



HP ProCurve Switch 3500 Series

Product overview

The HP ProCurve Switch 3500 Series consists of the most advanced intelligent edge switches in the HP ProCurve Networking product line. The 3500 series includes 24-port and 48-port stackables. The foundation for all these switches is a purpose-built, programmable ProVision ASIC that allows the most demanding networking features, such as Quality of Service (QoS) and security, to be implemented in a scalable yet granular fashion. With a variety of Gigabit and 10/100 interfaces, integrated PoE and Non-PoE options, 10-GbE capability on Gigabit switches, the 3500 switches offer excellent investment protection, flexibility, and scalability, as well as ease of deployment, operation, and maintenance.

Key features

- Advanced access layer & Small Distribution
- Enterprise-class performance and security
- Intelligent Edge feature set with L2-L4
- Scalable 10/100/1000 & 10/100 PoE connectivity
- Unified core-to-edge ProVision software

HP ProCurve Switch 3500 Series

Specifications



HP ProCurve Switch 3500yl-24G-PWR Intelligent Edge (J8692A)



HP ProCurve Switch 3500yl-48G-PWR Intelligent Edge (J8693A)



HP ProCurve 3500-24 Switch (J9470A)

	HP ProCurve Switch 3500yl-24G-PWR Intelligent Edge (J8692A)	HP ProCurve Switch 3500yl-48G-PWR Intelligent Edge (J8693A)	HP ProCurve 3500-24 Switch (J9470A)
Ports	<p>1 open module slot</p> <p>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</p> <p>1 RS-232C DB-9 console port</p> <p>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) with PoE or an open mini-GBIC slot (for use with mini-GBIC transceivers)</p> <p>Supports a maximum of 4 10-GbE ports</p>	<p>1 open module slot</p> <p>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</p> <p>1 RS-232C DB-9 console port</p> <p>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) with PoE or an open mini-GBIC slot (for use with mini-GBIC transceivers)</p> <p>Supports a maximum of 4 10-GbE ports</p>	<p>20 RJ-45 auto-sensing 10/100 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX); Media Type: Auto-MDIX; Duplex: half or full</p> <p>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)</p> <p>1 RS-232C DB-9 console port</p>
Physical characteristics			
Dimensions	15.43(d) x 17.44(w) x 1.73(h) in. (39.2 x 44.3 x 4.4 cm) (1U height)	16.93(d) x 17.44(w) x 1.73(h) in. (43.0 x 44.3 x 4.4 cm) (1U height)	15.43(d) x 17.44(w) x 1.73(h) in. (39.2 x 44.3 x 4.4 cm) (1U height)
Weight	14.11 lb. (6.4 kg)	16.09 lb. (7.3 kg)	11.9 lb. (5.4 kg)
Memory and processor			
10G Module	ARM9 @ 200 MHz; packet buffer size: 36 Mb QDR SDRAM	ARM9 @ 200 MHz; packet buffer size: 36 Mb QDR SDRAM	
Management Module	Stackable memory and processor: Freescale PowerPC 8540 @ 666 MHz, 4 MB flash, 128 MB compact flash, 256 MB DDR SDRAM	Stackable memory and processor: Freescale PowerPC 8540 @ 666 MHz, 4 MB flash Mb, 128 MB compact flash, 256 MB DDR SDRAM	Stackable memory and processor: Freescale PowerPC 8540 @ 666 MHz, 4 MB flash, 128 MB compact flash, 256 MB DDR SDRAM
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only
Performance			
100 Mb Latency			< 3.4 μs (LIFO 64-byte packets)
1000 Mb Latency	< 3.4 μs (FIFO 64-byte packets)	< 3.4 μs (FIFO 64-byte packets)	< 2.9 μs (LIFO 64-byte packets)
10 Gbps Latency	< 2.1 μs (FIFO 64-byte packets)	< 2.1 μs (FIFO 64-byte packets)	
Throughput	up to 75.7 million pps	up to 111.5 million pps	up to 8.9 million pps (64-byte packets)
Routing/Switching capacity	101.8 Gbps	149.8 Gbps	12 Gbps
Switch fabric speed	105.6 Gbps	153.6 Gbps	
Routing table size	10,000 entries	10,000 entries	10,000 entries
MAC address table size	64,000 entries	64,000 entries	64,000 entries
Environment			
Operating temperature	32°F to 131°F (0°C to 55°C); 32°F to 104°F (40°C) when used with any X2 10-GbE	32°F to 131°F (0°C to 55°C); 32°F to 104°F (40°C) when used with any X2 10-GbE	32°F to 131°F (0°C to 55°C)
Operating relative humidity	15% to 95% @ 104°F (40°C), non-condensing	15% to 95% @ 104°F (40°C), non-condensing	15% to 95% @ 104°F (40°C), non-condensing
Non-operating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Non-operating/Storage relative humidity	15% to 90% @ 149°F (65°C), non-condensing	15% to 95% @ 149°F (65°C), non-condensing	15% to 90% @ 149°F (65°C), non-condensing
Altitude	up to 15,000 ft. (4.6 km)	up to 15,000 ft. (4.6 km)	up to 15,000 ft. (4.6 km)
Acoustic	Power: 55.1 dB, Pressure: 44.8 dB ISO 7779, ISO 9296	Power: 55.6 dB, Pressure: 45.3 dB ISO 7779, ISO 9296	Power: 53.1 dB, Pressure: 42.6 dB ISO 7779, ISO 9296
Electrical characteristics		Achieved Miercom Certified Green Award	
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 with 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	865 BTU/hr (912.9 kJ/hr)	1144 BTU/hr (1206.9 kJ/hr)	268 BTU/hr (282.8 kJ/hr)
Voltage	100-127 / 200-240 VAC	100-127 / 200-240 VAC	100-127 / 200-240 VAC
Current	10.0 / 5.0 A	10.0 / 5.0 A	1.1 / 0.6 A
Idle power	98 W	142 W	68.2 W
Maximum power rating	623 W	705 W	78.7 W
PoE power	398 W	398 W	
Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz

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Specifications (continued)

	HP ProCurve Switch 3500yl-24G-PWR Intelligent Edge (J8692A)	HP ProCurve Switch 3500yl-48G-PWR Intelligent Edge (J8693A)	HP ProCurve 3500-24 Switch (J9470A)
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 power supplied by the internal power supply, it is dependent on the type and quantity of power supplies and may be supplemented with the use of a External Power Supply (EPS).	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 power supplied by the internal power supply, it is dependent on the type and quantity of power supplies and may be supplemented with the use of a External Power Supply (EPS).	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.
Safety	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A
Immunity			
EN	EN 55024, CISPR 24	EN 55024, CISPR 24	EN 55024, CISPR 24
ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD	IEC 61000-4-2; 4 kV CD, 8 kV AD	IEC 61000-4-2; 4 kV CD, 8 kV AD
Radiated	IEC 61000-4-3; 3 V/m	IEC 61000-4-3; 3 V/m	IEC 61000-4-3; 3 V/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)	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	IEC 61000-4-5; 1 kV/2 kV AC
Conducted	IEC 61000-4-6; 3 V	IEC 61000-4-6; 3 V	IEC 61000-4-6; 3 V
Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz	IEC 61000-4-8; 1 A/m, 50 or 60 Hz	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	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	EN 61000-3-2, IEC 61000-3-2	EN 61000-3-2, IEC 61000-3-2	EN 61000-3-2, IEC 61000-3-2
Flicker	EN 61000-3-3, IEC 61000-3-3	EN 61000-3-3, IEC 61000-3-3	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)	HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)	HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)
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.	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.	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 (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) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR868E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR869E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR870E) 4-year, 24x7 SW phone support, software updates (UR871E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR872E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR873E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR874E) 5-year, 24x7 SW phone support, software updates (UR875E) 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.	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) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR884E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR885E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR886E) 4-year, 24x7 SW phone support, software updates (UR887E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR888E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR889E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR890E) 5-year, 24x7 SW phone support, software updates (UR891E) 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.	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) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR868E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR869E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR870E) 4-year, 24x7 SW phone support, software updates (UR871E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR872E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR873E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR874E) 5-year, 24x7 SW phone support, software updates (UR875E) 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.

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Specifications (continued)

	HP ProCurve Switch 3500yl-24G-PWR Intelligent Edge (J8692A)	HP ProCurve Switch 3500yl-48G-PWR Intelligent Edge (J8693A)	HP ProCurve 3500-24 Switch (J9470A)	
Standards and protocols (applies to all products in series)	Device management RFC 1591 DNS (client) HTML and telnet management General protocols IEEE 802.1ad Q-in-Q (Premium License) IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1s Multiple Spanning Trees IEEE 802.1v VLAN classification by Protocol and Port 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 UDLD (Uni-directional Link Detection) RFC 826 ARP RFC 854 TELNET RFC 868 Time Protocol RFC 951 BOOTP RFC 1058 RIPv1 RFC 1350 TFTP Protocol (revision 2) RFC 1519 CIDR RFC 1542 BOOTP Extensions RFC 2030 Simple Network Time Protocol (SNTP) v4 RFC 2131 DHCP RFC 2453 RIPv2 RFC 2548 (MS-RAS-Vendor only) RFC 3046 DHCP Relay Agent Information Option RFC 3576 Ext to RADIUS (CoA only) RFC 3768 VRRP (Premium License) RFC 4675 RADIUS VLAN & Priority	IP multicast RFC 3376 IGMPv3 (host joins only) RFC 3973 Draft 2 PIM Dense Mode (Premium License) RFC 4601 Draft 10 PIM Sparse Mode (Premium License) IPv6 RFC 1981 IPv6 Path MTU Discovery RFC 2460 IPv6 Specification RFC 2710 Multicast Listener Discovery (MLD) for IPv6 RFC 2925 Remote Operations MIB (Ping only) RFC 3019 MLDv1 MIB RFC 3315 DHCPv6 (client only) RFC 3513 IPv6 Addressing Architecture RFC 3596 DNS Extension for IPv6 RFC 3810 MLDv2 (host joins only) 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 4541 IGMP & MLD Snooping Switch RFC 4861 IPv6 Neighbor Discovery RFC 4862 IPv6 Stateless Address Auto-configuration 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	IP multicast RFC 3376 IGMPv3 (host joins only) RFC 3973 Draft 2 PIM Dense Mode (Premium License) RFC 4601 Draft 10 PIM Sparse Mode (Premium License) IPv6 RFC 1981 IPv6 Path MTU Discovery RFC 2460 IPv6 Specification RFC 2710 Multicast Listener Discovery (MLD) for IPv6 RFC 2925 Remote Operations MIB (Ping only) RFC 3019 MLDv1 MIB RFC 3315 DHCPv6 (client only) RFC 3513 IPv6 Addressing Architecture RFC 3596 DNS Extension for IPv6 RFC 3810 MLDv2 (host joins only) 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 4541 IGMP & MLD Snooping Switch RFC 4861 IPv6 Neighbor Discovery RFC 4862 IPv6 Stateless Address Auto-configuration 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 2787 VRRP MIB RFC 2863 The Interfaces Group MIB RFC 2925 Ping 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 OSPFv2 (Premium License) RFC 3101 OSPF NSSA 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 2865 RADIUS (client only) RFC 2866 RADIUS Accounting Secure Sockets Layer (SSL) SSHv1/SSHv2 Secure Shell

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Specifications



HP ProCurve 3500-24-PoE Switch (J9471A)



HP ProCurve 3500-48 Switch (J9472A)



HP ProCurve 3500-48-PoE Switch (J9473A)

Ports	20 RJ-45 auto-sensing 10/100 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX); Media Type: Auto-MDIX; Duplex: half or full 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) with PoE or an open mini-GBIC slot (for use with mini-GBIC transceivers) 1 RS-232C DB-9 console port	44 RJ-45 auto-sensing 10/100 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX); Media Type: Auto-MDIX; Duplex: half or full 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) with PoE or an open mini-GBIC slot (for use with mini-GBIC transceivers) 1 RS-232C DB-9 console port	44 RJ-45 auto-sensing 10/100 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX); Media Type: Auto-MDIX; Duplex: half or full 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) with PoE or an open mini-GBIC slot (for use with mini-GBIC transceivers) 1 RS-232C DB-9 console port
Physical characteristics			
Dimensions	15.43(d) x 17.44(w) x 1.73(h) in. (39.2 x 44.3 x 4.4 cm) (1U height)	16.93(d) x 17.44(w) x 1.73(h) in. (43.0 x 44.3 x 4.4 cm) (1U height)	16.93(d) x 17.44(w) x 1.73(h) in. (43.0 x 44.3 x 4.4 cm) (1U height)
Weight	13.23 lb. (6 kg)	13.45 lb. (6.1 kg)	14.99 lb. (6.8 kg)
Memory and processor			
Management Module	Stackable memory and processor: Freescale PowerPC 8540 @ 666 MHz, 4 MB flash, 128 MB compact flash, 256 MB DDR SDRAM	Stackable memory and processor: Freescale PowerPC 8540 @ 666 MHz, 4 MB flash Mb, 128 MB compact flash, 256 MB DDR SDRAM	Stackable memory and processor: Freescale PowerPC 8540 @ 666 MHz, 4 MB flash Mb, 128 MB compact flash, 256 MB DDR SDRAM
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only
Performance			
100 Mb Latency	< 3.4 μ s (LIFO 64-byte packets)	< 3.4 μ s (LIFO 64-byte packets)	< 3.4 μ s (LIFO 64-byte packets)
1000 Mb Latency	< 2.9 μ s (LIFO 64-byte packets)	< 2.9 μ s (LIFO 64-byte packets)	< 2.9 μ s (LIFO 64-byte packets)
Throughput	up to 8.9 million pps (64-byte packets)	up to 12.5 million pps (64-byte packets)	up to 12.5 million pps (64-byte packets)
Routing/Switching capacity	12 Gbps	16.8 Gbps	16.8 Gbps
Routing table size	10,000 entries	10,000 entries	10,000 entries
MAC address table size	64,000 entries	64,000 entries	64,000 entries
Environment			
Operating temperature	32°F to 131°F (0°C to 55°C)	32°F to 131°F (0°C to 55°C)	32°F to 131°F (0°C to 55°C)
Operating relative humidity	15% to 95% @ 104°F (40°C), non-condensing	15% to 95% @ 104°F (40°C), non-condensing	15% to 95% @ 104°F (40°C), non-condensing
Non-operating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Non-operating/Storage relative humidity	15% to 90% @ 149°F (65°C), non-condensing	15% to 95% @ 149°F (65°C), non-condensing	15% to 95% @ 149°F (65°C), non-condensing
Altitude	up to 15,000 ft. (4.6 km)	up to 15,000 ft. (4.6 km)	up to 15,000 ft. (4.6 km)
Acoustic	Power: 55.1 dB, Pressure: 44.8 dB ISO 7779, ISO 9296	Power: 55.8 dB, Pressure: 43.5 dB ISO 7779, ISO 9296	Power: 55.6 dB, Pressure: 45.3 dB ISO 7779, ISO 9296
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 with either 50 or 60 Hz	The switch automatically adjusts to any voltage between 100-127 and 200-240 volts with either 50 or 60 Hz
Maximum heat dissipation	435 BTU/hr (458.92 kJ/hr)	465 BTU/hr (490.58 kJ/hr)	611 BTU/hr (644.6 kJ/hr)
Voltage	100-127 / 200-240 VAC	100-127 / 200-240 VAC	100-127 / 200-240 VAC
Current	6.6 / 3.0 A	1.6 / 0.8 A	7.3 / 3.3 A
Idle power	91 W	96 W	133.2 W
Maximum power rating	497 W	136.2 W	548.8 W
PoE power	398 W		398 W
Frequency	50 / 60 Hz	50 / 60 Hz	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 power supplied by the internal power supply, it is dependent on the type and quantity of power supplies and may be supplemented with the use of a External Power Supply (EPS).	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.	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 power supplied by the internal power supply, it is dependent on the type and quantity of power supplies and may be supplemented with the use of a External Power Supply (EPS).
Safety	EN 60950/IEC 60950; CAN/CSA 22.2 No. 60950; EN 60825; UL 60950	EN 60950/IEC 60950; CAN/CSA 22.2 No. 60950; UL 60950; IEC 60950	EN 60950/IEC 60950; CAN/CSA 22.2 No. 60950; UL 60950; IEC 60950
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A
Immunity			

HP ProCurve Switch 3500 Series

Specifications (continued)

	HP ProCurve 3500-24-PoE Switch (J9471A)	HP ProCurve 3500-48 Switch (J9472A)	HP ProCurve 3500-48-PoE Switch (J9473A)
EN	EN 55024, CISPR 24	EN 55024, CISPR 24	EN 55024, CISPR 24
ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD	IEC 61000-4-2; 4 kV CD, 8 kV AD	IEC 61000-4-2; 4 kV CD, 8 kV AD
Radiated	IEC 61000-4-3; 3 V/m	IEC 61000-4-3; 3 V/m	IEC 61000-4-3; 3 V/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)	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	IEC 61000-4-5; 1 kV/2 kV AC
Conducted	IEC 61000-4-6; 3 V	IEC 61000-4-6; 3 V	IEC 61000-4-6; 3 V
Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz	IEC 61000-4-8; 1 A/m, 50 or 60 Hz	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	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	EN 61000-3-2, IEC 61000-3-2	EN 61000-3-2, IEC 61000-3-2	EN 61000-3-2, IEC 61000-3-2
Flicker	EN 61000-3-3, IEC 61000-3-3	EN 61000-3-3, IEC 61000-3-3	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)	HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)	HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)
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.	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.	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	<p>3-year, 4-hour onsite, 13x5 coverage for hardware (U2855E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (U2856E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6304E)</p> <p>3-year, 24x7 SW phone support, software updates (UE262E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (UR868E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (UR869E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR870E)</p> <p>4-year, 24x7 SW phone support, software updates (UR871E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (UR872E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware (UR873E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR874E)</p> <p>5-year, 24x7 SW phone support, software updates (UR875E)</p> <p>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.</p>	<p>3-year, 4-hour onsite, 13x5 coverage for hardware (H4496E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (H2893E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6319E)</p> <p>3-year, 24x7 SW phone support, software updates (UE264E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (UR884E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (UR885E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR886E)</p> <p>4-year, 24x7 SW phone support, software updates (UR887E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (UR888E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware (UR889E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR890E)</p> <p>5-year, 24x7 SW phone support, software updates (UR891E)</p> <p>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.</p>	<p>3-year, 4-hour onsite, 13x5 coverage for hardware (H4496E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (H2893E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6319E)</p> <p>3-year, 24x7 SW phone support, software updates (UE264E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (UR884E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (UR885E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR886E)</p> <p>4-year, 24x7 SW phone support, software updates (UR887E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (UR888E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware (UR889E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR890E)</p> <p>5-year, 24x7 SW phone support, software updates (UR891E)</p> <p>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.</p>

HP ProCurve Switch 3500 Series

Specifications (continued)

	HP ProCurve 3500-24-PoE Switch (J9471A)	HP ProCurve 3500-48 Switch (J9472A)	HP ProCurve 3500-48-PoE Switch (J9473A)
Standards and protocols (applies to all products in series)	Device management RFC 1591 DNS (client) HTML and telnet management General protocols IEEE 802.1ad Q-in-Q (Premium License) IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1s Multiple Spanning Trees IEEE 802.1v VLAN classification by Protocol and Port 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 UDLD (Uni-directional Link Detection) RFC 826 ARP RFC 854 TELNET RFC 868 Time Protocol RFC 951 BOOTP RFC 1058 RIPv1 RFC 1350 TFTP Protocol (revision 2) RFC 1519 CIDR RFC 1542 BOOTP Extensions RFC 2030 Simple Network Time Protocol (SNTP) v4 RFC 2131 DHCP RFC 2453 RIPv2 RFC 2548 (MS-RAS-Vendor only) RFC 3046 DHCP Relay Agent Information Option RFC 3576 Ext to RADIUS (CoA only) RFC 3768 VRRP (Premium License) RFC 4675 RADIUS VLAN & Priority	IP multicast RFC 3376 IGMPv3 (host joins only) RFC 3973 Draft 2 PIM Dense Mode (Premium License) RFC 4601 Draft 10 PIM Sparse Mode (Premium License) IPv6 RFC 1981 IPv6 Path MTU Discovery RFC 2460 IPv6 Specification RFC 2710 Multicast Listener Discovery (MLD) for IPv6 RFC 2925 Remote Operations MIB (Ping only) RFC 3019 MLDv1 MIB RFC 3315 DHCPv6 (client only) RFC 3513 IPv6 Addressing Architecture RFC 3596 DNS Extension for IPv6 RFC 3810 MLDv2 (host joins only) 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 4541 IGMP & MLD Snooping Switch RFC 4861 IPv6 Neighbor Discovery RFC 4862 IPv6 Stateless Address Auto-configuration 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 2787 VRRP MIB RFC 2863 The Interfaces Group MIB RFC 2925 Ping 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 OSPFv2 (Premium License) RFC 3101 OSPF NSSA 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 2865 RADIUS (client only) RFC 2866 RADIUS Accounting Secure Sockets Layer (SSL) SSHv1/SSHv2 Secure Shell

HP ProCurve Switch 3500 Series accessories

Premium License for Switch 3500 Series (J8993A)
HP ProCurve 620 Redundant/External Power Supply (J8696A)
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 CX4 Media Converter (J8439A)
HP ProCurve 10-GbE X2-CX4 Transceiver (J8440B)
HP ProCurve 1000-BX-D SFP-LC Mini-GBIC (J9142B)
HP ProCurve 1000-BX-U SFP-LC Mini-GBIC (J9143B)
HP ProCurve 10-GbE X2-SC LRM Optic (J9144A)
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 100-FX SFP-LC Transceiver (J9054B)
HP ProCurve 100-BX-D SFP-LC Transceiver (J9099B)
HP ProCurve 100-BX-U SFP-LC Transceiver (J9100B)
HP ProCurve Manager 3.0 (-)

yl Modules

HP ProCurve Switch yl 10-GbE 2-Port CX4 + 2-Port X2 Module (J8694A)



Products within this series have achieved sufficient scores in each of the rated criteria to achieve the Miercom Certified Green distinction Award. See the Specifications section of this series for more information.

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