

Overview

HP ProCurve 2520-8-PoE Switch

HP ProCurve 2520-24-PoE Switch

HP ProCurve 2520G-8-PoE Switch

HP ProCurve 2520G-24-PoE Switch

Models

HP ProCurve 2520-8-PoE Switch	J9137A
HP ProCurve 2520-24-PoE Switch	J9138A
HP ProCurve 2520G-8-PoE Switch	J9298A
HP ProCurve 2520G-24-PoE Switch	J9299A

Key features

- Fully managed Layer 2 switch in 8 or 24 ports
- Choice of Fast Ethernet or Gigabit PoE models
- Power over Ethernet for voice, video, and wireless
- Energy-efficient design and quiet operation
- Rack-mountable and compact form factors

Introduction

The HP ProCurve 2520 Switch Series is ideally suited for small and medium businesses looking to deploy voice, video, and/or wireless solutions that require Power over Ethernet (PoE) connectivity. The series consists of four switches: the HP ProCurve 2520-8-PoE, the HP ProCurve 2520-24-PoE, the HP ProCurve 2520G-8-PoE, and the HP ProCurve 2520G-24-PoE Switch. The four models offer a choice of either Fast Ethernet or Gigabit connectivity. All models also include support for dual-personality Gigabit ports that can be used for either copper or fiber connectivity. All products are fully managed via SNMP, command-line interface (CLI), and graphical user interface (GUI) and offer a Layer 2 feature set. In addition, the products provide deployment flexibility with compact, quiet, and energy-efficient designs.

Features and Benefits

Management

- **Choice of management interfaces:**
 - **Web graphical user interface (GUI):** easy-to-use graphical interface allows configuration of the switch from any Web browser
 - **Command-line interface (CLI):** robust command-line interface provides advanced configuration and diagnostics
 - **Simple Network Management Protocol (SNMPv2c/SNMPv3):** allows switch to be managed with a variety of third-party network management applications
- **Integration with HP ProCurve Manager:** enables discovery, mapping, logging, and configuration via ProCurve Manager, available as a free download from the Web
- **Virtual stacking:** single IP address manages up to 16 switches
- **Port mirroring:** allows traffic to be mirrored on any port or a network analyzer to assist with diagnostics or detecting network attacks
- **Multiple configuration files:** configuration file management tools allow up to three configuration files to be managed and stored on the switch
- **Dual flash images:** provide independent primary and secondary operating system files for backup while upgrading

Overview

- **Network tools:** command-line interface includes telnet client, ping, traceroute, and Layer 2 link test tools for diagnostics
- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP):** automated device discovery protocol for easy mapping by network management applications
- **Command authorization:** leverages RADIUS to link a custom list of CLI commands to individual network administrator's login; also provides an audit trail
- **Logging:** local and remote logging of events via SNMP (v2c and v3) and syslog
- **IPv6 host:** allows switches to be managed using IPv6 protocols
- **RMON:** provides advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- **Find-Fix-Inform:** finds and fixes common network problems automatically, then informs administrator
- **Front-panel LEDs:**
 - **Locator LED:** allows users to set the locator LED on a specific switch to either turn on, blink, or turn off; simplifies troubleshooting by making it easy to locate a particular switch within a rack of similar switches
 - **Per-port LEDs:** provides an at-a-glance view of status, activity, speed, and full-duplex operation
 - **Power and fault LEDs:** power LED and fault LEDs display any issues

Connectivity

- **Auto-MDIX:** automatically adjusts for straight-through or crossover cables on all ports
- **Small Form-Factor Pluggable (SFP) slots:** dual-personality ports allow for either copper or fiber connectivity such as Gigabit-SX, -LX, -LH, and -BX or 100-FX and -BX
- **IEEE 802.3af Power over Ethernet:** provides up to 15.4 W per port to IEEE 802.3af-compliant PoE-powered devices such as IP phones, wireless access points, and security cameras (see product specifications for total PoE power available); supports some prestandard PoE devices (see product FAQ for more details)
- **RJ-45 serial console port:** easily accessible on front of unit to access switch CLI

Performance

- **Switch on a chip:** highly integrated, high-performance switch design with a non-blocking architecture
- **Jumbo packet support:** supports up to 9,216-byte frame size to improve performance of large data transfers (2520G switch)

Resiliency and high availability

- **Port trunking and link aggregation:**
 - **Trunking:** supports up to eight links per trunk to increase bandwidth and create redundant connections
 - **IEEE 802.3ad Link Aggregation Protocol (LACP):** eases configuration of trunks through automatic configuration
- **IEEE 802.1s Multiple Spanning Tree Protocol (MSTP):** provides high link availability in multiple VLAN environments by allowing multiple spanning trees; provides legacy support for IEEE 802.1w (Rapid Reconfiguration of Spanning Tree Protocol) and IEEE 802.1d (Spanning Tree Protocol)

Layer 2 switching

- **VLAN support and tagging:** supports the IEEE 802.1Q (4,094 VLAN IDs) and up to 256 port-based VLANs simultaneously
- **GARP VLAN Registration Protocol (GVRP):** allows automatic learning and dynamic assignment of VLANs
- **Broadcast control:** allows limitation of broadcast traffic rate to cut down on unwanted broadcast traffic on the network

Security

- **Manager and operator privilege levels:** enables read-only (operator) and read-write (manager) access on management interfaces
- **RADIUS/TACACS+ for management access authentication:** eases switch management security administration by using a password authentication server
- **Secure protocols for encryption of management traffic:**
 - **Secure Shell (SSHv2):** encrypts all transmitted data for secure, remote CLI access over IP networks



Overview

- **Secure Sockets Layer (SSL)**: encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch
- **Simple Network Management Protocol (SNMP) v3**: allows encryption of traffic between switch MIBs and network management software
- **Secure FTP (SFTP)**: encrypts uploads and downloads of configuration file
- **Protected ports**: prevents designated ports from communicating with each other while allowing access to unprotected ports
- **Port security**: allows access only to specified MAC addresses, which can be learned or specified by the administrator
- **MAC address lockout**: prevents particular configured MAC addresses from connecting to the network
- **MAC address lockdown**: allows only specified MAC addresses access to the network on a specified port
- **Denial-of-service (DoS) attack filtering**: automatically filters and drops common DoS attack traffic types
- **User authentication for port access**:
 - **IEEE 802.1X**: industry-standard user authentication using an IEEE 802.1X supplicant on the client in conjunction with a RADIUS server
 - **Web-based**: similar to IEEE 802.1X, it provides a browser-based environment to authenticate clients
 - **MAC-based**: client is authenticated with the RADIUS server based on MAC address
 - **Concurrent authentication schemes**: each switch port will accept up to two sessions of IEEE 802.1X, Web, and/or MAC authentications concurrently
- **Custom banner**: displays security policy when users log in to the switch
- **Spanning Tree Protocol Bridge Protocol Data Unit (BPDU) port protection**: blocks BPDUs on ports that do not require BPDUs, preventing forged BPDU attacks
- **Spanning Tree Protocol Root Guard**: when running the spanning tree protocol, protects root bridge from malicious attack or configuration mistakes
- **Physical security**:
 - **Front-panel buttons**: provides the ability to disable reset and clear buttons on front panel for added security
 - **Kensington Lock**: 2520-8-PoE and 2520G-8-PoE switches include a Kensington Lock slot for securing the switches in open-space deployments

Convergence

- **LLDP-MED (Media Endpoint Discovery)**: a standard extension of LLDP that automatically configures network devices such as IP phones
- **IP multicast snooping and data-driven IGMP**: automatically prevents flooding of IP multicast traffic
- **Voice VLAN**: uses LLDP-MED to automatically configure VLAN for IP phones

Quality of Service (QoS)

- **Selectable queue configuration**: increase performance and/or traffic reliability by selecting the number of queues that best meet the requirements of your network applications; switch will map 8 priorities to either 2 or 4 queues
- **Simplified QoS configuration**:
 - **Port-based**: prioritize traffic by specifying a port and priority level
 - **VLAN based**: prioritize traffic by specifying a VLAN and priority level 4
- **IEEE 802.1p traffic prioritization**: honors and sets IEEE 802.1p priority in the VLAN tag
- **Type of service**:
 - **IP Precedence**: honors IP Precedence bits and allows mapping to a priority queue
 - **Differentiated Services Code Point values**: honors Differentiated Services Code Point (DSCP) bits and allows mapping to a priority queue
- **Flow control**: helps ensure reliable communications during full-duplex operation

Flexibility

- **Quiet operation**:
 - **Fanless design (2520-8-PoE & 2520G-8-PoE)**: enables quiet operation for deployment in open spaces



Overview

- **Variable-speed fans** (2520-24-PoE & 2520G-24-PoE): improves fan speed for the operating environment while keeping noise and energy consumption levels to a minimum
- **Flexible mounting:**
 - **Rackable:** Product can be mounted in a standard 19-inch rack with included hardware (2520-8-PoE and 2520G-8-PoE rack kit available free of charge via the Web)
 - **Wall mountable:** allows the switch to be mounted to a wall using included hardware
 - **Surface mountable:** allows the product to be mounted above or below a surface (such as a desk or table) with included hardware
- **Compact size:** products are designed to reduce space requirements (see product specifications for exact dimensions)

Product Architecture

- **Energy-efficient design:**
 - **Fans:** fanless (2520-8-PoE and 2520G-8-PoE) and variable-speed fans (2520-24-PoE and 2520G-24-PoE) help reduce power consumption
 - **Port LEDs:** port link and activity LEDs can be turned off in order to conserve energy
 - **Port low-power mode:** when no link is detected on a port, the port will automatically go into low-power mode to conserve energy (2520G switch)

Warranty and support

- **Industry-leading HP ProCurve Lifetime Warranty:** features next-business-day advance replacement (available in most countries) and includes coverage for fans and power supplies for the entire warranty period; HP ProCurve products have legendary HP quality, and our warranty is one way of demonstrating it; The HP Hardware Limited Warranty Statement containing the terms and conditions for the warranty on HP ProCurve products can be viewed at www.procurve.com/warranty
- **Software:**
 - **Maintenance releases:** free of charge for as long as you own the product
 - **Enhancements:** when and if available, free of charge for as long as you own the product
- **Technical support:** free phone and email support during business hours is available for as long as you own the product; support upgrades are available through the purchase of HP Care Pack Services; see www.procurve.com/services for more details
- **Services:** HP offers a variety of services to meet your organizations needs. Please see www.procurve.com/services for more details

Technical Specifications

HP ProCurve 2520-8-PoE Ports Switch (J9137A)

8 RJ-45 auto-sensing 10/100 PoE ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3af PoE); Media Type: Auto-MDIX; Duplex: half or full

2 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 as a SFP slot (for use with SFP transceivers)

1 RJ-45 serial console port

Physical characteristics	Dimensions	6.28(d) x 10(w) x 1.75(h) in. (15.95 x 25.4 x 4.45 cm) (1U height)
	Weight	3.62 lb. (1.64 kg) including power adapter and power cord
Memory and processor	Processor	Freescale PowerPC 8313 @ 266 MHz, 32 MB flash, 128 MB DDR2 SDRAM; packet buffer size: 384 KB dynamically allocated
Mounting		Mounts in an EIA-standard 19-inch telco rack or equipment cabinet (rack-mounting kit available); horizontal surface mounting; wall mounting
Performance	100 Mb Latency	< 1.9 μ s (LIFO 64-byte packets)
	1000 Mb Latency	< 1.5 μ s (LIFO 64-byte packets)
	Throughput	4.1 million pps
	Switching capacity	5.6 Gbps
Environment	MAC address table size	8,000 entries
	Operating temperature	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	15% to 95% @ 104°F (40°C), non-condensing
	Non-operating / Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Non-operating / Storage relative humidity	15% to 95% @ 149°F (65°C), non-condensing
	Altitude	up to 10,000 ft. (3 km)
	Acoustic	Power: 0 dB, Pressure: 0 dB
Electrical characteristics	Description	Use only the external power adapter module (5070-6082, PA1 AC adapter) supplied with this product
	Maximum heat dissipation	87 BTU/hr (91.79 kJ/hr)
	Voltage	100-240 VAC
	Current	1.5 A
	Idle power	9.4 W
	Maximum power rating	85.5 W
	PoE power	67 W
	Frequency	50 / 60 Hz
	Notes	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat

Technical Specifications

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.

PoE Power is the total power budget available to all PoE ports.

Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE, 100% traffic, and all ports plugged in.

Safety	cUL (CSA 22.2 No. 60950); CE Labeled; UL 60950-1; UL Listed; CAN/CSA 22.2 No. 60950; EN 60825; AS/NZS 60950; IEC 60950-1; EN 60950-1																						
Emissions	FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 (Canada); AS/NZS CISPR 22; IEC/EN 61000-3-2; IEC/EN 61000-3-3; IEC 61000:4-2, 4-3, 4-4, 4-5, 4-6, 4-8, 4-11																						
Immunity	<table><tr><td>Generic</td><td>EN 55024, CISPR 24</td></tr><tr><td>EN</td><td>EN 55024, CISPR 24</td></tr><tr><td>ESD</td><td>IEC 61000-4-2</td></tr><tr><td>Radiated</td><td>IEC 61000-4-3</td></tr><tr><td>EFT/Burst</td><td>IEC 61000-4-4</td></tr><tr><td>Surge</td><td>IEC 61000-4-5</td></tr><tr><td>Conducted</td><td>IEC 61000-4-6</td></tr><tr><td>Power frequency magnetic field</td><td>IEC 61000-4-8</td></tr><tr><td>Voltage dips and interruptions</td><td>IEC 61000-4-11</td></tr><tr><td>Harmonics</td><td>EN 61000-3-2, IEC 61000-3-2</td></tr><tr><td>Flicker</td><td>EN 61000-3-3, IEC 61000-3-3</td></tr></table>	Generic	EN 55024, CISPR 24	EN	EN 55024, CISPR 24	ESD	IEC 61000-4-2	Radiated	IEC 61000-4-3	EFT/Burst	IEC 61000-4-4	Surge	IEC 61000-4-5	Conducted	IEC 61000-4-6	Power frequency magnetic field	IEC 61000-4-8	Voltage dips and interruptions	IEC 61000-4-11	Harmonics	EN 61000-3-2, IEC 61000-3-2	Flicker	EN 61000-3-3, IEC 61000-3-3
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Flicker	EN 61000-3-3, IEC 61000-3-3																						
Management	HP ProCurve Manager Plus; HP ProCurve Manager; command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C); IEEE 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB																						
Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.																						
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (U4683E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U4835E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6321E) 3-year, 24x7 SW phone support, software updates (UF792E) Installation with minimum configuration, system-based pricing (U4826E) Installation with HP-provided configuration, system-based pricing (U4830E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR948E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR949E)																						

Technical Specifications

4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR950E)

4-year, 24x7 SW phone support, software updates (UR951E)

5-year, 4-hour onsite, 13x5 coverage for hardware (UR952E)

5-year, 4-hour onsite, 24x7 coverage for hardware (UR953E)

5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR954E)

5-year, 24x7 SW phone support, software updates (UR955E)

Refer to the HP website 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.

Standards and protocols
(applies to all products in series)

Denial of service protection

CPU DoS Protection

Device management

RFC 1591 DNS (client)

SSHv1/SSHv2 Secure Shell

General protocols

IEEE 802.1D MAC Bridges

IEEE 802.1p Priority

IEEE 802.1Q VLANs

IEEE 802.1s Multiple Spanning Trees

IEEE 802.1w Rapid Reconfiguration of Spanning Tree

IEEE 802.3 Type 10BASE-T

IEEE 802.3ab 1000BASE-T

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 868 Time Protocol

RFC 951 BOOTP

RFC 1350 TFTP Protocol (revision 2)

RFC 1542 BOOTP Extensions

RFC 2030 Simple Network Time Protocol (SNTP) v4

RFC 2131 DHCP

IP multicast

RFC 3376 IGMPv3 (host joins only)

IPv6

RFC 1981 IPv6 Path MTU Discovery

RFC 2460 IPv6 Specification

RFC 2925 Remote Operations MIB (Ping only)

RFC 3315 DHCPv6 (client only)

Technical Specifications

RFC 3513 IPv6 Addressing Architecture
RFC 3596 DNS Extension for IPv6
RFC 4022 MIB for TCP
RFC 4113 MIB for UDP
RFC 4251 SSHv6 Architecture
RFC 4252 SSHv6 Authentication
RFC 4253 SSHv6 Transport Layer
RFC 4254 SSHv6 Connection
RFC 4293 MIB for IP
RFC 4419 Key Exchange for SSH
RFC 4443 ICMPv6
RFC 4861 IPv6 Neighbor Discovery
RFC 4862 IPv6 Stateless Address Auto-configuration

MIBs

RFC 1213 MIB II
RFC 1493 Bridge MIB
RFC 2021 RMONv2 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 1098 A Simple Network Management Protocol (SNMP)
RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events)
SNMPv1/v2c/v3

QoS/Cos

RFC 2474 Diffserv precedence, with 4 queues per port
RFC 2475 DiffServ Architecture
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)

HP ProCurve 2520-24- Ports
PoE Switch (J9138A)

24 RJ-45 auto-sensing 10/100 PoE ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3af PoE); Media Type: Auto-MDIX;
Duplex: half or full

Technical Specifications

		2 RJ-45 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
		2 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 as a SFP slot (for use with SFP transceivers)
		1 RJ-45 serial console port
Physical characteristics	Dimensions	9.69(d) x 17.44(w) x 1.75(h) in. (24.61 x 44.3 x 4.45 cm) (1U height)
	Weight	7.1 lb. (3.22 kg)
Memory and processor	Processor	Freescale PowerPC 8313 @ 266 MHz, 32 MB flash, 128 MB DDR2 SDRAM; packet buffer size: 384 KB dynamically allocated
Mounting		Mounts in an EIA-standard 19-inch telco rack or equipment cabinet (rack-mounting kit available); horizontal surface mounting; wall mounting
Performance	100 Mb Latency	< 1.9 μ s (LIFO 64-byte packets)
	1000 Mb Latency	< 1.5 μ s (LIFO 64-byte packets)
	Throughput	6.2 million pps
	Switching capacity	12.8 Gbps
	MAC address table size	8,000 entries
Environment	Operating temperature	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	15% to 95% @ 104°F (40°C), non-condensing
	Non-operating / Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Non-operating / Storage relative humidity	15% to 95% @ 149°F (65°C), non-condensing
	Altitude	up to 10,000 ft. (3 km)
	Acoustic	Power: 27.9 dB, Pressure: 36.0 dB; DIN 45635T.19 per ISO 7779
Electrical characteristics	Maximum heat dissipation	208 BTU/hr (219.44 kJ/hr)
	Voltage	100-127 / 200-240 VAC
	Current	3.3 / 1.6 A
	Idle power	21.6 W
	Maximum power rating	257 W
	PoE power	195 W
	Frequency	50 / 60 Hz
	Notes	Idle power is the actual power consumption of the device with no ports connected. 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),

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		100% traffic, all ports plugged in, and all modules populated. PoE Power is the total power budget available to all PoE ports. Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE, 100% traffic, and all ports plugged in.
Safety		cUL (CSA 22.2 No. 60950); CE Labeled; UL 60950-1; UL Listed; CAN/CSA 22.2 No. 60950; EN 60825; AS/NZS 60950; IEC 60950-1; EN 60950-1
Emissions		FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 (Canada); AS/NZS CISPR 22; IEC/EN 61000-3-2; IEC/EN 61000-3-3; IEC 61000:4-2, 4-3, 4-4, 4-5, 4-6, 4-8, 4-11
Immunity	Generic	EN 55024, CISPR 24
	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3
	EFT/Burst	IEC 61000-4-4
	Surge	IEC 61000-4-5
	Conducted	IEC 61000-4-6
	Power frequency magnetic field	IEC 61000-4-8
	Voltage dips and interruptions	IEC 61000-4-11
	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; command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C); IEEE 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB
Notes		When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.
Services		3-year, 4-hour onsite, 13x5 coverage for hardware (U4683E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U4835E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6321E) 3-year, 24x7 SW phone support, software updates (UF792E) Installation with minimum configuration, system-based pricing (U4826E) Installation with HP-provided configuration, system-based pricing (U4830E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR948E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR949E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UR950E) 4-year, 24x7 SW phone support, software updates (UR951E)

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5-year, 4-hour onsite, 13x5 coverage for hardware (UR952E)
5-year, 4-hour onsite, 24x7 coverage for hardware (UR953E)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR954E)
5-year, 24x7 SW phone support, software updates (UR955E)

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CPU DoS Protection

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IEEE 802.1D MAC Bridges

IEEE 802.1p Priority

IEEE 802.1Q VLANs

IEEE 802.1s Multiple Spanning Trees

IEEE 802.1w Rapid Reconfiguration of Spanning Tree

IEEE 802.3 Type 10BASE-T

IEEE 802.3ab 1000BASE-T

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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

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RFC 1350 TFTP Protocol (revision 2)

RFC 1542 BOOTP Extensions

RFC 2030 Simple Network Time Protocol (SNTP) v4

RFC 2131 DHCP

IP multicast

RFC 3376 IGMPv3 (host joins only)

IPv6

RFC 1981 IPv6 Path MTU Discovery

RFC 2460 IPv6 Specification

RFC 2925 Remote Operations MIB (Ping only)

RFC 3315 DHCPv6 (client only)

RFC 3513 IPv6 Addressing Architecture

RFC 3596 DNS Extension for IPv6

RFC 4022 MIB for TCP

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RFC 4113 MIB for UDP
RFC 4251 SSHv6 Architecture
RFC 4252 SSHv6 Authentication
RFC 4253 SSHv6 Transport Layer
RFC 4254 SSHv6 Connection
RFC 4293 MIB for IP
RFC 4419 Key Exchange for SSH
RFC 4443 ICMPv6
RFC 4861 IPv6 Neighbor Discovery
RFC 4862 IPv6 Stateless Address Auto-configuration

MIBs

RFC 1213 MIB II
RFC 1493 Bridge MIB
RFC 2021 RMONv2 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 1098 A Simple Network Management Protocol (SNMP)
RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events)
SNMPv1/v2c/v3

QoS/Cos

RFC 2474 Diffserv precedence, with 4 queues per port
RFC 2475 DiffServ Architecture
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)

HP ProCurve 2520G-8- Ports
PoE Switch (J9298A)

8 RJ-45 auto-sensing 10/100/1000 PoE ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab Type 1000Base-T, IEEE 802.3af PoE); Media Type: Auto-MDIX; Duplex: 10Base-T/100Base-TX: half or full; 1000Base-T: full only

Technical Specifications

		2 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 as a SFP slot (for use with SFP transceivers)
		1 RJ-45 serial console port
Physical characteristics	Dimensions	6.28(d) x 10(w) x 1.75(h) in. (15.95 x 25.4 x 4.45 cm) (1U height)
	Weight	3.66 lb. (1.66 kg) including power adapter and power cord
Memory and processor	Processor	Freescale PowerPC 8313 @ 266 MHz, 32 MB flash, 128 MB DDR2 SDRAM; packet buffer size: 512 KB dynamically allocated
Mounting		Mounts in an EIA-standard 19-inch telco rack or equipment cabinet (rack-mounting kit available); horizontal surface mounting; wall mounting
Performance	100 Mb Latency	< 5.3 μ s (LIFO 64-byte packets)
	1000 Mb Latency	< 2.7 μ s (LIFO 64-byte packets)
	Throughput	14.8 million pps
	Switching capacity	20 Gbps
	MAC address table size	8,000 entries
Environment	Operating temperature	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	15% to 95% @ 104°F (40°C), non-condensing
	Non-operating / Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Non-operating / Storage relative humidity	15% to 95% @ 149°F (65°C), non-condensing
	Altitude	up to 10,000 ft. (3 km)
	Acoustic	Power: 0 dB, Pressure: 0 dB
Electrical characteristics	Description	Use only the external power adapter module (5070-6082, PA1 AC adapter) supplied with this product
	Maximum heat dissipation	89 BTU/hr (93.9 kJ/hr)
	Voltage	100-240 VAC
	Current	1.5 A
	Idle power	9.3 W
	Maximum power rating	86.2 W
	PoE power	67 W
	Frequency	50 / 60 Hz
	Notes	Idle power is the actual power consumption of the device with no ports connected. 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

Technical Specifications

	modules populated.
	PoE Power is the total power budget available to all PoE ports.
	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE, 100% traffic, and all ports plugged in.
Safety	cUL (CSA 22.2 No. 60950); CE Labeled; UL 60950-1; UL Listed; CAN/CSA 22.2 No. 60950; EN 60825; AS/NZS 60950; IEC 60950-1; EN 60950-1
Emissions	FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 (Canada); AS/NZS CISPR 22; IEC/EN 61000-3-2; IEC/EN 61000-3-3; IEC 61000:4-2, 4-3, 4-4, 4-5, 4-6, 4-8, 4-11
Immunity	Generic EN 55024, CISPR 24 EN EN 55024, CISPR 24 ESD IEC 61000-4-2 Radiated IEC 61000-4-3 EFT/Burst IEC 61000-4-4 Surge IEC 61000-4-5 Conducted IEC 61000-4-6 Power frequency magnetic field IEC 61000-4-8 Voltage dips and interruptions IEC 61000-4-11 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; command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C); IEEE 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB
Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (U4683E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U4835E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6321E) 3-year, 24x7 SW phone support, software updates (UF792E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR948E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR949E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR950E) 4-year, 24x7 SW phone support, software updates (UR951E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR952E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR953E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone

Technical Specifications

(UR954E)

5-year, 24x7 SW phone support, software updates (UR955E)

Refer to the HP website 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.

Standards and protocols
(applies to all products in series)

Denial of service protection

CPU DoS Protection

Device management

RFC 1591 DNS (client)

SSHv1/SSHv2 Secure Shell

General protocols

IEEE 802.1D MAC Bridges

IEEE 802.1p Priority

IEEE 802.1Q VLANs

IEEE 802.1s Multiple Spanning Trees

IEEE 802.1w Rapid Reconfiguration of Spanning Tree

IEEE 802.3 Type 10BASE-T

IEEE 802.3ab 1000BASE-T

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 868 Time Protocol

RFC 951 BOOTP

RFC 1350 TFTP Protocol (revision 2)

RFC 1542 BOOTP Extensions

RFC 2030 Simple Network Time Protocol (SNTP) v4

RFC 2131 DHCP

IP multicast

RFC 3376 IGMPv3 (host joins only)

IPv6

RFC 1981 IPv6 Path MTU Discovery

RFC 2460 IPv6 Specification

RFC 2925 Remote Operations MIB (Ping only)

RFC 3315 DHCPv6 (client only)

RFC 3513 IPv6 Addressing Architecture

RFC 3596 DNS Extension for IPv6

RFC 4022 MIB for TCP

RFC 4113 MIB for UDP

RFC 4251 SSHv6 Architecture

RFC 4252 SSHv6 Authentication

Technical Specifications

RFC 4253 SSHv6 Transport Layer
RFC 4254 SSHv6 Connection
RFC 4293 MIB for IP
RFC 4419 Key Exchange for SSH
RFC 4443 ICMPv6
RFC 4861 IPv6 Neighbor Discovery
RFC 4862 IPv6 Stateless Address Auto-configuration

MIBs

RFC 1213 MIB II
RFC 1493 Bridge MIB
RFC 2021 RMONv2 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

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RFC 1098 A Simple Network Management Protocol (SNMP)
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SNMPv1/v2c/v3

QoS/Cos

RFC 2474 Diffserv precedence, with 4 queues per port
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RFC 2597 DiffServ Assured Forwarding (AF)
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Security

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

HP ProCurve 2520G-24- Ports PoE Switch (J9299A)

20 RJ-45 auto-sensing 10/100/1000 PoE ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab Type 1000Base-T, IEEE 802.3af PoE); Media Type: Auto-MDIX; Duplex: 10Base-T/100Base-TX: half or full; 1000Base-T: full only

4 dual-personality ports; each port can be used as either an RJ-45 10/100/1000 PoE port (IEEE 802.3 Type 10Base-T; IEEE 802.3u Type 100Base-TX; IEEE 802.3ab 1000Base-T Gigabit Ethernet, IEEE 802.3af) or as an SFP slot (for use with SFP transceivers)

1 RJ-45 serial console port

Technical Specifications

Physical characteristics	Dimensions	9.69(d) x 17.44(w) x 1.75(h) in. (24.61 x 44.3 x 4.45 cm) (1U height)
	Weight	7.21 lb. (3.27 kg)
Memory and processor	Processor	Freescale PowerPC 8313 @ 266 MHz, 32 MB flash, 128 MB DDR2 SDRAM; packet buffer size: 384 KB dynamically allocated
Mounting	Mounts in an EIA-standard 19-inch telco rack or equipment cabinet (rack-mounting kit available); horizontal surface mounting; wall mounting	
Performance	100 Mb Latency	< 1.9 μ s (LIFO 64-byte packets)
	1000 Mb Latency	< 1.5 μ s (LIFO 64-byte packets)
	Throughput	35.7 million pps
	Switching capacity	48 Gbps
	MAC address table size	8,000 entries
Environment	Operating temperature	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	15% to 95% @ 104°F (40°C), non-condensing
	Non-operating / Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Non-operating / Storage relative humidity	15% to 95% @ 149°F (65°C), non-condensing
	Altitude	up to 10,000 ft. (3 km)
Acoustic	Power: 28.3 dB, Pressure: 37.7 dB; DIN 45635T.19 per ISO 7779	
Electrical characteristics	Maximum heat dissipation	223 BTU/hr (235.27 kJ/hr)
	Voltage	100-127 / 200-240 VAC
	Current	3.3 / 1.6 A
	Idle power	21.8 W
	Maximum power rating	260.4 W
	PoE power	195 W
	Frequency	50 / 60 Hz
Notes	Idle power is the actual power consumption of the device with no ports connected. 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. PoE Power is the total power budget available to all PoE ports. Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE, 100% traffic, and all ports plugged	

Technical Specifications

		in.
Safety	cUL (CSA 22.2 No. 60950); CE Labeled; UL 60950-1; UL Listed; CAN/CSA 22.2 No. 60950; EN 60825; AS/NZS 60950; IEC 60950-1; EN 60950-1	
Emissions	FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 (Canada); AS/NZS CISPR 22; IEC/EN 61000-3-2; IEC/EN 61000-3-3; IEC 61000:4-2, 4-3, 4-4, 4-5, 4-6, 4-8, 4-11	
Immunity	Generic	EN 55024, CISPR 24
	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3
	EFT/Burst	IEC 61000-4-4
	Surge	IEC 61000-4-5
	Conducted	IEC 61000-4-6
	Power frequency magnetic field	IEC 61000-4-8
	Voltage dips and interruptions	IEC 61000-4-11
	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; command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C); IEEE 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB	
Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.	
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RFC 4252 SSHv6 Authentication

RFC 4253 SSHv6 Transport Layer

RFC 4254 SSHv6 Connection

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RFC 4419 Key Exchange for SSH

RFC 4443 ICMPv6

RFC 4861 IPv6 Neighbor Discovery

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RFC 2138 RADIUS Authentication
RFC 2866 RADIUS Accounting
Secure Sockets Layer (SSL)

Accessories

HP ProCurve 2520 Switch Series accessories

Transceivers	HP ProCurve 100-FX SFP-LC Transceiver	J9054B
	HP ProCurve 100-BX-D SFP-LC Transceiver	J9099B
	HP ProCurve 100-BX-U SFP-LC Transceiver	J9100B
Mini-GBICs	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 1000-BX-D SFP-LC Mini-GBIC	J9142B
	HP ProCurve 1000-BX-U SFP-LC Mini-GBIC	J9143B
Cables	HP Optical Ethernet Cables	JxxxxA
Software	HP ProCurve Manager 3.0	--

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