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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	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 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 N1124T-ON: 24x 10/100/1000Mbps half/full duplex RJ45 ports, 4x SFP/SFP+ 1/10GbE ports, 1 RU switch form factor, fanless operation 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 N1148T-ON: 48x 10/100/1000Mbps half/full duplex RJ45 ports, 4x SFP+ 10GbE ports, 1 RU, fanless 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
Power cords	C13 to NEMA 5-15, 3M C13 to C14, 2M C15 to NEMA 5-15, 2M (C15 for PoE N-Series only)
Optics (optional)	Transceiver, SFP, 1000BASE-T Transceiver, SFP, 1000BASE-SX, 850nm wavelength, up to 550m reach Transceiver, SFP, 1000BASE-LX, 1310nm wavelength, up to 10km reach Transceiver, SFP, 1000BASE-ZX, 1550nm wavelength, up to 80km reach Transceiver, SFP+, 10GbE, SR, 850nm wavelength, up to 300m reach Transceiver, SFP+, 10GbE, LR, 1310nm wavelength, up to 10km reach Transceiver, SFP+, 10GbE, ER, 1550nm wavelength, up to 40km reach
Cables (optional)	Dell Technologies Networking cable, SFP+ to SFP+, 10GbE, copper twinax direct

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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 N1124PON), 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

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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 your need to design and execute plans to transform your business.

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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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