



# DELL EMC POWERSWITCH 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), voice over-IP (VoIP) handsets, video conferencing systems and security cameras.

## 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. 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.

\*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. For details, visit <https://www.dell.com/en-us/work/shop/networkingwarranty/cp/networkingwarranty>.

## 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 EMC 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 ADIUS 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

Product	Description
N1100 series	<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>N1108EP-ON: 8x 10/100/1000Mbps half/full duplex ports, 2x GbE RJ45 and 2x GbE SFP interfaces, 8xPoE/PoE+, 137W PoE power budget RJ45, FastPoE, Perpetual PoE, 1 RU half-width, fanless operation</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, fanless</p> <p>N1148P-ON: 48x 10/100/1000Mbps half/full duplex ports, 4x SFP/SFP+ 1/10GbE ports, 24xPoE/PoE+, 375W PoE power budget, 1 RU switch form factor</p>
Power cords	<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>
Optics (optional)	<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>
Cables (optional)	<p>Dell Technologies Networking cable, SFP+ to SFP+, 10GbE, copper twinax direct</p>

# 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; Pass through POE (N1108EP-ON)

External power adapter: 137W of POE power (N1108EP-ON)

Integrated power supply:

24W AC (N1108T-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) in inches:

N1108T-ON, N1108EP-ON: 1.62 x 8.23 x 9.84

N1124T-ON, N1124P-ON, N1148T-ON,

N1148P-ON: 1.75 x 17 x 10

N1108EP-ON 280W PS 1.69x3.94x7.87

Approximate weight:

N1108EP-ON 4lbs, 1.81kg

N1108T-ON 3.54lbs, 1.61kg

N1124T-ON 6.72lbs, 3.05kg N1124P-ON

8.33lbs, 3.78kg N1148T-ON 8.33lbs, 3.78kg

N1148P-ON 9.19lbs, 4.17kg

N1108EP-ON 280W PowerSupply 2.0lbs, 0.91kg

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):

66.53 (N1108EP-ON), 35.72 (N1108T-ON),

65.85 (N1124T-ON), 851.66 (N1124P-ON),

102.98 (N1148T-ON), 1566.15 (N1148P-ON)

Power consumption max (watts):

19.51 (N1108EP-ON), 10.47 (N1108T-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) (N1108EP-ON,

N1108T-ON, N1124T-ON, N1124P-ON,

N1148T-ON, N1148P-ON)

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 N1108EP-ON),

128Gbps (N1124T-ON and N1124P-ON),

176Gbps (N1148T-ON and N1148P-ON)

Forwarding rate:

18Mpps (12 Gbps) N1108T-ON and N1108EP-ON

96Mpps (64 Gbps) N1124T-ON and N1124P-ON

132Mpps (89 Gbps) 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 N1108EP-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 (N1108EP-ON, N1124P-ON, N1148P-ON)

802.3at PoE+ (N1108EP-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 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.

## 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

2475 DiffServ Architecture

2597 Assured Fwd PHB

Dell L4 Trusted Mode (TCP/UDP)

Dell UDLD

Dell Flow Based QoS Services Mode

(IPv4/IPv6)

Dell Port Based QoS Services Mode

## Network management and security

1155 SMIv1

1157 SNMPv1

1212 Concise MIB Definitions

1213 MIB-II

1215 SNMP Traps

1286 Bridge MIB

1442 SMIv2

1451 Manager-to-Manager MIB

1492 TACACS+

1493 Managed Objects for Bridges MIB

1573 Evolution of Interfaces

1612 DNS Resolver MIB Extensions

1643 Ethernet-like MIB

1757 RMON MIB

1867 HTML/2.0 Forms with File Upload Extensions

1901 Community-based SNMPv2

1907 SNMPv2 MIB

1908 Coexistence Between SNMPv1/v2

2011 IP MIB

2012 TCP MIB

2013 UDP MIB

2068 HTTP/1.1

2096 IP Forwarding Table MIB

2233 Interfaces Group using SMIv2

2246 TLS v1

2271 SNMP Framework MIB

2295 Transport Content Negotiation

2296 Remote Variant Selection

2576 Coexistence Between SNMPv1/v2/v3

2578 SMIv2

2579 Textual Conventions for SMIv2  
 2580 Conformance Statements for SMIv2  
 2613 RMON MIB  
 2618 RADIUS Authentication MIB  
 2620 RADIUS Accounting MIB  
 2665 Ethernet-like Interfaces MIB  
 2674 Extended Bridge 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  
 5246 TLS v1.2  
 6101 SSL  
 Dell Enterprise MIB supporting routing features  
 draft-ietfhubmib-etherifmibv3-  
 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 IP Address Filtering  
 Dell Tiered Authentication  
 Dell RSPAN  
 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 Dell Technologies 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.

**Immunity**

EN 61000-4-5: Surge

**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

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.



**Dell  
Technologies  
Services**

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 you 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.

**Support**

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.

Learn more at  
[DellTechnologies.com/Services](https://DellTechnologies.com/Services)

Learn more at [DellTechnologies.com/Networking](https://DellTechnologies.com/Networking)