QuickSpecs

Overview

HPE 870 Unified Wired-WLAN Appliance Series

HP 870 Unified Wired-WLAN Appliance

Models

HP 870 Unified Wired-WLAN Appliance	JG723A

Key features

- Enterprise-scale capacity, performance, and high reliability for wireless networks
- System-wide approach to WLAN reliability through Wi-Fi Clear Connect
- IEEE 802.11ac-ready
- Flexible forwarding modes
- Comprehensive feature set for demanding Enterprise environments

Product overview

The IEEE 802.11ac-ready HPE 870 Unified Wired-WLAN Appliance delivers enterprise-scale features, capacity, and high reliability and supports IEEE 802.11a/b/g/n and IEEE 802.11ac APs and access devices, as well as offering substantial data processing capacity for wireless networks.

The HPE 870 Unified Wired-WLAN Appliance provides 24 1000 Mbps Ethernet ports and four 10GbE ports and can optionally support up to 1,536 managed APs,30,000 users, and 40G of centralized throughput.

The HPE 870 Unified Wired-WLAN Appliance provides refined user control and management, improved power savings with IEEE 802.3 az, comprehensive RF management and security mechanisms, fast roaming, QoS and IPv4/IPv6 features, and powerful WLAN access control.

Features and benefits

Overview

Management

- **Wi-Fi Clear Connect**
  provides a system-wide approach to help ensure WLAN reliability by proactively determining and adjusting to changing RF conditions and by identifying rogue activity and enforcing prevention policies, and optimizing WLAN performance by detecting interference from Wi-Fi and non-Wi-Fi sources using Spectrum Analysis capabilities built into specific HPE access points (refer to the HPE Access Point—Controller Compatibility Matrix).
- **Advanced radio resource management**
  - Automatic radio power adjustments: include real-time power adjustments based on changing environmental conditions and signal coverage adjustments
  - Automatic radio channel: provides intelligent channel switching and real-time interference detection
  - Intelligent client load balancing: balances the number of clients across multiple APs to optimize AP and client throughput
  - Airtime fairness: helps ensure equal RF transmission time for wireless clients
- **Spectrum Analysis**
  - Signal detection/classification: identifies source of RF interference, for example, Bluetooth, cordless phones, and microwave ovens
  - Evaluation of channel quality: helps detect severe channel degradation and improves the reporting of poor RF performance
- **Band Navigation**
  enables automatic redirection of 5 GHz-capable clients to the less-congested 5 GHz spectrum
- **Enterprise network management**
  is provided by HPE Intelligent Management Center (IMC) Platform software and the IMC Wireless Services Manager Software Module, which effectively integrate traditionally disparate management tools into one easy-to-use interface
- **Secure controller management**
  manages the controller securely from a single location with IMC or any other SNMP management station; controller supports SNMPv3 as well as SSHv2 and SSL for secure CLI and Web management; console port is available as a pass-through to the switch console function
- **Support for Bonjour services environments**
  - Gateway: Discovers Bonjour services located in a different layer-3 network
  - Hewlett Packard Enterprise Zerocast: Eliminates Bonjour multicast traffic from the WLAN enabling scalable deployment of Apple devices with no performance impact on the Wi-Fi network
  - Access control: Enables filters to be applied inbound and outbound (on the AP) to SSIDs, groups of, or specific APs. User based filtering can block Bonjour traffic until the user is authenticated
- **VLAN pooling**
  - enables wireless clients to be dynamically assigned to different VLANs so administrators can assign different subnets to different clients in the same SSID. A VLAN pool can bind to multiple SSIDs.
- **Unified network visibility**
  - provides visibility between a wired and wireless network using IEEE 802.1AB Link Layer Discovery Protocol (LLDP) and sFlow.
- **AP Plug and Play (PnP)**
  - provides zero-configuration capability. An AP without a predefined configuration file can connect to the WLAN controller and the WLAN Controller will provision it with the correct wireless configuration.
- **Policy based forwarding**
  - simplifies the deployment of centralized or local forwarding. The policy-based mode allows user to classify data traffic based on ACL and choose local or centralized forwarding. Policy-based forwarding can be applied based on SSID or user-profile. That means a forwarding policy can be applied on a SSID or a specific user or a group of users.
- **AP grouping**
  - enables an admin to easily apply AP-based or radio-based configurations to all the AP that are in the same group.
- **Staged Firmware Upgrades**
  - enables an admin to selectively upgrade APs, typically a group of APs, to minimize the impact of upgrading large deployments of APs to a new version of firmware.
- **Custom antenna settings**

Overview

- allow the admin to select a custom antenna gain.

Quality of Service (QoS)

- **IEEE 802.1p prioritization**
  delivers data to devices based on the priority and type of traffic
- **Class of Service (CoS)**
  sets the IEEE 802.1p priority tag based on IP address, IP Type of Service (ToS), Layer 3 protocol, TCP/UDP port number, source port, and DiffServ
- **End-to-end QoS**
  - the HPE 870 Unified Wired-WLAN Appliance supports the DiffServ standard and IPv6 QoS; the QoS DiffServ model includes traffic classification and traffic policing, and fully implements six groups of services—EF, AF1 through AF4, and BE.

Security

- **Web-based authentication**
  provides a browser-based environment to authenticate clients that do not support the IEEE 802.1X supplicant
- **IEEE 802.1X and RADIUS network logins**
  supports port-based and SSID-based IEEE 802.1X authentication and accounting
- **WEP, WPA2, or WPA encryption**
  can be deployed at the AP to lock 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 wireless traffic
- **Integrated Wireless Intrusion Detection System (WIDS)**
  provides support for hybrid and dedicated modes; detects flood, spoofing, and weak IV attacks; displays statistics (events) and history; supports configuration of detection policies
- **Integrated Wireless Intrusion Prevention System (WIPS)**
  - automatically identifies and classifies all APs and stations; enables packet-trigger containment via knowledge-based heuristics; protects against honeypot attacks and enforces STA security; detects Denial Of Service (DoS) attacks via pre-defined DoS attacks, and provides a Signature mechanism which allows admins to define custom rules; enables Virtual Service Domains to deploy security policies by department or location for example.
- **Media access control (MAC) authentication**
  provides simple authentication based on a user's MAC address; supports local or RADIUS-based authentication
- **Secure user isolation**
  virtual AP services enable network administrators to provide specific services for different user groups, allowing effective resource sharing, and simplifying network maintenance and management
- **Secure access by location**
  AP location-based user access control helps ensure that wireless users can access and authenticate only to preselected APs, enabling system administrators to control the locations where a wireless user can access the network
- **Endpoint Admission Defense**
  integrated wired and wireless Endpoint Admission Defense (EAD) helps ensure that only wireless clients who comply with mandated enterprise security policies can access the network, reducing threat levels caused by infected wireless clients and improving the overall security of the wireless network
- **Public Key Infrastructure (PKI)**
  is used to control access
- **Authentication, authorization, and accounting (AAA)**
  uses an embedded authentication server or external AAA server for local users
- **Wireless Intelligent Application Aware Feature (WIAA)**
  - provides a user role based or SSID based firewall embedded in WLAN Controller via ACL-based packet filter firewall and ASPF firewall.
  - Protect clients from outside attacks Restrict specific users from accessing specific network resources.
- **Source Address Validation Improvement (SAVI)**

Overview

- records the wireless client's IP address and MAC address and at the next data traffic forwarding stage, SAVI will validate the client's IP address to prevent attacker spoofing other client's IP address.

Connectivity

- **Loopback**
  supports internal loopback testing for maintenance purposes and an increase in availability; loopback detection protects against incorrect cabling or network configurations and can be enabled on a per-port or per-VLAN basis for added flexibility
- **IPv6**
  - IPv6 host: enables controllers to be managed and deployed at the IPv6 network's edge
  - Dual stack (IPv4 and IPv6): transitions customers from IPv4 to IPv6, supporting connectivity for both protocols
  - MLD snooping: directs IPv6 multicast traffic to the appropriate interface, preventing traffic flooding
  - IPv6 ACL/QoS: supports ACL and QoS for IPv6 network traffic
- **NAT support**
  - NAT traversal: helps ensure that communication between a branch office AP and HPE 870 is supported when the branch uses NAT.
  - Integrated NAT support: replaces the private source IP address with a public address; enables multiple internal addresses to be mapped to the same public IP address; permits only certain internal IP addresses to be NATed, and provides an Application Layer Gateway that supports specific application protocols without requiring the NAT platform to be modified.
- **IEEE 802.3ad Link Aggregation Control Protocol (LACP)**
  supports a total of a 128 trunk groups with each group supporting 8 active ports. Ports must be of the same type (that is, all 100/1000 ports or 10GbE ports).

Performance

- **Flexible forwarding modes**
  - enable distributed and centralized traffic forwarding: centralized forwarding, wireless traffic is sent to the HPE 870 for processing. With distributed mode wireless traffic is dropped off locally. In the event that connectivity to the HPE 870 is lost, authenticated clients can continue to access local resources
  - support local drop off or centralization of data traffic: after an HTML authentication using the built-in portal server or IMC portal authentication.
- **Wireless user access control and management**
  - support defining settings such as Committed Access Rate (CAS), QoS profiles, and access control policies based on location for different applications.
- **Fast roaming**
  supports Layer 3 roaming and fast roaming, satisfying the most demanding voice service requirements
- **Robust capacity**
  - delivers powerful forwarding capacity to support large enterprise WLANs.

Resiliency and high availability

- **High reliability**
  supports 1+1, N+1, and N+N backup; the 1+1 redundancy configuration supports subsecond-level failure detection; APs establish AP-controller tunnel links with both controllers, but only the links to the active controller are active; when the active controller fails, the heartbeat mechanism between the two controllers helps ensure that the standby controller can sense the failure in subsecond level and then informs the APs to switch over to it, thus providing service continuity.
- **802.1X hot-backup**
  - enables two controllers to sync 802.1X state information and wireless client's 802.11 information from master to backup. This feature is only supported on the HPE 850, HPE 870 and 20G Unified Module.

Overview

Layer 2 switching

- **VLAN support and tagging**
  supports IEEE 802.1Q with 4,094 simultaneous VLAN IDs
- **Spanning Tree Protocol (STP)**
  supports standard IEEE 802.1D STP, IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) for faster convergence, and IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
- **Port mirroring**
  duplicates port traffic (ingress and egress) to a local monitoring port
- **Jumbo packet support**
  supports frame sizes up to 9K byte (switch) and up to 4K byte (controller) to improve the performance of large data transfers

Layer 3 routing

- **Static IP routing**
  provides manually configured routing for both IPv4 and IPv6 networks

Comprehensive portfolio

- **Access point support**
  Refer to the HPE Access Point—Controller Compatibility Matrix (**https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA5-0345ENW&cc=us&lc=en**).

Scalability

- **Optional 32 or 128 access-point upgrade license**
  - increases support for additional access points from the base 256 AP support without the need to buy additional costly hardware.
  - A reduced-cost 128-access point license is available for use on the redundant controller. Refer to the Specifications and Accessories sections for more detail.

Warranty and support

- **Limited Lifetime Warranty**
  See **http://www.hpe.com/networking/warrantysummary** for warranty and support information included with your product purchase.
- **Software releases**
  includes all offered software releases for as long as you own the product; to find software for your product, refer to **http://www.hpe.com/networking/support**; for details on the software releases available with your product purchase, refer to **http://www.hpe.com/networking/warrantysummary**

Configuration

Build To Order: BTO is a standalone unit with no integration. BTO products ship standalone are not part of a CTO or Rack-Shippable solution.

The HPE 830, HPE 850 and HPE 870 Unified Wired-WLAN Switch Series are similar enough in functionality that, for configuration menu purposes, they are combined into one "800" Unified WLAN menu

Standard Switch Enclosures

HP 830 8-Port PoE+ Unified Wired-WLAN Switch — JG641A
- 8 RJ-45 dual-personality 10/100/1000 ports
- 2 SFP 1000 Mbps ports (Min 0 / Max 2)
- 1 RJ-45 serial console port

See Configuration
NOTE:1, 2, 3

PDU CABLE NA/MEX/TW/JP — JG641A#B2B
- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU CABLE ROW — JG641A#B2C
- C15 PDU Jumper Cord (ROW)

220 NA — JG641A#B2E
- NEMA L6-20P Cord

HP 830 24-Port PoE+ Unified Wired-WLAN Switch — JG640A
- 24 RJ-45 auto-negotiating 10/100/1000 ports
- 4 SFP dual-personality ports; Duplex: full only (Min 0 / Max 4)
- 2 extended module slots
- 1 RJ-45 serial console port

See Configuration
NOTE:1, 2, 3

PDU CABLE NA/MEX/TW/JP — JG640A#B2B
- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU CABLE ROW — JG640A#B2C
- C15 PDU Jumper Cord (ROW)

220 NA — JG640A#B2E
- NEMA L6-20P Cord

HP 850 Unified Wired-WLAN Appliance — JG722A

Configuration

- 8 SFP dual-personality ports/8 RJ-45 autosensing 100/1000 ports (min=0 \ max=8 SFP Transceivers)
- 2 SFP+ 10GbE ports(min=0 \ max=2 SFP+ Transceivers)
- 1 RJ-45 serial console port
- 1 RJ-45 out-of-band management port
- JG745A HP X351 150W AC Power Supply Included
- 1 U Height

See Configuration
NOTE:2, 3, 6, 7

PDU Cable NA/MEX/TW/JP — JG722A#B2B
- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW — JG722A#B2C
- C15 PDU Jumper Cord (ROW)

High Volt Switch/Router to Wall Power Cord — JG722A#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

No Power Cord — JG722A#AC3
- No Localized Power Cord Selected

HP 870 Unified Wired-WLAN Appliance — JG723A
- 12 RJ-45 autosensing 100/1000 ports
- 12 SFP 100/1000 Mb/s ports (min=0 \ max=12 SFP Transceivers)
- 4 SFP+ 10GbE ports (min=0 \ max=4 SFP+ Transceivers)
- 1 RJ-45 serial console port
- 1 RJ-45 out-of-band management port
- 1 - JG527A HP X351 300W AC Power Supply Included
- 2 U Height

See Configuration
NOTE:2, 3, 6, 7

PDU Cable NA/MEX/TW/JP — JG723A#B2B
- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW — JG723A#B2C
- C15 PDU Jumper Cord (ROW)

High Volt Switch/Router to Wall Power Cord — JG723A#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

No Power Cord — JG723A#AC3
- No Localized Power Cord Selected

Configuration

Configuration Rules:

Note 1 The following Transceivers install into this Switch:

HPE X125 1G SFP LC LH40 1310nm Transceiver	JD061A
HPE X120 1G SFP LC LH40 1550nm Transceiver	JD062A
HPE X125 1G SFP LC LH70 Transceiver	JD063B
HPE X120 1G SFP LC SX Transceiver	JD118B
HPE X120 1G SFP LC LX Transceiver	JD119B

Note 2 Localization required on orders without #B2B, #B2C or #B2E options.

Note 3 If #B2E is selected Then replace Localized option with #B2E for power supply and with #B2E for switch . (Offered only in NA, Mexico,, Taiwan, and Japan)

Note 6 The following Transceivers install into this Switch:

HPE X130 10G SFP+ LC SR Transceiver	JD092B
HPE X130 10G SFP+ LC LRM Transceiver	JD093B
HPE X130 10G SFP+ LC LR Transceiver	JD094B
HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
HPE X130 10G SFP+ LC ER 40km Transceiver	JG234A

Note 7 The following Transceivers install into this Switch:

HPE X115 100M SFP LC FX Transceiver	JD102B
HPE X110 100M SFP LC LX Transceiver	JD120B
HPE X110 100M SFP LC LH40 Transceiver	JD090A
HPE X120 1G SFP LC SX Transceiver	JD118B
HPE X120 1G SFP LC LX Transceiver	JD119B
HPE X125 1G SFP LC LH40 1310nm Transceiver	JD061A
HPE X120 1G SFP LC LH40 1550nm Transceiver	JD062A
HPE X125 1G SFP LC LH70 Transceiver	JD063B

Remarks:

The TAA skus in the 800 Unified Wired-WLAN Switches are US available only.

Box Level CTO Models

CTO Solution Sku

HP 830 Configure-to-order Unified Wired- WLAN Switch Solution JG662A

- SSP trigger sku

CTO Switch Chassis

Configuration

HP 830 8-Port PoE+ Unified Wired-WLAN Switch • 8 RJ-45 dual-personality 10/100/1000 ports • 2 SFP 1000 Mbps ports (Min 0 / Max 2) • 1 RJ-45 serial console port	JG641A See Configuration **NOTE:**1, 2, 3, 4, 9
PDU CABLE NA/MEX/TW/JP • C15 PDU Jumper Cord (NA/MEX/TW/JP)	JG641A#B2B
PDU CABLE ROW • C15 PDU Jumper Cord (ROW)	JG641A#B2C
220 NA • NEMA L6-20P Cord	JG641A#B2E
HP 830 24-Port PoE+ Unified Wired-WLAN Switch • 24 RJ-45 auto-negotiating 10/100/1000 ports • 4 SFP dual-personality ports; Duplex: full only (Min 0 / Max 4) • 2 extended module slots • 1 RJ-45 serial console port	JG640A See Configuration **NOTE:**1, 2, 3, 4, 9
PDU CABLE NA/MEX/TW/JP • C15 PDU Jumper Cord (NA/MEX/TW/JP)	JG640A#B2B
PDU CABLE ROW • C15 PDU Jumper Cord (ROW)	JG640A#B2C
220 NA • NEMA L6-20P Cord	JG640A#B2E
HP 850 Unified Wired-WLAN Appliance • 8 SFP dual-personality ports/8 RJ-45 autosensing 100/1000 ports (min=0 \ max=8 SFP Transceivers) • 2 SFP+ 10GbE ports(min=0 \ max=2 SFP+ Transceivers) • 1 RJ-45 serial console port • 1 RJ-45 out-of-band management port • 1- JG745A HP X351 150W AC Power Supply Included • 1 U Height	JG722A See Configuration **NOTE:** 2, 3, 4, 7, 8, 9
PDU Cable NA/MEX/TW/JP	JG722A#B2B

Configuration

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW JG722A#B2C
- C15 PDU Jumper Cord (ROW)

High Volt Switch/Router to Wall Power Cord JG722A#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

No Power Cord JG722A#AC3
- No Localized Power Cord Selected

HP 870 Unified Wired-WLAN Appliance JG723A
- 12 RJ-45 autosensing 100/1000 ports
- 12 SFP 100/1000 Mb/s ports (min=0 \ max=12 SFP Transceivers)
- 4 SFP+ 10GbE ports (min=0 \ max=4 SFP+ Transceivers)
- 1 RJ-45 serial console port
- 1 RJ-45 out-of-band management port
- 1 - JG527A HP X351 300W AC Power Supply Included
- 2 U Height

See Configuration
NOTE: 2, 3, 4, 7, 8, 9

PDU Cable NA/MEX/TW/JP JG723A#B2B
- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW JG723A#B2C
- C15 PDU Jumper Cord (ROW)

High Volt Switch/Router to Wall Power Cord JG723A#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

No Power Cord JG723A#AC3
- No Localized Power Cord Selected

Configuration Rules:

Note 1 The following Transceivers install into this Controller: (Use #0D1 if switch is CTO0

HPE X125 1G SFP LC LH40 1310nm Transceiver	JD061A
HPE X120 1G SFP LC LH40 1550nm Transceiver	JD062A
HPE X125 1G SFP LC LH70 Transceiver	JD063B
HPE X120 1G SFP LC SX Transceiver	JD118B
HPE X120 1G SFP LC LX Transceiver	JD119B

Configuration

Note 2 If the Switch Chassis is to be Factory Integrated (CTO), Then the #0D1 is required on the Switch Chassis and integrated to the JG662A - HPE 800 CTO Enablement. (Min 1/Max 1 Switch per SSP)

Note 3 Localization required on orders without #B2B, #B2C, or #B2E options.

Note 4 If #B2E is selected Then replace Localized option with #B2E for power supply and with #B2E for switch . (Offered only in NA, Mexico,, Taiwan, and Japan)

Note 7 The following Transceivers install into this Switch:

HPE X130 10G SFP+ LC SR Transceiver	JD092B
HPE X130 10G SFP+ LC LRM Transceiver	JD093B
HPE X130 10G SFP+ LC LR Transceiver	JD094B
HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
HPE X130 10G SFP+ LC ER 40km Transceiver	JG234A

Note 8 The following Transceivers install into this Switch

HPE X115 100M SFP LC FX Transceiver	JD102B
HPE X110 100M SFP LC LX Transceiver	JD120B
HPE X110 100M SFP LC LH40 Transceiver	JD090A
HPE X120 1G SFP LC SX Transceiver	JD118B
HPE X120 1G SFP LC LX Transceiver	JD119B
HPE X125 1G SFP LC LH40 1310nm Transceiver	JD061A
HPE X120 1G SFP LC LH40 1550nm Transceiver	JD062A
HPE X125 1G SFP LC LH70 Transceiver	JD063B

Note 9 If this Switch is selected, Then a Minimum of 1 factory integrated accessory must be ordered and integrated to CTO chassis. See Menu below, option must have a #0D1 to be integrated to the CTO Chassis.

Transceivers

SFP Transceivers

HPE X115 100M SFP LC FX Transceiver	JD102B
HPE X110 100M SFP LC LX Transceiver	JD120B
HPE X110 100M SFP LC LH40 Transceiver	JD090A
HPE X120 1G SFP LC SX Transceiver	JD118B
HPE X120 1G SFP LC LX Transceiver	JD119B
HPE X125 1G SFP LC LH40 1310nm Transceiver	JD061A
HPE X120 1G SFP LC LH40 1550nm Transceiver	JD062A
HPE X125 1G SFP LC LH70 Transceiver	JD063B

SFP+ Transceivers

HPE X130 10G SFP+ LC ER 40km Transceiver	JG234A
HPE X130 10G SFP+ LC SR Transceiver	JD092B

Configuration

HPE X130 10G SFP+ LC LRM Transceiver	JD093B
HPE X130 10G SFP+ LC LR Transceiver	JD094B
HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C

XFP Transceivers

HPE X130 10G XFP LC LR Single Mode 10km 1310nm Transceiver	JD108B
HPE X130 10G XFP LC SR Transceiver	JD117B
HPE X135 10G XFP LC ER Transceiver	JD121A

Internal Power Supplies

For AC PSUs JG527A or JG745A (JG722A, JG724A, JG723A, JG725A only) System (std 1// max 2) User Selection (min 0 // max 1)

For DC PSUs JG528A or JD366A (JG722A, JG724A, JG723A, JG725A only) System (std 0// max 2) User Selection (min 0 // max 2)

HPE FlexNetwork X351 300W 100-240VDC to 12VDC Power Supply	JG527A See Configuration **NOTE:**1, 2, 4
PDU Cable NA/MX/TW/JP • C15 PDU Jumper Cord (NA/MX/TW/JP)	JG527A#B2B
PDU Cable ROW • C15 PDU Jumper Cord (ROW)	JG527A#B2C
High Volt Switch/Router to Wall Power Cord • NEMA L6-20P Cord (NA/MEX/JP/TW)	JG527A#B2E
HP X351 300W DC Power Supply	JG528A#B01 See Configuration **NOTE:** 4
HPE FlexNetwork X351 150W 100-240VAC to 12VDC Power Supply	JG745A See Configuration **NOTE:**1, 2, 3
HPE FlexNetwork X351 150W 100-240VAC to 12VDC Power Supply • C15 PDU Jumper Cord (NA/MX/TW/JP)	JG745A

Configuration

HPE FlexNetwork X351 150W 100-240VAC to 12VDC Power Supply JG745A
- C15 PDU Jumper Cord (ROW)

HPE FlexNetwork X351 150W 100-240VAC to 12VDC Power Supply JG745A
- NEMA L6-20P Cord (NA/MEX/JP/TW)

Configuration Rules:

Note 1 Localization (Wall Power Cord) required on orders without #B2B, #B2C (PDU Power Cord) or #B2E. (See Localization Menu)

Note 2 If #B2E is selected Then replace Localized option with #B2E for power supply and with #B2E for Switch . (Offered only in NA, Mexico, Taiwan, and Japan)

Note 3 Only supported on the HP 850 Unified Wired-WLAN Appliances (JG724A and JG722A).

Note 4 Only supported on the HP 870 Unified Wired-WLAN Appliances (JG723A and JG725A).

Remarks DC Power supply JG746A cannot be used in conjunction with the AC Power Supply (JG745A) that ships with JG722A, JG724A.
If you select DC Power supplies JG746A, you must remove the existing AC Power supply, JG745A, that is included with switches JG722A, JG724A. If you require redundant power using the DC Power supply JG746A, then you must select 2 of them per chassis.
DC Power supply JG528A cannot be used in conjunction with the AC Power Supply (JG527A) that ships with JG723A or JG725A.
If you select DC Power supply JG528A, you must remove the existing AC Power supply, JG527A, that is included with switches JG723A or JG725A. If you require redundant power using the DC Power supply JG528A, then you must select 2 of them per chassis..
Drop down under power supply should offer the following options and results:
Switch/Router/Power Supply to PDU Power Cord - #B2B in North America, Mexico, Taiwan, and Japan or #B2C ROW. (Watson Default B2B or B2C for Rack Level CTO)
Switch/Router/Power Supply to Wall Power Cord - Localized Option (Watson Default for BTO and Box Level CTO)
High Volt Switch/Router/Power Supply to Wall Power Cord - #B2E Option. (Offered only in North America, Mexico, Taiwan, and Japan)

Switch Options

External Power Supplies

HPE RPS1600 Redundant Power System JG136A
- Height = 1U
- includes 1 x c13, 1600w and Power Supply port

See Configuration
NOTE:2, 3

HPE RPS1600 1600W AC Power Supply JG137A

Configuration

- Installs into JG136A only — See Configuration **NOTE:**1, 3

Configuration Rules:

Note 1 If this power supply is selected, The JG136A - HPE A-RPS1600 Redundant Power System must be on order or onsite.

Note 2 Localization required.

Note 3 Only supported on the JG640A switch. Switch only supports 1 JG136A and 1 JG137A Power supply systems.

Licenses

(Switch JG641A and JG647A) System (std 0 // max 1) User Selection (min 0 // max 1) per enclosure
(Switch JG640A) System (std 0 // max 3) User Selection (min 0 // max 3) per enclosure

HP 830 Unified Wired-WLAN Switch 12 AP E-LTU License JG648AAE
REMARK: This SKU is optional to increase the AP by a count of 12 per E-LTU

(Switch JG723A, JG725A) System (std 0 // max 48) User Selection (min 0 // max 48) per enclosure
(Switch JG724A, JG722A) System (std 0 // max 16) User Selection (min 0 // max 16) per enclosure

HP Unified Wired-WLAN 32 AP E-LTU JG774AAE
REMARK: This license is for use with the Primary Controllers.

Remarks This SKU is optional to increase the AP by a count of 32 per E-LTU
Each HP 870 Enclosure supports a total of 1536 AP's using any combination of JG774AAE or JG649AAE.
Each HP 850 Enclosure supports a total of 512 AP's using any combination of JG774AAE or JG649AAE.

(Switch JG723A, JG725A) System (std 0 // max 12) User Selection (min 0 // max 12) per enclosure
(Switch JG724A, JG722A) System (std 0 // max 4) User Selection (min 0 // max 4) per enclosure

HP Unified Wired-WLAN 128 AP E-LTU JG649AAE
REMARK: This license is for use with the Primary Controllers.

HP Unified Wired-WLAN 128 AP Redundant E-LTU JG902AAE
REMARK: This license is for use with the Redundant Controllers.

Remarks JG649AAE is optional to increase the AP by a count of 128 per E-LTU
Each HPE 870 Enclosure supports a total of 1536 AP's using any combination of JG774AAE or JG649AAE.
Each HPE 850 Enclosure supports a total of 512 AP's using any combination of JG774AAE or JG649AAE.
JG902AAE - Redundant access point licenses are intended for use only on a redundant controller module in a 1+1 or N+1 configuration or when extra access point capacity is required for failover in an N+N configuration.

Opacity Shield Kit

Configuration

HP 870 Unified Wired-WLAN Appliance Opacity Shield Kit JG772A

NOTE: Only supported on the HPE 870 Unified Wired-WLAN Appliances (JG723A and JG725A).

HP 850 Unified Wired-WLAN Appliance Opacity Shield Kit JG773A

NOTE: Only supported on the HPE 850 Unified Wired-WLAN Appliances (JG724A and JG722A).

HP 830 24-Port PoE+ Unified Wired-WLAN Switch Opacity Shield Kit JG657A

NOTE: Only supported on the HPE 830 24P PoE+ Unified Wired-WLAN Switches (JG640A).

HP 830 8-Port PoE+ Unified Wired-WLAN Switch Opacity Shield Kit JG658A

NOTE: Only supported on the HPE 830 8P PoE+ Unified Wired-WLAN Switches (JG641A and JG647A).

Technical Specifications

HP 870 Unified Wired-WLAN Appliance (JG723A)

I/O ports and slots	12 RJ-45 autosensing 100/1000 ports (IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Media Type: Auto-MDIX; Duplex: 100BASE-TX: half or full; 1000BASE-T: full only 12 SFP 100/1000 Mbps ports (IEEE 802.3z Type 1000BASE-X, IEEE 802.3u Type 100BASE-FX) 4 SFP+ 10GbE ports (IEEE 802.3ae Type 10GBASE-ER, IEEE 802.3ae Type 10GBASE-LR, IEEE 802.3ae Type 10GBASE-SR, IEEE 802.3aq Type 10GBASE-LRM)	
Additional ports and slots	1 RJ-45 serial console port 1 RJ-45 out-of-band management port	
Physical characteristics	**Dimensions**	17.32(w) x 18.9(d) x 3.47(h) in (44 x 48 x 8.81 cm) (2U height)
	Weight	29.32 lb (14.5 kg)
Power supplies	2 power supply slots 1 minimum power supply required includes: 1 x JG527A (HP X351 300W 100-240VAC to 12VDC Power Supply)	
Memory and processor	**Processor**	Broadcom XLP432 Eight core @ 1.4 GHz, 4 GB flash, 8 GB DDR3 SDRAM
Mounting and enclosure	EIA-standard 19-inch telco rack or equipment cabinet (hardware included)	
Environment	**Operating temperature**	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	5% to 95%, noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, noncondensing
	Altitude	up to 16,404 ft (5 km)
Electrical characteristics	**Maximum heat dissipation**	887 BTU/hr (935.79 kJ/hr)
	Voltage	100 - 240 VAC, rated -48 to -60 VDC, rated (depending on power supply chosen)
	Maximum power rating	260 W
	Frequency	50/60 Hz
Safety	UL 60950-1; CAN/CSA 22.2 No. 60950-1; IEC 60950-1; EN 60950-1; FDA 21 CFR Subchapter J	
Features	Default supported APs: 256 Maximum supported APs: 1536 (via the optional purchase of the 32 or 128 access point E-LTU) Maximum supported clients and centralized throughput: - 30,000 clients - 40G centralized throughput Maximum supported users via local portal authentication: 6000 Maximum supported users via local authentication (AAA): 3,000 Maximum supported configured SSIDs: 512 Maximum supported ACLs: 32,000 Supported MSM APs are automatically discovered, Comware firmware is loaded, and the APs can be fully managed. AP upgrade license rules for redundant HP 870 Unified Wired-WLAN Appliance deployments - The primary HP 870 Unified Wired-WLAN Appliance's AP count must be increased using the optional HP Unified Wired-WLAN 128 AP E-LTU (JG649AAE) or the HP Unified Wired-WLAN 32 AP E-LTU (JG774AAE).	

Technical Specifications

	- The secondary HP 870 Unified Wired-WLAN Appliance's AP count can be increased as needed using the reduced-cost HP Unified Wired-WLAN 128 AP Redundant E-LTU Power supplies are hot-swappable. When two power supplies are used, they must be the same type. An AC and a DC power supply must not be used together in the same appliance.
Emissions	EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; AS/NZS CISPR 22 Class A; EN 61000-3-2; EN 61000-3-3; VCCI-3 CLASS A; VCCI-4 CLASS A; ETSI EN 300 386; FCC Part 15 (CFR 47) CLASS A
Immunity	**EN** EN 55024, CISPR24 & ETSI EN 300 386
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; HTTPS; RMON1; FTP; IEEE 802.3 Ethernet MIB; Ethernet Interface MIB
Services	Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/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 Hewlett Packard Enterprise sales office.

Standards and protocols (applies to all products in series)

General protocols

RFC 768 UDP
RFC 791 IP
RFC 792 ICMP
RFC 793 TCP
RFC 826 ARP
RFC 854 TELNET
RFC 855 Telnet Option Specification
RFC 858 Telnet Suppress Go Ahead Option
RFC 894 IP over Ethernet
RFC 950 Internet Standard Subnetting Procedure
RFC 959 File Transfer Protocol (FTP)
RFC 1122 Host Requirements
RFC 1141 Incremental updating of the Internet checksum
RFC 1144 Compressing TCP/IP headers for low-speed serial links
RFC 1256 ICMP Router Discovery Protocol (IRDP)
RFC 1305 NTPv3 (IPv4 only)
RFC 1321 The MD5 Message-Digest Algorithm
RFC 1334 PPP Authentication Protocols (PAP)
RFC 1350 TFTP Protocol (revision 2)
RFC 1812 IPv4 Routing
RFC 1944 Benchmarking Methodology for Network Interconnect Devices
RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP)
RFC 2104 HMAC: Keyed-Hashing for Message Authentication
RFC 2246 The TLS Protocol Version 1.0
RFC 2284 EAP over LAN
RFC 2644 Directed Broadcast Control
RFC 2864 The Inverted Stack Table
RFC 2465 Management Information Base for IPv6: Textual Conventions and General Group
RFC 2466, Management Information Base for IP Version 6 - ICMPv6
RFC 2526 Reserved IPv6 Subnet Anycast Addresses
RFC 2553 Basic Socket Interface Extensions for IPv6
RFC 2563 ICMPv6
RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations (Ping only)
RFC 3315 DHCPv6 (client and relay)
RFC 3363 DNS support
RFC 3484 Default Address Selection for IPv6
RFC 3493 Basic Socket Interface Extensions for IPv6
RFC 3513 IPv6 Addressing Architecture
RFC 3542 Advanced Sockets API for IPv6
RFC 3587 IPv6 Global Unicast Address Format
RFC 3596 DNS Extension for IPv6
RFC 4193, Unique Local IPv6 Unicast Addresses
RFC 4443 ICMPv6
RFC 4541 IGMP & MLD Snooping Switch
RFC 4861 IPv6 Neighbor Discovery
RFC 4862 IPv6 Stateless Address Auto-configuration
RFC 5095 Deprecation of Type 0 Routing Headers in IPv6

MIBs

RFC 1213 MIB II
RFC 1229 Interface MIB Extensions
RFC 1643 Ethernet MIB
RFC 1757 Remote Network Monitoring MIB

Network management

IEEE 802.11k-2008 (beacon measurement functionality used as part of radio resource management)
RFC 1155 Structure of Management Information
RFC 1905 SNMPv2 Protocol Operations
RFC 2573 SNMPv3 Applications
RFC 2574 SNMPv3 User-based Security Model (USM)
RFC 2575 VACM for SNMP
SNMPv1/v2c

QoS/CoS

RFC 2474 DS Field in the IPv4 and IPv6 Headers
RFC 2475 DiffServ Architecture
RFC 3168 The Addition of Explicit Congestion Notification (ECN) to IP
Call Admission Control (CAC): supports client-based and channel-utilization based call admission policies
Wi-Fi MultiMedia (WMM), IEEE 802.11e

Security

IEEE 802.11w Protected Management Frames
IEEE 802.1X Port Based Network Access Control
RFC 1851 ESP Triple DES Transform
RFC 2246 Transport Layer Security (TLS)
RFC 2401 Security Architecture for the Internet Protocol
RFC 2408 Internet Security Association and Key Management Protocol (ISAKMP)
RFC 2409 The Internet Key Exchange (IKE)
RFC 2548 Microsoft Vendor-specific RADIUS Attributes

Technical Specifications

Extension to the Interfaces Group MIB
RFC 2866 RADIUS Accounting
RFC 2869 RADIUS Extensions
RFC 3164 Syslog
RFC 3268 Advanced Encryption Standard (AES) Ciphersuites for Transport Layer Security (TLS)
RFC 3619 Ethernet Automatic Protection Switching (EAPS)
RFC 3636 Definitions of Managed Objects for IEEE 802.3 Medium Attachment Units (MAUs)

IP multicast

RFC 1112 IGMP
RFC 2236 IGMPv2
RFC 2934 Protocol Independent Multicast MIB for IPv4
RFC 4541 Considerations for Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) Snooping Switches

IPv6

RFC 1350 TFTP
RFC 1881 IPv6 Address Allocation Management
RFC 1887 IPv6 Unicast Address Allocation Architecture
RFC 1981 IPv6 Path MTU Discovery
RFC 2292 Advanced Sockets API for IPv6
RFC 2373 IPv6 Addressing Architecture
RFC 2375 IPv6 Multicast Address Assignments
RFC 2454 IP Version 6 Management Information Base - UDP
RFC 2460 IPv6 Specification
RFC 2461 IPv6 Neighbor Discovery
RFC 2462 IPv6 Stateless Address Auto-configuration
RFC 2463 ICMPv6
RFC 2464 Transmission of IPv6 over Ethernet Networks
RFC 2011 SNMPv2 MIB for IP
RFC 2012 SNMPv2 MIB for TCP
RFC 2013 SNMPv2 MIB for UDP
RFC 2571 SNMP Framework MIB
RFC 2572 SNMP-MPD MIB
RFC 2613 SMON MIB
RFC 2665 Ethernet-Like-MIB
RFC 2674 Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering, and Virtual Extensions
RFC 2863 The Interfaces Group MIB
RFC 2932 IP (Multicast Routing MIB)
RFC 2933 IGMP MIB
RFC 4444 Management Information Base for Intermediate System to Intermediate System (IS-IS)

Mobility

IEEE 802.11a High Speed Physical Layer in the 5 GHz Band
IEEE 802.11ac WLAN Enhancements for Very High Throughput
IEEE 802.11b Higher-Speed Physical Layer Extension in the 2.4 GHz Band
IEEE 802.11d Global Harmonization
IEEE 802.11e QoS enhancements
IEEE 802.11g Further Higher Data Rate Extension in the 2.4 GHz Band
IEEE 802.11h Dynamic Frequency Selection
IEEE 802.11i Medium Access Control (MAC) Security Enhancements
IEEE 802.11n WLAN Enhancements for Higher Throughput
IEEE 802.11s D1.06 Draft
HotSpot 2.0 Release 1 per the WiFi Alliance Hotspot 2.0 (Release 1) Technical Specification Package v1.0.0 (refer to the HP Access Point—Controller Compatibility Matrix for certified APs)
NOTE: Some of the above standards are now included in IEEE 802.11-2012
RFC 2716 PPP EAP TLS Authentication Protocol
RFC 2865 RADIUS Authentication
RFC 2867 RADIUS Accounting Modifications for Tunnel Protocol Support
RFC 3394 Advanced Encryption Standard (AES) Key Wrap Algorithm
RFC 3576 Dynamic Authorization Extensions to RADIUS (Disconnect Message and Session-time renewal)
RFC 3579 RADIUS Support For Extensible Authentication Protocol (EAP)
RFC 3580 IEEE 802.1X RADIUS Guidelines
Access Control Lists (ACLs)
Guest VLAN for 802.1X
Secure Sockets Layer (SSL)
SSHv2 Secure Shell
Web Authentication
WPA (Wi-Fi Protected Access)/WPA2

VPN

RFC 2403 The Use of HMAC-MD5-96 within ESP and AH
RFC 2404 The Use of HMAC-SHA-1-96 within ESP and AH
RFC 2405 The ESP DES-CBC Cipher Algorithm With Explicit IV
RFC 2407 The Internet IP Security Domain of Interpretation for ISAKMP
RFC 2451 The ESP CBC-Mode Cipher Algorithms

IPSec

RFC 1829 The ESP DES-CBC Transform
RFC 3602 The AES-CBC Cipher Algorithm and Its Use with IPSec

IKEv1

RFC 3748 - Extensible Authentication Protocol (EAP)

PKI

RFC 3280 Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile

Accessories

HPE 870 Unified Wired-WLAN Appliance Series accessories

HP 870 Unified Wired-WLAN Appliance (JG723A)

HPE X125 1G SFP LC LH40 1310nm Transceiver	JD061A
HPE X120 1G SFP LC LH40 1550nm Transceiver	JD062A
HPE X125 1G SFP LC LH70 Transceiver	JD063B
HPE X110 100M SFP LC LH40 Transceiver	JD090A
HPE X130 10G SFP+ LC SR Transceiver	JD092B
HPE X130 10G SFP+ LC LRM Transceiver	JD093B
HPE X130 10G SFP+ LC LR Transceiver	JD094B
HPE X115 100M SFP LC FX Transceiver	JD102B
HPE X120 1G SFP LC SX Transceiver	JD118B
HPE X120 1G SFP LC LX Transceiver	JD119B
HPE X110 100M SFP LC LX Transceiver	JD120B
HPE X130 10G SFP+ LC ER 40km Transceiver	JG234A
HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
HPE FlexNetwork X351 300W 100-240VDC to 12VDC Power Supply	JG527A
HPE FlexNetwork X351 300W 48-60VDC to 12VDC Power Supply	JG528A
HP Unified Wired-WLAN 32 AP E-LTU	JG774AAE
HP Unified Wired-WLAN 128 AP E-LTU	JG649AAE
HP Unified Wired-WLAN 128 AP Redundant E-LTU	JG902AAE

Summary of Changes

Date	Version History	Action	Description of Change:
01-Aug-2016	From Version 8 to 9	Changed	Adding #AC3 Option
01-Dec-2015	From Version 7 to 8	Changed	Overview and Technical Specifications updated
01-Jun-2015	From Version 6 to 7	Changed	Technical Specifications updated
20-Mar-2015	From Version 5 to 6	Changed	Document name changed to HP 870 Unified Wired-WLAN Appliance Series
09-Feb-2015	From Version 4 to 5	Added	Product image added
		Changed	Features and benefits, Configuration and Technical Specifications were updated
01-Dec-2014	From Version 3 to 4	Changed	Warranty and support updated, SFP+ Transceivers and Accessories updated
19-June-2014	From Version 2 to 3	Changed	Text change on Product overview
10-June-2014	From Version 1 to 2	Added	Consolidated menu for HP 800s (HP 830, HP 850 and HP 870)

Summary of Changes

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