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 N3000E series is 8; however, N3000E series and N3132PX-ON support max stack of 12 members. N3000E 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 RVF lite 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 RVFLite, 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.**

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*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.

Dell EMC PowerSwitch N3000E Series Switches
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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.

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3000E series</td>
<td>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</td>
</tr>
<tr>
<td>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</td>
<td></td>
</tr>
<tr>
<td>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</td>
<td></td>
</tr>
<tr>
<td>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)</td>
<td></td>
</tr>
<tr>
<td>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</td>
<td></td>
</tr>
<tr>
<td>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</td>
<td></td>
</tr>
<tr>
<td>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</td>
<td></td>
</tr>
<tr>
<td>N3048EP-ON: 48x RJ45 10/100/1000Mb PoE+ (up to 30.8W) auto-sensing ports; first twelve RJ45 10/100/1000Mb 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</td>
<td></td>
</tr>
<tr>
<td>N3048P: 48x RJ45 10/100/1000Mb PoE+ (up to 30.8W) auto-sensing ports; first twelve RJ45 10/100/1000Mb 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)</td>
<td></td>
</tr>
<tr>
<td>N3124PX-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)</td>
<td></td>
</tr>
</tbody>
</table>

Power cords

- C13 to NEMA 5-15, 3M
- C13 to C14, 2M
- C15 to NEMA 5-15, 2M (C15 for POE N-Series only)
### 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)
- **Approximate weight:**
  - 13.2277lbs/6kg (N3024, N3024ET-ON), 14.5505lbs/6.4kg (N3024P and N3024EP-ON), 13.8891lbs/6.3kg (N3048 and N3048ET-ON), 15.2119lbs/6.9kg (N3048P & N3048EP-ON), 15.7lbs/7.12kg (N3132PX-ON)
- **Two port rack mount**

#### Environmental

- **Power supply:**
  - 200W (N3024, N3024ET-ON, N3024F, N3024EF-ON, and N3048 and N3048ET-ON)
- **Approximate weight:**
  - 15.7lbs/7.12kg (N3132PX-ON only)
- **Size (1RU, H x W x D):**
  - 43.5 mm x 434.0 mm x 407.0 mm
- **Storage relative humidity:**
  - 85%
- **Storage temperature:**
  - –40° to 65°C
- **Operating relative humidity:**
  - 95%
- **Operating temperature:**
  - 32° to 113°F
- **Storage temperature:**
  - –40° to 45°C
- **Storage relative humidity:**
  - 85%

#### Performance

- **MAC addresses:** 32K
- **Static routes:** 1,024 (IPv4), 512 (IPv6)
- **Dynamic routes:** 8,160 (IPv4), 4,096 (IPv6)
- **Switch fabric capacity:**
  - 212Gbps (N3024, N3024ET-ON, N3024F, N3024EF-ON, and N3024P and N3024EP-ON) (full duplex)
- **Flash memory:** 256MB (N3132PX-ON), 512MB (N3048P, N3048EP-ON), 1GB (2GB for N3132PX-ON)
- **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**

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**Product**

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-port 10 Gigabit BASE-T RJ-45 hot swappable uplink module</td>
</tr>
<tr>
<td>2-port 10 Gigabit SFP+ hot swappable uplink module</td>
</tr>
<tr>
<td>2-port 40 Gigabit QSFP+ hot swappable module (N3132PX-ON only)</td>
</tr>
<tr>
<td>Stacking module (N3132PX-ON only)</td>
</tr>
</tbody>
</table>

**Power supplies (optional)**

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200W AC hot swappable with V-Lock, adds redundancy to non-PoE switches (N3024, N3024ET-ON, N3024F, N3024EF-ON, and N3048 and N3048ET-ON only)</td>
</tr>
<tr>
<td>715W AC hot swappable, adds redundancy to N3024P and N3024EP-ON (N3024P only)</td>
</tr>
<tr>
<td>1100W AC hot swappable, adds redundancy to N3048P and N3048EP-ON or upgrade N3024P and N3048EP-ON for additional PoE+ power (N3024P, N3048P, N3048EP-ON, N3132PX-ON only)</td>
</tr>
</tbody>
</table>

**Optics (optional)**

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transceiver, SFP, 100BASE-FX, 1310nm wavelength, up to 2km reach</td>
</tr>
<tr>
<td>Transceiver, SFP, 100BASE-T</td>
</tr>
<tr>
<td>Transceiver, SFP, 100BASE-SX, 850nm wavelength, up to 550m reach</td>
</tr>
<tr>
<td>Transceiver, SFP, 100BASE-LX, 1310nm wavelength, up to 10km reach</td>
</tr>
<tr>
<td>Transceiver, SFP, 100BASE-ZX, 1550nm wavelength, up to 80km reach</td>
</tr>
<tr>
<td>Transceiver, SFP+, 10GbE, LRM, 1310nm wavelength, up to 220m reach</td>
</tr>
<tr>
<td>Transceiver, SFP+, 10GbE, SR, 850nm wavelength, up to 300m reach Transceiver, SFP+, 10GbE, ER, 1310nm wavelength, up to 10km reach Transceiver, SFP+, 10GbE, ER, 1550nm wavelength, up to 40km reach</td>
</tr>
</tbody>
</table>

**Cables (optional)**

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stacking cable 0.25m, 1m and 3m</td>
</tr>
</tbody>
</table>

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**3** Dell EMC PowerSwitch N3000E Series Switches

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Technical specifications

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-Per VLAN (compatible with Cisco's RPVST+);
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
802.3ae 10 Gigabit Ethernet (10GBASE-X)

Quality of service
2370 Opaque 4271 BGP
2338 VRRP 3768 VRRP
2370 Opaque 4271 BGP
Dell Policy Based QoS Services
2365 Admin 5617 OSPFv3 Graceful Restart
802.3x Flow Control
802.3z Gigabit Ethernet (1000BASE-X)
ANSI LLDP-MED (TIA-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 RIPv1 3453 RIPv2
1724 RIPv2 MIB 2740 OSPFv3
Extension
1765 OSPF DB 2787 VRRP MIB
overflow
1850 OSPF MIB 3101 NSSA
2082 RIP-2 MDS 3137 OSPF Stub
Auth 3238 OSPFv2
Router Advert
2328 OSPFv2 3623 Graceful Restart
2338 VRRP 3768 VRRP
2370 Opaque 4271 BGP
Dell Policy Based Routing
Multicast
1112 IGMPv1 3810 MLDbv
2236 IGMPv2 3973 PIM-DM
2365 Admin 4541 IGMP v1/v2/v3
2710 MDLv1 Snooping and Querier
2710 MLDbv
2932 IPv4 MIB 5061 PIM MIB
2933 IGMP MIB 5060 PIM MIB
3376 IGMPv3 Dell Static IP Multicast

Dell EMC Policy Based Forwarding
Dell EMC Multi-Chassis LAG (MLAG)
Dell EMC EqualLogic iSCSI Auto-configuration

Safety and emissions
Australia/New Zealand: ACMA RCA Class A
Canada: ICES Class A; cUL
China: CCC Class A; NAL
Europe: CE Class A
Japan: VCCI Class A
USA: FCC Class A; NRTL UL; FDA 21 CFR
1040.10 and 1040.11
Eurasia Customs Union: EAC
Germany: GS mark
Product meets EMC and safety standards in
many countries inclusive of USA, Canada,
EU, Japan, China. For more country-specific
regulatory information, and approvals, please
see your Dell EMC representative.

RoHS
Product meets RoHS compliance standards in
many countries inclusive of USA, EU, China,
and India. For more country-specific RoHS
compliance information, please see your Dell
EMC representative.
EU WEEE
EU Battery Directive
REACH

Energy
Japan: JEL

Certifications (available or coming soon)
Available with US Trade Agreements Act
(TAA) compliance.
N-Series products have the necessary features
to support a PCI compliant network topology.
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.

Learn more at DellEMC.com/Services