# HPE Aruba Networking 2920 Switch Series

## Key features

- HPE Aruba Networking Layer 3 switch series with stacking, static & RIP routing, IPv6, ACLs, and sFlow

- Advanced security and network management tools with HPE Aruba Networking NAC and HPE Aruba Networking [Legacy] Management Software

- Modular 10 GbE uplinks (SFP+ and 10 GBASE-T) and upgradeable power supplies for up to 1440W PoE+

- Simple deployment with Zero Touch Provisioning and cloud-based HPE Aruba Networking Central support

## Product overview

The HPE Aruba Networking 2920 Switch Series provides security, scalability, and ease of use for enterprise edge, SMB and branch office networks. A powerful ProVision ASIC delivers low latency, more packet buffering, and adaptive power consumption. This Layer 3 switch series supports modular stacking, 10 GbE, PoE+, static and RIP routing, Access OSPF routing, Tunneled Node, ACLs, sFlow, and IPv6. The 2920 delivers a consistent wired/wireless user experience with advanced security and network management tools with HPE Aruba Networking NAC and HPE Aruba Networking [Legacy] Management Software. With support from HPE Aruba Networking Central, you can quickly set up remote branch sites with little or no IT support.

The 2920 Switch Series provides cost-effective pay as you grow modular stacking with a 2-port stacking module, support for up to four 10GBASE-T (or SFP+) uplinks and upgradeable power supplies so your network can quickly scale when needed. The robust Layer 3 feature set requires no licensing and includes a limited lifetime warranty.

## Features and benefits

### Software-defined networks

- Supports multiple programmatic interfaces, including REST APIs and OpenFlow 1.0 and 1.3, to enable automation of network operations, monitoring, and troubleshooting

### Unified wired and wireless

- HPE Aruba Networking NAC provides support for unified wired and wireless policies

- Switch auto-configuration automatically configures switch for rogue AP detection, add VLAN, and set PoE priority when an HPE Aruba Networking AP is detected

- Static IP visibility lets HPE Aruba Networking NAC do accounting for clients with static IP address

- Tunnel Node provides a secure tunnel that transports network traffic on a per-port basis to an HPE Aruba Networking Controller

### Quality of Service (QoS)

- Traffic prioritization (IEEE 802.1p) allows real-time traffic classification into eight priority levels mapped to eight queues

- Layer 4 prioritization enables prioritization based on TCP/UDP port numbers

- 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

- Rate limiting sets per-port ingress enforced maximums and per-port, per-queue minimums

- Large buffers provide graceful congestion management

### Connectivity

- Flexible 10 Gb/s Ethernet connectivity up to four optional 10 Gigabit ports (SFP+ and/or 10GBASE-T)

- Optional two-port stacking module with up to 40 Gb/s per port allows stacking of up to four switch units into a single virtual device

- Auto-MDIX provides automatic adjustments for straight-through or crossover cables on all 10/100 and 10/100/1000 ports

- IEEE 802.3at Power over Ethernet (PoE+) provides up to 30 W per port that allows support of the latest PoE+-capable devices such as IP phones, wireless access points, and security cameras, as well as any IEEE 802.3af-compliant end device; eliminates the cost of additional electrical cabling and circuits that would otherwise be necessary in IP phone and WLAN deployments

- Pre-standard PoE support detects and provides power to pre-standard PoE devices

- Dual-personality functionality includes four 10/100/1000 ports or SFP slots for optional fiber connectivity such as Gigabit-SX, -LX, and -LH, or 100-FX

- IPv6

  – IPv6 host enables switches to be managed in an IPv6 network

  – Dual stack (IPv4 and IPv6) transitions from IPv4 to IPv6, supporting connectivity for both protocols

  – MLD snooping forwards IPv6 multicast traffic to the appropriate interface

  – IPv6 ACL/QoS supports ACL and QoS for IPv6 network traffic

  – IPv6 routing supports static and RIPng protocols

  – Security provides RA guard, DHCPv6 protection, dynamic IPv6 lockdown, and ND snooping

### Performance

- Energy-efficient design

  – 80 PLUS Silver Certified power supply increases power efficiency and savings

  – Energy-Efficient Ethernet (EEE) support reduces power consumption in accordance with IEEE 802.3az

- Designed with a ProVision ASIC for very low latency, increased packet buffering, and adaptive power consumption

- Selectable queue configurations allow for increased performance by selecting the number of queues and associated memory buffering that best meet the requirements of the network applications

### Convergence

- IP multicast snooping and data-driven IGMP automatically prevent flooding of IP multicast traffic

- LLDP-MED (Media Endpoint Discovery) defines a standard extension of LLDP that stores values for parameters such as QoS and VLAN to automatically configure network devices such as IP phones

- IEEE 802.1AB Link Layer Discovery Protocol (LLDP) facilitates easy mapping using network management applications with LLDP automated device discovery protocol

- PoE and PoE+ allocations support multiple methods (automatic, IEEE 802.3at dynamic, LLDP-MED fine grain, IEEE 802.3af device class, or user- specified) to allocate and manage PoE/PoE+ power for more efficient energy savings

- Local MAC Authentication assigns attributes such as VLAN and QoS using locally configured profile that can be a list of MAC prefixes

### Resiliency and high availability

- IEEE 802.1s Multiple Spanning Tree provides high link availability in multiple VLAN environments by allowing multiple spanning trees; provides legacy support for IEEE 802.1d and IEEE 802.1w

- IEEE 802.3ad link-aggregation-control protocol (LACP) and HPE port trunking support up to 60 static, dynamic, or distributed trunks active across a stack, with each trunk having up to eight links (ports) per static trunk; and offer support for trunking across stack members

- Ring and chain stacking topology allows failure of a link or switch in a ring of stacked switches, while the remaining connected switches continue operation

- SmartLink provides easy-to-configure link redundancy of active and standby links

## Management

- SNMPv1, v2, and v3 provide complete support of SNMP; provide full support of industry-standard Management Information Base (MIB) plus private extensions; SNMPv3 supports increased security using encryption

- Out-of-band Ethernet management port enables management of a separate physical management network, keeping management traffic segmented from network data traffic

- Zero-Touch ProVisioning (ZTP) uses settings in DHCP to enable ZTP with HPE Aruba Networking [Legacy] Management Software

- Flexible management with same hardware—Supports both cloud-based HPE Aruba Networking Central and on-premise HPE Aruba Networking [Legacy] Management Software with the same hardware ensuring change management platform without ripping and replacing switching infrastructure

## Manageability

- Dual flash images provide independent primary and secondary operating system files for backup while upgrading

- Friendly port names allow assignment of descriptive names to ports

- Find-Fix-Inform finds and fixes common network problems automatically, then informs administrator

- Multiple configuration files allow multiple configuration files to be stored to a flash image

- Software updates free downloads from the Web

- RMON, XRMON, and sFlow provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events

- Troubleshooting ingress and egress port monitoring enable network problem solving

- Unidirectional link detection (UDLD) monitors the link between two switches and blocks the ports on both ends of the link if the link goes down at any point between the two devices

## Layer 2 switching

- VLAN support and tagging supports IEEE 802.1Q (4,094 VLAN IDs) and 256 VLANs simultaneously

- Jumbo packet support improves the performance of large data transfers; supports frame size of up to 9220 bytes

- IEEE 802.1v protocol VLANs isolate select non-IPv4 protocols automatically into their own VLANs

- Rapid Per-VLAN Spanning Tree (RPVST+) allows each VLAN to build a separate spanning tree to improve link bandwidth usage; is compatible with PVST+

- GARP VLAN Registration Protocol allows automatic learning and dynamic assignment of VLANs

## Layer 3 services

- DHCP server centralizes and reduces the cost of IPv4 address management

## Layer 3 routing

- Static IP routing provides manually configured routing; includes ECMP capability

- 256 static and 2,048 RIP routes facilitate segregation of user data, without adding external hardware

- Routing Information Protocol (RIP) provides RIPv1, RIPv2, and RIPng routing

## Security

- Multiple user authentication methods

  – IEEE 802.1X uses an IEEE 802.1X supplicant on the client in conjunction with a RADIUS server to authenticate in accordance with industry standards

  – Web-based authentication provides a browser-based environment, similar to IEEE 802.1X, to authenticate clients that do not support the IEEE 802.1X supplicant

  – MAC-based authentication authenticates the client with the RADIUS server based on the client's MAC address

- Authentication flexibility

  – Multiple IEEE 802.1X users per port provides authentication of multiple IEEE 802.1X users per port; prevents a user from "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 IP Layer 3 filtering based on source/destination IP address/subnet and source/destination TCP/UDP port number

- 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

- IEEE 802.1X, MAC, or Web authentication provides concurrent network access control and Web authentication of up to 24 clients per port

- Secure shell encrypts all transmitted data for secure remote 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

- Port security allows access only to specified MAC addresses, which can be learned or specified by the administrator

- MAC address lockout prevents particular configured MAC addresses from connecting to the network

- Secure FTP allows secure file transfer to and from the switch; protects against unwanted file downloads or unauthorized copying of a switch configuration file

- Switch management logon security helps secure switch CLI logon by optionally requiring either RADIUS or TACACS+ authentication

- Custom banner displays security policy when users log in to the switch

- STP BPDU port protection blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks

- DHCP protection blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks

- Dynamic ARP protection blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data

- STP Root Guard protects the root bridge from malicious attacks or configuration mistakes

- Identity-driven ACL enables implementation of a highly granular and flexible access security policy and VLAN assignment specific to each authenticated network user

- Per-port broadcast throttling configures broadcast control selectively on heavy traffic port uplinks

- Private VLAN provides network security by restricting peer-to-peer communication to prevent a variety of malicious attacks; typically a switch port can only communicate with other ports in the same community and/or an uplink port, regardless of VLAN ID or destination MAC address

### Monitor and diagnostics
- Digital optical monitoring of SFP+ and 1000BASE-T transceivers allows detailed monitoring of the transceiver settings and parameters

### Warranty and support
- Limited Lifetime Warranty
  See hpe.com/networking/warrantysummary for warranty and support information included with your product purchase.

- Software releases to find software for your product, refer to hpe.com/networking/support; for details on the software releases available with your product purchase, refer to hpe.com/networking/warrantysummary

## Specification

| | HPE Aruba Networking 2920-24G Switch (J9726A) | HPE Aruba Networking 2920-24G-PoE+ Switch (J9727A) | HPE Aruba Networking 2920-48G Switch (J9728A) |
|---|---|---|---|
| **I/O ports and slots** | | | |
| | 20 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only | 20 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only | 44 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only |
| | 4 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) | 4 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) | 4 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) |
| | 2 module slots | 2 module slots | 2 module slots |
| **Additional ports and slots** | | | |
| | 1 stacking module slot 1 dual-personality (RJ-45 or USB micro-B) 1 USB 1.1 1 RJ-45 out-of-band management port | 1 stacking module slot 1 dual-personality (RJ-45 or USB micro-B) 1 USB 1.1 1 RJ-45 out-of-band management port | 1 stacking module slot 1 dual-personality (RJ-45 or USB micro-B) 1 USB 1.1 1 RJ-45 out-of-band management port |
| **Power supplies** | | | |
| | 1 power supply slot 1 minimum power supply required includes: 1 x J9739A (HPE X331 165W 100-240VAC to 12VDC Modular Power Supply) | 1 power supply slot 1 minimum power supply required includes: 1 x J9738A (HPE X332 575W 100-240VAC to 54VDC Modular Power Supply) | 1 power supply slot 1 minimum power supply required includes: 1 x J9739A (HPE X331 165W 100-240VAC to 12VDC Modular Power Supply) |
| **Physical characteristics** | | | |
| **Dimensions** | 17.42 (w) x 13.23 (d) x 1.75 (h) in (44.25 x 33.6 x 4.45 cm) (1U height) | 17.42 (w) x 13.23 (d) x 1.73 (h) in (44.25 x 33.6 x 4.4 cm) (1U height) | 17.42 (w) x 13.23 (d) x 1.73 (h) in (44.25 x 33.6 x 4.4 cm) (1U height) |
| **Weight** | 11.57 lb (5.25 kg) | 12.04 lb (5.46 kg) | 11.95 lb (5.42 kg) |
| **Memory and processor** | | | |
| | Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM; Packet buffer size: 11.25 MB (6.75 MB dynamic egress + 4.5 MB ingress), 1 GB flash MB | Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM; Packet buffer size: 11.25 MB (6.5 MB dynamic egress + 4.5 MB ingress), 1 GB flash | Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM; Packet buffer size: 11.25 MB (6.75 MB dynamic egress + 4.5 MB ingress), 1 GB flash |
| **Performance** | | | |
| **100 Mb latency** | <9.0µs (FIFO 64-byte packets) | <9.0µs (FIFO 64-byte packets) | <9.0µs (FIFO 64-byte packets) |
| **1000 Mb latency** | <3.3µs (FIFO 64-byte packets) | <3.3µs (FIFO 64-byte packets) | <3.3µs (FIFO 64-byte packets) |
| **10 Gbps latency** | <3.3µs (FIFO 64-byte packets) | <3.3µs (FIFO 64-byte packets) | <3.2µs (FIFO 64-byte packets) |
| **Throughput** | up to 95.2 Mpps | up to 95.2 Mpps | up to 130.9 Mpps |
| **Switching capacity** | 128 Gbps | 128 Gbps | 176 Gbps |
| **Routing table size** | 2048 entries (IPv4), 256 entries (IPv6) | 2048 entries (IPv4), 256 entries (IPv6) | 2048 entries (IPv4), 256 entries (IPv6) |
| **MAC address table size** | 16000 entries | 16000 entries | 16000 entries |

## Specification

| | HPE Aruba Networking 2920-24G Switch (J9726A) | HPE Aruba Networking 2920-24G-PoE+ Switch (J9727A) | HPE Aruba Networking 2920-48G Switch (J9728A) |
|---|---|---|---|
| **Environment** | | | |
| **Operating temperature** | 32°F to 131°F (0°C to 55°C) | 32°F to 131°F (0°C to 55°C) | 32°F to 131°F (0°C to 55°C) |
| **Operating relative humidity** | 15% to 95%, non-condensing | 15% to 95%, non-condensing | 15% to 95%, non-condensing |
| **Non-operating/storage temperature** | -40°F to 158°F (-40°C to 70°C) | -40°F to 158°F (-40°C to 70°C) | -40°F to 158°F (-40°C to 70°C) |
| **Non-operating/storage relative humidity** | 15% to 95%, non-condensing | 15% to 95%, non-condensing | 15% to 95%, non-condensing |
| **Altitude** | up to 10,000 ft (3 km) | up to 10,000 ft (3 km) | up to 10,000 ft (3 km) |
| **Acoustic** | Power: 57 dB, Pressure: 41.4 dB | Power: 61 dB, Pressure: 44.9 dB | Power: 57 dB, Pressure: 41.8 dB |
| **Electrical characteristics** | | | |
| **Frequency** | 50/60 Hz | 50/60 Hz | 50/60 Hz<br>Achieved Miercom Certified Green Award |
| **80plus.org certification** | Silver | Silver | Silver |
| **Maximum heat dissipation** | 198 BTU/hr (208.89 kJ/hr) | 358 BTU/hr (377.69 kJ/hr) | 239 BTU/hr (252.15 kJ/hr) |
| **Voltage** | 100c240 VAC, rated (depending on power supply chosen) | 100–240 VAC, rated (depending on power supply chosen) | 100–40 VAC, rated (depending on power supply chosen) |
| **Maximum power rating** | 58 W | 475 W | 70 W |
| **Idle power** | 26 W | 42 W | 27 W |
| **PoE power** | | 370 W PoE+ | |
| **Notes** | Idle power is the actual power consumption of the device with no ports connected.<br><br>Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. | Idle power is the actual power consumption of the device with no ports connected.<br><br>Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.<br><br>PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS).<br><br>370 W of PoE+ power is available using the internal default power supply. | Idle power is the actual power consumption of the device with no ports connected.<br><br>Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. |

# Specification

| | HPE Aruba Networking 2920-24G Switch (J9726A) | HPE Aruba Networking 2920-24G-PoE+ Switch (J9727A) | HPE Aruba Networking 2920-48G Switch (J9728A) |
|---|---|---|---|
| **Safety** | | | |
| | CE Labeled; EN 60825-1 Safety of Laser Products-Part 1; FCC Part 15, Subpart B; GOST; EU RoHS Compliant; EN 55022 Class A; EN 55024: 1998; C-Tick; ICES-003, Class A; VCCI Class A; IEC 60950-1, Second Edition; IEC 60825-1; EN62479:2010; CSA C22.2 No.60950-1-07 2nd Edition; EN 60950-1:2006+A11:2009+A1:2010 +A12:2011; IEC 60950-1 (ed.2): am1 | CE Labeled; EN 60825-1 Safety of Laser Products-Part 1; FCC Part 15, Subpart B; GOST; EU RoHS Compliant; EN 55022 Class A; EN 55024: 1998; C-Tick; ICES-003, Class A; VCCI Class A; IEC 60825-1; IEC 60950-1, Second Edition; EN62479:2010; CSA C22.2 No.60950-1-07 2nd Edition; EN 60950-1:2006+A11:2009+A1:2010 +A12:2011; IEC 60950-1 (ed.2): am1 | CE Labeled; EN 60825-1 Safety of Laser Products-Part 1; FCC Part 15, Subpart B; GOST; EU RoHS Compliant; EN 55022 Class A; EN 55024: 1998; C-Tick; ICES-003, Class A; VCCI Class A; IEC 60825-1; IEC 60950-1, Second Edition; EN62479:2010; CSA C22.2 No.60950-1-07 2nd Edition; EN 60950-1:2006+A11:2009+A1:2010 +A12:2011; IEC 60950-1 (ed.2): am1 |
| **Emissions** | | | |
| | FCC part 15 Class A; VCCI Class A; EN 55022/CISPR 22 Class A | FCC part 15 Class A; VCCI Class A; EN 55022/CISPR 22 Class A | FCC part 15 Class A; VCCI Class A; EN 55022/CISPR 22 Class A |
| **Immunity** | | | |
| **EN** | EN 55024, CISPR 24 | EN 55024, CISPR 24 | EN 55024, CISPR 24 |
| **ESD** | IEC 61000-4-2 | IEC 61000-4-2 | IEC 61000-4-2 |
| **Radiated** | IEC 61000-4-3 | IEC 61000-4-3 | IEC 61000-4-3 |
| **EFT/Burst** | IEC 61000-4-4 | IEC 61000-4-4 | IEC 61000-4-4) |
| **Surge** | IEC 61000-4-5 | IEC 61000-4-5 | IEC 61000-4-5 |
| **Conducted** | IEC 61000-4-6 | IEC 61000-4-6 | IEC 61000-4-6 |
| **Power frequency magnetic field** | IEC 61000-4-8 | IEC 61000-4-8 | IEC 61000-4-8 |
| **Voltage dips and interruptions** | IEC 61000-4-11 | IEC 61000-4-11 | IEC 61000-4-11 |
| **Harmonics** | IEC 61000-3-2 | IEC 61000-3-2 | IEC 61000-3-2 |
| **Flicker** | IEC 61000-3-3 | IEC 61000-3-3 | IEC 61000-3-3 |
| **Management** | | | |
| | HPE Aruba Networking Central; HPE Aruba Networking [Legacy] Management Software; IMC–ntelligent Management Center; Command-line interface; Web browser; Configuration menu; Out-of-band management (RJ-45 Ethernet); SNMP manager; Telnet; RMON1; FTP; In-line and out-of- band; Out-of-band management (serial RS-232c or micro USB) | HPE Aruba Networking Central; HPE Aruba Networking [Legacy] Management Software; IMC–Intelligent Management Center; Command-line interface; Web browser; Configuration menu; Out-of-band management (RJ-45 Ethernet); SNMP manager; Telnet RMON1; FTP; In-line and out-of- band; Out-of-band management (serial RS-232c or micro USB) | HPE Aruba Networking Central; HPE Aruba Networking [Legacy] Management Software; IMC–Intelligent Management Center; Command-line interface; Web browser; Configuration menu; Out-of-band management (RJ-45 Ethernet); SNMP manager Telnet; RMON1; FTP; In-line and out-of- band; Out-of-band management (serial RS-232c or micro USB) |
| **Services** | | | |
| | Refer to the Hewlett Packard Enterprise website at 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. | Refer to the Hewlett Packard Enterprise website at 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. | Refer to the Hewlett Packard Enterprise website at 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. |

## Specification

| | HPE Aruba Networking 2920-48G-PoE+ Switch (J9729A) | HPE Aruba Networking 2920-48G-PoE+ 740W Switch (J9836A) |
|---|---|---|
| **I/O ports and slots** | | |
| | 44 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only | 44 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only |
| | 4 RJ-45 dual-personality 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+) | 4 RJ-45 dual-personality 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+) |
| | 2 module slots | 2 module slots |
| **Additional ports and slots** | | |
| | 1 stacking module slot<br>1 dual-personality (RJ-45 or USB micro-B)<br>1 USB 1.1<br>1 RJ-45 out-of-band management port | 1 stacking module slot<br>1 dual-personality (RJ-45 or USB micro-B)<br>1 USB 1.1<br>1 RJ-45 out-of-band management port |
| **Power supplies** | | |
| | 1 power supply slot<br>1 minimum power supply required includes: 1 x J9738A (HPE X332 575W 100-240VAC to 54VDC Modular Power Supply) | 1 power supply slot<br>1 minimum power supply required includes: 1 x J9737A (HPE X332 1050W 110-240VAC to 54VDC Power Supply) |
| **Physical characteristics** | | |
| **Dimensions** | 17.42 (w) x 13.23 (d) x 1.73 (h) in (44.25 x 33.6 x 4.39 cm) (1U height) | 17.42 (w) x 13.23 (d) x 1.73 (h) in (44.25 x 33.60 x 4.39 cm) (1U height) |
| **Weight** | 12.57 lb (5.7 kg) | 12.86 lb (5.83 kg) |
| **Memory and processor** | | |
| | Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM; Packet buffer size: 11.25 MB (6.75 MB dynamic egress + 4.5 MB ingress), 1 GB flash | Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM; Packet buffer size: 11.25 MB (6.75 MB dynamic egress + 4.5 MB ingress), 1 GB flash |
| **Performance** | | |
| **100 Mb latency** | <9.0µs (FIFO 64-byte packets) | <9.0µs (FIFO 64-byte packets) |
| **1000 Mb latency** | <3.2µs (FIFO 64-byte packets) | <3.2µs (FIFO 64-byte packets) |
| **10 Gbps latency** | <3.2µs (FIFO 64-byte packets) | <3.2µs (FIFO 64-byte packets) |
| **Throughput** | up to 130.9 Mpps | up to 130.9 Mpps |
| **Switching capacity** | 176 Gbps | 176 Gbps |
| **Routing table size** | 2048 entries (IPv4), 256 entries (IPv6) | 2048 entries (IPv4), 256 entries (IPv6) |
| **MAC address table size** | 16000 entries | 16000 entries |
| **Environment** | | |
| **Operating temperature** | 32°F to 131°F (0°C to 55°C) | 32°F to 131°F (0°C to 55°C) |
| **Operating relative humidity** | 15% to 95%, non-condensing | 15% to 95%, non-condensing |
| **Non-operating/storage temperature** | -40°F to 158°F (-40°C to 70°C) | -40°F to 158°F (-40°C to 70°C) |
| **Non-operating/storage relative humidity** | 15% to 95%, non-condensing | 15% to 95%, non-condensing |

## Specification

| | HPE Aruba Networking 2920-48G-PoE+ Switch (J9729A) | HPE Aruba Networking 2920-48G-PoE+ 740W Switch (J9836A) |
|---|---|---|
| **Environment** | | |
| **Altitude** | up to 10,000 ft (3 km) | up to 10,000 ft (3 km) |
| **Acoustic** | Power: 62 dB, Pressure: 45.2 dB | Power: 53 dB, Pressure: 38.3 dB |
| **Electrical characteristics** | | |
| **Frequency** | 50/60 Hz | 50/60 Hz |
| **80plus.org certification** | Silver | Gold |
| **Maximum heat dissipation** | 399 BTU/hr (420.95 kJ/hr) | 482 BTU/hr (508.51 kJ/hr) |
| **Voltage** | 100–240 VAC, rated (depending on power supply chosen) | 110–240 VAC, rated (depending on power supply chosen) |
| **Maximum power rating** | 487 W | 881 W |
| **Idle power** | 46 W | 52 W |
| **PoE power** | 370 W PoE+ | 740 W PoE+ |
| **Notes** | Idle power is the actual power consumption of the device with no ports connected. | Idle power is the actual power consumption of the device with no ports connected. |
| | Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. | Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. |
| | PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS). | PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS). |
| | 370 W of PoE+ power is available using the internal default power supply. | Idle power is the actual power consumption of the device with no ports connected. 740 W of PoE+ power is available using the internal default power supply. |
| **Safety** | | |
| | CE Labeled; EN 60825-1 Safety of Laser Products-Part 1; FCC Part 15, Subpart B; GOST; EU RoHS Compliant; EN 55022 Class A; EN 55024: 1998; C-Tick; ICES-003, Class A; VCCI Class A; IEC 60950-1: Second Edition; IEC 60825-1; EN62479:2010; CSA C22.2 No. 60950-1-07 2nd Edition; EN 60950-1:2006+A11:2009+A1:2010+A12:2011; IEC 60950-1 (ed.2): am1 | CE Labeled; EN 60825-1 Safety of Laser Products-Part 1; FCC Part 15, Subpart B; GOST; EU RoHS Compliant; EN 55022 Class A; EN 55024: 1998; C-Tick; ICES-003, Class A; VCCI Class A; IEC 60950-1: Second Edition; IEC 60825-1; EN62479:2010; CSA C22.2 No. 60950-1-07 2nd Edition; EN 60950-1:2006+A11:2009+A1:2010+A12:2011; IEC 60950-1 (ed.2): am1 |
| **Emissions** | | |
| | FCC part 15 Class A; VCCI Class A; EN 55022/CISPR 22 Class A | FCC part 15 Class A; VCCI Class A; EN 55022/CISPR 22 Class A |
| **Immunity** | | |
| **EN** | EN 55024, CISPR 24 | EN 55024, CISPR 24 |
| **ESD** | IEC 61000-4-2 | IEC 61000-4-2 |
| **Radiated** | IEC 61000-4-3 | IEC 61000-4-3 |
| **EFT/burst** | IEC 61000-4-4 | IEC 61000-4-4 |
| **Surge** | IEC 61000-4-5 | IEC 61000-4-5 |
| **Conducted** | IEC 61000-4-6 | IEC 61000-4-6 |

## Specification

| | HPE Aruba Networking 2920-48G-PoE+ Switch (J9729A) | HPE Aruba Networking 2920-48G-PoE+ 740W Switch (J9836A) |
|---|---|---|
| **Immunity** | | |
| **Power frequency magnetic field** | IEC 61000-4-8 | IEC 61000-4-8 |
| **Voltage dips and interruptions** | IEC 61000-4-11 | IEC 61000-4-11 |
| **Harmonics** | IEC 61000-3-2 | IEC 61000-3-2 |
| **Flicker** | IEC 61000-3-3 | IEC 61000-3-3 |
| **Management** | | |
| | HPE Aruba Networking Central; HPE Aruba Networking AirWave Network Management; IMC–Intelligent Management Center; Command-line interface; Web browser;Configuration menu; Out-of-band management (RJ-45 Ethernet); SNMP manager; Telnet; RMON1; FTP; In-line and out-of-band; Out-of-band management (serial RS-232c or micro USB); | HPE Aruba Networking Central; HPE Aruba Networking AirWave Network Management; IMC–Intelligent Management Center; Command-line interface; Web browser;Configuration menu; Out-of-band management (RJ-45 Ethernet); SNMP manager; Telnet; RMON1 FTP; In-line and out-of-band; Out-of-band management (serial RS-232c or micro USB); |
| **Services** | | |
| | Refer to the Hewlett Packard Enterprise website at 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. | Refer to the Hewlett Packard Enterprise website at 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)

### Denial of service protection
• CPU DoS Protection

### Device management
• RFC 1155 Structure and Mgmt Information (SMIv1)

• RFC 1157 SNMPv1/v2c

• RFC 1591 DNS (client)

• RFC 1901 (Community based SNMPv2)

• RFC 1901-1907 SNMPv2c, SMIv2 and Revised MIB-II

• RFC 1908 (SNMP v1/2 Coexistence)

• RFC 2578-2580 SMIv2

• RFC 2579 (SMIv2 Text Conventions)

• RFC 2580 (SMIv2 Conformance)

• RFC 2819 (RMON groups Alarm, Event, History and Statistics only)

• RFC 3416 (SNMP Protocol Operations v2)

• RFC 3417 (SNMP Transport Mappings)

• HTML and telnet management

• HTTP, SSHv1, and Telnet

• Multiple Configuration Files

• Multiple Software Images

• SNMP v3 and RMON RFC support

• SSHv1/SSHv2 Secure Shell

• TACACS/TACACS+

• Web UI

### General protocols
• IEEE 802.1AX-2008 Link Aggregation

• IEEE 802.1D MAC Bridges

• IEEE 802.1p Priority

• IEEE 802.1Q VLANs

• IEEE 802.1s Multiple Spanning Trees

• IEEE 802.1v VLAN classification by Protocol and Port

• IEEE 802.1w Rapid Reconfiguration of Spanning Tree

• IEEE 802.3ab 1000BASE-T

• IEEE 802.3ad Link Aggregation Control Protocol (LACP)

- IEEE 802.3af Power over Ethernet

- IEEE 802.3at PoE+

- IEEE 802.3az Energy Efficient Ethernet

- IEEE 802.3x Flow Control

- RFC 768 UDP

- RFC 783 TFTP Protocol (revision 2)

- RFC 792 ICMP

- RFC 793 TCP

- RFC 826 ARP

- RFC 854 TELNET

- RFC 868 Time Protocol

- RFC 951 BOOTP

- RFC 1058 RIPv1

- RFC 1256 ICMP Router Discovery Protocol (IRDP)

- RFC 1350 TFTP Protocol (revision 2)

- RFC 1519 CIDR

- RFC 1542 BOOTP Extensions

- RFC 1918 Address Allocation for Private Internet

- RFC 2030 Simple Network Time Protocol (SNTP) v4

- RFC 2131 DHCP

- RFC 2236 IGMP Snooping

- RFC 2453 RIPv2

- RFC 2865 Remote Authentication Dial In User Service (RADIUS)

- RFC 2866 RADIUS Accounting

- RFC 3046 DHCP Relay Agent Information Option

- RFC 3411 An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks

- RFC 3412 Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)

- RFC 3413 Simple Network Management Protocol (SNMP) Applications

- RFC 3414 User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)

- RFC 3415 View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)

- RFC 3416 Protocol Operations for SNMP

- RFC 3417 Transport Mappings for the Simple Network Management Protocol (SNMP)

- RFC 3418 Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)

- RFC 3576 Ext to RADIUS (CoA only)

- RFC 4541 Considerations for Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) Snooping Switches

- RFC 4675 RADIUS VLAN & Priority

- RFC 4861 Neighbor Discovery for IP version 6 (IPv6)

- RFC 4862 IPv6 Stateless Address Autoconfiguration

- RFC 5905 Network Time Protocol Version 4: Protocol

- UDLD (Uni-directional Link Detection)

**IP multicast**
- RFC 1112 IGMP

- RFC 2236 IGMPv2

- RFC 2710 Multicast Listener Discovery (MLD) for IPv6

- RFC 3376 IGMPv3

- RFC 4541 Considerations for Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) Snooping Switches

**IPv6**
- RFC 1981 IPv6 Path MTU Discovery

- RFC 2080 RIPng for IPv6

- RFC 2081 RIPng Protocol Applicability Statement

- RFC 2082 RIP-2 MD5

- RFC 2460 IPv6 Specification

- RFC 2464 Transmission of IPv6 over Ethernet Networks

- RFC 2710 Multicast Listener Discovery (MLD) for IPv6

- RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations (Ping only)

- RFC 2925 Remote Operations MIB (Ping only)

- RFC 3019 MLDv1 MIB

- RFC 3315 DHCPv6 (client and relay)

- RFC 3484 Default Address Selection for IPv6

- RFC 3513 IPv6 Addressing Architecture

- RFC 3596 DNS Extension for IPv6

- RFC 3810 MLDv2 for IPv6

- RFC 4022 MIB for TCP

- RFC 4113 MIB for UDP

- RFC 4251 SSHv6 Architecture

- RFC 4252 SSHv6 Authentication

- RFC 4253 SSHv6 Transport Layer

- RFC 4254 SSHv6 Connection

- RFC 4291 IP Version 6 Addressing Architecture

- RFC 4293 MIB for IP

- RFC 4419 Key Exchange for SSH

- 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

- RFC 6620 FCFS SAVI

- draft-ietf-savi-mix

**MIBs**
- IEEE 802.1ap (MSTP and STP MIB's only)

- RFC 1155 Structure & ID of Mgmt Info for TCP/IP Internets

- RFC 1156 (TCP/IP MIB)

- RFC 1157 A Simple Network Management Protocol (SNMP)

- RFC 1213 MIB II

- RFC 1493 Bridge MIB

- RFC 1724 RIPv2 MIB

- RFC 2021 RMONv2 MIB

- RFC 2578 Structure of Management Information Version 2 (SMIv2)

- RFC 2579 Textual Conventions for SMIv2

- RFC 2580 Conformance Statements for SMIv2

- RFC 2613 SMON MIB RFC 2933 IGMP MIB

- RFC 2618 RADIUS Client MIB RFC 3414 SNMP-User based-SM MIB

- RFC 2620 RADIUS Accounting MIB

- RFC 2665 Ethernet-Like-MIB

- RFC 2668 802.3 MAU MIB

- RFC 2674 802.1p and IEEE 802.1Q Bridge MIB

- RFC 2737 Entity MIB (Version 2) RFC 2819 RMON MIB

- RFC 2819 RMON MIB

- RFC 2863 The Interfaces Group MIB

- RFC 2925 Ping MIB

- RFC 2932 IP (Multicast Routing MIB)

- RFC 2933 IGMP MIB

- RFC 3414 SNMP-User based-SM MIB

- RFC 3415 SNMP-View based-ACM MIB

- RFC 3417 Simple Network Management Protocol (SNMP) over IEEE 802 Networks

- RFC 3418 MIB for SNMPv3

- RFC 4836 Managed Objects for 802.3 Medium Attachment Units (MAU

**Network management**
- IEEE 802.1AB Link Layer Discovery Protocol (LLDP)

- RFC 1155 Structure of Management Information

- RFC 1157 SNMPv1

- RFC 2021 Remote Network Monitoring Management Information Base Version 2 using SMIv2

- RFC 2576 Coexistence between SNMP versions

- RFC 2578 Structure of Management Information Version 2 (SMIv2)

- RFC 2579 Textual Conventions for SMIv2

- RFC 2580 Conformance Statements for SMIv2

- RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events)

- RFC 2819 Remote Network Monitoring Management Information Base

- RFC 2856 Textual Conventions for Additional High Capacity Data Types

- RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations

- RFC 3164 BSD syslog Protocol RFC 3176 sFlow

- RFC 3411 SNMP Management Frameworks

- HPE X132 10G SFP+ LC ER Transceiver (J9153A)

- RFC 3414 SNMPv3 User-based Security Model (USM)

- RFC 3415 SNMPv3 View-based Access Control Model (VACM)

- RFC 5424 Syslog Protocol

- ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)

- SNMPv1/v2c/v3 XRMON

**QoS/CoS**
- IEEE 802.1p (CoS)

- RFC 2474 DiffServ Precedence, including 8 queues/port

- RFC 2597 DiffServ Assured Forwarding (AF)

- RFC 2598 DiffServ Expedited Forwarding (EF)

- Ingress Rate Limiting

**Security**
- IEEE 802.1X Port Based Network Access Control
- RFC 1321 The MD5 Message-Digest Algorithm
- RFC 1334 PPP Authentication Protocols (PAP)
- RFC 1492 An Access Control Protocol, Sometimes Called TACACS
- RFC 1492 TACACS+
- RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP)
- RFC 2082 RIP-2 MD5 Authentication
- RFC 2104 Keyed-Hashing for Message Authentication
- RFC 2138 RADIUS Authentication
- RFC 2139 RADIUS Accounting
- RFC 2246 Transport Layer Security (TLS)
- RFC 2548 Microsoft Vendor-specific RADIUS Attributes
- RFC 2618 RADIUS Authentication Client MIB
- RFC 2620 RADIUS Accounting Client MIB
- RFC 2716 PPP EAP TLS Authentication Protocol
- RFC 2818 HTTP Over TLS
- RFC 2865 RADIUS (client only)
- 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 3162 RADIUS and IPv6
- RFC 3576 Dynamic Authorization Extensions to RADIUS
- RFC 3579 RADIUS Support for Extensible Authentication Protocol (EAP)
- RFC 3580 IEEE 802.1X RADIUS
- RFC 3580 IEEE 802.1X Remote Authentication Dial In User Service (RADIUS) Usage Guidelines
- RFC 4576 RADIUS Attributes
- Access Control Lists (ACLs)
- draft-grant-tacacs-02 (TACACS)
- Guest VLAN for 802.1X
- MAC Authentication

- MAC Lockdown
- MAC Lockout
- Port Security
- Secure Sockets Layer (SSL)
- SSHv2 Secure Shell
- Web Authentication

## HPE Aruba Networking 2920 switch series accessories
**Modules**
- HPE 2920 2-Port 10GbE SFP+ Module (J9731A)
- HPE 2920 2-port 10GBASE-T Module (J9732A)
- HPE 2920 2-Port Stacking Module (J9733A)
- HPE 2920 2-port 10GbE SFP+ Module/S-Buy (J9731AS)
- HPE 2920 2-port 10GBASE-T Module/S-Buy (J9732AS)
- HPE 2920 2-port Stacking Module/S-Buy (J9733AS)

**Transceivers**
- HPE X121 1G SFP LC SX Transceiver (J4858C)
- HPE X121 1G SFP LC LX Transceiver (J4859C)
- HPE X122 1G SFP LC BX-D Transceiver (J9142B)
- HPE X122 1G SFP LC BX-U Transceiver (J9143B)
- HPE X121 1G SFP LC LH Transceiver (J4860C)
- HPE X121 1G SFP RJ45 T Transceiver (J8177C)
- HPE X111 100M SFP LC FX Transceiver (J9054C)
- HPE X132 10G SFP+ LC SR Transceiver (J9150A)
- HPE X132 10G SFP+ LC LR Transceiver (J9151A)
- HPE X132 10G SFP+ LC LRM Transceiver (J9152A)
- HPE X132 10G SFP+ LC ER Transceiver (J9153A)
- HPE X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable (J9281B) HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable (J9283B)
- HPE X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable (J9285B)
- HPE X244 10G XFP to SFP+ 1m Direct Attach Copper Cable (J9300
- HPE X244 10G XFP to SFP+ 3m Direct Attach Copper Cable (J9301A)
- HPE X244 10G XFP to SFP+ 3m Direct Attach Copper Cable (J9302A)
- HPE X132 10G SFP+ LC SR Transceiver/S-Buy (J9150AS)

- HPE X132 10G SFP+ LC LR Transceiver/S-Buy (J9151AS)

- HPE X132 10G SFP+ LC LRM Transceiver/S-Buy (J9152AS)

- HPE X242 40G QSFP+ to QSFP+ 1m Direct Attach Copper Cable (JH234A)

- HPE X242 40G QSFP+ to QSFP+ 3m DAC Cable (JH235A)

- HPE X242 40G QSFP+ to QSFP+ 5m DAC Cable (JH236A)

### Cables
- HPE 0.5 m Multimode OM3 LC/LC Optical Cable (AJ833A)

- HPE 1 m Multimode OM3 LC/LC Optical Cable (AJ834A)

- HPE 2 m Multimode OM3 LC/LC Optical Cable (AJ836A)

- HPE 5 m Multimode OM3 LC/LC Optical Cable (AJ835A)

- HPE 15 m Multimode OM3 LC/LC Optical Cable (AJ837A)

- HPE 30 m Multimode OM3 LC/LC Optical Cable (AJ838A)

- HPE 50 m Multimode OM3 LC/LC Optical Cable (AJ839A)

- HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable (QK732A)

- HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable (QK733A)

- HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable (QK734A)

- HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable (QK735A)

- HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable (QK736A)

- HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable (QK737A)

- HPE 2920 0.5m Stacking Cable (J9734A)

- HPE 2920 1.0m Stacking Cable (J9735A) HP 2920 3.0m Stacking Cable (J9736A)

- HPE 640 External/Redundant Power Supply 1m Cable (J9806A)

- HPE 2920 0.5m Stacking Cable/S-Buy (J9734AS)

- HPE 2920 1.0m Stacking Cable/S-Buy (J9735AS)

- HPE 2920 3.0m Stacking Cable/S-Buy (J9736AS)

### Power Supply
- HPE 640 Redundant/External Power Supply Shelf (J9805A)

### Mounting Kit
- HPE X410 1U Universal 4-post Rack Mounting Kit (J9583A)

### HP 2920-48G-PoE+ 740W Switch (J9836A)
- HPE X332 575W 100-240VAC to 54VDC Modular Power Supply (J9738A)

- HPE X332 1050W 110-240VAC to 54VDC Power Supply (J9737A)

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