



Dell EMC PowerSwitch N3000E Series Switches

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

The N3000E 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 N3000E 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, N3000E 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). N3000E

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. N3000E supports VRF lite, allowing it to be partitioned into multiple virtual routers with isolated control and data planes on the same physical switch. The N3000E series is also fully tested and validated to work with Dell EMC EqualLogic™ PSSeries 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 N3000E switches now support the Open Network Install Environment (ONIE), enabling installation of alternate network operating systems.

Deploy with confidence at any scale

N3000E 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 highlyavailable 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."

*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.

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.

Product	Description
N3000E series	<p>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</p> <p>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</p> <p>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</p> <p>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, 2G memory and 1Gb of flash</p> <p>N3048EP-ON: 48x RJ45 10/100/1000Mb PoE+ (up to 30.8W) auto-sensing ports; first twelve RJ45 10/100/1000Mb can provide 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 4GB flash (on product shipping from July 1st, 2019).</p> <p>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)</p>
Power cords	<p>C13 to NEMA 5-15, 3M</p> <p>C13 to C14, 2M</p> <p>C15 to NEMA 5-15, 2M (C15 for POE N-Series only)</p>

Product	Description
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 (N3024ET-ON, N3024EF-ON and N3048ET-ON only) 715W AC hot swappable, adds redundancy to N3024EP-ON 1100W AC hot swappable, adds redundancy to N3048EP-ON N3024EP-ON for additional PoE+ power (N3024EP-ON, N3048EP-ON, N3132PX-ON 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, LRM, 1310nm wavelength, up to 220m reach Transceiver, SFP+, 10GbE, SR, 850nm 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 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

Chassis

Size (1RU, H x W x D):
1.7126 in x 17.0866 in x 16.0236 in (43.5 mm x 434.0 mm x 407.0 mm)
(Power supply handle adds 1.38 in or 35 mm)
Approximate weight:
13.2277lbs/6kg (N3024ET-ON, and N3024EF-ON), 14.5505lbs/6.6kg (N3024EP-ON),
13.8891lbs/6.3kg (N3048ET-ON),
15.2119lbs/6.9kg (N3048EP-ON),
15.7lbs/7.12kg (N3132PX-ON)
Two post rack mount

Environmental

Power supply:
200W (N3024ET-ON, N3024EF-ON, and N3048ET-ON)

715W or 1,100W (N3024EP-ON)
1,100W (N3048EP-ON and N3132PX-ON)
Power supply efficiency: 80% or better in all operating modes
Max. thermal output (BTU/hr):
151.4 (N3024ET-ON), 204.6 (N3024EF-ON), 4,467.1 (N3024EP-ON), 220.97 (N3048ET-ON), 3,113.33 (N3048EP-ON), 7216.68 (N3132PX-ON)
Power consumption max (watts):
52.8 (N3024ET-ON), 67.1 (N3024EF-ON), 1,287 (N3024EP-ON), 74.8 (N3048ET-ON), 2,145 (N3048EP-ON), 2,115 (N3132PX-ON)
Operating temperature: 32° to 113°F (0° to 45°C)
Operating relative humidity: 95%
Storage temperature: -40° to 149°F (-40° to 65°C)
Storage relative humidity: 85%

Performance

MAC addresses: 32K
Static routes: 1,024 (IPv4)/1,024 (IPv6)
Dynamic routes: 8,160 (IPv4)/4,096 (IPv6)
Switch fabric capacity:
212Gbps (N3024ET-ON, N3024EF-ON, and N3024EP-ON) (full duplex)
260Gbps (N3048ET-ON, N3048EP-ON)
328Gbps (N3132PX-ON)

Forwarding rate:

158Mpps (N3024ET-ON, N3024EF-ON, N3024EP-ON) 193Mpps (N3048ET-ON, N3048EP-ON) 428Mpps (N3132PX-ON)
Link aggregation: 128 LAG groups, 144 dynamic

ports per stack, 8 member ports per LAG
Priority queues per port: 8
Line-rate Layer 2 switching: All (non-blocking)
Line-rate Layer 3 routing: All (non-blocking)
Flash memory: 256MB (512MB for N3132PX-ON)
Packet buffer memory: 4MB (5MB for N3132PX-ON)
CPU memory: 1GB (2GB for N3132PX-ON)
OSPF routing interfaces: 8,160
RIP routing interfaces: 512
ECMP next hops per route: 4
ECMP groups: 64
VLAN routing interfaces: 128
VLANs supported: 4,094
Protocol-based VLANs: Supported
Multicast forwarding entries: 1,536 (IPv4), 512 (IPv6)
ARP entries: 6,144
NDP entries: 400
Access control lists (ACL): Supported
MAC and IP-based ACLs: Supported
Time-controlled ACLs: Supported
Max number of ACLs: 100
Max ACL rules system-wide: 4,096
Max rules per ACL: 1,023
Max ACL rules per interface (IPv4): 3,072 (ingress), 1,024 (egress)
Max ACL rules per interface (IPv6): 1,021 (ingress), 512 (egress)
Max VLAN interfaces with ACLs applied: 24

IEEE Compliance

802.1AB LLDP
Dell Voice VLAN
Dell ISDP (inter-operates with devices running CDP)
802.1D Bridging, Spanning Tree
802.1p Ethernet Priority (User Provisioning and Mapping)
Dell Adjustable WRR and Strict Queue Scheduling

IT Lifecycle Services for Networking

Experts, insights and ease

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Let us analyze your multivendor environment and deliver a comprehensive report and action plan to build upon the existing network and improve performance.



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