N9600-64OD Bare Metal Switch Datasheet

Product Overview

N9600-64OD 800GbE switch (64 port 800GbE) is a next-generation, fixed-configuration platform designed for spine, leaf, and border switch roles. It provides flexible, cost-effective, high-density 800GbE, 400GbE, 200GbE and 100GbE interfaces for intra-IP fabric connectivity as well as higher density 200/400GbE NIC connectivity for AI/ML use cases.

The switch is loaded with the Open Network Install Environment (ONIE), which supports the installation of the commercial PicOS® offering.

Figure 1 shows the FS N9600-64OD Switch

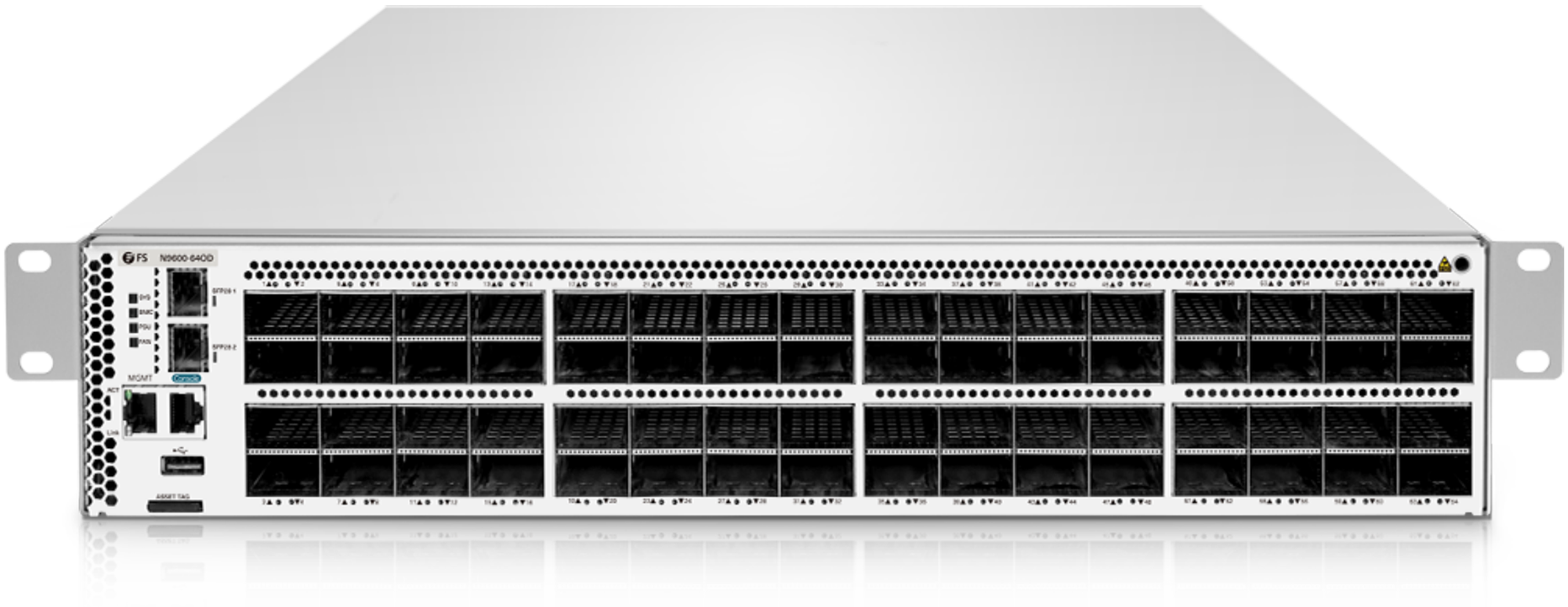

Figure 1.

The N9600-64OD is a high-speed, high-density, spine-and-leaf switch featuring:

- 64 ports of 800GbE on a 2U switch to reduce costs on both space and total power utilization
- Broadcom BCM78900 Tomahawk 5 with 240G (SSD) storage
- Up to 51.2 Tbps (unidirectional) throughput
- 1+1 Hot-swappable Power Supplies, 3+1 Hot-swappable Smart Fans
- Support PicOS® Network Operating System

Using breakout cables, each of the 64 800GbE OSFP ports can be broken into 2x 400GbE or 4x 200GbE ports, increasing the total number of supported 400GbE ports per switch to 128 and 200GbE ports per switch to 256.

Features and Benefits

- **Built-in Broadcom Tomahawk 5 Chip**: Provides high-speed data transfer, low latency and 51.2 Tbps throughput for superior stability and performance.
- **Power efficiency**: With its low-power 5nm process, the N9600-64OD brings improvements in speed, lower power consumption, and higher density on chip.
- **Hardware-level Redundancy:** The N9600-64OD switch is equipped with two AC power supplies, providing 1+1 redundancy when all power supplies are present, and four hot-swappable ports-to-FRUs (AFO) airflow fans, providing (3+1) redundancy.

N9600-64OD Switch Specifications

Tables 1 through 4 show the FS N9600-64OD switch hardware specifications.

Table 1. Interface Options

P/N	N9600-64OD

Console port	1
Management port	1 x RJ-45 port
USB port	1
100GbE port	256 (with breakout cable)
200GbE port	256 (with breakout cable)
400GbE port	128 (with breakout cable)
100GbE port	64
200GbE port	64
400GbE port	64
800GbE port	64

Note:

After you split a port into 8 x 100Gb/s, another port in the same group can only be split into 2 x 400Gb/s or remains unsplit due to chip limitations.

A group is defined as two adjacent ports. For example:

- xe-1/1/1 and xe-1/1/2 form a group. If xe-1/1/1 is split into 8 x 100Gb/s, xe-1/1/2 can only be split into 2 x 400Gb/s or remains unsplit.
- Similarly, xe-1/1/3 and xe-1/1/4 form another group, xe-1/1/5 and xe-1/1/6 form another, and so on up to xe-1/1/59 and xe-1/1/60.

Table 2. Power Supplies and Fans

P/N	N9600-64OD
Power supply	2x Hot-swappable AC Power Supplies (1+1 Redundancy)
Fan number	4x Hot-swappable Fans (3+1 Redundancy)
Airflow	Front-to-Back
Acoustic noise	<78dB
Power consumption	Max. power draw: 2,982W Typical power draw: 2,010W
Power max rating	3,000W
Input-voltage range and frequency	AC Input: Rated Voltage Range: 100~120VAC, 200~240VAC, 50Hz~60Hz
Rated input current range	16A Max.

Table 3. Performance Specifications

P/N	N9600-64OD
Switching capacity	51.2/102.4 Tbps (uni/bidirectional)
Forwarding rate	21,200 Mpps
Switch chip	Broadcom BCM78900 Tomahawk 5
CPU	Intel Xeon D-1734NT (4-core 8-thread processor with a clock speed of 2.2GHz)
DDR4	16GB

Flash memory	240GB (SSD)
Jumbo frame	9K
ARP Table	32,000
Packet buffer	165.2MB
MAC addresses	8K

Table 4. Product Specifications

P/N	N9600-64OD
Environmental	
Operating temperature	0ºC to 40ºC (32°F to 104°F)
Storage temperature	-40ºC to 70 ºC (-40°F to 158°F)
Operating humidity	10% to 90% (Non-condensing)
Storage humidity	10% to 90% (Non-condensing)
Temperature alarm	supported
Physical specifications	
Weight	57.32 lbs (26kg)
Dimensions (H x W x D)	10.83"x 38.58"x 23.23" (275x 980x 590mm)
Rack units (RU)	2 RU
Electrical	
Voltage (auto ranging)	100~120VAC, 200~240VAC
Frequency	50-60Hz
Current	16A Max.
Mean-time between failures	
MTBF (hours)	390,000

Standards Compliance

Table 5 lists the standards compliance for the FS N9600-64OD switch.

Table 5. Standards Compliance

Category	Description

IEEE Standard	IEEE 802.1 IEEE 802.1AB IEEE 802.1ad IEEE 802.1ax IEEE 802.1D IEEE 802.1p IEEE 802.1Q IEEE 802.1Qbb IEEE 802.1w IEEE 802.3x

Supported RFCs	RFC 768 UDP RFC 791 IP RFC 792 ICMP RFC 793 TCP RFC 826 ARP RFC 854 Telnet client and server RFC 894 IP over Ethernet RFC 1058 RIP RFC 1112 IP Multicast Host Extensions RFC 1142 OSI IS-IS Intra-domain Routing Protocol RFC 1492 TACACS RFC 1519 Classless Interdomain Routing (CIDR) RFC 1534 DHCP-BOOTP Interoperation RFC 1745 BGP4/IDRP for IP—OSPF Interaction RFC 1771 BGP-4 RFC 1812 Requirements for IP Version 4 Routers RFC 1997 BGP Communities Attribute RFC 2080 RIP for ipv6 RFC 2131 DHCP RFC 2132 DHCP Options & BOOTP Extensions RFC 2138 RADIUS Authentication RFC 2139 RADIUS Accounting RFC 2154 OSPF with Digital Signatures (Password, MD-5) RFC 2236 IGMP v2 RFC 2328 OSPF v2 RFC 2338 VRRP RFC 2370 OSPF Opaque LSA Option RFC 2385 Protection of BGP Sessions via the TCP MD5 Signature Option RFC 2453 RIP v2 RFC 3031 MPLS Architecture RFC 3032 MPLS Label Stack Encoding RFC 3034 Label Switching over Frame Relay RFC 3036 LDP Specification RFC 3037 LDP RFC 3046 DHCP Relay Agent Info Option RFC 3101 NSSA Option RFC 3215 LDP State Machine RFC 3376 IGMP v3 RFC 3446 Anycast RP Mechanism (PIM+MSDP) RFC 3569 SSM Overview RFC 3618 MSDP RFC 4541 IGMP/MLD Snooping Guidelines RFC 4601 PIM-SM(Recised) RFC 4607 IP Source-Specific Multicast RFC 5036 LDP Specification (Updated)

	RFC 5443 LDP-IGP Synchronization RFC 5561 BGP-Signaled IP/VPNs RFC 5880 BFD Base Protocol RFC 5881 BFD for IPv4/IPv6 RFC 5882 BFD Generic Application RFC 5883 BFD for Multihop Paths RFC 6720 Early IANA Code Point Allocation RFC 7348 VXLAN RFC 7552 GMPLS Packet-Optical Integration RFC 8365 EVPN-VXLAN

Warranty, Service and Support

FS N9600-64OD switch has a 5-year limited warranty against defects in materials or workmanship. For more information for FS Returns & Refunds policy, visit https://www.fs.com/policies/warranty.html or https://www.fs.com/policies/day_return_policy.html

FS provides a personal account manager, free professional technical support, and 24/7 live customer service to each customer.

- Professional Lab: Test each product with the latest and advanced networking equipment.
- Free Technical Support: Provide free & tailored solutions and services for your businesses.
- 80% Same-day Shipping: Immediate shipping for in-stock items.
- Fast Response: Direct and immediate assistance from an expert.

For more information, visit https://www.fs.com/service/fs_support.html

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