The N2200-ON switch series offers a power-efficient Multigigabit Ethernet network-access switching solution with integrated 25GbE uplinks. With high-performance capabilities and wire-speed performance, utilizing a non-blocking architecture to easily handle unexpected traffic loads, the switches offer simple management and scalability via an 160Gbps (full duplex) high availability stacking architecture that allows management of up to twelve switches from a single IP address. An integrated 80PLUS Platinum certified power supply provides energy efficiency to help decrease power and cooling costs.

Modernize campus network architectures

Modernize campus network architectures with a power-efficient and resilient 1/2.5/25GbE switching solution with 802.3bt Type-3 (60W) Power over Ethernet. PoE ports can deliver clean power to network devices such as wireless access points (APs), Voice-over-IP (VoIP) handsets, video conferencing systems, security cameras, LED luminaries and many more. For greater interoperability in multivendor networks, N2200-ON switches offer the latest open-standard protocols.

Leverage familiar tools and practices

All N-Series switches include Dell EMC Networking OS6, 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. With USB auto-configuration, network administrators can rapidly deploy mirrored configurations to numerous devices by simply inserting a USB key. N2200-ON switches also support the Open Network Install Environment (ONIE), enabling installation of alternate network operating systems.

Deploy with confidence at any scale

N2200-ON series switches help create performance assurance with a data rate up to 600Gbps (full duplex) and a forwarding rate up to 833Mpps. Scale easily with built-in rear stacking ports. Switch stacks of up to 624 1/2.5/25GbE 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.*

Hardware, performance and efficiency

- 1RU switches with up to 48 line-rate 1/2.5GbE RJ-45 ports and four integrated 25GbE SFP28 ports.
- Up to 48 ports of 30W PoE including 24 ports which can scale up to 60W PoE.
- Up to 624 1/2.5/25GbE ports in a 12-unit stack for high-density, high-availability in IDFs, MDFs and wiring closets.
- Non-stop forwarding and fast failover in stack configurations.
- Dell Fresh Air compliance for operation in environments up to 113°F (45°C) helps reduce cooling costs in temperature constrained deployments.

*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. Details at https://www.dell.com/en-us/work/shop/networkingwarranty/
Deploying, configuring and managing

- USB auto-configuration rapidly deploys the switch without complex TFTP configurations or sending technical staff to remote offices.
- 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.
- Layer 3 Standard IPv4 and IPv6 functionality including static routing, RIP, and OSPF support.
- VXLAN-Lite support in hardware only (can be used if enabled by Open Networking (ON) partner network operating system).

<table>
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<th>Product</th>
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<td>N2200-ON Series</td>
<td><strong>OS6 Options (with pre-installed OS6 NOS)</strong></td>
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<td>• N2224X-ON IO/PS airflow with OS6: 24x RJ45 10M/100M/1G/2.5G auto-sensing ports, 4x SFP28 ports, 2x 40G QSFP+ ports, 1x 550W PSU included</td>
</tr>
<tr>
<td></td>
<td>• N2224X-ON PS/I0 airflow with OS6: 24x RJ45 10M/100M/1G/2.5G auto-sensing ports, 4x SFP28 ports, 2x 40G QSFP+ ports, 1x 550W PSU included</td>
</tr>
<tr>
<td></td>
<td>• N2224PX-ON IO/PS airflow with OS6: 12x RJ45 10M/100M/1G/2.5G 802.3at (up to 30W) PoE auto-sensing ports, 12x RJ45 10M/100M/1G/2.5G 802.3bt Type-3 (up to 60W) PoE auto-sensing ports, 4x SFP28 ports, 2x 40G QSFP+ ports, 1x 1050W PSU included</td>
</tr>
<tr>
<td></td>
<td>• N2248X-ON IO/PS airflow with OS6: 48x RJ45 10M/100M/1G/2.5G auto-sensing ports, 4x SFP28 ports, 2x 40G QSFP+ ports, 1x 550W PSU included</td>
</tr>
<tr>
<td></td>
<td>• N2248X-ON PS/I0 airflow with OS6: 48x RJ45 10M/100M/1G/2.5G auto-sensing ports, 4x SFP28 ports, 2x 40G QSFP+ ports, 1x 550W PSU included</td>
</tr>
<tr>
<td></td>
<td>• N2248PX-ON IO/PS airflow with OS6: 24x RJ45 10M/100M/1G/2.5G 802.3at (up to 30W) PoE auto-sensing ports, 24x RJ45 110M/100M/1G/2.5G 802.3bt Type-3 (up to 60W) PoE auto-sensing ports, 4x SFP28 ports, 2x 40G QSFP+ ports, 1x 1600W PSU included</td>
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<td>Power cords</td>
<td>C13 to NEMA 5-15, 3M</td>
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<td></td>
<td>C13 to C14, 2M</td>
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<tr>
<td>Power shelves (optional)</td>
<td>550W AC hot swappable with IO/PS airflow, adds redundancy to N2224X-ON, N2248X-ON 550W AC hot swappable with PS/I0 airflow, adds redundancy to N2224X-ON, N2248X-ON 1050W AC hot swappable with IO/PS airflow, adds redundancy and/or extends PoE budget for N2224X-ON. Also used with MPS-1S shelf, MPS-3S Shelf 1600W AC hot swappable with IO/PS airflow, adds redundancy and/or extends PoE budget for N2248PX-ON. Also used with MPS-1S shelf, MPS-3S Shelf ** 550W DC hot swappable with IO/PS airflow, adds redundancy to N2224X-ON, N2248X-ON ** 1300W DC hot swappable with IO/PS airflow, adds redundancy and/or extends PoE budget for N2224PX-ON, N2248PX-ON **</td>
</tr>
</tbody>
</table>
| Power supplies (optional) | Transceiver, SFP, 1000BASE-T *** Transceiver, SFP, 1000BASE-SX *** Transceiver, SFP, 1000BASE-LX *** Transceiver, SFP, 1000BASE-ZX *** Transceiver, SFP+ 10GbE, USR (MMF upto 100m) **** Transceiver, SFP+ 10GbE, SR (MMF upto 400m) **** Transceiver, SFP+ 10GbE, LR (SMF 10 km) **** Transceiver, SFP+ 10GbE, ER SMF 40 km) **** Transceiver, SFP+ 10GbE, ZR (SMF 80 km) **** Transceiver, SFP+ 10GbE, BASE-T GEN2 **** Transceiver, SFP28 25GbE, LR Transceiver, SFP28 25GbE, SR-NOF Transceiver, QSFP+ 40GbE, QSFP-40G-SR4 Transceiver, QSFP+ 40GbE, QSFP-40G-LR4

** Planned in Roadmap
*** Auto-negotiation not supported, using 1G optics require manual configuration and all 4x10G SFP+ or 4x25G SFP28 ports to be set to same speed. 100M speed not supported.
**** Auto-negotiation not supported, using 10G cables or optics require manual configuration and all 4x25G SFP28 ports to be set to same speed. 100M/1G speed not supported.
### Product Description

| Cables | 10GBE, SFP+ to SFP+, Passive DAC (0.5M, 1M, 2M, 3M, 5M, 7M)  
|        | 10GBE, SFP+ to SFP+, Active optical (2M, 3M, 5M, 7M, 10M,15M, 20M)  
|        | 25GBE, SFP28 to SFP28, Passive DAC (1M, 2M, 3M, 5M)  
|        | 25GBE, SFP28 to SFP28, Active optical (7M, 10M,15M, 20M)  
|        | 40GBE, QSFP+ to QSFP+, Passive DAC (0.5M, 1M, 2M, 3M, 5M, 7M)  
|        | 40GBE, QSFP+ to QSFP+, Active optical (3M, 10M)  

| Fans (spare) | Fan module, I/O to PSU Airflow  
|             | Fan module, PSU to IO Airflow (for N2224X-ON, N2248X-ON only)  

### Technical specifications

#### Hardware specifications

| Physical | 2 integrated rear 40GbE QSFP+ stacking ports  
|          | Out-of-band management port (10/100/1000BASE-T)  
|          | USB (Type A) port for configuration via USB flash drive  
|          | MicroUSB (Type B) console port (MicroUSB to USB connector cable included)  
|          | RJ45 console port with RS232 signaling (RJ-45 to female DB-9 connector cable included)  
|          | Auto-negotiation for speed and flow control  
|          | Auto MDI/MDIX, port mirroring  
|          | Flow-based port mirroring  
|          | Broadcast storm control  
|          | Redundant variable speed fans (field replaceable)  
|          | Air flow: I/O to power supply; Power supply to I/O options available with non-PoE models  
|          | Models integrated power supply: 550W AC (N2224X-ON), 1050W AC (N2248PX-ON), 1600W AC (N2248PX-ON)  
|          | Dual firmware images on-board  
|          | Switching engine model: Store and forward  

| Chassis | Size (1RU, H x W x D): 1.71 in x 17.09 in x 15.75 in (power supply/fan tray handle adds additional 1.18 in)  
|         | Approximate weight (Switch with 1 PSU installed): 14.3lbs/6.5kg (N2224X-ON), 14.7lbs/6.7kg (N2248X-ON), 15.1lbs/6.9kg (N2248PX-ON), 15.8lbs/7.2kg (N2248PX-ON)  
|         | 2-Post rack mounting kit  
|         | 14.7lbs/6.7kg (N2248PX-ON), 15.1lbs/6.9kg (N2224PX-ON), 15.8lbs/7.2kg (N2248PX-ON)  

| Environmental | Power supply efficiency: 80% or better in all operating modes  
|               | Max. thermal output (BTU/hr): 812 (N2224X-ON), 4,495 (N2248X-ON), 1112 (N2224X-ON), 8,478 (N2248X-ON)  
|               | Power consumption max (watts): 238W (N2224X-ON), 1,318W (N2248X-ON), 3,268W (N2248X-ON), 2,486W (N2248PX-ON)  
|               | Operating temperature: 32° to 113°F (0° to 45°C)  
|               | Operating humidity: 95%  
|               | Storage temperature: −40° to 149°F (−40° to 65°C)  
|               | Storage relative humidity: 85%  

| Performance | CPU memory: 4GB  
|            | SSD: 8GB  
|            | Packet buffer memory: 4MB  
|            | Switch fabric capacity (full duplex): 480Gbps (N2224X-ON and N2248PX-ON); 600Gbps (N2248X-ON and N2248PX-ON)  

### Forwarding rate:

- 667Mpps (N2224X-ON and N2248PX-ON); 833Mpps (N2248X-ON and N2248PX-ON)  
- Line-rate Layer 2 switching: All (non-blocking)  
- Line-rate Layer 3 routing: All (non-blocking)

### Network Operating System specifications

Software specifications listed below are applicable for OS6. For detailed specifications of the NOS, please contact your Dell Technologies representative

#### Scaling performance

| MAC addresses: 32K  
| Static routes: 256 (IPv4)/128 (IPv6) Dynamic routes: 256 (IPv4)  
| Link aggregation: 128 LAG groups, 144 dynamic ports per stack, 8 member ports per LAG  
| Priority queues per port: 8  
| RIP routing interfaces: 256  
| VLAN routing interfaces: 128  
| VLANs supported: 4,094  
| Protocol-based VLANs: Supported  
| ARP entries: 4,096  
| NDP entries: 512  
| 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: 3,914  
| Max rules per ACL: 1,023  
| Max ACL rules per interface (IPv4): 1,023 ( ingress), 1023 (egress)  
| Max ACL rules per interface (IPv6): 1023 ( ingress), 509 (egress)  
| Max VLAN interfaces with ACLs applied: 24

### IEEE compliance

- 802.1AB LLDP  
- Dell Voice VLAN  
- Dell ISDP  
- 802.1D 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-Per VLAN  
- 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 Ethernet (100BASE-T)  
- 802.3ab Gigabit Ethernet (1000BASE-T)  
- 802.3ac Frame Extensions for VLAN Tagging

### Quality of service

- 802.3ad Link Aggregation with LACP  
- 802.3ae 10 Gigabit Ethernet (10GBASE-X)  
- 802.3at PoE+ (N2024P and N2048P)  
- 802.3AX LAG Load Balancing  
- Dell Multi-Chassis LAG (MLAG)  
- Dell Policy Based Forwarding  
- 802.3u Fast Ethernet (100BASE-TX)  
- Dell Management Ports  
- 802.3x Flow Control  
- 802.3z Gigabit Ethernet (1000BASE-X)  
- ANSI LLDP-MED (TIA-1057)  
- MTU 9,216 bytes

### General Internet protocols

General Internet protocols are supported. For a detailed list, please contact your Dell Technologies representative.

### General IPv4 protocols

General IPv4 protocols are supported. For a detailed list, please contact your Dell Technologies representative.

### General IPv6 protocols

General IPv6 protocols are supported. For a detailed list, please contact your Dell Technologies representative.

### Layer 3 functionality

- 1058 RIPv1  
- 1724 RIPv2 MIB Extension  
- 2082 RIP-2 MD5 Auth  
- 2453 RIPv2  
- 1765 OSPF DB overflow  
- 1850 OSPF MIB  
- 2328 OSPFv2  
- 2740 OSPFV3 (from OS6.6.2)  
- 3137 OSPF Stub Router Advert  
- 5187 OSPFv3 Graceful Routing Restart (from OS6.6.2)

### Multicast

- 2365 Admin scoped IP Mcast  
- 2932 IPv4 MIB  
- 4541 IGMP v1/v2/v3 Snooping and Querier  

- IEEE 802.1ag draft 8.1 – Connectivity Fault Management

### Warranty

- Dell 3 years with local service
- 3 years with on-site service

### Support

- 24x7 Support
- 24x7 Support

### Documentation

- Dell 800.2 drafts
- Dell 800.2 drafts

### Dell Technologies

- Dell Technologies Representative
Technical specifications

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Other certifications
N-Series products have the necessary features to support a PCI compliant network topology.

Regulatory, environment and other compliance

Safety and emissions
Australia/New Zealand: ACMA RCM 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 Technologies 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 Technologies representative.

EU WEEE
EU Battery Directive REACH

Energy
Japan: JEL
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 DellTechnologies.com/Services