The N1500 switch series offers a power-efficient Gigabit Ethernet (GbE) network-access switching solution with integrated 10GbE uplinks. The N1500 switch series has 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 40Gbps (full-duplex) high-availability stacking architecture that allows management of up to four switches from a single IP address.

An integrated 80PLUS-certified power supply 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 Power over Ethernet Plus (PoE+). Select N1500 models offer 24 or 48 ports of PoE+ to 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 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. This allows network administrators to maintain consistent configurations by running one OS release across all N-Series products. With USB auto-configuration, network administrators can rapidly deploy mirrored configurations to numerous devices by simply inserting a USB key.

Deploy with confidence at any scale

N1500 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 200 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 RJ-45 ports and four integrated 10GbE SFP+ ports.
- Support for 24 ports of PoE+ in 1RU or up to 48 ports of PoE+ with an optional external power supply.
- Up to 200 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.
- 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.
- 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 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.
- 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.
- Layer 3 Lite IPv4 and IPv6 functionality including static routing and Routing Information Protocol support.
- 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 ProSupport.
Specifications: Dell Networking N1500 series

Dell SKU description
N1524: 24x RJ45 10/100/1000Mb auto-sensing ports, 4x SFP+ ports, 1 integrated 40W PSU
N1524P: 24x RJ45 10/100/1000Mb PoE+ (up to 30.8w) auto-sensing ports, 4x SFP+ ports, 1 integrated 600W PSU (requires CLI plug)
N1548: 48x RJ45 10/100/1000Mb auto-sensing ports, 4x SFP+ ports, 1 integrated 100W PSU
N1548P: 48x RJ45 10/100/1000Mb PoE+ (up to 30.8w) auto-sensing ports, 4x SFP+ ports, 1 integrated 600W PSU (requires CLI plug)

Power cords
C13 to NEMA 5-15, 3M
C13 to C14, 2M
C15 to NEMA 5-15, 2M (C15 for POE N-Series only)

Power supplies (optional)
P75520 external power supply for N1500 non-POE (70 watts): N1524 and N1548 (sold separately)
MPS5500 external power supply for N1500 PoE+ switches (100 watts): N1524P and N1548P (sold separately)

Optics (optional)
Transceivers: SPF 1000BASE-T
Transceivers: SPF 1000BASE-X, 5X5Gbps wavelength, up to 550m reach
Transceivers: SPF 1000BASE-X, 1310nm wavelength, up to 10km reach
Transceivers: SPF 1000BASE-X, 2550nm wavelength, up to 80km reach
Transceivers: SPF+ 10G, SR, 850nm wavelength, up to 300m reach
Transceivers: SPF+, 10G, LR, 1310nm wavelength, up to 10km reach
Transceivers: SPF+, 10G, ER, 1550nm wavelength, up to 40km reach

Cables (optional)
Dell Networking, cable, SFP+ to SFP+, 10Gbe, copper twinax direct attach cable, 0.5m, 1m, 3m and 7m

Physical
4 integrated front 10Gbe SFP+ dedicated ports, 2 10Gbe can be used as stacking ports
USB (Type A) port for configuration via flash drive
Auto-negotiation for speed and flow control
Auto MDIX/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: 40W AC (N1524), 100W AC (N1548), 600W AC (N1524P, N1548P)
RJ45 console port with RS232 signaling (RJ-45 to female DB-9 connector cable included)
Dual firmware images on-board
Switching engine model: Store and forward

Chassis
Size (SRU, H x W x D): 1.7 in x 17.3 in x 10.1 in (43.2 mm x 440.0 mm x 257.0 mm) (N1524 and N1548)
24.7 in x 17.3 in x 10.1 in (626.0 mm x 440.0 mm x 257.0 mm) (N1548P)
Approximate weight: 6.86lbs (3kg) (N1524), 12.8lbs (6kg) (N1524P), 8.8lbs (4kg) (N1548), 15.4lbs (7kg) (N1548P)
Rack mounting kit with 2 mounting brackets, bolts and cage nuts

Environmental
Power supply efficiency: 80% or better in all operating modes
Max. thermal output (BTU/hr): 3031 (N1524), 2972 (N1524P), 152.2 (N1548), 58932 (N1548P)
Power consumption max (watts): 30.2 (N1524), 87.1 (N1524P), 44.6 (N1548), 170.4 (N1548P)
Operating temperature: 32° to 113°F (0° to 45°C)
Storage temperature: –40° to 149°F (–40° to 65°C)
Storage relative humidity: 85%

Performance
MAC addresses: 16K
Static routes: 256 (IPv4/128 (IPv6)
Dynamic routes: 256 (IPv4)
Switch fabric capacity: 256Gbps (N1524 and N1524P)
Link aggregation: 166Mpps (N1524P and N1548P)
Flow Control: 166Mpps (N1524P and N1548P)
Link aggregation: 166Mpps (N1524P and N1548P)

Layer 3 functionality
1085 RIPv4
2082 RIP-2 MIB Extension
1724 RIPv2 MIB Extension
2453 RIPv2

Multicast
2932 IPv4 MIB
4541 iGMPv2/3 Snooping and Querier

IEEE 802.1ag draft 8.1 - Connectivity Fault Management
Quality of service
2474 DiffServ Field
2475 DiffServ Architecture
2597 Assured Flow PHB
2600 Port Based QoS

Layer 3 functionality
Dell Port Based QoS Services Mode

Flash memory
256MB
Packet buffer memory: 15MB
CPU memory: 1GB
RIP routing interfaces: 128
VLAN routing interfaces: 128
VLANs supported: 512
Protocol-based VLANs: Supported
ARP entries: 2,048 (IPv4/1526 IPv6)
NDP entries: 400
Access control lists (ACL): Supported
BGP and IP-based ACLs: Supported
Time-controlled ACLs: Supported
Max number of ACLs: 100
Max ACL rules system-wide: 2048
Max rules per ACL: 1023
Max ACL rules per interface (IPv4): 1,023 (ingress), 1,023 (egress)
Max ACL rules per interface (IPv6): 512 (ingress), 599 (egress)
ACL applied: 24

IEEE compliance
802.1Q VLAN
802.1D Bridge, Bridging Tree
802.1p Ethernet Priority (User Programming and Mapping)
802.1Q VLAN Tagging, Double VLAN Tagging, GFPV
802.1S Multiple Spanning Tree (MSTP)
802.3x Protocol-based VLANs
802.1w Rapid Spanning Tree (RSTP)
802.1Q Tagged VLANs (compatible with Cisco’s RPSV+T)
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
802.3e 10 Gigabit Ethernet (10GBASE-X)
802.3f 10 Gigabit Ethernet (10GBASE-X)
802.3M Power- up (N1524P and N1548P)
802.3X LAG Load Balancing
802.3z Energy Efficient Ethernet (EEE)
802.3i Fast Ethernet (100BASE-TX) on Management Ports
802.3z Flow Control
802.3z Gigabit Ethernet (100BASE-X)
803.2LLDP-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 representative.

General IPv4 protocols
General IPv4 protocols are supported. For a detailed list, please contact your Dell representative.

General IPv6 protocols
General IPv6 protocols are supported. For a detailed list, please contact your Dell representative.

Layer 3 functionality
1058 RIPv4
2082 RIP-2 MDS Auth
1724 RIPv2 MIB Extension
2453 RIPv2

Multicast
2932 IPv4 MIB
4541 iGMPv2/3 Snooping and Querier

IEEE 802.1ag draft 8.1 - Connectivity Fault Management
Quality of service
2474 DiffServ Field
2475 DiffServ Architecture
2597 Assured Flow PHB
2600 Port Based QoS

Layer 3 functionality
Dell Port Based QoS Services Mode

Network management and security
1155 SNMPv1
1157 SNMPv2
1212 Concise MIB Definitions
1213 MIB-II
1215 SNMP Traps
1286 Bridge MIB
1451 Manager-to-Manager MIB
1492 TAG-CDS
1493 Managed Objects for Bridges MIB
1573 Evolution of Interfaces
1612 DNS Resolver MIB
1643 Ethernet-like MIB
1757 RMON MIB
1867 HTML/2.0 Forms with File Upload Extensions
1901 Community-based
1907 SNMIPv2
1908 Coexistence Between SNMIPv1/v2
1911 IP MIB
1912 TCP MIB
1913 UDP MIB
1916 IP Forwarding Table MIB
2233 Interfaces Group using SNMPv2
2246 TSL v1
2271 SNMIPv2 Framework MIB
2295 Transport Context Negotiation
2296 Remote Variant Selection
2346 AES Ciphersuites for TLS
2576 Coexistence Between SNMIPv1/v2/3
2578 SMIPv2
2579 Textual Conventions for SMIPv2
2580 Coexistence Between SMIPv2/3
2613 RMON MIB
2618 RADIUS Authentication MIB
2620 RADIUS Accounting MIB
2663 Ethernet-like Interfaces MIB
2674 Extended Bridge MIB
2737 EMTR MIB
2818 HTTP over TLS

Regulatory, environment and other compliance
Safety and emissions
Australia/New Zealand: ACMA-RCM Class A
Canada:ICES Class A, CUL
Japan:CCC Class A, CUL
Europe: CE Class A
Japan: VCCI Class A
USA: FCC Class A, NRTL, UL
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 representative.

Energy
Australia: Energy Star

Certifications (available or coming soon)
4420 Available with US Trade Agreements Act (TAA) compliance.
N-Series products have the necessary features to support a PCI-compliant network topology.

Learn More at Dell.com/Networking