



# Dell Networking S3100 series

## High-performance managed Ethernet switches designed for non-blocking access

The S3100 switch series offers a power-efficient and resilient Gigabit Ethernet (GbE) switching solution with integrated 10GbE uplinks for advanced Layer 3 distribution for offices and campus networks. The S3100 switch series has high-performance capabilities and wire-speed performance utilizing a non-blocking architecture to easily handle unexpected traffic loads. Use dual internal hot-swappable 80PLUS-certified power supplies for high availability and power efficiency. The switches offer simple management and scalability via an 84Gbps (full-duplex) high-availability stacking architecture that allows management of up to 12 switches from a single IP address.

### Modernize campus network architectures

Modernize campus network architectures with a power-efficient and resilient 1/10GbE switching solution with dense Power over Ethernet Plus (PoE+). Select S3100 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. For greater interoperability in multivendor networks, S3100 series switches offer the latest open-standard protocols and include technology to interface with Cisco protocol PVST+. The S3100 series supports Dell Networking OS9, VLT and network virtualization features such as VRF-lite and support for Dell Embedded Open Automation Framework.

### Leverage familiar tools and practices

All S3100 switches include Dell Networking OS9 for easier deployment and greater interoperability. One common command line interface (CLI) using a well-known command language means a faster learning curve for network administrators.

### Deploy with confidence at any scale

S3100 series switches help create performance assurance with a data rate up to 260Gbps (full duplex) and a forwarding rate up to 193Mpps. Scale easily with built-in rear stacking ports. Switch stacks of up to 624 ports can be managed from a single screen using the highly-available stacking architecture for high-density aggregation with seamless redundant availability.

### Hardware, performance and efficiency

- Up to 48 line-rate GbE ports of copper or 24 line-rate ports of fiber, two combo ports for fiber/copper flexibility, and two integrated 10GbE SFP+ ports
- Up to 48 ports of PoE+ in 1RU without an external power supply
- Hot swappable expansion module supporting dual-port SFP+ or dual-port 10GBaseT
- Integrated stacking ports with support up to 84Gbps
- Up to 624 ports in a 12-unit stack for high-density, high-availability aggregation and distribution in wiring closets/ MDFs. Non-stop forwarding and fast failover in stack configurations
- Available with dual 80PLUS-certified hot swappable power supplies. Variable speed fan operation helps decrease cooling and power costs

- 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

- Tool-less ReadyRails™ significantly reduces rack installation time
- Management via an intuitive and familiar CLI, SNMP-based management console application (including Dell Open-Manage Network Manager), Telnet or serial connection
- Private VLAN support
- AAA authorization, TACACS+ accounting and RADIUS support for comprehensive secure access
- Authentication tiering allows network administrators to tier port authentication methods such as 802.1x, MAC Authentication Bypass in priority order so that a single port can provide flexible access and security
- Achieve high availability and full bandwidth utilization with VLT and support firmware upgrades without taking the network offline
- Interfaces with PVST+ protocol for greater flexibility and interoperability in Cisco networks
- Advanced Layer 3 IPv4 and IPv6 functionality
- Flexible routing options with policy-based routing to route packets based on assigned criteria beyond destination address
- Routed Port Monitoring (RPM) covers a Layer 3 domain without costly dedicated network taps
- OpenFlow 1.3 provides the ability to separate the control plane from the forwarding plane for deployment in SDN environments

### Get more starting on day one

Trust Dell experts to lead deployments from planning and basic hardware installations to configuration and complex integrations. The Dell ProDeploy Enterprise Suite saves you time, reduces the cost of implementing new technology, and offers you confidence that your new systems will be easy to maintain.

Learn more at [Dell.com/ProDeploy](http://Dell.com/ProDeploy).

1GbE switches utilizing a comprehensive enterprise-class Layer 2 and 3 advanced feature set in Dell Networking OS9

# Specifications: Dell Networking S3100 series

## Ordering information

**S3124:** 24x RJ45 10/100/1000Mb auto-sensing ports, 2x SFP+ ports, 2x GbE combo media ports, 1x hot swap expansion module bay, 1x 200W PSU included

**S3124F:** 24x 1000-SX (up to 500m distance) or 1000-LX (up to 10km distance) SFP GbE ports, 2x SFP+ ports, 2x GbE combo media ports, 1x hot swap expansion module bay, 1x 200W PSU included

**S3124P:** 24x RJ45 10/100/1000Mb PoE+ (up to 30.8W) auto-sensing ports, 2x SFP+ ports, 2x GbE combo media ports, 1x hot swap expansion module bay, 1x 715W PSU included

**S3148:** 48x RJ45 10/100/1000Mb auto-sensing ports, 2x SFP+ ports, 2x GbE combo media ports, 1x hot swap expansion module bay, 1x 200W PSU included

**S3148P:** 48x RJ45 10/100/1000Mb PoE+ (up to 30.8W) auto-sensing ports, 2x SFP+ ports, 2x GbE combo media ports, 1x hot swap expansion module bay, 1x 1100W PSU included\*

**Power cords**  
C13 to NEMA 5-15, 3M; C13 to C14, 2M; C15 to NEMA 5-15, 2M (C15 for PoE S-Series only)

**Modules (optional)**  
2-port 10GBASE-T RJ-45 hot swappable uplink module  
2-port 10GbE SFP+ hot swappable uplink module

**Power supplies (optional)**  
200W AC hot swappable with V-Lock, adds redundancy to non-PoE switches (S3124, S3124F and S3148 only)  
715W AC hot swappable, adds redundancy to S3124P (S3124P only)  
1100W AC hot swappable, adds redundancy to S3148P or upgrade S3124P for additional PoE+ power (S3124P and S3148P only)

**Optics (optional)**  
Transceiver, SFP, 100BASE-FX, 1310nm wavelength, up to 2km reach  
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, LRM, 1310nm wavelength, up to 220m 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)**  
Stacking cable 0.25m, 1m and 3m  
Dell Networking cable, SFP+ to SFP+, 10GbE, copper twinax direct attach cable, 0.5m, 1m, 3m, 5m and 7m  
\*Requires C15 plug

## Physical

2 rear stacking ports (21Gbps) supporting up to 84Gbps (full-duplex)

2 integrated front 10GbE SFP+ dedicated ports  
Out-of-band management port (10/100/1000BASE-T)  
USB (Type A) port for configuration via USB flash drive  
Auto-negotiation for speed and flow control  
Auto-MDI/MDIX, port mirroring  
Energy-Efficient Ethernet per port settings  
Redundant variable speed fans  
Air flow: I/O to power supply  
RJ45 console/management 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 (1RU): 1.7126in x 17.0866in x 16.0236in (43.5mm x 434.0mm x 407.0mm) (H x W x D)  
Approximate weight: 13.2277lbs/6kg (S3124 and S3124F), 14.5505lbs/6.6kg (S3124P), 15.2119lbs/6.9kg (S3148P)  
ReadyRails rack mounting system, no tools required

**Environmental**  
Power supply: 200W (S3124, S3124F and S3148), 715W or 1,100W (S3124P), 1,100W (S3148P)  
Power supply efficiency: 80% or better in all operating modes  
Max. thermal output (BTU/hr): 182.55 (S3124), 228.96 (S3124F), 4391.42 (S3124P), 221.11 (S3148), 7319.04 (S3148P)  
Power consumption max (watts): 52.8 (S3124), 67.1 (S3124F), 1,287 (S3124P), 74.8 (S3148), 2,145 (S3148P)  
Operating temperature: 32° to 113°F (0° to 45°C)  
Operating relative humidity: 95%  
Storage temperature: -40° to 149°F (-40° to 65°C)  
Storage relative humidity: 85%

## Performance

MAC addresses: 56K (80K in L2 scaled mode)  
Static routes: 16K (IPv4)/8K (IPv6)  
Dynamic routes: 16K (IPv4)/8K (IPv6)  
Switch fabric capacity: 212Gbps (S3124, S3124F and S3124P) (full duplex) and 260Gbps (S3148 and S3148P)  
Forwarding rate: 158Mpps (S3124, S3124F and S3124P) and 193Mpps (S3148 and S3148P)  
Link aggregation: 16 links per group, 128 groups  
Priority queues per port: 8  
Line-rate Layer 2 switching: All (non-blocking)  
Line-rate Layer 3 routing: All (non-blocking)  
Flash memory: 1G  
Packet buffer memory: 4MB  
CPU memory: 2GB DDR3  
Layer 2 VLANs: 4K  
MSTP: 64 instances  
VRF-lite: 511 instances  
Line-rate Layer 2 switching: All protocols, including IPv4 and IPv6  
Line-rate Layer 3 routing: IPv4 and IPv6  
IPv4 host table size: 22K (42K in L3 scaled hosts mode)

IPv6 host table size: 16K (both global + Link Local) (32K in L3 scaled hosts mode)  
IPv4 Multicast table size: 8K  
LAG load balancing: Based on Layer 2, IPv4 or IPv6 headers

**IEEE compliance**  
802.1AB  
802.1D  
802.1P  
802.1Q

802.1Qbb  
802.1Qaz  
802.1s  
802.1w  
802.1x  
802.1x-2010

802.3ab  
802.3ac

802.3ad  
802.1ax

802.3ae  
802.3af  
802.3at  
802.3az  
802.3u

802.3x  
802.3z  
ANSI/TIA-1057  
Force10  
MTU

## RFC and I-D compliance

### General Internet protocols

768 UDP  
793 TCP  
854 Telnet  
959 FTP

### General IPv4 protocols

791 IPv4 2474 Diffserv Field in IPv4 and IPv6 Headers  
792 ICMP 2596 Assured Forwarding PHB Group  
826 ARP 3164 BSD Syslog  
1027 Proxy ARP 3195 Reliable Delivery for Syslog  
1035 DNS (client)  
1042 Ethernet Transmission  
1305 NTPv3 3246 Expedited Assured Forwarding  
1519 CIDR 4364 VRF-lite (IPv4 VRF with OSPF and BGP)  
1542 BOOTP (relay)  
1812 Requirements for IPv4 Routers 5798 VRRP  
1918 Address Allocation for Private Internets

### General IPv6 protocols

1981 Path MTU Discovery Features  
2460 Internet Protocol, Version 6 (IPv6) Specification  
2464 Transmission of IPv6 Packets over Ethernet Networks  
2711 IPv6 Router Alert Option  
4007 IPv6 Scoped Address Architecture  
4213 Basic Transition Mechanisms for IPv6 Hosts and Routers  
4291 IPv6 Addressing Architecture  
4443 ICMP for IPv6  
4861 Neighbor Discovery for IPv6  
4862 IPv6 Stateless Address Autoconfiguration  
5095 Deprecation of Type 0 Routing Headers in IPv6  
IPv6 Management support (telnet, FTP, TACACS, RADIUS, SSH, NTP)

**RIP**  
1058 RIPv1 2453 RIPv2

**OSPF (v2/v3)**  
1587 NSSA 4552 Authentication/OSPF with Digital Signatures  
2154 OSPFv2 OSPFv3  
2328 Opaque LSA 5340 OSPF for IPv6

### IS-IS

5301 Dynamic hostname exchange mechanism for IS-IS  
5302 Domain-wide prefix distribution with two-level IS-IS  
5303 Three way handshake for IS-IS point-to-point adjacencies  
5308 IS-IS for IPv6

### BGP

1997 Communities 2858 Multiprotocol Extensions  
2385 MD5 2918 Route Refresh  
2545 BGP-4 Multiprotocol Extensions for IPv6 3065 Confederations  
Inter-Domain Routing 4360 Extended Communities  
2439 Route Flap Damping  
2796 Route Reflection 4893 4-byte ASN  
2842 Capabilities 5396 4-byte ASN representations

draft-ietf-idr-bgp4-20 BGPv4  
draft-michaelson-4byte-as-representation-05 4-byte ASN Representation (partial)  
draft-ietf-idr-add-paths-04.txt ADD PATH

### Multicast

1112 IGMPv1 3376 IGMPv3  
2236 IGMPv2 MSDP  
draft-ietf-pim-sm-v2-new-05 PIM-SMw

## Security

2404 The Use of HMACSHA-1-96 within ESP and AH 4250, 4251, 4252, 4253, 4254 SSHv2  
RADIUS 4301 Security Architecture for IPsec  
3162 Radius and IPv6 4302 IPsec Authentication Header  
3579 Radius support for EAP 4303 ESP Protocol  
3580 802.1X with RADIUS 4807 IPsec Security Policy DB  
3768 EAP MIB PIM-SMw  
3826 AES Cipher Algorithm in the SNMP User Base Security Model

## Network management

1155 SMIPv1 3411 SNMPv3  
1157 SNMPv1 Management Framework  
1212 Concise MIB Definitions 3412 Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)  
1215 SNMP Traps 3413 SNMP Applications  
1493 Bridges MIB 3414 User-based Security Model (USM) for SNMPv3  
1850 OSPFv2 MIB 3415 VACM for SNMP  
1901 Community-Based SNMPv2 3416 SNMPv2  
2011 IP MIB 3417 Transport mappings for SNMP  
2096 IP Forwarding Table MIB 3418 SNMP MIB  
2578 SMIPv2 3434 RMON High Capacity Alarm MIB  
2579 Textual Conventions for SMIPv2 3584 Coexistence between SNMP v1, v2 and v3  
2618 RADIUS Authentication MIB 4022 IP MIB  
2665 Ethernet-Like Interfaces MIB 4087 IP Tunnel MIB  
2674 Extended Bridge MIB 4113 UDP MIB  
2787 VRRP MIB 4133 Entity MIB  
2819 RMON MIB (groups 1, 2, 3, 9) 4292 MIB for IP  
2863 Interfaces MIB 4293 MIB for IPv6 Textual Conventions  
3273 RMON High Capacity MIB 4502 RMONv2 (groups 1,2,3,9)  
3410 SNMPv3 5060 PIM MIB

ANSI/TIA-1057 LLDP-MED MIB  
DelL\_ITA.Rev\_1\_1 MIB  
draft-grant-tacacs-02 TACACS+  
draft-ietf-idr-bgp4-mib-06 BGP MIBv1  
IEEE 802.1AB LLDP MIB  
IEEE 802.1AB LLDP DOT1 MIB  
IEEE 802.1AB LLDP DOT3 MIB  
sFlow.org sFlowv5  
sFlow.org sFlowv5 MIB (version 1.3)  
FORCE10-BGP4-V2-MIB Force10 BGP MIB  
(draft-ietf-idr-bgp4-mibv2-05)  
FORCE10-IF-EXTENSION-MIB  
FORCE10-LINKAGG-MIB  
FORCE10-COPY-CONFIG-MIB  
FORCE10-PRODUCTS-MIB  
FORCE10-SS-CHASSIS-MIB  
FORCE10-SMI  
FORCE10-TC-MIB  
FORCE10-TRAP-ALARM-MIB  
FORCE10-FORWARDINGPLANE-STATS-MIB

## Regulatory, environment and other compliance

### Safety

UL/CSA 60950-1, Second Edition  
EN 60950-1, Second Edition  
IEC 60950-1, Second Edition Including All National Deviations and Group Differences  
EN 60825-1 Safety of Laser Products Part 1: Equipment Classification Requirements and User's Guide  
EN 60825-2 Safety of Laser Products Part 2: Safety of Optical Fibre Communication Systems  
FDA Regulation 21 CFR 1040.10 and 1040.11

### Emissions

USA: FCC CFR 47 Part 15, Subpart B:2011, Class A  
**Immunity**  
EN 300 386 V1.4.1:2008 EMC for Network Equipment  
EN 55024:1998 + A1: 2001 + A2: 2003  
EN 61000-3-2: Harmonic Current Emissions  
EN 61000-3-3: Voltage Fluctuations and Flicker  
EN 61000-4-2: ESD  
EN 61000-4-3: Radiated Immunity  
EN 61000-4-4: EFT  
EN 61000-4-5: Surge  
EN 61000-4-6: Low Frequency Conducted Immunity

### RoHS

All S Series components are EU RoHS compliant.

### Certifications

Available with US Trade Agreements Act (TAA) compliance  
USGv6 Host and Router Certified on Dell Networking OS 9.7 and greater  
IPv6 Ready for both Host and Router  
DoD UC-APL approved switch  
FIPS 140-2 Approved Cryptography  
**Warranty**  
Lifetime Limited Hardware Warranty



## Learn More at Dell.com/Networking

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Dell\_Networking\_S3100\_Series\_spec\_sheet

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