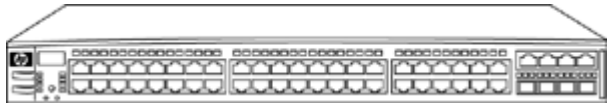
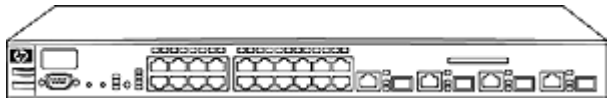
Overview



HP ProCurve Switch 2848



HP ProCurve Switch 2824

Models

HP ProCurve Switch 2848	J4904A
HP ProCurve Switch 2824	J4903A

Key features

- Access layer switch
- Enterprise-class features
- Layer 2 and Layer 3 lite feature set
- Scalable 10/100/1000 connectivity
- Gigabit fiber uplinks

Introduction

The HP ProCurve Switch 2800 Series consists of two switches: the 24-port HP ProCurve Switch 2824 with 20 10/100/1000 ports, and the 48-port HP ProCurve Switch 2848 with 44 10/100/1000 ports. In addition, each switch has four dual-personality ports for RJ-45 10/100/1000 or mini-GBIC connectivity. The 2800 series is ideal for secure 10/100/1000 connectivity, and it offers access security and advanced prioritization and traffic-monitoring capabilities. With support for IP static routing, the 2800 series is well-suited for environments that need basic routing at the edge of the network.

Features and Benefits

Connectivity:

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

Performance:

- 48 Gbps backplane with up to 34.7 million pps (HP ProCurve 2824) and 96 Gbps backplane with up to 69.8 million pps (HP ProCurve 2848): ten times the bandwidth for low-latency throughput

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
- Spanning Tree Protocol (IEEE 802.1D):provides redundant links while preventing network loops

Overview

- IEEE 802.1w Rapid Convergence Spanning Tree Protocol: increases network uptime through faster recovery from failed links
- IEEE 802.1s Multiple Spanning Tree: provides high link availability in multiple VLAN environments by allowing multiple spanning trees
- Optional external redundant power supply: provides uninterrupted power

Layer 2 switching:

- VLAN support and tagging: supports the IEEE 802.1Q (4,096 VLAN IDs) and 256 VLANs simultaneously
- GARP VLAN Registration Protocol: allows automatic learning and dynamic assignment of VLANs
- Jumbo packet support: supports up to 9,216 byte frame size to improve performance of large data transfers

Layer 3 routing:

- Basic IP routing: enables automatic routing to the connected VLANs and up to 16 static routes--including one default route-in IP networks

Security:

- Dynamic ARP protection: blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
- Dynamic IP lockdown: works with DHCP protection to block traffic from unauthorized host, preventing IP source address spoofing
- 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 method 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 client's MAC address
- Secure FTP: allows secure file transfer to/from the switch; protects against unwanted file downloads or unauthorized copying of switch configuration file
- RADIUS/TACACS+: eases switch management security administration by using a password authentication server
- Source-port filtering: allows only specified ports to communicate with each other
- 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

Convergence:

- IP multicast snooping and data-driven IGMP: automatically prevents flooding of IP multicast traffic
- IEEE 802.1AB Link Layer Discovery Protocol (LLDP): automated device discovery protocol for easy mapping by network management applications
- Per-port broadcast throttling: selectively configures broadcast control on heavy traffic port uplinks

Quality of Service (QoS):

- Traffic prioritization (IEEE 802.1p): allows real-time traffic classification into eight priority levels mapped to four queues
- Class of Service (CoS): sets the 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

Manageability:

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- RMON, XRMON, sFlow, and SMON: provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- Friendly port names: allow assignment of descriptive names to ports
- Auto-MDIX: automatically adjusts for straight-through or crossover cables on all 10/100/1000 ports
- Dual flash images: provides independent primary and secondary operating system files for backup while upgrading
- Software updates: free downloads from the Web
- Stacking capability: single IP address management for a virtual stack of up to 16 switches, including the HP ProCurve 2500 series, 2510 series, 2600 series, 2800 series, 2810 series, 2900 series, 3400cl series, 3500yl series, 4200vl series, 6108, 6200yl-24G-mGBIC, and 6400cl series
- Find-Fix-and-Inform: finds and fixes common network problems automatically, then informs administrator
- Troubleshooting: ingress/egress port monitoring enables network problem-solving
- Multiple configuration files: multiple configuration files can be stored to the flash image

Industry-leading warranty:

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

Services

HP ProCurve Switch 2824	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
	3-year, 24x7 SW phone support, software updates	UE262E
	Installation with minimum configuration, system-based pricing	U4826E
	Installation with HP-provided configuration, system-based pricing	U4830E
	Refer to the HP Web site at www.procurve.com/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP ProCurve Switch 2848	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
	3-year, 24x7 SW phone support, software updates	UE264E
	Installation with minimum configuration, system-based pricing	U4826E
	Installation with HP-provided configuration, system-based pricing	U4830E
	Refer to the HP Web site at www.procurve.com/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Overview

HP ProCurve Switch 2800 Series Accessories

HP ProCurve 100-FX SFP-LC Transceiver	J9054B
NEW HP ProCurve 100-BX-D SFP-LC Transceiver	J9099B
NEW HP ProCurve 100-BX-U SFP-LC Transceiver	J9100B
HP ProCurve Gigabit-SX-LC Mini-GBIC	J4858C
HP ProCurve Gigabit-LX-LC Mini-GBIC	J4859C
HP ProCurve Gigabit-LH-LC Mini-GBIC	J4860C
NEW HP ProCurve 1000-BX-D SFP-LC Mini-GBIC	J9142B
NEW HP ProCurve 1000-BX-U SFP-LC Mini-GBIC	J9143B
HP ProCurve 600 Redundant External Power Supply	J8168A
HP ProCurve Manager 2.3	
HP ProCurve Network Immunity Manager 1.0 50-device license	J9060A
HP ProCurve Network Immunity Manager 1.0 +100-device license	J9061A
HP ProCurve Network Immunity Manager 1.0 unlimited-device license	J9062A

HP ProCurve Switch 2824 (J4903A)	**Ports**	20 auto-sensing 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab Type 1000Base-T); Media Type: Auto-MDIX; Duplex: 10Base-T/100Base-TX: half or full; 1000Base-T: full only	
		1 RS-232C DB-9 console port	
		4 dual-personality ports; each port can be used as either an RJ-45 10/100/1000 port or an open mini-GBIC slot (for use with mini-GBIC transceivers)	
	Physical characteristics	**Dimensions** (D x W x H):	14.4 x 17.32 x 1.75 in. (36.58 x 43.99 x 4.45 cm) (1U height)
		Weight (fully loaded):	10.2 lb. (4.59 kg)
	Memory and processor	**Processor**	Motorola PowerPC MPC8245 @ 266 MHz, 8 MB flash, 64 MB SDRAM
	Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
	Performance	**Latency**	<5.4 µs (64-byte packets)
		Throughput	Up to 34.65 million pps (64-byte packets)
		Switching capacity	48 Gbps
		MAC address table size	16,000 entries
	Environment	**Operating temperature**	32° to 131°F (0° to 55°C)
		Operating relative humidity	15% to 95% @ 104°F (40°C), non-condensing
		Non-operating/ Storage temperature	–40° to 158°F (–40° to 70°C)
		Non-operating/ Storage relative humidity	15% to 95% @ 149°F (65°C), non-condensing
		Altitude	up to 15000 ft. (4.6 km)
		Acoustic	Power: < 53 dB; DIN 45635T.19 per ISO 7779 @ < 80°F (25°C)
	Electrical characteristics	**Maximum heat dissipation**	341 BTU/hr (360 kJ/hr)
		Voltage	100–127 VAC/200–240 VAC
		Current	0.6 A/0.3 A
		Power consumption	100 W
		Frequency	50/60 Hz
		Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
	Safety	cUL (CSA 950); EN 60950/IEC 60950; NOM-019-SCFI-1994; UL 1950 3rd edition	
	Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	
	Immunity	**EN**	EN 55024, CISPR 24

	ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD
	Radiated	IEC 61000-4-3; 3 V/m
	EFT/Burst	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
	Surge	IEC 61000-4-5; 1 kV/2 kV AC
	Conducted	IEC 61000-4-6; 3 V
	Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
	Voltage dips and interruptions	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management		HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)
Notes		Other mini-GBICs supported: • HP ProCurve Gigabit-SX-LC Mini-GBIC (J4858A/B) • HP ProCurve Gigabit-LX-LC Mini-GBIC (J4859A/B) • HP ProCurve Gigabit-LH-LC Mini-GBIC (J4860A/B)
Standards and protocols	Device Management	HTML and telnet management
	General Protocols	IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1w Rapid Reconfiguration of Spanning Tree IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3x Flow Control RFC 768 UDP RFC 783 TFTP Protocol (revision 2) RFC 792 ICMP RFC 793 TCP RFC 826 ARP RFC 854 TELNET RFC 951 BOOTP RFC 1542 BOOTP Extensions RFC 2030 Simple Network Time Protocol (SNTP) v4 RFC 3046 DHCP Relay Agent Information Option
	IP Multicast	RFC 3376 IGMPv3
	MIBs	RFC 1213 MIB II RFC 1493 Bridge MIB RFC 2021 RMONv2 MIB RFC 2096 IP Forwarding Table MIB

RFC 2613 SMON MIB
RFC 2618 RADIUS Client MIB
RFC 2620 RADIUS Accounting MIB
RFC 2665 Ethernet-Like-MIB
RFC 2668 802.3 MAU MIB
RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
RFC 2737 Entity MIB (Version 2)
RFC 2863 The Interfaces Group MIB

Network Management
IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
RFC 2819 Four groups of RMON:
1 (statistics), 2 (history), 3 (alarm) and 9 (events)
RFC 3176 sFlow
SNMPv1/v2c/v3
XRMON

Security
IEEE 802.1X Port Based Network Access Control
RFC 1492 TACACS+
RFC 2138 RADIUS Authentication
RFC 2866 RADIUS Accounting
Secure Sockets Layer (SSL)
SSHv2 Secure Shell

HP ProCurve Switch 2848 Ports (J4904A)	44 auto-sensing 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab Type 1000Base-T); Media Type: Auto-MDIX; Duplex: 10Base-T/100Base-TX: half or full; 1000Base-T: full only 1 RS-232C DB-9 console port 4 dual-personality ports; each port can be used as either an RJ-45 10/100/1000 port or an open mini-GBIC slot (for use with mini-GBIC transceivers)		
	Physical characteristics	Dimensions (D x W x H):	16.9 x 17.32 x 1.75 in. (42.93 x 43.99 x 4.45 cm) (1U height)
		Weight (fully loaded):	10.75 lb. (4.88 kg)
	Memory and processor	Processor	Motorola PowerPC MPC8245 @ 266 MHz, 8 MB flash, 64 MB SDRAM
	Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
	Performance	Latency	<5.4 µs (FIFO 64-byte packets)
		Throughput	up to 69.3 million pps (64-byte packets)
		Switching capacity	96 Gbps
		MAC address table size	16,000 entries
	Environment	Operating temperature	32° to 131°F (0° to 55°C)
		Operating relative humidity	15% to 95% @ 104°F (40°C), non-condensing

	Non-operating/ Storage temperature	–40° to 158°F (–40° to 70°C)
	Non-operating/ Storage relative humidity	15% to 95% @ 149°F (65°C), non-condensing
	Altitude	up to 15000 ft. (4.6 km)
	Acoustic	Power: < 53 dB; DIN 45635T.19 per ISO 7779 @ < 80°F (25°C)
Electrical characteristics	Maximum heat dissipation	341 BTU/hr (360 kJ/hr)
	Voltage	100–127 VAC/200–240 VAC
	Current	0.6 /0.3 A
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	Frequency	50/60 Hz
	Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
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Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	
Immunity	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD
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	Conducted	IEC 61000-4-6; 3 V
	Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
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Management	HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)	
Notes	Other mini-GBICs supported: • HP ProCurve Gigabit-SX-LC Mini-GBIC (J4858A/B) • HP ProCurve Gigabit-LX-LC Mini-GBIC (J4859A/B) • HP ProCurve Gigabit-LH-LC Mini-GBIC (J4860A/B)	
Standards and protocols	Device Management HTML and telnet management General Protocols	

IEEE 802.1D MAC Bridges
IEEE 802.1p Priority
IEEE 802.1Q VLANs
IEEE 802.1w Rapid Reconfiguration of Spanning Tree
IEEE 802.3ad Link Aggregation Control Protocol (LACP)
IEEE 802.3x Flow Control
RFC 768 UDP
RFC 783 TFTP Protocol (revision 2)
RFC 792 ICMP
RFC 793 TCP
RFC 826 ARP
RFC 854 TELNET
RFC 951 BOOTP
RFC 1542 BOOTP Extensions
RFC 2030 Simple Network Time Protocol (SNTP) v4
RFC 3046 DHCP Relay Agent Information Option

IP Multicast
RFC 3376 IGMPv3

MIBs
RFC 1213 MIB II
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Secure Sockets Layer (SSL)
SSHv2 Secure Shell

Technical Specifications

To learn more, visit www.hp.com/go/procurve