



Nokia Service Router Linux

Release 23.7.2

Software Release Notes

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1 Document Scope

This document summarizes the key features in the SR Linux Release 23.7.2 software.

Known usage limitations and issues are documented, as well as any issues that have been resolved since this document was last issued.

2 List of Features

Table 1 list available features in release 23.7.

Table 1. Feature list

Applications	
Feature name/Description	First Supported
Application warm restart - dev_mgr	23.7.1
Application warm restart - acl_mgr	23.7.1
Application warm restart - bgp_mgr	23.7.1
Application warm restart - l2_static_mac_mgr	23.7.1
Application warm restart - l2_mac_mgr	23.7.1
Application warm restart - l2_mac_learn_mgr	23.7.1

API	
Feature name/Description	First Supported
Support for origin within paths in gNMI	23.7.1
Support for srlinux_cli origin within gNMI	23.7.1
SNMP OID extensions – BGP	23.7.1
SNMP OID extensions - components	23.7.1
SNMP OID extensions - ifTable and ifXTable	23.7.1

BGP	
Feature name/Description	First Supported
GR support for dynamic nbrs and unnumbered peers	23.7.1

Configuration	
Feature name/Description	First Supported
Root-level annotations through metadata field	23.7.1
OpenConfig – Platform	23.7.1
OpenConfig – Platform (line cards)	23.7.1
OpenConfig – Platform (temperature)	23.7.1
OpenConfig – Platform (software modules)	23.7.1
OpenConfig – Platform (disks)	23.7.1
OpenConfig – Policy Based Forwarding	23.7.1

High Availability	
Feature name/Description	First Supported
Non-stop forwarding on 7250 IXR-6/10/6e/10e	23.7.1

Interfaces	
Feature name/Description	First Supported
Flexible interface naming (interface-ref)	23.7.1
Forwarding complex and line card state for interfaces	23.7.1

L2/EVPN services	
Feature name/Description	First Supported
Dynamic MCID allocation and management for scalable multicast support	23.7.1
Source MAC learning control for L2CP frames	23.7.1
EVPN unequal ECMP for RT5 IFL routes	23.7.2
MAC-VRF Proxy ARP - TD4	23.7.2
MAC-VRF Proxy ND - TD4	23.7.2

L3 services	
Feature name/Description	First Supported
Layer-3 Local/Remote proxy ND - TD4	23.7.1
Configurable IPv6 link local addresses	23.7.1

Logging	
Feature name/Description	First Supported
Source interface for syslog	23.7.1
Addition of 'ntp', 'all', 'audit', and 'console' facilities within syslog	23.7.1

Mirroring	
Feature name/Description	First Supported
Mirror: statistic counters per mirror destination	23.7.1

MPLS	
Feature name/Description	First Supported
Revised MPLS MTU handling	23.7.1

NDK	
Feature name/Description	First Supported
NDK protobufs distributed with SR Linux image	23.7.1

OAM	
Feature name/Description	First Supported
Allow co-existence of LLDP transparency and underlay LLDP	23.7.1

Platform	
Feature name/Description	First Supported
QSFP56-DD – 4x100G LR1, MPO12, 0/70C (3HE17067AA)	23.7.1
QSFP-DD – 400GE LR4-10 0/70C (3HE16568AA)	23.7.1
QSFP28 – 100Gbase-ER4Lite RoHS6/6 0/70C (3HE11239AA)	23.7.1
QSFP+ – 4x10GE LR SMF MPO ROHS6/6 0/70 (3HE11241AA)	23.7.1
State fields for RPM fan speed for fan trays and PSUs	23.7.1
State fields reporting output power of PSUs	23.7.1
Last switchover reason state	23.7.1
Last boot reason state	23.7.1
Additional component state for forwarding complexes	23.7.1
Power management for 7250 IXR-6e/10e	23.7.1
State information for PSU feeds on 7250 IXR 6e/10e	23.7.1
Resize of NOKIA-ETC SD card partition from 200MB to 1GB	23.7.1
Normalization of manufactured-date between components	23.7.1
General sub-interface scale cleanup and sub-interface scale increase for D4/D5	23.7.1

QoS	
Feature name/Description	First Supported
Dot1p classification and rewrite for 7220 IXR D4/D5	23.7.1
QoS Multi-field Classification for 7220 IXR D4/D5	23.7.1
Reporting of TD3/TD4 IFP meter resource utilization	23.7.1

Storm Control on D1	23.7.1
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Routing	
Feature name/Description	First Supported
FIB ACK and FIB timestamping for Ipv4/Ipv6 entries	23.7.1
ARP/ND host route datapath programming	23.7.1
Weighted ECMP for IS-IS	23.7.1

Security	
Feature name/Description	First Supported
Configurable roles for the admin user	23.7.1
Remove NTP sync dependency when evaluating password rules	23.7.1
CLI plugin authorization	23.7.1
Preserve SSH host keys	23.7.1

3 Feature support level and limitations

3.1 Limited Support Features

The following section describes SR Linux features that have limited support and are intended for demo/laboratory use only.

Feature name/Description	First Introduced
<i>NA for this release</i>	

3.2 OpenConfig support

The following OpenConfig modules are supported.

Area	Module	Version
AFT	openconfig-aft-common	0.6.0
	openconfig-aft-ipv4	0.6.0
	openconfig-aft	0.6.0
	openconfig-aft-ethernet	0.6.0
	openconfig-aft-ipv6	0.6.0
	openconfig-aft-network-instance	0.2.3
	openconfig-aft-types	0.3.4
BGP	openconfig-bgp-common-multiprotocol	6.0.0
	openconfig-bgp-common	6.0.0
	openconfig-bgp-global	6.0.0
	openconfig-bgp-peer-group	6.1.0
	openconfig-bgp-types	5.3.0
	openconfig-bgp-common-structure	6.0.0
	openconfig-bgp-errors	5.0.2
	openconfig-bgp-neighbor	6.1.0
	openconfig-bgp-policy	6.0.2
	openconfig-bgp	6.1.0
Interfaces	openconfig-if-aggregate	2.4.3
	openconfig-if-ethernet-ext	0.1.1
	openconfig-if-sdn-ext	0.1.0
	openconfig-if-ethernet	2.11.0
	openconfig-if-ip	3.0.0
	openconfig-if-types	0.2.1

	openconfig-interfaces	2.5.0
IS-IS	openconfig-isis-lsdb-types	0.4.2
	openconfig-isis-lsp	1.0.0
	openconfig-isis-policy	0.5.0
	openconfig-isis-routing	1.0.0
	openconfig-isis-types	0.6.0
	openconfig-isis	0.4.2
LACP	openconfig-lacp	1.1.1
LLDP	openconfig-lldp-types	0.1.1
	openconfig-lldp	0.2.1
Local routing	openconfig-local-routing	1.2.0
Network instance	openconfig-network-instance-l3	0.11.1
	openconfig-network-instance-types	0.9.1
	openconfig-network-instance	0.15.0
P4RT	openconfig-p4rt	0.4.0
Platform	openconfig-platform	0.22.0
	openconfig-platform-controller-card	0.1.0
	openconfig-platform-cpu	0.1.1
	openconfig-platform-fabric	0.1.0
	openconfig-platform-fan	0.1.1
	openconfig-platform-linecard	1.0.0
	openconfig-platform-port	1.0.0
	openconfig-platform-psu	0.2.1
	openconfig-platform-software	0.1.1
	openconfig-platform-transceiver	0.10.1
Routing Policy	openconfig-routing-policy	3.3.0
Sampling	openconfig-sampling-sflow	0.1.0
	openconfig-sampling	0.1.0
System	openconfig-aaa	1.0.0
	openconfig-system	0.17.0
	openconfig-system-grpc	1.0.0
VLAN	openconfig-vlan-types	3.1.1
	openconfig-vlan	3.2.0
Metadata	openconfig-metadata	0.1.0

3.3 Warm reboot feature limitations

The following limitations apply:

- Warm reboot cannot be used when the following features are enabled in the configuration:
 - QSFP28 breakouts
 - Link Aggregation Groups (LAG)
 - EVPN
 - BFD-enabled static routes
 - OSPFv2
 - OSPFv3
 - IS-IS
 - Mirroring
 - sFlow
 - Unified Forwarding Tables
- Warm reboot will result in the following slow-path-dependent features being non-functional during the reboot process:
 - DHCP relay
 - ACL log action
 - MAC duplication prevention
- Warm reboot is not supported for dynamic-peers.
- Warm reboot can only be used for minor upgrades within a release, for example between 21.6.1 and 21.6.2. It cannot currently be used for upgrades between major releases, for example between 21.6.1 and 21.11.1.

3.4 Application warm restart

The application warm restart is supported for the following applications:

- policy_mgr
- chassis_mgr
- net_inst_mgr
- lag_mgr
- fib_mgr
- arpd_mgr
- isis_mgr
- static_route_mgr

- gribi_server
- 15gmt._svr
- qos_mgr
- lldp_mgr
- p4rt_server

Release 23.7.1 introduces application warm restart for:

- l2_static_mac_mgr
- l2_mac_mgr
- l2_mac_learn_mgr

3.5 Non-stop forwarding

Non-stop forwarding is supported on the 7250 IXR-6/10/6e/10e, with the following limitations:

- Non-stop forwarding cannot be used when MPLS ACLs are used.
- Non-stop forwarding cannot be used when BFD sessions are configured/present.
- Non-stop forwarding cannot be used when any form of MPLS is used, including LDP, SR.
- Non-stop forwarding cannot be used with OSPFv2/v3.

Non-stop forwarding results in the management and control plane being unavailable, so any slow path functions are also impacted during a switchover (for example DHCP relay, ARP/ND).

4 Feature descriptions for release 23.7

4.1 API

4.1.1 Origin support in gNMI path message

Release 23.7.1 introduces support for setting an origin in a gNMI path message in addition to existing availability of origin in a Prefix message.

4.1.2 CLI origin for gNMI

Release 23.7.1 introduces support for setting the ``srlinux_cli`` origin in the path message of a Set/Get request.

4.1.3 SNMP OID extensions – BGP

Release 23.7.1 includes support for the TIMETRA-BGP-MIB MIB. This MIB includes multi-instance support, and the retrieval of state for BGP globally, for peer groups, and per peer. For full support details please see the MIBs provided with the SR Linux release artifacts.

4.1.4 SNMP OID extensions – components

Release 23.7.1 includes support for the TIMETRA-CHASSIS-MIB MIB. This MIB includes component information – operational states, part numbers, serial numbers, etc. It also includes information around PSUs and fans, fan speeds. For full support details please see the MIBs provided with the SR Linux release artifacts.

4.1.5 SNMP OID extensions – ifTable and ifXTable

Release 23.7.1 includes extensions to the ifTable and ifXTable within the IF-MIB. This MIB was previously supported but not with all OIDs covered – which is now the case. For full support details please see the MIBs provided with the SR Linux release artifacts.

4.2 BGP

4.2.1 Graceful restart support for dynamic neighbors and unnumbered peers

Release 23.7.1 extends support for BGP graceful restart to cover dynamic BGP sessions that are not explicitly configured as neighbors in the BGP configuration. Dynamic BGP sessions can be bootstrapped by the reception of ICMPv6 router-advertisement messages on unnumbered interfaces or by reception of incoming TCP connection requests to port 179, if they come from authorized source IP addresses and signal expected AS numbers. When a dynamic session is protected by BGP graceful restart, the session can be restarted without a disruption to forwarding, provided that the restarting router can preserve forwarding state across the restart and the other router temporarily holds onto the control plane state of the session.

4.3 Configuration

4.3.1 Root-level annotations through metadata field

Release 23.7.1 introduces support for a configurable metadata field at `.system.information.protobuf-metadata`. This field is only configurable on systems that support OpenConfig (currently the 7250 IXR-6/10/6e/10e). The field contains 1 MB binary protobuf, or any other binary data controller or user may wish to store on the system. The content of the field is stored with the configuration and can be read back or configured via any interface.

4.4 High Availability

4.4.1 Non-stop forwarding on 7250 IXR-6/10/6e/10e

Release 23.7.1 introduces non-stop forwarding (or NSF) for the 7250 IXR-6/10/6e/10e. Non-stop forwarding, or NSF is the sequence of processes required to effectively switch control of a running system between two supervisors or CPMs, without impact to the data path. It allows a system to continue forwarding with previously known state, while the control plane restarts and re-converges. It is similar to system warm reboot in that it

depends on protocol helpers like graceful restart, but is different in that it predominantly is used in an unplanned manner, and cannot be used for upgrades.

NSF in SR Linux leverages Application Warm Restart or AWR, with the fundamental design to synchronize the `idb_server` to the standby supervisor, and to allow applications to start with state in `idb_server` using AWR.

No configuration is required by the user to enable NSF, it is used by default for any switchover that would be NSF-capable.

The default behavior when the command `“tools.platform.redundancy.switchover”` is executed has been changed in line with this, in that if available the system will always attempt to do a NSF switchover, as opposed to the previous cold start behavior. Due to this there is no other new tools command introduced with the feature.

Implementation also extends the current meaning of the `.platform.redundancy.synchronization.state` field, in that the synchronized state now indicates both file system and `idb_server` synchronization state between the two modules. It therefore is also the representative leaf indicating that the system would support an NSF switchover for any supported features if the active supervisor were to fail.

Non-stop forwarding is not supported for all features. Please see the previous feature support level section for NSF limitations.

4.5 Interfaces

4.5.1 Flexible interface naming (interface-ref)

Release 23.7.1 introduces more flexibility to the way that subinterfaces are named when referencing them from outside the interface configuration hierarchy. In previous releases, any reference to a subinterface from outside the interface configuration hierarchy was required to use the real subinterface name (in the format `<interface-name>.<subinterface-index>`). Beginning in 23.7, it is now possible to use an alias name for the interface/subinterface in configuration outside the interface configuration hierarchy and link that alias name to the real interface/subinterface using an `interface-ref` construct. This is supported in the following contexts:

- Configuration of the interfaces belonging to a network-instance (`/network-instance/interface`)

- Configuration of the interfaces running IS-IS (/network-instance/protocols/isis/instance/interface)
- Configuration of the interfaces with attached PBF policies (/network-instance/policy-forwarding/interface)

4.5.2 Co-existence of LLDP transparency and underlay LLDP termination

Release 23.7.1 introduces the simultaneous support of LLDP tunneling and the termination/process of LLDP packets in the underlay in an EVPN-VXLAN network.

When L2CP transparency is used in EVPN-VXLAN networks, the tunneling of certain protocols at the access interface, requires enabling the tunneling of those protocols at the ingress Layer 3 interfaces of the default network instance (on the egress leaf). Prior to this feature, the simultaneous tunneling of VXLAN encapsulated L2CP protocols and processing of the same non-encapsulated protocols on the same interface was not supported. With the introduction of this feature, the following is supported at the same time:

- Given two CEs, CE1 and CE2, connected to Leaf 1 and Leaf 2 respectively, LLDP can be tunneled between CE1 and CE2 end to end. Leaf 1 and Leaf 2 are attached to the same EVPN-VXLAN broadcast domain.
- LLDP is enabled on the default network-instance interfaces of Leaf 1 and Leaf 2.

This enhancement does not require any configuration and it is supported on 7220 IXR-D2/D3/D2L/D3L/D4/D5 platforms.

4.5.3 Forwarding complex and line card state for interfaces

Release 23.7.1 introduces support for additional state fields underneath an interface that indicate the line card and forwarding complex the interface resides on. These new fields can be found at .interface.linecard and .interface.forwarding-complex.

4.6 L3 Services

4.6.1 Configurable IPv6 link local addresses

Release 23.7.1 introduces support for configurable IPv6 link local addressing. In previous releases, it was not possible to override the auto-generated IPv6 link-local address assigned to every IPv6-enabled routed subinterface. (The auto-generated link-local address is based on MAC address; the subinterface's MAC address is converted to an EUI-64 identifier and this identifier is appended to an fe80::/64 subnet.) With the new functionality, any properly formed IPv6-link local address can be configured as an override of the auto-generated link-local address on a particular routed subinterface. To be properly formed, the IPv6 link-local-address prefix must be /64 and it must belong to the fe80::/10 range.

4.7 Logging

4.7.1 Source interface for rsyslog

Release 23.7.1 introduces support to specify the source address that will be used for sending syslog messages to a remote server.

In scenarios where multiple sources addresses are available within a network-instance, this option provides a deterministic approach to defining the appropriate source address to use for sending messages to the remote server.

The source address is defined per remote-server.

4.7.2 Addition of 'ntp', 'all', 'audit', and 'console' facilities within syslog

Release 23.7.1 introduces support for 'ntp', 'all', 'audit', and 'console' facilities within syslog to align with these additional OpenConfig supported facilities.

- The NTP facility is for the NTP subsystem
- The Audit facility is for log audit messages
- The Console facility is for log alert messages
- The All facility is a wildcard facility to match all supported facilities

4.8 Mirroring

4.8.1 Mirroring Statistics

Release 23.7.1 introduces support for mirror destination statistics and is available for 7220 IXR-D4/D5 and 7250 IXR-6e/10e platforms. The statistics shows the number of packets sent to the mirror destination. See the *SR Linux Troubleshooting Toolkit* for more information.

4.9 MPLS

4.9.1 Revised MPLS MTU handling

Release 23.7.1 changes the behavior when an MPLS MTU value is configured for a routed subinterface and the implied value, after adding Ethernet encapsulation, exceeds the port MTU. In previous releases, this was handled by bringing the subinterface down, with reason `mpls-mtu-too-large`. Starting in 23.7.1, the subinterface remains operational in this case but the MPLS MTU has no effect.

4.10 NDK

4.10.1 NDK protobufs distributed with SR Linux image

In release 23.7.1 NDK's protobuf files can also be found at ``/opt/srlinux/protos/ndk`` directory and used for client/server stubs generation. In previous releases, it could only be downloaded from OLCS as a separate archive.

4.11 Platform

4.11.1 State fields for RPM fan speed for fan trays and PSUs

Release 23.7.1 introduces support for reporting the speed of fans in fan trays and PSUs expressed in RPM - previously only a percentage value was available. This new field is named `speed-rpm`, and lives in the same container as the corresponding speed field,

which continues to represent the percentage speed. The corresponding OpenConfig field is also now available.

4.11.2 State fields reporting output power of PSUs

Release 23.7.1 introduces support for publishing output information about PSUs. This information is available in a new output container at `.platform.power-supply.output`. Similar to input, voltage, current, and power readings are available. This field is currently only supported for the 7250 IXR-6/10/6e/10e. The corresponding OpenConfig fields are also now available.

4.11.3 Last switchover reason state

Release 23.7.1 introduces a new state field for CPMs named `last-switchover-reason`, presenting at `.platform.control.last-switchover-reason`. This field is populated based on any known reason for a CPM switchover. Reasons include user initiated, controller module rebooted, control module failure, or linecard connectivity. The corresponding field in OpenConfig is also now available.

4.11.4 Last boot reason state

Release 23.7.1 introduces a new state field for components at `*.last-booted-reason`. This field is populated based on any known reason for a component booting or rebooting. Reasons include user initiated, power error, or critical error. The corresponding field in OpenConfig is also now available.

4.11.5 Additional component state for forwarding complexes

Release 23.7.1 introduces new state fields for forwarding complexes. Previously the serial number and part number of a forwarding complex were not retrievable from state. This also allows these values to be retrieved via the OpenConfig components tree.

4.11.6 Power management for the 7250 IXR-6e/10e

Release 23.7.1 introduces power management for the 7250 IXR-6e/10e. This feature is in line with the power management feature delivered for the 7250 IXR-6/10. A user can

configure the redundancy mode, and the system will in turn nag them if that redundancy mode is not being met. Under no circumstances does the system power down components based on the lack of redundancy of power.

Separate from redundancy, if not enough power exists simplex in the system to power the available components, the system will now power down components in a controlled manner.

The priorities for this are currently fixed and are available in documentation. Configurable priorities will be made available in a subsequent release.

4.11.7 State information for PSU feeds on the 7250 IXR-6e/10e

Release 23.7.1 introduces feed information for the 7250 IXR-6e/10e. The original PSU model did not support PSUs with more than one feed, which is now available.

The existing input container continues to function as is, containing aggregate information for both feeds.

4.11.8 Resize of NOKIA-ETC SD card partition from 200MB to 1GB

Release 23.7.1 on installation with resize the NOKIA-ETC SD card partition from its current size of 200MB, to a new size of 1GB. To support this, systems require 8GB SD cards at a minimum.

This change is seamless and is executed during the first boot of release 23.7.1. Existing files are copied into memory during the change and are copied back post modification.

4.11.9 Normalization of manufactured-date between components

Release 23.7.1 introduces changes to the manufactured-date state field. Previous behavior copied the manufactured data reported by a components EEPROM without modification into state. This change introduces a normalization layer resulting in consistent date formats. The corresponding OpenConfig field is now available.

4.12 QoS

4.12.1 Dot1p classification and rewrite for 7220 IXR D4/D5

Release 23.7.1 extends support for dot1p classification and rewrite to 7220 IXR D4/D5 systems. Previously this functionality was only supported on 7220 IXR-D1/D2/D3/D2L/D3L systems. The following limitations, specific to D4/D5, should be noted:

- There is no support for user-configured default forwarding-class or drop-probability classification (when the received frame is untagged and does not carry an IP payload)
- There is no support for dot1p rewrite on routed subinterfaces; the dot1p value is always 0 in egress frames

4.12.2 QoS IPv4 Multi-field Classification for 7220 IXR D4/D5

Release 23.7.1 extends support for QoS multifield classification to 7220 IXR D4/D5 systems. Previously this functionality was only supported on 7220 IXR-D1/D2/D3/D2L/D3L systems. Note that the implementation on D4/D5 has more limitations than the TD3 implementation. In particular:

- Only IPv4 multi-field classification (MFC) policies are supported
- TCAM resources are available for IPv4 MFC rules only if the static **tcam-profile** is configured equal to **acl-mfc-ipv4-only**. This profile supports up to 3K ingress IPv4 MFC entries but provides no resources for ingress subinterface IPv6 ACLs or for ingress subinterface MAC ACLs.

4.12.3 Storm Control on 7220 IXR-D1 platforms

Release 23.7.1 introduces support for Storm Control on 7220 IXR-D1 platforms. Prior to this release, Storm Control was already supported in 7220 IXR-D2/D3/D2L/D3L/D4/D5 platforms.

4.13 Routing

4.13.1 FIB ACK and FIB timestamping for Ipv4/Ipv6 entries

Release 23.7.1 introduces YANG modeled state and telemetry to allow detailed reporting of the FIB programming status of gRIBI and other IP routes. This provides the following information per prefix entry:

- Last successful operation detail (type and timestamp)
- Pending operation type
- Last failed operation type
- List of forwarding complexes that reported a failure

4.13.2 Weighted ECMP for IS-IS

Release 23.7.1 introduces support for weighted ECMP for IS-IS IPv4 and IPv6 routes. Weighted IP ECMP (or UCMP – unequal cost multipath) refers to the ability to install a multipath route (a route with multiple next-hops) into the FIB with the effect that ECMP flow hashing directs flows to each next-hop in a ratio proportional to the weight of each next-hop. Weighted ECMP is used for an IS-IS IP route when:

- Weighted ECMP is enabled at the instance level, and
- All the next-hop interfaces corresponding to the same minimum path cost have a load-balancing-weight (derived automatically from port/LAG bandwidth using the **auto** option, or configured with a static value)

When a BGP next-hop is resolved by an IS-IS route with weighted ECMP next-hops, traffic using the BGP route and hashed to the BGP next-hop (if the BGP route is multipath) inherits the weighted ECMP load-balancing of the resolving IS-IS route.

4.13.3 ARP/ND host route data-path programming

Release 23.7.1 introduces support for the programming of ARP/ND host routes in the data-path if the command **host-route populate datapath-programming true** is configured.

Prior to this feature, when **interface <id> subinterface 1 ipv4/ipv6 arp/neighbor-discovery host-route populate {dynamic, static, evpn}** was configured, the ARP/ND entries generate a host route type arp-nd in the route table of the routed network instance. However, the entry did not create an entry in the data-path FIB. The configuration of **datapath-programming true** forces the programming of the entry.

While this consumes more resources in the data-path, it is required in cases ARP/ND host routes need to be leaked between network instances.

4.14 Security

4.14.1 Configurable roles for the admin user

Release 23.7.1 introduces support for configuring roles for the admin user. This is done via a new roles leaf-list available at `.system.aaa.authentication.admin-user.roles`. This field works similar to the field available to configure roles for normal users. Where it differs is that the existing behavior of the admin user having superuser permissions without a role configured persists for backwards compatibility.

With a role configured service authorization, CLI plugin authorization, and typical path based RBAC are supported. Similar to normal local users, multiple roles may be configured for the admin user, and behavior is additive and permissive.

4.14.2 Remove password NTP sync dependency

Release 23.7.1 introduces support for ignoring the synchronization status of NTP when using the password aging and lock-out policy options. In circumstances where NTP is unreliable or unavailable, the new leaf available at `.system.aaa.authentication.password.require-ntp-sync` can be set to false to ignore the NTP status.

It should be noted that when set to false, NTP can continue to be used by the system, this new option only removes the requirement that NTP is synchronized. When NTP is unavailable, the system clock will be used.

The system will continue to require NTP synchronization by default.

4.14.3 CLI plug-in authorization

Release 23.7.1 introduces support for controlling how operator-provided plugins are loaded. It also introduces support for controlling a list of commands executable in the CLI.

The new capabilities are available at `.system.aaa.authorization/role.<rolename>.cli` on a per-role basis, and introduce the following new options:

- To specify if the CLI should load plugins from the global directory (`/etc/opt/srlinux/cli`), the leaf `.load-global-plugins` is a boolean that can be set true or false for this role. The default value is true.
- To specify if the CLI should load plugins from the users's home directory (`~/cli/plugins`), the leaf `.load-user-plugins` is a boolean that can be set true or false for this role. The default value is true.
- To control a list of CLI commands that are allowed to be executed, the new list `.allow-command-list` is available to list the CLI commands that are allowed for this role.
- To control a list of CLI commands that are not allowed to be executed, the new list `.deny-command-list` is available to list the CLI commands that are not allowed for this role.

The allow and deny command lists support Python regular expressions. An empty `allow-command-list` indicates anything not in the `deny-command-list` is allowed. An empty `deny-command-list` indicates anything not in the `allow-command-list` is denied. If both lists are empty, then everything is allowed.

4.14.4 Preserve SSH host keys

Release 23.7.1 introduces support for preserving the SSH host keys across the reboot boundary. In previous releases, the keys would be removed and regenerated during each boot. This is configured via a new leaf available at `.system.ssh-server.host-key.preserve`.

It should be noted this value is now enabled by default and is a change to the previous behavior. If the previous behavior is required, the `preserve-key` option can be set to false.

4.15 Services

4.15.1 Layer 3 Proxy-ARP/ND support on 7720 IXR-D4/D5 platforms

Release 23.7.1 introduces support for Layer 3 Proxy-ARP/ND on routed interfaces of 7720 IXR-D4/D5 platforms.

4.15.2 Layer 2 Proxy-ARP/ND support on 7720 IXR-D4/D5 platforms

Release 23.7.2 introduces support for Layer 2 Proxy-ARP/ND on MAC-VRF network-instances of 7720 IXR-D4/D5 platforms.

4.15.3 Unequal ECMP for EVPN IP Prefix routes

Release 23.7.2 introduces support for unequal ECMP for EVPN IP prefix routes (IPv4 and IPv6) in IP-VRF network-instances. Based on draft-ietf-bess-evpn-unequal-lb, the EVPN link bandwidth extended community is used in the IP prefix routes to indicate a weight that the receiver router has to consider when load-balancing traffic to multiple EVPN next hops. The supported weight in the extended community is the “Generalized weight” type and encodes the CE count that advertised prefix N to a leaf in a BGP PE-CE route, before the route is re-advertised as N in an EVPN IP prefix route.

The procedures associated with this feature can be divided into the following advertising procedures and receiving procedures:

- The advertising procedures are enabled with the `network-instance.protocols.bgp-evpn.bgp-instance.routes.route-table.ip-prefix.evpn-link-bandwidth.advertise` command. The `advertise.weight dynamic` command triggers the advertisement of the EVPN link bandwidth extended community with a weight that matches the count of CEs that advertises the route. The dynamic weight can optionally also be overridden by a configured `advertise weight` value.
- The receiving procedures are enabled with the `network-instance.protocols.bgp-evpn.bgp-instance.routes.route-table.ip-prefix.evpn-link-bandwidth.weighted-ecmp.admin-state` command. When `weighted-ecmp` is enabled, the receiving router installs IP prefix routes in the IP-VRF route table associated to a normalized weight that is derived from the signaled weight. If the EVPN IP Prefix route received with the weight has a non-zero ESI, the weight is divided into the number of PEs attached to the Ethernet Segment (and rounded up if the result is

not an integer). The command also enables the weighted ECMP functionality for BGP CEs that are configured with an `link-bandwidth.add-next-hop-count-to-received-bgp-routes` weight.

In addition, the configuration of `evpn-link-bandwidth.weighted-ecmp.max-ecmp-hash-buckets-per-next-hop-group` preserves the datapath resources used for the weighted next-hops. The normalization algorithm also refers to this number of hash buckets.

This feature is supported on 7720 IXR-D2/D3/D4/D5 platforms.

5 Hardware Supported

The SR Linux currently supports the following hardware platforms:

- 7250 IXR-6
- 7250 IXR-10
- 7250 IXR-6e
- 7250 IXR-10e
- 7220 IXR-D1
- 7220 IXR-D2
- 7220 IXR-D2L
- 7220 IXR-D3
- 7220 IXR-D3L
- 7220 IXR-D4
- 7220 IXR-D5
- 7220 IXR-H2
- 7220 IXR-H3
- 7220 IXR-H4

Platforms running SR Linux support qualified pluggable optic modules only. Refer to the current Nokia price list for supported modules. Third-party optics are not supported.

The optical transceiver DDM feature provides real-time values for guidance. For the various values, the optical power data provides an accuracy of ± 3 dB or better. The accuracy of this data is defined in the relevant standard for the transceiver type, such as SFF-8472 for SFP+. Use an optical power meter where precise optical power data is required. If any clarification is required, please contact your Nokia representative for assistance.

5.1 7250 IXR-6

Table 2. 7250 IXR-6 supported chassis and cards specifications

Chassis	
Part number	Description
3HE11760AA	CHAS - 7250 IXR-6 Chassis
3HE11759AA	FAN - 7250 IXR-6 Fan Tray
3HE11751AA	PSU - 7250 IXR AC/HVDC
3HE11752AA	PSU - 7250 IXR LVDC
Cards	
Part number	Description
3HE12522AA	IMM - 7250 IXR 32pt 100G QSFP28 + 4pt 400G QSFP-DD
3HE12382AA	SFM - 7250 IXR-6 SFM2
3HE12458AA	CPM - 7250 IXR CPM2 SSD

5.2 7250 IXR-10

Table 3. 7250 IXR-10 supported chassis and cards specifications

Chassis	
Part number	Description
3HE11770AA	CHAS - 7250 IXR-10 Chassis
3HE11769AA	FAN - 7250 IXR-10 Fan Tray
3HE11751AA	PSU - 7250 IXR AC/HVDC
3HE11752AA	PSU - 7250 IXR LVDC
Cards	
Part number	Description
3HE12522AA	IMM - 7250 IXR 32pt 100G QSFP28 + 4pt 400G QSFP-DD
3HE12446AA	SFM - 7250 IXR-10 SFM2
3HE12458AA	CPM - 7250 IXR CPM2 SSD

5.3 7250 IXR-6e

Table 4. 7250 IXR-6e supported chassis and cards specifications

Chassis	
Part number	Description
3HE16998AA	CHAS - 7250 IXR-6e chassis
3HE16994AA	FAN - 7250 IXR-6e fan tray
3HE17002AA	PSU - 7250 IXR-6e AC
3HE17003AA	PSU - 7250 IXR-6e LVDC
Cards	
3HE17006AA	IMM - 7250 IXR 36x400G QSFP-DD IMM2
3HE16995AA	IMM - 7250 IXR 60x100G QSFP28 IMM2
3HE17011AA	CPM - 7250 IXR-6e CPM4 SSD
3HE16992AA	SFM - 7250 IXR-6e SFM2

5.4 7250 IXR-10e

Table 5. 7250 IXR-10e supported chassis and cards specifications

Chassis	
Part number	Description
3HE16997AA	CHAS - 7250 IXR-10e chassis
3HE16993AA	FAN - 7250 IXR-10e fan tray
3HE17002AA	PSU - 7250 IXR-10e AC
3HE17003AA	PSU - 7250 IXR-10e LVDC
Cards	
Part number	Description
3HE17006AA	IMM - 7250 IXR 36x400G QSFP-DD IMM2
3HE16995AA	IMM - 7250 IXR 60x100G QSFP28 IMM2
3HE17011AA	CPM - 7250 IXR-10e CPM4 SSD
3HE17005AA	SFM - 7250 IXR-10e SFM1
3HE16991AA	SFM - 7250 IXR-10e SFM2

5.5 7220 IXR-D1

Table 6: 7220 IXR-D1 base platform, power supply, and fan specifications

Base platform	
Nokia Model	Description
3HE15621AA	SYS - 7220 IXR-D1 48baseT 4SFP+
Power supply	
Nokia Model	Description
3HE15625AA	PS - 7220 IXR-D1 48baseT 4SFP+ AC, FtoB
3HE15626AA	PS - 7220 IXR-D1 48baseT 4SFP+ AC, BtoF
3HE15629AA	PS - 7220 IXR-D1 48baseT 4SFP+ DC, FtoB
3HE15630AA	PS - 7220 IXR-D1 48baseT 4SFP+ DC, BtoF
Fan	
Nokia Model	Description
3HE15631AA	FAN - 7220 IXR-D1 48baseT 4SFP+, FtoB
3HE15632AA	FAN - 7220 IXR-D1 48baseT 4SFP+, BtoF

5.6 7220 IXR-D2

The 7220 IXR-D2 supports the configuration of 12 groups of 4 ports. Each port group of 4 ports supports a mix of 1G and 10G, or 25G port speeds only. Mixing port speeds in a group other than 1G and 10G is not supported.

Table 7. 7220 IXR-D2 base platform, power supply, and fan specifications

Base platform	
Nokia Model	Description
3HE15622AA	SYS - 7220 IXR-D2 48SFP28 8QSFP28
Power supply	
Nokia Model	Description
3HE11886AA	PS - 210 WBX AC (FtoB)
3HE11885AA	PS - 210 WBX AC (BtoF)
3HE10837AA	PS - 210 WBX, 7210 Sx 100G -48VDC (FtoB)
3HE11883AA	PS - 210 WBX -48V DC (BtoF)
Fan	
Nokia Model	Description
3HE15780AA	FAN - 7220 IXR-D2 48SFP28 8QSFP28, FtoB
3HE15781AA	FAN - 7220 IXR-D2 48SFP28 8QSFP28, BtoF

5.7 7220 IXR-D2L

The 7220 IXR-D2L supports the configuration of 4 groups of 12 ports. Each port group of 12 ports supports a mix of 1G and 10G, or 25G port speeds only. Mixing port speeds in a group other than 1G and 10G is not supported.

Table 8. 7220 IXR-D2L platform, power supply, and fan specifications

Part Number	Short Description	Long Description
3HE19301AA	CH-BN - 7220 IXR-D2L AC FtB Int Chassis	AC front-to-back integrated chassis contains:
		<ul style="list-style-type: none"> • (1) SYS-7220 IXR-D2L 48SFP28 8QSFP28 2SFP+ (3HE17645AA) • (2) PS - 7220 IXR-D2L, D3L AC, FtoB (3HE17647AA) • (6) FAN - 7220 IXR-D2L, FtoB (3HE17655AA)
3HE19302AA	CH-BN - 7220 IXR-D2L AC BtF Int Chassis	AC back-to-front integrated chassis contains:
		<ul style="list-style-type: none"> • (1) SYS-7220 IXR-D2L 48SFP28 8QSFP28 2SFP+ (3HE17645AA) • (2) PS - 7220 IXR-D2L, D3L AC, BtoF (3HE17648AA) • (6) FAN - 7220 IXR-D2L, BtoF (3HE17656AA)
3HE19303AA	CH-BN - 7220 IXR-D2L DC FtB Int Chassis	DC front-to-back integrated chassis contains:
		<ul style="list-style-type: none"> • (1) SYS-7220 IXR-D2L 48SFP28 8QSFP28 2SFP+ (3HE17645AA) • (2) PS - 7220 IXR-D2L, D3L -48V DC, FtoB (3HE17649AA) • (6) FAN - 7220 IXR-D2L, FtoB (3HE17655AA)
3HE19304AA		DC back -to-front integrated chassis contains:

	CH-BN - 7220 IXR-D2L DC BtF Int Chassis	<ul style="list-style-type: none"> • (1) SYS-7220 IXR-D2L 48SFP28 8QSFP28 2SFP+ (3HE17645AA) • (2) PS - 7220 IXR-D2L, D3L -48V DC, BtoF (3HE17650AA) • (6) FAN - 7220 IXR-D2L, BtoF (3HE17656AA)
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5.8 7220 IXR-D3

Table 9. 7220 IXR-D3 base platform, power supply, and fan specifications

Base platform	
Nokia Model	Description
3HE15623AA	SYS - 7220 IXR-D3 32QSFP28 2SFP+
Power supply	
Nokia Model	Description
3HE11886AA	PS - 210 WBX AC (FtoB)
3HE11885AA	PS - 210 WBX AC (BtoF)
3HE10837AA	PS - 210 WBX, 7210 Sx 100G -48VDC (FtoB)
3HE11883AA	PS - 210 WBX -48V DC (BtoF)
Fan	
Nokia Model	Description
3HE15779AA	FAN - 7220 IXR-D3 32QSFP28 2SFP+, FtoB
3HE16092AA	FAN - 7220 IXR-D3 32QSFP28 2SFP+, BtoF

5.9 7220 IXR-D3L

Table 10. 7220 IXR-D3L platform, power supply, and fan specifications

Part Number	Short Description	Long Description
3HE19305AA	CH-BN - 7220 IXR-D3L AC FtB Int Chassis	AC front-to-back integrated chassis contains:
		<ul style="list-style-type: none"> (1) SYS - 7220 IXR-D3L 32QSFP28 2SFP+ (3HE17646AA) (2) PS - 7220 IXR-D2L, D3L AC, FtOB (3HE17647AA) (6) FAN - 7220 IXR-D3L, FtOB (3HE17657AA)
3HE19306AA	CH-BN - 7220 IXR-D3L AC BtF Int Chassis	AC back-to-front integrated chassis contains:
		<ul style="list-style-type: none"> (1) SYS - 7220 IXR-D3L 32QSFP28 2SFP+ (3HE17646AA) (2) PS - 7220 IXR-D2L, D3L AC, BtoF (3HE17648AA) (6) FAN - 7220 IXR-D3L, BtoF (3HE17658AA)
3HE19307AA	CH-BN - 7220 IXR-D3L DC FtB Int Chassis	DC front-to-back integrated chassis contains:
		<ul style="list-style-type: none"> (1) SYS - 7220 IXR-D3L 32QSFP28 2SFP+ (3HE17646AA) (2) PS - 7220 IXR-D2L, D3L -48V DC, FtOB (3HE17649AA) (6) FAN - 7220 IXR-D3L, FtOB (3HE17657AA)
3HE19308AA	CH-BN - 7220 IXR-D3L DC BtF Int Chassis	DC back -to-front integrated chassis contains:
		<ul style="list-style-type: none"> (1) SYS - 7220 IXR-D3L 32QSFP28 2SFP+ (3HE17646AA) (2) PS - 7220 IXR-D2L, D3L -48V DC, BtoF (3HE17650AA) (6) FAN - 7220 IXR-D3L, BtoF (3HE17658AA)

5.10 7220 IXR-D4

Table 11. 7220 IXR-D4 platform, power supply, and fan specifications

Part Number	Short Description	Long Description
3HE19309AA	CH-BN - 7220 IXR-D4 AC FtB Int Chassis	AC front-to-back integrated chassis contains:
		<ul style="list-style-type: none"> • SYS - 7220 IXR-D4 8QSFPDD 28QSFP28 (3HE17734AA) • (2) PS - 7220 IXR-D4 AC, FtoB (3HE17736AA) • (6) FAN - 7220 IXR-D4 D5, FtoB (3HE17744AA)
3HE19310AA	CH-BN - 7220 IXR-D4 AC BtF Int Chassis	AC back-to-front integrated chassis contains:
		<ul style="list-style-type: none"> • (1) SYS - 7220 IXR-D4 8QSFPDD 28QSFP28 (3HE17734AA) • (2) PS - 7220 IXR-D4 AC, BtoF (3HE17737AA) • (6) FAN - 7220 IXR-D4 D5, BtoF (3HE17745AA)
3HE19311AA	CH-BN - 7220 IXR-D4 DC FtB Int Chassis	DC front-to-back integrated chassis contains:
		<ul style="list-style-type: none"> • (1) SYS - 7220 IXR-D4 8QSFPDD 28QSFP28 (3HE17734AA) • (2) PS - 7220 IXR-D4 DC, FtoB (3HE17738AA) • (6) FAN - 7220 IXR-D4 D5, FtoB (3HE17744AA)
3HE19312AA	CH-BN - 7220 IXR-D4 DC BtF Int Chassis	DC back-to-front integrated chassis contains:
		<ul style="list-style-type: none"> • SYS - 7220 IXR-D4 8QSFPDD 28QSFP28 (3HE17734AA) • PS - 7220 IXR-D4 DC, BtoF (3HE17739AA) • (6) FAN - 7220 IXR-D4 D5, BtoF (3HE17745AA)

5.11 7220 IXR-D5

Table 12. 7220 IXR-D5 platform, power supply, and fan specifications

Part Number	Short Description	Long Description
3HE19313AA	CH-BN - 7220 IXR-D5 AC FtB Int Chassis	AC front-to-back integrated chassis contains:
		<ul style="list-style-type: none"> (1) SYS - 7220 IXR-D5 32QSFPDD (3HE17735AB) (2) PS - 7220 IXR-D5 AC, FtoB (3HE17740AA) (6) FAN - 7220 IXR-D4 D5, FtoB (3HE17744AA)
3HE19314AA	CH-BN - 7220 IXR-D5 AC BtF Int Chassis	AC back-to-front integrated chassis contains:
		<ul style="list-style-type: none"> (1) SYS - 7220 IXR-D5 32QSFPDD (3HE17735AB) (2) PS - 7220 IXR-D5 AC, BtoF (3HE17741AA) (6) FAN - 7220 IXR-D4 D5, BtoF (3HE17745AA)
3HE19315AA	CH-BN - 7220 IXR-D5 DC FtB Int Chassis	DC front-to-back integrated chassis contains:
		<ul style="list-style-type: none"> (1) SYS - 7220 IXR-D5 32QSFPDD (3HE17735AB) (2) PS - 7220 IXR-D5 DC, FtoB (3HE17742AA) (6) FAN - 7220 IXR-D4 D5, FtoB (3HE17744AA)
3HE19316AA	CH-BN - 7220 IXR-D5 DC BtF Int Chassis	DC back -to-front integrated chassis contains:
		<ul style="list-style-type: none"> (1) SYS - 7220 IXR-D5 32QSFPDD (3HE17735AB) (2) PS - 7220 IXR-D5 DC, BtoF (3HE17743AA) (6) FAN - 7220 IXR-D4 D5, BtoF (3HE17745AA)

5.12 7220 IXR-H2

Table 13. 7220 IXR-H2 base platform, power supply, and fan specifications

Part Number	Short Description	Long Description
3HE19317AA	CH-BN - 7220 IXR-H2 AC FtB Int Chassis	AC front-to-back integrated chassis contains:
		<ul style="list-style-type: none"> • (1) SYS - 7220 IXR-H2 128QSFP28 (3HE16421AA) • (4) PS - 7220 IXR-H2 128QSFP28 AC, FtoB (3HE16428AA) • (8) FAN - 7220 IXR-H2 128QSFP28, FtoB (3HE16430AA) • (1) ACC - Rail-Kit for 7220 IXR-H2 (3HE16662AA)
3HE19318AA	CH-BN - 7220 IXR-H2 AC BtF Int Chassis	AC back-to-front integrated chassis contains:
		<ul style="list-style-type: none"> • (1) SYS - 7220 IXR-H2 128QSFP28 (3HE16421AA) • (4) PS - 7220 IXR-H2 128QSFP28 AC, BtoF (3HE16429AA) • (8) FAN - 7220 IXR-H2 128QSFP28, BtoF (3HE16431AA) • (1) ACC - Rail-Kit for 7220 IXR-H2 (3HE16662AA)
3HE19319AA	CH-BN - 7220 IXR-H2 DC FtB Int Chassis	DC front-to-back integrated chassis contains:
		<ul style="list-style-type: none"> • (1) SYS - 7220 IXR-H2 128QSFP28 (3HE16421AA) • (4) PS - 7220 IXR-H2 128QSFP28 -48VDC, FtoB (3HE16426AA) • (8) FAN - 7220 IXR-H2 128QSFP28, FtoB (3HE16430AA) • (1) ACC - Rail-Kit for 7220 IXR-H2 (3HE16662AA)
3HE19320AA		DC back -to-front integrated chassis contains:

	CH-BN - 7220 IXR-H2 DC BtF Int Chassis	<ul style="list-style-type: none"> • (1) SYS - 7220 IXR-H2 128QSFP28 (3HE16421AA) • (4) PS - 7220 IXR-H2 128QSFP28 -48VDC, BtoF (3HE16427AA) • (8) FAN - 7220 IXR-H2 128QSFP28, BtoF (3HE16431AA) • (1) ACC - Rail-Kit for 7220 IXR-H2 (3HE16662AA)
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5.13 7220 IXR-H3

Table 14. 7220 IXR-H3 base platform, power supply, and fan specifications

Part Number	Short Description	Long Description
3HE19321AA	CH-BN - 7220 IXR-H3 AC FtB Int Chassis	AC front-to-back integrated chassis contains:
		<ul style="list-style-type: none"> • (1) SYS - 7220 IXR-H3 32QSFPDD 2SFP+ (3HE16425AA) • (2) PS - 7220 IXR-H3 32QSFPDD AC, FtoB (3HE16434AA) • (6) FAN - 7220 IXR-H3 32QSFPDD, FtoB (3HE16436AA) • (1) ACC - Rail-kit for 7220 IXR-Dx, H3 (3HE16193AA)
3HE19322AA	CH-BN - 7220 IXR-H3 AC BtF Int Chassis	AC back-to-front integrated chassis contains:
		<ul style="list-style-type: none"> • (1) SYS - 7220 IXR-H3 32QSFPDD 2SFP+ (3HE16425AA) • (2) PS - 7220 IXR-H3 32QSFPDD AC, BtoF (3HE16435AA) • (6) FAN - 7220 IXR-H3 32QSFPDD, BtoF (3HE16437AA) • (1) ACC - Rail-kit for 7220 IXR-Dx, H3 (3HE16193AA)
3HE19323AA	CH-BN - 7220 IXR-H3 DC FtB Int Chassis	DC front-to-back integrated chassis contains:
		<ul style="list-style-type: none"> • (1) SYS - 7220 IXR-H3 32QSFPDD 2SFP+ (3HE16425AA) • (2) PS - 7220 IXR-H3 32QSFPDD -48VDC, FtoB (3HE16432AA) • (6) FAN - 7220 IXR-H3 32QSFPDD, FtoB (3HE16436AA) • (1) ACC - Rail-kit for 7220 IXR-Dx, H3 (3HE16193AA)
3HE19324AA		DC back -to-front integrated chassis contains:

	CH-BN - 7220 IXR-H3 DC BtF Int Chassis	<ul style="list-style-type: none"> • (1) SYS - 7220 IXR-H3 32QSFPDD 2SFP+ (3HE16425AA) • (2) PS - 7220 IXR-H3 32QSFPDD -48VDC, BtoF (3HE16433AA) • (6) FAN - 7220 IXR-H3 32QSFPDD, BtoF (3HE16437AA) • (1) ACC - Rail-kit for 7220 IXR-Dx, H3 (3HE16193AA)
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5.14 7220 IXR-H4

Table 15. 7220 IXR-H4 base platform, power supply, and fan specifications

Part Number	Short Description	Long Description
3HE19325AA	CH-BN - 7220 IXR-H4 AC FtB Int Chassis	AC front-to-back integrated chassis contains:
		<ul style="list-style-type: none"> • (1) SYS - 7220 IXR-H4 64QSFDD (3HE17750AA) • (2) PS - 7220 IXR-H4 64QSFDD AC, FtoB (3HE17752AA) • (4) FAN - 7220 IXR-H4 64QSFDD, FtoB (3HE17753AA) • (1) ACC - Rail-Kit for 7220 IXR-H4 (3HE17754AA)
3HE19326AA	CH-BN - 7220 IXR-H4 DC FtB Int Chassis	AC back-to-front integrated chassis contains:
		<ul style="list-style-type: none"> • (1) SYS - 7220 IXR-H4 64QSFDD (3HE17750AA) • (2) PS - 7220 IXR-H4 64QSFDD -48VDC, FtoB (3HE17751AA) • (4) FAN - 7220 IXR-H4 64QSFDD, FtoB (3HE17753AA) • (1) ACC - Rail-Kit for 7220 IXR-H4 (3HE17754AA)

6 Non-backward compatible changes

This section provides a centralized list of changes that are not backwards compatible.

Compatibility is the ability to keep using products or features with interfacing counterpart product releases in the network as planned so that requirements are fulfilled, and no unexpected interaction is caused.

Non-backwards compatible changes are also listed in the Resolved Issues section. Any resolved issues may change behavior and therefore may not be considered backward compatible.

6.1 Summary of 23.7 changes

The following issues reflect non-backward compatible changes:

- The configuration path `/system/warm-reboot/bgp-max-wait` has been moved to `/system/protocols/bgp/restart-max-wait`. [432151]
- As of release 23.7.1, configuration for IPv6 address under sFlow source and collector IP is blocked. In previous releases, the configuration may not be blocked for sFlow source and collector IP addresses in IPv6 format although it was not supported. Applicable for 7250 IXR6/10/6E/10E, 7220 IXR-D1/D2/D3, 7220 IXR-D4/D5, and 7220 IXR-H3/H4 platforms. [426686]
- PTP port range is now restricted to [1..1500]. [436174]
- The leaf "type" has been removed from `srl_nokia-ospf.yang/grouping ospf-interface-state`. [437859]
- LSDB type identity `extended_is_reachability` renamed to `extended-is-reachability` in `srl_nokia-isis-lsdb-types.yang`. [428708]
- `last-high-threshold-time` now constrained for 7220 IXR-D4 and IXR-D5 platforms in `srl_nokia-qos.yang`. [425255].
- state field enumeration `fib-install-disabled` renamed to `rtm-install-disabled` in `srl_nokia-rib-bgp.yang`. The state path changes in `srl_nokia-rib-bgp.yang`:
 - `ipv4-unicast/rib-in-out/routes` changed to `ipv4-unicast/rib-in-out/route`
 - `ipv4-unicast/rib-in-post/routes` changed to `ipv4-unicast/rib-in-post/route`
 - `ipv4-unicast/rib-out-post/routes` changed to `ipv4-unicast/rib-out-post/route`
 - `ipv6-unicast/rib-in-out/routes` changed to `ipv6-unicast/rib-in-out/route`
 - `ipv6-unicast/rib-in-post/routes` changed to `ipv6-unicast/rib-in-post/route`
 - `ipv6-unicast/rib-out-post/routes` changed to `ipv6-unicast/rib-out-post/route`
 [436394]

7 Known limitations

The following defines the known usage limits that should be followed during system management activities. Where available, workarounds are provided.

NOTE: New known limitations added in R23.7.2 are marked as **[NEW]**.

7.1 ACL

- In 7220 IXR-Dx platforms, packets allowed by system filter cannot be accepted or copied by capture filter. [378078]
- ACLs are not supported on subinterfaces of type "local-mirror-dest". If a mirror subinterface has ACL configured, upgrading to 22.6 release would fail. The system now removes the ACL configuration during the upgrade process. [416570]
- On 7220 IXR-D3/D2/D3L/D2L, statistics counters of cpm-mac acl with match criteria set to vlan-id 1 may inadvertently account for LLDP packets.
Workaround: Create cpm-mac acl entry with specific match criteria for LLDP packets at higher priority than the entry with vlan-id 1 match criteria. [419858]
- Loading a factory default configuration may fail due to dynamic TCAM being unable to reserve the egress IPv6 CPM filter resources. Workaround by removing the egress IPv4 and MAC CPM filters before loading factory default configuration. [421630]
- Toggling the ACL Filter subinterface-specific mode can result in momentary packet loss while the ACL rules are being reprogrammed. [428257]
- In 7220 IXR-D4/D5 systems, an internal overhead is added to control packets which makes the ACL CPM-Filter policer rate to be halved for a 64-byte packet. If 1000kbps is configured in CLI, the control packets are policed at 500kbps due to the internal overhead. [429268]
- Extract-to-CPM may not be displayed in packet trace output for packets with ttl/hlim set to 0. [375550]

7.2 Application warm restart

- When an application undergoes warm restart, it will log events in the same fashion as when it restarts cold. This is a known limitation. [425425]

7.3 BGP

- In a scaled setup when there is a route churn, BGP show commands may timeout. The outputs return to normal once the protocol stabilizes. [335403]
- Address-family admin-state change at the BGP instance level impacts neighbor sessions that explicitly override the inheritance. [336411]
- Dynamic BGP accept sessions cannot work in conjunction with TCP MD5 Authentication. [358676]
- Unpredictable behavior is observed when maintenance mode policies are configured for a neighbor at peer and peer-group levels. [339047]
- Regex functionality for extended communities in routing policy does not work when the pattern must match more than one subtype. For example, matching on both origin and target. [336948]
- Changing bgp prefix-limit configuration on the fly does not take effect immediately but it waits until the next route is learned to take an action (e.g., teardown session). If the configuration change is made when the neighbor or group is administratively disabled, then the changes will take effect immediately after admin enable. [432720]
- iBGP peering for an unnumbered peer may become established in 22.11.1 but is not supported. [425715]
- When 2 different values for MSS are configured on client side and server side of the connection, then the MSS from client side is taken. [431628]

7.4 EVPN

- IFL traffic will not be flooded to the vxlan default multicast group upon MAC Expiry on PE. [380014]
- evpn-vxlan tunnel NH resolution over an irb interface is not supported. [435684]

7.5 Interfaces

- In 7220 IXR-D1 systems, interfaces configured with auto-negotiation off, and full-duplex at 100M speed do not work. [387303]
- LAGs using LACP with fast timers will experience LACP session flaps when application warm restart of lag-mgr occurs.
- L3 proxy ARP/ND is not supported on 7250 IXR and 7220 IXR-H2/H3/H4 platforms though configuration may be allowed. [436789]

7.6 IP/RTM

- The **show route-table** command may incorrectly show a disabled next-hop as active. This does not impact traffic forwarding. [318022]
- Disabling export of routes to Linux in scaled configurations is recommended. [337736].
- Packets leaked from a source network-instance to a target network-instance are dropped, if the destination IP address lookup yields a local subnet in the target network-instance. As an example, suppose a router is leaking a local subnet 10.10.10.0/24 on subinterface-1 from IP-VRF-A into IP-VRF-B, and 10.10.10.10 is a server connected to subinterface-1 in IP-VRF-A. An ICMP request packet coming from IP-VRF-B with destination 10.10.10.10 will be discarded. As a workaround, subinterface-1 can be configured with "host-route populate dynamic datapath-programming true" so that 10.10.10.10 creates and programs an ARP-ND host route in IP-VRF-A. If the ARP-ND host route is leaked into IP-VRF-B, now the packets to 10.10.10.10 will be forwarded from IP-VRF-B to IP-VRF-A. [427943]
- Packets leaked from a source network-instance to a destination network-instance are dropped if the destination is the local CPM. As an example, suppose a router is leaking a local loopback address from IP-VRF-A into IP-VRF-B. An ICMP request packet coming from IP-VRF-B with destination the loopback address in IP-VRF-A will be discarded. [428375]
- ICMP packets (for example, ICMP6 Destination port unreachable) generated by kernel are not rate limited to 1 packet per sec and source address. [436645]
- On DNI platforms, In-error-stats are not getting incremented for IPv6 terminated packets discarded due to hop limit expiration. [439096]

7.7 IS-IS

- Authentication may fail between a node upgraded to 22.11 and a node running prior releases due to TLV type 3 used for cleartext or HMAC-MD5 key. Prior releases used TLV type 1 for cleartext and TLV type 54 for HMAC-MD5. Workaround by setting the last key-id to 32 on the node that has not been upgraded and setting direct key configuration using same algorithm and password on the upgraded node. [424692]
- The IS-IS statistics "../isis/instance/level/statistics/manual-address-drop-from-area" may not get incremented when packets are received with a multiple area address in the LSP within the same Level. [406933]

7.8 MAC-VRF

- Packets with the source IP equal to the destination IP are dropped in MAC VRF. [348854]
- In 7220 IXR-D4/D5 systems, unknown frames are discarded as expected when "discard-unknown-dest-mac" is enabled. However, the source mac is not learnt. [428846]

7.9 Management

- A CLI session may terminate when performing show commands that return a large amount of output. For example, show network-instance default route-table all (with a million routes). Workaround is to use the available show command filters to narrow down the output. [351856]

7.10 Mirroring

- MAC-PAUSE and ARP-reply frames are not mirrored. [385950]
- Flooded IRB traffic may not be received by a port mirror configured for the egress direction. [395438]
- When a LAG is defined as a mirror destination, only the first 8 members of the LAG will carry mirrored traffic. [410979]
- VXLAN traffic may not be mirrored when the source is a subinterface. [411255]
- Statistics of ingress and egress mirrored destination packets is not supported on 7220 IXR-D5 platforms. [417439]
- The remote encapsulation for mirroring destination is fixed to "L2oGRE" in CLI command "set system mirroring mirroring-instance <instance> mirror-destination remote encap <l2ogre>". 7250 IXR-6e/10e systems support L3oGRE and 7220 IXR-D3/D5 platforms support L2oGRE. [424733]
- Mirroring of MPLS packets on 7250 IXR-6e/10e platforms may not work. [431958]
- In 7220 IXR-D5/D4 systems, the mirrored packets transmitted may not be accounted in the Multicast-Queue-0 statistics of the mirror destination port. Only dropped packets will be accounted under "Final-dropped-packets". [425510]
- Only mirroring of egress VxLAN encapsulated unicast traffic is supported. Mirroring of VxLAN encapsulated broadcast, unknown unicast, and multicast traffic are NOT supported. [434927]
- Remote mirroring using the interface of mgmt0.0 as the source IP address is not supported. [438313]

7.11 OpenConfig

- Static routes created in native (srlinux) yang context may not show up in the openconfig context due to conceptual differences between the two models. [416460]

7.12 Platform

- 7220 IXR-H4 systems take longer than usual time to detect port link down over breakout interfaces when the peer node is rebooted. [432398]
- 7220 IXR-D3/D3L systems longer than usual time to detect port link down over breakout interfaces when the peer node is rebooted. [437055]
- On 7250 IXR-6/10/6E/10E platforms, transit IPv6 packets with payload length errors are forwarded instead of being discarded by generating ICMP6 Type4 code0 message. [436376]
- If we attach policies more than supported then those subinterfaces will use default DSCP/Dot1p policy.

Platform =====	DSCP classifier's supported =====	Rewrite policies supported =====
7220 IXR-H2/H3	61	128
7220 IXR-D4/D5	64	50
7220 IXR-H4	58	58
7250 IXR/IXRE	15	28
7220 IXR-D2/D3 [440007]	125	127

7.13 QOS

- VOQ octet count statistics are incorrect for the CPU generated traffic. [339494]
- Egress queue and VOQ statistics show an octet count based on the ingress packet size without considering the encapsulation change. For example, a dot1q packet of 68B which is egressing as 64B null encapsulated packet will be counted as 68B in statistics. [339528]
- VoQ/Egress queue stats do not show the correct value of transmitted packets if a lag member is added with traffic running. [358827]
- A Weighted Round Robin (WRR) weight programmed in the hardware is not the same as programmed in the software. This can result in an inaccurate ratio proportionate to the configured weights. [353897]

- On 7250 IXR platforms, high drop probability traffic may not get buffers when buffer utilization on the line card is around 75% (similarly medium drop probability traffic may not get buffers around 85% utilization). This is due to some buffers implicitly reserved in hardware for Low and Medium drop probability traffic. ECN marking behavior for this traffic may also get impacted in this situation. [375900].
- A commit check is not performed for rewrite policies once the maximum number of policies is exceeded. [340377]
- Buffers above the configured MBS may be utilized when the traffic ingresses from both ITM (Ingress Traffic Management). The % of variation depends on the MBS, queue shaper rate, and frame size. For example, MBS=1MB, queue shaper=1%, frame size=200B. An approximate variation in buffer utilization can be 7%. [385245]
- On 7220 IXR-Dx systems, when performing network instance restart events, XDP-PI deletes real entries but does not release the slices. Dummy entries have to be filled into these slices. When the network instance comes up, the dummy entries should be deleted before real entries are added (not optimal). [424839]
- On 7220 IXR-D4/D5, ECN bits will not be preserved when packets are transiting through the node. [408174]
- On 7250 IXR-6e/10e, ACL match for UDP traffic involving certain tunneling protocols (refer Fig.1) may show unexpected behavior as explained below:
 - If ACL rule has udp src/dst port value as one of A), match criteria may not be honored.
 - If ACL rule has udp src/dst port value as XXX (any other value than A) but the traffic is having udp src/dst port in A) AND first 2bytes (src) or second 2bytes (dst) of UDP payload matches XXX of acl rule, the traffic may end up matching the rule.

In summary, acl match would work on UDP payload offset values rather than UDP header values in the given scenario:

Fig 1

====

Src/DestPort	Protocol
500	ISAKMP
1701	L2TP
4500	IPSEC (starting in 6.5.29)
4789	VXLAN
4790	VXLAN GPE
6081	Geneve
6635	Encap MPLS tunnels
26117	Unassigned
26133	SCSCP

[430219]

- In 7220 IXR Dx systems, packets will be classified to Queue 0 with drop probability "low" when attaching 126th DSCP classifier profile to sub-interfaces. Only 125 custom classifier profiles are supported. [433588]

7.14 Services

- On EVPN Layer-3 scenarios (MAC-VRF with IRB subinterfaces), host moves occurring between 7220 IXR-Dx leaf nodes attached to the same Broadcast Domain may not be increasing the mac-duplication num-moves counter if ARP/ND packets trigger the move. If the host moves back and forth between two leaf nodes multiple times (and ARP/ND traffic is the trigger to detect the move), the host's MAC will not be detected as duplicate. [401275].
- On the 7220 IXR-Dx at full MAC scale, it is observed that some MACs are not learned. [386303]
- On 7250 IXR-6/10 and 7250 IXR-6e/10e systems, the traffic egressing out of the queue can be more than the applied queue shaper for the DECAP + ENCAP IPinIP scenario. [429650]
- On 7220 IXR-D4/D5 platforms, VXLAN packets forwarded over a default network-instance subinterface do not increase the out-fowarded-packets/octets statistics on that subinterface. The corresponding interface out-packets/octets statistics are incremented. [435750]

7.15 sFlow

- A collector IP address cannot be in a local subnet. The configuration will succeed but the system will disregard it. The recommended way to configure a collector is:
 1. Create a static route for the collector subnet.
 2. Resolve ARP (static or dynamic) for the next-hop of the static route.
 [327469]
- The field 'total offered packets' specified in the YANG is not implemented. [339890]
- The IPv6 collector is not supported. However, the configuration is not blocked. [330900]
- Collectors reachable over MPLS tunnels are not supported. [393293]
- Packets hitting ingress drop ACL (without the log option) may not be picked by the sampler in 7220 IXR-Dx platforms. [374841]
- A maximum of 7 unique destination UDP port numbers is only supported for sFlow collectors. [349576]
- BFD control packets may not be sampled by sflow on the 7250 IXR and 7220 IXR-H platforms. [402381]
- Despite a tag mismatch, samples of tagged packets received on IRB interfaces having untagged I2 subinterfaces may contain a valid outputPortID based on the destination IP of the packets. [376431]

- Packet injected when using the packet-trace command for diagnosis may be picked for flow sampling and delivered to collectors. [370075]
- Packets hitting ingress drop ACL may not be picked by sampler in TD4 platform. [430854]
- Configuration may not be blocked for Sflow source and collector IP addresses in ipv6 format although it is not supported for platforms 7250 IXR6/10/6e/10e, 7220 IXR-D5, D4, D3, D2, D1, H4, and H3. [426686]

7.16 System

- dnsmasq does not process a response from DNS domain names starting with '_'. For example: _jabber._host.com. [311146]
- Statistics for packets exceeding the IP-MTU are getting accounted in the Egress Queue Stats. [335058]
- Sometimes during times of fabric congestion, some high priority traffic may get dropped before low priority traffic. [336509]
- Front panel/External SD card cannot have any of the same NOKIA-OS partitions as an internal SD card. [342602]
- Sync will fail when the active CPM is running 19.11.x and a standby CPM with 20.6.x or higher is inserted. Workaround: Update the standby CPM manually to 19.11.x. [367153]
- A downgrade from 20.6.x to 19.11.7 and older releases fails to bring up 19.11 software. Workaround: Format the opt and overlay partitions via grub before upgrading. [367245]
- ZTP install is not supported when SR Linux services are enabled in the system. Ensure ZTP and srlinux systemctl services do not run in parallel. [386748]
- On the 7220 IXR-Dx, crc errors and fragmentation can be observed when the xdp_lc_1 app is restarted, or the chassis is rebooted with traffic. Workaround: Disable and then enable the port. [387304]
- In rare cases, after a chassis reboots or interface flaps, an interface may go down with reason "lower-layer-down". [390627]
- Sometimes VOQ statistics may take up to 20 seconds to be updated on 7250 IXR-6e/10e systems. [402841]
- In high scale configurations, out-of-memory (OOM) kill is seen on 7220 IXR-D2 and IXR-D3 platforms. [418165]
- In rare scenarios, a chassis might reboot continuously due to corrupt or unmounted SD card partitions. Workaround by replacing the SD card. [419274]
- Upgrading a 7250 IXR-6/10 or 7250 IXR-6e/10e chassis with redundant CPM cards to 22.11.1 requires that both CPM cards have the same SD card size. Combinations such as 8GB/4GB are not supported. [423777]
- 7250 IXR-6/10 CPMs with SD cards of 4G will only be able to deploy up to 2 images in the nokiaos/ partition. If the system already has 2 images and a new image needs to be

deployed, it is recommended to remove one of the older images from the partition. [425427]

- Rarely CWDM color-chip optics ports may stay in down state after node or line card reboot. [365422]
- On 7250 IXR-6/10 and 7250 IXR-6e/10e systems, changing/swapping the Forwarding class index in the single commit can result in commit failure (when it is already being used by some FC). It is recommended to delete the fc index mapping first before reassigning to another forwarding class. [432281]
- 7220 IXR-D4/D5 platforms do not support EVPN l2 proxy-arp and l2proxy-nd features in R23.3.2. [436832]
- On 7220 IXR-D1/D2/D3/D4/D5/H2/H3/H4 systems, traffic discards due to interface MTU small are counted under the in-discarded counter at ingress interface instead of the out-discarded counter at the egress interface. [438204]
- Hardware device does not check the IPv6 payload length for errors. [438227]
- On 7220-IXR D4/D5 systems, policer rates may take effect per ITM pipeline when the traffic is over LAG ports that are part of multiple pipelines. [437895]

7.17 Warm boot

- No forwarding statistics are maintained in the warm boot state. The statistics will reset to 0 after a warm boot completes. [387483]
- With the introduction of application warm restart in 22.11.1, the default behavior of the command "tools system app-management application <app_name> restart" depends on whether the application supports warm restart or not.
 - The command "warm restarts" applications supporting warm restart
 - The command "cold restarts" applications not supporting warm restart.

[425428]

8 Known Issues

The following are known issues. Where available, workarounds are provided.

NOTE: New known issues added in R23.7.2 are marked as **[NEW]**.

8.1 AAA

- The following paths for the AAA yang model are not supported in 23.7 even though they are available:
 - system aaa authentication admin-user ssh-principals
 - system aaa authentication admin-user ssh-key
 - system aaa authentication linuxadmin-user ssh-principals
 - system aaa authentication linuxadmin-user ssh-key
 - system aaa authentication user ssh-principals
 - system ssh-server trust-anchors
 - system ssh-server revoked-keys

[439024]

8.2 ACL

- Capture-filter ACLs currently allow both 'accept' and 'copy' actions, but only the 'accept' option is supported. [331853]
- The ACL Manager may timeout if a new filter is created and attached to interfaces when programming ACL entries from a previous commit is in progress. [339698]
- On 7220 IXR-Hx platforms, IPv4 packets with Authentication Header (protocol 51) cannot be matched. [367693]
- On 7220 IXR-Hx platforms, IPv6 packets with destination options (protocol 60) cannot be matched. [371149]
- When an SSH session running an interactive traffic monitoring command is abruptly terminated, the ACL resources automatically created by that session may not be withdrawn. [336391]
- The configuration where the same distributed policer is attached to multiple cpm filter types (ipv6/v6/mac) only works when there is just one instance of policer(entry-specific=False). [419114]
- On 7220 IXR-D4/D5, ACL logging for CPM filters is not supported. [428099]
- On 7220 IXR-D1, MAC ACL is not supported but "if-input-mac" and "if-output-cpm-mac" dummy entries may be shown in the reservation table. [433357]

- On 7220 IXR-D4/D5, egress mac-acl on L2/L3 sub-interface with vlanid as match criteria may match the vlan-id that the packet originally ingress with instead of outer vlan-id of egressing packet. [433646]

8.3 Application warm restart

- Auto-checkpoint configuration does not result in a checkpoint being created for the commit done on the load startup configuration post CPM switchover. [441034]
- **[NEW]** During CPM switchover or dev_mgr application restart events, a momentary LED color change is expected: PWR/Status may blink, fan-tray LEDs may turn blue, and SFM LEDs may turn amber. [440526]

8.4 BFD

- BFD enabled next-hops are not disabled when bfd_mgr goes down. Restarting bfd_mgr or static_route_mgr will fix the state. [436922]

8.5 BGP

- The 'show network-instance <net-inst> route-table <family> prefix <prefix> detail' may not show only the level-2 next hops when the number of next hops exceeds the max-paths-level-2 configured. [339414]
- Dynamic BGP peering is not supported with the EVPN address family. [377768]
- The 'show network-instance <instance> protocols bgp routes ipv4/ipv6 prefix <prefix> detail' does not display BGP routes advertised or received over LLA peers. Workaround with 'info from state network-instance <instance> bgp-rib ipv4/ipv6-unicast rib-in-out rib-in-post routes <prefix> neighbor <LLA-peer>'. [414826]
- Inheriting only local-as or peer-as from higher level may indicate incorrect values in state and show outputs. There is no issue when both local-as and peer-as are inherited. [425247]
- A tunnel-resolution for next-hop-resolution incorrectly tries to resolve a BGP peer's next-hop IP and can prevent BGP peers from getting established if mode-require is set. Only a BGP route's next-hop should be resolved to the tunnel. [425257]
- Few BGP neighbors might flap rarely in a scaled environment. [429335]
- After deleting and adding peer-as configuration at the group level, it is possible that an unnumbered peer does not reach the established state. A possible work around is to restart bgp_mgr. [432317]

- When removing all bgp, group and neighbor mtu-discovery, the parameter does not switch back to the value defined on network-instance, instead it stays on the last configured. [433422]
- Executing the tools command to reset a bgp peer matching a peer-as '/tools network-instance protocols bgp group reset-peer peer-as', does not reset dynamic bgp peers even if their peer-as matches the provided AS number. [433681]
- BGP component prefixes may sometimes get advertised momentarily until aggregate route is activated and then the component prefixes are withdrawn. As a workaround, use the export route policy to explicitly reject the aggregate prefixes that shouldn't be exported till aggregate route kicks. [431833]
- Executing a configuration rollback that modifies dynamic BGP neighbors with graceful-restart capability to static neighbors (or vice versa) can cause an error log. [437253]
- The hold timer does not take effect for unnumbered BGP peers with negotiated GR capability. [439694]
- When the restart-max-wait timer expires on the restarting node, the helper node's state continues to indicate helping (helping-mode true). This can be resolved by using the command "tools network-instance base protocols bgp reset-peer". [440658]
- Error logs are generated when "remove-private" is configured and we perform a bgp_mgr warm-restart with GR configured on the same node. [441045]

8.6 DHCP

- DHCP relay server messages to the DHCP client sent with incorrect mac address destination when using client-id option with DUID Type 2 in the message. [438644]

8.7 EVPN

- In 7220 IXR-D4/D5 systems, anycast IFL service traffic is impacted when underlay interface flaps. [434084]

8.8 Forwarding

- On the 7250 IXR, traffic drop can be observed at 3.2Tbps and higher for high/low priority streams and for streams sent to all 8 queues. [367140]
- BCM errors for L3_route_add fail are seen in scenarios like link flap / route withdrawal and readvertise for the 7220 IXR-Hx platform. [380526]

8.9 gRIBI

- gRIBI hierarchical top-level routes get deleted after fib_mgr cold restart. [438329]
- fibmgr errors seen during arp_nd_mgr cold restart in gRIBI wECMP scaled setup. [438961]
- net_inst_mgr core seen in gRIBI wECMP scaled setup after chassis_mgr cold restart. [439399]

8.10 Interface

- DAC may take a few seconds to detect link failures. It's recommended to run other failure detection control protocols like BFD, micro BFD or LACP to detect the link failures faster. [418707]
- Router Advertisements to inform hosts of link-local address changes are not sent as expected when configuring the link-local address. [440693]
- Primary flag configuration for a user configured ipv6 link-local-address may not take effect, even though the commit may be successful. [440512]

8.11 IP/RTM

- Next-hop group programming errors may be seen in 7220 IXR-D5 platforms after events that result in route churn in scaled environments. [421483]
- Packets received with 240.0.0.0/4 as source IP address are forwarded instead of being discarded. [436642]
- Traffic from remote source destined to a local interface IPv6 address's subnet ID is incorrectly resolved to the remote interface's MAC address. [439229]

8.12 IS-IS

- Keychain is not validated at commit. [402867]
- When prefix-sid conflict is encountered, both the conflicting new prefix-sid and the existing entry are removed. The expected behavior is to update the entry with the most recent one. Workaround is to update prefix-sid to resolve the conflict. [414158]
- Tx-LSP will not have the IPv6 address encoded for the adjacency sid configured and advertised to the neighbor. [412307]
- State container for IS-IS graceful-restart is not available in OC mode and so the state information for graceful restart enabled and helper-only leaves cannot be retrieved in OC. [432717]

- Traffic loss is seen on performing cpm switchover, when the system is scaled to 32 IS-IS adjacencies with 32k prefixes and traffic forwarding at line rate. [439771]
- The command "show isis database <detail>" doesn't show sub-tlvs like metric and other attributes. "info from state" can be used to get these details. [439849]

8.13 MAC-VRF

- Upon toggling an IRB subinterface, the router is expected to send a Gratuitous ARP (on IPv4 subinterfaces) or a Neighbor Solicitation message (on IPv6 subinterfaces for Duplicate Address Detection purposes). However, those messages may not be sent if there are no entries in the ARP/ND tables for the IRB subinterface. [409313]
- When a MAC address (e.g., M1), is learned on a bridged subinterface, (e.g., ethernet-1/1.1), the entry in the mac-table is incorrectly refreshed against ethernet-1/1.1 if a frame with M1 (as source address) is received on a different subinterface with mac-learning disabled, or on a vxlan-interface of the same MAC-VRF. This issue may bring unexpected mac-learning behaviors, for instance:
 - A mac M1 on subinterface ethernet-1/1.1 will never age out as long as frames with M1 are received on other interfaces (in the same MAC-VRF) that do not learn MACs. Examples of MAC-VRF subinterfaces that do not learn MACs are vxlan-interfaces, subinterfaces with disabled mac-learning, or subinterfaces in the mac-duplication stop-learning state.
 - A mac M1 learned as local with type EVPN (due to all-active multi-homing) will be incorrectly turned into type dynamic if frames with M1 as the source address are received on the local vxlan-interface. This will generate unnecessary advertised MAC/IP routes on the node. [379344].

8.14 Management

- When grep is used with the **watch** command, the display output for two consecutive iterations may be shown together. [374691]
- The DHCP relay cannot resolve a next-hop for the DHCP server if the route is learned via BGP-EVPN. [388545]
- **[NEW]** The password for the admin user is set back to default value after the restart of mgmt_server. [443327]
- **[NEW]** Reloading the app_mgr, which causes reload of the YANG modules, will fail if a candidate-exclusive configuration session is active. Reloading the app_mgr should be blocked in this scenario. [443335]

8.15 Mirroring

- Breakout interface as source for an egress mirror may not work. Workaround is to disable and enable the mirror session. [390904]
- Parent interface of a breakout port is not supported as a source in a mirroring instance. [390148]
- Egress mirroring on subinterfaces of default-L3-vrf instance may not work. [427553]
- The admin-state of local-mirror-destination is now set to enable whenever a subinterface is configured for type "local-mirror-dest". [428789]
- On 7220 IXR-D4/D5, VLAN encapsulation of the original egress packet may not be present on the mirrored copy for egress mirroring of routed packets. [427894]
- On 7220 IXR-D3/D2, egress mirroring of flooded VXLAN traffic (BUM) may not contain VXLAN header in the mirror copy. [412288]
- VLAN information is not seen on the mirrored packets in the egress direction when VXLAN tunnel is involved in carrying the traffic to the ERSPAN destination. [437293]
- The ERSPAN destination command can accept any network instance, but it will only be effective if a valid ip-vrf instance is used. The mgmt and mac-vrf instances are not supported. [397454]
- **[NEW]** ERSPAN destination IP within a local subnet may not supported and may not forward mirrored packets. Generally, it is recommended to use local mirroring when mirroring to a local interface. ERSPAN to a local interface requires additional configuration, either a static route to the remote IP must be configured (namely, a static route to the /32 IPv4 destination or a /128 IPv6 destination) or configure a static ARP or ND entry to resolve the remote IPv4 or IPv6 destination MAC address. [440022]

8.16 MPLS

- The output of "info from state /system mpls label-ranges" sometimes shows allocated-labels incorrectly as 0 for both static and dynamic label blocks. The workaround is to restart the corresponding application using the label block, such as "mpls_mgr" or "ldp_mgr". [395697]
- On 7220 IXR-D1/D2/D3/D2L/D3L/D4/D5 platforms, the MPLS encapsulated with Dot1Q header are classified based on default dot1p policy or based on custom dot1p policies if configured on bridged subinterfaces. [439240]
- LDP may accept non-/32 prefix FECs. [440924]

8.17 Network Instance

- Restart of the staticroutemgr sometimes causes the aggregate routes to be created right after the warm restart instead of during it. When this happens, the aggregate routes can be withdrawn from FIB for a short moment but re-installed right after warm restart of staticroutemgr completes. [438509]
- Configuring a link-local address deletes all dynamic v6 neighbors on the interface and makes BFD sessions flap. [439324]
- Node enters helper mode, but the second-best route is not being marked as stale. [440660]

8.18 OSPF

- Traffic loss is observed when a new OSPF path (next-hop) is available, and traffic switches to this new path due to SPF or this path is preferred due to higher priority. [378819]

8.19 Platform

- On 7220 IXR-D3L systems, when the fan-tray is empty and the node is rebooted (**tools platform chassis reboot**), the fan-tray LED does not remain unlit. The fan-tray LED changes from unlit to red and remains red. [422980]
- On 7220 IXR-D2L systems, the fan-tray LED changes from red to green when inserting a fan-tray while the node reboots (**tools platform chassis reboot**). It should be green. [423411]
- FEC configuration is lost after an interface speed change. Workaround by deleting the configured FEC and reconfiguring it if FEC is needed. [424589]
- IMM reboot/Port flaps on one end results in continuous port flaps every few seconds. Work around: Reboot IMM on both ends. [428782]
- In 7220 IXR-H4 systems, during port flap or reboot of node, multiple RA source IPs are advertised causing the BGP unnumbered peers to stay 'down' on peer nodes due to incorrect SMAC address that gets picked up. The peers may stay “down” until the incorrect ARPND entry times out. [432331]
- info/show commands related to fan are not supported in 7220 IXR-H4. [434427]
- On 7220 IXR-H4 systems, when inserting a fan-tray during a reboot (tools platform chassis reboot), the fan-tray LED changes from RED to GREEN instead of immediately turning from UNLIT to GREEN. [429338].
- On 7220 IXR-D2L systems, upon reboot and xdp_lc restart, Carrier-Transition observed is "1" on GIGE-T[3HE00062CBAA01] optics, expected Carrier-Transition is "0". [433219]
- On 7220 IXR-D3 systems, upon reboot and xdp_lc restart, Carrier-Transition observed is "1" on 10GBASE-LR[3HE04823AAAA01], 40GBASE-SR4[3HE07928AAAA01] and 100GBASE-SR4[3HE10551AARA01] optics, expected Carrier-Transition is "0". [433478]

- On 7220 IXR-D2 systems, upon reboot and xdp_lc restart, Carrier-Transition observed is "1" on 10GBASE-LR[3HE04823AAAA01] and 25GBASE-SR[3HE14834AARA01] optics, expected Carrier-Transition is "0". [433553]
- SyncE is not supported with 400G interfaces on the 7220 IXR-D5 platforms. [440384]
- When CPM-B is the active cpm, the state path "platform/control/cpu" is not populated for the standby CPM-A. [435216]
- On 7250 IXR-6/10 and 7250 IXR-6e/10e platforms, even though configuring PIR/queue template on the MCAST queue feature is supported, it does not work as expected. On 7250 IXR-H2/H3/H4 platforms, even though configuring the queue template on the MCAST queue feature is supported, it does not work as expected. [439881]
- On 7250 IXR6/10/6E/10E platforms, static route BFD sessions may take more than fifteen seconds to re-establish themselves post CPM Switchover. [437193]
- IDB connectivity to the line card may sometimes fail and reboot the line card automatically during chassis bring up. [438576]
- **[NEW]** During CPM switchover or dev_mgr application restart events, a momentary LED color change is expected: PWR/Status may blink, fan-tray LEDs may turn blue, and SFM LEDs may turn amber. [440526]
- **[NEW]** In 7250 IXR-6 and IXR-10 platforms, traffic is not distributed evenly across all level-2 ECMP links when there are 17 or more level-2 ECMP links and 2 or more level-1 ECMP links for a BGP route prefix. Traffic distribution becomes progressively uneven as the number of level-2 ECMP links increase. With 17 level-2 paths traffic distribution is uneven and with 64 level-2 paths (max supported in 7250 IXR-6 and IXR-10), several paths do not transmit any traffic and remain unused. [441240]

8.20 PTP

- Port-based timestamping is not supported on the 4x10G interface (3HE11241AA). The PTP port may never lock to an upstream clock or may provide poor time to any downstream clocks. [436967]

8.21 QoS

- When applying classification/rewrite profiles on a LAG, a member might switch to a default profile due to a lack of resources while other members use the configured profile. Workaround: Ensure resources are available on the line card for all members. [359313]
- In 7250 IXR-6/10 platforms with certain max-threshold values, the buffer buildup is not as expected. [376028]
- Traffic stream rates may not be as expected with multiple slopes applied on a single queue. [379513]

- In 7220 IXR-Dx systems, buffers consumed by the queue may be approximately 10% lower than the maximum (330MB) when max-drop-probability in the queue template is set to 100. [384340]
- In 7220 IXR-Dx systems, the effective forwarding rate of policed traffic may be slightly less than the configured rate (several hundred kbps) based on the programmed rate. [390034]
- In 7220 IXR-Dx systems, all policies are reference counted to a single policy after qos_mgr restart. [403324].
- On the 7220 IXR-D5, traffic monitoring may not capture ipv6+udp traffic with protocol UDP as match criteria. Workaround: Use the source/destination address as match criteria. [418113]
- On 7220 IXR-D2/D3/D2L/D3L systems, non-IP traffic over a VXLAN tunnel may be classified as forwarding-class 'BE', drop-priority 'low' since the default dot1p classifier is not honored. [419266]
- On the 7250 IXR-6e/10e, ECN marking/dscp rewrite is not working for the ecn capable traffic, when traffic sent with ECN bits as 01 or 11. As a workaround, use ECN value 10 which is also EC capable traffic. [424406]
- On 7220 IXR-D4/D5 systems, there can be divergence in the traffic distribution in certain WRR scenario's when few queues are sending smaller packets (less than 200 bytes) and others are sending jumbo packets (greater than 1500 bytes). [426699]
- On 7220 IXR-D4/D5, storm control policers may be configured only on a maximum of 60 ports (including breakout). Exceeding this limit can throw "No resources for operation" errors. [437269]

8.22 Segment routing

- Packet loss will be seen when traffic switches over to a new path due to a change in an IS-IS metric. [398556]
- Changing the ip-address of a loopback or system subinterface may cause the corresponding prefix-sid to be removed from the local sid-database. The new effective address is advertised correctly in the network. The prefix-sid can be restored in the local side-database by changing the subinterface's admin state or the IS-IS instance interface to disable and then back to enable. [399396]
- If multiple Rtr Cap TLV are received, only the first one is processed and printed. [399523]

8.23 Services

- Traffic monitor shows inner MAC and IP header fields when transit VXLAN packets are captured. Outer IP header fields are not shown. [375243]
- When the VIP is configured with Host-Mobility (HM) knobs and the host is moved from the MH side to the remote leaf (first move) and then back to the MH side (second move), the ND entry on the remote leaf may be installed as type 'dynamic' instead of 'evpn'. [402237]
- Routed traffic on an IRB subinterface is not flooded in the default flood list (as it would be expected) when there is an ARP/ND entry for the destination IP address, but the resolved MAC address is not in the MAC-VRF's mac-table. As a result, this routed traffic may be black-holed if the destination is attached to a non-DF sub-interface in the MAC-VRF or in a remote leaf attached to the same broadcast domain. [418606].
- When EVPN-VXLAN is enabled, only three VLAN TPIDs are supported on the interfaces of a router. An attempt to configure a fourth TPID/TPID_ANY will fail to be applied. If EVPN-VXLAN is disabled, the configuration of a fourth TPID on any interface of the router will prevent the user from enabling EVPN-VXLAN. When fourth TPID or TPID_ANY is configured, system may get into bad state. System reboot is required to recover. [403897]
- VxLAN traffic does not work if the underlay network interface has a non-default TPID configuration on 7220 IXR-D4/D5 platforms. [427425]
- The router does not fail validate/commit when the MCID (multicast indexes) scale is exhausted and any of the layer-2 proxy-arp/nd flood configuration options are set to false (which requires new MCIDs to be allocated. [413210]
- In proxy-arp/proxy-nd scaled scenarios, flapping the mclag or lag access ports results in few proxy-arp/proxy-nd entries going to in-active state. [428678].
- On 7220 IXR-D4/D5, packets arriving with extra tag on L3/IRB interfaces may get forwarded instead of getting dropped. [427552]
- In 7220 IXR-D4/D5 systems, IRB MACs are not programmed when anycast-gw virtual-router-id is changed. [434440]

8.24 sFlow

- In 7250 IXR platforms, deleting and reconfiguring an sFlow configuration does not reset the statistics for total-samples-taken. [386875]

8.25 SNMP

- Configuring a non-existent source address in the list of source addresses for SNMPD can result in an SNMP Agent not working for a valid source address. Workaround: Remove the non-existing source address and flap the admin state of SNMP daemon. [313857]

8.26 System

- IDB connectivity to a line card may sometimes fail and reboot the line card automatically during chassis bring up. [381641]
- Rarely an SFM may be stuck in the empty state after chassis reboots. The command **tools platform fabric <x> reboot** can be used as workaround to recover. [378354]
- Standby CPM does not reflect the power usage temperature information in the **info from state platform control B** output. [338088]
- Sometimes when interfaces are flapped in 7250 IXR systems, the port may flap multiple times before it stabilizes. [390302]
- The object "system aaa server-group type" is now mandatory. When upgrading to 21.11, a server-group entry will be automatically removed from the list if it does not contain the type field. [395208]
- On the 7250 IXR, traffic loss can occur in the intra-IMM case if the incoming traffic is @99.99% rate, that is, 4.799Tbps for packet sizes higher than ~1000B. [359084]
- On the 7250 IXR-6e/10e, traffic drops can occur for IPv4/IPv6 line rate jumbo sized frames at frame sizes starting from 7500B sent to all the ports. [407618]
- On the 7250 IXR-6e/10e, traffic drops can occur for FC0, FC1, and FC2 queues if strict priority queuing is enabled and traffic is sent to all the 8 queues. [411065]
- The 7220 IXR-D5 shows optics type field as empty when 400G DAC is connected. [406712]
- The 7220 IXR-D5 front panel LED status does not blinking green when the system is up and running. The front panel status LED changes from solid blue to solid green. [419913]
- On the 7220 IXR-D5, the traffic monitor may not capture traffic to destination UDP port numbers 319, 320, 3784, 3785, 4784, or 6784 using UDP protocol filters. Workaround using source/destination address as match criteria. [410963]
- In a management network instance enabled with export-routes, sometimes default route may not be installed in Linux causing outside network connectivity issues. Workaround by performing any trigger that causes the routes to reapply such as admin disable/enable of network-instance or mgmt0.0 interface. [433882]
- 7220 IXR-H4 ports might take longer time to come operational on initial bringup and on port speed changes. [431339]
- In certain rare scenarios, applications using high memory may get restarted when triggering tech-support in scaled node configurations. [436759]

- The qualifier IpType added to differentiate between Ipv4 and Ipv6 is not working as expected for IPv6 flows. IPv6 flows will hit the IPv4 default filter entry. This issue is seen only on 7220 IXR-D4 platforms. [435914]
- On 7220 IXR-D4/D5 platforms, the non-fragmented packets match the IPv4 filter entry when match criteria configured as fragment True. This is due to BCM limitation. [439261]
- **[NEW]** On 7220 IXR-H3 systems, the link training fails to bring up the link for 200G PAM 4 implementation. This impacts the Interoperability with other platforms. [436802]
- **[NEW]** Fetching ztp-provision.py may time out when srbase-mgmt has already an assigned IPv6 management address. Before fetching the provisioning script from a remote server, ZTP was switching to the management VRF only if a valid IP was assigned in the management VRF. The request plugin was only checking the v4 address in management VRF. Hence, if only the v6 address is assigned in management VRF, ZTP will not switch to management VRF and fail to fetch the provisioning script. With this change, both v4 and v6 IP addresses are checked in the management VRF. [431818]

8.27 Timing/Sync

- In rare cases you can get into a situation where the system-ql-level does not reflect the ql-value of the active reference. This has been seen when configuration changes are made that would cause the active reference to change and then more configuration changes are made that would cause the previous active reference to be active again. All these changes need to occur within approximately 1 second. This can be resolved by disabling configured references and re-enabling them. [436319]
- **[NEW]** Instead of displaying the time stamps in the local configured time zone, the CLI “show” and “info” commands display time in UTC. [315805]

9 Resolved Issues

Resolved issues for the current release (23.7) are documented in this section. For releases prior to 23.7, refer to the release notes for previous releases (R23.3 and earlier).

NOTE: New resolved issues added in release 23.7.2 are marked as **[NEW]**.

9.1 Application warm restart

- **[NEW]** During CPM switchover, fan speed will be configured to the pre-switchover speed as soon as the new CPM takes the active role. The same is applicable in the event of dev_mgr application going down. [440527]

9.2 BGP

- The configuration path /system/warm-reboot/bgp-max-wait has been moved to /system/protocols/bgp/restart-max-wait. [432151]
- state field enumeration fib-install-disabled renamed to rtm-install-disabled in srl_nokia-rib-bgp.yang. The state path changes in srl_nokia-rib-bgp.yang:
 ipv4-unicast/rib-in-out/routes changed to ipv4-unicast/rib-in-out/route
 ipv4-unicast/rib-in-post/routes changed to ipv4-unicast/rib-in-post/route
 ipv4-unicast/rib-out-post/routes changed to ipv4-unicast/rib-out-post/route
 ipv6-unicast/rib-in-out/routes changed to ipv6-unicast/rib-in-out/route
 ipv6-unicast/rib-in-post/routes changed to ipv6-unicast/rib-in-post/route
 ipv6-unicast/rib-out-post/routes changed to ipv6-unicast/rib-out-post/route
 [436394]
- **[NEW]** An issue is observed when updating both /network-instance/protocols/bgp/convergence/min-wait-to-advertise and /network-instance/protocols/bgp/afi-safi/convergence/max-wait-to-advertise in the same commit: if the new value of min-wait-to-advertise is greater than (one of) the old max-wait-to-advertise value(s) in the same /network-instance/bgp instance, an error is printed in sr_bgp_mgr logs and causes the bgp instance's config to not be updated correctly. A restart of bgp_mgr will bring the instance back to its correct state. As a workaround, change the necessary max-wait-to-advertise values and set min-wait-to-advertise to 0 in one commit; and after that, set min-wait-to-advertise to the desired value in a separate commit. [439233]

- **[NEW]** bgp_mgr errors seen when configuring and de-configuring bgp-evpn ip-aliasing. The errors have no operational impact. [440779]
- **[NEW]** If a dynamic peer is deleted during the restart process, the "application bgp_mgr warm-restart" may timeout and can result in traffic loss. This is an intermittent issue. [441046]
- **[NEW]** Upon performing bgp_mgr application warm reset or CPM switchover, next-hop-resolution for BGP routes fails for routes having 2 or more level-2 ECMP next-hops programmed. [440167]

9.3 DHCP

- DHCP relay server messages to the DHCP client are sent with an incorrect MAC address destination when using a client-id option with DUID Type 2 in the message. [438744]
- **[NEW]** DHCPv6 doesn't work if an IRB interface is added to an mac-vrf, where the client and server connects, and the IRB interface doesn't have dhcp-relay operational. [442325]

9.4 EVPN

- In some rare scenarios, the VXLAN termination on a network sub-interface is not set correctly, causing some specific VXLAN-encapsulated traffic (such as with inner payload of arp requests and SNMP) to be discarded. [438009]

9.5 Interface

- Nokia supports DAC in D3/D3L for 50G speed and in H3 for 200G until 23.7 release. The dac-link-training should not be set to true for optical transceivers. The purpose of the command is to ensure that the link comes up when another switch that has link training enabled by default and does not have a configuration knob to disable link training. [439230]
- An echo request packet initiated from an IPv6 interface with anycast-gateway enabled may go out with a system-generated LLA in the source-address field instead of the user configured LLA. [440614]

9.6 IS-IS

- LSDB type identity `extended_is_reachability` renamed to `extended-is-reachability` in `srl_nokia-isis-lsdb-types.yang`. [428708]

9.7 MAC-VRF

- The L2CP protocol transparency in bridged sub-interfaces feature, in release 22.3.1, causes the L2CP protocol PDU source MAC addresses (e.g., LLDP PDU source MACs) to be learned in the MAC-VRF mac-table where a null encapsulated subinterface or untagged subinterface is configured. [425183]

9.8 OSPF

- The leaf "type" has been removed from `srl_nokia-ospf.yang/grouping ospf-interface-state`. [437859]

9.9 Platform

- In some scenarios where 2x100G breakout ports are configured, `xdp_lc` application may become unstable during tech-support collection. [438939]
- As of release 23.7.1, configuration for IPv6 address under sFlow source and collector IP is blocked. In previous releases, the configuration may not be blocked for sFlow source and collector IP addresses in IPv6 format although it was not supported. Applicable for 7250 IXR6/10/6E/10E, 7220 IXR-D1/D2/D3, 7220 IXR-D4/D5, and 7220 IXR-H3/H4 platforms. [426686]
- **[NEW]** The number of reserved entries in EFP has increased by 1, reducing v4/v6/v4cpm/v6cpm scaling number by 1. [440865]
- **[NEW]** During CPM switchover, fan speed will be configured to the pre-switchover speed as soon as the new CPM takes the active role. The same is applicable in the event of `dev_mgr` application going down. [440527]

9.10 PTP

- PTP port range is now restricted to [1..1500]. [436174]

9.11 System

- System instability may occur during the collection of the tech-support data if the configured network-instance names are longer than 30 characters. [438934]
- **[NEW]** When receiving IPv6 transit packets on the 7220 IXR-H2/H3 platform with the hop-by-hop option enabled and the higher order bit set to 11, no ICMP6 Type4 code2 message is sent. [437708]
- **[NEW]** The network-instance.bridge-table.proxy-arp/nd.evpn.flood configuration commands are not supported on 7220 IXR-D4 and IXR-D5 platforms. [441784]
- **[NEW]** Until 23.7.1, if the name of the keychain (system authentication keychain <name>) exceeded 64 characters and was used in IS-IS authentication, an isis_mgr crash is observed during the rollback of configuration. With the latest fix, the keychain name can now be configured up to its maximum length of 255 characters. [441404]
- **[NEW]** Discarding free blocks on SDD filesystems is now enabled through the fstrim service. [430358]

10 Customer documentation

The online SR Linux documentation WebHelp, is now the primary access point for customer documentation. All software documentation in PDF and HTML format, as well as the PDF zip collection of the software guides can be obtained on the SR Linux documentation WebHelp and will no longer be available on the Nokia Doc Center beginning with SR Linux release 22.11.

The Nokia Doc Center will continue to host all restricted documents (Hardware and Release Notes) and will continue to provide a link to the online customer documentation WebHelp.

To access the SR Linux customer documentation, users can enter the term SR Linux customer documentation in a web search engine or go directly to <https://documentation.nokia.com/srlinux/23-7/index.html>

Starting from version 23.7, you can view the data model information using the SR Linux YANG browser. This is in addition to the Data Model Reference guide that is already provided.