PR1357591
- IDP inline-tap mode is not supported and configuration for SPC3 must be disabled. PR1359591
- The syslog usage is deprecated, use the ERRMSG for relevant messages. PR1360274
- On the secondary control plane, a multicast session leak is observed for the PIM register. PR1360373
- The application layer protocol negotiation (ALPN) fails because the SSL proxy removes the ALPN extensions from the TLS packets. PR1360820
- On the SRX550M device, traffic might be duplicated and forwarded to the wrong interface. PR1362514
- The **show services application-identification statistics applications** command displays the **application-system-cache** error message. PR1363033
- On SRX Series devices, application identification (AppID) is supported for HTTP, SMTPS, POP3S, and IMAPS protocols. PR1365810
- When RG0 failover occurs, the flowd process generates core files. PR1366122
- The **request services user-identification authentication-table delete authentication-source** command output displays incorrect results. PR1366767
- On SRX Series devices, when AppQoE is enabled and the traffic starts flowing, the flowd process might stop. PR1367599
- On an SRX1500 device with Junos OS Release 15.1X49-D140, the srxpfe process might not work. PR1370900

- The device under test (DUT) sends incorrect rejection code when the destination device is not reachable. PR1371115
- The SPC3 core file size is larger than the SPC1 and SPC2 core files. PR1371447
- On SRX4100 and SRX4200 devices, the UDP IMIX throughput is decreased. PR1373019
- In chassis cluster mode with the IPsec tunnel configured, packet loss is observed when the clear-text packets are processed. PR1373161
- Using the SPC3 improves the performance of the unified policies. PR1374231
- A **summary** option for the **show system security-profile assignment** command is added to provide summary of security profile assignment for the entire device. PR1376990
- The SPC3 card might be installed on any slot except slot 0, slot 1, and slot 11. PR1378178
- On SRX Series devices working in a PIM sparse mode, and located between a first-hop router and a rendezvous point (RP), if a PIM control session is created through the PIM register stop message, only the next PIM register message can be forwarded, and after this first message, the subsequent PIM register messages (also matching the PIM control session above) are wrongly dropped. PR1378295
- When the datapath-debug capture is stopped, incorrect error message is displayed. PR1381703
- On an SRX5600 device in a chassis cluster, if respmod is enabled for ICAP, the connection with the ICAP server might reset automatically. PR1382376
- On SRX300, SRX320, SRX340, SRX345, SRX550M devices, during the path MTU discovery, the control engine does not receive the message **frag needed and DF set**. PR1389428
- The **set security flow log dropped-illegal-packet** and **set security flow log dropped-icmp-packet** CLI commands are unhidden. PR1394720
- On SRX Series devices, the active flow monitoring does not work for multiple collectors. PR1396482

Interfaces and Chassis

- The virtual IP address of the Virtual Router Redundancy Protocol (VRRP) might not respond to the host-inbound traffic. PR1371516

Intrusion Detection and Prevention (IDP)

- The IDP might not be deployed because the IDP configuration cannot be committed. PR1374079
- The unified policies configured with IDP might not inspect the arbitrary sessions, and are marked as **Not Interested** within the **show security idp counters flow** command. PR1385094

J-Web

- The PPPoE interface pp0 is not displayed on the **J-Web's Interfaces > Port** page. PR1316328
- The dynamic application configuration page in J-Web does not display application signatures in the result if the signatures are searched by category field. PR1344165

- The J-Web setup does not populate the DHCP attributes. PR1370700
- The chassis cluster image is not displayed on the J-Web dashboard. PR1382219

Logical Systems

- The logical system licenses fail to bind to the tenants or logical systems after the device is rebooted. PR1380144
- The logical system license limit is increased to three. One license is for root-logical-system traffic and the other two licenses are for the logical system and the tenant to transfer the traffic. PR1384659
- Tenant for logical system installation failed on node 1 after upgrading ISSU. PR1388336

Network Address Translation (NAT)

- Source NAT sessions might fail to be created when the **port-overloading** or the **port-overloading-factor** statement is configured. PR1370279

Network Management and Monitoring

- The **show snmp mib walk etherStatsTable** command displays incorrect results. PR1335808
- The eventd process generates core file, when the incoming system log message length is at or beyond the maximum supported size. PR1366120

Platform and Infrastructure

- On SRX1500 devices, when the power supply fails, the trap sent might contain incorrect information. PR1315937
- On SRX300, SRX320, SRX340, and SRX345 devices, you are unable to lock the USB port. PR1352104
- On SRX4100 and SRX4200 devices, the SRX Network Time Protocol (NTP) client might not stay synchronized to the NTP server and as a result the device clock often switches from NTP to local time. PR1357843
- On SRX5400, SRX5600, and SRX5800 devices, log messages are seen often when an IOC card has the same identifier as the SPC card. PR1357913
- When the secure copy protocol (SCP) fails to transfer the active configuration to an archive site, the archive site also fails. PR1359424
- On SRX4600 devices, the **show chassis fan show chassis environment** command does not display any output. PR1363645
- Packet capture feature does not work after the sampling configuration is deleted. PR1370779
- On SRX Series devices in a chassis cluster, the cold synchronization process might slow down when there are many Packet Forwarding Engines installed on the device. PR1376172
- Junos OS upgrade might fail when you use the **validate** option after the **/cf/var/sw** directory is erroneously deleted. PR1384319

Routing Policy and Firewall Filters

- The TCP protocol ports 5800 and 5900 are added to junos-defaults to support the VNC application. PR1333206
- The **show security policies detail** command output is modified to improve readability, particularly for unified policies. PR1338307
- The timeout value of **junos-http** is not accurate. PR1371041
- When the **dynamic address** is referenced in the dynamic-address field and the destination IP address for the traffic is matched within this dynamic address, the policy fails to match the traffic PR1372921

Routing Protocols

- If family **iso** is enabled through the GRE over IPSec tunnel, the vFPC stops working. PR1364624

Services Applications

- When the ICAP configuration and the traffic passing through are modified, core files might be generated. PR1389600
- Clearing the TCP session might not clear the redirect objects. PR1390835

System Logs

- On SRX Series devices, the following false log message is observed. are observed: **/kernel: check_configured_tpids: < interfaces > : default tpid (0x8100) not configured. pic allows maximum of 0 tpids**. PR1373668

Unified Threat Management (UTM)

- The default actions under a Web filtering profile might not work properly. PR1365389
- When the server port is configured as 443, the displayed EWF server status is **UP**. PR1383695

VPNs

- IPsec tunnel might not work when there are concurrent IKEv2 Phase 1 SA rekeys. PR1360968
- On SRX5600 and SRX 5800 devices, during a migration from VPN to AutoVPN configuration, traffic loss is observed. PR1362317
- On SRX Series devices in a chassis cluster, when the VPN configuration size reaches an internal configuration processing chunk size, the VPN tunnels might not be configured successfully and the VPN tunnels might not come up after rebooting, upgrading, or restarting ipsec-key-management. PR1376134
- Packet loss is observed in IPsec Z-mode scenario. PR1377266
- The kmd process might stop and cause VPN traffic outage after the **show security ipsec next-hop-tunnels** command is run. PR1381868
- Adding or deleting site-to-site manual NHTB VPN tunnels to an existing st0 unit causes the existing manual NHTB VPN tunnels under the same st0 unit to flap. PR1382694

SEE ALSO

New and Changed Features | 316
Changes in Behavior and Syntax | 324
Known Behavior | 330
Known Issues | 332
Documentation Updates | 356
Migration, Upgrade, and Downgrade Instructions | 356

Documentation Updates

There are no errata or changes in Junos OS Release 18.4R2 for the SRX Series documentation.

SEE ALSO

New and Changed Features | 316
Changes in Behavior and Syntax | 324
Known Behavior | 330
Known Issues | 332
Resolved Issues | 336
Migration, Upgrade, and Downgrade Instructions | 356

Migration, Upgrade, and Downgrade Instructions

This section contains the procedure to upgrade Junos OS, and the upgrade and downgrade policies for Junos OS. Upgrading or downgrading Junos OS can take several hours, depending on the size and configuration of the network.

Upgrade and Downgrade Support Policy for Junos OS Releases and Extended End-Of-Life Releases

Support for upgrades and downgrades that span more than three Junos OS releases at a time is not provided, except for releases that are designated as Extended End-of-Life (EEOL) releases. EEOL releases provide direct upgrade and downgrade paths. You can upgrade directly from one EEOL release to the next EEOL release even though EEOL releases generally occur in increments beyond three releases.

Junos OS upgrade from 15.1X49 directly to 18.4R3 or 18.4R3 based Service Releases is supported for all SRX platforms.

You cannot upgrade directly from a non-EEOL release to a release that is more than three releases ahead or behind. To upgrade or downgrade from a non-EEOL release to a release more than three releases before or after, first upgrade to the next EEOL release and then upgrade or downgrade from that EEOL release to your target release.

For more information about EEOL releases and to review a list of EEOL releases, see https://www.juniper.net/support/eol/junos.html.

For information about software installation and upgrade, see the Installation and Upgrade Guide for Security Devices.

For information about ISSU, see the Chassis Cluster User Guide for Security Devices.

SEE ALSO

New and Changed Features | 316

Changes in Behavior and Syntax | 324

Known Behavior | 330

Known Issues | 332

Resolved Issues | 336

Documentation Updates | 356

Upgrading Using ISSU

In-service software upgrade (ISSU) enables you to upgrade between two different Junos OS releases with no disruption on the control plane and with minimal disruption of traffic.

For additional information about using ISSU on routing and switching devices, see the High Availability User Guide.

For additional information about using ISSU on security devices, see the Chassis Cluster User Guide for SRX Series Devices.

For information about ISSU support across platforms and Junos OS releases, see the In-Service Software Upgrade (ISSU) Web application.

Licensing

Starting 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 we've developed at Juniper Networks 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.

Compliance Advisor

For regulatory compliance information about Common Criteria, FIPS, Homologation, RoHS2, and USGv6 for Juniper Networks products, see the Juniper Networks Compliance Advisor.

Finding More Information

- **Feature Explorer**—Juniper Networks Feature Explorer helps you in exploring 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. prsearch.juniper.net.
- **Hardware Compatibility Tool**—Determine optical interfaces and transceivers supported across all platforms. apps.juniper.net/hct/home

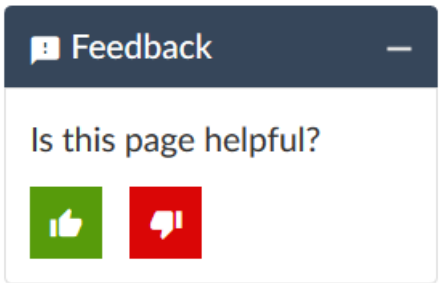
  NOTE: To obtain information about the components that are supported on the devices, and the special compatibility guidelines with the release, see the Hardware Guide for the product.

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

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. 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 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://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

28 January 2022—Revision 12, Junos OS Release 18.4R3– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

7 October 2021—Revision 11, Junos OS Release 18.4R3– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

15 July 2021—Revision 10, Junos OS Release 18.4R3– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

22 April 2021—Revision 9, Junos OS Release 18.4R3– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

13 January 2021—Revision 8, Junos OS Release 18.4R3– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

5 November 2020—Revision 7, Junos OS Release 18.4R3– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

21 May 2020—Revision 6, Junos OS Release 18.4R3– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

27 February 2020—Revision 5, Junos OS Release 18.4R3– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

14 January 2020—Revision 4, Junos OS Release 18.4R3– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

09 January 2020—Revision 3, Junos OS Release 18.4R3– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

07 January 2020—Revision 2, Junos OS Release 18.4R3– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

30 December 2019—Revision 1, Junos OS Release 18.4R3– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

28 November 2019—Revision 10, Junos OS Release 18.4R2– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

31 October 2019—Revision 9, Junos OS Release 18.4R2– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

10 October 2019—Revision 8, Junos OS Release 18.4R2– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

3 October 2019—Revision 7, Junos OS Release 18.4R2– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

12 September 2019—Revision 6, Junos OS Release 18.4R2– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

30 August 2019—Revision 5, Junos OS Release 18.4R2– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

8 August 2019—Revision 4, Junos OS Release 18.4R2– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

25 July 2019—Revision 3, Junos OS Release 18.4R2– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

17 July 2019—Revision 2, Junos OS Release 18.4R2– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

10 July 2019—Revision 1, Junos OS Release 18.4R2– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

16 May 2019—Revision 12, Junos OS Release 18.4R1– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

22 April 2019—Revision 11, Junos OS Release 18.4R1– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

28 March 2019—Revision 10, Junos OS Release 18.4R1– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

15 March 2019—Revision 9, Junos OS Release 18.4R1– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

14 February 2019—Revision 8, Junos OS Release 18.4R1– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

7 February 2019—Revision 7, Junos OS Release 18.4R1– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

31 January 2019—Revision 6, Junos OS Release 18.4R1– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

24 January 2019—Revision 5, Junos OS Release 18.4R1– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

17 January 2019—Revision 4, Junos OS Release 18.4R1– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

11 January 2019—Revision 3, Junos OS Release 18.4R1– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

28 December 2018—Revision 2, Junos OS Release 18.4R1– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.

21 December 2018—Revision 1, Junos OS Release 18.4R1– ACX Series, EX Series, MX Series, NFX Series, PTX Series, QFX Series, SRX Series, and Junos Fusion.