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. 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.

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.

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.
<table>
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<th>Product</th>
<th>Description</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  
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  
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)  
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  
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 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, N3024F and N3048 only)  
715W AC hot swappable, adds redundancy to N3024P (N3024P only)  
1100W AC hot swappable, adds redundancy to N3048P or upgrade N3024P for additional PoE+ power (N3024P, N3048P, N3048EP-ON, N3132PX-ON only) |
| **Optics (optional)** | Transceiver, SFP, 10BASE-FX, 1310nm wavelength, up to 2km reach  
Transceiver, SFP, 100BASE-SX, 850nm wavelength, up to 550m reach  
Transceiver, SFP, 100BASE-LX, 1310nm wavelength, up to 10km reach  
Transceiver, SFP, 100BASE-ZX, 1550nm wavelength, up to 80km reach  
Transceiver, SFP+, 10GbE, LR, 1310nm wavelength, up to 220km 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  
- 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 6.0236 in (43.5 mm x 434.0 mm x 407.0 mm)  
- (Power supply handle adds 1.38 in or 35 mm)  
- Approximate weight: 13.227lbs/6kg (N3024 and N3024F), 14.550lbs/6.6kg (N3024P), 15.889lbs/6.3kg (N3048), 15.715lbs/7.2kg (N3132PX-ON)  
- ReadyRails rack mounting system, no tools required  
- **Environmenta**l Power supply: 200W (N3024, N3024F and N3048), 715W or 1300W (N3024P), 1100W (N3048P, N3132PX-ON)  
- Power supply efficiency: 80% or better in all operating modes  
- Max. thermal output (BTU/hr): 151.4 (N3024), 204.6 (N3024F), 4,467.1 (N3024P), 220.97 (N3048), 3,113.33 (N3048P), 7,216.68 (N3132PX-ON)  
- Power consumption max (watts): 52.8 (N3024), 67.1 (N3024F), 220.97 (N3048P), 74.8 (N3048), 2,145 (N3048P), 2,115 (N3132PX-ON)  
- Operating temperature: 32° to 113°F (0° to 45°C)  
- Operating relative humidity: 95%  
- Storage temperature: –40° to 68°F (–40° to 20°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 (N3024, N3024F and N3024P) (full duplex)
260Gbps (N3048, N3048EP-ON and N3048P)
328Gbps (N3132PX-ON)
Forwarding rate: 1
58Mpps (N3024, N3024F and N3024P)
193Mpps (N3048, N3048EP-ON and N3048P)
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)
Packet buffer memory: 4MB
(5MB for N3132PX-ON)
CPU memory: 1GB (2GB for N3132PX-ON)
ACLs applied: 24
Max VLAN interfaces with
512 (egress)
Max ACL rules per interface (IPv6): 1,021 (ingress), 1,024 (egress)
Max rules per ACL: 1,023
Max ACL rules system-wide: 4,096
Max number of ACLs: 100
MAC and IP-based ACLs: Supported
Access control lists (ACL): Supported
IEEE compliance
802.1AB LLDP
Dell Voice VLAN
Dell ISDP (inter-operates with devices running CDP)
802.1B Bridging, Spanning Tree
802.1p Ethernet Priority (User Provisioning and Mapping)
Dell Adjustable WRR and Strict Queue Scheduling
802.1Q VLAN Tagging, Double VLAN Tagging, GVRP
802.1S Multiple Spanning Tree (MSTP)
802.1v Protocol-based VLANs
802.1W Rapid Spanning Tree (RSTP)
Dell RSTP-Pv VLAN (compatible with Cisco's RSTPVST+)
Dell Spanning tree optional features: STP root guard, BPDU guard, BPDU filtering
802.1X Network Access Control, Auto VLAN
802.2 Logical Link Control
802.3 10BASE-T
802.3ab Gigabit Ethernet (1000BASE-T)
802.3ac Frame Extensions for VLAN Tagging
802.3ad  Link Aggregation with LACP
802.3af PoE+ (N3024P, N3048EP-ON and N3048P)
802.3AX LAG Load Balancing
Dell EMC Multi-Chassis LAG (MLAG)
Dell EMC Policy Based Forwarding
802.3az Energy Efficient Ethernet (EEE)
802.3u Fast Ethernet (100BASE-TX) on management ports
802.5x Flow Control
802.3z Gigabit Ethernet (1000BASE-X)
ANP L2-LLDP (MIA-1057)
LLDP-ED (MIA-1057)
Dell EMC EqualLogic iSCSI Auto-configuration
MTU, 9,216 bytes

RFC compliance and additional features
General Internet protocols
General Internet protocols are supported. For a detailed list, please contact your Dell EMC representative.
General IPv4 protocols
General IPv4 protocols are supported. For a detailed list, please contact your Dell EMC representative.
General IPv6 protocols
General IPv6 protocols are supported. For a detailed list, please contact your Dell EMC representative.
Layer 3 functionality
1058 IPv1
1724 IPv4/IPv6 Management Extension
1765 OSPF DB overflow
1850 OSPF MIB
2082 RIP-2 MIB Auth
Router Advert
2328 OSPFv2
2338 VRRP
2370 Opaque LSA Option
Dell Policy Based Routing
1112 IGMPv1
1155 SNMPv1
1157 SNMPv1
2328 OSPFv2
2370 Opaque LSA Option
Dell Policy Based Routing
3216 Multicast
IPv4, 512
IPv6
ARP entries: 6,144
NDP entries: 400
Control Access 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: 1,024
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 802.3ad Link Aggregation with LACP
802.3ac Frame Extensions for VLAN Tagging
802.3ad Link Aggregation with LACP
802.3af PoE+ (N3024P, N3048EP-ON and N3048P)
802.3ax LAG Load Balancing
Dell EMC Multi-Chassis LAG (MLAG)
Dell EMC Policy Based Forwarding
802.3az Energy Efficient Ethernet (EEE)
802.3u Fast Ethernet (100BASE-TX) on management ports
802.3x Flow Control
802.3z Gigabit Ethernet (1000BASE-X)
ANP L2-LLDP (MIA-1057)
Dell EMC EqualLogic iSCSI Auto-configuration
MTU, 9,216 bytes

Network management and security
1155 SMIv1
1157 SNMPv1
1212 Concise MIB Definitions
1213 MIB-II
1215 SNMP Traps
1286 Bridge MIB
1442 SMV
1451 Manager-to-
Manager MIB
1492 TACACS+
1493 Managed objects for Bridges MIB
1573 Evolution of Interfaces
1612 DNS Resolver MIB
1643 Ethernet-like MIB
1757 RMON MIB
1867 HTML/2.0 Forms with file upload extensions
1901 Community-based
SNMPv2
1907 SNMPv2 MIB
1908 Coexistence between
SNMPv1/v2
2011 IP MIB
2012 TCP MIB
2013 UDP MIB
2088 HTTP/1.1
2096 IP Forwarding Table MIB
2233 Interfaces Group
2246 TLS v1
2271 SNMP Framework
2295 Transport Control
Negotiation
2296 Remote Variant
2348 AES Ciphersuites
for TLS
2576 Coexistence
between
SNMPv1/v2
2578 SMVv2
2579 Textual Conventions
for SMV2
2580 Conformance
Statements for SMV2
2613 RMON MIB
2618 RADIUS Authentication
2620 RADIUS Accounting
2665 Ethernet-like Interfaces
2666 Identification of
Ethernet chips
IT Lifecycle Services for Networking

Experts, insights and ease
Our highly trained experts, with innovative tools and proven processes, help you transform your IT investments into strategic advantages.

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

Deploy & Integrate
Get new wired or wireless network technology installed and configured with ProDeploy. Reduce costs, save time, and get up and running fast.

Educate
Ensure your staff builds the right skills for long-term success. Get certified on Dell EMC Networking technology and learn how to increase performance and optimize infrastructure.

Manage & Support
Gain access to technical experts and quickly resolve multivendor networking challenges with ProSupport. Spend less time resolving network issues and more time innovating.

Optimize
Maximize performance for dynamic IT environments with Dell EMC Optimize. Benefit from in-depth predictive analysis, remote monitoring and a dedicated systems analyst for your network.

Retire
We can help you resell or retire excess hardware while meeting local regulatory guidelines and acting in an environmentally responsible way.

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