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 switches offer the latest open-standard protocols.

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.

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).

*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/cp/networkingwarranty
<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OS6 Options (with pre-installed OS6 NOS)</strong></td>
<td></td>
</tr>
<tr>
<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>
<td></td>
</tr>
<tr>
<td>N2224X-ON PS/IO 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>
<td></td>
</tr>
<tr>
<td>N2224PX-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>
<td></td>
</tr>
<tr>
<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>
<td></td>
</tr>
<tr>
<td>N2248X-ON PS/IO 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>
<td></td>
</tr>
<tr>
<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>
<td></td>
</tr>
<tr>
<td>N2248PX-ON PS/IO 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>
<td></td>
</tr>
<tr>
<td><strong>Power cords</strong></td>
<td></td>
</tr>
<tr>
<td>C13 to NEMA 5-15, 3M</td>
<td></td>
</tr>
<tr>
<td>C13 to C14, 2M</td>
<td></td>
</tr>
<tr>
<td><strong>Power shelves (optional)</strong></td>
<td></td>
</tr>
<tr>
<td>C13 to NEMA 5-15, 3M</td>
<td></td>
</tr>
<tr>
<td>C13 to C14, 2M</td>
<td></td>
</tr>
<tr>
<td><strong>Power supplies (optional)</strong></td>
<td></td>
</tr>
<tr>
<td>550W AC hot swappable with IO/PS airflow, adds redundancy to N2224X-ON, N2248X-ON</td>
<td></td>
</tr>
<tr>
<td>550W AC hot swappable with PS/IO airflow, adds redundancy to N2224X-ON, N2248X-ON</td>
<td></td>
</tr>
<tr>
<td>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</td>
<td></td>
</tr>
<tr>
<td>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</td>
<td></td>
</tr>
<tr>
<td>2000W-AC hot swappable with IO/PS airflow, extends PoE budget, used with MPS1S Shelf, MPS-3S Shelf</td>
<td></td>
</tr>
<tr>
<td>550W DC hot swappable with IO/PS airflow, adds redundancy to N2224X-ON, N2248X-ON</td>
<td></td>
</tr>
<tr>
<td>1500W DC hot swappable with IO/PS airflow, adds redundancy and/or extends PoE budget for N2224PX-ON, N2248PX-ON</td>
<td></td>
</tr>
<tr>
<td><strong>Optics</strong></td>
<td></td>
</tr>
<tr>
<td>Transceiver, SFP, 1000BASE-T ***</td>
<td></td>
</tr>
<tr>
<td>Transceiver, SFP, 1000BASE-SX ***</td>
<td></td>
</tr>
<tr>
<td>Transceiver, SFP, 1000BASE-LX ***</td>
<td></td>
</tr>
<tr>
<td>Transceiver, SFP, 1000BASE-ZX ***</td>
<td></td>
</tr>
<tr>
<td>Transceiver, SFP+, 10Gbe. USR (MMF up to 100m) ****</td>
<td></td>
</tr>
<tr>
<td>Transceiver, SFP+, 10Gbe. ER (MMF up to 400m) ****</td>
<td></td>
</tr>
<tr>
<td>Transceiver, SFP+, 10Gbe. LR (SMF 10 km) ****</td>
<td></td>
</tr>
<tr>
<td>Transceiver, SFP+, 10Gbe. ER SMF 40 km ****</td>
<td></td>
</tr>
<tr>
<td>Transceiver, SFP+, 10Gbe. ZR (SMF 80 km) ****</td>
<td></td>
</tr>
<tr>
<td>Transceiver, SFP+, 10Gbe. BASE-T GEN2 ****</td>
<td></td>
</tr>
<tr>
<td>Transceiver, SFP28 25Gbe, LR</td>
<td></td>
</tr>
<tr>
<td>Transceiver, SFP28 25Gbe, SR-NOF</td>
<td></td>
</tr>
<tr>
<td>Transceiver, SFP28 25Gbe, ESR</td>
<td></td>
</tr>
<tr>
<td>Transceiver, QSFP+ 40Gbe. QSFP-40G-SR4</td>
<td></td>
</tr>
<tr>
<td>Transceiver, QSFP+ 40Gbe. QSFP+40G-LR4</td>
<td></td>
</tr>
<tr>
<td><strong>Cables</strong></td>
<td></td>
</tr>
<tr>
<td>10Gbe, SFP+ to SFP+, Passive DAC (0.5M, 1M, 2M, 3M, 5M, 7M)</td>
<td></td>
</tr>
<tr>
<td>10Gbe, SFP+ to SFP+, Active optical (2M, 3M, 5M, 7M, 10M,15M, 20M)</td>
<td></td>
</tr>
<tr>
<td>25Gbe, SFP28 to SFP28, Passive DAC (3M, 2M, 3M, 5M)</td>
<td></td>
</tr>
<tr>
<td>25Gbe, SFP28 to SFP28, Active optical (7M, 10M,15M, 20M)</td>
<td></td>
</tr>
<tr>
<td>40Gbe, QSFP+ to QSFP+, Passive DAC (0.5M, 1M, 2M, 3M, 5M, 7M)</td>
<td></td>
</tr>
<tr>
<td>40Gbe, QSFP+ to QSFP+, Active optical (3M, 10M)</td>
<td></td>
</tr>
<tr>
<td><strong>Fans (spare)</strong></td>
<td></td>
</tr>
<tr>
<td>Fan module, IO to PSU Airflow</td>
<td></td>
</tr>
<tr>
<td>Fan module, PSU to IO Airflow (for N2224X-ON, N2248X-ON only)</td>
<td></td>
</tr>
</tbody>
</table>

** Planned in Roadmap  
** 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.
Hardware specifications

**Physical**
- 2 integrated rear 40GbE QSFP+ stacking ports
- Out-of-band management port (10/10/100BASE-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
- Integrated power supply: 550W AC (N2224X-ON, N2248X-ON), 1050W AC (N2224PX-ON), 1600W AC (N2248PX-ON)
- Dual firmware images on-board
- Switching engine model: Store and forward
- Dual firmware images on-board
- AC (N2248PX-ON)
- Integrated power supply: 550W AC (N2224X-ON, N2224PX-ON), 1500W AC (N2248X-ON)
- Options available with non-PoE models

**Switching**
- 2-Post rack mounting kit

**Environmental**
- Power supply efficiency: 80% or better in all operating modes
- Max. thermal output (BTU/hr): 812 (N2224X-ON), 4495 (N2224PX-ON), 1112 (N2248X-ON), 8478 (N2248PX-ON)
- Power consumption max (watts): 238W (N2224X-ON), 318W (N2224PX-ON), 2486W (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%
- Max ACL rules per interface (IPv6): 1023 (ingress), 1023 (egress)
- Max ACL rules per interface (IPv4): 1,023 (ingress), 1,023 (egress)
- Max number of ACLs: 100
- Max ACL rules system-wide: 3,914
- Max rules per ACL: 1,023
- Max ACL rules system-wide: 3,914
- Max number of ACLs: 100
- Time-controlled ACLs: Supported
- Access control lists (ACLs): Supported
- VLANs supported: 4,094
- VLAN routing interfaces: 128
- VLANs supported: 4,094
- Protocol-based VLANs: Supported
- VLAN Tagging, Double VLAN Tagging: Supported
- Frame Extensions for VLAN Tagging: Supported
- VLAN Tagging, Double VLAN Tagging, GVRP: Supported
- Multiple Spanning Tree (MSTP): Supported
- Protocol-based VLANs: Supported
- Fast Ethernet (10BASE-T): Supported
- Frame Extensions for VLAN Tagging: Supported

**Network Operating System specifications**

**OS6.6.2**
- 4541 IGMP v1/v2/v3 Snooping and Querier
- 3137 OSPF Stub Router Advert
- 5187 OSPF-V3 Graceful Routing Restart (from OS6.6.2)
- Assured Fwd PHB
- Port Based GoS (TCP/UDP) Services Mode
- Flow Based GoS Services Mode (IPv4/IPv6)
- rTCP
- Mellanox
- 4115 tr-TCM
- Dell L4 Trusted Mode
- Managed Objects for Bridges MI
- 1573 Evolution of Interfaces
- 1643 Ethernet-Ike MI
- 1757 RMON MIB
- 2453 RIP-2 MD5 Auth
- 1850 OSPF MIB
- 2475 DiffServ Field
- 1155 SMIv1
- 2096 IP Forwarding Table MIB
- 2012 TCP MIB
- 2011 IP MIB
- 1907 SNMPv2 MIB
- 1867 HTML/2.0 Forms with File Upload Extensions
- 2932 IPv4 MIB
- 1573 Evolution of Interfaces
- 1643 Ethernet-Ike MI
- 1757 RMON MI
- 1901 Community-based SNMPv2
- 1902 SNMPv2 MIB
- 2475 DiffServ Architecture
- 1850 OSPF MIB
- 2453 RIP-2 MD5 Auth
- 1785 OSPP DB overflow
- 2328 OSPF-V2
- 2740 OSPF-V3 (from OS6.6.2)
- 3137 OSPFE Stub Router Advert
- 5187 OSPF-V3 Graceful Routing Restart (from OS6.6.2)
- Admin scoped IP Mcast
- IPv4 MI
- 4541 IGMP v1/v2/v3 Snooping and Querier
- IEEE 802.1ag draft 8.1 – Connectivity Fault Management

**Quality of service**

**Multicast**
- 2082 802.3u  Fast Ethernet (100BASE-TX)
- 2082 802.3ab  Gigabit Ethernet (1000BASE-T)
- 2082 802.3ad  Link Aggregation with LACP
- 2082 802.3ae  10 Gigabit Ethernet (10GBASE-X)
- 2082 802.3at  PoE+ (N2024P and N2048P)
- 2082 802.3AX  Load Balancing
- 2082 802.3z  Gigabit Ethernet (1000BASE-T)
- 2082 802.3ac  Frame Extensions for VLAN Tagging
- 2082 802.3ab  Gigabit Ethernet (10GBASE-X)
- 2082 802.3ay  Link Aggregation with LACP
- 2082 802.3m  Multiple Spanning Tree (MSTP)
- 2082 802.1Q  VLAN Tagging, Double VLAN Tagging, GVRP
- 2082 802.1p  Ethernet Priority (User Provisioning and Mapping)
- 2082 802.1d  Bridge, Spanning Tree
- 2082 802.1w  Rapid Spanning Tree (RSTP)

**General Internet protocols**

**Multicast**
- 1757 RMON MI
- 1867 HTML/2.0 Forms with File Upload Extensions
- 1901 Community-based SNMPv2
- 1902 SNMPv2 MIB
- 1903 Managed Objects for Bridges MI
- 1643 Ethernet-Ike MI
- 1757 RMON MI
- 1573 Evolution of Interfaces
- 1612 DNS Resolver MI
- 1907 SNMPv2 MIB
- 1908 Coexistence Between SNMPv1/v2
- 2011 IP MI
- 2012 TCP MI
- 2013 UDP MI
- 2008 HTTP/1.1
- 2096 IP Forwarding Table MI
- 2233 Interfaces Group using SMIv2
- 2246 TLS v1
- 2271 SNMP Framework MIB
- 2296 Remote Variant Selection
- 2597 Assured Fwd PHB
- 2475 DiffServ Architecture
- 2578 SNMPv2 MIB
- 2579 Textual Conventions for SMIv2
- 2580 Conformance Statements for SMIv2
- 2576 SMIv2
- 2575 Coexistence Between SNMPv1/v2
- 2576 Coexistence Between SNMPv1/v2/v3
- 2578 SNMPv2
- 2579 Textual Conventions for SMIv2
- 2580 Conformance Statements for SMIv2
- 2575 Coexistence Between SNMPv1/v2/v3
- 2576 Coexistence Between SNMPv1/v2/v3
- 2578 SNMPv2
2865 RADIUS
2866 RADIUS Accounting
2868 RADIUS Attributes for Tunnel Prot.
2869 RADIUS Extensions
3410 Internet Standard Mgmt. Framework
3411 SNMP Management Framework
3412 Message Processing and Dispatching
3413 SNMP Applications
3414 User-based security model 3415 View-based control model
3416 SNIPv2
3417 Transport Mappings
3418 SNMP MIB
3577 RMON MIB
3580 802.1X with RADIUS
3737 Registry of RMOM MIB
4086 Randomness Requirements
4113 UDP MIB
4251 SSHv2 Protocol
4252 SSHv2 Authentication
4253 SSHv2 Transport
4254 SSHv2 Connection Protocol
4419 SSHv2 Transport Layer Protocol
4716 SECSH Public Key File Format
5246 TLS v1.2
6101 SSL
6398 IP Router Alert
Dell Enterprise MIB supporting routing features
draft-ietf-hubmib-etherif-mib-v3-00.txt
(Obsoletes RFC 2665)
Dell LAG MIB Support for 802.3ad
Functionalit
Dell sflow version 1.3 draft 5
Dell 802.1x Monitor Mode
Dell Custom Login Banners
Dell Dynamic ARP Inspection
Dell IP Address Filtering
Dell Tiered Authentication
Dell RSPAN
Dell Change of Authorization
Dell OpenFlow 1.3
Dell Python Scripting
Dell Support Assist
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

Learn more at DellTechnologies.com/Networking