Dell Networking N4000 series

Dell Networking N4000 is a series of energy-efficient and cost-effective 10GbE switches designed for modernizing and scaling network infrastructure. N4000 switches utilize a comprehensive enterprise-class Layer 3 Advanced feature set, deliver consistent, simplified management and offer high-availability device and network design.

The N4000 switch series offers a power-efficient and resilient 10 Gigabit Ethernet (10GbE) switching solution with support for 40GbE optics allowing for flexibility in multivendor network operations. N4000 series switches offer the latest open-standard protocols and include technology to interface with Cisco protocol RPVST+. They also feature hardware, performance and efficiency:

- Up to 32 10GbE ports (N4032 and N4032F) and up to 64 10GbE ports (N4064 and N4064F) using breakout cables.
- Converged network support for DCB with Priority Flow Control (802.1Qbb), ETS (802.1Qaz), DCBx, iSCSI TLV Support.
- Up to 672 10GbE ports in a 12-unit stack for high-density, high-availability aggregation and distribution in wiring closets/MDFs. Non-stop forwarding and fast failover in stack configurations.
- Hot swappable expansion module supporting dual-port QSFP+ (8x 10GbE), quad-port 10GbBaseT and quad-port SFP+
- Dual 80PLUS-certified efficient hot swappable power supplies and redundant variable speed fan operation helps decrease cooling and power costs.
- Energy-Efficient Ethernet and lower power PHYs reduce power to inactive ports and idle links, providing energy savings from the power cord to the port.
- Dell Fresh Air compliance for operation in environments up to 113°F (45°C) helps reduce cooling costs in temperature constrained deployments.

Deploying, configuring and managing

- Tool-less ReadyRails™ significantly reduces rack installation time.
- USB auto-configuration rapidly deploys the switches without setting up complex TFTP configurations or sending technical staff to remote offices.
- Plug-and-Play configuration with Dell EqualLogic iSCSI storage arrays** and one-command iSCSI setup alleviates multiple step configuration and potential configuration errors.
- Management via an intuitive and familiar CLI, embedded web server (GUI), SNMP-based management console application (including Dell OpenManage Network Manager), Telnet or serial connection.
- Private VLAN extensions and Private VLAN Edge support.
- AAA authorization, TACACS+ accounting and RADIUS support for comprehensive secure access support.
- Authentication tiering allows network administrators to tier port authentication methods such as 802.1x. MAC Authentication Bypass and Captive Portal in priority order so that a single port can provide flexible access and security.
- Achieve high availability and full bandwidth utilization with Multi-chassis Link Aggregation (MLAG). N4000 series switches support MLAG to create active/active loop-free redundancy without spanning tree. Server rooms can deliver reliable server and storage connectivity with features to help save time and avoid configuration errors. These high density 24-port or 48-port 10GbE switches are ready for converged fabric requirements for SAN and LAN networks with loss-less operation for iSCSI environments with Data Center Bridging (DCB). N4000 supports VRF-lite, allowing it to be partitioned into multiple virtual routers with isolated control and data planes on the same physical switch. The N4000 series is also fully tested and validated to work with Dell EqualLogic™ PS-Series storage arrays.**

Leverage familiar tools and practices

All N-Series switches include Dell Networking OS 6 designed for easier deployment, greater interoperability and a lower learning curve for network administrators. One common command line interface (CLI) and GUI using a well-known command language gets skilled network administrators productive quickly. This allows network administrators to maintain consistent configurations by running one OS release across all N-Series products. With USB auto-configuration, network administrators can quickly deploy mirrored configurations to numerous devices by simply inserting a USB key.

Deploy with confidence at any scale

N4000 series switches help create performance assurance with a data rate up to 1.28Tbps (full duplex) and a forwarding rate up to 952Mpps. Scale easily with 10/40GbE user port stacking supporting distances up to 100 meters. Switch stacks of up to 672 10GbE ports can be managed from a single screen using the highly-available stacking architecture for high-density aggregation with seamless redundant availability. N-Series switches help provide certainty with a lifetime warranty that covers software upgrades, hardware repair or replacement as well as optics and cables purchased with the switch. Details at Dell.com/LifetimeWarranty.***

*Available starting with Dell Networking OS 6.1 release.
**Contact your Dell representative for a full list of validated storage arrays.
***Select Networking products carry a Lifetime Limited Warranty with Basic Hardware Service (repair or replacement) for life. Repair or replacement does not include troubleshooting, configuration, or other advanced service provided by Dell ProSupport.
Specifications: Dell Networking N4000 series

**Dell SKU description**

**Specifications:**
- Dell Networking N4000 series

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**Legal:**
- Additional features may be supported and not listed. For a detailed list, please contact your Dell representative.
- This document is for informational purposes only. Dell reserves the right to make changes without further notice to the products herein. The content provided is as-is and without expressed or implied warranties of any kind. Additional features may be supported and not listed. For a detailed list, please contact your Dell representative.

**Power cords**
- 25V, 1A, 10 feet, NEMA S-15/C13
- 25V, 1A, 2 meters, C13/C14

**Cables (optional)**
- Cables (optional)
  - Transceiver, QSFP+, 40GbE, PSM4 with 1m, 5m or 15m pigtail to MPO
  - Transceiver, QSFP+, 40GbE, ESR, 850nm wavelength, up to 300m reach
  - Transceiver, QSFP+, 40GbE, SR4, 850nm wavelength, up to 150m reach
  - Transceiver, SFP, 1000BASE-LX, 1310nm wavelength, up to 10km reach
  - Transceiver, SFP, 1000BASE-SX, 850nm wavelength, up to 550m reach
  - Transceiver, SFP, 1000BASE-T

**Optics (optional)**
- Optics (optional)
  - 250V, 12A, 2 meters, C13/C14

**Environmental**
- Size (1RU): 1.71 in x 17.08 in x 18.11 in
- Operating temperature: 32° to 113°F (0° to 45°C)
- Storage temperature: -40° to +158°F (-40° to 70°C)
- Operating relative humidity: 90%
- Storage relative humidity: 95%
- Air flow: I/O to power supply
- Redundant variable speed fans
- Energy-Efficient Ethernet per port settings
- Broadcast storm control
- Flow-based port mirroring
- Auto-negotiation for speed and flow control
- Energy-Efficient Ethernet per port settings
- Redundant variable speed fans
- Air flow: I/O to power supply
- Redundant variable speed fans
- Energy-Efficient Ethernet per port settings
- Broadcast storm control
- Flow-based port mirroring
- Auto-negotiation for speed and flow control

**General Internet protocols**
- General Internet protocols are supported. For a detailed list, please contact your Dell representative.

**IPv4 protocols**
- IPv4 protocols are supported. For a detailed list, please contact your Dell representative.

**IPv6 protocols**
- IPv6 protocols are supported. For a detailed list, please contact your Dell representative.

**Multicast**
- Multicast

**QoS Services Mode**
- Dell Flow-Based QoS Services Mode

**!Network management and security**
- !Network management and security

**Quality of service**
- Quality of service

**Safety and emissions**
- Safety and emissions

**Regulatory, environment and other compliance**
- Regulatory, environment and other compliance

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