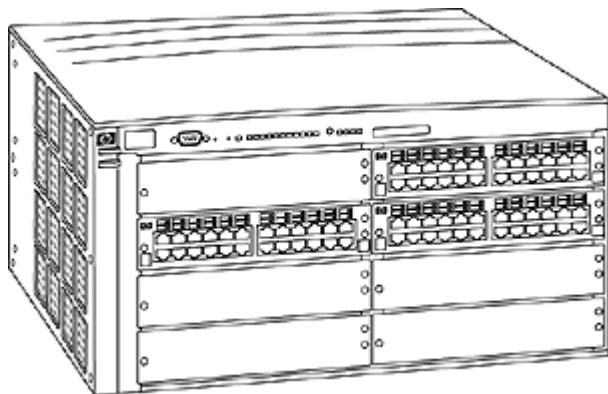
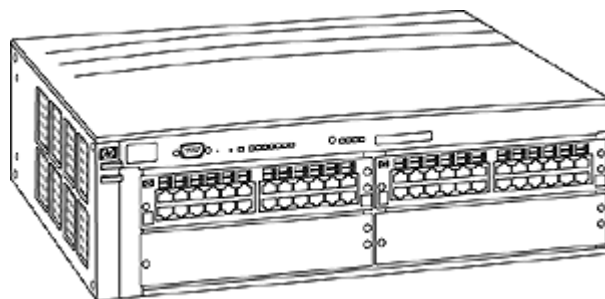


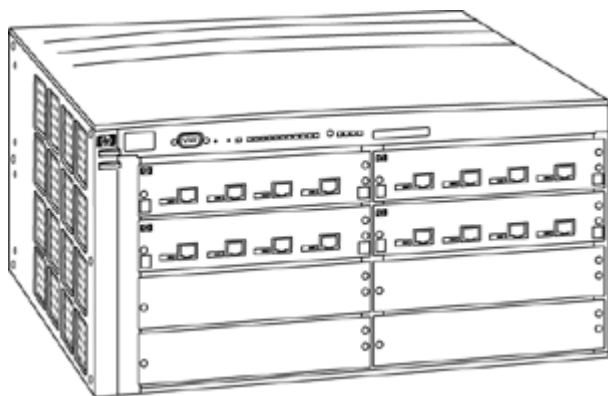
Overview



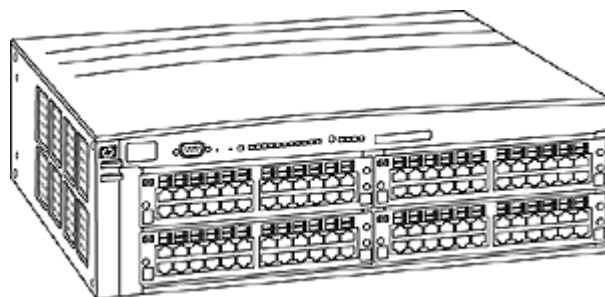
ProCurve Switch 5372xl



ProCurve Switch 5348xl



ProCurve Switch 5308xl



ProCurve Switch 5304xl

Models

HP ProCurve Switch 5372xl
HP ProCurve Switch 5348xl
HP ProCurve Switch 5308xl
HP ProCurve Switch 5304xl

J4848B
J4849B
J4819A
J4850A

Overview

Introduction

Designed to accommodate the most demanding network needs, the ProCurve Switch 5300xl series offers scalable Layer 2, 3, and 4 switching in compact 4- or 8-slot modular form factors. These secure, convergence-ready switches provide flexibility, high port density, free software updates, and a lifetime warranty. The easy-to-use ProCurve 5300xl series provides the latest in technology, with unparalleled investment protection and superior return on IT.

Features and Benefits

Performance

- **Architecture:** up to 76.8 Gbps crossbar switching fabric provides wire-speed intra- and inter-module switching with up to 48 million pps throughput built on ProCurve custom-designed ASIC technology

Resiliency and high availability

- **Router redundancy (XRRP):** allows groups of two routers to dynamically back each other up to create highly available routed environments
- **IEEE 802.1s Multiple Spanning Tree:** provides high link availability in multiple VLAN environments by allowing multiple spanning trees
- **IEEE 802.1w Rapid Convergence Spanning Tree Protocol:** increases network uptime through faster recovery from failed links
- **IEEE 802.3ad Link Aggregation Control Protocol (LACP) and ProCurve trunking:** supports up to 36 trunks, each with up to 8 links (ports) per trunk; trunking across modules is supported
- **Hot-swappable modules:** permit modules, mini-GBICs, and one of the power supplies in a redundant power supply configuration to be added or swapped without interrupting the network
- **Optional redundant power supply:** provides uninterrupted power; allows hot-swapping of one of the two supplies when installed

Layer 2 switching

- **ProCurve switch meshing:** dynamically load-balances across multiple active redundant links to increase available aggregate bandwidth
- **VLAN support and tagging:** support complete IEEE 802.1Q (4,096 VLAN IDs) and 256 VLANs simultaneously
- **IEEE 802.1v protocol VLANs:** isolate select non-IPv4 protocols automatically into their own VLANs
- **GARP VLAN Registration Protocol:** allows automatic learning and dynamic assignment of VLANs

Layer 3 routing

- **Layer 3 IP routing:** provides routing of IP at media speed; supports static routes, RIP, RIPv2, and OSPF
- **OSPF-ECMP:** enables multiple equal-cost links in OSPF environment to increase link redundancy and scale bandwidth

Layer 3 services

- **UDP helper function:** UDP broadcasts can be directed across router interfaces to specific IP unicast or subnet broadcast addresses and prevent server spoofing for UDP services such as DHCP

Security

- **Virus throttling:** detects worm forms of network virus activity and either throttles or entirely prevents the ability of the virus to spread across the routed VLANs of the ProCurve 5300xl series, without requiring external appliances
- **ICMP throttling:** defeats ICMP denial-of-service attacks by enabling any switch port to automatically throttle ICMP traffic
- **Multiple user authentication methods:**
 - **IEEE 802.1X:** industry-standard way of user authentication using an IEEE 802.1X supplicant on the client in conjunction

Overview

- 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
- **Authentication flexibility:**
 - **Multiple IEEE 802.1X users per port:** provides authentication of multiple 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
- **Access control lists (ACLs):** provide IP Layer 3 filtering based on source/destination IP address/subnet and source/destination TCP/UDP port number
- **Identity-driven per-port ACL:** enables implementation of a highly granular and flexible access security policy specific to each authenticated network user
- **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
- **Source-port filtering:** allows only specified ports to communicate with each other
- **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
- **Secure FTP:** allows secure file transfer to/from the switch; protects against unwanted file downloads or unauthorized copying of switch configuration file
- **Secure access to manage the ProCurve 5300xl series:** all access methods-CLI, GUI, or MIB-are securely encrypted through SSHv2, SSL, and/or SNMPv3
- **Switch management logon security:** can require either RADIUS or TACACS+ authentication for switch CLI logon

Convergence

- **IP multicast routing (PIM Dense):** routes IP multicast traffic using the PIM Dense routing protocol
- **IP multicast snooping and data-driven IGMP:** automatically prevents flooding of IP multicast traffic
- **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

Quality of service (QoS)

- **Layer 4 prioritization:** enables prioritization based on TCP/UDP ports
- **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
- **Bandwidth shaping:**
 - **Rate limiting:** per-port ingress-based enforced bandwidth maximums
 - **Guaranteed minimums:** per-port, per-queue, egress-based guaranteed bandwidth minimums

Manageability

- **User-driven port configuration support:** switch port configuration responds to RADIUS stored user attributes for QoS and rate limiting when that user authenticates; these attributes are then determined by the user, not the switch port
- **RMON, XRMON, and sFlow:** provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP):** automated device discovery protocol for easy mapping by network management applications
- **Friendly port names:** allows assignment of descriptive names to ports
- **Auto-MDIX:** automatically adjusts for straight-through or crossover cables on all 10/100/1000 ports

Overview

- **Dual flash images:** provide independent primary and secondary OS and configuration files for backup while upgrading or fine-tuning the switch configuration
- **Multiple configuration files:** allows a config file to be stored for each flash image
- **Troubleshooting:** ingress/egress port monitoring enables network problem-solving
- **Custom banner:** displays security policy when users log in to the switch

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 5308xl	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 3-year, 24x7 SW phone support, software updates Installation with minimum configuration, system-based pricing Installation with HP-provided configuration, system-based pricing	UE244E UE245E UE246E UF787E U4828E U4832E
	ProCurve Switch 5372xl	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 3-year, 24x7 SW phone support, software updates Installation with minimum configuration, system-based pricing Installation with HP-provided configuration, system-based pricing	UE244E UE245E UE246E UF787E U4828E U4832E
	ProCurve Switch 5348xl	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 3-year, 24x7 SW phone support, software updates Installation with minimum configuration, system-based pricing Installation with HP-provided configuration, system-based pricing	UE241E UE242E UE243E UE263E U4828E U4832E
	ProCurve Switch 5304xl	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 3-year, 24x7 SW phone support, software updates Installation with minimum configuration, system-based pricing Installation with HP-provided configuration, system-based pricing	UE241E UE242E UE243E UE263E U4828E U4832E

Overview

* 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

Technical Specifications

ProCurve Switch 5372xl (J4848B)	Included accessories	3 ProCurve Switch xl 10/100-TX Modules (J4820B)
	Ports	72 10/100 ports 5 open module slots
	Maximum ports	Supports a maximum of 192 10/100 or 128 10/100/1000 ports
Physical characteristics	Dimensions	15.3 x 17.4 x 8.75 in. (38.86 x 44.2 x 22.23 cm) (5U height)
	Weight (fully loaded)	31.05 lb. (14.08 kg)
Memory and processor	Fabric processor type and speed	Motorola PowerPC @ 200 MHz, 12 MB flash, 32 MB SDRAM
	Module processor type and speed	ARM7 @ 66 MHz
	Flash	128 KB
	SRAM	128 KB
	RDRAM	18 MB
	Packet buffer size	36 MB
	Flash capacity	Dual flash
	Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only
Performance	Latency	<6 μ s (FIFO)
	Throughput	Up to 48 million pps
	Switch fabric speed	76.8 Gbps
	Routing table size	10,000 entries
Environment	Operating temperature	32° to 104°F (0° to 40°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 15,091 ft. (4.6 km)
Electrical characteristics	Maximum BTUs	2,152 BTU/hr
	Voltage	100–127 VAC/200–240 VAC
	Current	8.2 A/3.8 A
	Power consumption	630 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.

Technical Specifications

Safety	cUL (CSA 950); EN 60950/IEC 60950; NOM-019-SCFI-1994; UL 1950 3rd edition	
Emissions	FCC Class A; EN 55022/CISPR-22 Class A; VCCI Class A	
Immunity	EN	EN55024, CISPR 24
	ESD	IEC 61000-4-2, 4 kV CD, 8 kV AD
	Radiated	IEC 61000-4-3, 3V/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, 3V
	Power frequency magnetic field	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
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	ProCurve Manager (included); ProCurve Manager Plus; command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)	
Standards and protocols	Device management	HTML and telnet management
	General protocols	IEEE 802.1p Priority
		IEEE 802.1Q VLANs
		IEEE 802.1s Multiple Spanning Trees
		IEEE 802.1w Rapid Reconfiguration of Spanning Tree
		IEEE 802.3ad Link Aggregation Control Protocol (LACP)
		IEEE 802.3af Power over Ethernet
		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 1058 RIPv1
		RFC 1542 BOOTP Extensions
		RFC 2030 Simple Network Time Protocol (SNTP) v4
		RFC 2131 DHCP
		RFC 2453 RIPv2
		RFC 3046 DHCP Relay Agent Information Option
	IP multicast	RFC 3376 IGMPv3 RFC 3973 PIM Dense Mode
	MIBs	RFC 1213 MIB II

Technical Specifications

	RFC 1493 Bridge MIB
	RFC 1724 RIPv2 MIB
	RFC 1850 OSPFv2 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
	ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
	SNMPv1/v2c/v3
	XRMON
OSPF	RFC 2328 O
QoS/Cos	RFC 2474 DiffServ Precedence, including 8 queues/port
	RFC 2597 DiffServ Assured Forwarding (AF)
	RFC 2598 DiffServ Expedited Forwarding (EF)
Security	IEEE 802.1X Port Based Network Access Control
	RFC 1492 TACACS+
	RFC 2138 RADIUS Authentication
	RFC 2866 RADIUS Accounting
	Secure Sockets Layer (SSL)
	SSHv1/SSHv2 Secure Shell

ProCurve Switch 5308xl (J4819A)	Ports	8 open module slots
	Maximum ports	Supports a maximum of 192 10/100 or 128 10/100/1000 ports
	Physical characteristics	Dimensions 15.3 x 17.4 x 8.75 in. (38.86 x 44.2 x 22.23 cm) (5U height)
		Weight (fully loaded) 26.65 lb. (12.09 kg)
Memory and processor	Fabric processor type and speed	Motorola PowerPC @ 200 MHz, 12 MB flash, 32 MB SDRAM
	Module processor type and speed	N/A
	Flash	N/A
	SRAM	N/A
	RDRAM	N/A

Technical Specifications

Mounting	Packet buffer size	36 MB
	Flash capacity	Dual flash
Performance	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
	Latency	<6 μ s (FIFO)
	Throughput	Up to 48 million pps
	Switch fabric speed	76.8 Gbps
Environment	Routing table size	10,000 entries
	Operating temperature	32° to 104°F (0° to 40°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
Electrical characteristics	Altitude	Up to 15,091 ft. (4.6 km)
	Maximum BTUs	2,152 BTU/hr
	Voltage	100–127 VAC/200–240 VAC
	Current	8.2 A/3.8 A
	Power consumption	630 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; EN 55022/CISPR-22 Class A; VCCI Class A	
Immunity	EN	EN55024, CISPR 24
	ESD	IEC 61000-4-2, 4 kV CD, 8 kV AD
	Radiated	IEC 61000-4-3, 3V/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, 3V
	Power frequency magnetic field	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
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3

Technical Specifications

Management	ProCurve Manager (included); ProCurve Manager Plus; command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)	
Standards and protocols	Device management	HTML and telnet management
	General protocols	IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1s Multiple Spanning Trees IEEE 802.1w Rapid Reconfiguration of Spanning Tree IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3af Power over Ethernet 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 1058 RIPv1 RFC 1542 BOOTP Extensions RFC 2030 Simple Network Time Protocol (SNTP) v4 RFC 2131 DHCP RFC 2453 RIPv2 RFC 3046 DHCP Relay Agent Information Option
	IP multicast	RFC 3376 IGMPv3 RFC 3973 PIM Dense Mode
	MIBs	RFC 1213 MIB II RFC 1493 Bridge MIB RFC 1724 RIPv2 MIB RFC 1850 OSPFv2 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

Technical Specifications

	ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
	SNMPv1/v2c/v3
	XRMON
OSPF	RFC 2328
QoS/Cos	RFC 2474 DiffServ Precedence, including 8 queues/port
	RFC 2597 DiffServ Assured Forwarding (AF)
	RFC 2598 DiffServ Expedited Forwarding (EF)
Security	IEEE 802.1X Port Based Network Access Control
	RFC 1492 TACACS+
	RFC 2138 RADIUS Authentication
	RFC 2866 RADIUS Accounting
	Secure Sockets Layer (SSL)
	SSHv1/SSHv2 Secure Shell

ProCurve Switch 5348xl (J4849B)	Included accessories	2 ProCurve Switch xl 10/100-TX Modules (J4820B)
	Ports	48 10/100 ports 2 open module slots
	Maximum ports	Supports a maximum of 96 10/100 or 64 10/100/1000 ports
Physical characteristics	Dimensions	15.3 x 17.4 x 5.25 in. (38.86 x 44.2 x 13.34 cm) (3U height)
	Weight (fully loaded)	24.65 lb. (11.18 kg)
Memory and processor	Fabric processor type and speed	Motorola PowerPC @ 200 MHz, 12 MB flash, 32 MB SDRAM
	Module processor type and speed	ARM7 @ 66 MHz
	Flash	128 KB
	SRAM	128 KB
	RDRAM	18 MB
	Packet buffer size	36 MB
	Flash capacity	Dual flash
	Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only
Performance	Latency	<6 μ s (FIFO)
	Throughput	Up to 24 million pps
	Switch fabric speed	38.4 Gbps
	Routing table size	10,000 entries
Environment	Operating temperature	32° to 104°F (0° to 40°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)

Technical Specifications

Electrical characteristics	Non-operating/ Storage relative humidity	15% to 95% @ 149°F (65°C), non-condensing
	Altitude	Up to 15,091 ft. (4.6 km)
	Maximum BTUs	2,152 BTU/hr
	Voltage	100–127 VAC/200–240 VAC
	Current	8.2 A/3.8 A
	Power consumption	630 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; EN 55022/CISPR-22 Class A; VCCI Class A	
Immunity	EN	EN55024, CISPR 24
	ESD	IEC 61000-4-2, 4 kV CD, 8 kV AD
	Radiated	IEC 61000-4-3, 3V/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, 3V
	Power frequency magnetic field	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
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	ProCurve Manager (included); ProCurve Manager Plus; command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)	
Standards and protocols	Device management	HTML and telnet management
	General protocols	IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1s Multiple Spanning Trees IEEE 802.1w Rapid Reconfiguration of Spanning Tree IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3af Power over Ethernet IEEE 802.3x Flow Control RFC 768 UDP RFC 783 TFTP Protocol (revision 2) RFC 792 ICMP

Technical Specifications

	RFC 793 TCP
	RFC 826 ARP
	RFC 854 TELNET
	RFC 951 BOOTP
	RFC 1058 RIPv1
	RFC 1542 BOOTP Extensions
	RFC 2030 Simple Network Time Protocol (SNTP) v4
	RFC 2131 DHCP
	RFC 2453 RIPv2
	RFC 3046 DHCP Relay Agent Information Option
IP multicast	RFC 3376 IGMPv3
	RFC 3973 PIM Dense Mode
MIBs	RFC 1213 MIB II
	RFC 1493 Bridge MIB
	RFC 1724 RIPv2 MIB
	RFC 1850 OSPFv2 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
	ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
	SNMPv1/v2c/v3
	XRMON
OSPF	RFC 2328 O
QoS/Cos	RFC 2474 DiffServ Precedence, including 8 queues/port
	RFC 2597 DiffServ Assured Forwarding (AF)
	RFC 2598 DiffServ Expedited Forwarding (EF)
Security	IEEE 802.1X Port Based Network Access Control
	RFC 1492 TACACS+
	RFC 2138 RADIUS Authentication
	RFC 2866 RADIUS Accounting
	Secure Sockets Layer (SSL)
	SSHv1/SSHv2 Secure Shell

Technical Specifications

ProCurve Switch 5304xl (J4850A)	Ports	4 open module slots
	Maximum ports	Supports a maximum of 96 10/100 or 64 10/100/1000 ports
Physical characteristics	Dimensions	15.3 x 17.4 x 5.25 in. (38.9 x 44.2 x 13.34 cm) (3U height)
	Weight (fully loaded)	21.71 lb. (9.35 kg)
Memory and processor	Fabric processor type and speed	Motorola PowerPC @ 200 MHz, 12 MB flash, 32 MB SDRAM
	Module processor type and speed	N/A
	Flash	N/A
	SRAM	N/A
	RDRAM	N/A
	Packet buffer size	36 MB
	Flash capacity	Dual flash
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
Performance	Latency	<6 μ s (FIFO)
	Throughput	Up to 24 million pps
	Switch fabric speed	38.4 Gbps
	Routing table size	10,000 entries
Environment	Operating temperature	32° to 104°F (0° to 40°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 15,091 ft. (4.6 km)
Electrical characteristics	Maximum BTUs	2,152 BTU/hr
	Voltage	100–127 VAC/200–240 VAC
	Current	8.2 A/3.8 A
	Power consumption	630 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; EN 55022/CISPR-22 Class A; VCCI Class A	

Technical Specifications

Immunity	EN	EN55024, CISPR 24
	ESD	IEC 61000-4-2, 4 kV CD, 8 kV AD
	Radiated	IEC 61000-4-3, 3V/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, 3V
	Power frequency magnetic field	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
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	ProCurve Manager (included); ProCurve Manager Plus; command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)	
Standards and protocols	Device management	HTML and telnet management
	General protocols	IEEE 802.1p Priority
		IEEE 802.1Q VLANs
		IEEE 802.1s Multiple Spanning Trees
		IEEE 802.1w Rapid Reconfiguration of Spanning Tree
		IEEE 802.3ad Link Aggregation Control Protocol (LACP)
		IEEE 802.3af Power over Ethernet
		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 1058 RIPv1
		RFC 1542 BOOTP Extensions
		RFC 2030 Simple Network Time Protocol (SNTP) v4
		RFC 2131 DHCP
		RFC 2453 RIPv2
		RFC 3046 DHCP Relay Agent Information Option
	IP multicast	RFC 3376 IGMPv3 RFC 3973 PIM Dense Mode
	MIBs	RFC 1213 MIB II RFC 1493 Bridge MIB RFC 1724 RIPv2 MIB RFC 1850 OSPFv2 MIB RFC 2021 RMONv2 MIB

Technical Specifications

	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
	ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
	SNMPv1/v2c/v3
	XRMON
OSPF	RFC 2328 O
QoS/Cos	RFC 2474 DiffServ Precedence, including 8 queues/port
	RFC 2597 DiffServ Assured Forwarding (AF)
	RFC 2598 DiffServ Expedited Forwarding (EF)
Security	IEEE 802.1X Port Based Network Access Control
	RFC 1492 TACACS+
	RFC 2138 RADIUS Authentication
	RFC 2866 RADIUS Accounting
	Secure Sockets Layer (SSL)
	SSHv1/SSHv2 Secure Shell

Accessories

HP ProCurve Switch gl/xl/vl Redundant Power Supply	J4839A
HP ProCurve 600 Redundant External Power Supply	J8168A
HP ProCurve 610 External Power Supply	J8169A
HP ProCurve Gigabit-SX-LC Mini-GBIC	J4858C
HP ProCurve Gigabit-LX-LC Mini-GBIC	J4859C
HP ProCurve Gigabit-LH-LC Mini-GBIC	J4860C
HP ProCurve Gigabit 1000Base-T Mini-GBIC	J8177C
NEW HP ProCurve 1000-BX-D SFP-LC Mini-GBIC	J9142B
NEW HP ProCurve 1000-BX-U SFP-LC Mini-GBIC	J9143B
HP ProCurve 10-GbE X2-SC SR Optic	J8436A
HP ProCurve 10-GbE X2-SC LR Optic	J8437A
HP ProCurve 10-GbE X2-SC ER Optic	J8438A
HP ProCurve 10-GbE X2-CX4 Transceiver	J8440B
HP ProCurve 10-GbE CX4 Media Converter	J8439A
HP ProCurve Wireless Services Module 12 RP License	J9002A
Wireless Access Controllers	
HP ProCurve Wireless Edge Services xl Module	J9001A
HP ProCurve Switch xl Access Controller Module	J8162A
xl Modules	
HP ProCurve Switch xl 24-Port 10/100-TX Module	J4820B
HP ProCurve Switch xl 4-Port 100/1000-T Module	J4821B
HP ProCurve Switch xl 4-Port Mini-GBIC Module	J4878B
HP ProCurve Switch xl 12-Port 100-FX MTRJ Module	J4852A
HP ProCurve Switch xl 24-Port 10/100-TX PoE Module	J8161A
HP ProCurve Switch xl 16-Port 10/100/1000 M	J4907A
HP ProCurve Switch xl 1-Port 10-GbE X2 Module	J8988A

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