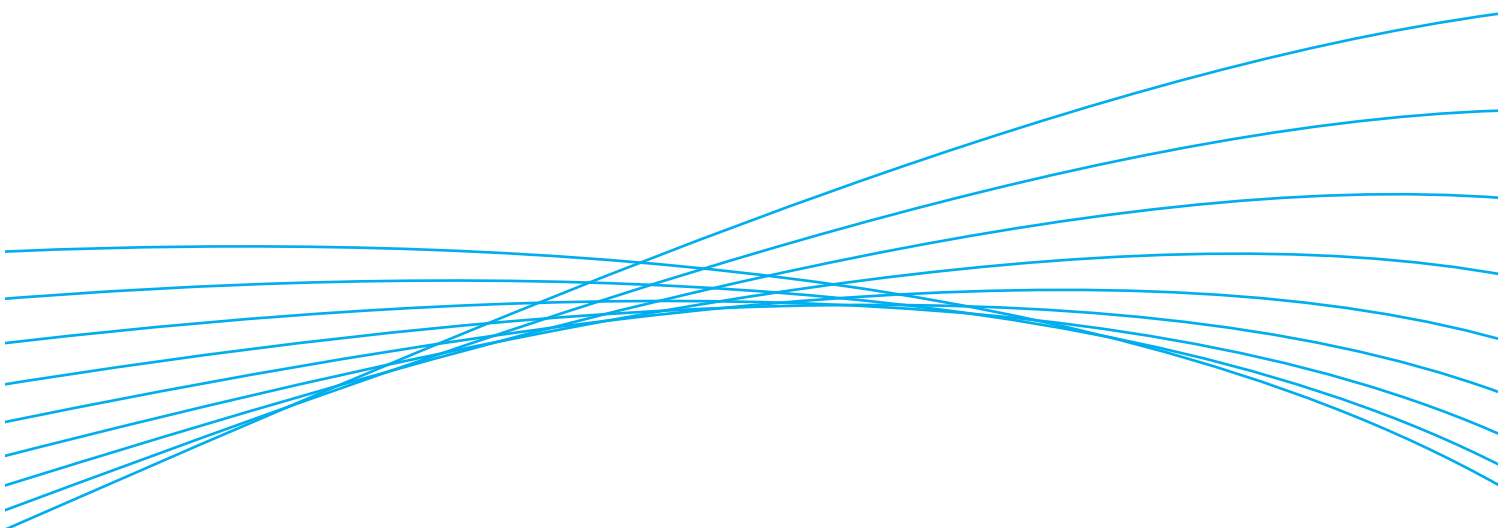# ProCurve Switch 2900 Series

The ProCurve Switch 2900 series consists of two switches: the ProCurve Switch 2900-24G with 24 10/100/1000 ports and the ProCurve Switch 2900-48G with 48 10/100/1000 ports. Both have 4 dual-personality ports for 10/100/1000 or mini-GBIC connectivity. In addition, by including four integrated 10-Gigabit Ethernet ports (two CX4 and two X2), the 2900 series offers the most flexible and easy-to-deploy multiple 10-Gigabit stacking and uplinks in its class. Together with static routing, robust security and management features, free lifetime warranty, and free software updates, the 2900 series is a cost-effective, future-proof solution for customers who are building high-performance networks.

ProCurve Switch 2900-24G (J9049A)

ProCurve Switch 2900-48G (J9050A)

ProCurve Switch 2900 Series

Features and benefits

Performance

- **High-performance architecture**: 115 Gbps switching fabric with up to 74 million pps (Switch 2900-24G) and 173 Gbps switching fabric with up to 110 million pps (Switch 2900-48G)

- **NEW** **Selectable queue configurations:** increase performance by selecting the number of queues and associated memory buffer that best meet the requirements of network applications

Connectivity

- **Plug-n-Play 10-Gbps Ethernet for stacking and uplink**: four integrated 10-GbE ports (two CX4 and two X2) built-in on the switch

- **Dual-personality functionality**: four 10/100/1000 ports or mini-GBIC slots for optional fiber connectivity such as Gigabit-SX, -LX, or -LH

- **Stacking capability**: single IP address management for a virtual stack of up to 16 switches, including the ProCurve 2500 series, 2510 series, 2600 series, 2800 series, 2810 series, 2900 series, 3400cl series, 3500yl series, 6108, 6200yl, 6400cl series, 4200vl series, and 4100gl series

- **IPv6 ready**: the switch hardware is capable of supporting IPv6, but IPv6 operation and deployment are not available until enabled via a software update at a later date

- **ProCurve/IEEE Auto-MDIX**: automatically adjusts for straight-through or crossover cables on all 10/100/1000 ports

Resiliency and high availability

- **IEEE 802.3ad Link Aggregation Protocol (LACP) and ProCurve trunking**: support up to 24 trunks, each with up to 8 links (ports) per trunk

- **IEEE 802.1s Multiple Spanning Tree**: provides high link availability in multiple VLAN environments by allowing multiple spanning trees; provides legacy support for IEEE 802.1d and IEEE 802.1w

Layer 3 routing

- **Static IP routing** provides basic routing

- **NEW** **RIP** provides RIPv1 and RIPv2 routing

Layer 2 switching

- **VLAN support and tagging**: support complete IEEE 802.1Q (4,096 VLAN IDs) and 256 VLANs simultaneously

- **GARP VLAN Registration Protocol**: allows automatic learning and dynamic assignment of VLANs

- **Jumbo frames**: on Gigabit and 10-Gigabit ports, allow high-performance remote backup and disaster-recovery services

Security

- **Port security**: allows access only to specified MAC addresses, which can be learned or specified by the administrator

- **MAC address lockout**: prevents configured particular MAC addresses from connecting to the network

- **Multiple user authentication methods:**

  - **IEEE 802.1X**: industry-standard way of user authentication using an IEEE 802.1X supplicant on the client in conjunction with a RADIUS server

  - **Web-based authentication**: similar to IEEE 802.1X, provides a browser-based environment to authenticate clients that do not support the IEEE 802.1X supplicant

  - **MAC-based authentication**: client is authenticated with the RADIUS server based on the MAC address of the client

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- **Authentication flexibility:**

  - **Multiple IEEE 802.1X users per port**: provides authentication of up to 8 IEEE 802.1X users per port; prevents user piggybacking on another user's IEEE 802.1X authentication

  - **Concurrent IEEE 802.1X and Web or MAC authentication schemes per port**: switch port will accept any of IEEE 802.1X and either Web or MAC authentications

- **NEW** **BPDU port protection:** blocks Bridge Protocol Data Unit (BPDU) on ports that do not require BPDU, preventing forged BPDU attack

- **Source-port filtering**: allows only specified ports to communicate with each other

- **Secure FTP**: allows secure file transfer to/from the switch; protects against unwanted file downloads or unauthorized copying of switch configuration file

- **TACACS+**: eases switch management security administration by using a password authentication server

- **Secure Shell (SSHv2)**: encrypts all transmitted data for secure, remote command-line interface (CLI) access over IP networks

- **Secure Sockets Layer (SSL)**: encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch

- **Switch management logon security**: can require either RADIUS or TACACS+ authentication for secure switch CLI logon

- **Custom banner**: displays security policy when users log in to the switch

Quality of Service (QoS)

- **Traffic prioritization (IEEE 802.1p)**: allows real-time traffic classification into 8 priority levels mapped to 4 queues

- **Class of Service (CoS)**: sets IEEE 802.1p priority tag based on IP address, IP Type of Service (ToS), L3 protocol, TCP/UDP port number, source port, and DiffServ

- **Layer 4 prioritization**: enables prioritization based on TCP/UDP port numbers

Management

- **Port mirroring**: enables traffic on a port to be simultaneously sent to a network analyzer for monitoring

- **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

- **IEEE 802.1ab LLDP discovery**: advertises and receives management information from adjacent devices on a network

- **RMON and XRMON**: provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events

- **NEW** **Command authorization:** leverages RADIUS to link a custom list of CLI commands to individual network administrator's login; also provides audit trail

- **Friendly port names:** allow assignment of descriptive names to ports

- **Dual flash images**: provide independent primary and secondary OS files for backup while upgrading

- **Find-Fix-and-Inform**: finds and fixes common network problems automatically, then informs administrator

- **NEW** **Uni-Directional Link Detection (UDLD):** monitors a link between two switches and blocks the ports on both ends of the link if the link goes down at any point between the two devices

ProCurve Switch 2900 Series

Convergence

- **IP multicast snooping (data-driven IGMP)**: automatically prevents flooding of IP multicast traffic

- **iSCSI support**: enables the deployment of Ethernet storage area network solutions using the iSCSI standard

- **LLDP-MED (Media Endpoint Discovery)**: a standard extension of LLDP that stores values for parameters such as QoS and VLAN to automatically configure network devices such as IP phones

- **Software updates**: free downloads from the Web

Industry-leading warranty

- **Lifetime warranty**: for as long as you own the product, with next-business-day advance replacement (available in most countries)

Services

ProCurve Switch 2900-24G

- 3-year, 4-hour onsite, 13x5 coverage for hardware (U2855E)

- 3-year, 4-hour onsite, 24x7 coverage for hardware (U2856E)

- 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6304E)

- Installation with minimum configuration, system-based pricing (U4826E)

- Installation with HP-provided configuration, system-based pricing (U4830E)

ProCurve Switch 2900-48G

- 3-year, 4-hour onsite, 13x5 coverage for hardware (H4496E)

- 3-year, 4-hour onsite, 24x7 coverage for hardware (H2893E)

- 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6319E)

- Installation with minimum configuration, system-based pricing (U4826E)

- Installation with HP-provided configuration, system-based pricing (U4830E)

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.

Accessories

ProCurve Gigabit-LH-LC Mini-GBIC (J4860B)

ProCurve Gigabit-LX-LC Mini-GBIC (J4859B)

ProCurve Gigabit-SX-LC Mini-GBIC (J4858B)

ProCurve 100-FX SFP-LC Transceiver (J9054B)

ProCurve Switch 10-GbE X2-CX4 Transceiver (J8440B)

ProCurve 10-GbE CX4 Media Converter (J8439A)

ProCurve 10-GbE X2-SC ER Optic (J8438A)

ProCurve 10-GbE X2-SC LR Optic (J8437A)

ProCurve 10-GbE X2-SC SR Optic (J8436A)

ProCurve Manager Plus 2.1 100-device limited version (J8778A)

ProCurve Manager Plus 2.1 unlimited license (J9009A)

ProCurve Switch 2900 Series

Specifications

	ProCurve Switch 2900-24G (J9049A)	**ProCurve Switch 2900-48G (J9050A)**
Ports	20 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab 1000Base-T Gigabit Ethernet) 2 CX4 10-GbE ports 2 X2 ports 4 dual-personality ports—each port can be used as either an RJ-45 10/100/1000 port (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab 1000Base-T Gigabit Ethernet) or an open mini-GBIC slot (for use with mini-GBIC transceivers) 1 RS-232C DB-9 console port	44 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab 1000Base-T Gigabit Ethernet) 2 CX4 10-GbE ports 2 X2 ports 4 dual-personality ports—each port can be used as either an RJ-45 10/100/1000 port (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab 1000Base-T Gigabit Ethernet) or an open mini-GBIC slot (for use with mini-GBIC transceivers) 1 RS-232C DB-9 console port
Physical characteristics		
Dimensions (D x W x H)	39.2 x 44.3 x 4.4 cm (15.43 x 17.44 x 1.73 in.) (1U height)	43.0 x 44.3 x 4.4 cm (16.93 x 17.44 x 1.73 in.) (1U height)
Weight	6.3 kg (14.11 lb.)	7 kg (15.43 lb.)
Memory and processor		
Processor type and speed	Freescale PowerPC 8540 @ 667 MHz	Freescale PowerPC 8540 @ 667 MHz
Packet buffer size	13.5 MB	22.5 MB
Flash capacity	4 MB	4 MB
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
Performance		
Latency	1000 Mb <3.7 µs (FIFO 64-byte packets) 10 Gbps <2.1 µs (FIFO 64-byte packets)	1000 Mb <3.7 µs (FIFO 64-byte packets) 10 Gbps <2.1 µs (FIFO 64-byte packets)
Throughput	Up to 74 million pps (64-byte packets)	Up to 110 million pps
Routing/switch capacity	101 Gbps	148 Gbps
Switching capacity	115 Gbps	173 Gbps
Environment		
Operating temperature	0°C to 55°C (32°F to 131°F); 0°C to 40°C (32°F to 104°F) when using any X2 optic or transceiver	0°C to 55°C (32°F to 131°F); 0°C to 40°C (32°F to 104°F) when using any X2 optic or transceiver
Operating relative humidity	15% to 95% @ 40°C (104°F), non-condensing	15% to 95% @ 40°C (104°F), non-condensing
Non-operating/Storage temperature	–40°C to 70°C (–40°F to 158°F)	–40°C to 70°C (–40°F to 158°F)
Non-operating/Storage relative humidity	15% to 90% @ 65°C (149°F), non-condensing	15% to 90% @ 65°C (149°F), non-condensing
Altitude	Up to 4.6 km (15,091 ft.)	Up to 4.6 km (15,091 ft.)
Acoustic	Power: 49.3 dB; DIN 45635T.19 per ISO 7779	Power: 52 dB; DIN 45635T.19 per ISO 7779
Electrical characteristics		
Description	The switch automatically adjusts to any voltage between 100–127 and 200–240 volts and either 50 or 60 Hz	The switch automatically adjusts to any voltage between 100–127 and 200–240 volts and either 50 or 60 Hz
Maximum heat dissipation	720.57 kJ/hr (683 BTU/hr)	720.57 kJ/hr (683 BTU/hr)
Voltage	100–127 VAC/200–240 VAC	100–127 VAC/200–240 VAC
Current	4.0 A/2.0 A	4.0 A/2.0 A
Power output	200 W	200 W
Frequency	50/60 Hz	50/60 Hz
Safety	CSA 22.2 No. 60950; UL 60950; IEC60950; EN60950	
Emissions	FCC Class A; EN55022/CISPR-22 Class A; VCCI Class A	
Immunity		
EN	EN55024, CISPR 24	EN55024, CISPR 24
ESD	IEC 61000-4-2; 4 kV CD, 8kV AD	IEC 61000-4-2; 4 kV CD, 8kV AD
Radiated	IEC 61000-4-3; 3V/m	IEC 61000-4-3; 3V/m
EFT/Burst	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
Surge	IEC 61000-4-5; 1 kV/2 kV AC	IEC 61000-4-5; 1 kV/2 kV AC
Conducted	IEC 61000-4-6; 3V	IEC 61000-4-6; 3V
Power frequency magnetic field	IEC 61000-4-8; 1A/m, 50 or 60 Hz	IEC 61000-4-8; 1A/m, 50 or 60 Hz
Voltage dips and interruptions	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods
Harmonics	IEC 61000-3-2, IEC61000-3-2	IEC 61000-3-2, IEC61000-3-2
Flicker	IEC 61000-3-3, IEC61000-3-3	IEC 61000-3-3, IEC61000-3-3
Management	ProCurve Manager Plus; ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)	
Standards and protocols	RFC 783 TFTP; RFC 951 BootP; RFC 854 Telnet; RFC 768 UDP; RFC 792 ICMP; RFC 793 TCP; RFC 826 ARP; RFC 2030 SNTP; IEEE 802.3x Flow Control; DHCP Relay; RFC 3376 IGMPv1/v2/v3; IEEE 802.1D Spanning Tree; IEEE 802.1w Rapid Convergence Spanning Tree; IEEE 802.1s Multiple Spanning Trees; IEEE 802.3ad Link Aggregation Control Protocol; IEEE 802.1AB Link Layer Discovery Protocol; ANSI/TIA-1057 LLDP Media Endpoint Discovery (MED); RFC 2474 DiffServ Precedence; RFC 2597 DiffServ Expedited Forwarding (EF); RFC 2598 DiffServ Assured Forwarding (AF); RFC 1492 TACACS+; RFC 2138 RADIUS; RFC 2866 RADIUS accounting; SSHv2 Secure Shell; Secure Sockets Layer (SSL); IEEE 802.1X Network Login; IEEE 802.1Q VLAN tagging; IEEE 802.1Q GVRP; IEEE 802.1p Priority; SNMPv1/v2c/v3; HTML and telnet management; RFC 1493 Bridge MIB; RFC 1213 MIB II; RFC 2737 Entity MIB; RFC 2863 Evolution of Interface; RFC 2665 Ethernet MIB; RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events); XRMON; sFlow; RFC 2021 RMON probe configuration (RMON v2); RFC 2668 802.3 MAU MIB; RFC 2613 SMON; RFC 2674 IEEE 802.1p and IEEE 802.1Q Bridge MIB; RFC 2618 RADIUS Client MIB; RFC 2620 RADIUS Accounting MIB; RFC 3046 DHCP Relay Agent Information Option	
Notes	One 0.5 m 10-GbE CX4 cable is included. When using mini-GBICs with this product, mini-GBICs with revision "B" (product number ends with the letter "B", e.g. J4858B, J4859B) or later are required. ProCurve 10-GbE CX4 Media Converter (J8439A) can be used only with the two fixed CX4 ports.	

For more information

To learn more about ProCurve
Networking, please visit
www.hp.com/eur/procurve

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