DELL EMC NETWORKING
N3000 SERIES SWITCHES

Energy-efficient, cost-effective 1GbE switches for modernizing and scaling network infrastructure

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 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. Note: With OS 6.5.1.x and higher, max stack for N3000 series is 8; however, N3000E series and N3132PX-ON support max stack of 12 members. N3000 series can be stacked with N3000E series; however, stack size is limited to 8 and active VLANs to 1024.

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+) and PoE 60W. Select N3000 models offer 24 or 48 ports of PoE+, or up to 32 ports of PoE 60W 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 EMC EqualLogic™ PS-Series storage arrays.*

Leverage familiar tools and practices

All N-Series switches include Dell EMC Networking OS 6, designed for easier deployment, greater interoperability and a lower learning curve for network administrators. OS 6 common command line interface (CLI) and graphic user interface (GUI) are intuitive, so skilled network administrators can get productive quickly. Select N3000 switches now support the Open Network Install Environment (ONIE), enabling installation of alternate network operating systems.

Deploy with confidence at any scale

N3000 series switches help create performance assurance with a data rate up to 328Gbps (full duplex) and a forwarding rate up to 428Mpps. 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. The N-Series switches’ lifetime warranty 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+ or 32 ports of PoE 60W in 1RU without an external power supply.
- Up to eight 2.5/5GbE ports delivering additional bandwidth for Wave 2 wireless access points.
- 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 EMC Fresh Air compliance for operation in environments up to 113°F (45°C) reduces cooling costs.

Deploying, configuring and managing

- USB auto-configuration rapidly deploys the switch without complex TFTP configurations or sending technical staff to remote offices.
- Plug-and-Play configuration with Dell EMC 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 EMC OpenManage Network Manager), Telnet or serial connection.
- Private VLAN extensions and Private VLAN Edge support.

*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 EMC ProSupport.

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<table>
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<th>Product</th>
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| N3000 series| N3024: 24x RJ45 10/100/1000Mb auto-sensing ports, 2x SFP+ ports, 2x GbE combo media ports, 1x hot swap expansion module bay, 1x 200W PSU included  
N3024ET-ON: 24x RJ45 10/100/1000Mb auto-sensing ports, 2x SFP+ ports, 2x GbE combo media ports, 1x hot swap expansion module bay, 1x 200W PSU included, 2Gb memory and 1Gb of flash  
N3024F: 24x 1000-SX (up to 500m distance) or 1000-LX (up to 10km distance) SFP GbE ports, 2x SFP+ ports, 2x GbE combo media ports, 1x hot swap expansion module bay, 1x 200W PSU included  
N3024EF-ON: 24x 1000-SX (up to 500m distance) or 1000-LX (up to 10km distance) SFP GbE ports, 2x SFP+ ports, 2x GbE combo media ports, 1x hot swap expansion module bay, 1x 200W PSU included, 2Gb memory and 1Gb of flash  
N3024P: 12x RJ45 10/100/1000Mb PoE+ (up to 30.8W) auto-sensing ports, 12x RJ45 10/100/1000Mb PoE 60W auto-sensing ports, 2x SFP+ ports, 2x GbE combo media ports, 1x hot swap expansion module bay, 1x 715W PSU included (requires C15 plug)  
N3024EP-ON: 12x RJ45 10/100/1000Mb PoE+ (up to 30.8W) auto-sensing ports, 12x RJ45 10/100/1000Mb PoE 60W auto-sensing ports, 2x SFP+ ports, 2x GbE combo media ports, 1x hot swap expansion module bay, 1x 715W PSU included (requires C15 plug), 2Gb memory and 1Gb of flash  
N3048: 48x RJ45 10/100/1000Mb auto-sensing ports, 2x SFP+ ports, 2x GbE combo media ports, 1x hot swap expansion module bay, 1x 200W PSU included  
N3048ET-ON: 48x RJ45 10/100/1000Mb auto-sensing ports, 2x SFP+ ports, 2x GbE combo media ports, 1x hot swap expansion module bay, 1x 200W PSU included, 2Gb memory and 1Gb of flash  
N3048EP-ON: 48x RJ45 10/100/1000Mb PoE 60W auto-sensing ports, 12x RJ45 10/100/1000/2500/5000Mb PoE 60W auto-sensing ports, 2x SFP+ ports, 2x GbE combo media ports, 1x hot swap expansion module bay, 1x 1100W PSU included (requires C15 plug); 2GB memory and 1GB flash  
N3132PX-ON: 24x RJ45 10/100/1000Mb PoE 60W auto-sensing ports, 8x RJ45 10/100/1000/2500/5000Mb PoE 60W auto-sensing ports, 4x SFP+ ports, 1x hot swap expansion module bay, 1x 1100W PSU included (requires C15 plug) |
| Power cords | C13 to NEMA 5-15, 3M  
C13 to C14, 2M  
C15 to NEMA 5-15, 2M (C15 for POE N-Series only) |
| Modules (optional) | 2-port 10 Gigabit BASE-T RJ-45 hot swappable uplink module  
2-port 10 Gigabit SFP+ hot swappable uplink module  
2-port 40 Gigabit QSFP+ hot swappable module (N3132PX-ON only)  
Stacking module (N3132PX-ON only) |
| Power supplies (optional) | 200W AC hot swappable with V-Lock, adds redundancy to non-PoE switches (N3024, N3024ET-ON, N3024F, N3024EP-ON, and N3048 and N3048ET-ON only)  
715W AC hot swappable, adds redundancy to N3024P and N3024EP-ON (N3024P only)  
| Optics (optional) | Transceiver, SFP, 100BASE-FX, 1310nm wavelength, up to 2km reach  
Transceiver, SFP, 1000BASE-T  
Transceiver, SFP, 1000BASE-SX, 850nm wavelength, up to 550m reach  
Transceiver, SFP, 1000BASE-LX, 1310nm wavelength, up to 10km reach  
Transceiver, SFP, 1000BASE-ZX, 1550nm wavelength, up to 80km reach  
Transceiver, SFP+, 10GbE, LR, 1310nm wavelength, up to 220m reach  
Transceiver, SFP+, 10GbE, SR, 850nm wavelength, up to 300m reach  
Transceiver, SFP+, 10GbE, ER, 1550nm wavelength, up to 40km reach |
| Cables (optional) | Stacking cable 0.25m, 1m and 3m  
Dell EMC Networking cable, SFP+ to SFP+, 10GbE, copper twinax direct attach cable, 0.5m, 1m, 3m, 5m and 7m |
**Technical specifications**

### Physical
- 2 rear stacking ports (21Gbps) supporting up to 84Gbps (full duplex) (N3132PX-ON requires optional stacking module)
- 2 integrated front 10GbE SFP+ dedicated ports (N3132PX-ON includes 4 integrated SFP+ ports)
- Out-of-band management port (10/100/1000BASE-T)
- USB (Type A) port for configuration via USB flash drive
- Auto-negotiation for speed and flow control
- Auto MDI/MDIX, port mirroring
- Flow-based port mirroring
- Broadcast storm control
- Energy-Efficient Ethernet per port settings
- Redundant variable speed fans
- Air flow: I/O to power supply
- RJ45 console/management port with RS232 signaling (RJ-45 to female DB-9 connector cable included)
- Dual firmware images on-board
- Switching engine model: Store and forward
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### Switch fabric capacity:
- Dynamic routes: 8,160 (IPv4)/4,096 (IPv6)
- Static routes: 1,024 (IPv4)/1,024 (IPv6)

### Performance
- Storage relative humidity: 85%
- Operating relative humidity: 95%
- Power consumption max (watts):
- Max. thermal output (BTU/hr):
- Power supply:
- Approximate weight:
- Size (1RU, H x W x D):
  - 36x165
  - 36x174
  - 36x182
  - 36x200
  - 36x208
  - 36x232
  - 36x296
  - 36x352
  - 36x384
  - 36x424
  - 36x501
  - 36x536
  - 36x545
  - 36x553
  - 36x561
  - 36x585
  - 36x609
  - 36x641
  - 36x657
  - 36x689
  - 36x713
  - 36x721
  - 36x737
  - 36x753
  - 36x779
  - 36x795
  - 36x821
  - 36x847
  - 36x873
  - 36x899
  - 36x925
  - 36x951
  - 36x977
  - 36x993

### Power supply:
- Max. thermal output (BTU/hr):
- Power supply:
- Approximate weight:
- Size (1RU, H x W x D):

### Chassis
- Approximate weight:
- Size (1RU, H x W x D):
- Approximate weight:
- Size (1RU, H x W x D):

### Switch fabric capacity:
- Dynamic routes: 8,160 (IPv4)/4,096 (IPv6)
- Static routes: 1,024 (IPv4)/1,024 (IPv6)

### Power consumption max (watts):
- Max. thermal output (BTU/hr):
- Power supply:
- Approximate weight:
- Size (1RU, H x W x D):

### Environmental
- Power supply:
- Max. thermal output (BTU/hr):
- Power supply:
- Approximate weight:
- Size (1RU, H x W x D):

### Power supply efficiency:
- 80% or better in all operating modes
- Max. thermal output (BTU/hr):
- Power supply:
- Approximate weight:
- Size (1RU, H x W x D):

### Operating modes
- Max. thermal output (BTU/hr):
- Power supply:
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