Dell Networking H9106-OPF and H9124-OPF Director Class Switches

HPC Fabrics that deliver high performance with breakthrough cost models

Dell Networking H9106-OPF and H9124-OPF director class switches (DCS) are based on Intel® Omni-Path Fabric Architecture, using a scalable, 100 Gbps low latency fabric. The Intel Omni-Path Fabric effectively supports clusters with thousands of servers; larger fabrics are possible when the Intel Omni-Path Fabric is combined with the Intel Omni-Path Edge Switch.

Lower cost structure, minimizing required fabric infrastructure

Dell Networking H9106-OPF and H9124-OPF director class switches provide optimum performance for medium to large-scale HPC fabrics.

With their high port densities, these switches can help organizations simplify HPC networking topologies by reducing the number of required switches, cables and racks, while still allowing a large number of ports to be configured. You can deploy a director switch with a lower number of ports to meet your current requirements, and add more ports in 32-port increments as your requirements grow. These switches can dramatically lower fabric costs, while simultaneously reducing space and power requirements.

Deliver more bandwidth with high availability

The Dell Networking H-series director class switches, along with the Dell H-series edge switches, deliver scalable HPC networking architecture that allows you to scale to super-computers with tens of thousands of nodes.

These switches are designed for high availability with features that include port and module redundancy, component-level diagnostics and alarming, and out-of-band management. Intel's Omni-Path Fabric Architecture also enables features such as Traffic Flow Optimization (TFO), Packet Integrity Protection (PIP) and Dynamic Lane Scaling (DLS).

Build more network for less

Both H-series director class switches are dense form factor designs with capacity for up to 192 100 Gb/s ports in a 7U package or up to 768 100 Gb/s ports in a 20U footprint.

- Highly-integrated design reduces space, power, and cooling:
  - 192 ports in 7U
  - 768 ports in 20U

- Optimized for high message rates and low end-to-end latency

- FastFabric tools for easy installation

- All OpenSource Software

- Fully redundant subsystems: spine/management/power/cooling

- RoHS compliant

- Integrated chassis management capabilities for installation, configuration, and ongoing monitoring

Support and Warranty

Dell ProSupport Services and Tools
Spend less time resolving network issues. ProSupport and ProSupport Plus deliver 24x7x365 access to technical experts and automated remote monitoring, enabled by Dell Support-Assist technology, to proactively resolve issues, often before you realize they exist. Services for multivendor environments include third-party collaborative assistance, configuration assistance and best practice recommendations. With Dell Support Services and tools you gain more time to focus on your business objectives and stay competitive.

Warranty
Get the peace of mind that comes with basic hardware warranty coverage that includes three-year 8x5 hardware and 90-day software technical support with basic troubleshooting and next business day repair or part replacement.

Minimize fabric cost, maximize cluster capability

Specifications: Dell Networking H-Series director class switches

Dell SKU description

Switches
Dell Networking H9106-OPF:
Director Switch 6 slot in 7U Modular Form-factor, 6 leaf slots, 3 spine slots, 3 of 4 180-240 VAC PSU, 1 of 2 MGMT Modules, 3 of 3 Fans
Dell Networking H9124-OPF:
Director Switch 24 slot in 20U (+1U) Modular Form-factor, 24 leaf slots, 12 spine slots, 7 of 12 180-240 VAC PSU, 1 of 2 MGMT Modules, 9 of 9 Fans

Modules
Dell Networking H9100 Series, Director Switch Management Module
Dell Networking H9100 Series, Director Switch 48-port Spine Module
Dell Networking H9100 Series, Director Switch 32-port Leaf Module

Power supply
Dell Networking H9100 Series, Director Switch 180-240 VAC Power Supply

Filler Panels
Dell Networking H9100 Series, Director Switch Management Module Filler Panel
Dell Networking H9100 Series, Director Switch Spine Module Filler Panel
Dell Networking H9100 Series, Director Switch Leaf Filler Panel
Dell Networking H9100 Series, Director Switch Power Supply Filler Panel

Cables
Omni-Path Fabric Passive Direct Attach Copper Cable QSFP-QSFP H, 0.5m
Omni-Path Fabric Passive Direct Attach Copper Cable QSFP-QSFP H, 1m
Omni-Path Fabric Passive Direct Attach Copper Cable QSFP-QSFP, 2m
Omni-Path Fabric Passive Direct Attach Copper Cable QSFP-QSFP F, 3m
Omni-Path Fabric Active Optical Cable QSFP-QSFP, 5m
Omni-Path Fabric Active Optical Cable QSFP-QSFP, 10m
Omni-Path Fabric Active Optical Cable QSFP-QSFP, 15m
Omni-Path Fabric Active Optical Cable QSFP-QSFP, 20m
Omni-Path Fabric Active Optical Cable QSFP-QSFP, 30m
Omni-Path Fabric Active Optical Cable QSFP-QSFP, 50m
Omni-Path Fabric Active Optical Cable QSFP-QSFP, 100m

Physical
Chassis
Leaf module slots:
H9106-OPF: 6
H9124-OPF: 24
Spine module slots:
H9106-OPF: 2
H9124-OPF: 8
Management Module Slots (min / max):
H9106-OPF: 1 / 2
H9124-OPF: 1 / 2

Power Supplies (min / DC / AC Redundancy):
H9106-OPF: 2 / 3 / 4
H9124-OPF: 6 / 7 / 12
Fan Modules:
H9106-OPF: 3
H9124-OPF: 9
Max ports:
H9106-OPF: 192 100Gb/s
H9124-OPF: 768 100Gb/s

Modules
Leaf Module(s):
H9106-OPF: 32 x 100Gb/s QSFP28 ports
H9124-OPF: 32 x 100Gb/s QSFP28 ports
Spine Module(s):
H9106-OPF: 96 x internal mid-plane ports (3 x 32 port leaf modules) with 32 external ports
H9124-OPF: 96 x internal mid-plane ports (3 x 32 port leaf modules) with 32 external ports
Management Ports:
H9106-OPF: 1 10/100/1000 BASE-T
H9124-OPF: 1 10/100/1000 BASE-T
USB Ports:
H9106-OPF: 1 Serial Type A
H9124-OPF: 1 Serial Type A

Performance
Switching Capacity:
H9106-OPF: 4.8Tbps
H9124-OPF: 19.2Tbps
Multicast Table Size:
H9106-OPF: 8,192
H9124-OPF: 8,192
Unicast Table Size:
H9106-OPF: 49,151
H9124-OPF: 49,151

Dimensions
Size:
H9106-OPF: 7 RU, 12.2 h x 17.6 w x 29.5" d (31 h x 44.7 w x 74.9 cm d)
H9124-OPF: 20 RU (+1 RU Support Tray), 35 h x 17.6 w x 29.5" d (88.9 h x 44.7 w x 74.9 cm d)
Weight (fully configured):
H9106-OPF: 264.7 lb (120.1 kg)
H9124-OPF: 584 lb (265kg)

Environmental
Operating temperature:
H9106-OPF: 5°C to 40°C (41°F to 104°F)
H9124-OPF: 5°C to 40°C (41°F to 104°F)
Storage temperature:
H9106-OPF: -40°C to 70°C (-40°F to 158°F)
H9124-OPF: -40°C to 70°C (-40°F to 158°F)
Operating humidity:
H9106-OPF: 5% to 85% non-condensing
H9124-OPF: 5% to 85% non-condensing
Storage temperature:
H9106-OPF: 5% to 95% non-condensing
H9124-OPF: 5% to 95% non-condensing
Power
Power supply:
H9106-OPF: 180-240 VAC 50-60 Hz
H9124-OPF: 180-240 VAC 50-60 Hz

Hot swappable:
H9106-OPF: Yes
H9124-OPF: Yes

Power Consumption (Typical/Maximum):

	H9106-OPF	H9124-OPF
Input 180-260 VAC 50-60 Hz	1.8/2.3 KW (Copper)	6.8/8.9 KW (Copper)
Optical Power: Class 4 - 3 Watt Max	2.4/3 KW (All Optical)	9.4/11.6 KW (All Optical)

Availability
Power supply redundancy:
H9106-OPF: 3 (DC redundant) / 4 (AC redundant)
H9124-OPF: 7 (DC redundant) / 12 (AC redundant)
Airflow:
H9106-OPF: Front-to-back
H9124-OPF: Front-to-back

Regulatory, environment and other compliance
Regulatory model designations
100SWD06 and 100SWD24

Safety and emissions
US/Canada
• FCC Part 15, Subpart B, Class A
• CAN ICES-3 (A)
Europe
• CISPR22
• CISPR32/EN55032
• EN55024
• EN61000-3-2
• EN61000-3-3
Japan
• VCCI, Class A
New Zealand/Australia
• AS/NZS CISPR 22, Class A
Customs Union: Russia, Belarus and Kazakhstan

Agency Approvals – Safety (Planned)
US/Canada
• TUV NRTL: UL 60950-1, CSA 22.1.No. 60950-1
Europe
• TUV SUD EN60950-1
International
• CB Scheme: IEC 60950-1

RoHS/REACH
• Complies with RoHS II Directive 2011/65/EU of the European Parliament

Learn more at Dell.com/H-Series.