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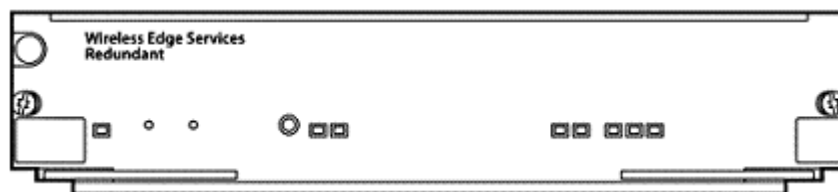|	
ProCurve Wireless Edge Services zl Module	J9051A

Introduction

Working in conjunction with ProCurve radio ports, the ProCurve Wireless Edge Services zl Module provides centralized wireless LAN configuration and management of advanced wireless services, enabling a resilient, highly secure, mobile multi-service network. With the addition of the module, the ProCurve Switch 5400zl series and Switch 8212zl enable network administrators to centrally manage a unified wired and wireless network using the complete ProCurve Manager networking management suite. This centralized approach to wired and wireless management streamlines device configuration. It enables network monitoring and response to wired and wireless network threats and administration of security and role-based user policies that are enforced at the edge of the network, regardless of how or where the user connects.

Features and Benefits

Mobility

- **Layer 3 radio port adoption:** Network-wide adoption and auto configuration of ProCurve radio ports enable rapid deployment of a wireless LAN with minimal network reconfiguration. By enabling radio port deployment at Layer 3, the wireless network provides fast network roaming to maintain uninterrupted application persistence.
- **Layer 3 mobility domain:** When configured as part of a Layer 3 mobility domain, ProCurve Wireless Edge Services zl Modules maintain client network connectivity as users roam across subnet boundaries and from module to module. A mobility domain may include up to 12 ProCurve Wireless Edge Services zl Modules.
- **Guest accounts:** The ProCurve Wireless Edge Services zl Module provides secure, Web-authenticated guest access using the built-in RADIUS server. Guest account creation includes randomly generated or predefined individual user credentials and duration of access, including time of day. Termination of network access privileges is immediate upon expiration of the guest account.
- **Guest administration:** Assigned by the network administrator, guest administration privileges permit restricted access to the Web page used to manage guest accounts hosted internally on the Wireless Edge Services zl Module. Guest administrators may create, print, and delete guest accounts.

Management

- **Centralized management:** A single point to configure system-wide wireless LAN setup and operation is provided, including SSID, security, and authentication options as well as advanced wireless services. Wireless LAN settings are automatically administered to designated ProCurve radio ports, eliminating the cost and time associated with individual configuration of access points.
- **Zero-configuration deployment:**
  - **Automatic wireless LAN provisioning:** Upon installation of a Wireless Edge Services zl Module, the switch will automatically configure the module to discover and adopt ProCurve radio ports.
  - **Layer 2 auto radio port discovery:** Simply connect each ProCurve radio port to a Power over Ethernet-enabled network

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port, and the device will be automatically discovered and configured by the Wireless Edge Services zl Module.

- **Wireless sFlow support:** With addition of sFlow sampling of wireless traffic, management applications such as ProCurve Manager Plus or other wireless sFlow-capable network analyzers enable unified network visibility into traffic metrics—including wired and wireless network top talkers, top applications, and network connections. Wireless sFlow, when used in conjunction with ProCurve Network Immunity Manager, provides rapid identification and response to specific network threats on wired and wireless network connections.

Connectivity

- **Modular network connectivity:** The modular design of the ProCurve Switch 5400zl series and Switch 8212zl provides a choice of port type, density, and Power over Ethernet capability to simplify network deployment, with expansion to scale as network needs change.
- **Scalable radio architecture:** The ProCurve family of radio ports provides choice and flexibility to address a wide range of deployment needs. Network architects can choose between flexible dual-radio (IEEE 802.11a and IEEE 802.11g) and highly cost-effective single-radio (IEEE 802.11g) designs, integrated or external antenna configurations, and customized housings for office area and in-ceiling deployment.
- **Auto Channel Select (ACS):** helps minimize radio co-channel interference by automatically selecting an unoccupied radio channel
- **Adjustable output power:** controls cell size for high-density access point deployments
- **IEEE 802.11h International Telecommunication Union (ITU) compliant:** employs Dynamic Frequency Selection (DFS) and Transmit Power Control (TPC) to automatically select another channel and adjust transmit power to minimize interference with systems such as radar, if it is detected on the same channel
- **International country configuration:** Centrally configured on the Wireless Edge Services zl Module, all ProCurve radio ports automatically adjust to match selected country regulatory requirements.

Resiliency and high availability

- **Network self-healing:** In the event of a radio port failure, the module will automatically adjust transmit power and data rate on adjacent ProCurve radio ports to maintain wireless LAN coverage.
- **RF detection and interference avoidance:** The system automatically recalibrates radio port channel assignments to avoid environmental or other IEEE 802.11-based wireless interference.
- **Module redundancy:** If a primary Wireless Edge Services zl Module should fail, the ProCurve Redundant Wireless Services zl Module will automatically adopt the radio ports that were associated with the primary module.
- **Module power redundancy:** As an integrated service module for the ProCurve Switch 5400zl series and Switch 8212zl, the module leverages the fully redundant, hot-swappable power supplies of the chassis for higher service uptime.

Security

- **Stateful packet inspection firewall:** inspects and drops routed wireless packets with invalid TCP flags or corrupted packets and stops common denial-of-service attacks; dropped packets are logged with the name and time of the attack
- **Access control lists (ACLs):** provide IP Layer 3 filtering based on source/destination IP address/subnet and source/destination TCP/UDP port number
- **Network address translation (NAT):** Choice of dynamic or static NAT preserves a network's IP address pool or conceals the private address of network resources, such as Web servers, made accessible to users of a guest or public wireless LAN.
- **Enhanced Web authentication:** provides authentication for browser-based wireless clients. Built-in login, welcome, and failure Web pages assist users through the login process. In addition, the Wireless Edge Services zl Module can store custom Web pages or direct users to custom Web authentication pages on an external Web server.
- **MAC address lockout:** prevents configured particular MAC addresses from connecting to the network
- **RADIUS-based MAC authentication:** a wireless client is authenticated with a RADIUS server based on the MAC address of the client; this is useful for clients that have minimal or no user interface
- **IEEE 802.1X:** provides port-based user authentication with support for Extensible Authentication Protocol (EAP) MD-5, TLS, TTLS, and PEAP with choice of AES, TKIP, and static or dynamic WEP encryption for protecting wireless traffic between authenticated clients and the access point

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- **Choice of IEEE 802.11i, Wi-Fi Protected Access 2 (WPA2), or WPA:** locks out unauthorized wireless access by authenticating users prior to granting network access; robust Advanced Encryption Standard (AES) or Temporal Key Integrity Protocol (TKIP) encryption secures the data integrity of the wireless traffic
- **ProCurve Identity Driven Manager (IDM) security and access control:**
    - **Per-user ACLs:** User access to specific network resources is permitted or denied based on user identity and time of day, so multiple types of users (employees, visitors, temporary workforce) on the same network can access specific network resources without risk to network security or unauthorized access to sensitive data.
    - **Automatic VLAN assignment:** Users are automatically assigned to the appropriate VLAN based on their identity, community, and time of day.
    - **Traffic prioritization:** Traffic prioritization (QoS) is automatically set for each wireless client based on identity, community, location, and time of day.
    - **Rate limits:** Ingress rate limits are automatically applied to user traffic based on identity, community, and time of day.
- **Secure management access:** all access methods--CLI, GUI, or MIB--are securely encrypted through SSHv2, SSL, and/or SNMPv3 • Management VLAN: segments traffic to and from management interfaces, including CLI/telnet, Web browser interface, and SNMP
- **4 BSSIDs/16 SSIDs per radio:** Multiple wireless broadcast domains with separate security, authentication, and policy configuration per SSID provide access control of network resources based on user authentication and level of trusted security between the wireless user and the network.
- **Neighbor access point (rogue AP) detection:** The Wireless Edge Services zl Module provides a system-wide view of all access points detected in the wireless LAN coverage area. Discovered access points are easily classified as either approved or unapproved to simplify network monitoring of "rogue APs". Each ProCurve radio port simultaneously scans for the presence of other access points while servicing wireless clients. Radio ports can be configured as dedicated RF monitors for continuous monitoring of the RF environment.
- **Wireless intrusion detection:** The ProCurve Wireless Services zl Module monitors wireless client activity for behavior harmful to the network. Upon detection of such behavior, the module will block the wireless client, log the attack, and generate a trap.
- **Inter-station traffic blocking:** prevents communication between client devices associated on the same radio port
- **Closed system:** restricts broadcast of SSID as a security measure to conceal presence of the wireless network

Quality of Service (QoS)

- **Wi-Fi WMM support:** provides QoS functionality in wireless networks by prioritizing wireless traffic from different applications
- **SpectraLink voice priority (SVP) support:** prioritizes SpectraLink voice IP packets sent from a SpectraLink NetLink SVP server to SpectraLink wireless voice handsets to help ensure excellent voice quality
- **Unscheduled Automatic Power Save Delivery (uAPSD):** extends the battery life for Wi-Fi devices such as voice over wireless LAN (VoWLAN) handsets

Configuration

- **Local RADIUS server:** supports wireless as well as wired user or device authentication using 802.1X, browser based, or MAC authentication. Choice of authentication database includes the built-in, 500 user account database or authentication to an LDAP-compliant directory. EAP methods supported include EAP-TLS, EAP-TTLS with MD5, EAP-TTLS with PAP, EAP-TTLS with GTC, and EAP-PEAP with MSCHAPv2.
- **Built-in DHCP server:** When configured, the ProCurve Wireless Edge Services zl Module responds to wired and wireless client DHCP (Dynamic Host Configuration Protocol) IP configuration requests. The DHCP server provides configuration responses including the assigned client IP address from network or host pools, lease time, default gateway, domain name, DNS server addresses, and DHCP options. DHCP functionality also includes DHCP relay and Dynamic DNS.

Scalability

- **Scalable network capacity:** The ProCurve Wireless Edge Services zl Module, as purchased, provides support for up to 12 ProCurve radio ports. The module easily accommodates additional radio port capacity with purchase of either a 12 or 48 ProCurve Wireless Services zl Radio Port License. The Wireless Services zl Module scales to a maximum of 156 ProCurve radio ports per module. With up to four ProCurve Wireless Edge Services zl Modules per Switch 5400zl series or Switch 8212zl,

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each chassis can manage a total of 624 ProCurve radio ports.

Industry-leading warranty

- **Lifetime warranty:** for as long as you own the product, with next-business-day advance replacement (available in most countries)

QuickSpecs

Technical Specifications

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	2.05 lb. (0.93 kg)	
Environment	Non-operating/Storage	Temperature	-40°F to 158°F (-40°C to 70°C)
		Relative humidity	15% to 95%, non-condensing
Wireless interface	Microsoft Internet Explorer 5.5 or higher		
Standards and protocols	Device Management	RFC 2068 Hypertext Transfer Protocol -- HTTP/1.1 HTML and telnet management	
	General Protocols	IEEE 802.1p Priority IEEE 802.1Q VLANs RFC 768 UDP RFC 783 TFTP Protocol (revision 2) RFC 791 IP RFC 792 ICMP RFC 793 TCP RFC 826 ARP RFC 854 TELNET RFC 894 IP over Ethernet RFC 959 File Transfer Protocol (FTP) RFC 1541 DHCP RFC 2030 Simple Network Time Protocol (SNTP) v4 RFC 3046 DHCP Relay Agent Information Option	
	IPv6	RFC 3162 RADIUS and IPv6	
	MIBs	RFC 1213 MIB II RFC 1493 Bridge MIB	
	Mobility	IEEE 802.11a High Speed Physical Layer in the 5 GHz Band IEEE 802.11b Higher-Speed Physical Layer Extension in the 2.4 GHz Band IEEE 802.11g Further Higher Data Rate Extension in the 2.4 GHz Band IEEE 802.11i Medium Access Control (MAC) Security Enhancements	
	Network Management	RFC 3164 BSD syslog Protocol RFC 3176 sFlow SNMPv1/v2c/v3	
	Security	IEEE 802.1X Port Based Network Access Control RFC 2138 RADIUS Authentication RFC 2548 Microsoft Vendor-specific RADIUS Attributes RFC 2809 L2TP Compulsory Tunneling via RADIUS RFC 2865 RADIUS Authentication RFC 2866 RADIUS Accounting RFC 2867 RADIUS Accounting Modifications for Tunnel Protocol Support RFC 2868 RADIUS Attributes for Tunnel Protocol Support RFC 2869 RADIUS Extensions RFC 2882 NAS Requirements: Extended RADIUS Practices RFC 3576 Dynamic Authorization Extensions to RADIUS RFC 3579 RADIUS Support For Extensible Authentication Protocol (EAP)	

Technical Specifications

RFC 4590 RADIUS Extension for Digest Authentication
Secure Sockets Layer (SSL)
SSHv2 Secure Shell
WPA (Wi-Fi Protected Access)

Accessories

Wireless Access Controllers

NEW ProCurve Redundant Wireless Services zl Module (J9052A)	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:	2.05 lb. (0.93 kg)
The ProCurve Redundant Wireless Services zl Module automatically adopts ProCurve radio ports if the primary Wireless Edge Services zl Module is unavailable or fails.	Environment	Non-operating/Storage temperature:	-40°F to 158°F (-40°C to 70°C)
		Non-operating/Storage relative humidity:	15% to 95%, non-condensing

zl Modules

ProCurve Wireless Services zl 12 RP License
(J9053A)

The ProCurve Wireless Services zl 12 RP License provides support for 12 additional ProCurve radio ports on a Wireless Edge Services zl Module, for a maximum of 156 radio ports per module.

NEW ProCurve Wireless Services zl 48 RP License
(J9090A)

The ProCurve Wireless Services zl 48 RP License provides support for 48 additional ProCurve radio ports on a Wireless Edge Services zl Module, for a maximum of 156 radio ports per module.

Accessories

To learn more, visit www.procurve.com
Information is subject to change without notice