ProCurve Networking
HP Innovation

ProCurve Switch 3500yl-48G-PWR

The ProCurve 3500yl-48G-PWR is an advanced Layer 3 stackable in 1U height. It has 44 10/100/1000Base-T ports, 4 dual-personality ports, integrated PoE on all 10/100/1000Base-T interfaces, and an expansion slot for an optional 4-port 10-GbE module. The foundation for this switch is a purpose-built, programmable ProVision ASIC that allows the most demanding networking features such as QoS and security to be implemented in a scalable yet granular fashion. The 3500yl-48G-PWR is a part of the ProCurve 3500yl/5400zl series of switches that offer unprecedented investment protection, flexibility, and scalability, as well as ease of deployment, operation, and maintenance for any network environment.

ProCurve Switch
3500yl-48G-PWR (J8693A)

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Features and benefits

- **Stacking capability:** provides single IP address management for a virtual stack of up to 16 switches

Performance

- **3500yl/5400zl architecture:** 115 to 692 Gbps crossbar switching fabric provides intra- and inter-module switching with 36 to 428 million pps throughput on purpose-built ProVision ASIC

Connectivity

- **802.3af Power over Ethernet:** provides up to 15.4 W per port to power compliant PoE devices such as IP phones, wireless access points, and security cameras
- **Pre-standard PoE support:** detects and provides power to pre-standard PoE devices; see list of supported devices in the product FAQ at www.procurve.com
- **Jumbo frames:** on Gigabit and 10-Gigabit ports, allow high-performance remote backup and disaster-recovery services
- **ProCurve/IEEE Auto-MDIX:** automatically adjusts for straight-through or crossover cables on all 10/100/1000 ports

Resiliency and high availability

- **Virtual Router Redundancy Protocol (requires Premium Edge license):** VRRP allows groups of two routers to dynamically back each other up to create highly available routed environments
- **802.1s Multiple Spanning Tree Protocol:** provides high link availability in multiple VLAN environments by allowing multiple spanning trees; encompasses 802.1D Spanning Tree Protocol and 802.1w Rapid Spanning Tree Protocol
- **802.3ad Link Aggregation Control Protocol (LACP) and ProCurve trunking:** support up to 36 trunks, each with up to 8 links (ports) per trunk; trunking across modules is supported
- **Hot-swappable modules (5400zl series):** permit modules, mini-GBICs, and power supplies in a redundant power supply configuration to be added or swapped without interrupting the network
- **Optional redundant power supply (5400zl series):** provides uninterrupted power and allows hot-swapping of the redundant power 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 802.1Q standard and 2,048 VLANs simultaneously
- **802.1v protocol VLANs:** isolate select non-IPv4 protocols automatically into their own VLANs
- **Group VLAN Registration Protocol (GVRP):** allows automatic learning and dynamic assignment of VLANs

Layer 3 routing

- **Layer 3 IP routing:**
  - **Static IP routing:** provides basic routing
  - **RIP:** provides RIPv1 and RIPv2 routing at media speed
  - **OSPF (requires Premium Edge license)** includes ECMP to provide link redundancy and scalable 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

- **Switch CPU protection:** provides automatic protection against malicious network traffic trying to shut down the switch
- **Virus throttling:** detects traffic patterns typical of WORM-type viruses and either throttles or entirely prevents the ability of the virus to spread across the routed VLANs, 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 802.1X supplicant on the client in conjunction with a RADIUS server
  - **Web-based authentication:** similar to 802.1X, provides a browser-based environment to authenticate clients that do not support the 802.1X supplicant
  - **MAC-based authentication:** client is authenticated with the RADIUS server based on the MAC address of the client; useful for clients that have minimal or no user interface
- **Authentication flexibility:**
  - **Multiple 802.1X users per port:** provides authentication of multiple 802.1X users per port; prevents user "piggybacking" on another user's 802.1X authentication
  - **Concurrent 802.1X and Web or MAC authentication schemes per port:** switch port will accept any of 802.1X and either Web or MAC authentications
- **access control lists (ACLs):** provide IP Layer 3 filtering based on the IP field, source/destination IP address/subnet, and source/destination TCP/UDP port number
- **Identity-driven ACL:** enables implementation of a highly granular and flexible access security policy specific to each authenticated network user
- **Port security:** prevents unauthorized access using MAC address lockdown
- **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 management access:** 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 secure switch CLI logon
- **Security banner:** displays customized security policy when users log in to the switch

Convergence

- **IP multicast routing (Premium Edge license):** includes PIM Sparse and Dense modes to route IP multicast traffic
- **IP multicast snooping (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
- **iSCSI support:** enables the deployment of Ethernet storage area network solutions using the iSCSI standard

Quality of Service (QoS)

- **Layer 4 prioritization:** enables prioritization based on TCP/UDP port numbers
- **Traffic prioritization:** allows real-time traffic classification into 8 priority levels mapped to 8 queues
- **Bandwidth shaping:**
  - **Rate limiting:** per-port ingress-based

enforced bandwidth maximums

- **Guaranteed minimums:** per-port, per-queue egress-based guaranteed bandwidth minimums

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

Management

- **RMON, XRMON, and sFlow:** provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- **Link Layer Discovery Protocol (802.1ab) :** automated device discovery protocol for easy mapping by network management applications
- **Friendly port names:** allow assignment of descriptive names to ports
- **Dual flash images:** provide independent primary and secondary OS files for backup while upgrading
- **Multiple configuration files:** multiple config files can be stored to flash image
- **Port mirroring:** enables troubleshooting by mirroring ingress/egress traffic on a port

Services

- 3-year, 4-hour onsite, 13x5 coverage for hardware (H4496E)
- 3-year, 4-hour onsite, 24x7 coverage for hardware (H2893E)
- 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6319E)
- Installation with minimum configuration, system-based pricing (U4826E)
- Installation with HP-provided configuration, system-based pricing (U4830E)

ProCurve Switch 3500yl-48G-PWR

Specifications

Ports
1 open module slots
44 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab 1000Base-T Gigabit Ethernet)
Supports a maximum of 4 10-GbE ports
1 RS-232C DB-9 console port
4 dual-personality ports - each port can be used as either an RJ-45 10/100/1000 port (IEEE 802.3 Type 10Base-T; 802.3u Type 100Base-TX; 802.3ab 1000Base-T Gigabit Ethernet) or an open mini-GBIC slot (for use with mini-GBIC transceivers)

Power Supplies

Physical characteristics
Dimensions
16.93(d) x 17.44(w) x 1.73(h) in. (43 x 44.3 x 4.4 cm) (1U height)
Weight
16.09 lb. (7.3 kg)

Memory and processor
10G Module: ARM9 @ 200 MHz; packet buffer size: 36 Mb QDR SDRAM
Exceptions: 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

Performance
Latency:
- 1000 Mb: <3.7 µs (FIFO 64-byte packets)
- 10Gbps: <2.1 µs (FIFO 64-byte packets)

Throughput: up to 110 million pps (64-byte packets)
Routing/switching capacity: 148 Gbps
Switch fabric speed: 173 Gbps
Routing table size: 10,000 entries

Environment
Operating
- Temperature: 32°F to 131°F (0°C to 55°C); 32Â°F to 104Â°F (40Â°C) when used with any X2 10-GbE
- Relative humidity: 15% to 95% @ 104°F (40°C), non-condensing
- Altitude: up to 15,091 ft.(4.6 km)

Non-operating/Storage
- Temperature: -40°F to 158°F (-40°C to 70°C)
- Relative humidity: 15% to 95% @ 149°F (65°C), non-condensing

Acoustic: DIN 45635T.19 per ISO 7779 55.6 dB

Electrical characteristics
The switch automatically adjusts to any voltage between 100-127 and 200-240 volts with either 50 or 60 Hz
Max heat dissipation: 2590 BTU/hr, including the switch and max number of attached PoE devices; switch only is 1,330 BTU/hr
Voltage: 100-127 VAC/200-240 VAC
Current: 10.0 A/5.0 A
Power consumption: 759 W
Frequency: 50/60 Hz

Safety
CSA 22.2 No. 60950;
UL 60950; IEC60950;
EN60950

Emissions
FCC Class A;
EN55022/CISPR-22 Class A;
VCCI Class A

Immunity
EN: EN55024, CISPR 24
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: EN61000-3-2, IEC61000-3-2
Flicker: EN61000-3-3, IEC61000-3-3

Management
ProCurve Manager Plus;
ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)

Standards and protocols
RFC 783 TFTP;
RFC 951 BootP;
RFC 1542 BootP;
RFC 854 Telnet;
RFC 768 UDP;
RFC 792 ICMP;
RFC 793 TCP; RFC 826 ARP;
RFC 2030 Simple Network Time Protocol;
IEEE 802.3x Flow Control;
DHCP Relay;
RFC 3376 IGMPv1/v2/v3;
RFC 2453 RIPv2;
RFC 2328 OSPFv2 (Premium Edge License);
IGMPv3;
IEEE 802.1D Spanning Tree;
IEEE 802.1w Rapid Convergence Spanning Tree;
IEEE 802.1s Multiple Spanning Trees;
IEEE 802.3ad Link Aggregation Control Protocol;
IEEE 802.1AB Link Layer Discovery Protocol;
ANSI/TIA-1057 LLDP Media Endpoint Discovery (MED);
RFC 2474 DiffServ Precedence;
RFC 2597 DiffServ Expedited Forwarding (EF);
RFC 2598 DiffServ Assured Forwarding (AF);
RFC 1492 TACACS+;
RFC 2138 RADIUS;
RFC 2866 RADIUS accounting;
SSHv1/SSHv2 Secure Shell;
Secure Sockets Layer (SSL);
IEEE 802.1X Network Login;
802.3af Power over Ethernet;
IEEE 802.1Q VLAN tagging;
IEEE 802.1Q GVRP;
IEEE 802.1p Priority;
SNMPv1/v2c/v3;
HTML and telnet management;
RFC 1493 Bridge MIB;
PIM Dense Mode (Premium Edge License);
PIM Sparse Mode (Premium Edge License);
RFC 1213 MIB II;
RFC 2096 IP Forwarding Table MIB;
RFC 2737 Entity MIB;
RFC 2863 Evolution of Interface;
RFC 2665 Ethernet MIB;
RFC 3768 VRRP (Premium Edge License);
RFC 2787 VRRP MIB;
RFC 1058 RIP;
RFC 1724 RIPv2 MIB;
RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events);
XRMON; sFlow;
RFC 2021 RMON probe configuration (RMON v2);
RFC 2668 802.3 MAU MIB;
RFC 2613 SMON;
RFC 2674 802.1p and IEEE 802.1Q Bridge MIB;
RFC 1850 OSPF MIB;
RFC 2618 RADIUS Client MIB;
RFC 2620 RADIUS Accounting MIB;
RFC 3046 DHCP Relay Agent Information Option

Notes
When using mini-GBICs with this product, mini-GBICs with revision "B" (product number ends with the letter "B", e.g. J4858B, J4859B) or later are required.
J8177B Gigabit 1000Base-T mini-GBIC is not supported on Switch 3500.

Accessories

ProCurve Gigabit-LH-LC Mini-GBIC (J4860B)
with one 1000Base-LH port; designed for long-distance single-mode fiber connectivity

Ports
1 1000Base-LH port (no IEEE standard exists for 1550 nm optics)
Connector: LC
Duplex: full

Physical characteristics
Dimensions: 2.167 (d) x 0.604 (w) x 0.463 (h) in. (5.5 x 1.53 x 1.18 cm)
Weight: 0.04 lb. (0.02 kg)

Cabling
Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1

Maximum distance
70 km

ProCurve Gigabit-LX-LC Mini-GBIC (J4859B)
with one 1000Base-LX port; designed for long-distance single-mode fiber connectivity, will support multimode fiber connectivity to limited distances

Ports
1 1000Base-LX port (IEEE 802.3z Type 1000Base-LX)
Connector: LC
Duplex: full

Physical characteristics
Dimensions: 2.24 (d) x 0.54 (w) x 0.486 (h) in. (5.69 x 1.37 x 1.23 cm)
Weight: 0.04 lb. (0.02 kg)

Cabling
Either single mode or multimode 62.5/125 µm or 50/125 µm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively
Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1

Maximum distance
10 km (single mode) or 550 m (multimode)

Notes
A mode conditioning patch cord may be needed in some multimode fiber installations.

ProCurve Gigabit-SX-LC Mini-GBIC (J4858B)
with one 1000Base-SX port; designed for short-distance (<550 m max.) multimode fiber connectivity

Ports
1 1000Base-SX port (IEEE 802.3z Type 1000Base-SX)
Connector: LC
Duplex: full

Physical characteristics
Dimensions: 2.24 (d) x 0.54 (w) x 0.486 (h) in. (5.69 x 1.37 x 1.23 cm)
Weight: 0.04 lb. (0.02 kg)

Cabling
62.5/125 µm or 50/125 µm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively

Maximum distance
220 m (62.5 µm core diameter, 160 MHz/km bandwidth)
275 m (62.5 µm core diameter, 200 MHz/km bandwidth)
500 m (50 µm core diameter, 400 MHz/km bandwidth)
550 m (50 µm core diameter, 500 MHz/km bandwidth)

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ProCurve Gigabit 1000Base-T Mini-GBIC (J8177B)
pluggable Gigabit transceiver (RJ-45) for up to 100 m over Cat 5 cable or better

Ports
Connector: RJ-45
Duplex: full
Physical characteristics
Dimensions: 2.56 (d) x 0.55 (w) x 0.57 (h) in. (6.5 x 1.4 x 1.46 cm)
Weight: 0.05 lb. (0.02 kg)
Cabling
1000Base-T: Category 5 (5E or better recommended), 100 ohm differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000Base-T
Maximum distance
100 m
Notes
When used in the ProCurve Switch gl 20-port 10/100/1000 Module (J4908A), the J8177B mini-GBIC can be installed in either the upper or lower mini-GBIC port, but will block access to the other port.
Requires specific code version for support:
- For use with 9300m series modules, requires code 07.08.00a or greater
- For use with 8100fl series modules, requires CY.01.02.0050 or greater
- For use with 5300xl series modules, requires code E.09.11 or greater (excluding E.09.21)
- For use with 4100gl series modules, requires code G.07.69 or greater

Not supported on dual-personality ports.

ProCurve Switch 10-GbE X2-CX4 Transceiver (J8440B)
10-Gigabit X2 transceiver that supports a CX4 connector with distance of 15 m

Ports
Connector: CX4
Duplex: full
Physical characteristics
Dimensions: 3.54 (d) x 1.42 (w) x 0.53 (h) in. (8.99 x 3.61 x 1.35 cm)
Weight: 0.18 lb. (0.08 kg)
Environment
Operating temperature: 32°F to 131°F (0°C to 55°C)
Operating relative humidity: 15% to 95%, non-condensing
Maximum distance
15 m using CX4 cables
300 m using optical media converters and ribbon multimode fiber cable
Notes
Use CX4 10-GbE cable (0.5-15 m) or ProCurve 10-GbE CX4 Media Converter (J8439A)

ProCurve 10-GbE CX4 Media Converter (J8439A)
Optical media converter for CX4 (10G copper) mmf cable up to 300 m

Ports
Duplex: full
Maximum distance
62.5 um multimode cable @ 150 MHz/km = 1-50 meters
50 um multimode cable @ 500 MHz/km = 1-100 meters
50 um multimode cable @ 2000 MHz/km = 1-300 meters
Notes
12 fiber 62.5/125 um (core/cladding) diameter or 12 fiber 50/125 um diameter, multimode ribbon cable with MPO/MTP to MPO/MTP connectors
When used with the ProCurve Switch yl 10-GbE 2p CX4 + 2p X2 Module (J8694A), only use this media converter with the fixed CX4 ports.

ProCurve Switch 3500yl-48G-PWR

ProCurve 10-GbE X2-SC ER Optic (J8438A)
10-Gigabit X2 transceiver that supports ER distance of up to 40km with SC connector

Ports
1 10-Gigabit Ethernet port (IEEE 802.3ae Type 10Gbase-ER 1550 nm serial optics)
Connector: SC
Duplex: full
Physical characteristics
Dimensions: 3.48 (d) x 1.42 (w) x .43 (h) in. (8.84 x 3.61 x 1.09 cm)
Weight: 0.15 lb. (0.07 kg)
Environment
Operating temperature: 32°F to 104°F (0°C to 40°C)
Operating relative humidity: 15% to 95%, non-condensing
Cabling
Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1
Maximum distance
40km with link engineered to standard spec (30km otherwise)
Notes
Conditioning patch cord cables are not supported.

ProCurve 10-GbE X2-SC LR Optic (J8437A)
10-Gigabit X2 transceiver that supports LR distance of 10 km with SC connector

Ports
1 10-Gigabit Ethernet port (IEEE 802.3ae Type 10Gbase-LR 1310 nm serial optics)
Connector: SC
Duplex: full
Physical characteristics
Dimensions: 3.48 (d) x 1.42 (w) x 0.43 (h) in. (8.84 x 3.61 x 1.09 cm)
Weight: 0.16 lb. (0.07 kg)
Environment
Operating temperature: 32°F to 104°F (0°C to 40°C)
Operating relative humidity: 15% to 95%, non-condensing
Cabling
Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1
Maximum distance
9/125 um single-mode cable = 2 m-10 km
Notes
Conditioning patch cord cables are not supported.

ProCurve 10-GbE X2-SC SR Optic (J8436A)
Transceiver that supports 10G SR fiber standard; supports standard 50 u and 62.5 u mmf up to 300 m

Ports
1 10-Gigabit Ethernet port (IEEE 802.3ae Type 10Gbase-SR 850 nm serial optics)
Connector: SC
Duplex: full
Physical characteristics
Dimensions: 3.48 (d) x 1.42 (w) x .43 (h) in. (8.84 x 3.61 x 1.09 cm)
Weight: 0.64 lb. (0.29 kg)
Environment
Operating temperature: 32°F to 104°F (0°C to 40°C)
Operating relative humidity: 15% to 95%, non-condensing
Maximum distance
62.5 um multimode cable @ 160 MHz/km = 2-26 meters
62.5 um multimode cable @ 200 MHz/km = 2-33 meters
50 um multimode cable @ 400 MHz/km = 2-66 meters
50 um multimode cable @ 500 MHz/km = 2-82 meters
50 um multimode cable @ 2000 MHz/km = 2-300 meters
Notes
62.5 um (core/cladding) diameter or 50 um, 850 nm, low metal content, multimode fiber-optic, complying with the ITU-T G.652 and ISO/IEC 793-2 Type B1 standards

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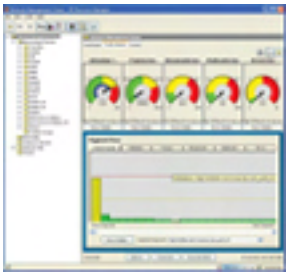
Premium Edge License for Switch 3500 Series (J8993A)

Premium Edge License for Switch 5400 Series (J8994A)



ProCurve Manager Plus 2.1 unlimited license (J9009A)
PCM+ 2.1 unlimited license provides a PCM+ license that does not limit the number of devices managed(It does NOT require the 100 device license).

System requirements
Minimum processor: 2.0 GHz Intel Pentium or equivalent
Recommended processor: 3.0 GHz Intel Pentium or equivalent
Minimum memory: 512 MB RAM
Recommended memory: 1 GB RAM
Minimum disk space: 5 GB
Recommended disk space: 10 GB

Operating system
Microsoft Windows XP Professional, Microsoft Windows XP, Microsoft Windows 2003, Microsoft Windows XP Professional (SP1 or greater)

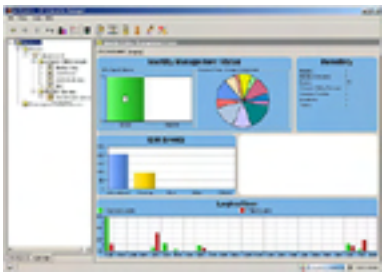
Browsers
Microsoft Internet Explorer version 5.0 or later

Supported platforms
HP OpenView Network Node Manager version 6.41 or 7.01 or 7.5

RADIUS server support
Microsoft IAS

Features
Device auto-discovery
Topology and mapping
Intuitive Explorer-style interface
Usable troubleshooting data and alerts
Device configuration and management
Customize and execute policies across groups
Enhanced network security features
Multiple device configuration management and archiving
Create and configure VLANs across the network
Traffic monitoring and analysis
Auto-configures traffic monitoring of inter-switch links
Software updates with dual flash image support
Modular design for add-in expansion
E-mail/Pager alerts
SNMP trap forwarding
Granular event data via syslog support
OpenView NNM integration

Additional requirements
Additional processing power may be necessary for extensive traffic monitoring



Identity Driven Manager 2.0 base product--500-user license (J9012A)

System requirements
Minimum processor: 2.0 GHz Intel Pentium or equivalent
Recommended processor: 3.0 GHz Intel Pentium or equivalent
Minimum memory: 512 MB RAM
Recommended memory: 1 GB RAM
Minimum disk space: 5 GB
Recommended disk space: 10 GB

Operating system
Microsoft Windows XP Professional (SP1 or greater), Microsoft Windows 2000 Server, Advanced Server or Professional with SP4 or better, Microsoft Windows XP (SP1 or greater), Microsoft Windows 2003 Server

Browsers
Microsoft Internet Explorer version 5.0 or later

Required platforms
HP OpenView Network Node Manager version 6.41 or 7.01 or 7.5

RADIUS server support
Microsoft IAS, Funk Steelbelted RADIUS Server, FreeRADIUS (on Red Hat ES3 or ES4 or SuSe Linux 9)

Features
Intuitive Explorer-style interface
OpenView NNM integration
Application of policies by user identity
-Auto VLAN assignment
-Auto set quality of service by user
-Auto set bandwidth assignment by user
Rule-based access rights deployment
Dynamic rights assignment based on:
-Time
-Location
-User system
Auto-discovery of:
-RADIUS servers
-Realms
-Users

Additional requirements
Large numbers of users may require more disk space.

Power supplies

ProCurve Switch zl 875W Power Supply (J8712A)
Standard 875 W power supply for 5400 series switches. Supplies 273 W for PoE power plus 600 W for switch power.

Physical characteristics
Dimensions: 6.05 (d) x 7.45 (w) x 5.1 (h) in. (15.37 x 18.92 x 12.95 cm)
Weight: 7.05 lb. (3.2 kg)

Electrical characteristics
Voltage: 100-127 VAC/200-240 VAC
Maximum current: 12 A/5.7 A
Frequency range: 50/60 Hz
Power: 875 W

Notes
J8712A supplies 600 W chassis power and 273 W PoE power.
One J8712A can power the J8697A chassis.
Two J8712A supplies are required to power the J8698A chassis.
See the ordering guide for more details on power supply selection for PoE power.

ProCurve Switch 3500yl-48G-PWR

ProCurve Switch zl 1500W Power Supply (J8713A)
High-power 1500 W power supply for 5400 series switches. Supplies 900 W for PoE power plus 600 W for switch power. 220 V only.

Physical characteristics
Dimensions: 6.05 (d) x 7.45 (w) x 5.1 (h) in. (15.37 x 18.92 x 12.95 cm)
Weight: 7.5 lb. (3.4 kg)
Electrical characteristics
Maximum current: 10 A
Frequency range: 50/60 Hz
Power: 1500 W
Notes
220 V only. Installation of the J8713A reduces the chassis altitude specification to 10,000ft (3677m).
J8713A supplies 600 W chassis power and 900 W PoE power.
See the Ordering Guide for more details on power supply selection for PoE power.
Units shipped to North America include a NEMA L6-20P twist lock power cord.
Non-locking NEMA 6-20P optionally available - see the Ordering Guide for more details.

yl Modules

ProCurve Switch yl 10-GbE 2P CX4 + 2P X2 Module (J8694A)
10-GbE module with two fixed CX4 ports and two X2 slots for ProCurve Switch 3500yl series and ProCurve Switch 6200yl-24G-mGBIC

Ports
2 open transceiver slots
2 10-Gigabit Ethernet ports (IEEE 802.3ak Type 10Gbase-CX4)
Duplex: full
Physical characteristics
Dimensions: 7.76 (d) x 7.52 (w) x 14.29 (h) in. (19.7 x 19.1 x 36.3 cm)
Weight: 1.54 lb. (.7 kg)
Environment
Operating temperature: 32°F to 131°F (0°C to 55°C)
Operating relative humidity: 15% to 95%, non-condensing
Non-operating/Storage temperature: -40°F to 158°F (-40°C to 70°C)
Non-operating/Storage relative humidity: 15% to 90%, non-condensing

Transceivers supported (ordered separately)
- ProCurve 10-GbE X2-SC LR Optic
- ProCurve Switch 10-GbE X2-CX4 Transceiver
- ProCurve 10-GbE X2-SC SR Optic
- ProCurve 10-GbE X2-SC ER Optic
- ProCurve 10-GbE CX4 Media Converter

Maximum distance
CX4: 15 m (CX4 cable) or 300 m (media converter with ribbon MMF)
Notes
Only the two fixed CX4 ports on this module support ProCurve 10-GbE CX4 Media Converter (J8439A).
Operating temperature is 32Â°F to 104Â°F (0Â°C to 40Â°C) if any X2 10-GbE optic or transceiver is inserted in any X2 slot.
One 0.5m CX4 cable is included.

ProCurve Switch 3500yl-48G-PWR

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

10-GbE module with two fixed CX4 ports and two X2 slots for ProCurve Switch 3500yl series and ProCurve Switch 6200yl-24G-mGBIC

Ports

2 open transceiver slots

2 10-Gigabit Ethernet ports (IEEE 802.3ak Type 10Gbase-CX4)

Duplex: full

Physical characteristics

Dimensions: 7.76 (d) x 7.52 (w) x 14.29 (h) in. (19.7 x 19.1 x 36.3 cm)

Weight: 1.54 lb. (.7 kg)

Environment

Operating temperature: 32°F to 131°F (0°C to 55°C)

Operating relative humidity: 15% to 95%, non-condensing

Non-operating/Storage temperature: -40°F to 158°F (-40°C to 70°C)

Non-operating/Storage relative humidity: 15% to 90%, non-condensing

Transceivers supported (ordered separately)

- ProCurve 10-GbE X2-SC LR Optic
- ProCurve Switch 10-GbE X2-CX4 Transceiver
- ProCurve 10-GbE X2-SC SR Optic
- ProCurve 10-GbE X2-SC ER Optic
- ProCurve 10-GbE CX4 Media Converter

Maximum distance

CX4: 15 m (CX4 cable) or 300 m (media converter with ribbon MMF)

Notes

Only the two fixed CX4 ports on this module support ProCurve 10-GbE CX4 Media Converter (J8439A).

Operating temperature is 32Â°F to 104Â°F (0Â°C to 40Â°C) if any X2 10-GbE optic or transceiver is inserted in any X2 slot.

One 0.5m CX4 cable is included.

zl Modules

ProCurve Switch 5400zl 24p Mini-GBIC Module (J8706A)

24-port mini-GBIC module for 5400 series switches

Ports

24 open mini-GBIC slots

Physical characteristics

Dimensions: 10.3 (d) x 8.13 (w) x 1.75 (h) in. (26.16 x 20.65 x 4.45 cm)

Weight: 2.01 lb. (0.91 kg)

Environment

Operating temperature: 32°F to 104°F (0°C to 40°C)

Mini-GBICs supported (ordered separately)

- ProCurve Gigabit-SX-LC Mini-GBIC
- ProCurve Gigabit-LX-LC Mini-GBIC
- ProCurve Gigabit-LH-LC Mini-GBIC
- ProCurve Gigabit 1000Base-T Mini-GBIC

Notes

This product requires revision "B" or later mini-GBICs (product number ends with the letter "B", e.g. J4858B, J4859B).

When installed in a 5400 chassis, the J8706A module limits the operating temperature range of the chassis to 32Â°F to 104Â°F (0Â°C to 40Â°C).

Module available mid-2006

ProCurve Switch 3500yl-48G-PWR

ProCurve Switch 5400zl 4p 10-GbE CX4 Module (J8708A)
4-port 10-GbE CX4 module for 5400 series switches. No CX4 cables supplied with this module.

Ports
4 10-Gigabit Ethernet ports (IEEE 802.3ak Type 10Gbase-CX4)
Connector: CX4
Physical characteristics
Dimensions: 10.3 (d) x 8.13 (w) x 1.75 (h) in. (26.16 x 20.65 x 4.45 cm)
Weight: 1.74 lb. (0.79 kg)
Environment
Operating temperature: 32°F to 131°F (0°C to 55°C)

Transceivers supported (ordered separately)
• ProCurve 10-GbE CX4 Media Converter
Maximum distance
15 m using CX4 cable
300 m using optical media converters and multimode fiber cable
Notes
Use CX4 10-GbE cable (0.5 m-15 m) or ProCurve 10-GbE CX4 Media Converter (J8439A)
• No CX4 cables are included with this module.
Available mid-2006

ProCurve Switch 5400zl 20p 10/100/1000 + 4p Mini-GBIC Module (J8705A)
20-port 10/100/1000 PoE + 4-port mini-GBIC module for 5400 series switches

Ports
4 open mini-GBIC slots
ProCurve Auto MDI-X: No (ports are IEEE Auto-MDI/MDI-X)
IEEE Auto-MDI: Yes
Connector: RJ-45
Duplex: half or full
Physical characteristics
Dimensions: 10.3 (d) x 8.13 (w) x 1.75 (h) in. (26.16 x 20.65 x 4.45 cm)
Weight: 2.2 lb. (1 kg)

Environment
Operating temperature: 32°F to 104°F (0°C to 40°C)
Mini-GBICs supported (ordered separately)
• ProCurve Gigabit-SX-LC Mini-GBIC
• ProCurve Gigabit-LX-LC Mini-GBIC
• ProCurve Gigabit-LH-LC Mini-GBIC
• ProCurve Gigabit 1000Base-T Mini-GBIC
Notes
This product requires revision "B" or later mini-GBICs (product number ends with the letter "B", e.g. J4858B, J4859B).
When installed in a 5400 chassis, the J8705A module limits the operating temperature range of the chassis to 32Â°F to 104Â°F (0Â°C to 40Â°C).

ProCurve Switch 5400zl 24p 10/100/1000 PoE Module (J8702A)
24-port 10/100/1000 PoE module for 5400 series switches

Ports
ProCurve Auto MDI-X: No (ports are IEEE Auto-MDI/MDI-X)
IEEE Auto-MDI: Yes
Connector: RJ-45
Duplex: half or full

Physical characteristics
Dimensions: 10.3 (d) x 8.13 (w) x 1.75 (h) in. (26.16 x 20.65 x 4.45 cm)
Weight: 2.16 lb. (0.98 kg)
Cabling
1000Base-T: Category 5 (5E or better recommended), 100 ohm differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000Base-T

ProCurve Switch 3500yl-48G-PWR

ProCurve Switch 5400zl 4p 10-GbE X2 Module (J8707A)

4-port 10-GbE X2 module for 5400 series switches

Ports

4 open transceiver slots

Physical characteristics

Dimensions: 10.3 (d) x 8.13 (w) x 1.75 (h) in. (26.16 x 20.65 x 4.45 cm)

Weight: 1.74 lb. (0.79 kg)

Environment

Operating temperature: 32°F to 104°F (0°C to 40°C)

Transceivers supported (ordered separately)

- ProCurve 10-GbE X2-SC LR Optic
- ProCurve Switch 10-GbE X2-CX4 Transceiver
- ProCurve 10-GbE X2-SC SR Optic
- ProCurve 10-GbE X2-SC ER Optic

Notes

When installed in a 5400 chassis, the J8707A module limits the operating temperature range of the chassis to 32Â°F to 104Â°F (0Â°C to 40Â°C).

06/16/06

To learn more, visit www.procurve.com

Information is subject to change without notice