Dell Networking N3000 series

Dell Networking N3000 is a series of energy-efficient and cost-effective 1GbE switches designed for modernizing and scaling network infrastructure. N3000 switches utilize a comprehensive enterprise-class Layer 3 Advanced feature set, deliver consistent, simplified management and offer high-availability device and network design.

The N3000 switch series offers a power-efficient and resilient Gigabit Ethernet (GbE) switching solution with integrated 10GbE uplinks for advanced Layer 3 distribution for offices and campus networks. The N3000 switch series has high-performance capabilities and wire-speed performance utilizing a non-blocking architecture to easily handle unexpected traffic loads. Use dual internal hot-swappable 80PLUS-certified power supplies for high availability and power efficiency. The switches offer simple management and scalability via an 84Gbps (full-duplex) high-availability stacking architecture that allows management of up to 12 switches from a single IP address.

Modernize campus network architectures

Modernize campus network architectures with a power-efficient and resilient 1/10GbE switching solution with dense Power over Ethernet Plus (PoE+). Select N3000 models offer 24 or 48 ports of PoE+ to deliver clean power to network devices such as wireless access points (APs), Voice-over-IP (VoIP) handsets, video conferencing systems and security cameras. For greater interoperability in multivendor networks, N3000 series switches offer the latest open-standard protocols and include technology to interface with Cisco protocol RPVST+ and devices using CDP.

Achieve high availability and full bandwidth utilization with Multi-chassis Link Aggregation (MLAG). N3000 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. N3000 supports VRF-lite, allowing it to be partitioned into multiple virtual routers with isolated control and data planes on the same physical switch. The N3000 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 graphic user interface (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 rapidly deploy mirrored configurations to numerous devices by simply inserting a USB key.

Deploy with confidence at any scale

N3000 series switches help create performance assurance with a data rate up to 260Gbps (full duplex) and a forwarding rate up to 193Mpps. Scale easily with built-in rear stacking ports. Switch stacks of up to 624 1GbE 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, and optics and cables purchased with the switch. Details at Dell.com/LifetimeWarranty.

Hardware, performance and efficiency

- Up to 48 line-rate GbE ports of copper or fiber, two combo ports for fiber/copper flexibility, and two integrated 10GbE SFP+ ports.
- Up to 48 ports of PoE+ in 1RU without an external power supply.
- Up to 624 1GbE 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 SFP+ or dual-port 10GBaseT.
- Available with dual 80PLUS-certified hot swappable power supplies. 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 switch 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 MLAG and support firmware upgrades without taking the network offline.
- Interfaces with RPVST+ protocol for greater flexibility and interoperability in Cisco networks.
- Advanced Layer 3 IPv4 and IPv6 functionality.
- Flexible routing options with policy-based routing to route packets based on assigned criteria beyond destination address.
- Remote Switch Port Analyzer (RSPAN) monitors ports across a Layer 2 domain without costly dedicated network taps.
- OpenFlow 1.3 provides the ability to separate the control plane from the forwarding plane for more sophisticated traffic management.

*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 N3000 series

Dell SKU description

N3024: 24x 10/100/1000Mb auto-sensing ports, 2x SFP+ ports, 2x SFP+ ports, 1x hot swap expansion module bay, 1x 200W PoE included

N3024F: 24x 10/100/1000Mb or 10/100/1000Mb distance or 1000-LX (up to 10km distance) GBE ports, 2x SFP+ ports, 2x GBE combo media ports, 1 hot swap expansion module bay, 1x 200W PoE included

N3024P: 24x RJ45 10/100/1000Mbps PoE+ (up to 38.8W) auto-sensing ports, 2x SFP+ ports, 2x SFP+ ports, 1 hot swap expansion module bay, 1x 200W PoE included on 75% power only

N3048: 48x RJ45 10/100/1000Mbps auto-sensing ports, 2x SFP+ ports, 2x SFP+ ports, 2x SFP+ ports, 1 hot swap expansion module bay, 1x 200W PoE included

N3048P: 48x RJ45 10/100/1000Mbps PoE+ (up to 38.8W) auto-sensing ports, 2x SFP+ ports, 2x SFP+ ports, 2x SFP+ ports, 1 hot swap expansion module bay, 1x 1000W PoE included*

Power cords
c13 to c14, 13m

C13 to c14, 15m

C15 to NEA 5-15, 3m

C15 to c14, 15m

C15 to POE N-Series only

Power supply

200W AC hot swappable with V-Lock, adds redundancy to non-PoE switches (N3024, N3024F and N3048 only)

750W AC hot swappable, adds redundancy to N3024P (N3024P only)

1,000W AC hot swappable, adds redundancy to N3048P or upgrade N3024P for additional PoE+ power (N3024P and N3048P only)

Optics (optional)

Transceiver, SFP, 10BASE-TX, 150m wavelength, up to 2km reach

Transceiver, SFP, 100BASE-TX

Transceiver, SFP, 100BASE-LX, 1550nm wavelength, up to 550m reach

Transceiver, SFP+, 10GbE, URM, 1310nm wavelength, up to 220m reach

Transceiver, SFP+, 10GbE, 1550nm wavelength, up to 300m reach

Transceiver, SFP+, 10GbE, LR, 1310nm wavelength, up to 10km reach

Transceiver, SFP+, 10GbE, ER, 1550nm wavelength, up to 40km reach

Cables (optional)

Stacking cable 0.25m, 1m and 3m

Dell networking cable: SFP+ to SFP+, 10GbE, copper twinax direct attach cable, 0.5m, 1m, 3m and 7m

* Requires c15 plug

Physical

2 rear stacking ports (2gbps) supporting up to 84gbps (full-duplex)

2 integrated front 10GbE SFP+ dedicated ports

Out-of-band management port (RJ10/100/1000BASE-T)

USB (Type A) port for configuration via USB flash drive

Auto-negotiation for speed and flow control

Auto-MDI/MDIX, port mirroring

Broadcast storm control

Energy-Efficient Ethernet per port settings

Reduced variable speed fans

Air flow: (1) power supply b, (1) console/management port with RS232 signaling (RJ-45 to DB9)

Redundant variable speed fans

Chassis

Size (UL) 1.716W x 1.078W x 0.196W (43.5 mm x 443.0 mm x 49.7 mm) (W x D x H)

Approximate weight: 13.227lbs (6kg) (N3024 and N3024F), 14.050lbs (6kg) (N3024P), 18.8lbs (9.3kg) (N3048), 15.21lbs (6.9kg) (N3048P)

ReadyRails rack mounting system, no tools required

Environmental

Power supply, 200W (N3024, N3024F and N3048), 751W or 1,100W (N3024P, 1,100W (N3048P)

Power supply efficiency: 80% or better in all operating modes

Max. ambient thermal (IT/ITU): 151.5°F (72.5°C), 204.6°F (96.4°C), 446°F (229°C), 220.9°F (104.9°C), 513°F (280°C)

Max. ambient thermal (IEC): 70°F (21°C), 85°F (30°C)

Max. ambient thermal (Dell): 100°F (38°C), 122°F (50°C)

Operating temperature: 32°F to 113°F (0°C to 45°C)

Operating relative humidity: 5% to 95% (non-condensing)

Storage temperature: -40°F to 149°F (-40°C to 65°C)

Storage relative humidity: 85%

Performance

MAC address: 32K

Static routes: 1,024 (IPv4)/1,024 (IPv6)

Dynamic routes: 8,192 (IPv4)/4,096 (IPv6)

Switched MAC addresses: N3024, N3024F and (full duplex) N3024P

Forwarding rate: 24,000Mpps (N3024, N3024F and N3024P)

193Mpps (N3024P and N3048P)

Link aggregation: 128 LAG groups, 4 dynamic ports per stack, 8 member ports per LAG