N8610-64D Switch Data Sheet

Contents

Product overview

N8610-64D switch is a high-radix class switch, dedicated for high-bandwidth network switching devices supporting up to 64x 400/100GbE ports in 2U form factor. This makes it optimal for AI data center deployments and spine and super-spine roles within IP fabrics.

The additional RoCEv2 capabilities supports IP storage deployments where instead of relying on deep buffer switching, the QoS mechanisms such as priority flow control (PFC) and explicit congestion notification (ECN) deliver high performance for the storage workloads.

Product highlights

- Broadcom BCM56990 Tomahawk 4 Chip, 25.6 Tbps Throughout
- 64x 400GbE QSFP-DD or 100GbE QSFP28, Can Use Breakout for 128x 200GbE or 256x 100GbE
- 1+1 Hot-swappable, load-sharing, 2400W AC PSUs, 3+1 Hot-swappable Smart Fans
- All ports on front, PSUs and fans accessible from rear
- PicOS® MLAG, RoCEv2, PFC, ECN and DLB
- AmpCon-DC Management Platform Provides Full Day 0 to Day 2+ Capabilities
- Designed for Data Center Fabric Spine, Super Spine, IP Storage Networking

Platform details

Switch models and configurations

Figure 1 shows the N8610-64D switch model and configuration.

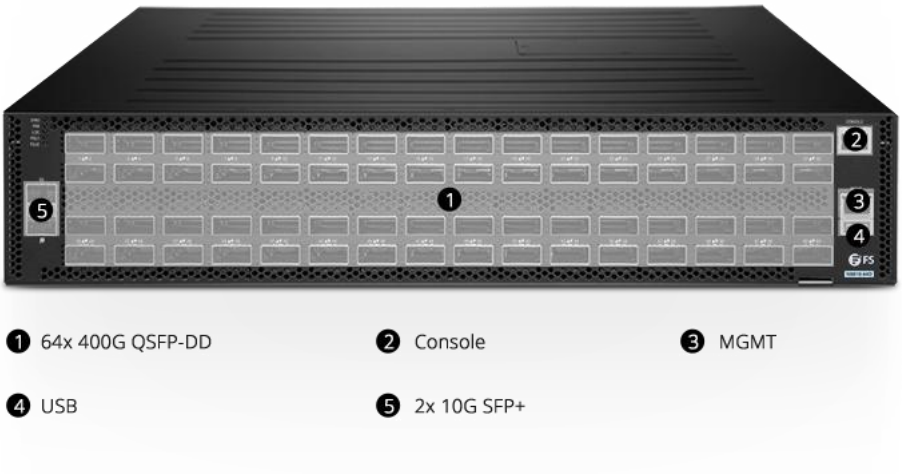

Figure 1.

N8610-64D, 64-Port Ethernet HPC/AI Data Center Switch, 64 x 400G QSFP-DD, PicOS®, Broadcom Tomahawk 4 Chip

Switch configurations and port density

Table 1 shows the N8610-64D switch configurations and port density.

Table 1. Switch configuration and port density

FS P/N	N8610-64D
Description	N8610-64D, 64-Port Ethernet HPC/AI Data Center Switch, 64 x 400G QSFP-DD, PicOS®, Broadcom Tomahawk 4 Chip
Port	
40G port density	64
100G port density	64
200G port density	—
400G port density (up to 24W per port)	16
400G port density (up to 13W per port)	48

FS P/N	N8610-64D
Description	N8610-64D, 64-Port Ethernet HPC/AI Data Center Switch, 64 x 400G QSFP-DD, PicOS®, Broadcom Tomahawk 4 Chip
Port	
10G port density with breakout cable	256
25G port density with breakout cable	256
50G port density with breakout cable	128
100G port density with breakout cable	256
200G port density with breakout cable	128
RJ45 Management ports	1
10G Management ports	2
Console port	1
USB port	1
Memory and processor	
Switch chip	BCM56990 Tomahawk 4
CPU	Intel® Xeon® Processor D-1548 8-Core 2.0 GHz
DDR4	16 GBx 2 SO-DIMM
Flash memory	128GBx 1
Packet buffer	113.66 MB

Note: QSFP-DD port can be configured as 100/400Gb, or as 2x 200Gb, or 4x 100Gb via breakout cables.

Power supplies and fans

Table 2 provides more details on the N8610-64D switch power supplies and fan specifications.

Table 2. Power supply and fan specifications

Description	N8610-64D
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	—
Max. power consumption	2400W
Input-voltage range and frequency	AC Input: Rated Voltage Range: 100V~127V AC, 50Hz~60Hz Rated Input Current Range: 12A Max Rated Voltage Range: 200V~240V AC, 50Hz~60Hz Rated Input Current Range: 15A Max

Switch performance

Table 3 shows performance specifications for the N8610-64D switch.

Table 3. Performance specifications

Performance	N8610-64D
Switching capacity	25.6 Tbps
Forwarding rate	1,0420 Mpps
Total number of MAC addresses	8K
Jumbo frame	9k

Platform benefits

Table 4 lists the software spotlights for the N8610-64D switch.

Table 4. Software spotlights

Functionality	Description
Layer2 Feartures	Support MLAG (Multi-chassis Link Aggregation) Support EVPN-VXLAN Support STP (IEEE 802.1D) Support Rapid Spanning Tree Protocol (RSTP) (IEEE 802.1w), MSTP (IEEE 802.1s) Support VLAN—IEEE 802.1Q VLAN trunking Support Link Aggregation and Link Aggregation Control Protocol (LACP) (IEEE 802.3ad) Support IEEE 802.1AB Link Layer Discovery Protocol (LLDP) Support Bridge protocol data unit (BPDU) protect
Layer3 Features	Support static routing Support OSPFv2, OSPFv3 Support Virtual Router Redundancy Protocol (VRRP) Support IPv6 Support BGP4/BGP4+ Support DHCP snooping/Relay Support RIP, RIPng Support Equal-Cost Multipath Routing (ECMP) Support PBR (Policy-Based Routing)
Multicast	Support Internet Group Management Protocol (IGMP) v1/v2/v3 Support IGMP v1/v2 snooping Support Protocol Independent Multicast PIM-SM and PIM-SSM
QoS	Support IEEE 802.1p-based CoS Support TOS or DSCP-based CoS Support ACL classification, metering, and remarking Support SP, WRR, WFQ scheduling Support Tail drop Support WRED congestion control
High Availability	Support Bidirectional Forwarding Detection (BFD) Support GR for RIP/OSPF/BGP Support Device Link Detection Protocol (DLDP) Support Rapid Ethernet Uplink Protection (REUP)

Functionality	Description
Visibility and Analytics	Support AmpCon-DC Management Platform for centralized ZTP Support Test Automation with PicOS-V Support Switched Port Analyzer (SPAN) Support Remote SPAN (RSPAN) Support Encapsulated Remote SPAN (ERSPAN) Support sFlow Support Telemetry Support gRPC protocol Support SNMP v1/v2c/v3 Support Ansible Support Python Support Command line interface (CLI) Support Netconf configuration and automation tools Support Openflow, CrossFlow
Lossless Fabric Features	Support RoCE/RoCEv2 (RDMA over Converged Ethernet) Support PFC (Priority Flow Control) Support PFC deadlock prevention Support PFC deadlock detection Support fully shared packet buffer Support RoCE EasyDeploy Support ECN (Explicit Congestion Notification) Support Easy ECN Support Dynamic Load Balancing (DLB)

Product specifications

Table 5 shows the product specifications for the N8610-64D switch.

Table 5. Product specifications

Description	N8610-64D
Environmental	
Operating temperature	0ºC to 40ºC (32° F to 104° F) at sea level 0ºC to 35ºC (32° F to 95° F) at 1828 m (6000 ft)
Storage temperature	-40ºC to 70 ºC (-40° F to 158° F)
Operating humidity	5% to 95% (Non-condensing)
Storage humidity	—
Operating Altitude	0 m to 1828 m (0 ft to 6000 ft)

Description	N8610-64D
Environmental	
Temperature alarm	supported
Acoustic noise	
Physical specifications	
Dimensions (HxWxD)	3.43"x 17.32"x 25.56" (87x 440x 649.2mm)
Rack units (RU)	2 RU
Weight	47.4 lbs (21.5 kg)
Electrical	
Voltage (auto ranging)	100~127V AC, 200~240V AC
Frequency	50-60Hz
Current	100~127 VAC, 50~60 Hz, 12 A MAX 200~240 VAC, 50~60 Hz, 15 A MAX
Power rating (maximum consumption)	2,400 W
Mean-time between failures	
MTBF (hours)	—
Connectors	
Connectors and cabling	400G/100G module/DAC/AOC
Standards	
Standards	IEEE802.1d STP, IEEE802.1w RSTP, 802.1s MSTP, RMON, SNMPV1 V2 V3

Warranty, service and support

N8610-64D switch enjoys 5 years 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

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- 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

Ordering information

Table 6 provides the ordering information for N8610-64D switch.

Table 6. Ordering information

FS P/N	Product description
Switch hardware	
N8610-64D	N8610-64D, 64-Port Ethernet HPC/AI Data Center Switch, 64 x 400G QSFP-DD, PicOS®, Broadcom Tomahawk 4 Chip
400G QSFP-DD optical modules and cables	
QDD-SR8-400G	400GBASE-SR8 QSFP-DD Transceiver, MPO-16/APC, 100m over MMF
QDD-SR4-400G	400GBASE-SR4 QSFP-DD Transceiver, MPO-12/APC, 100m over MMF
QDD-SR4.2-400G	400GBASE-SR4.2 QSFP-DD Transceiver, MPO-12/UPC, 100m over MMF
QDD-DR4-400G-Si	400GBASE-DR4 QSFP-DD Transceiver, MPO-12/APC, 500m over SMF
QDD-DR4-400G	400GBASE-DR4 QSFP-DD Transceiver, MPO-12/APC, 500m over SMF
QDD-4X100G-FR-Si	400GBASE-FR QSFP-DD Transceiver, MPO-12/APC, 2km over SMF

FS P/N	Product description
400G QSFP-DD optical modules and cables	
QDD-XDR4-400G	400GBASE-XDR4 QSFP-DD Transceiver, MPO-12/APC, 2km over SMF
QDD-FR4-400G	400GBASE-FR4 QSFP-DD Transceiver, Duplex LC, 2km over SMF
QDD-LR4L-400G	400GBASE-LR4L QSFP-DD Transceiver, Duplex LC, 6km over SMF
QDD-LR8-400G	400GBASE-LR8 QSFP-DD Transceiver, Duplex LC, 10km over SMF
QDD-LR4-400G	400GBASE-LR4 QSFP-DD Transceiver, Duplex LC, 10km over SMF
QDD-PLR4-400G	4 x 100GBASE-LR QSFP-DD, MPO-12/APC, 10km over SMF
QDD-ER8-400G	400GBASE-ER8 QSFP-DD, Duplex LC, 40km over SMF
QDD-400G-PCxxx	400G QSFP-DD Passive Direct Attach Cable (0.5 to 3 meters)
QDD-400G-ACxxx	400G QSFP-DD Active Direct Attach Cable (1 to 5 meters)
QDD-400G-AOxxx	400G QSFP-DD Active Optical Cable (1 to 100 meters)

Additional information

For more information about the N8610-64D switch, contact your account manager or visit https://www.fs.com/products/310831.html

Document history

New or revised topic	Described in	Date
Updates to N8610-64D Switch Data Sheet	Updated all	3/25/2025

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