Datasheet

HP ProCurve Switch 8212zl

The ProCurve Switch 8212zl is a high-performance, highly available, chassis switch platform that enables unified core-to-edge adaptive network solutions and delivers to market the industry’s first core switch with a lifetime warranty. It has platform and software high-availability features to ensure system continuity and enhance network productivity. With a full range of connectivity options, comprehensive networking features, advanced security tools, and unified core-to-edge infrastructure and management tools, the Switch 8212zl reduces complexity and provides lower cost of ownership. The ProCurve Switch 8212zl is ideal for customers seeking to cost-effectively meet the stringent availability requirements of today’s converged network environments without sacrificing performance or flexibility.
HP ProCurve Switch 8212zl

Features and benefits

Management

**NEW Remote intelligent mirroring**: mirrors selected ingress/egress traffic based on ACL, port, MAC address, or VLAN to a local or remote 8200zl/6200yl/5400zl/3500yl switch anywhere on the network

- **RMON, XRMON, and sFlow v5**: provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP)**: automated device discovery protocol for easy mapping by network management applications
- **Command authorization**: leverages RADIUS to link a custom list of CLI commands to individual network administrator’s login; also provides an audit trail
- **Friendly port names**: allow assignment of descriptive names to ports
- **Dual flash images**: provides independent primary and secondary OS files for backup while upgrading or fine-tuning the switch configuration
- **Multiple configuration files**: multiple configuration files can be stored to the flash image
- **Uni-Directional Link Detection (UDLD)**: monitors cable between two switches and shuts down the ports on both ends if the cable is broken turning the bi-directional link into uni-directional; this prevents network problems such as loops
- **Unified Core-to-Edge features**: ProCurve portfolio-common feature implementation for faster solution deployment
- **ProCurve Core-to-Edge Device/Network Management tools**: ProCurve portfolio-common device-level tools (CLI, Web GUI, Menu) plus seamless integration into ProCurve Manager Plus (PCM+)/Identity Driven Manager (IDM) network management deployments

**NEW IPv6**:
- **IPv6 host**: the switches can be managed and deployed at the edge of IPv6 networks
- **Dual stack (IPv4/IPv6)**: provides transition mechanism from IPv4 to IPv6; supports connectivity for both protocols
- **MLD snooping**: forwards IPv6 multicast traffic to the appropriate interface; prevents IPv6 multicast traffic from flooding the network
- **IPv6 ACL/QoS**: supports ACL and QoS for IPv6 network traffic
- **IPv6 ready**: the switch hardware can support IPv6 QoS, ACL, routing, tunneling, and security; these features will be available when enabled via software update in follow-on releases

**Performance**

- **High-speed/capacity architecture**: 692 Gbps crossbar switching fabric provides intra- and inter-module switching with 428 million pps throughput on the purpose-built ProVision ASICs
- **Selectable queue configurations**: increase performance by selecting the number of queues and associated memory buffering that best meet the requirements of your network applications
- **Scalable system design**: chassis architecture/backplane provides built-in performance capacity/headroom to support next-generation high-density/high-speed connectivity

**Resiliency and high availability**

- **Proven ASIC and system architecture**: the ProCurve ProVision ASIC and platform architecture, leveraged from ProCurve’s successful 5400zl/3500yl/6200yl families of switches, minimizes technology risk and ensures reliable support and flexibility
- **ProCurve zl family componentry**: employs market-proven Intelligent Edge Switch interface modules, optics, and power supplies to minimize technology risk and enhance system reliability
- **Virtual Router Redundancy Protocol**: VRRP allows groups of two routers to dynamically back each other up to create highly available routed environments
- **IEEE 802.1s Multiple Spanning Tree Protocol**: provides high link availability in multiple VLAN environments by allowing multiple spanning trees; encompasses IEEE 802.1D Spanning Tree Protocol and IEEE 802.1w Rapid Spanning Tree Protocol

**Connectivity**

- **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
- **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
- **Auto-MDIX**: automatically adjusts for straight-through or crossover cables on all 10/100/1000 ports
- **High-density port connectivity**: 12 interface module slots, up to 288 wire-speed 10/100/1000 PoE-enabled ports/48 10-GbE ports per system
- **ProCurve Core-to-Edge accessories**: ProCurve Intelligent Edge family-common interface and service modules, Gigabit optics/10-GbE transceivers, and power supplies enable sparing simplicity
HP ProCurve Switch 8212zl

- **IEEE 802.3ad Link Aggregation Control Protocol (LACP) and ProCurve trunking**: support up to 60 trunks, each with up to 8 links (ports) per trunk; trunking across modules is supported
- **Hot-swappable modules**: interface, management, and fabric modules as well as mini-GBIC optics and power supplies can be removed, swapped, or added to the system without interrupting ongoing switch operations
- **Redundant, scalable power design**: add/deploy redundant power supplies to expand power capacity and provide redundancy to ensure network productivity
- **Redundant switch fabric**: dual, performance load-sharing fabric modules provide enhanced system availability and seamless system resiliency
- **Redundant switch management**: dual management modules provide active/standby operation to enhance system availability
- **Redundant, hot-swappable cooling**: redundant fan design and hot-swappable fan tray ensure continuity of operation in case of a single fan failure
- **Passive system design**: passive chassis backplane (no traffic-forwarding active componentry) ensures system reliability and reduces impact of component failure

**Layer 2 switching**

- **NEW IEEE 802.1ad Q-in-Q**: increases the scalability of Ethernet network by providing a hierarchical structure; connects multiple LANs on high-speed campus or metro network
- **ProCurve switch meshing**: dynamically load-balances across multiple active redundant links to increase available aggregate bandwidth
- **VLAN support and tagging**: supports the IEEE 802.1Q standard and 2,048 VLANs simultaneously
- **IEEE 802.1v protocol VLANs**: isolate select non-IPv4 protocols automatically into their own VLANs
- **GARP VLAN Registration Protocol**: allows automatic learning and dynamic assignment of VLANs

**Layer 3 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
- **Loopback interface address**: defines an address in RIP and OSPF that can always be reachable, improving diagnostic capability

**Layer 3 routing**

- **Static IP routing**: provides manually configured routing; includes ECMP capability
- **RIP**: provides RIPv1 and RIPv2 routing
- **OSPF**: includes host-based ECMP to provide link redundancy/scalable bandwidth and NSSA

**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 or bridged interfaces, without requiring external appliances
- **ICMP throttling**: defeats ICMP denial-of-service attacks by enabling any switch port to automatically throttle ICMP traffic
- **Multiple user authentication methods**:
  - **IEEE 802.1X**: industry-standard way of user authentication using an IEEE 802.1X supplicant on the client in conjunction with a RADIUS server
  - **Web-based authentication**: authenticates from Web browser for clients that do not support 802.1X supplicant; customized remediation can be processed on an external Web server
  - **MAC-based authentication**: client is authenticated with the RADIUS server based on client’s MAC address
- **Authentication flexibility**:
  - **Multiple IEEE 802.1X users per port**: provides authentication of multiple IEEE 802.1X users per port; prevents user "piggybacking" on another user's IEEE 802.1X authentication
  - **Concurrent IEEE 802.1X, Web, and MAC authentication schemes per port**: switch port will accept up to 32 sessions of IEEE 802.1X, Web, and MAC authentications
- **Access control lists (ACLs)**: provide filtering based on the IP field, source/destination IP address/subnet, and source/destination TCP/UDP port number on a per-VLAN or per-port basis
- **Identity-driven ACL**: enables implementation of a highly granular and flexible access security policy and VLAN assignment specific to each authenticated network user
- **DHCP protection**: blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks
- **STP BPDU port protection**: blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks
- **Dynamic IP lockdown**: works with DHCP protection to block traffic from unauthorized hosts, preventing IP source address spoofing
**HP ProCurve Switch 8212zl**

- **Dynamic ARP protection**: blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
- **Detection of malicious attacks**: monitors ten types of network traffic and sends a warning when an anomaly that potentially can be caused by malicious attacks is detected
- **Port security**: allows access only to specified MAC addresses, which can be learned or specified by the administrator
- **MAC address lockout**: prevents configured particular MAC addresses from connecting to the network
- **Source-port filtering**: allows only specified ports to communicate with each other
- **RADIUS/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 a customized security policy when users log in to the switch

**NEW USB Secure Autorun (requires HP ProCurve Manager Plus)**: deploys, diagnoses, and updates switch using USB flash drive; works with secure credential to prevent tampering

**NEW STP Root Guard**: protects root bridge from malicious attack or configuration mistakes

**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**:
  - **Port-based rate limiting**: per-port ingress/egress enforced maximum bandwidth
  - **Classifier-based rate limiting**: use ACL to enforce maximum bandwidth for ingress traffic on each port
  - **Guaranteed minimum**: per-port, per-queue egress-based guaranteed minimum bandwidth
- **Class of Service (CoS)**: sets the IEEE 802.1p priority tag based on IP address, IP Type of Service (ToS), L3 protocol, TCP/UDP port number, source port, and DiffServ

**Flexibility**
- **ProCurve Wireless Edge Services zl Module**: offers secure, advanced wireless services with simplified management and unified wired and wireless operation across the network
- **Complete feature set**: Gigabit PoE for edge VoIP solutions, scalable 10-GbE for enterprise-class distribution-layer implementations, advanced wireless management for comprehensive mobility solutions, and critical high-availability features for mid-market core network deployments
- **Programmable ASIC design**: allows seamless addition of new QoS and security features over time without costly hardware upgrades

**Convergence**
- **IP multicast routing**: 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

**NEW RADIUS VLAN for voice**: uses standard RADIUS attribute and LLDP-MED to automatically configure VLAN for IP phones

**NEW PoE allocations**: supports multiple methods (automatic, IEEE 802.3af class, LLDP-MED, or user specified) to allocate PoE power for more efficient energy savings
## Specifications

### Included accessories

- 1 HP ProCurve Switch 8200zl Management Module (J9092A)
- 2 HP ProCurve Switch 8200zl Fabric Module (J9093A)
- 1 HP ProCurve Switch 8200zl System Support Module (J9095A)
- 1 HP ProCurve Switch 8212zl Chassis/Fan Tray (J9091A)

### Ports

- 12 open module slots
- Supports a maximum of 288 auto-sensing 10/100/1000 ports or 48 10-GbE ports or 288 mini-GBICs, or a combination

### Power supplies

- 2 x required
- 4 open power supply slots

### Physical characteristics

#### Dimensions

- 18.7(d) x 17.5(w) x 15.6(h) in. (47.5 x 44.45 x 39.62 cm) (9U height)

#### Weight

- 50.45 lb. (22.88 kg)

### Memory and processor

#### Gigabit Module

- ARM9 @ 200 MHz; packet buffer size: 144 Mb QDR SDRAM

#### 10G Module

- ARM9 @ 200 MHz; packet buffer size: 36 Mb QDR SDRAM

#### Management Module

- 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. Optional 4-post cabinet rail available (see Switch 8212zl Ordering Guide).

### Performance

#### 1000 Mb Latency

- < 3.7 µs (FIFO 64-byte packets)

#### 10 Gbps Latency

- < 2.1 µs (FIFO 64-byte packets)

#### Throughput

- up to 428 million pps

#### Routing/Switching capacity

- 692 Gbps

#### Routing table size

- 10000 entries

#### MAC address table size

- 64000 entries

### Environment

#### Operating temperature

- 32°F to 104°F (0°C to 40°C)

#### Operating relative humidity

- 15% to 95% @ 131°F (55°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 10000 ft. (3.1 km)

#### Acoustic

- Power: 64.0 dB; ISO 7779, ISO 9296

### Electrical characteristics

#### Description

- Chassis ships without power supplies. Four power-supply slots available; two different power-supply products available. See power-supply products for additional specifications.

#### Maximum heat dissipation

- 4900 BTU/hr (5170 kJ/hr), (max non-PoE); 7400 BTU/hr (7807 kJ/hr) (max PoE)

#### Voltage

- 100-127 / 200-240 VAC

#### Frequency

- 50 / 60 Hz
## Notes

Power supplies must be ordered separately. Two J8712A or J8713A supplies are required to power the J8715A base system.

## Safety

- CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950; IEC 60825

## Emissions

- FCC Class A; FCC part 15 Class A; ICE-003, Canadian Radio Interface Regulation; VCCI Class A; EN 55022/CISPR 22 Class A

## Immunity

### EN
- EN 55024, CISPR 24

### ESD
- IEC 61000-4-2; 4 kV CD, 8 kV AD

### Radiated
- IEC 61000-4-3; 3 V/m

### EFT/Burst
- IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)

### Surge
- IEC 61000-4-5; 1 kV/2 kV AC

### Conducted
- IEC 61000-4-6; 3 V

### Power frequency magnetic field
- IEC 61000-4-8; 1 A/m, 50 or 60 Hz

### Voltage dips and interruptions
- IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods

### Harmonics
- EN 61000-3-2, IEC 61000-3-2

### Flicker
- EN 61000-3-3, IEC 61000-3-3

## Management

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

## Notes

- Interface/Service modules, power supplies, and redundant management module ordered separately
- RS-232C console port via an RJ-45 connector
- 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 (UF807E)
- 3-year, 4-hour onsite, 24x7 coverage for hardware (UF808E)
- 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UF809E)
- 3-year, 24x7 SW phone support, software updates (UF810E)
- Installation with minimum configuration, system-based pricing (U4828E)
- Installation with HP-provided configuration, system-based pricing (U4832E)

Refer to the HP Web site at [www.procurve.com/services](http://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

<table>
<thead>
<tr>
<th>Device management</th>
<th>RFC 1591 DNS (client)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Javascript Management</td>
<td>RFC 3376 IGMPv3 (host joins only)</td>
</tr>
<tr>
<td>HTML and telnet management</td>
<td>RFC 3973 IPv6 Dense Mode</td>
</tr>
<tr>
<td></td>
<td>RFC 2930 IPv6 Path MTU Discovery</td>
</tr>
<tr>
<td>IPv6</td>
<td>RFC 3790 IPv6 Specification</td>
</tr>
<tr>
<td></td>
<td>RFC 3791 IPv6 Multicast Listener</td>
</tr>
<tr>
<td></td>
<td>RFC 3792 IPv6 Discovery (MLD) for IPv6</td>
</tr>
<tr>
<td></td>
<td>RFC 3793 IPv6 Remote Operations MIB (Ping only)</td>
</tr>
<tr>
<td></td>
<td>RFC 3794 IPv6 Addressing Architecture</td>
</tr>
<tr>
<td></td>
<td>RFC 3795 IPv6 Neighbor Discovery</td>
</tr>
<tr>
<td></td>
<td>RFC 3796 IPv6 Stateless Address Auto-configuration</td>
</tr>
<tr>
<td></td>
<td>RFC 3797 IPv6 Stateful Address Auto-configuration</td>
</tr>
<tr>
<td></td>
<td>RFC 3798 IPv6 Static Address Auto-configuration</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General protocols</th>
<th>RFC 768 UDP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RFC 792 ICMP</td>
</tr>
<tr>
<td></td>
<td>RFC 793 TCP</td>
</tr>
<tr>
<td></td>
<td>RFC 826 ARP</td>
</tr>
<tr>
<td></td>
<td>RFC 854 TELNET</td>
</tr>
<tr>
<td></td>
<td>RFC 866 Time Protocol</td>
</tr>
<tr>
<td></td>
<td>RFC 951 BOOTP</td>
</tr>
<tr>
<td></td>
<td>RFC 1058 RIPv1</td>
</tr>
<tr>
<td></td>
<td>RFC 1350 TFTP Protocol (revision 2)</td>
</tr>
<tr>
<td></td>
<td>RFC 1519 CIDR</td>
</tr>
<tr>
<td></td>
<td>RFC 1542 BOOTP Extensions</td>
</tr>
<tr>
<td></td>
<td>RFC 2030 Simple Network Time Protocol (SNTP) v4</td>
</tr>
<tr>
<td></td>
<td>RFC 2453 RIPv2</td>
</tr>
<tr>
<td></td>
<td>RFC 2548 (MS-RAS-Vendor only)</td>
</tr>
<tr>
<td></td>
<td>RFC 3046 DHCP Relay Agent Information Option</td>
</tr>
<tr>
<td></td>
<td>RFC 3576 Ext to RADIUS (CoA only)</td>
</tr>
<tr>
<td></td>
<td>RFC 3768 VRRP</td>
</tr>
<tr>
<td></td>
<td>RFC 4675 RADIUS VLAN &amp; Priority</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IP multicast</th>
<th>RFC 2362 IPv4 Sparse Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RFC 3376 IGMPv3 (host joins only)</td>
</tr>
<tr>
<td></td>
<td>RFC 3973 IPv6 Dense Mode</td>
</tr>
<tr>
<td></td>
<td>RFC 3790 IPv6 Path MTU Discovery</td>
</tr>
<tr>
<td></td>
<td>RFC 3791 IPv6 Multicast Listener</td>
</tr>
<tr>
<td></td>
<td>RFC 3792 IPv6 Discovery (MLD) for IPv6</td>
</tr>
<tr>
<td></td>
<td>RFC 3793 IPv6 Remote Operations MIB (Ping only)</td>
</tr>
<tr>
<td></td>
<td>RFC 3794 IPv6 Addressing Architecture</td>
</tr>
<tr>
<td></td>
<td>RFC 3795 IPv6 Neighbor Discovery</td>
</tr>
<tr>
<td></td>
<td>RFC 3796 IPv6 Stateless Address Auto-configuration</td>
</tr>
<tr>
<td></td>
<td>RFC 3797 IPv6 Stateful Address Auto-configuration</td>
</tr>
<tr>
<td></td>
<td>RFC 3798 IPv6 Static Address Auto-configuration</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Network management</th>
<th>RFC 2665 Ethernet-Like-MIB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RFC 2688 803 MAU MIB</td>
</tr>
<tr>
<td></td>
<td>RFC 2674 802.1p and IEEE 802.1Q Bridge MIB</td>
</tr>
<tr>
<td></td>
<td>RFC 2737 Entity MIB (Version 2)</td>
</tr>
<tr>
<td></td>
<td>RFC 2787 VRRP MIB</td>
</tr>
<tr>
<td></td>
<td>RFC 2863 The Interfaces Group MIB</td>
</tr>
<tr>
<td></td>
<td>RFC 2925 Ping MIB</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OSPF</th>
<th>RFC 2328 OSPFv2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RFC 3101 OSPF NSSA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QoS/Cos</th>
<th>RFC 2474 DiffServ Precedence, including 8 queues/port</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RFC 2597 DiffServ Assured Forwarding (AF)</td>
</tr>
<tr>
<td></td>
<td>RFC 2598 DiffServ Expedited Forwarding (EF)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Security</th>
<th>RFC 1492 TACACS+</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RFC 2865 RADIUS (client only)</td>
</tr>
<tr>
<td></td>
<td>RFC 2866 RADIUS Accounting Secure Sockets Layer (SSL)</td>
</tr>
<tr>
<td></td>
<td>SSHv2 Secure Shell</td>
</tr>
</tbody>
</table>
HP ProCurve Switch 8212zl accessories

- HP ProCurve Switch zl 875 W Power Supply (J8712A)
- HP ProCurve Switch zl 1500 W Power Supply (J8713A)
- HP ProCurve Switch zl Power Supply Shelf (J8714A)
- HP ProCurve 100-FX SFP-LC Transceiver (J9054B)
- **NEW** HP ProCurve 100-BX-D SFP-LC Transceiver (J9099B)
- **NEW** HP ProCurve 100-BX-U SFP-LC Transceiver (J9100B)
- HP ProCurve Gigabit-SX-LC Mini-GBIC (J4858C)
- HP ProCurve Gigabit-LX-LC Mini-GBIC (J4859C)
- HP ProCurve Gigabit-LH-LC Mini-GBIC (J4860C)
- HP ProCurve Gigabit 1000Base-T Mini-GBIC (J8177C)
- **NEW** HP ProCurve 1000-BX-D SFP-LC Mini-GBIC (J9142B)
- **NEW** HP ProCurve 1000-BX-U SFP-LC Mini-GBIC (J9143B)
- HP ProCurve 10-GbE X2-SC SR Optic (J8436A)
- **NEW** HP ProCurve 10-GbE X2-SC LR Optic (J9144A)
- HP ProCurve 10-GbE X2-SC ER Optic (J8437A)
- HP ProCurve 10-GbE X2-CX4 Transceiver (J8440B)
- HP ProCurve 10-GbE CX4 Media Converter (J8439A)
- HP ProCurve Threat Management Services zl Module with 1-year IDS/IPS Subscription (J9156A)
- HP ProCurve Threat Management Services 1-year IPS Subscription (J9157A)
- HP ProCurve Threat Management Services 2-year IDS/IPS Subscription (J9158A)

For more information

To learn more about HP ProCurve Networking, please visit ProCurve.com

© 2008 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein. January 2009