

Release Notes

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Network Director 7.1 Release Note

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Introduction

Junos Space Network Director can be used for campus network management. In the campus, Network Director automates routine management tasks such as network provisioning and troubleshooting, dramatically improving operational efficiency and reliability.

Campus networks have increased variability and unpredictability stemming from a wide range of user and IoT devices. Juniper's portfolio of services, software and hardware products securely address end to end campus network solutions.

Junos Space Network Director enables unified management of EX Series Ethernet Switches, MX Series routers, QFX Series switches, and Junos Fusion Enterprise in your network. It provides for full network life cycle management by simplifying the discovery, configuration, visualization, monitoring, and administration of large networks containing physical and virtual devices. You can download the software images for Network Director and the release notes for Network Director Release 7.1R1 by using the appropriate links on the [Network Director – Download Software](#) page.

These release notes accompany Network Director Release 7.1R1.

New and Changed Features

This section lists the new and changed features in Network Director Release 7.1R1.

The No Link Title lists the supported platforms and the corresponding qualified Junos OS release versions validated in Network Director Release 7.1R1.

Table 1: Supported Platforms and Corresponding Qualified Junos OS Releases

Supported Platforms	Qualified Junos OS Release
EX2300-24T	Junos OS Release 20.4R3.8
EX4100-24MP	Junos OS Release 23.1R1.2
EX4100-24P	Junos OS Release 23.1R1.2
EX4100-24T	Junos OS Release 23.1R1.2
EX4100-48T	Junos OS Release 22.3R1.12

Table 1: Supported Platforms and Corresponding Qualified Junos OS Releases *(Continued)*

Supported Platforms	Qualified Junos OS Release
EX4100-F-12T	Junos OS Release 22.3R1.12
EX4100-F-24P	Junos OS Release 22.3R1.12
EX4100-48P	Junos OS Release 22.3R1.12
EX4400-24X	Junos OS Release 21.4R3-S1

Supported Junos Space Network Management Platform Release

The [Table 2 on page 2](#) lists the supported Junos Space Network Management Platform Release for Network Director 7.1R1:

Table 2: Supported Junos Space Network Management Platform Releases

Network Director Release	Supported Junos Space Network Management Platform Release
7.1R1	23.1R1

Junos Space Network Management Platform Requirements

Network Director Release 7.1R1 is supported on the Junos Space Network Management Platform Release 23.1R1.

You must download this release of Network Director from [Network Director - Download Software](#) page and Junos Space Network Management Platform from [Junos Space Network Management Platform - Download Software](#) page.

Network Director is supported on Junos Space Virtual Appliance that meets the hardware requirements specified in the Junos Space documentation.

For detailed information about hardware requirements, see [Junos Space Virtual Appliance Deployment Overview](#).

Supported Platforms and Supported Line Cards

[Table 3 on page 3](#) lists the supported platforms for Network Director Release 7.1R1 and the corresponding qualified Junos OS releases.

Table 3: Supported Platforms and Corresponding Qualified Junos OS Releases

Supported Platforms	Qualified Junos OS Release Version
EX Series Switches	
EX2300 EX2300-48T EX2300-48P	Junos OS Releases 18.1R3.3, 18.2R3-S2.9, 18.4R1.8, and 20.2R1.10
EX2300-24T	Junos OS Release 20.4R3.8, 21.4R3-S1.5 Junos OS Release 21.4R3-S1.5
EX2300-24MP (Standalone) EX2300-48MP (Standalone) EX2300-24MP (Virtual Chassis) EX2300-48MP (Virtual Chassis)	Junos OS Releases 18.1R1, 18.1R3.3, 18.2R3-S2.9, and 18.4R1.8

Table 3: Supported Platforms and Corresponding Qualified Junos OS Releases *(Continued)*

Supported Platforms	Qualified Junos OS Release Version
EX3400 EX3400-24P EX3400-24T EX3400-48P	Junos OS Release 18.1R3.3, 18.4R1.8, 18.2R3-S2.9, and 19.4R1.10
EX3400-48T	Junos OS Release 18.1R3.3, 18.4R1.8, 18.2R3-S2.9, 19.4R1.10, and 20.4R3.8
EX3400 (Virtual Chassis)	Junos OS Releases 20.2R2.8
EX4100-12T	Junos OS Releases 22.3R1.12
EX4100-F-12P	Junos OS Releases 22.3R1.12
EX4100-F-12T	Junos OS Release 22.3R1.12
EX4100-24P	Junos OS Release 23.1R1.2
EX4100-24T	Junos OS Releases 23.1R1.2
EX4100-F-24P	Junos OS Releases 22.3R1.12
EX4100-F-24T	Junos OS Releases 22.3R1.12
EX4100-24MP	Junos OS Releases 23.1R1.2
EX4100-48P	Junos OS Releases 22.3R1.12
EX4100-48T	Junos OS Release 22.3R1.12
EX4100-F-48T	Junos OS Releases 22.3R1.12
EX4100-48T (Virtual Chassis)	Junos OS Releases 22.3R1.12
EX4100-48MP (Virtual Chassis)	Junos OS Releases 22.3R1.12

Table 3: Supported Platforms and Corresponding Qualified Junos OS Releases *(Continued)*

Supported Platforms	Qualified Junos OS Release Version
EX4100-F-48P (Virtual Chassis)	Junos OS Releases 22.3R1.12
EX4300-48MP	Junos OS Releases 18.3R1, 18.4R2-S2.3, 19.4R1.10 and 20.4R3.8.
EX4300 (Standalone)	Junos OS Releases 18.4R1.8, 18.4R2-S2.3, 19.4R1.10, 20.2R1.10, and 20.4R1.12
EX4300 (Virtual Chassis)	<p>Junos OS Releases 18.4R1.8, 18.4R2-S2.3, 19.4R1.10, and 20.2R1.10</p> <p>NOTE: The primary switch in EX4300 (Virtual Chassis) must be running Junos OS Release 13.2X51-D20 or later for auto Virtual Chassis Resync to work. If this is not the case, the role changes and the addition or deletion of members will not reflect in Network Director.</p>
EX4400-24X	Junos OS Release 21.4R3-S1
EX4400 (Standalone) EX4400-(Virtual Chassis) EX4400-24T EX4400-24P EX4400-48T	Junos OS Release 21.1R1.11
EX4400-48P	Junos OS Release 21.1R1.11 Junos OS Release 21.4R3-S1.5
EX4400-48F	Junos OS Release 21.1R1.11, 21.2R2-S1.5
EX4400-48F-(Virtual Chassis)	Junos OS Release 21.2R2-S1.5

Table 3: Supported Platforms and Corresponding Qualified Junos OS Releases *(Continued)*

Supported Platforms	Qualified Junos OS Release Version
EX4400-24MP EX4400-48MP EX4400-24MP/EX4400-48MP (Virtual Chassis)	Junos OS Release 21.2R1.10
EX4600 (Standalone) EX4600 (Virtual Chassis)	Junos OS Releases 18.4R1.8, 18.4R2-S2.3, and 20.1R1.11
Mixed EX4600 and EX4300 (Virtual Chassis)	Junos OS Releases 18.4R2-S2.3 (For all the EX Series switches)
EX4600-40F	Junos OS Release 20.4R3-S3.4
EX4650 (Standalone)	Junos OS Releases 18.4R1.8 and 18.4R2-S2.3
EX4650 (Virtual Chassis)	Junos OS Releases 18.4R1.8, 18.4R2-S2.3, 19.1R3-S4.6, and 20.4R1.12
EX4650-48Y-8C	Junos OS Releases 21.4R3-S1.5
EX9200 (Standalone) EX9200 (Virtual Chassis)	Junos OS Releases 18.3R1.9, 18.4R2-S2.3, 19.4R1.10, and 20.2R1.10
EX9214-15C EX9204-15C	Junos OS Release 20.3R1.7
EX9208-15C	Junos OS Release 20.3R1.7 and 20.4R3.8
EX9251 (Standalone) EX9251 (Virtual Chassis)	Junos OS Releases 18.2R1, and 18.3R1.9

Table 3: Supported Platforms and Corresponding Qualified Junos OS Releases *(Continued)*

Supported Platforms	Qualified Junos OS Release Version
EX9253 (Standalone) EX9253 (Virtual Chassis)	Junos OS Releases 18.2R1, and 18.3R1.9
QFX Series Switches	
QFX5120-32C	Junos OS Releases 19.4R1
QFX5120-48T-6C	Junos OS Releases 20.2R1.10 and 20.4R3-S2.5
QFX5120-48YM	Junos OS Release 20.4R1.12
QFX5120-48Y-8C	Junos OS Releases 18.4R1 and 18.4R2-S2.3
QFX5110 switches with the following product SKUs: QFX5110-32Q QFX5110-48S	Junos OS Releases 18.1R3.3, 18.4R2-S2.3, and 19.4R1.10
QFX5100 switches with the following product SKUs: QFX5100-48S-3AFI QFX5100-24Q-3AFI QFX5100-24Q-3AFO QFX5100-24Q-D-3AFI QFX5100-24Q-D-3AFO QFX5100-48T-AFI QFX5100-48T-AFO QFX5100-48T-DC-AFI QFX5100-48T-DC-AFO	Junos OS Releases 18.4R2-S2.3, and 19.4R1.10

Table 3: Supported Platforms and Corresponding Qualified Junos OS Releases *(Continued)*

Supported Platforms	Qualified Junos OS Release Version
QFX5100-48S (Standalone) QFX5100-24Q (Standalone) QFX5100-96S (Standalone) QFX5100-48S (Virtual Chassis) QFX5100-24Q (Virtual Chassis) QFX5100-96S (Virtual Chassis)	Junos OS Releases 14.1X53-D40.8
QFX5210 switches with the following product SKUs: QFX5210-64C	Junos OS Releases 18.1R1, 18.4R2-S3, and 19.4R1.10
QFX5200 switches with the following product SKUs: QFX5200-48Y	Junos OS Releases 18.1R1, 18.4R1.8, and 18.4R2-S2.3
QFX5200 switches with the following product SKUs: QFX5200-32C-AF QFX5200-32C-AFO QFX5200-32C-DC-AFI QFX5200-32C-DC-AFO	Junos OS Releases 18.1R1, 18.4R1.8, and 18.4R2-S2.3
Virtual Chassis Fabric (QFX5110)	Junos OS Releases 17.2R2.8, 17.3R2.10, and 17.4R1.16
QFX10002-36Q switches with the following SKU: QFX10002-36Q-DC QFX10002-72Q switches with the following SKU: QFX10002-72Q-DC	Junos OS Releases 18.4R2-S2.3, and 19.4R1.10
QFX10002-36Q	Junos OS Release 20.4R3-S2.6

Table 3: Supported Platforms and Corresponding Qualified Junos OS Releases *(Continued)*

Supported Platforms	Qualified Junos OS Release Version
QFX10002-60C	Junos OS Releases 18.4R1, 18.4R2-S2.3, and 19.4R1.10
QFX10008	Junos OS Releases 18.4R1.8, 18.4R2-S2.3, and 19.4R1.10
QFX10016	Junos OS Releases 19.1R1.6
MX Series Routers	
MX150	Junos OS Releases 18.2R3-S3.11 and 20.1R1.11
MX204	Junos OS Releases 18.4R1 and 20.1R1.11
MX240	Junos OS Releases 18.4R1.8
MX480	Junos OS Releases 19.1R1.6
MX960	Junos OS Releases 15.1R1
MX80 MX104 MX960 MX2010	Junos OS Releases 15.1R1
MX240	Junos OS Releases 19.4R1.10
MX480	Junos OS Releases 14.1R4, 15.1R1, and 17.3R3-S6
MX2020	Junos OS Releases 19.4R1.10
MX10003, MX10008, MX10016	Junos OS Release 18.4R1
ACX Series Routers	

Table 3: Supported Platforms and Corresponding Qualified Junos OS Releases (Continued)

Supported Platforms	Qualified Junos OS Release Version
ACX710	Junos OS Release 20.2R1 NOTE: You must install the latest hot patch versions of Junos Space Network Management Platform Release 20.2R1 and Network Director.
ACX5448	Junos OS Release 18.4R1
ACX5448-D	Junos OS Release 19.2R1-S1
ACX5448-M	Junos OS Release 19.3R1

Table 4 on page 10 lists the EVPN-VXLAN and layer 3 fabrics supported platforms for Network Director Release 6.3R1 and the corresponding qualified Junos OS releases.

Table 4: EVPN-VXLAN and Layer 3 Fabrics Supported Platforms and Software Versions for Network Director

Supported Platforms	Qualified Junos OS Release Version
EX Series Switches	
EX4300 as Layer 3 Fabric leaf device	Junos OS Release 14.1X53-D42.3
EX4300 as Layer 3 Fabric leaf device (in an EVPN-VXLAN configuration)	Junos OS Release 14.1X53-D27
QFX Series Switches	
QFX5100 as Layer 3 Fabric spine or leaf device	Junos OS Release and 14.1X53-D42.3 for QFX5100
QFX5110-32Q as Layer 3 Fabric spine or leaf device	Junos OS Releases 17.2R2.8 for QFX5110-32Q
QFX5110-48S as Layer 3 Fabric leaf device	Junos OS Releases 17.2R2.8 for QFX5110-48S
QFX10002-36Q as Layer 3 Fabric leaf device	Junos OS Release 20.2R1.10 for QFX10002-36Q
QFX10002-72Q as Layer 3 Fabric leaf device	Junos OS Release 17.4R1.15 for QFX10002-72Q

Table 4: EVPN-VXLAN and Layer 3 Fabrics Supported Platforms and Software Versions for Network Director *(Continued)*

Supported Platforms	Qualified Junos OS Release Version
QFX5110 as Layer 3 Fabric leaf device (in an EVPN-VXLAN configuration)	Junos OS Releases 17.2R2.8 for QFX5110
QFX5100 as Layer 3 Fabric leaf device (in an EVPN-VXLAN configuration)	Junos OS Release 14.1X53-D42.3 for QFX5100
QFX5200-32C-32Q as Layer 3 Fabric spine or leaf device (in an EVPN-VXLAN configuration)	Junos OS Releases 15.1X53-D210 for QFX5200-32C-32Q
QFX10002-36Q as Layer 3 Fabric spine device (in an EVPN-VXLAN configuration)	Junos OS Release 17.2R1.13 for QFX10002-36Q

[Table 5 on page 11](#) lists the ESI LAG configuration supported platforms for Network Director Release 6.3R1 and the corresponding qualified Junos OS releases.

Table 5: ESI LAG Configuration Supported Platforms and Software Versions for Network Director

Supported Platforms	Qualified Junos OS Release Version
EX Series Switches	
EX9200 as peer device in a core network	Junos OS Release 20.2R1.10
EX2300 and EX4300 as client devices in an access network	

[Table 6 on page 11](#) lists the supported DHCP and File Server (FTP and TFTP) for Network Director Release 6.3R1 and the corresponding qualified Junos OS releases.

Table 6: Supported DHCP and File Server (FTP and TFTP) and Corresponding Qualified Versions

Supported DHCP and File Server (FTP and TFTP)	Qualified Versions
DHCP and File Server (FTP and TFTP)	
CentOS	CentOS Release 6.10 and CentOS Release 7.6
Ubuntu	Ubuntu Release 14.04

[Table 7 on page 12](#) lists Juniper Networks line cards supported by Network Director Release 6.3R1.

Table 7: Supported Line Cards

Device	Line Cards
MX240	MPC10E-10C-X
MX480	SCBE3-MX-S SCBE3-MX-BB SCBE3-MX-R MPC10E-15C-X MPC10E-10C-X
MX960	5K-AC-PSM HV-PSM
MX10008	JNP10008-FAN2 JNP10008-FTC2 JNP10K-PWR5500-AC JNP10K-PWR5500-DC
MX10016	JNP10016-FAN2 JNP10016-FTC2 JNP10K-PWR5500-DC

Supported Web Browsers

[Table 8 on page 13](#) lists the supported versions of web browsers for Network Director 7.1R1:

Table 8: Supported Web Browsers for Network Director

Web Browser	Supported Versions
Google Chrome	86 and later
Mozilla Firefox	72.0.2 (64-bit) and later

The recommended screen resolution is 1280 x 1024. If your screen resolution is less than the supported resolution, the Network Director UI might not be displayed properly.

Installation Instructions

You can install Network Director on Junos Space Network Management Platform by using one of the following methods:

- Installing Network Director from Junos Space Store
- Installing Network Director by manually downloading the Network Director application image

NOTE: The preferred method to install Network Director on Junos Space Network Management Platform is by installing Network Director from Junos Space Store.

Network Director cannot be installed on a system that has Connectivity Services Director already installed. If Connectivity Services Director is already installed on your system, uninstall it before you install Network Director.

Network Director 7.1R1 is compatible with the following applications:

- Security Director 23.1R1

For more information about prerequisites for firewall ports for Network Director management, see ["Prerequisites for Firewall Ports for Network Director Management" on page 24](#).

For more information about installing Network Director on Junos Space Network Management Platform, see [Installing Network Director](#).

For more information about overview of installing Network Director, see Network Director [Quick Start Guide](#).

Upgrade Instructions

You can upgrade to Network Director Release 7.1R1 from Network Director 6.3R1 and 6.2R1.

If you do not have a supported version of Network Director, upgrade first to Network Director Release 7.1R1. For instructions on upgrading to Network Director Release 7.1R1, see [Network Director Release 7.1 Quick Start Guide](#).

For more information about upgrade instructions, see [Upgrading Network Director](#).

Junos Space DMI Schema Requirements for Network Director

In Junos Space Network Management Platform, a device family always has a default DMI schema associated with it. Typically, when you perform a clean installation of Junos Space Platform, a schema (usually the latest one) is automatically set as the default for each device family. When you perform an upgrade of Junos Space Platform, the default schemas stay the same as the ones before the upgrade. But there might be certain situations where your network uses a device for which Junos Space does not have the latest or supported schema available. In such instances, you must obtain and upload the requisite schema and set it as the default DMI schema for each device family. This ensures that even if an exact matching schema is not available, the default schema is used for managed devices belonging to a specific device family.

If you cannot find the schema equivalent, use the latest schema from the main release or contact the Juniper Support. For example, for an EX3400 switch running Junos OS Release 20.2R2.8, you must use the Junos OS Release 20.2R2.8 schema. If this is not available, you can use the latest schema available from the Junos OS Release 20.2R2 releases. Use [Table 9 on page 15](#) as a guideline for the fallback schema that you can obtain and upload in Junos Space before you start working on Network Director Release 7.1R1.

EX4600 switches are grouped under Campus Switching ELS platform in Network Director even though the device family for EX4600 displays as JUNOS-QFX in the Inventory page. All Campus Switching ELS profiles can be associated with these switches.

You must use the QFX schema to manage this device instead of the EX ELS schema.

QFX10002-60C switches are grouped under the DataCenter ELS platform in Network Director even though the device family for QFX10002-60C is displayed as junos on the Inventory page. All DataCenter ELS profiles can be associated with these switches.

You must use the junos schema to manage this device instead of the junos-qfx schema.

[Table 9 on page 15](#) lists the latest DMI schema that you must obtain and upload in Junos Space before you start working on Network Director Release 7.1R1.

Table 9: DMI Schemas

Device	Name of the DMI Schema	Device Family
EX2300	JUNOS 18.1R3.3	junos
EX2300-48T	JUNOS 18.2R3-S2.9	
EX2300-48P	JUNOS 18.4R1.8	
EX2300 - 24T	JUNOS 20.4R3.8	
EX2300-24MP (Standalone)	JUNOS 21.4R3-S1.5	
EX2300-24MP (Virtual Chassis)		
EX2300-48MP (Standalone)		
EX2300-48MP (Virtual Chassis)		
EX3400	JUNOS 18.1R3.3	junos
EX3400-24P	JUNOS 18.4R1.8	
EX3400-24T	JUNOS 18.2R3-S2.9	
EX3400-48P	JUNOS 19.4R1.10	
EX3400-48T	JUNOS 18.1R3.3	junos
	JUNOS 18.4R1.8	
	JUNOS 18.2R3-S2.9	
	JUNOS 19.4R1.10	
	JUNOS 20.4R3.8	

Table 9: DMI Schemas (*Continued*)

Device	Name of the DMI Schema	Device Family
EX4100-12T	JUNOS 22.3R1.12	junos-ex
EX4100-F-12P	JUNOS 23.1R1.2	
EX4100-48P		
EX4100-48T (Virtual Chassis)		
EX4100-48MP (Virtual Chassis)		
EX4100-F-24P		
EX4100-F-48P (Virtual Chassis)		
EX4100-F-48T		
EX4100-F-24T		
EX4100-24MP		
EX4100-24T		
EX4300	JUNOS 18.4R1.8	junos
EX4300-48MP	JUNOS 18.4R2-S2.3	
	JUNOS 19.4R1.10	
	JUNOS 18.3R1	
	JUNOS 18.4R2-S2.3	
	JUNOS 19.4R1.10	
	JUNOS 20.4R3.8	
EX440-48P	JUNOS 21.4R3-S1.5	junos

Table 9: DMI Schemas (*Continued*)

Device	Name of the DMI Schema	Device Family
EX4400 (Standalone) EX4400 (Virtual Chassis) EX4400-24T EX4400-24P EX4400-48P EX4400-48T	JUNOS 21.1R1.11	junos
EX4400-24X	JUNOS 22.4	junos
EX4400-48F EX4400-48F - Virtual Chassis	JUNOS 21.1R1.11 JUNOS 21.2R2-S1.5	junos-ex
EX4400-24MP EX4400-48MP EX4400-24MP/EX4400-48MP (Virtual Chassis)	Junos OS Release 21.2R1.10	junos-ex
EX4600	JUNOS 18.4R1.8 JUNOS 18.4R2-S2.3	junos-qfx
EX4600-40F	JUNOS 20.4R3-S3.4	junos-qfx
EX4650	JUNOS 18.4R1.8 JUNOS 18.4R2-S2.3	junos-qfx
EX4650-48Y-8C	JUNOS 21.4R3-S1.5	junos

Table 9: DMI Schemas (Continued)

Device	Name of the DMI Schema	Device Family
EX9200	JUNOS 18.3R1.9 JUNOS 18.2R1 JUNOS 18.4R2-S2.3 JUNOS 19.4R1.10	junos
EX9208-15C	JUNOS 20.4R3.8	junos
EX9251	JUNOS 18.3R1.9	junos
EX9253	JUNOS 17.3R3.9 JUNOS 18.3R1.9	junos
QFX5120-48T-6C	JUNOS 20.4R3-S2.5	junos-qfx
QFX5120-48Y-8C	JUNOS 18.4 JUNOS 18.4R2-S2.3	junos-qfx
QFX5120-32C	JUNOS 19.4	junos-qfx
QFX5210-64C	JUNOS 18.1R1 JUNOS 18.4R2-S3 JUNOS 19.4R1.10	junos-qfx
QFX5110 switches with the following product SKUs: QFX5110-32Q QFX5110-48S	JUNOS 18.1R3.3 JUNOS 18.4R2-S2.3 JUNOS 19.4R1.10	junos-qfx

Table 9: DMI Schemas (Continued)

Device	Name of the DMI Schema	Device Family
QFX5100-48S (Standalone) QFX5100-24Q (Standalone) QFX5100-96S (Standalone) QFX5100-48S (Virtual Chassis) QFX5100-24Q (Virtual Chassis) QFX5100-96S (Virtual Chassis)	JUNOS 14.1X53-D42.3	junos-qfx
QFX5100 switches with the following product SKUs: QFX5100-48S-3AFI QFX5100-24Q-3AFI QFX5100-24Q-3AFO QFX5100-24Q-D-3AFI QFX5100-24Q-D-3AFO	JUNOS 18.4R2-S2.3 JUNOS 19.4R1.10	junos-qfx
QFX5100 switches with the following product SKUs: QFX5100-48T-AFI QFX5100-48T-AFO QFX5100-48T-DC-AFI QFX5100-48T-DC-AFO	JUNOS 18.4R2-S2.3 JUNOS 19.4R1.10	junos-qfx
QFX5200	JUNOS 18.4R2-S2.3	junos-qfx
QFX5200-48Y	JUNOS 18.4R1.8 JUNOS 18.4R2-S2.3	junos-qfx
QFX5200-32Q	JUNOS 18.4R2-S2.3	junos-qfx

Table 9: DMI Schemas (Continued)

Device	Name of the DMI Schema	Device Family
QFX5200-32C-AF QFX5200-32C-AFO QFX5200-32C-DC-AFI QFX5200-32C-DC-AFO	JUNOS 18.4R1.8 JUNOS 18.4R2-S2.3	junos-qfx
QFX10002	JUNOS 18.4R2-S2.3 JUNOS 19.1R1.6 JUNOS 19.4R1.10	junos-qfx
QFX10002-36Q	JUNOS 20.4R3-S2.6	junos-qfx
QFX10002-60C	JUNOS 18.4R1 JUNOS 18.4R2-S2.3 JUNOS 19.4R1.10	junos
QFX10008	JUNOS 18.4R2-S2.3 JUNOS 19.1R1.6 JUNOS 19.4R1.10	junos-qfx
QFX10016	JUNOS 19.1R1.6	junos-qfx
MX Series Routers MX80 MX104 MX960 MX2010	JUNOS 19.4R1.10	junos
MX480	JUNOS 17.3R3-S6	junos

Table 9: DMI Schemas (*Continued*)

Device	Name of the DMI Schema	Device Family
MX2020	JUNOS 19.4R1.10	junos
MX960	JUNOS 19.2R1	junos
MX240	JUNOS 19.2R1 JUNOS 19.4R1.10	junos
MX204	JUNOS 18.4R1.8	junos
MX480	JUNOS 19.1R1.6	junos
MX204 MX10003	JUNOS 18.3	junos
MX10008 MX10016	JUNOS 18.4	junos
ACX710	JUNOS 20.2R1	junos
ACX5448	JUNOS 18.4	junos
ACX5448-D	JUNOS 19.2R1-S1	junos
ACX5448-M	JUNOS 19.3	junos

See [Setting a Default DMI Schema](#) for detailed steps for setting a default schema.

DMI Schema Compatibility for Junos OS Service Releases

The [Table 10 on page 22](#) explains how the Device Management Interface (DMI) schemas are chosen for devices running Junos OS Service releases for the following conditions:

- Device with Service Release and Junos Space with FRS Release
- Device with Service Release and Junos Space without matching DMI Schema
- Device with Service Release and Junos Space with more than one DMI Schemas
- Device with Service Release and Junos Space without more DMI Schemas

Table 10: DMI Schema Compatibility for Junos OS Service Releases

Junos OS Version on Device	Junos Space DMI Schemas Installed	Junos Space Default Version	Junos Space Version Chosen for Platform
Device with Service Release and Junos Space with FRS Release			
18.4R1-S1	18.4R1.8 18.3R1.1 18.2R1.1	18.2R1.1	18.4R1.8
Device with Service Release and Junos Space without matching DMI Schema			
18.4R1-S1	18.3R1.1 18.2R1.1	18.2R1.1	18.2R1.1
Device with Service Release and Junos Space with more than one DMI Schemas			
18.4R1-S1	18.4R1.8 18.4R1.7 18.4R1.6 18.3R1.1	18.3R1.1	18.4R1.8

Table 10: DMI Schema Compatibility for Junos OS Service Releases (*Continued*)

Junos OS Version on Device	Junos Space DMI Schemas Installed	Junos Space Default Version	Junos Space Version Chosen for Platform
Device with Service Release and Junos Space without more DMI Schemas			
18.4R1.1	18.3R1.1 18.2R1.1	18.2R1.1	18.2R1.1

In Junos Space Network Management Platform Release 22.2R1, no new Junos OS releases are supported. For information about Junos OS compatibility for releases up to and including Junos Space Platform Release 23.1R1, see [Junos OS Releases Supported in Junos Space Network Management Platform](#).

Operational Notes on General Interface Use

You can log in directly to Network Director without logging in to the Network Management Platform first. To do so, use the URL: `https://<junos-space-host>network director`.

The default username and password is the administrator's username and password.

Deployment of configurations to QFX5100 switches from Network Director is possible only after you run the following commands by using the CLI of the QFX5100 switch:

```
[edit]
user@switch# set system extensions providers juniper license-type juniper deployment-scope
commercial
user@switch# set system extensions providers chef license-type juniper deployment-scope
commercial
```

Prerequisites for Firewall Ports for Network Director Management

This section describes the prerequisites for firewall ports for the Network Director 7.1R1.

The [Table 11 on page 24](#) lists the protocol ports must be open between the Junos Space Network Management Platform server and the devices to discover and manage devices for Network Director.

Table 11: Firewall Ports for Network Director Management

Ports	Scope
22	<p>Enables SSH connections</p> <p>If you have changed the SSH port to a port other than port 22 on your Network Management Platform, you must change the SSH ports on your managed devices to the port that the Network Management Platform uses.</p>
10162	<p>Configures SNMP traps</p> <p>Network Director receives traps from managed devices on this port. (After you install Network Director, use Network Director to configure SNMP on your devices to send traps to Network Director on this port).</p>
21 (TCP) and 69 (UDP)	Uploads the software image and configuration file to the FTP server
8282	Connects to the DLE
8774, 9696, 9292, 8777, 35357, and 8776	Access OpenStack and VMware NSX APIs.

You can verify that the ports are open to the devices by logging in to the Network Management Platform CLI and executing the `nmap` command. For example, to verify that port 8889 is open to a controller, enter:

```
root@space# nmap <controller-ip-address> -p 8889
```

Operational Notes on Device Discovery and Management

- The administrator username that you specify for discovering the OpenStack server must have admin privileges and must belong to an admin tenant in the OpenStack server.
- In a data center network, changes that you make to a vCenter network are dynamically updated in Network Director. However, changes that are made on an OpenStack network require you to wait for the periodic synchronization job to run or you must perform a manual resynchronization for the changes to be updated in Network Director.
- While discovering a CPE switch for a QFabric system, we recommend that you use the root user credentials.
- You must run the following command on all the switches that are connected to a vCenter server for LLDP discovery to work.

```
user@switch# set protocols lldp port-id-subtype interface-name
```

Known Behavior

This section lists the known behavior in Network Director Release 7.1R1.

- When you discover devices in Network Director for the first time, the syslog pattern BR_INFRA_DEVICE is pushed into the device for JUNOS and JUNOS-QFX device families.
- The following alarms are cleared automatically when the corresponding clear event is received, and are available as part of the clear alarm list.
 - FanFailureAlarm
 - TemperatureAlarm
 - HardDiskFailedAlarm
 - PMonOverloadSetAlarm
 - DomAlertSetAlarm
 - POE Power usage High

- VccpPortAlarm and VccpMemberAlarm
 - PowerSupplyFailureAlarm and PowerSupplyInputFailureAlarm
 - CosFabricQueueOverflowAlarm and CosWanQueueOverflowAlarm
 - FRUPowerOffAlarm, FRUFailedAlarm, and FRUOfflineAlarm
 - CollUnavailableDestAlarm, CollFlowOverloadAlarm, and CollMemoryUnavailableAlarm
 - JdhcpLocalServerIfLimitExceededAlarm and Jdhcpv6LocalServerIfLimitExceededAlarm
 - FabricPowerSupplyFailure, FabricFanFailure, FabricTemperatureAlarm, FabricFruPowerOffAlarm, FabricFruFailedAlarm, and FabricFruOfflineAlarm
- Sometimes the CMEventAttributes table grows to several GBs and consumes disk space. To overcome this, execute the following steps after installing Network Director 3.8R1 or after upgrading Network Director to 3.8R1:
 1. Log in into Network Director.
 2. Go to **Preference -> Fault -> Additional Setting**.
 3. Modify the Number of Days to keep the alarm and event or alarm.

Modify the Number of Days such that it triggers a purge event that clears all existing alarms and events. This is a one-time activity.
 4. Click **OK**.
 - If the alarms are not purged, truncate the tables CMEvent, CMEventAttributes, CMAAlarm, CMAAlarmAttributes using the following steps. This clears the tables of all existing alarms and events. You can view any new alarms and events generated thereafter in Network Director. The alarms will be purged as expected after you perform this procedure.
 1. Take a backup of the current database.
 2. Stop the JBoss server using the following commands:

```
service jmp-watchdog stop
service jmp-firewall stop
service jboss stop
service jboss-dc stop
```

3. Run the following MySQL commands one after the other:

```
SET FOREIGN_KEY_CHECKS=0;
TRUNCATE TABLE CMEvent;
TRUNCATE TABLE CMEventAttributes;
TRUNCATE TABLE CMAAlarm;
TRUNCATE TABLE CMAAlarmAttributes;
SET FOREIGN_KEY_CHECKS=1;
```

4. Start the JBoss server using the following command:

```
service jmp-watchdog start
```

5. After JBoss started, execute the following steps:

- a. Log in into Network Director.
- b. Go to **Preference -> Fault -> Additional Setting**.
- c. Modify the Number of Days to keep the alarm and event or alarm.

Modify the Number of Days such that it triggers a purge event that clears all existing alarms and events. This is a one-time activity.

- d. Click **OK**.

- For EX4300 satellite devices to be part of a Junos Fusion Enterprise, ensure that you use *U-Boot 2011.12-00062-gf837a99 (Jul 11 2014 - 13:47:59)* and *FreeBSD/PowerPC U-Boot bootstrap loader 2.4* as the boot loader, with PoE firmware version *2.6.3.92.1*, and *10G PIC-2 ports* as cluster ports.
- When defining your network configuration in quick templates by using a particular command, ensure that you define the subcommands individually. Stating subcommands as a single command causes errors. For example, the commands `set snmp location sunnyvale` and `set snmp contact admin@example.com` are valid when defined individually. However, if you combine these commands into the single command `set snmp location sunnyvale contact admin@example.com`, schema validation treats the last command `contact` as an extra entry and causes an error.
- Network Director does not support Junos Space domains. Do not assign devices to domains in Junos Space.
- In Location View, if you assign all the members of a Virtual Chassis Virtual Chassis Fabric to buildings or floors, then none of the Device level tasks are available. We recommend that you assign the entire logical device—the Virtual Chassis, or the Virtual Chassis Fabric—to any given location.

- When an EX4300 switch is used as a member switch in a QFX5100 mixed mode Virtual Chassis or Virtual Chassis Fabric, Network Director does not consider the configurations that you make on DCBX and Device Count fields, and configuration commits fail.
- Bandwidth utilization value for VCP and aex interfaces might not be displayed in the Topology View.
- Network Director might not display:
 - Unprovisioned members added to a Virtual Chassis or a Virtual Chassis Fabric.
 - The *Not Present* status for members removed from a Virtual Chassis or a Virtual Chassis Fabric.
- For Data Center Switching ELS Port profile, a profile assignment might fail for channelized interfaces in a port range even when the channelized interfaces in that port range are available on the devices.
- The Validate Pending Configuration task does not validate the unsupported configurations on devices.
- In the manual mode, when out-of-band changes are resynchronized, the conflicting CR might not be listed for quick templates.
- During a cluster switchover, if a backup configuration job or a device discovery job is running in Network Director, the switchover status might display as In progress even after the switchover is complete.
- In a Junos Fusion setup, you might need to assign two aggregation devices for an auto-profile policy. For example, if a satellite device has 65 ports, then you might need to add two aggregation devices as
 AD1: ge-65/0/1- ge-65/0/10 and AD2 : ge-65/0/1 - ge-65/0/10. To assign both the aggregation devices, select the aggregation devices at the group level and do not select the satellite device.
- When editing a MACsec profile that is already deployed in Network Director, you can modify all the configuration parameters in the MACsec profile, except the Connection Association Name and MACsec mode.
- The resynchronization job for the MX Series device fails if the VLAN ID for the device is configured as none from the device CLI.
- You cannot modify the configuration for a Layer 3 Fabric from Network Director if the Layer 3 Fabric was created using the brownfield process during device discovery in Network Director.
- When viewing real-time traffic analysis on a particular port, if Network Director configures the sflow command on the device, the command is deleted when you close the Real Time window. Similarly, if a third-party tool sets the sflow configuration on a particular port to view real-time traffic analysis on the port, the sflow configuration is removed when you close the Traffic Analysis page.

- Network Director does not support cold migration of virtual machines. Cold migration is the migration of a virtual machine that is powered off.
- When the port statistics counters on a device are reset either manually or during an image upgrade, the traffic widgets might show incorrect values for some time. If this happens, wait for 2 to 3 poll intervals, after which the issue resolves itself.
- The following wireless application user interface screens are still available in Logical View > Monitor > Client. These user interface screens are not applicable to campus architecture.
 - Top Users
 - Top Sessions by MAC address
 - Session Trends
 - Current Sessions by Type

Known Issues

This section lists the known issues in Network Director Release 7.1R1.

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

- After upgrading to Junos Space Network Director Release 6.1R1, the alarm trend chart fails to load under network and switching network level. However, the alarm trend chart loads at device level until you execute alarm segregation. [PR1654598]
- After you upgrade Network Director from previous releases to Network Director Release 5.3, the physical inventory is not available for few devices after you delete devices and rediscover them from Network Director. [PR1641860]
- The following issues are seen after resynchronizing devices that are part of deployed ESI-LAG:
 - ESI-LAG CLIs are not removed from peer devices after deleting ESI-LAG from Network Director.
 Workaround: Create quick template for deleting LAG (peer port to client port).
 For example, delete interfaces ae1.
 - VLANs that are part of routing instance are not removed from devices after deleting ESI-LAG from Network Director.
 Workaround: Delete VLANs from VLAN profiles.

[PR1560855]

- LAG deployment and deletion fail when the device is part of ESI-LAG.

Workaround: Use quick template to create LAG and deployment. [PR1560940]

- The database status of standby node is "Out of Sync" after you upgrade Junos Space Network Management Platform Release 21.1R1.4 from Junos Space Network Management Platform Release 21.2R1.6. [PR1608479]
- The multicast-snooping-options knob is missing for the EX2300 device as compared to the configuration knobs present in the device CLI. [PR1665298]

Hot Patch Releases

IN THIS SECTION

- [Installation Instructions | 31](#)
- [Resolved Issues | 32](#)

This section describes the installation procedure and resolved issues in Network Director Release 7.1R1 hot patches.

During hot patch installation, the script performs the following operations:

- Blocks the device communication.
- Stops JBoss, JBoss-dc, and watchdog services.
- Backs up existing configuration files and Enterprise Application Archive (EAR) files.
- Updates the Red Hat Package Manager (RPM) files.
- Restarts the watchdog process, which restarts JBoss and JBoss-dc services.
- Unblocks device communication after the watchdog process is restarted for device load balancing.

NOTE: You must install the hot patch on Network Director 7.1R1 or on any previously installed hot patch. The hot patch installer backs up all the files that are modified or replaced during hot patch installation.

Installation Instructions

Perform the following steps in the CLI of the JBoss-VIP node only:

1. Download the Network Director 7.1R1 Patch vX from the [Downloads](#).

X is the hot patch version. For example, v1, v2, and so on.

2. Copy the **ND-7.1R1-hotpatch-vX.tgz** file to the **/home/admin** folder of the VIP node.
3. Verify the checksum of the hot patch:

```
md5sum ND-7.1R1-hotpatch-vX.tgz
```

4. Extract the **ND-7.1R1-hotpatch-vX.tgz** file:

```
tar -zxvf ND-7.1R1-hotpatch-vX.tgz
```

5. Change the directory to **ND-7.1R1-hotpatch-vX**:

```
cd ND-7.1R1-hotpatch-vX
```

6. Execute the `patchme.sh` script from the **ND-7.1R1-hotpatch-vX** folder:

```
sh patchme.sh
```

The script detects whether the deployment is standalone deployment or a cluster deployment and installs the patch accordingly.

A marker file **/etc/.ND-7.1R1-hotpatch-vX** is created with the list of RPMs that are fixed in the hot patch.

NOTE: We recommend that you install the latest available hot patch version, which is the cumulative patch.

Resolved Issues

Table 12 on page 32 lists the resolved issues in Network Director Release 7.1R1 hot patch.

Table 12: Resolved Issues in Network Director Release 7.1R1 Hot Patch

PR	Description	Hot Patch Version
PR1749726	Junos image deployment fails on the EX3400 Series Ethernet Switch Virtual Chassis from Network Director.	V2
PR1746747	Network Director generates incorrect configurations due to validation errors.	V2
PR1747777	Network Director fails to generate CLI and VLAN configurations for interfaces.	V2
PR1752011	The system does not allow port profile with MTU (maximum transmission unit) value of 9216 for MX and ACX series devices.	V2
PR1757596	Network Director fails to deploy the interface configuration for EX series devices.	V3
PR1762742	User is unable to get the Integrated routing and bridging (IRB) interface IP address from Network Director.	V3

Table 12: Resolved Issues in Network Director Release 7.1R1 Hot Patch *(Continued)*

PR	Description	Hot Patch Version
PR1813915	User is unable to create or manage Link Aggregation group from Network Director UI.	V4

NOTE: If the hot patch contains a user interface fix, you must clear the Web browser’s cache for the latest changes to take effect.

Revision History

- 8 June, 2023—Revision 1, Junos Space Network Director Release 7.1R1.
- 31 August, 2023—Revision 2, Junos Space Network Director Release 7.1R1 Hot Patch V1.
- 5 October, 2023—Revision 4, Junos Space Network Director Release 7.1R1 Hot Patch V3.
- 8 July, 2024—Revision 5, Junos Space Network Director Release 7.1R1 Hot Patch V4.

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