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Enterprise company

DATA SHEET

ARUBA 2930M SWITCH SERIES

PRODUCT OVERVIEW

The Aruba 2930M Switch Series is designed for customers creating digital workplaces that are optimized for mobile users with an integrated wired and wireless approach. These Layer 3 access switches are easy to deploy and manage with advanced security and network management tools like Aruba ClearPass Policy Manager and Aruba AirWave. With support from cloud-based Aruba Central, you can quickly set up remote offices with little or no IT support.

A powerful Aruba ProVision ASIC delivers performance, robust feature support, and value with flexible programmability for future applications. High performance modular stacking for up to 10 switches provides pay as you grow scalability and simplicity. The 2930M supports 10GbE and 40GbE uplinks, Dual Modular Power Supplies, up to 1440 Watts of PoE+, models with 24 ports of HPE Smart Rate multi-gigabit Ethernet, robust QoS, RIP, Access OSPF routing, Tunnel Node, PIM, VRRP and IPv6 with no software licensing required.

The Aruba 2930M Switch Series provides a convenient and cost-effective access switch solution that can be quickly set up with Zero Touch Deployment. The switches include 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
- ClearPass Policy Manager supports unified wired and wireless policies using Aruba ClearPass Policy Manager
- Switch auto-configuration automatically configures switch for different settings such as VLAN, CoS, PoE max power, and PoE priority when an Aruba access point is detected
- User role defines a set of switch-based policies in areas such as security, authentication, and QoS. A user role can be assigned to a group of users or devices, using switch-based local user role or download from ClearPass

KEY FEATURES
- Aruba Layer 3 Switch with 10 chassis backplane stacking, static, RIP and access OSPF routing, Tunnel Node, ACLs, SDN, and robust QoS
- Advanced security and network management tools like Aruba ClearPass Policy Manager, Aruba AirWave and Aruba Central
- Modular 10GbE or 40GbE uplinks and HPE Smart Rate (IEEE 802.3bz), up to 1440W PoE+
- Models with 24 ports of HPE Smart Rate with IEEE 802.3bz
- Ready for the software defined network with REST APIs and OpenFlow support
- Simple deployment with Zero Touch Provisioning

- Tunnel Node provides a secure tunnel that transports network traffic on a per-port or per-user role basis to an Aruba Controller. In a per-user role Tunnel Node, users are authenticated by the ClearPass Policy Manager which directs traffic to be tunneled to an Aruba controller or switch locally

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
- Unknown Unicast Rate Limiting throttles unicast packets with unknown destination addresses and limits flooding on the VLAN

Connectivity

- -HPE Smart Rate multi-gigabit (IEEE 802.3bz) Ethernet to connect to high speed 802.11ac wireless access points. Flexible configurations include:
  - Switch with 24 Smart Rate ports
  - Switch with 40 gigabit ports and 8 Smart Rate ports
  - All 2930M switches support optional 4 port Smart Rate module
- Flexible 10 Gbps Ethernet connectivity—Modular 4 port 10 Gigabit (SFP+) available
- 40 Gbps Uplink port connectivity—Modular 40 Gbps QSFP+ port available
- 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
- 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, RIPng and OSPFv3 protocols
  - Security provides RA guard, DHCPv6 protection, dynamic IPv6 lockdown, and ND snooping

Performance

- Energy-efficient design
  - 80 PLUS Gold and Platinum Certified power supplies increase power efficiency and savings

  - Energy-efficient Ethernet (EEE) support reduces power consumption in accordance with IEEE 802.3az
- Designed with the latest Aruba Provision ASIC, providing very low latency, increased packet buffering, and adaptive power consumption
- Selectable queue configurations allows for increased performance by selecting the number of queues and associated memory buffering that best meet the requirements of the network applications
- Stacking Topology
  - High Performance stacking—up to 100 Gbps of stacking throughput per switch. Each 2-port stacking module can support up to 25 Gbps in each direction per port.
  - Ring topology—Supports up to 10 member stack
  - Virtualized Switching Provides simplified management as the switches act as a single chassis when stacked

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 configure automatically 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 802.3 at 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
- IP multicast routing includes PIM sparse and dense modes to route IP multicast traffic
- Protocol Independent Multicast for IPv6 supports one-to-many and many-to-many media casting use cases such as IPTV over IPv6 networks

Resiliency and high availability

- Virtual Router Redundancy Protocol (VRRP) allows groups of two routers to back each other up dynamically to create highly available routed environments in IPV4 and IPV6 networks

- 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 port trunking Support up to 26 static, dynamic, or distributed trunks with each trunk having up to eight links (ports) per static trunk
- SmartLink provides easy-to-configure link redundancy of active and standby links
- Dual Hot Swappable Power Supplies
  - Increased Resiliency provides secondary power supply to enable complete switch power redundancy in case or power line or supply failure
  - Increased PoE+ Power provides secondary power supply to increase the total available PoE+ power

Management
- Aruba Central cloud-based management platform offers simple, secure and cost effective way to manage switches
- Zero-Touch-Provisioning (ZTP) simplifies installation of the switch infrastructure using Aruba Activate-based or DHCP-based process with AirWave Network Management
- Flexible management with same hardware – Supports both cloud-based Central and on-premise AirWave with the same hardware ensuring change management platform without ripping and replacing switching infrastructure
- Built-in programmable and easy to use REST API interface provides configuration automation for Mobile-first campus networks
- Out-of-band Ethernet management port enables management a separate physical management network, and keeps management traffic segmented from network data traffic
- 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

Manageability
- Dual flash images provides 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
- Power down mode allows power savings while the switch is not in use by powering down most of the switch, except for a clock which will boot up the switch on a schedule

Layer 2 switching
- IEEE802.1ad QinQ—Increases the scalability of an Ethernet network by providing a hierarchical structure; connects multiple LANs on a high-speed campus or metro network
- VLAN Support and Tagging supports IEEE 802.1Q (4094 VLAN IDs) and 2K 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+
- GVRP and MVRP allows automatic learning and dynamic assignment of VLANs
- VxLAN encapsulation (tunneling) protocol for overlay network that enables a more scalable virtual network deployment
- IEEE 1588v2 Transparent Clock Mode1-step and end to end delay mode support critical timing Applications

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

- Access OSPF provides OSPFv2 and OSPFv3 protocols for routing between access and the next layer on the LAN. One OSPF area and up to eight interfaces are supported.
- Policy-based routing uses a classifier to select traffic that can be forwarded based on policy set by the network administrator (limited to 16 next-hop routes)

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
- TPM-based Security
  - Includes a Trusted Platform Module (TPM) for secure hardware-based generation and storage of cryptographic keys that can be used for a variety of authentication purposes
- 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
- Open Authentication Role simplifies first-time deployment of AAA in brownfield deployments by allowing full network access for failed clients and provides instant connectivity as soon as a client is plugged-in
- Critical Authentication Role ensures that important infrastructure devices such as IP phones are allowed network access even in the absence of a RADIUS server
- MAC Pinning allows non-chatty legacy devices to stay authenticated by pinning client MAC addresses to the port until the clients logoff or get disconnected
- 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
- Control Plane Policing: Set rate limit on control protocols to protect CPU overload

- RADIUS/TACACS+ eases switch management security administration by using a password authentication server
- 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
- IEEE 802.1AE MACsec provides security on a link between two switch ports (1Gbps or 10Gbps or HPE Smart Rate) using standard encryption and authentication

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

SPECIFICATIONS

	JL319A Aruba 2930M 24G 1-slot Switch	JL320A Aruba 2930M 24G PoE+ 1-slot Switch	JL321A Aruba 2930M 48G 1-slot Switch
I/O ports and slots			
	20 Autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASETX, IEEE 802.3ab Type 1000Base-T); Duplex: 10BASE-T/100BASE-TX:half or full;1000BASE-T:full only	20 Autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASETX, IEEE 802.3ab Type 1000Base-T IEEE 802.3at PoE+); Duplex: 10BASE-T/100BASE-TX:half or full;1000BASE-T:full only	44 Autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASETX, IEEE 802.3ab Type 1000Base-T); Duplex: 10BASE-T/100BASE-TX:half or full;1000BASE-T:full only
	4 Combo 10/100/1000BASE-T or 100/1000Mbps SFP Ports	4 Combo 10/100/1000BASE-T PoE+ or 100/1000Mbps SFP Ports	4 Combo 10/100/1000BASE-T or 100/1000Mbps SFP Ports
Additional ports and slots			
	1 Dual Personality (RJ-45 or USB Micro-B) serial console port	1 Dual Personality (RJ-45 or USB Micro-B) serial console port	1 Dual Personality (RJ-45 or USB Micro-B) serial console port
	1 USB B port for uploading/ downloading files	1 USB B port for uploading/ downloading files	1 USB B port for uploading/ downloading files
	1 100BASE-T Out of Band Management Port	1 100BASE-T Out of Band Management Port	1 100BASE-T Out of Band Management Port
	1 Uplink Slot	1 Uplink Slot	1 Uplink Slot
	1 Stacking Module Slot	1 Stacking Module Slot	1 Stacking Module Slot
	2 Power Supply Slots (power supplies not included)	2 Power Supply Slots (power supplies not included)	2 Power Supply Slots (power supplies not included)
Physical characteristics			
Dimensions	1.73" (Height) x 17.42" (Width) x 12.77" (Depth) (4.39cm x 44.25cm x 32.43cm)	1.73" (Height) x 17.42" (Width) x 12.77" (Depth) (4.39cm x 44.25cm x 32.43cm)	1.73" (Height) x 17.42" (Width) x 12.77" (Depth) (4.39cm x 44.25cm x 32.43cm)
Weight	9.81 lbs 4.45 kg	9.92 lbs 4.50 kg	10.14 lbs 4.60 kg
Memory and Processor			
	Dual Core ARM Cortex A9 @ 1016 MHz	Dual Core ARM Cortex A9 @ 1016 MHz	Dual Core ARM Cortex A9 @ 1016 MHz
	1 GB DDR3 SDRAM	1 GB DDR3 SDRAM	1 GB DDR3 SDRAM
	Packet Buffer Size: 12.38MB and 4.5MB Ingress/7.875MB Egress	Packet Buffer Size: 12.38MB and 4.5MB Ingress/7.875MB Egress	Packet Buffer Size: 12.38MB and 4.5MB Ingress/7.875MB Egress
	4GB eMMC	4GB eMMC	4GB eMMC

SPECIFICATIONS

	JL319A Aruba 2930M 24G 1-slot Switch	JL320A Aruba 2930M 24G PoE+ 1-slot Switch	JL321A Aruba 2930M 48G 1-slot Switch
Performance			
	IPv6 Ready Certified	IPv6 Ready Certified	IPv6 Ready Certified
10 Mbps Latency	< 98.5µs (FIFO 64 byte packets)	< 98.5µs (FIFO 64 byte packets)	< 98.5µs (FIFO 64 byte packets)
100 Mbps Latency	< 11.8µs (FIFO 64-byte Packets)	< 11.8µs (FIFO 64-byte Packets)	< 11.8µs (FIFO 64-byte Packets)
1000 Mbps Latency	< 3.1µs (FIFO 64-byte packets)	< 3.1µs (FIFO 64-byte packets)	< 3.1µs (FIFO 64-byte packets)
10 Gbps Latency	< 3.4µs (FIFO 64-byte packets)	< 3.4µs (FIFO 64-byte packets)	< 3.4µs (FIFO 64-byte packets)
Throughput	95.2 Mpps	95.2 Mpps	112 Mpps
Stacking Performance	100 Gbps	100 Gbps	100 Gbps
Switching Capacity	128 Gbps	128 Gbps	176 Gbps
Switching Capacity (Including Stacking)	228 Gbps	228Gbps	276 Gbps
Routing Table Size	2,000 IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256 Static, 10,000 RIP	2,000 IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256 Static, 10,000 RIP	2,000 IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256 Static, 10,000 RIP
Mac Address Table Size	32768 entries	32768 entries	32768 entries
Environment			
Operating Temperature	32°F to 131°F (0°C to 55°C) up to 5000ft, 32°F to 122°F (0°C to 50°C). Derate -1 degree C for every 1000 ft from 5000 ft to 10000 ft	32°F to 131°F (0°C to 55°C) up to 5000ft, 32°F to 122°F (0°C to 50°C). Derate -1 degree C for every 1000 ft from 5000 ft to 10000 ft	32°F to 131°F (0°C to 55°C) up to 5000ft, 32°F to 122°F (0°C to 50°C). Derate -1 degree C for every 1000 ft from 5000 ft to 10000 ft
Operating Relative Humidity	15% to 95% (Non-condensing) 10,000 ft	15% to 95% (Non-condensing) 10,000 ft	15% to 95% (Non-condensing) 10,000 ft
Non-Operating/ Storage Temperature	-40°C to +70°C up to 15000 ft	-40°C to +70°C up to 15000 ft	-40°C to +70°C up to 15000 ft
Non-Operating/ Storage Relative Humidity	90% at 65C (non-condensing); 15,000 ft	90% at 65C (non-condensing); 15,000 ft	90% at 65C (non-condensing); 15,000 ft
Acoustic	Sound Power LWaD=4.0 Bel, Sound Pressure LpAm, Bystander = 22.8 dB	Sound Power LWaD=4.1 Bel, Sound Pressure LpAm, Bystander = 23.7 dB	Sound Power LWaD=4.6 Bel, Sound Pressure LpAm, Bystander = 28.8 dB
Primary Airflow Direction	Port to Power	Port to Power	Port to Power

SPECIFICATIONS

	JL319A Aruba 2930M 24G 1-slot Switch	JL320A Aruba 2930M 24G PoE+ 1-slot Switch	JL321A Aruba 2930M 48G 1-slot Switch
Electrical Characteristics			
Frequency	50/60Hz	50/60Hz	50/60Hz
Maximum Heat Dissipation	145 BTU/hr 150 kJ/hr	150 BTU/hr 162 kJ/hr	185 BTU/hr 194kJ/hr
Voltage	JL085A PSU: 100-127/200-240	JL086A PSU: 100-127/200-240 VAC JL087A PSU: 110-127/200-240 VAC	JL085A PSU: 100-127/200-240
Current	JL085A PSU: 1A/0.5A	JL086A PSU (each): 5A/2.5A JL087A PSU (each): 8.5A/5A	JL085A PSU: 1A/0.5A
Maximum Power Rating	93W	JL086A PSU (each): 470W JL087A PSU (each): 860W	111W
Idle Power	28W	30W	36W
PoE Power (Max Possible)	N/A	740 Watts	N/A
Hibernate Power	7W	7W	7W
Notes	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 provide 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. Maximum power rating and maximum heat dissipation are the worst case theoretical maximum numbers provide 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. Maximum power rating and maximum heat dissipation are the worst case theoretical maximum numbers provide for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.

SPECIFICATIONS

	JL322A Aruba 2930M 48G PoE+ 1-slot Switch	JL323A Aruba 2930M 40G 8 HPE Smart Rate PoE+ 1-slot Switch	JL324A Aruba 2930M 24 HPE Smart Rate PoE+ 1-slot Switch
I/O ports and slots			
	44 Autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASETX, IEEE 802.3ab Type 1000Base-T, IEEE 802.3at PoE+); Duplex: 10BASE-T/100BASE-TX:half or full;1000BASE-T:full only	36 Autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASETX, IEEE 802.3ab Type 1000Base-T PoE+); Duplex: 10BASE-T/100BASE-TX:half or full;1000BASE-T:full only	24 Autosensing 1/2.5/5GBaseT ports PoE+
	4 Combo 10/100/1000BASE-T PoE+ or 100/1000Mbps SFP Ports	4 Combo 10/100/1000BASE-T PoE+ or 100/1000Mbps SFP Ports	
		8 802.3bz 1/2.5/5 and 10GbaseT copper PoE+ ports	
Additional ports and slots			
	1 Dual Personality (RJ-45 or USB Micro-B) serial console port	1 Dual Personality (RJ-45 or USB Micro-B) serial console port	1 Dual Personality (RJ-45 or USB Micro-B) serial console port
	1 USB B port for uploading/ downloading files	1 USB B port for uploading/ downloading files	1 USB B port for uploading/ downloading files
	1 100BASE-T Out of Band Management Port	1 100BASE-T Out of Band Management Port	1 100BASE-T Out of Band Management Port
	1 Uplink Slot	1 Uplink Slot	1 Uplink Slot
	1 Stacking Module Slot	1 Stacking Module Slot	1 Stacking Module Slot
	2 Power Supply Slots (power supplies not included)	2 Power Supply Slots (power supplies not included)	2 Power Supply Slots (power supplies not included)
Physical characteristics			
Dimensions	1.73" (Height) x 17.42" (Width) x 12.77" (Depth) (4.39cm x 44.25cm x 32.43cm)	1.73" (Height) x 17.42" (Width) x 12.77" (Depth) (4.39cm x 44.25cm x 32.43cm)	1.73" (Height) x 17.42" (Width) x 12.77" (Depth) (4.39cm x 44.25cm x 32.43cm)
Weight	10.25 lbs 4.65 kg	9.81 lbs 4.45 kg	9.92 lbs 4.50 kg
Memory and Processor			
	Dual Core ARM Cortex A9 @ 1016 MHz	Dual Core ARM Cortex A9 @ 1016 MHz	Dual Core ARM Cortex A9 @ 1016 MHz
	1 GB DDR3 SDRAM	1 GB DDR3 SDRAM	1 GB DDR3 SDRAM
	Packet Buffer Size: 12.38MB and 4.5MB Ingress/7.875MB Egress	Packet Buffer Size: 12.38MB and 4.5MB Ingress/7.875MB Egress	Packet Buffer Size: 12.38MB and 4.5MB Ingress/7.875MB Egress
	4GB eMMC	4GB eMMC	4GB eMMC

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	JL322A Aruba 2930M 48G PoE+ 1-slot Switch	JL323A Aruba 2930M 40G 8 HPE Smart Rate PoE+ 1-slot Switch	JL324A Aruba 2930M 24 HPE Smart Rate PoE+ 1-slot Switch
Performance			
10 Mbps Latency	< 98.5µs (FIFO 64 byte packets)	< 98.5µs (FIFO 64 byte packets)	N/A
100 Mbps Latency	< 11.8µs (FIFO 64-byte Packets)	< 11.8µs (FIFO 64-byte Packets)	N/A
1000 Mbps Latency	< 3.1µs (FIFO 64-byte packets)	< 3.1µs (FIFO 64-byte packets)	< 3.1µs (FIFO 64-byte packets)
2.5 Gbps Latency	N/A	< 6.5µs (FIFO 64-byte packets)	< 6.5µs (FIFO 64-byte packets)
5 Gbps Latency	N/A	< 4.2µs (FIFO 64-byte packets)	4.2µs (FIFO 64-byte packets)
10 Gbps Latency	< 3.4µs (FIFO 64-byte packets)	< 3.4µs (FIFO 64-byte packets)	< 3.4µs (FIFO 64-byte packets)
Throughput	112 Mpps	112 Mpps	112 Mpps
Stacking Performance	100 Gbps	100 Gbps	100 Gbps
Switching Capacity	176 Gbps	320 Gbps	320 Gbps
Switching Capacity (Including Stacking)	276 Gbps	420 Gbps	420 Gbps
Routing Table Size	2,000 IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256 Static, 10,000 RIP	2,000 IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256 Static, 10,000 RIP	2,000 IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256 Static, 10,000 RIP
Mac Address Table Size	32768 entries	32768 entries	32768 entries
Environment			
Operating Temperature	32°F to 131°F (0°C to 55°C) up to 5000ft, 32°F to 122°F (0°C to 50°C). Derate -1 degree C for every 1000 ft from 5000 ft to 10000 ft	32°F to 131°F (0°C to 55°C) up to 5000ft, 32°F to 122°F (0°C to 50°C). Derate -1 degree C for every 1000 ft from 5000 ft to 10000 ft	32°F to 113°F (0°C to 45°C) up to 5000ft, 32°F to 122°F (0°C to 45°C). Derate -1 degree C for every 1000 ft from 5000 ft to 10000 ft
Operating Relative Humidity	15% to 95% (Non-condensing) 10,000 ft	15% to 95% (Non-condensing) 10,000 ft	15% to 95% (Non-condensing) 10,000 ft
Non-Operating/ Storage Temperature	-40°C to +70°C up to 15000 ft	-40°C to +70°C up to 15000 ft	-40°C to +70°C up to 15000 ft
Non-Operating/ Storage Relative Humidity	90% at 65C (non-condensing); 15,000 ft	90% at 65C (non-condensing); 15,000 ft	90% at 65C (non-condensing); 15,000 ft
Acoustic	Sound Power LWaD=4.6 Bel, Sound Pressure LpAm, Bystander = 28.9 dB	Sound Power LWaD=4.4 Bel, Sound Pressure LpAm, Bystander = 26.0 dB	Sound Power LWaD=4.8 Bel, Sound Pressure LpAm, Bystander = 31.2 dB
Primary Airflow Direction	Port to Power	Port to Power	Port to Power

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	JL322A Aruba 2930M 48G PoE+ 1-slot Switch	JL323A Aruba 2930M 40G 8 HPE Smart Rate PoE+ 1-slot Switch	JL324A Aruba 2930M 24 HPE Smart Rate PoE+ 1-slot Switch
Electrical Characteristics			
Frequency	50/60Hz	50/60Hz	50/60Hz
Maximum Heat Dissipation	200 BTU/hr 216 kJ/hr	145 BTU/hr 150 kJ/hr	150 BTU/hr 162 kJ/hr
Voltage	JL086A PSU: 100-127/200-240 VAC JL087A PSU: 110-127/200-240 VAC	JL086A PSU: 100-127/200-240 VAC JL087A PSU: 110-127/200-240 VAC	JL086A PSU: 100-127/200-240 VAC JL087A PSU: 110-127/200-240 VAC
Current	JL086A PSU (each): 5A/2.5A JL087A PSU (each): 8.5A/5A	JL086A PSU (each): 5.7/3A JL087A PSU (each): 10A/5.1A	JL086A PSU (each): 5.9A/3A JL087A PSU (each): 10A/5.1A
Maximum Power Rating	JL086A PSU (each): 470W JL087A PSU (each): 860W	JL086A PSU (each): 538W JL087A PSU (each): 941W	JL086A PSU (each): 554W JL087A PSU (each): 957W
Idle Power	40W	75W	95W
PoE Power (Max Possible)	1440 Watts	1440 Watts	860 Watts
Hibernate Power	7W	7W	7W
Notes	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 provide 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. Maximum power rating and maximum heat dissipation are the worst case theoretical maximum numbers provide 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. Maximum power rating and maximum heat dissipation are the worst case theoretical maximum numbers provide for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.

The operating temperature range for an Aruba 2930M switch is 0°C to 50°C (32°F to 122°F) if any of the following transceivers are installed in the switch:

- J9150A HP X132 10G SFP+ LC SR Transceiver
- J9151A HP X132 10G SFP+ LC LR Transceiver
- J9152A HP X132 10G SFP+ LC LRM Transceiver
- J9153A HP X132 10G SFP+ LC ER Transceiver
- JL308A Aruba 40G QSFP+ LC BiDi 150m MMF XCVR
- JH231A HP X142 40G QSFP+ MPO SR4 Transceiver
- JH232A HP X142 40G QSFP+ LC LR4 SM Transceiver
- JH233A HP X142 40G QSFP+ MPO CSR4 Transceiver

SPECIFICATIONS

Safety

	UL 60950-1, 2nd Edition
	EN 60950-1:2006 +A11:2009 : A1:2010 +A12:2011 +A2:2013
	IEC60950-1:2005 +A1:2009 +A2:2013
	CSA 22.2 No. 60950-1-07 2nd
	EN60825-1:2007 /IEC 60825-1:2007 Class 1

Emissions

	VCCI Class A
	CNS 13438
	ICES-003 Class A
	FCC CFR 47 Part 15, Class A
	EN 55022: 2010/CISPR-22, Class A

Immunity

Generic	EN 55024:2010/CISPR 24
ESD	IEC 61000-4-2
Radiated	IEC 61000-4-3
EFT/Burst	IEC 61000-4-4
Surge	IEC 61000-4-5
Conducted	IEC 61000-4-6
Power frequency magnetic field	IEC 61000-4-8
Voltage dips and interruptions	IEC 61000-4-11
Harmonics	EN 61000-3-2, IEC 61000-3-2
Flicker	EN 61000-3-3, IEC 61000-3-3

Management

	Aruba Central
	Aruba AirWave Network Management
	IMC—Intelligent Management Center
	Command-line interface
	Web browser
	Configuration menu
	REST interface
	SNMP manager
	Telnet
	RMON1
	FTP
	Out-of-band management
	Serial RS-232C
	Micro USB Serial

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 2576 (Coexistence between SNMP V1, V2, V3)
- 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 802.3bz 2.5 Gbps and 5 Gbps interfaces
- 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
- IEEE 1588v2 Precision Time Protocol (Transparent Clock Mode)
- 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 3575 IANA Considerations for RADIUS
- 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 and Algorithms Specification
- 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 3973 PIM Dense Mode
- RFC 4601 PIM Sparse Mode
- RFC 4541 Considerations for Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) Snooping Switches
- RFC 5059 Bootstrap Router—Except for scope zones
- RFC 7761 PIM Sparse Mode

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)
- IEEE 8021-Bridge-MIB (2008)
- IEEE 8021-Q-Bridge-MIB (2008)
- 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 2618 RADIUS Client 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 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
- 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 3418 Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
- 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 2475 DiffServ Architecture
- 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

- Refer to Hewlett Packard Enterprise website 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.

ARUBA 2930M SWITCH SERIES ACCESSORIES

Modules

- Aruba 2930M 2-port Stacking Module (JL325A)
- Aruba 3810M/2930M 1QSFP+ 40GbE Module (JL078A)
- Aruba 3810M/2930M 4SFP+ MACsec Module (JL083A)
- Aruba 3810M/2930M 4 1/2.5/5/10 GbE HPE Smart Rate Module (JL081A)

Transceivers

- Aruba 100M SFP LC FX 2km MMF XCVR (J9054D)
- Aruba 1G SFP RJ45 T 100m Cat5e XCVR (J8177D)
- Aruba 1G SFP LC SX 500m MMF XCVR (J4858D)
- Aruba 1G SFP LC LX 10km SMF XCVR (J4859D)
- Aruba 1G SFP LC LH 70km SMF XCVR (J4860D)
- Aruba 10G SFP+ LC SR 300m MMF XCVR (J9150D)
- Aruba 10G SFP+ LC LR 10km SMF XCVR (J9151D)
- Aruba 10G SFP+ LC LRM 220m MMF XCVR (J9152D)
- Aruba 10G SFP+ LC ER 40km SMF XCVR (J9153D)
- Aruba 10G SFP+ to SFP+ 1m DAC Cable (J9281D)
- Aruba 10G SFP+ to SFP+ 3m DAC Cable (J9283D)
- Aruba 10G SFP+ to SFP+ 7m DAC Cable (J9285D)
- Aruba 40G QSFP+ LC BiDi 150m MMF XCVR (JL308A)
- HPE X142 40G QSFP+ MPO SR4 Transceiver (JH231A)
- HPE X142 40G QSFP+ LC LR4 SM Transceiver (JH232A)
- HPE X142 40G QSFP+ MPO eSR4 300M XCVR (JH233A)
- HPE X242 40G QSFP+ to QSFP+ 1m DAC Cable (JH234A)
- HPE X242 40G QSFP+ to QSFP+ 3m DAC Cable (JH235A)
- HPE X242 40G QSFP+ to QSFP+ 5m DAC Cable (JH236A)

Stacking cables

- Aruba 2920/2930M 0.5M Stacking Cable (J9734A)
- Aruba 2920/2930M 1m Stacking Cable (J9735A)
- Aruba 2920/2930M 3m Stacking Cable (J9736A)

Power supplies

- Aruba X371 12VDC 250W 100-240VAC Power Supply (JL085A)
- Aruba X372 54VDC 680W 100-240VAC Power Supply (JL086A)
- Aruba X372 54VDC 1050W 110-240VAC Power Supply (JL087A)

Mounting kit

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

Cables

- Aruba X2C2 RJ45 to DB9 Console Cable (JL448A)
- 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)

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