# Cisco Nexus 9000 Series NX-OS Release Notes, Release 6.1(2)I1(1)

**Date: November 21, 2013**
**Part Number: OL-30668-01**
**Current Release: Release 6.1(2)I1(1)**

This document describes the features, caveats, and limitations for Cisco NX-OS Release 6.1(2)I1(1) software for use on the Cisco Nexus 9000 Series switches. Use this document in combination with documents listed in the Related Documentation, page 8.

Table 1 shows the online change history for this document.

***Table 1        Online History Change***

| Part Number | Revision | Date | Description |
|---|---|---|---|
| OL-30668-01 | A0 | November 21, 2013 | Created release notes for Release 6.1(2)I1(1). |

# Contents

This document includes the following sections:

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# Introduction

Cisco NX-OS software is a data center-class operating system designed for performance, resiliency, scalability, manageability, and programmability at its foundation. The Cisco NX-OS software provides a robust and comprehensive feature set that meets the requirements of virtualization and automation in mission-critical data center environments. The modular design of the Cisco NX-OS operating system makes zero-impact operations a reality and enables exceptional operational flexibility.

The Cisco Nexus 9000 Series uses an enhanced version of Cisco NX-OS software with a single binary image that supports every switch in the series, which simplifies image management.

# System Requirements

This section includes the following topics:

# Supported Device Hardware

Table 2 lists the Cisco Nexus 9000 Series hardware that Cisco NX-OS Release 6.1(2)I1(1) supports.

*Table 2        Cisco Nexus 9000 Series Hardware Supported by Cisco NX-OS Release 6.1(2)I1(1)*

| Product ID | Hardware | Quantity |
|---|---|---|
| N9K-C9508 | Cisco Nexus 9508, 8-slot chassis | 1 |
| N9K-C9508-FM | Cisco Nexus 9500 Series fabric module | 6 |
| N9K-X9636PQ | Cisco Nexus 9500 36-port, 40 Gigabit Ethernet QSPF aggregation module | 8 |
| N9K-SC-A | Cisco Nexus 9500 Series System Controller Module | 2 |
| N9K-SUP-A | Cisco Nexus 9500 Series supervisor module | 2 |
| N9K-C9508-FAN | Cisco Nexus 9508 fan tray assemblies | 3 |
| N9K-PAC-3000W-B | Cisco Nexus 9500 Series, 3000 W AC power supply | 6 |

For additional information about the supported hardware, see the *Cisco Nexus 9508 Switch Site Preparation and Hardware Installation Guide.*

## Supported Optics

Table 3 lists the optical components that Cisco NX-OS Release 6.1(2)I1(1) software supports.

*Table 3        Transceivers and Cables*

| Product ID | Transceivers and Cables |
|------------|-------------------------|
| QSFP-40G-SR4 | 40GBASE-SR4 QSFP+ transceiver module for MMF, 4-lanes, 850-nm wavelength, 12-fiber MPO/MTP connector |
| QSFP-40G-CSR4 | 40GBASE-CSR4 QSFP+ transceiver module for MMF, 4-lanes, 850-nm wavelength, 12-fiber MPO/MTP connector, 300 m reach with OM3 fiber |
| QSFP-40G-SR-BD | QSFP+ bidirectional transceiver module, duplex Multimode fiber, LC duplex connector, 100-m reach with OM3 fiber |
| QSFP-40GE-LR4 | 40GBASE-LR4 QSFP+ 40G transceiver module for single mode fiber, 4 CWDM lanes in 1310-nm window muxed inside module, duplex LC connector, 10-km, 40G Ethernet rate only |
| QSFP-4x10G-AC7M | 40GBASE-CR4 QSFP+ to four 10GBASE-CU SFP+ direct attach breakout cable assembly, 7 meter active |
| QSFP-4x10G-AC10M | 40GBASE-CR4 QSFP+ to four 10GBASE-CU SFP+ direct attach breakout cable assembly, 10 meter active |
| QSFP-H40G-CU5M | 40GBASE-CR4 QSFP+ direct-attach copper cable, 5 meter passive |
| QSFP-H40G-CU3M | 40GBASE-CR4 QSFP+ direct-attach copper cable, 3 meter passive |
| QSFP-H40G-CU1M | 40GBASE-CR4 QSFP+ direct-attach copper cable, 1 meter passive |
| QSFP-H40G-ACU7M | 40GBASE-CR4 QSFP+ direct-attach copper cable, 7 meter active |
| QSFP-H40G-ACU10M | 40GBASE-CR4 QSFP+ direct-attach copper cable, 10 meter active |

**Note**    For the current release, if you are using the 4 10G breakout cables with a Cisco Nexus 9000 Series switch, all ports on the I/O module must be set to breakout mode.

# New and Changed Information

This section lists the new and changed features in Cisco NX-OS Release 6.1(2)I1(1) and includes the following topics:

## New Hardware Features in Cisco NX-OS Release 6.1(2)I1(1)

Cisco NX-OS Release 6.1(2)I1(1) supports the following new hardware:

- The Cisco Nexus 9508 chassis (N9K-C9508)
- Supervisor modules (up to two supervisor modules) (N9K-SUP-A)

- System controllers (up to two system controller modules) (N9K-SC-A)
- I/O modules (up to eight I/O modules):
  - 36-port 40-Gbps QSFP+ aggregation I/O module (N9K-X9636PQ)
- Fabric modules (up to six fabric modules behind the fan trays) (N9K-C9508-FM)
- Fan trays (three) (N9K-C9508-FAN)
- AC power supplies (up to six 3-kW AC power supplies with front-to-back) (N9K-PAC-3000W-B)

# New Software Features in Cisco NX-OS Release 6.1(2)I1(1)

Cisco NX-OS Release 6.1(2)I1(1) supports the features listed in the following sections:

## Layer 3 Features

- IPv4 support
  - Static routes
  - Border Gateway Protocol (BGP), Enhanced Interior Gateway Routing Protocol (EIGRP), Open Shortest Path First version 2 (OSPFv2,) and Intermediate System-to-Intermediate System (IS-IS)
  - Virtual routing and forwarding Lite (VRF-Lite), VRF Route Leaking
  - Bidirectional Forwarding Detection (BFD)
  - Dynamic Host Configuration Protocol (DHCP) Relay
- IPv6 support
  - Static routes
  - BGP, OSPFv3
  - VRF-Lite, VRF Route Leaking
  - DHCP Relay
  - Intermediate System-to-Intermediate System (IS-IS)
  - Enhanced Interior Gateway Routing Protocol (EIGRP)

## Multicast Features

- Protocol Independent Multicast (PIM)–Sparse, Any Source Multicast (ASM)
- Anycast rendezvous point (RP)

- Multicast Source Discovery Protocol (MSDP)

## Monitoring Capabilities

- Generic Online Diagnostics (GOLD)
- Minimum, Complete, Bypass, On-Demand, Health Checks
- Onboard Fault Logging (OBFL)
- Embedded Event Manager (EEM)–scheduler, monitor, event manager
- Integrated packet capture/analysis with Wireshark
- Default SSD for logging and data capture
- SPAN
  - Source or destination on the switch
- Encapsulated Remote Switch Port Analyzer (ERSPAN)
  - Source on switch
  - ACL Filtering

## Interface Types and Features

- Layer 3 routed
- Loopback interface
- Port channels
  - Static mode
  - 802.3ad Link Aggregation Control Protocol (LACP)
- Unidirectional Link Detection (UDLD)

## Device Management Capabilities

- PowerOn Auto Provisioning (PoAP)
- Configuration rollback
- Configuration session manager
- FTP/SFTP/TFTP client
- Network Time Protocol (NTP)
  - Client, peer, server, ACL, and authentication
- SCP Client
- RMON
- Smart Call Home
- SNMP v1, v2, v3
- Syslog
- VTY
- XML (Network Configuration Protocol [NETCONF])

- SSHv2 (client, server)
- Telnet (client, server)
- 100/1000 Management port
- RS-232 Serial Console port
  – Locator LED (Beacon) for line cards (chassis)

## Extensibility and Programming Tools

- Linux tools
  – BASH Shell access
- BCM Shell access
- Python Shell
- NX-API
- TCL Shell

## Security Features

- Ingress/egress ACLs using Layer 3, Layer 4 fields
- Authentication, authorization, and accounting (AAA)
- LDAP support
- RADIUS
- RBAC
- TACACS+

# Installation Notes

Only one software image (called nx-os) is required to load the Cisco NX-OS operating system. This image runs on all Cisco Nexus 9000 Series switches.

# Limitations

Cisco NX-OS Release 6.1(2)I1(1) does not support the following features:

- The Generic Online Diagnostics (GOLD) port loopback test
- An ERSPAN type destination
- An egress filter on an ACL-based SPAN
- All VLAN features of SPAN/ERSPAN
- FEX

The following features are not enabled in this release:

- Layer 2 and vPC

- FabricPath and OTV
- LISP
- MPLS
- Fiber Channel
- Fiber Channel over Ethernet (FCoE)

# Caveats

This section includes the following topic:

- Open Caveats—Cisco NX-OS Release 6.1

# Open Caveats—Cisco NX-OS Release 6.1

Table 4 lists the open caveats in Cisco NX-OS Release 6.1(2)I1(1). Click the Bug ID to access the Bug Search tool and see additional information about the bug.

*Table 4      Open Caveats in Cisco NX-OS Release 6.1(2)I1(1)*

| Bug ID | Description |
|--------|-------------|
| CSCui07413 | The **show hardware** command to display internal forwarding utilization has not been implemented. |
| CSCui54272 | Support for link pause is needed on the Cisco Nexus 9500 Series device. |
| CSCui83920 | The Ethanalyzer capture filter is not working correctly. |
| CSCuj03386 | There is no interface counter available on Layer 3 subinterfaces |
| CSCuj56839 | After a **write erase** command, the ASCII configuration must be loaded twice to apply the breakout configuration. |
| CSCuj97891 | The ACL consistency check does not work on subinterfaces and IPv6 ACLs. |
| CSCul03369 | Multicast packet drops occur when the fabric module reloads. |
| CSCul15720 | The **show pc load-balance** command is not working correctly. |
| CSCul20901 | Jumbo packet counters for subinterfaces are not working correctly for Layer 3 packet sizes of 9216. |
| CSCul28058 | The **show port-channel load-balance** command is not working correctly for multicast traffic. |
| CSCul30376 | Benign syslog messages appear when there is an online insertion and removal (OIR) of the standby supervisor module. |
| CSCul34192 | A "No HW resource" error appears for a second SPAN session that has the same bidirectional sources as the first session. |
| CSCul38830 | After a module is inserted, the status LED does not instantaneously start blinking. |

# Related Documentation

This section lists the product documentation for Cisco NX-OS Release 6.1(2)I1(1), which is available at the following URL:

http://www.cisco.com/en/US/products/ps13386/tsd_products_support_series_home.html

## Cisco NX-OS Configuration Guides

*Cisco Nexus 9000 Series NX-OS Fundamentals Configuration Guide*

*Cisco Nexus 9000 Series NX-OS High Availability and Redundancy Guide*

*Cisco Nexus 9000 Series NX-OS Interfaces Configuration Guide*

*Cisco Nexus 9000 Series NX-OS Multicast Routing Configuration Guide*

*Cisco Nexus 9000 Series NX-OS Quality of Service Configuration Guide*

*Cisco Nexus 9000 Series NX-OS Security Configuration Guide*

*Cisco Nexus 9000 Series NX-OS System Management Configuration Guide*

*Cisco Nexus 9000 Series NX-OS Unicast Routing Configuration Guide*

*Cisco Nexus 9000 Series NX-OS Verified Scalability Guide*

## Other Software Documents

*Cisco NX-OS Licensing Guide*

*Cisco Nexus 7000 Series and 9000 Series NX-OS MIB Quick Reference*

*Cisco Nexus 9000 Series NX-OS Programmability Guide*

*Cisco Nexus 9000 Series NX-OS System Messages Reference*

*Cisco Nexus 9000 Series NX-OS Troubleshooting Guide*

*Cisco NX-OS XML Interface User Guide*

## Hardware Documents

*Cisco Nexus 9508 Switch Site Preparation and Hardware Installation Guide*

# Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

Open a service request online at:

https://tools.cisco.com/ServiceRequestTool/create/launch.do

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (http://www.openssl.org/). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

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