NEW ProCurve Routing Switch 9408sl

The ProCurve Routing Switch 9408sl delivers a new generation of high-performance, high-density, multilayer switching and routing solutions for enterprise networks. Designed specifically to meet the increasing demands of enterprise network deployments, the Routing Switch 9408sl enables network managers to build high-performance, scalable, highly available networks with support for emerging technologies such as wire-speed 10-Gigabit and IPv6. The Routing Switch 9400sl series provides scalability and investment protection by providing high-density Gigabit and 10-Gigabit solutions, with non-blocking performance, high availability, wire-speed traffic flow monitoring, and intelligent multilayer switching and routing.

NEW ProCurve Routing Switch 9408sl (J8680A)

ProCurve Routing Switch 9408sl

Features and benefits

- **Wire-speed IPv4 and IPv6 routing and switching:** support for IPv4 and IPv6 protocols and services, including IPv4 to IPv6 transition technologies, provides investment protection for transition to IPv6
- **High-density, wire-speed 10-Gigabit Ethernet:** simplify data center configurations and increase backbone throughput
- **Up to 480 million pps performance:** provides the high performance required by large networks
- **IP multicast routing:** provides IGMP, PIM-dense, PIM-sparse, and PIM snooping mode support in routed environments to control multicast traffic
- **Policy-based routing:** control network usage by setting access control list (ACL)–based policies that determine which type of traffic takes which path through the network
- **Advanced Quality of Service (QoS):** allows administrators to prioritize traffic flows and to enforce or change traffic priority based on port, VLAN, source MAC, ACL, 802.1p, Type of Service (ToS), or DiffServ settings to enhance QoS on delay-sensitive applications
- **sFlow (RFC 3176):** provides scalable, ASIC-based, wire-speed network monitoring and accounting with no impact on network performance; this allows network operators to gather a variety of sophisticated network statistics and information for capacity planning and real-time network monitoring purposes
- **Jumbo frames:** allow high-performance remote backup and disaster-recovery services
- **Unparalleled security:** protection against denial-of-service attacks; Secure Shell, Secure Copy, wire-speed rate limiting, and user authentication (with AAA, RADIUS, and TACACS+) prevent unauthorized network access and associated downtime
- **Dedicated 10/100 management port:** allows secure access for switch management by separating management traffic from the general LAN and providing the option to disable management access from global LAN ports
- **Hardware-based wire-speed access control lists:** feature-rich ACL implementation to ensure high levels of security and ease of administration without impacting network performance
- **Advanced Spanning Tree functionality:** single-instance STP, Per VLAN Spanning Tree (PVST), Per VLAN Group Spanning Tree (PVGST), and Rapid Spanning Tree (IEEE 802.1w) all provide improved availability and scalability for Spanning Tree–based networks
- **Port trunking:** for higher switch-to-switch and switch-to-server throughput and link-level redundancy, with support for standards-based link aggregation (IEEE 802.1ad)
- **Software updates:** free downloads from the Web
- **Optional redundant power supply:** provides uninterrupted power
- **Hot-swappable modules:** permit modules and mini-GBICs to be added or swapped without interrupting the network
- **Automatic routing switch failover:** provides hot-standby redundancy using standards-based VRRP (Virtual Router Redundancy Protocol)

Features and benefits (continued)

- **Optional redundant management:** provides automatic failover from the active management module to the standby management module for high availability
- **Full-featured console:** provides complete control of the switch with a familiar command-line interface
- **Web interface:** allows you to configure the switch from any Web browser on the network
- **Industry-leading warranty:** one-year next-business-day advance replacement, with extensions available

Services

- 3-year, parts only, global next-day advance exchange
- 3-year, 4-hour onsite, 13x5 coverage for hardware
- 3-year, 4-hour onsite, 24x7 coverage for hardware
- 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support
- 1-year, post-warranty, parts only, global next-day advance exchange
- 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware
- 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware
- 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support
- Installation with minimum configuration, system-based pricing
- Installation with HP-provided configuration, system-based pricing

Check **www.hp.com/go/procurveservices** for part numbers and service-level descriptions. For details about services and response times in your area, please contact your local HP sales office.

ProCurve Routing Switch 9408sl

Specifications

Ports
8 open module slots
Supports a maximum of 32 10-GbE ports or 480 Gigabit ports or 320 mini-GBICs

Power supplies
Includes 3 x J8686A
3 open power supply slots

Physical characteristics
Dimensions (D x W x H):
60.96 x 44.45 x 66.68 cm
(24.0 x 17.5 x 26.25 in.) (15U height)
Weight:
108.9 kg (242 lb.), fully loaded

Memory and processor
Interface module: LP 440GP @ 400 MHz, 256 MB SDRAM
Packet buffer size J8682A, J8684A, J8685A: 64 MB; J8688A: 96 MB
Management module: IBM 750FX @ 800 MHz, 512 MB SDRAM

Mounting
Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only

Performance
Latency: < 10 µs (FIFO)
Throughput: Up to 480 million pps (64-byte packets)
Routing/Switching capacity: 1.28 Tbps
Routing table size: 409,600 (IPv4) and 204,800 (IPv6) entries

Environment
Operating
– Temperature: 5°C to 40°C (41°F to 104°F)
– Relative humidity: 5% to 95% at 40°C (104°F), non-condensing
Non-operating/Storage
– Temperature: –25°C to 70°C (–13°F to 158°F)
– Relative humidity: 0% to 95% at 40°C (104°F), non-condensing
Altitude: Up to 3.05 km (10,000 ft.)

Electrical characteristics
Max BTUs: 13,373 BTU/hr
Voltage: 100–240 VAC
Current: 14 A–6 A (per supply)
Power consumption: 3918 W
Frequency: 50/60 Hz
Notes: Specification listed for current and power output is per power supply

Safety
UL 60950; CSA 22.2 No. 60950; IEC 60950; EN 60950; IEC 60825

Emissions
FCC Class A; EN 55022/CISPR-22 Class A; VCCI Class A

Immunity
Generic: EN 55024/CISPR 24
ESD: IEC 61000-4-2, 4kV CD, 8kV AD
Radiated: EN 61000-4-3, 3 V/m
EFT/Burst: EN 61000-4-4, 1.0 kV (power line), 0.5 kV (signal line)
Surge: EN 61000-4-5, 1kV/2kV AC
Conducted: EN 61000-4-6, 3 V
Voltage dips and interruptions: EN 61000-4-11
Harmonics: EN 61000-3-3
Flicker: EN 61000-3-3

Management
ProCurve Manager (included); ProCurve Manager Plus; 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB

Standards and protocols
RFC 783 TFTP;
RFC 1812 IPv4 Routing;
RFC 951 BootP;
RFC 1542 BootP;
RFC 1542 BootP Extensions;
RFC 854 Telnet;
RFC 768 UDP;
RFC 792 ICMP;
RFC 793 TCP;
RFC 826 ARP;
RFC 1112 IGMP;
RFC 2030 Simple Network Time Protocol;
IEEE 802.1X Network Login;
IEEE 802.3X Flow Control;
RFC 2236 IGMPv2;
RFC 1583 OSPFv2;
RFC 2328 OSPFv2 (includes route authentication);
IEEE 802.1D Spanning Tree;
IEEE 802.1w Rapid Convergence Spanning Tree;
IEEE 802.3ad Link Aggregation Control Protocol;
TACACS/TACACS+;
RFC 2138 RADIUS;
IEEE 802.1Q VLANs;
IEEE 802.1Q VLAN tagging;
IEEE 802.1p Priority;
SNMPv1/v2c/v3;
SNMP MIB II;
802.3 Ethernet Like MIB;
Ethernet Interface MIB;
Repeater MIB;
RFC 2338 VRRP;
RFC 1058 RIP;
RFC 1723 RIPv2;
RFC 1850 OSPF v2 MIB;
IEEE 802.3ae 10-Gigabit Ethernet;
RFC 1587 OSPF NSSA;
RFC 1745 OSPF Interactions;
RFC 1765 OSPF Database Overflow;
RFC 1812 RIP Requirements;
RFC 791 IP;
RFC 1256 ICMP Router Discovery Protocol;
RFC 894 IP over Ethernet;
RFC 906 TFTP Bootstrap;
RFC 1027 Proxy ARP;
RFC 1122 Host Requirements;
RFC 1256 IRDP;
RFC 1519 CIDR;
RFC 1591 DNS (client);
RFC 1812 General Routing;
RFC 1541 and 1542 DHCP;
RFC 2131 BootP/DHCP Helper;
RFC 2068 HTTP;
SSHv1/SSHv2 Secure Shell
RFC 2439 Weighted Route Dampening;
RFC 2439 BGP Route Flap Dampening;
RFC 1771 BGPv4;
RFC 1997 Communities & Attributes;
RFC 2796 route reflection;
RFC 1965 BGP4 confederations;
RFC 2842 Capability Advertisement;
RFC 2918 Route Refresh Capability;
RFC 1269 Managed Objects for BGP;
RFC 2385 BGP Session Protection via TCP MD5;
RFC 1850 OSPF Traps;
RFC 2154 OSPF w/Digital Signatures;
RFC 1812 RIP Requirements;
RFC 2362 PIM-SM;
PIM-DM v1;
DVMRP v3-07;
MSDP;
RFC 2283 MBGP;
RFC 2338 VRRP;
RFC 1354 IP Forwarding MIB;
RFC 1757 RMON Groups 1,2,3,9;
RFC 3176 sFlow;
RFC 2460 IPv6 Specification;
RFC 2461 IPv6 Neighbor Discovery;
RFC 2462 IPv6 Stateless Address Auto-configuration;
RFC 2463 ICMPv6;
RFC 3513 IPv6 Addressing Architecture;
RFC 1981 IPv6 Path MTU Discovery;
RFC 3587 IPv6 Global Unicast Address Format;
RFC 2375 IPv6 Multicast Address Assignments;
RFC 2464 Transmission of IPv6 over Ethernet Networks;
RFC 2711 IPv6 Router Alert Option;
RFC 3363 IPv6 DNS support;
RFC 2080 RIPng for IPv6;
RFC 2740 OSPFv3 for IPv6;
RFC 2545 Use of MP-BGP-4 for IPv6;
RFC 2710 Multicast Listener Discovery (MLD) for IPv6;
RFC 3306 Unicast-Prefix-based IPv6 Multicast Addresses;
RFC 2893 Transition Mechanisms for IPv6 Hosts and Routers;
RFC 3056 Connection of IPv6 Domains via IPv4 Clouds

ProCurve Routing Switch 9408sl Modules and RPS

ProCurve 9400sl Redundant Management Module (J8681A), not pictured

Ports
1 10/100 port for a separate management LAN

Physical characteristics
Dimensions (D x W x H): 40.39 x 24.38 x 2.41 cm (15.9 x 9.6 x 0.95 in.)
Weight: 1.35 kg (3.0 lb.)

Environment
Operating temperature: 0°C to 40°C (32°F to 104°F)
Operating relative humidity: 5% to 90%, non-condensing
Non-operating/Storage temperature: –25°C to 70°C (–13°F to 158°F)
Non-operating/Storage relative humidity: 0% to 95%, non-condensing

Cabling
Type:
- 10Base-T: Category 3 (or better) 100 Ω differential unshielded twisted pair (UTP) or shielded twisted pair (STP), complying with IEEE 802.3 Type 10Base-T
- 100Base-TX: Category 5 (or better), 100 Ω differential unshielded twisted pair (UTP) or shielded twisted pair (STP), complying with IEEE 802.3u 100Base-TX

Notes
Each 9408sl chassis requires one management module and can accept a second one for redundancy.
For additional specification information, see the data sheet for the product in which this module is being installed.

ProCurve 9400sl Redundant Power Supply (J8686A), not pictured

Redundant 1150 W AC power supply for use with the Routing Switch 9408sl

Physical characteristics
Dimensions (D x W x H): 48.26 x 8.26 x 6.68 cm (19.0 x 3.25 x 2.63 in.)
Weight: 3.6 kg (8 lb.)

Electrical characteristics
Voltage: 100–240 VAC
Maximum current: 14 A/6 A
Frequency range: 50/60 Hz
Power: 1150 W

Notes
Three power supplies ship with each chassis. One additional RPS required per 9408sl chassis for N+1 redundancy. Three additional RPS required per 9408sl chassis for 100% redundancy.
For additional RPS specification information, see the data sheet for the product in which the RPS is being installed. This RPS is supported only in the Routing Switch 9408sl (J8680A).

ProCurve 9400sl 4-Port 10-GbE Module (J8682A)

Ports
4 open 10-GbE XENPAK transceiver slots
Connector: SC
Duplex: full

Physical characteristics
Dimensions (D x W x H): 40.39 x 49.78 x 4.37 cm (15.9 x 19.6 x 1.72 in.)
Weight: 2.25 kg (5 lb.)

Environment
Operating temperature: 0°C to 40°C (32°F to 104°F)
Operating relative humidity: 5% to 90%, non-condensing
Non-operating/Storage temperature: –25°C to 70°C (–13°F to 158°F)
Non-operating/Storage relative humidity: 0% to 95%, non-condensing

XENPAK transceivers supported (ordered separately)
- J8173A ProCurve 10-GbE XENPAK LR optic
- J8175A ProCurve 10-GbE XENPAK SR optic
- J8176A ProCurve 10-GbE XENPAK ER optic

ProCurve 9400sl 40-Port Mini-GBIC Module (J8684A)

Ports
40 open mini-GBIC slots
Duplex: full

Physical characteristics
Dimensions (D x W x H): 40.39 x 49.78 x 4.37 cm (15.9 x 19.6 x 1.72 in.)
Weight: 2.25 kg (5 lb.)

Environment
Operating temperature: 0°C to 40°C (32°F to 104°F)
Operating relative humidity: 5% to 90%, non-condensing
Non-operating/Storage temperature: –25°C to 70°C (–13°F to 158°F)
Non-operating/Storage relative humidity: 0% to 95%, non-condensing

Mini-GBICs supported (ordered separately)
- J4858B ProCurve Gigabit-SX-LC Mini-GBIC
- J4859B ProCurve Gigabit-LX-LC Mini-GBIC
- J4860B ProCurve Gigabit-LH-LC Mini-GBIC
- J8177B ProCurve Gigabit 1000Base-T Mini-GBIC

Other mini-GBICs supported:
- J4858A ProCurve Gigabit-SX-LC Mini-GBIC
- J4859A ProCurve Gigabit-LX-LC Mini-GBIC
- J4860A ProCurve Gigabit-LH-LC Mini-GBIC

Services for accessories are covered under the product in which they are installed.

ProCurve Routing Switch 9408sl Modules

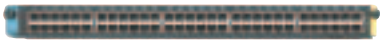
ProCurve 9400sl 40-Port 10/100/1000-T Module (J8685A)

Ports
40 auto-sensing 10/100/1000 ports (IEEE 802.3 Type 10Base-T; 802.3u Type 100Base-TX; 802.3ab Type 1000Base-T)
Connector: RJ-45
Duplex: half or full

Physical characteristics
Dimensions (D x W x H): 40.39 x 49.78 x 4.37 cm (15.9 x 19.6 x 1.72 in.)
Weight: 2.25 kg (5.0 lb.)

Environment
Operating temperature: 0°C to 40°C (32°F to 104°F)
Operating relative humidity: 5% to 90%, non-condensing
Non-operating/Storage temperature: –25°C to 70°C (–13°F to 158°F)
Non-operating/Storage relative humidity: 0% to 95%, non-condensing

Cabling
Type:
- 10Base-T: Category 3 (or better) 100 Ω differential unshielded twisted pair (UTP) or shielded twisted pair (STP), complying with IEEE 802.3 Type 10Base-T
- 100Base-TX: Category 5 (or better), 100 Ω differential unshielded twisted pair (UTP) or shielded twisted pair (STP), complying with IEEE 802.3u 100Base-TX
- 1000Base-T: Category 5 (5E or better recommended), 100 Ω differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000Base-T



ProCurve 9400sl 60-Port 10/100/1000-T Module (J8688A)

Ports
60 auto-sensing 10/100/1000 ports (IEEE 802.3 Type 10Base-T; 802.3u Type 100Base-TX; 802.3ab Type 1000Base-T)
Connector: RJ-45
Duplex: half or full

Physical characteristics
Dimensions (D x W x H): 40.39 x 49.78 x 4.37 cm (15.9 x 19.6 x 1.72 in.)
Weight: 2.25 kg (5.0 lb.)

Environment
Operating temperature: 0°C to 40°C (32°F to 104°F)
Operating relative humidity: 5% to 90%, non-condensing
Non-operating/Storage temperature: –22.78°C to 70°C (–9°F to 158°F)
Non-operating/Storage relative humidity: 0% to 95%, non-condensing

Cabling
Type:
- 10Base-T: Category 3 (or better) 100 Ω differential unshielded twisted pair (UTP) or shielded twisted pair (STP), complying with IEEE 802.3 Type 10Base-T
- 100Base-TX: Category 5 (or better), 100 Ω differential unshielded twisted pair (UTP) or shielded twisted pair (STP), complying with IEEE 802.3u 100Base-TX
- 1000Base-T: Category 5 (5E or better recommended), 100 Ω differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000Base-T

Additional accessories

ProCurve Gigabit-SX-LC Mini-GBIC (J4858B)
See page 113 for details.

ProCurve Gigabit-LX-LC Mini-GBIC (J4859B)
See page 113 for details.

ProCurve Gigabit-LH-LC Mini-GBIC (J4860B)
See page 113 for details.

ProCurve Gigabit 1000Base-T Mini-GBIC (J8177B)
See page 114 for details.

ProCurve 10-GbE XENPAK LR optic (J8173A)
See page 117 for details.

ProCurve 10-GbE XENPAK SR optic (J8175A)
See page 117 for details.

ProCurve 10-GbE XENPAK ER optic (J8176A)
See page 117 for details.

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