Cisco Nexus 9500 Platform Switches

Product Overview

Changing application environments are placing new demands on your IT infrastructure. With application workloads deployed across a mix of virtualized and nonvirtualized server and storage infrastructures, your network must provide constant connectivity, security, and visibility across bare-metal, virtualized, and cloud computing environments. For example:

- Application instances are created dynamically, so provisioning, modification, and removal of application network connectivity also need to be dynamic.
- With business units demanding accelerated application deployments, your IT department needs to provide a shared IT infrastructure that addresses time-to-market needs and an increased return on investment (ROI).
- When you deploy a mix of custom, open source, and off-the-shelf commercial applications, your IT department must manage security and quality of service (QoS) for environments that support multitenancy.
- With applications transitioning to a less monolithic, scale-out, multinode model, your IT infrastructure must scale with the speed of business and provide support for both 10 and 40 Gigabit Ethernet connectivity.

The Cisco Nexus® 9000 Series Switches include modular and fixed-port switches that overcome these challenges with a flexible, agile, low-cost, application centric infrastructure.

The Cisco Nexus 9500 switching platform (Figure 1) offers three modular options: the Cisco Nexus 9504 Switch with 4 slots, the Cisco Nexus 9508 Switch with 8 slots, and the Cisco Nexus 9516 Switch with 16 slots. All three switches use the same supervisor, system controller, power supplies, and line cards[1]. The Cisco Nexus 9500 platform consists of Layer 2 and 3 nonblocking Ethernet switches with backplane bandwidth of up to 60 terabits per second (Tbps), the Cisco Nexus 9504, 9508, and 9516 Switches support 1, 10, 40, and 100 Gigabit Ethernet interfaces through a comprehensive selection of modular line cards. Configurable with up to 2304 10 Gigabit Ethernet, 576 40 Gigabit Ethernet ports or 128 100 Gigabit Ethernet ports, they provide ample capacity for both access- and aggregation-layer deployments.

[1] N9K-X9636PQ is not supported in 16 slot chassis

Figure 1. Cisco Nexus 9000 Series Switches: Family Portrait

There are two modes of operation for Cisco Nexus 9000 Series. Organizations can use Cisco® NX-OS Software with the Cisco Nexus 9000 Series in standard Cisco Nexus switch environments. They can also use the application-centric infrastructure (ACI)-ready hardware infrastructure to take full advantage of an automated, policy-based, systems management approach. This data sheet covers standard Cisco Nexus switch deployment scenarios.

Cisco Nexus 9500 Platform Features and Benefits

The Cisco Nexus 9500 is a modular chassis that supports up to 16 line cards, 2 supervisor modules, 2 chassis controllers, 3 fan trays, 6 fabric modules, and 10 power supplies. The switch supports comprehensive Layer 2 and 3 functions on nonblocking 1, 10, 40 and 100 Gigabit Ethernet ports.

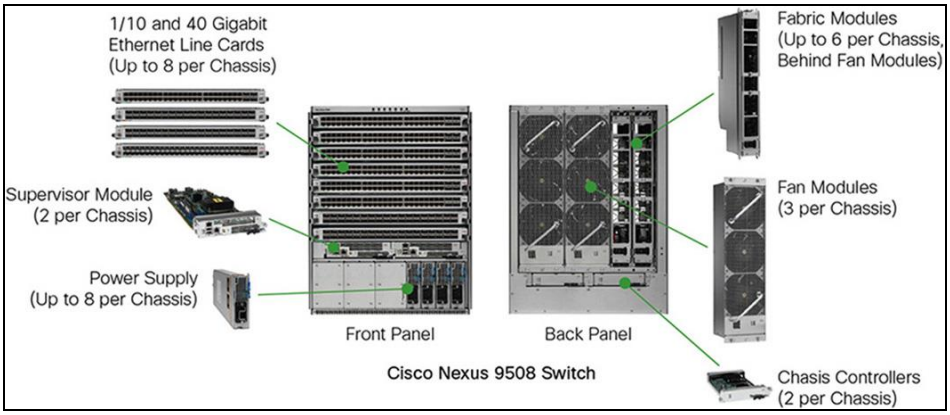
Table 1. Cisco Nexus 9500 Platform Features and Benefits

Capability	Benefit
Predictable high performance	The switch delivers up to 60 Tbps of nonblocking performance with latency of less than 5 microseconds, enabling data center customers to build a robust network fabric that can scale from as few as 200 10 Gigabit Ethernet server ports to more than 200,000 10 Gigabit Ethernet server ports.
High-density 1 and 10 Gigabit Ethernet configuration	The Cisco Nexus 9500 platform helps organizations transition from existing 1 Gigabit Ethernet Cisco Catalyst® 6500 Series Switches server access designs to 10 Gigabit Ethernet server access designs with the same port density.
High-density 10, 40 and 100 Gigabit Ethernet configuration	The Cisco Nexus 9000 Series helps organizations transition from 1 and 10 Gigabit Ethernet infrastructures to 10 40 and 100 Gigabit Ethernet infrastructures to support the increased bandwidth demands of scale-out, multinode application environments.
Advanced optics	Cisco offers a pluggable 40 Gigabit Ethernet QSFP+ bidirectional transceiver that enables customers to use existing 10 Gigabit Ethernet data center cabling to support 40 Gigabit Ethernet connectivity. This allows the adoption of 40 Gigabit Ethernet with no cable infrastructure upgrade costs.
Highly available, scalable, and robust solution	All major components are redundant, including supervisors, system controllers, power supplies, and fan trays. The switch line cards use a mix of merchant and Cisco application-specific integrated circuits (ASICs) to produce a low-complexity, low-cost design. All buffer memory is integrated into the forwarding ASICs, avoiding the need for a large number of external memory modules. All transceivers are pluggable to support the highest possible mean time between failure (MTBF) for the switch.
Chassis designed for 2 to 3 future generations of line cards	The flexible and efficient chassis design has 100% headroom for future expansion with the capability to support more bandwidth and cooling and twice the number of power supplies needed to support today's maximum configuration.
Power efficiency	The Cisco Nexus 9500 platform is the first switch chassis designed without a midplane. Line cards and fabric modules connect directly. This design approach provides optimal front-to-back airflow and helps the switch operate using less power. In addition, all Cisco Nexus 9000 Series power supplies are 80 Plus Platinum rated. The typical power consumption per 10 Gigabit Ethernet port is less than 3.5 watts (W). The typical power consumption of each 40 Gigabit Ethernet port is less than 14W.

Cisco Nexus 9500 Platform Components

The Cisco Nexus 9500 platform is built using the components illustrated in Figure 2 and described in the following sections.

Figure 2. Cisco Nexus 9500 Platform Components



Cisco Nexus 9500 Platform Line Cards for Non-ACI Deployments

The Cisco Nexus 9500 platform supports a variety of line cards, all able to be configured in any combination (Table 2).

Table 2. Cisco Nexus 9500 Line Cards

N9K-X9408PC-CFP2: 100G Gigabit Ethernet Line Card 	• 8-port 100 Gigabit Ethernet CFP2 line card • Line rate > 200-byte packets • Requires 4 fabric modules for maximum bandwidth • Designed for use in an aggregation switch role • Cannot be upgraded to ACI mode • Supported in 4, 8 and 16 slot chassis
N9K-X9636PQ: 40 Gigabit Ethernet Line Card 	• 36-port 40 Gigabit Ethernet QSFP+ line card • Nonblocking • Requires 6 fabric modules for maximum bandwidth • Designed for use in an aggregation switch role • Cannot be upgraded to ACI mode • Supported in 4- and 8-slot chassis
N9K-X9536PQ: 40 Gigabit Ethernet Line Card 	• 36-port 40 Gigabit Ethernet QSFP+ line card • 1.5:1 oversubscription • Requires 6 fabric modules for maximum bandwidth • Designed for 10 and 40 Gigabit Ethernet access and aggregation • Can be upgraded to ACI leaf mode • Supported in 4-, 8-, and 16-slot chassis

N9K-X9564PX: 1 and 10 Gigabit Ethernet Access-Layer and 10 and 40 Gigabit Ethernet Aggregation-Layer Line Card 	• 48-port 1 and 10 Gigabit Ethernet SFP+ with 4-port 40 Gigabit Ethernet QSFP+ line card • Nonblocking • Requires 3 fabric modules for maximum bandwidth • Designed for 10 and 40 Gigabit Ethernet access and aggregation • Supports both direct-attach 10 Gigabit Ethernet copper cabling and optical transceivers • Offers 4 QFSP+ ports that provide 40 Gigabit Ethernet server access, uplink, and downlink capacity • Can be upgraded to ACI leaf mode • Supported in 4-, 8-, and 16-slot chassis
N9K-X9564TX: 1 and 10 Gigabit Ethernet Copper Access-Layer and 10 and 40 Gigabit Ethernet Aggregation-Layer Line Card 	• 48-port 1 and 10GBASE-T plus 4-port 40 Gigabit Ethernet QSFP+ line card • Nonblocking • Requires 3 fabric modules for maximum bandwidth • Designed for end-of row (EoR) and middle-of-row (MoR) environments • Supports 100 Megabit Ethernet, 1 Gigabit Ethernet, and 10GBASE-T copper cabling connectivity for server access • Offers 4 QFSP+ ports that provide 40 Gigabit Ethernet server access, uplink, and downlink capacity • Can be upgraded to ACI leaf mode • Supported in 4-, 8-, and 16-slot chassis
N9K-X9432PQ: 40 Gigabit Ethernet Line Card 	• 32-port 40 Gigabit Ethernet QSFP+ line card • Line rate > 200-byte packets • Requires 4 fabric modules for maximum bandwidth • Designed for 10 and 40 Gigabit Ethernet access and aggregation • Cannot be upgraded to ACI mode • Supported in 4-, 8-, and 16-slot chassis
N9K-X9464PX: 1 and 10 Gigabit Ethernet Access-Layer and 10 and 40 Gigabit Ethernet Aggregation-Layer Line Card 	• 48-port 1 and 10 Gigabit Ethernet SFP+ with 4-port 40 Gigabit Ethernet QSFP+ line card • Line rate > 200-byte packets • Requires 4 fabric modules for maximum bandwidth • Designed for 10 and 40 Gigabit Ethernet access and aggregation • Supports both direct-attach 10 Gigabit Ethernet copper cabling and optical transceivers • Cannot be upgraded to ACI mode • Supported in 4-, 8-, and 16-slot chassis
N9K-X9464TX: 1 and 10 Gigabit Ethernet Copper Access-Layer and 10 and 40 Gigabit Ethernet Aggregation-Layer Line Card 	• 48-port 1 and 10GBASE-T plus 4-port 40 Gigabit Ethernet QSFP+ line card • Line rate > 200-byte packets • Requires 4 fabric modules for maximum bandwidth • Designed for end-of row (EoR) and middle-of-row (MoR) environments • Supports 100 Megabit Ethernet, 1 Gigabit Ethernet, and 10GBASE-T copper cabling connectivity for server access • Cannot be upgraded to ACI mode • Supported in 4-, 8-, and 16-slot chassis

Cisco Nexus 9500 Platform Fabric Modules

The Cisco Nexus 9500 platform has a Clos fabric design that interconnects the line cards with rear-mounted fabric modules. It supports up to six fabric modules, each with up to 10 24-Tbps line-rate packet forwarding capacity. All fabric cards are directly connected to all line cards. With load balancing across fabric cards, the architecture achieves optimal bandwidth distribution within the chassis. See Table 3 for ordering information.

Table 3. Cisco Nexus 9500 Line Cards and Fabric Modules

Part Number	Product Description	Required Fabric Modules for Maximum Bandwidth
N9K-X9408PC-CFP2	Nexus 9500 linecard, 8p 100G CFP2 aggregation linecard (Linerate >200 Bytes)	4
N9K-X9636PQ	Nexus 9500 linecard, 36p 40G QSFP aggregation linecard (non-blocking)	6
N9K-X9536PQ	Nexus 9500 linecard, 36p 40G QSFP aggregation linecard (1.5:1 Oversubscribed). ACI Leaf Ready	6
N9K-X9564TX	Nexus 9500 linecard, 48p 1/10G-T plus 4p QSFP linecard (non-blocking). ACI Leaf Ready	3
N9K-X9564PX	Nexus 9500 linecard, 48p 1/10G SFP+ plus 4p QSFP linecard (non-blocking). ACI Leaf Ready	3
N9K-X9432PQ	Nexus 9500 linecard, 32p 40G QSFP aggregation linecard (Linerate >200 Bytes)	4
N9K-X9464TX	Nexus 9500 linecard, 48p 1/10G-T plus 4p QSFP linecard (non-blocking)	4
N9K-X9464PX	Nexus 9500 linecard, 48p 1/10G SFP+ plus 4p QSFP linecard (non-blocking)	4

Cisco Nexus 9500 Platform Supervisor Module

A pair of redundant supervisor modules manages all switch operations using a state-synchronized active-standby model. The supervisor accepts an external clock and supports management through multiple ports, including two USB ports, a serial console, and a 10/100/1000-Mbps network port. Two supervisors are available to provide deployment options:

Supervisor A: 4-Core, 1.8GHz x86 CPU, 16 GB of RAM and 64 GB solid state drive (SSD)

Supervisor B: 6-Core, 2.2GHz x86 CPU, 24 GB of RAM and 256 GB solid state drive (SSD)

Either supervisor can be used in NX-OS deployments, but Supervisor B provides additional compute and storage for enhanced performance. Redundant supervisors need to be of same type within a chassis.

Cisco Nexus 9500 Platform System Controller

A pair of redundant system controllers offloads chassis management functions from the supervisor modules. The controllers are responsible for managing power supplies and fan trays and are a central point for the Gigabit Ethernet out-of-band channel (EOBC) between the supervisors, fabric modules, and line cards.

Cisco Nexus 9500 Platform Power Supply

The Cisco Nexus 9500 platform supports up to ten hot-swappable, front-panel-accessible power supplies. A fully loaded chassis can operate with two 3000W AC power supplies. N+1 and N+N redundancy modes are supported. The 3000W AC power supply is 80 Plus Platinum rated, providing more than 90 percent efficiency across typical workloads.

The additional four power supply slots are not needed with existing line cards but offer headroom to support higher-bandwidth line cards in the future. Two power supplies are available to provide deployment options:

N9K-PAC-3000W-B Nexus 9500 3000W Standard 200-240v AC PS, Port Side Intake

N9K-PUV-3000W-B Nexus 9500 3000W Universal AC/DC PS, Port Side Intake. This power supply can be used for 180-305VAC or 192-400VDC deployments.

Cisco Nexus 9500 Platform Fan Trays

Three hot-swappable fan trays support front-to-back cooling. Each fan tray covers two fabric modules and can be removed for access.

Deployment Scenarios

The Cisco Nexus 9500 platform is a versatile data center switching platform. Switches can operate as EoR access-layer switches deployed with or without Cisco fabric extender technology, as aggregation-layer switches in traditional hierarchical network architecture, or as leaf or spine switches in a horizontally scaled leaf-and-spine architecture.

End-of-Row Access-Layer Switch

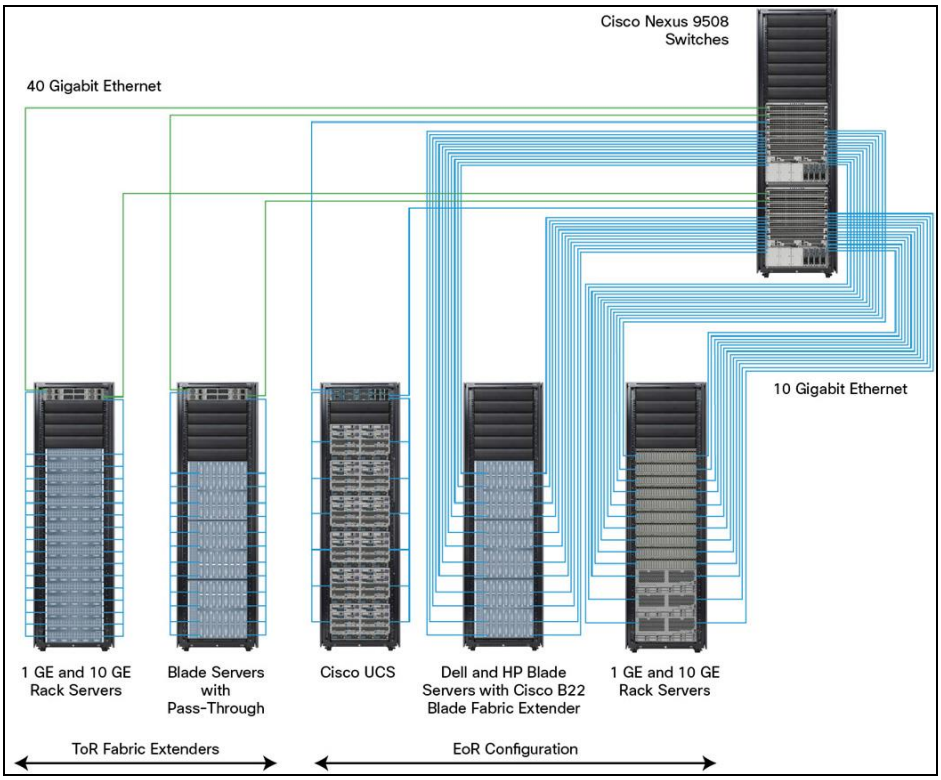
Configured as EoR access-layer switches (Figure 3), Cisco Nexus 9500 platform switches can connect to almost any blade or rack server through 100 Megabit Ethernet, 1 Gigabit Ethernet, and 10 Gigabit Ethernet connections, including:

- Third-party and standalone Cisco Unified Computing System™ (Cisco UCS®) rack servers
- Third-party blade server chassis with chassis-resident switches or pass-through devices
- Cisco UCS

The Cisco Nexus 9500 offers an easy upgrade path from the Cisco Catalyst 6500 Series, bringing the features, reliability, scalability, and availability of Cisco NX-OS Software platforms to existing EoR configurations. With support for 100 Megabit Ethernet, 1 Gigabit Ethernet, and 10 Gigabit Ethernet copper connectivity, it supports the transition from 1 to 10 Gigabit Ethernet one server or rack at a time.

For example, equipped with eight 48-port 1 and 10GBASE-T line cards, each Cisco Nexus 9508 can service up to 384 servers, with 32 40 Gigabit Ethernet uplinks available for server access or uplinks to the aggregation tier.

Figure 3. Cisco Nexus 9500 Platform Switches Can Be Configured as EoR Access-Layer Switches

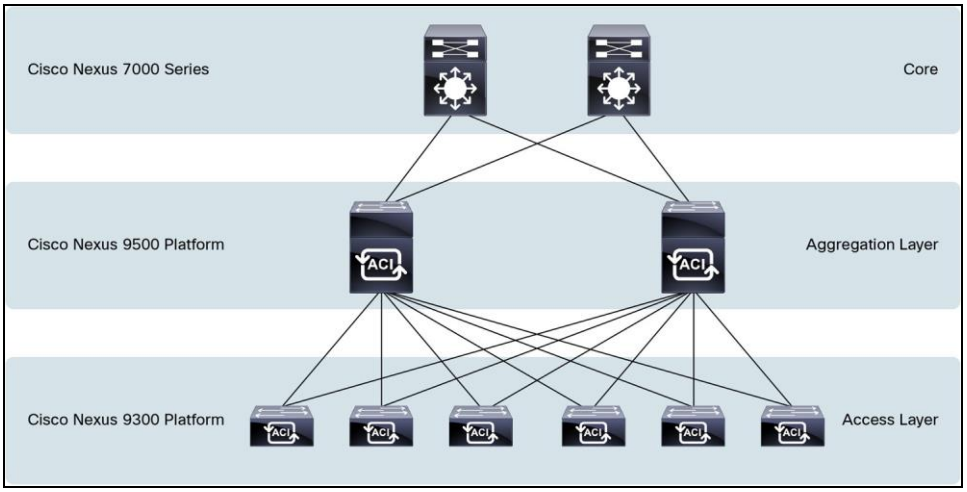


Aggregation-Layer Switch

The Cisco Nexus 9500 platform switches can act as aggregation-layer switches in traditional hierarchical architectures (Figure 5). Because the Cisco Nexus 9500 platform can host 10, 40, and (future) 100 Gigabit Ethernet interfaces, organizations have the flexibility to build new infrastructures or use the switches as slide-in replacements with increased bandwidth and functions, using existing copper and optical cables.

- Uplinks: 100 Gigabit Ethernet and 40 Gigabit Ethernet Ethernet-to-core switching layer connectivity is supported. The migration path offered by the Cisco Nexus 9500 platform prepares data center networks for future capacity growth.
- Downlinks: 10 Gigabit Ethernet connectivity to existing Cisco and third-party switches allows the switch to use the existing infrastructure and integrate with top-of-row (ToR), EoR, or MoR access-layer switches. 40 Gigabit Ethernet capability pairs the Cisco Nexus 9500 platform in the aggregation layer with 40 Gigabit Ethernet uplink ports on the Cisco Nexus 9300 platform switches with fixed access ports. Using 40-Gbps of connectivity on existing fiber pairs dramatically simplifies the evolution to greater per-rack bandwidth without the cost and complexity of upgrading the data center cable plant.

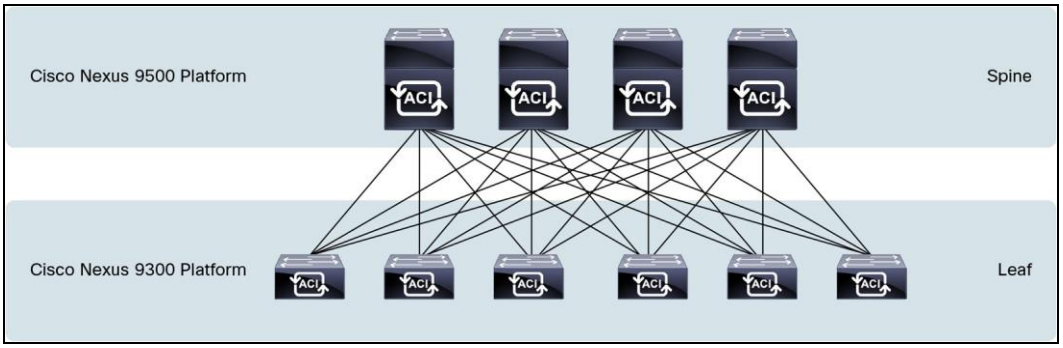
Figure 4. Cisco Nexus 9500 Platform as Aggregation-Layer Switches



Leaf-and-Spine Architecture

The Cisco Nexus 9500 platform can serve as a leaf or a spine in network architectures (Figure 6). With their Layer 3 capabilities, Cisco Nexus 9500 and 9300 platforms can be used with Equal-Cost Multipath (ECMP) routing to accelerate the flow of traffic and reduce reconvergence time in the event of a failure. Redundancy in leaf-and-spine architectures offer increased availability with highly flexible workload placement. Depending on your deployment requirements, the leaf-and-spine design can be implemented in Cisco NX-OS or ACI mode. For additional information about Cisco ACI mode refer to Cisco Nexus 9500 Platform Application-Centric Infrastructure Switches Data Sheet.

Figure 5. Cisco Nexus 9500 Platform in a Leaf-and-Spine Architecture



Cisco NX-OS Software Overview

Cisco NX-OS is a purpose-built operating system for the data center designed for performance, resiliency, scalability, manageability, and programmability. Cisco NX-OS provides a robust and comprehensive feature set that meets the demanding requirements of virtualization and automation in existing and future data centers. Cisco NX-OS Software for Cisco Nexus 9000 Series Switches works in two modes;

- Standalone Cisco NX-OS deployment
- Cisco ACI deployment

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 to simplify image management. The operating system is modular, with a dedicated process for each routing protocol that isolates faults while increasing availability. In the event of a process failure, the process can be restarted without losing state. The operating system supports patching and online diagnostics. In the event of a supervisor module failure, the software supports stateful switchover with continuous availability.

Main switch features include the following:

- The Cisco ACI image enables the Cisco ACI spine-and-leaf architecture on the Cisco Nexus 9500 platform. Powered with the Opflex-enabled Cisco Application Policy Infrastructure Controller (APIC) and open controllers such as OpenStack, this deployment model dramatically reduces time-to-service delivery, automated network provisioning, and real-time telemetry correlation between the virtual and physical infrastructure.
- Power-On Auto Provisioning (POAP) automates the process of upgrading software images and installing configuration files on Cisco Nexus switches that are deployed in the network for the first time.
- Intelligent Application Programming Interface (NX-API) provides operators with a means to manage the switch through remote procedure calls (RPCs), JavaScript Object Notation (JSON) or XML over a HTTP/HTTPS infrastructure.
- Linux shell access enables the switch to be configured through Linux shell scripts, helping automate and ensure consistency when configuring multiple switches.
- Cisco NX-OS can be upgraded and patched without any interruption in switch operations.
- Line-rate overlay support provides Virtual Extensible LAN (VXLAN) bridging and routing at full line rate, supporting and accelerating communication between virtual and physical servers and between multiple data centers in a campus environment.

For complete list of supported features refer to Cisco Feature Navigator.

Cisco NX-OS Features and Benefits

Software for the Cisco Nexus 9000 Series offers flexibility and a comprehensive feature set for consistency with Cisco Nexus access switches. The default system software has a comprehensive Layer 2 security and management feature set. Additional licenses are required to enable Layer 3 IP Unicast and IP Multicast routing functions. Table 4 shows the software packaging and licensing available to enable these advanced features.

Table 4. Software Packaging and Licensing

Packaging	Chassis Based	Part Number	Supported Features
Cisco Nexus 9500 platform Layer 3 license	Chassis	N95-LAN1K9	Layer 3 features, including full OSPF, Enhanced Interior Gateway Routing Protocol (EIGRP), Border Gateway Protocol (BGP)
Cisco Data Center Network Management (DCNM) license	Chassis	DCNM-LAN-N95-K9	Cisco DCNM license for Cisco Nexus 9500 platform

Software Requirements

The Cisco Nexus 9500 platform supports Cisco NX-OS Software Release 6.1 and later. Cisco NX-OS interoperates with any networking operating system that conforms to networking standards, including Cisco IOS®.

The Cisco Nexus 9000 Series runs Cisco NX-OS on a 64-bit Linux kernel (Release 3.4.10) with a single binary image that supports both modular (Cisco Nexus 9500 platform) and fixed-port (Cisco Nexus 9300 platform) switches. The software image is based on Cisco NX-OS Software Release 6.1(2). The single image incorporates both the Linux kernel and Cisco NX-OS so the switch can be booted through a standard Linux kickstart process.

Specifications

Table 5 lists the specifications for the Cisco Nexus 9500 platform in a non-ACI deployment. (Please check software release notes for feature support information.)

Table 5. Product Specifications: Performance and Scalability

Item	Cisco Nexus 9500 Platform
Maximum number of longest prefix match (LPM) routes	128,000
Maximum number of IP host entries	208,000
Maximum number of MAC address entries	160,000
Number of multicast routes	• 8000 to 32,000 (without virtual Port Channel [vPC]) • 4000 to 32,000 (with vPC)
Number of Interior Gateway Management Protocol (IGMP) snooping groups	• 8000 to 32,000 (without virtual Port Channel [vPC]) • 4000 to 32,000 (with vPC)
Number of access control list (ACL) entries	• 5,000 to 60,000 egress • 1,500 to 18,000 ingress
Maximum number of VLANs	4096
Maximum number of Virtual Routing and Forwarding (VRF) instances	1000
Maximum number of links in a PortChannel	32
Maximum number of ECMP paths	64
Maximum number of PortChannels	528
Number of active Switched Port Analyzer (SPAN) sessions	4 to 32
Maximum number of Rapid per-VLAN Spanning Tree (RPVST) instances	507
Maximum number of Hot Standby Router Protocol (HSRP) groups	490
Maximum number of Multiple Spanning Tree (MST) instances	64
Maximum number of tunnel endpoints (VTEP) and VXLAN physical servers (per VLAN)	10,000

Supported Optics Modules

For details about the available optics modules and the minimum software release required for each supported optical module, visit http://www.cisco.com/en/US/products/hw/modules/ps5455/products_device_support_tables_list.html.

Power Supply

Table 6 lists the properties of the Cisco Nexus 9500 platform power supplies.

Table 6. N9K-PAC-3000W-B Standard AC Power Supply Properties

AC Power Supply Properties	Cisco Nexus 9500 Platform
Power	3000W AC
Input voltage	200 to 240 VAC
Frequency	50 to 60 Hz
Efficiency	90% or greater (20 to 100% load)
RoHS compliance	Yes
Hot swappable	Yes
Front-to-back airflow power supply	Yes

Table 7. N9K-PUV-3000W-B Universal AC/DC Power Supply Properties

AC Power Supply Properties	Cisco Nexus 9500 Platform
Power	3000W AC
Input voltage	180-305 VAC or 192-400 VDC
Frequency	47Hz-63 Hz
Efficiency	90% or greater (20 to 100% load)
RoHS compliance	Yes
Hot swappable	Yes
Front-to-back airflow power supply	Yes

Environment

Table 8 lists the environmental properties of the Cisco Nexus 9500 platform.

Table 8. Environmental Properties

Property	Cisco Nexus 9500 Platform
Physical (H x W x D) • Cisco Nexus 9504 • Cisco Nexus 9508 • Cisco Nexus 9516	 • 12.25 x 17.50 x 33.15 in. (31.1 x 44.50 x 84.20 cm) • 22.70 x 17.50 x 31.76 in. (57.78 x 44.50 x 80.67 cm) • 36.70 x 17.50 x 31.76 in. (93.41 x 44.50 x 80.67 cm)
Operating temperature	32 to 104°F (0 to 40°C)
Nonoperating (storage) temperature	-40 to 158°F (-40 to 70°C)
Humidity	5 to 95% (noncondensing)
Altitude	0 to 13,123 ft (0 to 4000m)

Weight and Typical Power

Table 9 lists the weight and typical power consumption of the Cisco Nexus 9500 platform.

Table 9. Weight and Power Consumption

Component	Weight	Typical Power	Maximum Power
Chassis • Cisco Nexus 9504 chassis • Cisco Nexus 9508 chassis • Cisco Nexus 9516 chassis	 • 84 lb (38.2kg) • 150 lb (68.2 kg) • 192 lb (87.3 kg)	-	-
Power Supply • N9K-PAC-3000W-B • N9K-PUV-3000W-B	 • 6.2 lb (2.8 kg) • 5.9 lb (2.7 kg)		
Fan trays (3 maximum) • Cisco Nexus 9504 • Cisco Nexus 9508 • Cisco Nexus 9516	 • 6.38 lb (2.9 kg) • 8.25 lb (3.7 kg) • 10.10 lb (4.6kg)	 • 95W • 176W • 330W	 • 137W • 250W • 450W
Fabric modules (6 maximum) • Cisco Nexus 9504 • Cisco Nexus 9508 • Cisco Nexus 9516	 • 5.76 lb (2.6 kg) • 9.59 lb (4.4 kg) • 11.50 lb (5.2 kg)	 • 95W • 176W • 330W	 • 131W • 251W • 504W
Supervisor (2 maximum) • SUP-A • SUP-B	 • 4.84 lb (2.2 kg) • 6.00 lb (2.72 kg)	 • 69W • 75W	 • 80W • 90W
System controller (2 maximum)	1.91 lb (0.9 kg)	13W	25W
Cisco Nexus X9636PQ: 36-port 40 Gigabit Ethernet QSFP+ line card	11.48 lb (5.2 kg)	260W	400W
Cisco Nexus X9536PQ: 36-port 40 Gigabit Ethernet QSFP+ line card	11.99 lb (5.44 kg)	360W	400W
Cisco Nexus X9564TX: 48-port 1/10GBASE-T and 4-port 40 Gigabit Ethernet QSFP+ line card	12.58 lb (5.7 kg)	450W	540W
Cisco Nexus X9564PX: 48-port 1/10 Gigabit Ethernet SFP+ and 4-port 40 Gigabit Ethernet QSFP+ line card	11.48 lb (5.2 kg)	300W	400W
Cisco Nexus X9408PC-CFP2: 8-port 100 Gigabit Ethernet CFP2 line card	13.05 lb (5.92 Kg)	310W	432W
Cisco Nexus X9432PQ: 36-port 40 Gigabit Ethernet QSFP+ line card	10.85 lb (4.92 kg)	240W	300W
Cisco Nexus X9464TX: 48-port 1/10GBASE-T and 4-port 40 Gigabit Ethernet QSFP+ line card	10.01 lb (4.54 kg)	160W	240W
Cisco Nexus X9464PX: 48-port 10 Gigabit Ethernet SFP+/SFP and 4-port 40 Gigabit Ethernet QSFP+ line card	10.76 lb (4.88 kg)	300W	360W

Regulatory Standards Compliance

Table 10 summarizes regulatory standards compliance for the Cisco Nexus 9500 platform.

Table 10. Regulatory Standards Compliance: Safety and EMC

Specification	Description
Regulatory compliance	Products should comply with CE Markings according to directives 2004/108/EC and 2006/95/EC
Safety	• UL 60950-1 Second Edition • CAN/CSA-C22.2 No. 60950-1 Second Edition • EN 60950-1 Second Edition • IEC 60950-1 Second Edition • AS/NZS 60950-1 • GB4943
EMC: Emissions	• 47CFR Part 15 (CFR 47) Class A • AS/NZS CISPR22 Class A • CISPR22 Class A • EN55022 Class A • ICES003 Class A • VCCI Class A • EN61000-3-2 • EN61000-3-3 • KN22 Class A • CNS13438 Class A
EMC: Immunity	• EN55024 • CISPR24 • EN300386 • KN 61000-4 series
RoHS	The product is RoHS-6 compliant with exceptions for leaded-ball grid-array (BGA) balls and lead press-fit connectors.

Ordering Information

Table 11 shows ordering information for the Cisco Nexus 9500 platform.

Table 11. Ordering Information

Part Number	Product Description
Hardware	
N9K-C9504-B1	Nexus 9504 Chassis Bundle with 1 Sup, 3 PS, 2 SC, 3 Fan Trays, 3 Fabric Modules
N9K-C9504-B2	Nexus 9504 Chassis Bundle with 1 Sup, 3 PS, 2 SC, 3 Fan Trays, 6 Fabric Modules
N9K-C9504-B3	Nexus 9504 Chassis Bundle with 1 Sup, 3 PS, 2 SC, 3 Fan Trays, 4 Fabric Modules
N9K-C9508-B1	Nexus 9508 Chassis Bundle with 1 Sup, 3 PS, 2 SC, 3 Fan Trays, 3 Fabric Modules
N9K-C9508-B2	Nexus 9508 Chassis Bundle with 1 Sup, 3 PS, 2 SC, 3 Fan Trays, 6 Fabric Modules
N9K-C9508-B3	Nexus 9508 Chassis Bundle with 1 Sup, 3 PS, 2 SC, 3 Fan Trays, 4 Fabric Modules
N9K-C9516-B1	Nexus 9516 Chassis Bundle with 1 Sup, 3 PS, 2 SC, 3 Fan Trays, 3 Fabric Modules
N9K-C9516-B2	Nexus 9516 Chassis Bundle with 1 Sup, 3 PS, 2 SC, 3 Fan Trays, 6 Fabric Modules
N9K-C9516-B3	Nexus 9516 Chassis Bundle with 1 Sup, 3 PS, 2 SC, 3 Fan Trays, 4 Fabric Modules
N9K-C9504	Nexus 9504 Chassis with 4 linecard slots
N9K-C9508	Nexus 9508 Chassis with 8 linecard slots
N9K-C9516	Nexus 9516 Chassis with 16 linecard slots
N9K-X9636PQ	Nexus 9500 linecard, 36p 40G QSFP aggregation linecard (non-blocking) for 4 and 8 slot chassis
N9K-X9536PQ	Nexus 9500 linecard, 36p 40G QSFP aggregation linecard (1.5:1 Oversubscribed) for 4,8 and 16 slot chassis

Part Number	Product Description
N9K-X9564TX	Nexus 9500, 48p 1/10G-T plus 4p QSFP linecard (non-blocking). ACI leaf Ready for 4,8 and 16 slot chassis
N9K-X9564PX	Nexus 9500 48p 1/10G SFP+ plus 4p QSFP linecard (non-blocking). ACI leaf Ready for 4,8 and 16 slot chassis
N9K-X9408PC-CFP2	Nexus 9500 linecard, 8p 100G CFP2 aggregation linecard (Linerate >200 Bytes) for 4,8 and 16 slot chassis
N9K-X9432PQ	Nexus 9500 linecard, 32p 40G QSFP aggregation linecard (Linerate >200 Bytes) for 4,8 and 16 slot chassis
N9K-X9464TX	Nexus 9500 linecard, 48p 1/10G-T plus 4p QSFP linecard (non-blocking) for 4,8 and 16 slot chassis
N9K-X9464PX	Nexus 9500 linecard, 48p 1/10G SFP+ plus 4p QSFP linecard (non-blocking) for 4,8 and 16 slot chassis
N9K-SUP-A	Nexus 9500 4-Core Supervisor
N9K-SUP-B	Nexus 9500 6-Core Supervisor
N9K-SC-A	Nexus 9500 System Controller
N9K-PAC-3000W-B	Nexus 9500 3000W AC PS, Port Side Intake
N9K-PUV-3000W-B	Nexus 9500 3000W Universal AC/DC PS, Port Side Intake
N9K-C9504-FM	Fabric Module for Nexus 9504 chassis
N9K-C9508-FM	Fabric Module for Nexus 9508 chassis
N9K-C9516-FM	Fabric Module for Nexus 9516 chassis
N9K-C9504-FAN	Fan Tray for Nexus 9504 chassis
N9K-C9508-FAN	Fan Tray for Nexus 9508 chassis
N9K-C9516-FAN	Fan Tray for Nexus 9516 chassis
Software	
N95-LAN1K9	Enhanced L3 including full OSPF, EIGRP, BGP, VXLAN
DCNM-LAN-N95-K9	DCNM license for Nexus 9500 Series
Accessories	
N9K-C9500-RMK=	Nexus 9500 Rack Mount Kit for Nexus 9508 and Nexus 9516 chassis
N9K-C9504-RMK=	Nexus 9500 Rack Mount Kit for Nexus 9504
N9K-C9500-ACK=	Nexus 9500 Accessory Kit

Warranty

The Cisco Nexus 9500 platform has a 1-year limited hardware warranty. The warranty includes hardware replacement with a 10-day turnaround from receipt of a return materials authorization (RMA).

Service and Support

Cisco offers a wide range of services to help accelerate your success in deploying and optimizing the Cisco Nexus 9500 platform in your data center. These innovative Cisco Services offerings are delivered through a unique combination of people, processes, tools, and partners and are focused on helping you increase operational efficiency and improve your data center network. Cisco Advanced Services uses an architecture-led approach to help you align your data center infrastructure with your business goals and achieve long-term value. Cisco SMARTnet® Service helps you resolve mission-critical problems with direct access at any time to Cisco network experts and award-winning resources. With this service, you can take advantage of the Cisco Smart Call Home service, which offers proactive diagnostics and real-time alerts on your Cisco Nexus 9500 platform. Spanning the entire network lifecycle, Cisco Services offerings help increase investment protection, optimize network operations, support migration operations, and strengthen your IT expertise.

For More Information

For more information about the Cisco Nexus 9000 Series, please visit http://www.cisco.com/go/nexus9000.

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