The N1500 switch series offers a power-efficient Gigabit Ethernet (GbE) network-access switching solution with integrated 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 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 EMC Networking OS6, designed for easier deployment, greater interoperability and a lower learning curve for network administrators. OS6 common command line interface (CLI) and graphic user interface (GUI) using a well-known command language gets skilled network administrators productive quickly. 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.*

Hardware, performance and efficiency

- Up to 48 line-rate GbE RJ-45 ports and four integrated 10GbE SFP+ ports.
- 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.
- 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.
- Private VLAN extensions and Private VLAN Edge support.

*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.
### Technical specifications

#### Physical
4 integrated front 10GbE SFP+ dedicated ports, 2 10GbE can be used as stacking ports
USB (Type A) port for configuration via USB flash drives
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: 40W AC (N1524), 600W AC (N1548P, N1548P)
Power supply efficiency: 80% or better in all operating modes

#### Optics (optional)
Transceiver, SFP+, 10GbE, ER, 1550nm wavelength, up to 40km reach
Transceiver, SFP+, 10GbE, LR, 1310nm wavelength, up to 10km reach
Transceiver, SFP+, 10GbE, SR, 850nm wavelength, up to 300m reach
Transceiver, SFP, 1000BASE-ZX, 1550nm wavelength, up to 80km reach
Transceiver, SFP, 1000BASE-LX, 1310nm wavelength, up to 10km reach
Transceiver, SFP, 1000BASE-SX, 850nm wavelength, up to 550m reach
Transceiver, SFP, 1000BASE-T

#### Cables (optional)
Dell Technologies Networking cable, SFP+ to SFP+, 10GbE, copper twinax direct

#### Performance
**MAC addresses:** 16K
**Static routes:** 256 (IPv4)/128 (IPv6)
**Dynamic routes:** 256 (IPv4)
**Switch fabric capacity:** 128Gbps (N1524 and N1524P) (full duplex); 176Gbps (N1548 and N1548P)
**Forwarding rate:** 128Mpps (86 Gbps) N1524 and N1524P
**Line-rate Layer 2 switching:** All (non-blocking)
**Line-rate Layer 3 routing:** All (non-blocking)
**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)/512 (IPv6)
**NDP entries:** 400
**Access control lists (ACL):** Supported
**Time-controlled ACLs:** Supported
**Max number of ACLs:** 100
**Max ACL rules system-wide:** 2,048
**Max ACL rules per interface (IPv4):** 1,023
**Maximum output priority:** 512 (gress)
**Maximum input priority:** 512 (egress)
**Max VLAN interfaces with ACLs applied:** 24

#### IEEE compliance
802.1AB [LLDP]
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)]
802.1d [Dell RSTP-Per VLAN (compatible with Cisco's RPVST+)]
802.1X [Dell Spanning tree optional features; STP root guard, BPDU guard, BPDU filtering]
802.1Q [Network Access Control, Auto VLAN]
802.2 [Logical Link Control]
802.3 [10BASE-T]
802.3a [10 Gigabit Ethernet (10GBASE-X)]
802.3ad [Link Aggregation with LACP]
802.3ae [Energy Efficient Ethernet (EEE)]
802.3af [Fast Ethernet (100BASE-TX) on Management Ports]
802.3x [Flow Control]
802.3z [Gigabit Ethernet (1000BASE-X)]
802.3Q [VLAN Tagging]
802.3u [802.1D, 802.1W, 802.1S Multiple Spanning Tree (MSTP), 802.3ad Link Aggregation with LACP, 802.3ae Energy Efficient Ethernet (EEE), 802.3af Fast Ethernet (100BASE-TX) on Management Ports, 802.3x Flow Control, 802.3z Gigabit Ethernet (1000BASE-X), 802.3Q VLAN Tagging]
802.1Q [VLAN Tagging, Double VLAN Tagging, GVRP]
802.1S [Multiple Spanning Tree (MSTP)]
802.1v [Protocol-based VLANs]
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802.3a [10 Gigabit Ethernet (10GBASE-X)]
802.3ad [Link Aggregation with LACP]
802.3ae [Energy Efficient Ethernet (EEE)]
802.3af [Fast Ethernet (100BASE-TX) on Management Ports]
802.3x [Flow Control]
802.3z [Gigabit Ethernet (1000BASE-X)]
802.3Q [VLAN Tagging]

#### 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.

### Product | Description
--- | ---
**N1500 series** | N1524: 24x RJ-45 10/100/1000Mb auto-sensing ports, 4x SFP+ ports, 1 integrated 40W PSU
N1524P: 24x RJ-45 10/100/1000Mb PoE+ (up to 30.8w) auto-sensing ports, 4x SFP+ ports, 1 integrated 600W PSU (requires C15 plug)
N1548: 48x RJ-45 10/100/1000Mb auto-sensing ports, 4x SFP+ ports, 1 integrated 100W PSU
N1548P: 48x RJ-45 10/100/1000Mb PoE+ (up to 30.8w) auto-sensing ports, 4x SFP+ ports, 1 integrated 500W PSU (requires C15 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)
- MPS1000 external power supply for N1500 non-POE (720 watts); N1524 and N1548 (sold separately)
- MPS1000 external power supply for N1500 PoE+ switches (1000 watts); N1524P and N1548P (sold separately)

### Cables (optional)
- Dell Technologies Networking cable, SFP+ to SFP+, 10GbE, copper twinax direct
Multicast
- IPv4 MIB
- IGMP v1/v2/v3

Quality of service
- DiffServ Field

Network management and security
- SMIv1
- SNMPv1
- MIB-II
- SNMP Traps
- Bridge MIB
- SMIV2
- Manager-to-Manager MIB
- TACACS+
- SNMPv2 for Bridges MIB
- Evolution of Interfaces
- DNS Resolver MIB
- Ethernet-like MIB
- HTML/2.0 Forms with File Upload Extensions
- Community-based SNMPv2
- SNMPv2 for SMIv2
- Coexistence Between SNMPv1/v2
- IP MIB
- TCP MIB
- UDP MIB
- HTTP/1.1
- IP Forwarding Table MIB
- Interfaces Group using SMIV2
- TLS v1
- SNMP Framework MIB
- Transport Content Negotiation
- Remote Variant Selection

View-based control model
- SMIV2
- RADIUS
- RMOM MIB
- RMON MIB
- Management Framework
- Message Processing and Dispatching
- User-based security model

Communication
- IP Forwarding Table
- UDP MIB
- TCP MIB
- IP MIB
- SNMPv1/v2
- SMIV2
- Coexistence Between SNMPv1/v2/v3
- Textual Conventions for SMIV2
- RADIUS Authentication MIB
- RADIUS Accounting MIB
- RADIUS Attributes for Tunnel Prot.
- RADIUS Extensions
- Internet Standard Mgmt. Framework
- SNMP Management Framework
- Message Processing and Dispatching
- User-based security model

Security
- SSL
- TLS v1.2
- SECSH Public Key Protocol
- SECSH Public Key Protocol
- SSHv2 Protocol
- SSHv2 Authentication
- SSHv2 Connection Protocol
- SSHv2 Transport Layer Protocol
- LDAP Extensions
- SECSH Public Key Format
- SSHv2 Authentication
- SSHv2 Connection Protocol
- SSHv2 Transport Layer Protocol
- LDAP Extensions

N1500 Series
- Dell MIB
- 802.3ad
- LAG MIB
- Support for 802.3ad
- Functionality
- Dell Sflow version 1.3
- draft 5
- 802.3x 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

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