Cisco Nexus 9364E-SG2 Switches

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Contents

Introduction 2
Scope 2
Positioning 2
Supported Features 2
Cisco Nexus Dashboard Support 4
Software Releases 5
Platform Hardware 5
Additional Resources 5
Blogs 5
Documentation Feedback 5
Legal Information 6

Introduction

The Cisco Nexus 9364E-SG2-O and Cisco Nexus 9364E-SG2-Q switches support 64 OSFP ports and QSFP-DD ports, respectively, and use Cisco Silicon One™ ASIC. Based on Silicon One ASIC in a 2-RU form factor, these new platforms empower customers with advanced network solutions specifically tailored for AI and ML applications.

Scope

This document summarizes the current capabilities of the Cisco Nexus 9364E-SG2-O and 9364E-SG2-Q, including the current software features and hardware products.

Positioning

The next generation Nexus 9300 switches are designed to deliver high-density 64-port 800G (51.2T) aggregation. Leveraging Cisco's cutting-edge technology, users can seamlessly build both front-end and back-end networks to support a variety of AI use cases such as training and inference. This demonstrates our commitment to advancing Ethernet-based AI/ML infrastructures and addressing the evolving needs of enterprises in this domain. The switches are Ultra Ethernet Consortium (UEC) ready.

Supported Features

Beginning with the NX-OS Release 10.6(3)F, the Cisco Nexus 9364E-SG2-O and Cisco Nexus 9364E-SG2-Q switches support these software features:

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Feature Type	Description
Network Interfaces and Speeds	• 800G, 400G, 200G, 100G • Breakouts: 8 x 100G, 2 x 400G, 4 x 100G
Network Protocols and Serviceability	• L2 support • Port Channel (PC) • SVI support • L3 subinterface support • HSRP, VRRP, EIGRP, and ISIS supported • Static routes supported
Layer3 Unicast and Routing (IPv4 and IPv6)	• BGP, OSPF, BFD, VRF
VXLAN	• Spine/Leaf/Border Leaf roles • Multisite anycast BGW with L3 stretch • VXLAN with IR underlay support • ARP Suppression • Flowlet load balancing (FLLB) on VXLAN fabric • VXLAN Anycast BGW (L2VNI) and RFC5549 • vPC Fabric peering
Load Balancing	• ECMP, Dynamic Load Balancing (Flowlet Load balancing (FLLB) and Packet Spraying) • 512 ECMP groups, 128-way ECMP • RDMA- Opcode, q-pair, PSN • Configurable flow-let aging timer • Weighted Cost Multipath (WCMP) + Flowlet load balancing (FLLB) • Policy-based FLLB multiple profile support • ECMP static pinning • Support for Breakout interfaces with Dynamic Load Balancing (DLB)
Network Security	• AAA, RADIUS, TACACS+ • ACL • Ingress and egress RACL (IPV4/V6) • SSH Protocol Version 2

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	• SNMPv3
Quality of Service	• RoCEv2 (PFC +WRED ECN) • Classification and Marking • Queuing and Scheduling • CoPP, Custom CoPP • Base Transport Header (BTH) matching QoS policy

Telemetry and Monitoring	• SNMPv2
	• Software Telemetry
	  • DME data collection
	  • NX-API data sources
	  • Google protocol buffer (GPB) encoding over Google Remote Procedure Call (gRPC) transport
	  • JSON encoding over HTTP
	• sFlow
	• gNMI support
	• SPAN, SPAN on Drop, ERSPAN
	• Sampled Netflow

Programmability	• Open NX-OS automation • Open and Native YANG Models • NETCONF, RESTCONF, gNMI • Python API • Tcl • Cisco NX-API
Licensing	• Premier, Advantage and Essentials License for appropriate features

Cisco Nexus Dashboard Support

Nexus Dashboard (ND) can provide Management and Automation for Cisco Nexus 9364E-SG2-Q in external fabrics in ND 3.2(2).

Starting Nexus Dashboard (ND) 4.1(1) Management, Automation and Monitoring for Cisco Nexus 9364E-SG2-Q has been added to both VXLAN and AI Fabrics:

https://www.cisco.com/c/en/us/td/docs/dcn/nd/4x/collections/nd-user-content-411.html

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https://www.cisco.com/c/en/us/td/docs/dcn/nd/4x/collections/nd-user-content-421.html

Software Releases

Table 1. Software Releases

NX-OS Release	Description
10.5(3)F	Release 10.5(3) was the first release to enable 800G support on Silicon One ASIC in Cisco Nexus 9364E-SG2 switches.

Platform Hardware

The Nexus 9300 Series includes many switch chassis. For a complete list of 9300 series switches, see Cisco Nexus 9000 Series Switches Install and Upgrade Guides.

The site lists the currently available Nexus 93xxx Series switches, line cards, and accessories. For expanded details about these hardware products, see Cisco Nexus 9364E-SG2 Data Sheet.

Additional Resources

- Cisco Nexus 9000 Series Switches Install and Upgrade Guides
- Cisco Nexus 9000 Series Switches Configuration Guides
- Cisco Nexus 9000 Series NX-OS Verified Scalability Guides
- Cisco DataCenter Networking Blueprint
- Cisco Addressing AI/ML Network Challenges-Whitepaper
- Cisco Validated Design for Data Center Networking
- Cisco Optics-to-Device Compatibility Matrix

Blogs

- https://blogs.cisco.com/datacenter/building-data-center-infrastructure-for-the-ai-revolution
- https://blogs.cisco.com/datacenter/unlock-the-potential-of-ai-ml-workloads-with-cisco-data-center-networks
- https://blogs.cisco.com/datacenter/nexus-improves-load-balancing-and-brings-uec-closer-to-adoption

Documentation Feedback

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