

# Release Notes for NorthStar Controller

Release 4.2.3

11 December 2019

These release notes accompany Juniper Networks NorthStar Controller Release 4.2.3.

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# Introduction

The Juniper Networks NorthStar Controller is an SDN controller that enables granular visibility and control of IP/MPLS flows in large service provider and enterprise networks. Network operators can use the NorthStar Controller to optimize their network infrastructure through proactive monitoring, planning, and explicit routing of large traffic loads dynamically based on user-defined constraints.

The NorthStar Controller 4.2.3 release is fully supported with Junos OS Release 17.2R1 and later.

NorthStar Controller 4.2.3 can be deployed with Junos OS Releases 15.1F6, 16.1R1, and 17.1R1, but the segment routing (SPRING) feature would not be available.

The NorthStar Controller Analytics features require specific Junos OS Releases to be able to obtain LSP and interface statistics. This is a Junos Telemetry Interface (JTI) dependency. We recommend Junos OS Release 15.1F6 or later if you plan to use Analytics.

The NorthStar Controller 4.2.3 release can be deployed with Junos OS Releases 14.2R6, 15.1F4, and 15.1R4, but the following features would not be available:

- MD5 authentication for PCEP
- P2MP support
- Admin group support

For PCEP client to support binding SID, Junos OS Release 18.3 or 18.4 (or later) is required.

By default, the NorthStar Controller Release 3.0.0 and later requires that the external Junos VM be Release 17.2 or later. If you are using an older version of Junos OS, you can change the NorthStar configuration to support it, but segment routing support will not be available. See the *NorthStar Controller Getting Started Guide* for the configuration steps.

Other Junos OS releases are not supported.

**NOTE:** The Path Computation Element Protocol (PCEP) configuration on the PCC routers does not persist across upgrades when the SDN package is not part of the installation binary. Before upgrading the Junos OS image to this release, save the existing configuration to a file by using the **save** command. After you upgrade the Junos OS image on each PCC router, use the **load override** command to restore the PCEP configuration.

The NorthStar Controller is supported on the following Juniper platforms: M Series, T Series, MX Series, PTX Series, and QFX10008. Please contact JTAC for more information.

As of Junos OS Release 17.4R1, NorthStar Controller is also supported on QFX5110, QFX5100, and QFX5200.

Junos OS supports Internet draft draft-crabbe-pce-pce-initiated-lsp-03 for the stateful PCE-initiated LSP implementation (M Series, MX Series, PTX Series, T Series, and QFX Series).

## Contents of this Release

NorthStar Release 4.2.3 is a maintenance release that includes a number of bug fixes as described in this release notes document.

[Table 1 on page 3](#) describes the downloadable files.

**Table 1: NorthStar Controller 4.2.3 Downloadable Files**

File	Description
NorthStar Application  <b>NOTE:</b> E-signature also available.	Northstar_Bundle_4_2_3.tar.gz
NorthStar JunosVM  <b>NOTE:</b> E-signature also available.	northstar_junosvm_4_2_3.tar.gz

**NOTE:** VMDK installation is also supported, but the files needed for this type of installation are not available on the NorthStar software download page. Please request the files from your account team or NorthStar Product Line Manager.

## New Features

The following new features are introduced with NorthStar Release 4.2.3:

- Network archive update for parsing of no-install-to-address syntax in Junos.
- Network archive update for parsing of autoroute destination syntax in IOS-XR.
- Node visibility now saved with layout, easing ability to provide project or region-specific layout.

- Added northstar.cfg option to not ignore netflow records where output interface is 0. Set netflow\_drop\_invalid\_egress\_intf=0.
- Added northstar.cfg option to disable AS level demand aggregation if not used, to reduce disk and memory resource requirements. Set netflow\_as\_demands=0 (new default), or set to 1 to allow processing and collection.

## Changes in Behavior

There are no changes in behavior to report in NorthStar Controller Release 4.2.3.

## Known Behavior

The following behaviors are known to occur in NorthStar Controller Release 4.2.3:

- Only the bandwidth of PCE-initiated and PCC-delegated LSPs can be sized by applying bandwidth sizing attributes, but there is nothing to prevent you from applying attributes to PCC-controlled LSPs and no warning that they will not take effect.
- NorthStar REST API does not always return the selected routing method in the REST response:
  - Currently, if a REST API body has routingMethod=Default, the corresponding REST response does not include the routingMethod keyword.
  - NorthStar still computes the ERO properly.
  - In a future NorthStar release, the REST response will properly indicate the selected routingMethod.
- Re-provision LSPs issue:
  - For a NETCONF-provisioned P2MP tree, re-provisioning individual sub-LSPs to go around a failed link can fail under the following conditions:
    - The user re-provisions sub-LSPs separately.
    - The user has a mixture of sub-LSPs with a user-specified strict path and paths computed by NorthStar.
  - The workflow is to re-provision all sub-LSPs of a tree together; NorthStar computes sub-LSPs of a tree as a whole, not individually.
- Behaviors and limitations related to NETCONF Provisioning of LSPs and Binding SID Support:
  - Binding SID SR support requires Junos OS Releases 18.3R2 /18.4R2 or later.

- Automatic rerouting of NETCONF-provisioned LSPs (including NETCONF-provisioned SR LSPs) due to a failure in the network is not supported.
- The Preview Path button in the Provision LSP window may return a “Cannot find a path!” error message when in fact a path was found and the SR LSP was successfully provisioned. The error message occurs for certain scenarios such as when an SR LSP makes use of a binding SID SR LSP (privateForwardingAdjacency).
- During PCE-initiated LSP provisioning, some third party routers can return an error code for an unknown reason. Currently, the NorthStar Application only reports “NS\_ERR\_GENERIC” when this occurs. It is planned to improve this behavior and report the exact error code (e.g. PCEP Error Type = 24 error value = 2 ) in future releases.
- Behaviors related to Netflow Collector:
  - It can happen that during a NorthStar upgrade from NorthStar 4.x, netflowd cannot be started. If netflowd fails to start, run the following command on the system hosting the netflow collector:

```
sudo -u pcs /opt/northstar/thirdparty/python/bin/pip -q install --upgrade --no-deps
--force-reinstall /opt/pcs/lib/python/*.whl
```

- The telemetry REST API assumes that LSPs on different routers have different names.
- In rare cases, you might get an empty result in the network information table Service tab for both summary and detailed information, for example, after a system upgrade. If this happens, you can resolve it by restarting the web process:

```
supervisorctl restart infra:web
```

## Known Issues

[Table 2 on page 6](#) lists known issues in NorthStar Controller Release 4.2.3. The identifier associated with each entry is the tracking number in the Juniper Networks Problem Report (PR) tracking system.

Table 2: Known Issues in NorthStar Controller 4.2.3

Identifier	Description
1358245	<p><b>Junos OS Release 18.2 and 18.3 PCEP reporting limitation:</b> In Junos OS Releases prior to 18.4R2, Junos reports the SR LSP name only. The segment list path names (for multiple primary paths or secondary path) are not reported via PCEP. The implications for NorthStar Controller Release 4.2.x are:</p> <ul style="list-style-type: none"> <li>• Only one primary path is supported. Since Junos OS still requires a path name to be specified, when NorthStar sends a provisioning order for NETCONF-based SR LSPs, the primary path name is set to be the same as the SR LSP name.</li> <li>• The length of the LSP name provisioned via NorthStar 4.2.x should be 32 characters or less because the combined LSP name and path name length should be less than 64 characters. This 32 character constraint is not enforced by the NorthStar web UI or the REST API.</li> </ul>
NA	<p>When a user modifies device interface IP addresses resulting in ISIS adjacency or OSPF neighbor migration, there could be additional links created in NorthStar due to transient states being advertised into NorthStar.</p> <p>For example, suppose an ISIS adjacency is formed between interface IP address of 10.11.11.1 and 10.11.11.2, and the user modifies the device interface IP addresses to 10.11.11.5 and 10.11.11.6. In NorthStar, there might be three links displayed, each representing the ISIS adjacency:</p> <ul style="list-style-type: none"> <li>• The original adjacency of 10.11.11.1 and 10.11.11.2 in DOWN state</li> <li>• The transient adjacency of 10.11.11.5 and 10.11.11.2 in DOWN state</li> <li>• The new adjacency of 10.11.11.5 and 10.11.11.6 in UP state</li> </ul> <p>The original and transient adjacencies are harmless to NorthStar path computation, as they are in DOWN state. The user can manually delete them to clean up the topology view.</p>
NA	<p>When learning P2MP LSPs from network devices, NorthStar will create the P2MP group associated with the P2MP LSP. The bandwidth and priority of the P2MP group, however, do not reflect the bandwidth and priority on the P2MP LSP.</p>

## Resolved Issues

Table 3 on page 7 lists resolved issues in NorthStar Controller Release 4.2.3. The identifier associated with each entry is the tracking number in the Juniper Networks Problem Report (PR) tracking system.

Table 3: Resolved Issues in NorthStar Controller 4.2.3

Identifier	Description
1450327	LDAP issue to non AD LDAP server implementations was missing DN attribute.
1457141	Web UI incorrectly indicated some cluster nodes were unreachable with no other impact.
1457764	When bandwidth sizing script encountered nodes that were not in the profile, it did not process further nodes and LSPs.
1461612	Link threshold not updated when aggregated Ethernet (AE) link bandwidth dropped, then normalized.
1462196	NETCONF Status might be blank even though the session is configured and had been Up.
1466962	NETCONF Status down due to incorrect password did not come back up when the password was corrected in Profile.
Technical Service Bulletin TSB17645	System health could not connect to the server properly due to expired certificate.
NA	Layout saving node's visibility.
NA	Demand bandwidths were not updating in Demand tab.
NA	Adding comments to a Node in the Node tab of the network information table would clear the vendor type, displayed in the Type column.
NA	High rate of "device profile not found for host" in netflowd.msg caused log file wraps.
NA	When links from an Ethernet pseudo-node were withdrawn, the pseudo-node was withdrawn, and Toposerver could restart.
NA	Bandwidth sizing issue with IOS-XR LSPs.
NA	LSPs were rerouted on execution of the optimization timer even if they were already on an optimum path.
NA	Bandwidth sizing should not update the timeline with every LSP updated.
NA	Inter-domain link operational status was DOWN after resetting the topology.
NA	Could not delete Cisco delegated LSP. A message to the user is now displayed to remove delegation before deleting the LSP.

Table 3: Resolved Issues in NorthStar Controller 4.2.3 (continued)

Identifier	Description
NA	SNLC task failed to finish due to exception.
NA	PCS was not bringing up secondary path when primary and standby paths failed.
NA	Device collection task could fail to complete, for example if hostname was not defined in the router configuration.
NA	Collection task from standby nodes sometimes failed.
NA	PCS was not moving some LSPs away from congested links when the utilization threshold was crossed.
NA	View Total LSP graph was empty.
NA	HA agent failover state error.
NA	Event indices in analytics database were not being deleted to per the retention policy.
NA	Healthmonitor for analytics can't store data in history.
NA	Netflow dispatcher still running when worker stopped.
NA	Bandwidth sizing task failed when node not in profile.
NA	PCS restarted when there was an LSP event in which the LSP could not be resolved via a pathname.
NA	Some netflow demands might cause PCS to restart.
NA	Toposerver might not remove duplicate links or interfaces.
NA	Set ulimit -c in init script so processes can produce core files for debugging.
NA	RSVP utilization corrections regarding preempted LSPs.



# Requesting Technical Support

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

## Revision History

11 December 2019—NorthStar Controller Release 4.2.3.

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