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 OpenManage 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.

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

*Contact your Dell representative for a full list of validated storage arrays.

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: S3124P) (full duplex)	212Gbps (S3124, S3124F and 260Gbps (S3148 and S3148P)
Forwarding rate:	158Mpps (S3124, S3124F and S3124P)
	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	LLDP
802.1D	Bridging, STP
802.1p	L2 Prioritization
802.1Q	VLAN Tagging, Double VLAN Tagging, GVRP
802.1Qbb	PFC
802.1Qaz	ETS
802.1s	MSTP
802.1w	RSTP
802.1x	Network Access Control
802.1x-2010	Port Based Network Access Control
802.3ab	Gigabit Ethernet (1000BASE-T)
802.3ac	Frame Extensions for VLAN Tagging
802.3ad	Link Aggregation with LACP
802.1ax	Link Aggregation Revision - 2008 and 2011
802.3ae	10 Gigabit Ethernet (10GBase-X)
802.3af	PoE (for S3124P and S3148P)
802.3at	PoE+ (for S3124P and S3148P)
802.3az	Energy Efficient Ethernet (EEE)
802.3u	Fast Ethernet (100Base-TX) on mgmt ports
802.3x	Flow Control
802.3z	Gigabit Ethernet (1000Base-X)
ANSI/TIA-1057	LLDP-MED
Force10	PVST+
MTU	12,000 bytes

RFC and I-D compliance

General Internet protocols

768	UDP
793	TCP
854	Telnet
959	FTP

General IPv4 protocols

791	IPv4
792	ICMP
826	ARP
1027	Proxy ARP
1035	DNS (client)
1042	Ethernet Transmission
1305	NTPv3
1519	CIDR
1542	BOOTP (relay)
1812	Requirements for IPv4 Routers
1918	Address Allocation for Private Internets
2474	Diffserv Field in IPv4 and Ipv6 Headers
2596	Assured Forwarding PHB Group
3164	BSD Syslog
3195	Reliable Delivery for Syslog
3246	Expedited Assured Forwarding
4364	VRF-lite (IPv4 VRF with OSPF and BGP)
5798	VRRP

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/
2154	OSPF with Digital Signatures
2328	OSPFv2 OSPFv3
2370	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 Inter-Domain Routing	3065	Confederations
		4360	Extended Communities
2439	Route Flap Damping	4893	4-byte ASN
2796	Route Reflection	5396	4-byte ASN representations
2842	Capabilities		

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
2865	RADIUS
3162	Radius and IPv6
3579	Radius support for EAP
3580	802.1X with RADIUS
3768	EAP
3826	AES Cipher Algorithm in the SNMP User Base Security Model
4250, 4251, 4252, 4253, 4254	SSHv2
4301	Security Architecture for IPSec
4302	IPSec Authentication Header
4303	ESP Protocol
4807	IPsec Security Policy DB MIB PIM-SMw

Network management

1155	SMIv1
1157	SNMPv1
1212	Concise MIB Definitions
1215	SNMP Traps
1493	Bridges MIB
1850	OSPFv2 MIB
1901	Community-Based SNMPv2
2011	IP MIB
2096	IP Forwarding Table MIB
2578	SMIv2
2579	Textual Conventions for SMIv2
2580	Conformance Statements for SMIv2
2618	RADIUS Authentication MIB
2665	Ethernet-Like Interfaces MIB
2674	Extended Bridge MIB
2787	VRRP MIB
2819	RMON MIB (groups 1, 2, 3, 9)
2863	Interfaces MIB
3273	RMON High Capacity MIB
3410	SNMPv3
3411	SNMPv3 Management Framework
3412	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
3413	SNMP Applications
3414	User-based Security Model (USM) for NMPv3
3415	VACM for SNMP
3416	SNMPv2
3417	Transport mappings for SNMP
3418	SNMP MIB
3434	RMON High Capacity Alarm MIB
3584	Coexistence between SNMP v1, v2 and v3
4022	IP MIB
4087	IP Tunnel MIB
4113	UDP MIB
4133	Entity MIB
4292	MIB for IP
4293	MIB for IPv6 Textual Conventions
4502	RMONv2 (groups 1,2,3,9)
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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