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.*

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.

*Dell EMC PowerSwitch N1100 Series Switches
© 2019 Dell Inc. or its subsidiaries.
• 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.

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1100 series</td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>N1108EP-ON: 8x 10/100/1000Mbps half/full duplex ports, 2x GbE RJ45 and 2x GbE SFP interfaces, 8PoE/PoE+, 137W PoE power budget RJ45, 1 RU half-width form factor</td>
</tr>
<tr>
<td></td>
<td>N1124T-ON: 24x 10/100/1000Mbps half/full duplex RJ45 ports, 4x SFP/SFP+ 1/10Gbe ports, 1 RU switch form factor, fanless operation</td>
</tr>
<tr>
<td></td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>N1148T-ON: 48x 10/100/1000Mbps half/full duplex RJ45 ports, 4x SFP+ 10GbE ports, 1 RU switch form factor, fanless operation</td>
</tr>
<tr>
<td></td>
<td>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</td>
</tr>
</tbody>
</table>

| 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+, 1Gbe, SR, 850nm wavelength, up to 300m reach                                |
|                       | Transceiver, SFP+, 1Gbe, LR, 1310nm wavelength, up to 10km reach                              |
|                       | Transceiver, SFP+, 1Gbe, ER, 1550nm wavelength, up to 40km reach                              |

| Cables (optional)     | 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; 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 (N1148P-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; Fanless (N1108EP-ON)

**Chassis**
- Size (H x W x D) in inches:
  - N1108T-ON: 1.75 x 8.5 x 10; N1108EP-ON: 1.63" x 8.25" x 8.85
  - N1124T-ON, N1124P-ON, N1148T-ON, N1148P-ON: 1.75 x 17 x 10
- Approximate weight: 4lbs, 1.81kg (N1108EP-ON), 3.54lbs, 1.61kg (N1108T-ON), 6.72lbs, 3.03lbs (N1124T-ON), 8.33lbs, 3.75kg (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):
  - N1108EP-ON, 35.72 (N1108T-ON), 65.85 (N1124P-ON), 102.98 (N1148T-ON), 156.15 (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 118°F (0° to 50°C) (N1108EP-ON), 32° to 113°F (0° to 45°C) (N1108T-ON, N1124T-ON, N1124P-ON, N1148T-ON, N1148P-ON)
- 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 (N1108T-ON and N1108EP-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
Technical specifications

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): 1024/256 gegr

Max ACL logging rules (system-wide): 128

Max number of ACLs: 100

Max VLAN interfaces with ACLs applied: 24

IEEE Compliance

802.1AB GVRP

Dell ISDP (inter-ops 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 RPMV+*)

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-Z)

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

2532 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 UDDL

Dell Flow Based QoS Services Mode (IPv4/IPv6)

Dell Port Based QoS Services Mode

Network management and security

1155 SMV1

1157 SNMPv1

1212 Conformance MIB Definitions

1213 MIB-II

1215 SNMP Traps

1286 Bridge MIB

1442 SMV2

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 SMNPv2

1907 SMNPv2 MIB

1908 Coexistence Between SMNPv1/v2

1910 IP MIB

1911 TCP MIB

2013 UDP MIB

2068 HTTP/1.1

2333 IP Forwarding Table MIB

2496 Interfaces Group using SMV2

2671 TLS MIB

2675 SNMP Framework MIB

2737 Tribal MIB

2739 Transport Control Negotiation

2796 Remote Variant Selection

2346 AES Ciphersuites for TLS

2576 Coexistence Between SMNPv1/v2/v3

2578 SMV2

2580 Textual Conventions for SMV2

2613 Conformance Statements for SMV2

2614 RADIUS Authentication MIB

2616 RADIUS Accounting MIB

2617 Ethernet-like Interfaces MIB

2618 Extended Bridge MIB

2674 ENTITY MIB

2677 Textual Conventions for L2MTU

2681 HTTP over TLS

2685 RMON MIB (groups 1, 2, 3, 9)

2686 Interfaces MIB

2687 RADIUS

2865 RADIUS

2866 RADIUS Accounting

2868 RADIUS Attributes for Tunnel Prot.

2869 RADIUS Extensions

3410 Internet Standard Mgmt. Framework

3411 SNMP Management Framework

General IPv6 protocols

General IPv6 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.

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 ROMM 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-iethubmib-ethertf-mib-03.txt (Obsoletes RFC 2665)

Dell LAG MIB Support for 802.3ad

Functionality

Dell sflow version 1.3 draft 5

Dell 80.2.1x Monitor Mode

Dell Custom Login Banners

Dell Dynamic ARP Inspection

Dell IP Address Filtering

Dell Tiered Authentication

Dell RSPAN

Dell Python Scripting

Dell Support Assist

Regulatory, environmental and other compliance

Safety and emissions

Australia/New Zealand: ACMA ACM 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.

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 EMC representative.

Dell EEE

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 DellEMC.com/Services