



# DELL EMC NETWORKING N1100 SERIES SWITCHES

## Fully managed 1/10GbE Layer 2 switching with Open Networking capabilities

The N1100 switch series offers a power-efficient Gigabit Ethernet (GbE) network-access switching solution with integrated 1GbE and 10GbE 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 a 1Gbps (full-duplex) high availability stacking architecture that allows management of up to four switches from a single IP address. Fanless operation on select models, and features such as Energy-Efficient Ethernet and short cable detection provide energy efficiency to help decrease power and cooling costs.

### Modernize campus network architectures

Modernize campus network architectures with a power-efficient and resilient 1/10GbE switching solution with up to 24 PoE/PoE+ ports. PoE power budgets up to 375W deliver clean power to network devices such as wireless access points (APs), Voiceover-IP (VoIP) handsets, video conferencing systems and security cameras.

### 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. One common command line interface (CLI) and graphic user interface (GUI) using a well-known command language gets skilled network administrators productive quickly. The N1100 switch series also supports the Open Network Install Environment (ONIE), enabling installation of alternate network operating systems.

### Deploy with confidence at any scale

N1100 series switches help create performance assurance with a data rate up to 176Gbps (full duplex) and a forwarding rate up to 164Mpps. Scale easily by stacking with 10GbE ports. Switch stacks of up to 192 1GbE 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. Details at [Dell.com/LifetimeWarranty](https://Dell.com/LifetimeWarranty).\*

### Hardware, performance and efficiency

- Up to 48 line-rate GbE RJ45 ports and four integrated 10GbE SFP+ ports.
- Up to 12 PoE/PoE+ ports without an optional external power supply.
- Up to 192 1GbE ports in a 4-unit stack for high-density, high-availability in IDFs, MDFs and wiring closets.
- Non-stop forwarding and fast failover in stack configurations (24- and 48-port models only).
- 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.
- 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 setting up 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.
- Deploy, monitor and troubleshoot via integration with HiveManager cloud or on-premise management
- 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.
- Remote Switch Port Analyzer (RSPAN) monitors ports across a Layer 2 domain without costly dedicated network taps.

\*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.

Product	Description
<b>N1100 series</b>	<p>N1108T-ON: 8x 10/100/1000Mbps half/full duplex RJ45 ports, 2x GbE RJ45 and 2x GbE SFP interfaces, 1 RU half-width form factor, fanless operation</p> <p>N1108P-ON: 8x 10/100/1000Mbps half/full duplex ports, 2x GbE RJ45 and 2x GbE SFP interfaces, 4xPoE/PoE+, 75W PoE power budget RJ45, 1 RU half-width form factor</p> <p>N1124T-ON: 24x 10/100/1000Mbps half/full duplex RJ45 ports, 4x SFP/SFP+ 1/10GbE ports, 1 RU switch form factor, fanless operation</p> <p>N1124P-ON: 24x 10/100/1000Mbps half/full duplex ports, 4x SFP/SFP+ 1/10GbE ports, 12xPoE/PoE+ ports 190W PoE power budget, 1 RU switch form factor</p> <p>N1148T-ON: 48x 10/100/1000Mbps half/full duplex RJ45 ports, 4x SFP+ 10GbE ports, 1 RU switch form factor, fanless operation</p> <p>N1148P-ON: 48x 10/100/1000Mbps half/full duplex ports, 4x SFP/SFP+ 1/10GbE ports, 24xPoE/PoE+ ports, 375W PoE power budget, 1 RU switch form factor</p>
<b>Power cords</b>	<p>C13 to NEMA 5-15, 3M</p> <p>C13 to C14, 2M</p> <p>C15 to NEMA 5-15, 2M (C15 for PoE N-Series only)</p>
<b>Optics (optional)</b>	<p>Transceiver, SFP, 1000BASE-T</p> <p>Transceiver, SFP, 1000BASE-SX, 850nm wavelength, up to 550m reach</p> <p>Transceiver, SFP, 1000BASE-LX, 1310nm wavelength, up to 10km reach</p> <p>Transceiver, SFP, 1000BASE-ZX, 1550nm wavelength, up to 80km reach</p> <p>Transceiver, SFP+, 10GbE, SR, 850nm wavelength, up to 300m reach</p> <p>Transceiver, SFP+, 10GbE, LR, 1310nm wavelength, up to 10km reach</p> <p>Transceiver, SFP+, 10GbE, ER, 1550nm wavelength, up to 40km reach</p>
<b>Cables (optional)</b>	Dell Networking cable, SFP+ to SFP+, 10GbE, copper twinax direct

## Technical specifications

### Physical

4x integrated front 10GbE SFP+ dedicated ports, 2x 10GbE can be used as stacking ports (24 and 48-port models), 2x 1GbE SFP links (8-port models)

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

Integrated power supply: 24W AC (N1108T-ON); 24W and 80W AC (N1108P-ON); 40W AC (N1124T-ON); 250W AC (N1124P-ON); 60W AC (N1148T-ON); 500W AC (N1148P-ON)

Micro USB Console port (Micro USB to USB cable included)

Dual firmware images on-board

Switching engine model: Store and forward

### Chassis

Size (H x W x D):

N1108T-ON, N1108P-ON: 1.75 in x 8.5 in x 10 in

N1124T-ON, N1124P-ON, N1148T-ON, N1148P-ON: 1.75 in x 17 in x 10 in

Approximate weight: 3.54lbs, 1.61kg (N1108T-ON), 4.43lbs, 2.01kg (N1108P-ON), 6.72lbs, 3.05kg (N1124T-ON), 8.33lbs, 3.78kg (N1124P-ON), 8.33lbs, 3.78kg (N1148T-ON), 9.19lbs, 4.17kg (N1148P-ON)

Rack mounting kit with 2 mounting brackets, bolts and cage nuts

1RU tray to accommodate two half rack width switches (kit includes L-brackets for 800mm deep rack/ cabinet)

### Environmental

Power supply efficiency: 80% or better in all operating modes

Max. thermal output (BTU/hr):

35.72 (N1108T-ON), 292.62 (N1108P-ON), 65.85 (N1124T-ON), 851.66 (N1124P-ON), 102.98 (N1148T-ON), 1566.15 (N1148P-ON)

Power consumption max (watts):

10.47 (N1108T-ON), 85.76 (N1108P-ON), 19.3 (N1124T-ON), 249.6 (N1124P-ON), 30.18 (N1148T-ON), 459 (N1148P-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

MAC addresses: 16K

Switch fabric capacity: 24Gbps (N1108T-ON and N1108P-ON), 128Gbps (N1124T-ON and N1124P-ON), 176Gbps (N1148T-ON and N1148P-ON)

Forwarding rate: 18Mpps (N1108T-ON and N1108P-ON), 96Mpps (N1124T-ON and N1124P-ON), 132Mpps (N1148T-ON and N1148P-ON)

Link aggregation: 64 LAG groups, 144 dynamic ports per stack, 8 member ports per LAG

Queues per port: 8

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

Flash memory: 1GB

Packet buffer memory: 1.5MB (N1108T-ON and N1108P-ON), 2MB (N1124T-ON and N1124P-ON), 4MB (N1148T-ON and N1148P-ON)

CPU memory: 1GB

VLANs supported: 512

Protocol-based VLANs: Supported

ARP entries: 2,048 (IPv4)/512 (IPv6)

NDP entries: 400

Access control lists (ACL): Supported

MAC and IP-based ACLs: Supported

Time-controlled ACLs: Supported

Max ACL rules (system-wide): 4K

Max configurable rules per list: 1023

Max ACL rules per interface and direction (IPv4/L2): 1023

Max ACL rules per interface and direction (IPv6): 1021 ing/253 egr

Max ACL logging rules (system-wide): 128

Max number of ACLs: 100

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

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)

802.3af PoE (N1108P-ON, N1124P-ON, N1148P-ON)  
 802.3at PoE+ (N1108P-ON, N1124P-ON, N1148P-ON)  
 802.3AX LAG Load Balancing  
 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)  
 ANSI LLDP-MED (TIA-1057)  
 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.

**Multicast**

2932 IPv4 MIB 4541 IGMP v1/v2/v3 Snooping and Querier

IEEE 802.1ag draft 8.1—Connectivity Fault Management

**Quality of service**

2474 DiffServ Field Dell Flow Based QoS  
 2475 DiffServ Architecture Services Mode  
 2597 Assured Fwd PHB (IPv4/IPv6)  
 Dell L4 Trusted Mode Dell Port Based QoS (TCP/UDP) Services Mode  
 Dell UDLD

**Network management and security**

1155 SMIv1 2233 Interfaces Group using SMIv2  
 1157 SNMPv1  
 1212 Concise MIB Definitions 2246 TLS v1 2271 SNMP Framework MIB  
 1213 MIB-II  
 1215 SNMP Traps 2295 Transport Content Negotiation  
 1286 Bridge MIB  
 1442 SMIv2 2296 Remote Variant Selection  
 1451 Manager-to-Manager MIB 2346 AES Ciphersuites for TLS  
 1492 TACACS+  
 1493 Managed Objects for Bridges MIB 2576 Coexistence Between SNMPv1/v2/v3  
 1573 Evolution of Interfaces 2578 SMIv2  
 1612 DNS Resolver MIB Extensions 2579 Textual Conventions for SMIv2  
 1643 Ethernet-like MIB  
 1757 RMON MIB 2580 Conformance Statements for SMIv2  
 1867 HTML/2.0 Forms with File Upload Extensions 2613 RMON MIB  
 1901 Community-based SNMPv2 2618 RADIUS Authentication MIB  
 1907 SNMPv2 MIB 2620 RADIUS Accounting MIB  
 1908 Coexistence Between SNMPv1/v2 2665 Ethernet-like Interfaces MIB  
 2011 IP MIB 2674 Extended Bridge MIB  
 2012 TCP MIB  
 2013 UDP MIB  
 2068 HTTP/1.1  
 2096 IP Forwarding Table MIB 2737 ENTITY MIB  
 2818 HTTP over TLS  
 2819 RMON MIB (groups 1, 2, 3, 9)

2863 Interfaces MIB  
 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 SNMPv2  
 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  
 4521 LDAP Extensions  
 4716 SECSH Public Key File Format  
 6101 SSL  
 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 OpenFlow 1.3  
 Dell Python Scripting  
 Dell Support Assist

**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 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 [Dell.com/lifecycle services](http://Dell.com/lifecycle services)

Learn more at [Dell.com/N1100](http://Dell.com/N1100)