DELL EMC POWERSWITCH
N2200-ON SERIES SWITCHES

Cost-effective open networking Multigigabit Ethernet switches for modernizing and scaling infrastructure

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.

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.¹

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).

¹ 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>
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| **N2200 Series** | OS6 Options (with pre-installed OS6 NOS)  
- 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  
- 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  
- N2244PX-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  
- 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 |
| **Power cords** | C13 to NEMA 5-15, 3M  
C13 to C14, 2M |
| **Power shelves (optional)** | C13 to NEMA 5-15, 3M  
C13 to C14, 2M |
| **Power supplies (optional)** | 550W AC hot swappable with IO/PS airflow, adds redundancy to N2224X-ON, N2248X-ON  
550W AC hot swappable with PS/IO 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  
2000W AC hot swappable with IO/PS airflow, extends PoE budget, used with MPS1S Shelf, MPS-3S Shelf  
5500W DC hot swappable with IO/PS airflow, adds redundancy to N2224X-ON, N2248X-ON  
1500W DC hot swappable with IO/PS airflow, adds redundancy and/or extends PoE budget for N2224PX-ON, N2248PX-ON |
| **Optics** | Transceiver, SFP, 1000BASE-T  
Transceiver, SFP, 1000BASE-SX  
Transceiver, SFP, 1000BASE-LX  
Transceiver, SFP, 1000BASE-ZX  
Transceiver, SFP+ 10GbE, USR (MMF up to 100m)  
Transceiver, SFP+ 10GbE, SR (MMF up to 400m)  
Transceiver, SFP+ 10GbE, LR (SMF 10 km)  
Transceiver, SFP+ 10GbE, ZR (SMF 80 km)  
Transceiver, SFP+ 10GbE, BASE-T GEN2  
Transceiver, SFP28 25GbE, LR  
Transceiver, SFP28 25GbE, SR-NOF  
Transceiver, SFP28 25GbE, ESR  
Transceiver, QSFP+ 40GbE, QSFP-40G-SR4  
Transceiver, QSFP+ 40GbE, QSFP-40G-LR4 |
| **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, IO to PSU Airflow  
Fan module, PSU to IO Airflow (for N2224X-ON, N2248X-ON only) |

2 Planned in Roadmap  
3 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.  
4 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
- Cut-of-band management port (10/10/1000BASE-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

**Switching engine model:** Store and forward

**Switch fabric capacity (full duplex):** 480Gbps

**Line-rate Layer 2 switching:** All (non-blocking)

**Forwarding rate:**
- 679.8Mpps (N1148X-ON and N1248X-ON)
- 833Mpps (N2248X-ON and N2248PX-ON)

**Max VLAN interfaces with ACLs applied:** 24

**Network management and security**

**General Internet protocols**
- General IPv4 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.

**Layer 3 functionality**
- 1024 RIP
- 1274 RIP-2 MIB Extension
- 2082 RIP-2 MDS Auth

**Multicast**
- Admin scoped IPv4 Mcast

**Quality of service**
- DiffServ Field
- DiffServ Architecture
- Assured Fwd PHB
- Port Based GoS (TCP/UDP) Services Mode
- Flow Based GoS Services Mode (IPv4/IPv6)

**Environmental**
- Power consumption max (watts): 238W (N1148X-ON), 1318W (N2224PX-ON), 1050W AC (N2224PX-ON), 1600W AC (N2248PX-ON)
- Max. thermal output (BTU/hr): 812 (N2224X-ON), 1318W (N2224PX-ON), 326W (N2248X-ON), 4495 (N2224PX-ON), 1112W (N2248X-ON), 8478 (N2248PX-ON)
- Power supply efficiency: 80% or better in all operating modes
- Power supply options available with non-PoE models
- AC (N2248PX-ON)
- N2224X-ON), 1050W AC (N2224PX-ON), 1600W AC (N2248PX-ON)

**Switching**
- Size: 1RU (H x W x D): 1.71 in x 17.09 in x 15.75 in
- Weight: 15.8lbs/7.2kg (N2248PX-ON), 15.1lbs/6.9kg (N2248X-ON), 14.3lbs/6.5kg (N2224X-ON), 14.7lbs/6.7kg (N2224PX-ON)
- Max. thermal output (BTU/hr): 812 (N2224X-ON), 1318W (N2224PX-ON), 326W (N2248X-ON), 4495 (N2224PX-ON), 1112 (N2248X-ON), 8478 (N2248PX-ON)
- Power supply/fan tray handle adds additional 1.18 in

**Management**
- Storage temperature: –40° to 149°F (–40° to 65°C)
- Storage relative humidity: 85%

**Redundant variable speed fans (field replaceable)**

**Broadcast storm control**

**Flow-based port mirroring**

**Auto MDI/MDIX, port mirroring**

**Power consumption max (watts):**
- 667Mpps (N2224X-ON and N2248X-ON), 833Mpps (N2248PX-ON)

**Max VLANs supported:** 4,094

**VLAN routing interfaces:** 128

**RIP routing interfaces:** 256

**VLAN routing interfaces:** 256

**Max VLAN interfaces with ACLs applied:** 24
RADIUS
RADIUS Accounting
RADIUS Attributes for Tunnel Prot.
RADIUS Extensions
Internet Standard Mgmt. Framework
SNMP Management Framework
Message Processing and Dispatching
SNMP Applications
User-based security model
View-based control model
SNMPv2
Transport Mappings
SNMP MIB
RMON MIB
802.1X with RADIUS
Registry of RMOM MIB
Randomness Requirements
UDP MIB
SSHv2 Protocol
SSHv2 Authentication
SSHv2 Transport
SSHv2 Connection Protocol
SSHv2 Transport Layer Protocol
LDAP Extensions
SECSSH Public Key File Format
TLS v1.2
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
Functionality
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

Plan, deploy, manage and support
your IT transformation with our
top-rated services

Consulting
Dell Technologies Consulting
Services provides industry
professionals with a wide range of
tools and the experience your need
to design and execute plans to
transform your business.

Deployment
Accelerate technology adoption
with ProDeploy Enterprise
Suite. Trust our experts to lead
deployments through planning,
configuration and complex
integrations.

Management
Regain control of operations with
flexible IT management options. Our
Residency Services help you adopt
and optimize new technologies
and our Managed Services allow
you to outsource portions of your
environment to us.

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Increase productivity and reduce
downtime with ProSupport
Enterprise Suite. Expert support
backed by proactive and predictive
artificial intelligence tools.

Education
Dell Technologies Education
Services help you develop the IT
skills required to lead and execute
transformational strategies. Get
certified today.

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