

ProCurve Networking by HP

ProCurve Switch 8212zl



(shown with optional modules)

Introducing the ProCurve Switch 8212zl—a next-generation core switch with the robust features to meet the demands of highly converged networks while reducing complexity and offering dramatically lower cost of ownership¹.

¹ Lower acquisition costs and lower ongoing, explicit support and service costs provide lower overall cost of ownership.

The ProCurve Switch 8212zl lets customers take advantage of a comprehensive network platform optimized from the core to the edge, across both wired and wireless networks, with common modules, accessories, software, and management tools—all with lifetime warranty[♦].

Based on the industry-proven ProCurve ProVision™ ASIC, the Switch 8212zl delivers a high-performance core solution that expands ProCurve's family of award-winning 5400zl, 3500yl, and 6200yl switches. This family of switches offers unified network operation, management, and support from the core to the edge. The result is reduced complexity and lower cost of ownership for enterprise networks.

♦ For as long as you own the product, with next-business-day advance replacement (available in most countries). For details, refer to the ProCurve Software License, Warranty, and Support booklet at www.hp.com/rnd/support/warranty/index.htm.



Key Benefits

Unified Core to Edge

- Based on ProVision ASIC architecture
- Shared platform architecture with a field-tested track record of reliability

Reduced Complexity and Lower Cost of Ownership

- Unified infrastructure—core to edge
- Shared management platform, wired and wireless
- Lower ongoing support costs through lifetime warranty[♦]

Secure, Reliable Performance

- Built-in ProCurve ProActive Defense capabilities
- Enterprise-level performance and features for 500 to 10,000 users
- High-availability features for network peace of mind

The Switch 8212zl combines high performance with comprehensive networking and security features in a highly scalable, modular chassis solution. It provides platform and software high-availability features that enhance system reliability and ensure network continuity.

As the latest expression of ProCurve's Adaptive Networks vision, the Switch 8212zl helps organizations fortify security, increase productivity, and reduce complexity—allowing them to compete and thrive.

Unified Core to Edge

ProVision ASIC: power and performance at the core of the core

ProCurve's Adaptive Network vision—networks that adapt to the needs of users, applications, and organizations—began with the ProCurve 5400zl, 3500yl, and 6200yl intelligent edge switches, which leverage ProCurve's ProVision ASIC.

The ProVision ASIC combines high-end wire-speed capabilities and intelligence, integrating sophisticated switching functionality in a single, highly reliable, high-performance chip. The ProVision ASIC also delivers built-in resiliency features that can mitigate both error conditions and malicious network attacks.

The ProVision ASIC provides a highly integrated architecture in which functions that are typically hosted in off-chip componentry—such as system processor, memory (e.g., TCAM, input), packet classifier, MAC, and network processor—are engineered into a single ASIC platform.

In addition to a breadth of features that enhance security and system reliability, the ProVision ASIC provides the Switch 8212zl with investment protection through its programmable network processor. Based on patented technology from Hewlett-Packard, new algorithms can be programmed into the ASIC to enable new QoS classifiers for fast, efficient, deep data packet inspection. This capability allows the Switch 8212zl to seamlessly adapt to new application and policy requirements over time.

The ProVision ASIC architecture—included in the 5400zl, 3500yl, and 6200yl intelligent edge switches, and now in the Switch 8212zl—represents an infrastructure solution that delivers consistent operation and flexible deployment from the core to the edge.

Reduced Complexity and Lower Cost of Ownership

Unified infrastructure—core to edge

By sharing the ProVision ASIC, platform architecture, modules, accessories, software, and management tools with the award-winning ProCurve Switch 5400zl intelligent edge series, the Switch 8212zl extends a unified core to edge, wired and wireless solution while reducing complexity and lowering cost of ownership.

The common ProVision ASIC-based architecture provides interoperability and predictable behavior with the Switch 8212zl at the core of a complete ProCurve network solution. Network managers can take advantage of common networking, security, QoS, and resiliency features in a highly integrated, programmable and flexible architecture to simplify network operation. Instead of point technologies with vendor/platform-specific idiosyncrasies that result in complex and unproductive management, ProCurve's system deployment and even code image management and maintenance are unified.

The Switch 8212zl shares interface/service modules, power supplies, and optics/transceivers with the ProCurve Switch 5400zl series. Not only does this improve platform flexibility, but it also enables simplified and lower-cost component sparing strategies. It also allows current 5400zl customers to leverage existing investments and migrate cost-effectively to Switch 8212zl-based deployments, resulting in lower operational costs and streamlined network operations.

Shared network management core to edge, wired and wireless

By using a set of device-level management tools (CLI, Web GUI, Menu) common with the 5400zl, 3500y, and 6200yl platforms, the 8212zl simplifies network-wide management and improves ongoing management effectiveness and efficiency.

The Switch 8212zl can be deployed and efficiently managed using ProCurve Manager Plus (PCM+), a suite of device- and network-level management tools that provide a network-wide common look and feel, with single-pane-of-glass network administration. This provides unified management across the entire network—both wired and wireless—improving the effectiveness of network administration and making integration of IT-wide network management a snap.

- ProCurve Mobility Manager (PMM), a plug-in module for PCM+, provides wireless access point configuration and management, including rogue device detection and alerts, wireless client association and health visibility, and template-driven device group configuration and management.
- ProCurve Identity Driven Manager (IDM) access control software empowers network managers to dynamically manage user access, devices, and traffic from a simple, top-down perspective.
- ProCurve Network Immunity Manager (NIM) network threat management software enables detection and automated response to threats such as virus attacks to maximize network availability.

Lower costs of ownership and lifetime warranty

The Switch 8212zl delivers great value with enterprise-level performance, reliability, scalability, and high-availability features for mainstream enterprise environments of 500 to 10,000 users—and it slashes ongoing ownership costs for sparing, training, and network management.

With its industry-leading lifetime warranty and unified core to edge architecture, ProCurve is revolutionizing the customer ownership model by reducing long-term support costs.

Secure, Reliable Performance

ProActive Defense

The Switch 8212zl takes advantage of ProCurve's ProActive Defense strategy, which uniquely combines offensive and defensive network security strategies within a trusted network infrastructure. Elements of the ProActive Defense strategy include:

- **Secure infrastructure:** the platform for automation of both the proactive and defensive aspects of ProActive Defense; automatically detects anomalous behaviors
- **Access control:** utilizes Identity Driven Manager (IDM) for enforcing dynamic per-user policies including ACLs, QoS, and rate limiting; support for standards such as IEEE 802.1X, Web Auth, MAC Auth, TNC, and IETF RADIUS Extensions
- **Network immunity:** uses ProCurve Manager Plus (PCM+) network management software, which includes advanced policy-based device and traffic management; Virus Throttle software, which is embedded within the ProVizion ASIC; ICMP throttling, which defeats denial-of-service (DoS) attacks; control protocol detection; and device authentication



Enhancing overall network security, the ProVision ASIC at the heart of the Switch 8212zl has designed-in processes such as end-to-end data checking, embedded RAM error correction, and ECC on an external DRAM. These processes help ensure traffic integrity as it passes through the switch, protecting it from external network threats that could otherwise impact system performance and availability.

Enterprise performance and features

With excellent performance, comprehensive features, and excellent built-in network security capabilities, the Switch 8212zl was designed to capably and reliably support a wide range of deployments for enterprises of 500 to 10,000 users. At the same time, it provides features such as full Layer 2/3/4 capabilities (RIP, OSPF, PIM), IPv6 (IPv6 host, IPv4/IPv6 dual stack, and MLD Snooping), and Q-in-Q (802.1ad) that help ensure those solutions remain viable and effective over a long and useful life, enhancing network productivity and minimizing disruptive technology upgrades.

The Switch 8212zl offers superior scalability—from 24 to 288 PoE-enabled 10/100/1000 ports and 4 to 48 10GbE ports—and scalable power in a space-efficient chassis design to enable seamless migration to higher speed connectivity over time. With ample performance headroom to keep pace with growth, the Switch 8212zl provides flexibility and investment protection for future needs. It continues to deliver as the network expands to support bandwidth-intensive applications such as video streaming and distribution-layer link aggregation.

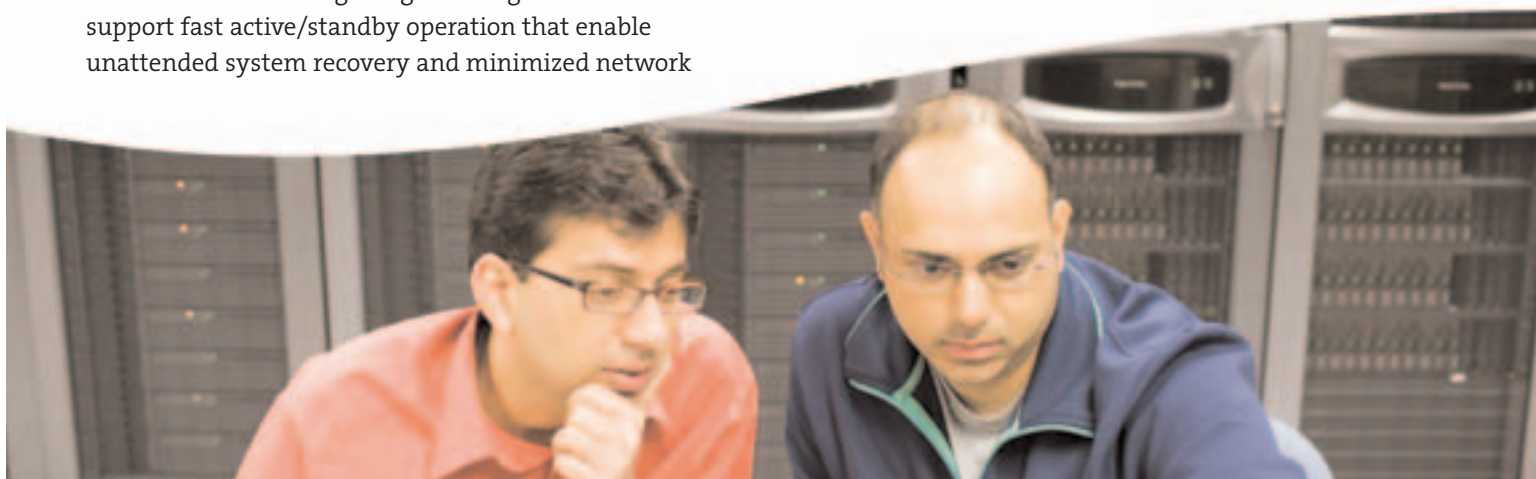
High availability

The Switch 8212zl includes a host of critical high-availability features that provide enhanced reliability, serviceability, and network peace-of-mind. It has hot-swappable, redundant management, fabric, and power with a resilient cooling design. Management modules support fast active/standby operation that enable unattended system recovery and minimized network

downtime. Fabric modules operate in an efficient, load-sharing model with no disruption of network operation in the event of module failure. System componentry and consolidated health/status indicators are hosted on a slotted System Support Module (SSM) to provide accessibility and serviceability. The 8212zl chassis hosts a network-traffic passive backplane (no active traffic-forwarding componentry) to ensure that network component failures never result in forklift servicing of the system.

The Switch 8212zl provides a complete set of software features to enhance network availability and help ensure continuity of operations. Examples include:

- VRRP, which allows groups of two routers to dynamically back each other up to create highly available routed environments
- ProCurve Switch Meshing, which dynamically load-balances across multiple active redundant links in a Layer 2 environment to increase available aggregate bandwidth
- OSPF ECMP (Equal Cost Multipath), which dynamically load-balances across multiple active equal-cost paths in a Layer 3 environment
- 802.1s MSTP, which provides high link availability in multiple-VLAN environments
- 802.3ad LACP, which supports up to 36 trunks, each with up to 8 links (ports) per trunk
- Dual flash images and multiple config files, which provide deployment flexibility, management simplicity, and continuity of operations
- Uni-Directional Link Detection (UDLD), which helps prevent network downtime from fiber link break



Flexibility where it counts

Thanks to its platform architecture and efficient system design, the ProCurve Switch 8212zl offers a host of features that make it well-suited for a wide range of network core/high-availability use models (e.g., traditional core or interconnect fabric core) as well as for large-scale distribution and high-availability access/edge deployments. Each use model delivers ease of deployment, solution-common componentry and features, and unified system and network management. Important features are highlighted in the table below:

Chassis slots

Interface/Service module	12
Management	2
Fabric	2
System support	1
Internal power supplies	4

Maximum ports per system

10/100/1000 with PoE	288
Mini-GBIC	288
100-FX	288
10-GbE ports	48

PoE power

3600 W (internal)
5400 W
(w/ext power shelf)

Chassis height

9U (15.6")

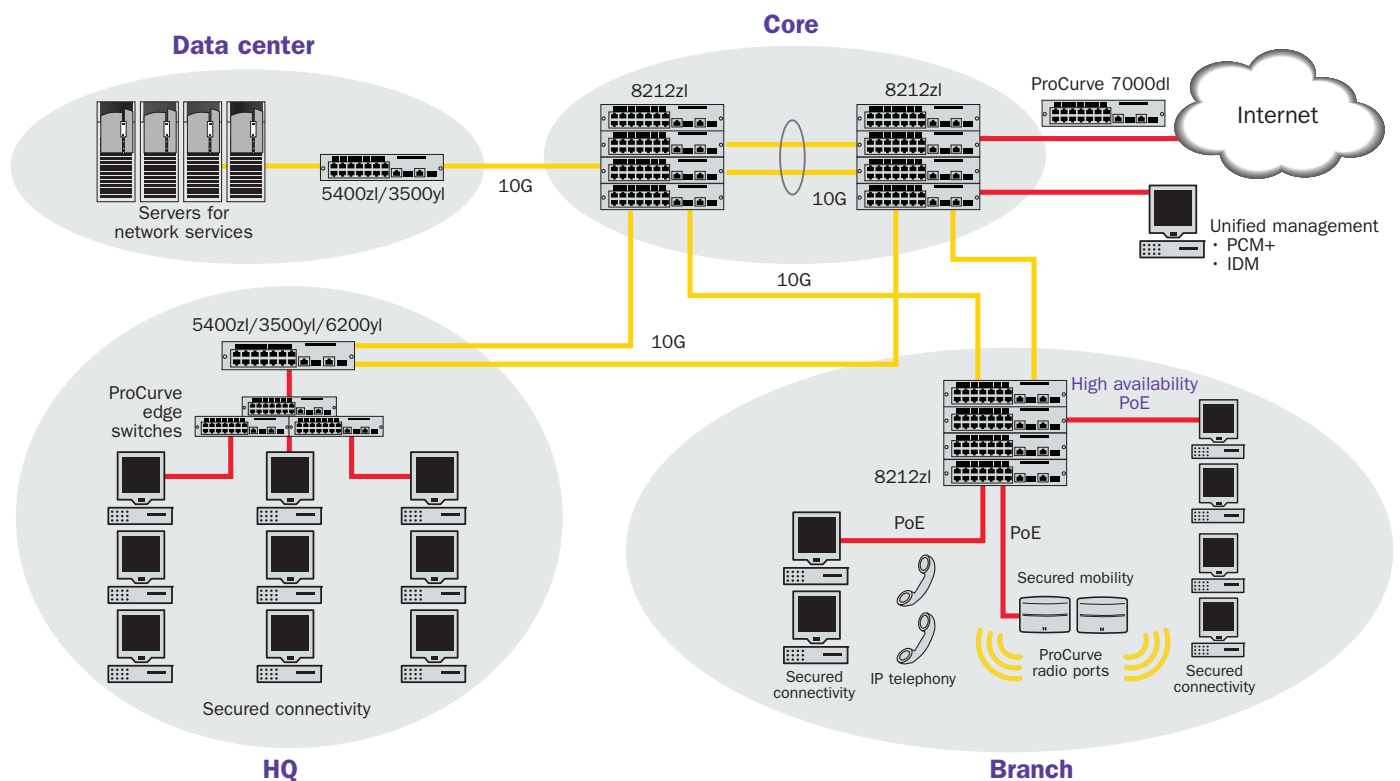
Performance

Routing/Switching capacity	692 Gbps
Switch performance	428 Mpps

High availability

Management redundancy	1 + 1
Fabric redundancy	1 + 1 (load sharing)
Power redundancy	
System	N+1 (3 supplies)
PoE	N+N (4 supplies)
PoE	N+1 (4 supplies)
PoE	N+N
PoE	(w/ext power shelf)
Cooling	1 fan tray (resilient)

The following diagram helps to illustrate the wide range of use models of the ProCurve Switch 8212zl.



Security

Security is a top concern for all network managers. The ProCurve Switch 8212zl provides the complete toolset to help ensure the integrity of the system and its solution integration:

- Granular policy enforcement: wire-speed packet processing and selection for Remote Intelligent Mirroring, ACLs, QoS, rate limiting, and other features
- Mitigation of malicious attacks through Virus Throttle, ICMP throttling, CPU DoS protection, and detection of malicious attacks
- Secure network access with 802.1X, Web/MAC Auth, identity-driven and per-port ACLs; protect network with DHCP Protection, BPDU port protection, dynamic ARP protection, dynamic IP lockdown, and STP root guard
- Secure network management via TACACS+, SSHv2, secure FTP, and secure encryption of all access methods—CLI, GUI or MIB—through SSHv2, SSL, and/or SNMPv3
- Dynamic per-user policy: integrated with ProCurve Identity Driven Manager (IDM), the 8212zl provides fast and effective means to set and enforce switch-level individual user's policies (e.g., ACL, QoS, and rate-limiting) automatically

Convergence

Mainstream convergence applications such as IP telephony and video-over-IP are providing businesses with more cost-effective ways to serve end users and enhance IT productivity. The 8212zl delivers converged traffic flows according to stringent requirements because it is built on a foundation of high availability features:

- Multicast support via data-driven IGMP, PIM Dense, and PIM Sparse
- QoS, including eight hardware priority queues and selectable queue configuration; prioritization based on Layer 2 (802.1p, MAC address), Layer 3 (DSCP, IP address), and Layer 4 (TCP/UDP port) markings; ability to set or rewrite 802.1p priority tag based on IP address, IP ToS, TCP/UDP port, and DSCP
- Bandwidth shaping by enforcing ingress/egress maximum and egress guaranteed minimum bandwidths
- Support for IP telephony, through interoperability with industry-leading IP telephony vendors; LLDP-MED, which enables automatic configuration of QoS and VLAN; and RADIUS VLAN, which uses standard RADIUS attribute to automatically configure VLAN for IP phones; and 802.3af and pre-standard PoE support
- PoE management tools for intelligent power allocation and redundancy for efficient power usage and enhanced availability

Mobility

In the context of a highly scaled wireless network topology, the 8212zl provides the foundation of robust, reliable core switching to meet end-user requirements for anytime, anywhere access:

- Support for highly scalable, centralized core or distribution-layer wireless access management and security with the Wireless Edge Services module
- Support for WLAN access points as well as 802.3af and pre-standard PoE support
- PoE standard on all Gigabit copper ports to ensure deployment flexibility to and allow for selective integration of wireless access points without additional cost or overhead
- Unified wired/wireless client and network management to provide both end users and network administrators with a consistent user experience no matter where and over what infrastructure connections are made
- Web Auth to provide flexible authentication for mobile workers to connect securely to network resources

Systems

J8715A: ProCurve Switch 8212zl Base System. Modular switch platform includes:

- 1 Redundant Management Module
- 2 Fabric Modules
- 1 System Support Module
- 1 Fan Tray

(Redundant management/interface/service modules, power supplies, optics/transceivers ordered separately)

Accessories

Management/Fabric/System Support Modules

J9092A: ProCurve Switch 8200zl Redundant Management Module (for redundant configuration or onsite sparing; J8715A base system delivers 1x module)

J9093A: ProCurve Switch 8200zl Fabric Module (for onsite sparing only; J8715A base system delivers required modules)

J9095A: ProCurve Switch 8200zl System Support Module (for onsite sparing only; J8715A base system delivers required module)

Infrastructure Components

J9091A: ProCurve Switch 8212zl Chassis/Fan Tray (for onsite sparing only; J8715A base system delivers required chassis and fan tray)

J9094A: ProCurve Switch 8212zl Fan Tray (for onsite sparing only; J8715A base system delivers required fan tray)

Interface Modules

J8694A: ProCurve Switch 10-GbE 2p CX4 + 2p X2 Module

J8702A: ProCurve Switch 24-Port 10/100/1000 PoE Module

J8705A: ProCurve Switch 20-Port 10/100/1000 + 4-Port Mini-GBIC Module

J8706A: ProCurve Switch 24-Port Mini-GBIC Module

J8707A: ProCurve Switch 4-Port 10-GbE X2 Module

J8708A: ProCurve Switch 4-Port 10-GbE CX4 Module

Service Modules

J9051A: ProCurve Wireless Edge Services zl Module

J9052A: ProCurve Redundant Wireless Services zl Module

Optics/Transceivers

J8177B: ProCurve Gigabit 1000Base-T Mini-GBIC

J4858C: ProCurve Gigabit-SX-LC Mini-GBIC

J4859C: ProCurve Gigabit-LX-LC Mini-GBIC

J4860C: ProCurve Gigabit-LH-LC Mini-GBIC

J8436A: ProCurve 10-GbE X2-SC SR Optic

J8437A: ProCurve 10-GbE X2-SC LR Optic

J8438A: ProCurve 10-GbE X2-SC ER Optic

J8439A: ProCurve 10-GbE CX4 Media Converter

J8440B: ProCurve 10-GbE X2-CX4 Transceiver

J9054B: ProCurve 100-FX SFP-LC Transceiver

Power

J8712A: ProCurve Switch zl 875W Power Supply

J8713A: ProCurve Switch zl 1500W Power Supply

J8714A: ProCurve Switch zl Power Supply Shelf (External power supply shelf for zl switches)

Software

J9057A: ProCurve Manager Plus v2.2 50-device license

J9058A: ProCurve Manager Plus v2.2 upgrade +100-device license

J9059A: ProCurve Manager Plus v2.2 unlimited-device license

For further information please contact us at

To learn more about ProCurve Networking,
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www.procurve.com

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