

### Overview

#### HPE Networking Instant On Switch 1960

In today's digital-first environment, small businesses face many challenges to stay afloat and competitive. With tight budgets and limited technical expertise, they're struggling to keep up with the explosion of devices and bandwidth-heavy applications running on the network. To optimize both performance and investment, small businesses need cost-effective, next-gen networking solutions.

The HPE Networking Instant On Switch 1960 is an easy-to-use and affordable wired solution for networks supporting IT, mobile and cloud applications.

HPE Networking Instant On 1960 Switches are advanced, smart-managed, fixed configuration Gigabit stackable switches designed for small and growing businesses that are easy to deploy and affordable. These switches are designed to scale as business grows, making adding more employees, devices and applications simple. HPE Networking Instant On 1960 switches are made to handle today's bandwidth-heavy applications like voice and video conferencing, enabling consistent connectivity to improve user experience and application performance.

The HPE Networking Instant On Switch 1960 includes five switches: two (2) 24-port and two (2) 48-port models in PoE and non-PoE configurations, and a 12 port 10-Gigabit aggregation switch.

The access switches each have two (2) 10GBASE-T and two (2) 10G SFP+ uplink ports for high bandwidth connectivity.

The 1960 aggregation switch comes with twelve (12) 10G Base-T and four (4) SFP+ ports, providing 10G connectivity to servers, network storage devices and access switches alike.

The 24-port and 48-port PoE access switches come with a PoE budget of 370W and 600W respectively to support the latest IoT devices. The 12-Port Multi-gig switch features a 480W PoE Budget for next generation lighting and IoT hardware.

The 12-Port multi-rate switch meets the increasing demand for higher network speeds of high-speed APs and IoT devices by delivering fast connectivity and PoE power.

With PoE models, up to 30 W PoE power delivery is available for Class 4 PoE devices like access points, surveillance cameras and VoIP phones, and up to 60 W PoE power delivery is available for Class 6 PoE devices like pan-tilt zoom cameras and video-enabled IP-phones.

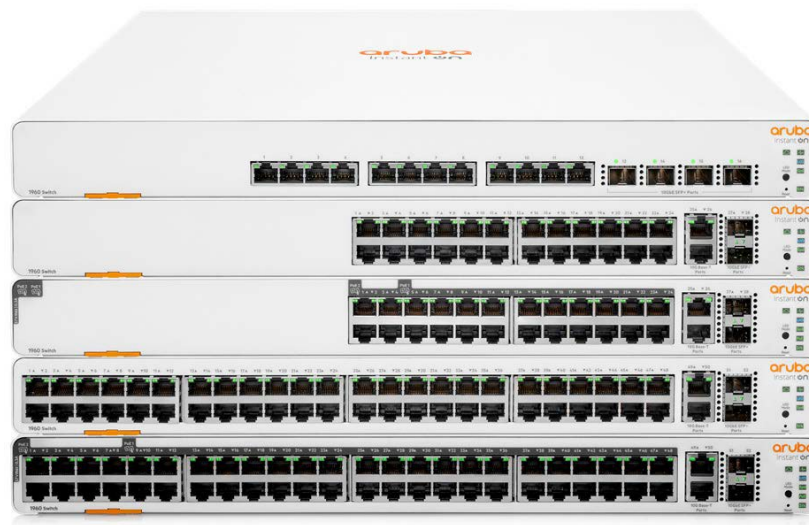
The 1960 switches provide stacking capabilities: up to (four) 4 switches (access and aggregation can be mixed and matched in a stack) can be stacked together and managed through one single management IP address, simplifying network operations. This means up to 208 ports, including 16 10G uplink ports, operate as one switch.

The 1960 switches support stacking through local and cloud-managed stacking modes. Local stacking provides True Stacking to easily configure, manage and troubleshoot physical switches as a single entity, while cloud-managed stacking provides ease-of-setup via the Instant On mobile app.

Using either the Instant On mobile app or the cloud-based web portal, you can quickly set up, monitor and manage the 1960 switch series from anywhere at any time.

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## Overview



### HPE Networking Instant On 1960 Switches Family

#### Key Features

- Smart-managed layer 2+ Ethernet switch series ready to deploy in 24- and 48-port for non-PoE and PoE (supports Class 4 and Class 6 PoE) models
- Up to 600W of PoE to power APs, IP Phones, surveillance cameras, door locks and other IoT devices
- 2 dedicated 10G SFP+ fiber and 2 10GBase-T uplink ports on 24-/48-port models for faster network speeds, and to eliminate traffic bottlenecks
- 10G copper and 10G SFP uplinks are supported on 12-port access switch with m-gig ports as well.
- The 12 port access switch has 8x1GbE and 4x2.5GbE autosensing ports and RJ-45/SFP+ Uplink ports to support next generation devices
- The 12 port aggregation switch comes with 12 ports of 10GBase-T to easily add expand your network reach to other stacks modernizing your network topology.
- True Stacking allows for redundancy while making it simple to configure, manage, and troubleshoot multiple switches as a single entity
- Luggage tag for easy cloud onboarding
- Convenient mobile app and web-based GUI for set up, management and troubleshooting



## Standard Features

### Simplicity at its best

- Plug-and-play switches that work together with Instant On APs right out of the box
- Cloud-Managed stacking to configure and manage multiple switches through the Instant On mobile app

### Security You Can Count On

- Protect your network from unauthorized access with Access Control List, IEEE 802.1x and VLANs
- Automatic denial-of-service (DOS) monitors and protects the network against malicious attacks

### We've Got You Covered

- No extra licensing or subscription fees
- Industry-leading limited lifetime warranty and support.

## Instant On Differentiators

### Easy Set Up and Management

The HPE Networking Instant On mobile app allows you to set up, manage, and monitor Instant On switches and access points directly from your phone. Within the app, you get guided step-by-step instructions to install Instant On devices to get your network up and running quickly – no technical expertise required. And cloud-based access allows you to access the network from anywhere, at any time.

### Cloud-Managed Stacking

The HPE Networking Instant On mobile app and cloud-based web portal make cloud-managed stacking easy — just follow the recommendations to stack up to four (4) 1960 switches and manage as a single entity. The Instant On mobile app automatically detects members, making multiple stack members easy to setup and manage remotely. Automated configurations and streamlined workflows allow users to manage all stack members through one single dashboard without the need for device reboot.

### Luggage Tag

Each switch has a pull-out tag, known as a luggage tag, on the front panel of the switch. The tag includes a QR code that includes switch ID information (SKU number, SKU name, serial number, and MAC address) for easy switch onboarding through Instant On mobile app.

### High Performance With Flexible Options

The series consists of two (2) PoE switches, and two (2) non-PoE switches including 24- and 48-port Gigabit Ethernet switches with two (2) dedicated 10G SFP+ ports and two (2) 10GBASE-T uplink ports on 24-/48- port models. The series also includes a 12-port 10Gbps aggregation switch with four (4) 10G SFP+ ports to meet the bandwidth requirements of small businesses.

### Better Together

Instant On automatically detects and applies highest (critical) PoE priority to Instant On Access Points for uninterrupted power delivery and wireless network access. Wired and wireless voice traffic is prioritized with high QoS priority end-to-end for optimal voice performance.

### Optimized User Experience

The HPE Networking Instant On mobile app provides common workflows for Instant On switches and access points making it easier to configure, monitor and manage your network remotely without the need for additional hardware like cloud keys. You can also update firmware on your Instant On devices directly from the cloud whenever you want, from wherever you are.

### Site Inventory and Topology View

The site inventory view shows all Instant On switches and access points on a single interface, and the topology view provides an intuitive structure of all Instant On devices deployed on the network — allowing you to quickly identify non-functioning devices and troubleshoot accordingly. Network issues can be easily diagnosed with connectivity tests like Ping and Traceroute.



## Standard Features

### Built-In Security

Built-in security features protect your network from external threats by blocking malware attacks and keeping unauthorized users off the network. Network traffic can be filtered and access restricted based on MAC and IP address.

### No Hidden Fees

All features are included in the price of the hardware – there are no recurring subscription or licensing fees. Expert-level support and industry leading limited lifetime warranty are also included, along with chat support for the life of the product.

### Multi-Site Remote Management

The cloud-hosted web interface and mobile app make it easy to remotely manage multiple sites, multiple networks, distributed deployments and multi-tenant deployments. Each site is logically separated and has its own configuration, statistics, guest portal, and admin read/write privileges. Instant On allows you to create three admin accounts per site, offering the option to lock accounts from accidental deletion or to allow your account to be managed by a trusted partner.

## Management

### Cloud-Based Management For Entire Network

The cloud-hosted web interface and mobile app make it easy to manage networks with Instant On APs and Switches.

### Simple Local Web GUI Management

For management of individual switches, the intuitive Web GUI makes management simple, even for non-technical users. Supports up to five (5) HTTP and HTTP Secure (HTTPS) sessions.

### True Stacking

Simplifies administration of multiple devices through creation of a single logical managed unit with up to four HPE Networking Instant On 1960 switches in a ring or chain topology, using affordable Cat 6A, or long-distance fiber, or localized DAC cables. The switches in the stack can either be access or aggregator switches or a combination of both. The entire stack behaves as a single switch regardless of whether the stack is in a closet or spread over multiple kilometers.

### Hybrid Stacking

Allows both access and aggregator switches to be connected in a single stack. Hybrid stacking helps in right-sizing the deployment by allowing a combination of aggregation and access switches to meet the needs of the deployment.

### Cloud-Managed Stacking

Enables automatic configuration and formation of stack based on recommendations from the cloud portal. It allows autodetection of potential stack members and stack links, making the independent switches turn into a stack with just a few taps. In the case of a link or switch failure, the stack handles the scenario even without the connection to the Internet

### Secure Web-Management Sessions With HTTPS

Encrypts and otherwise protects management sessions through HTTP Secure (HTTPS), which prevents snooping of sensitive management information. Regardless of whether the switch is managed from the local Web GUI or the Cloud, data between the switch and the management interface is encrypted and secure.

### Firmware Update

Provides notification of the latest firmware with the ability to schedule update at a preferred time through Instant On mobile app and cloud-based web portal.

### Default DHCP Client Mode

Allows the switch to be directly connected to a network, enabling plug-and-play operation. In the absence of a DHCP server on the network, the switch falls back to the static address 192.168.1.1.

### Account Management

Allows administrators to add, modify, delete and transfer management accounts and passwords for secure access to Instant cloud management solution.



## Standard Features

### Locator LED

Allows users to set the locator LED on a specific switch to either turn on, blink, or turn off; simplifies troubleshooting by making it easy to locate a particular switch within a rack of similar switches. This feature can also be used to locate units in a stack.

### SNMPv1, v2c, and v3

Facilitates remote management of the switch, as the device can be discovered and monitored from an SNMP management station.

### Simple Network Time Protocol (SNTP)

Allows automatic synchronization of the switch date and time for accurate tracking of system events and various schedules set by the administrator.

### Management VLAN ID

Provides secure management access to the switch for administrators from within the specified VLAN.

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### Quality of Service (QoS)

#### Traffic Prioritization

Provides time-sensitive packets (like VoIP and video) with priority over other traffic based on DSCP or IEEE 802.1p classification.

#### Class of Service (CoS)

Sets the 802.1p/DSCP priority to queue mapping (8 queues). Supports strict priority queuing (SP) or weighted round robin (WRR) queuing.

### Access Control Lists (ACLs)

Enables network traffic filtering by creating an ACL, adds rules and matches criteria to an ACL, and applies the ACL to permit or deny on one or more interfaces or a VLAN. Supports 100 inbound IPv4 and MAC ACLs with up to 960 ACEs on access switches and up to 1024 ACEs on aggregation switch.

### Global Trust Mode

Enables the user to define the type of trust to apply to traffic received on port or LAG interface, with 802.1p, DSCP or 802.1p-DSCP being the configurable options.

### Traffic shaping

Allows smoothing out temporary traffic bursts over time and sets the limit on how much traffic can leave a port, given that the switch can limit the transmission rate of egress frames on a per-port basis.

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## Connectivity

### Auto MDI/MDI-X

Adjusts automatically for straight-through or crossover cables on all 10/100/1000 ports.

### Auto-Negotiating Capability

Supports half/full-duplex auto-negotiating capability on every port doubles the throughput of every port.

### 10G Fiber and Copper Connectivity

Provides high speed connectivity with dedicated two (2) 10G SFP+ fiber ports and two (2) 10GBase-T ports on 24- and 48-port models, where fiber connections are used for uplinks and other connections across longer distances and copper ports are a cost-effective solution that uses readily available Cat6 cables. 10G fiber and copper ports are in addition to 1G copper ethernet ports, providing a higher total number of available ports.

### Smart-Rate Connectivity

The 12-port multi-gig access switch (IEEE 802.3bz) supports (IEEE 802.3bz) Ethernet switch supports high speed wireless access points; the switch includes 8x 1G ports supporting IEEE 802.3at Class 4 (30W), along with 4x 2.5G smart-rate ports supporting high power IEEE 802.3bt Class 6 (60W).



## Standard Features

### Aggregation Capability

12-port 10-Gigabit aggregator model with 12 10G Base-T and 4 four (4) SFP+ ports providing 10G connectivity, ideal for servers and network storage devices while offering uplink connectivity to access switches.

### Ethernet Alliance Poe Class 6 and Class 4 Certification

Provides dedicated ports with up to 60 W per port, which allows support of Class 6 PoE or 802.3bt capable devices such as digital signage, sensors and other IoT devices. Models also support Class 4 PoE or 802.3at capable devices, which provide up to 30 W per port for devices such as video IP phones, wireless access points, and advanced pan/tilt/zoom security cameras, as well as any 15.4 W 802.3af compliant end device; mitigates the cost of additional electrical cabling and circuits that would otherwise be necessary in IP phone and WLAN deployments.

### Auto-PoE Power Configuration

The switch automatically assigns the required power to a port for a PD device based on Link Layer Discovery Protocol (LLDP).

### PoE Power Allocation

Support multiple methods (LLDP-MED automatic, class of PoE, or usage-based) to allocate PoE power for more efficient energy savings.

### PoE Scheduling

Allows user to configure a specific day/time of the week (e.g., business hours) for Instant On switches to supply power to connected devices (e.g., surveillance cameras, access points etc.).

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## Switching

### Flow Control

Provides a flow-throttling mechanism propagated through the network to prevent packet loss at a congested node.

### Link Flap Prevention

Minimizes the network disruption by automatically detecting and disabling ports that experience link flap events.

### Spanning Tree Protocol (STP)

Supports 802.1D STP, 802.1w Rapid Spanning Tree Protocol (RSTP) for faster convergence, and 802.1s Multiple Spanning Tree Protocol (MSTP supported on local web only).

### BPDU Filtering

Drops BPDU packets when STP is enabled globally but disabled on a specific port.

### Loop Protection

Allows loop detection in the network for switches that do not run spanning tree, or on which STP feature is disabled.

### IGMP v1, v2, v3 /MLDv1, v2 Snooping

IGMP/MLD snooping allows the switch to forward IPv4 or IPv6 multicast traffic intelligently. With IGMP snooping enabled, the switch forwards traffic only to ports that request the multicast traffic. This prevents the switch from broadcasting traffic to all ports and possibly affecting network performance (MLD snooping/IPv6 supported on local web only).

### Link Aggregation

Groups together multiple ports up to 16 trunks with a maximum of eight (8) ports per trunk automatically using Link Aggregation Control Protocol (LACP), or manually, to form a high-bandwidth connection to the network backbone that helps prevent traffic bottlenecks.

### Link Layer Discovery Protocol (LLDP)

Advertises and receives management information from adjacent devices on a network, facilitating easy mapping by network management applications.



## Standard Features

### LLDP-MED (Media Endpoint Discovery)

Defines a standard extension of LLDP that stores values for parameters such as QoS and VLAN for automatic configuration of network devices such as IP phones.

### VLAN Support

Offers some of the benefits of both bridging and routing. VLANs partition the network into logical segments, which provide better administration, security, and multicast traffic management.

### Auto Voice VLAN

Automatically recognizes IP phones and assigns voice traffic to dedicated VLAN for voice traffic.

### Port Mirroring

Enables traffic on a port or VLAN to be simultaneously sent to a network analyzer for troubleshooting in case of issues.

### Auto Recovery

Allows ports to be placed in a suspended state when defined error conditions are met. Features supported by Auto Recovery are BPDU Guard, Storm Control, Port Security, Loop Protection and Link Flap Prevention.

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## Network Security

### TPM-based security

Includes a Trusted Platform Module (TPM) for secure hardware-based generation and storage of cryptographic keys used for secure connection to the Instant On cloud portal.

### RADIUS

The switch supports RADIUS authentication with primary and backup server configuration.

### Automatic VLAN assignment — RADIUS assigned VLANs

Assigns users automatically to the appropriate VLAN based on their identity and location.

### RADIUS accounting

A robust set of attributes and statistics are available for collecting information from the switch.

### Port access control

Authentication of network users on a per port basis prior to permitting network access. Port authentication includes RADIUS assigned VLAN or dynamic VLAN creation.

### Port security

Limits the number of MAC addresses that can be learned on a port. If the configured limit is reached, any other addresses beyond that limit are not learned, and the frames are discarded. It helps secure the network by preventing unknown devices from forwarding packets into the network.

### DHCP Snooping and IP Source Guard

DHCP snooping provides network security by filtering DHCP messages between untrusted hosts and DHCP servers. IP Source guard utilizes the DHCP snooping database to deny network access from untrusted sources (IP Source Guard supported on local web only).

### ARP attack prevention

ARP attack protection intercepts, logs, and discards ARP packets with invalid IP-to-MAC address bindings, protecting the network from common man-in-the-middle attacks.

### Automatic denial-of-service protection

Manages high-volume traffic and prevents denial-of-service (DoS) attacks against the network.



## Standard Features

### Global Storm Control

Protects against conditions where incoming packets flood the LAN, causing network performance degradation for unicast traffic with an unknown destination, and for broadcast and multicast traffic.

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### Performance and Efficiency

#### Energy Efficient Ethernet (EEE)

Compliant with 802.3az standard requirements to save energy during periods of low data activity.

#### Auto-Port Shut Down

The switch saves power by automatically shutting down power to inactive ports. Power is restored on a port upon link detection.

#### Energy-Efficient Cooling

Includes variable speed fans operating only at the speed necessary to maintain operating temperature to reduce excess noise and power consumption.

#### Fan-Less Operation

Fan-less design for 24-port non-PoE model, making the switches ideal for silent operations or usage.

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## Routing Features

### Static IPv4 Routing

Supports IPv4 static routing for up to 32 static routes and 8 VLAN routing interfaces on the access switch models and up to 512 static routes and 32 VLAN routing interfaces on aggregation model. Manual or DHCP IP address assignments can be configured to an individual port or VLAN.

### Address Resolution Protocol (ARP) Table

The ARP table displays all the IP addresses that have been resolved to MAC addresses, either dynamically or through static entry configuration.

### DHCP Relay

Enables packets to be forwarded between a DHCP client and server that reside different subnets.

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## Features Accessed Through Local Web-Management Interface

### Top Event Dashboard

Provides notifications for critical events and a quick access to the latest log events.

### Quick Start-Up and VLAN Wizard

Includes a basic start-up wizard which enable automatic configuring of the initial settings such IP address, device information and system time. VLAN wizard may be used for setting up initial VLAN IDs and port membership.

### Fully IPv6 Capable

- IPv6 host: Enables switches to be managed and deployed at the IPv6 network's edge
- IPv6 routing: Supports up to 32 IPv6 static routes on access models and up to 512 static routes on the aggregator model.
- MLD snooping: Forwards IPv6 multicast traffic to the appropriate interface, preventing traffic flooding
- IPv6 ACL/QoS: Supports ACL and QoS for IPv6 network traffic
- IPv6 DHCP relay
- Configuration of IPv6 features on local web GUI only

### DHCP Server (IPv4)

Centralizes control and automatic assignment of IP addresses to attached hosts. In addition to IP address allocation, it also provides information such as the address of the DNS server, default router, WINS server, and domain name.





## Standard Features

### Ingress Rate Limiting

Sets and enforces per-port ingress traffic limits based on percentages or packets per second. If limits are exceeded the switch may disable the port or send a SNMP trap to a management station.

### DNS Client

Provides a method for which host names can be mapped to IP addresses. When configured on a switch, a host name can be substituted for the IP address when executing commands from the web interface.

### Jumbo Frame Support

Supports up to 9216 bytes frame size to improve the performance of large data transfers.

### Protected Ports

Protected Ports, also known as port isolation, provides isolation between interfaces (Ethernet ports and LAGs) that share the same broadcast domain (VLAN). Protected ports can send traffic only to unprotected ports.

### Energy Savings Status

The switch provides estimated cumulative energy savings due to green Ethernet features being enabled.

### User Account Management

Password strength checking and aging feature provides enhanced security to user account administration on the local web management interface. Password management further enhances the security so that only authorized access to the switch's web interface.

### Secure Sockets Layer (SSL)

Encrypts all HTTP traffic, secures access to the local browser-based management of the switch.

### SCP and TFTP file transfer

Provides different mechanisms for secure file transfer through SCP (Secure Copy Protocol) or TFTP.

### Dual image support

Provide independent primary and secondary software images for backup while upgrading.

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## Diagnostics

### Event Logs

Provides detailed information for problem identification and resolution.

### Session Logging

Displays the active users connected to the switch such as client IP address, duration of the individual session.

### Remote Syslog

Provides support for a single syslog server allowing the user to redirect and store events to a remote syslog server (supported on local web only).

### Remote Monitoring (RMON)

Provides advanced monitoring and reporting capabilities for RMON group statistics, history, alarms and events. RMON data can be viewed from the local web interface or retrieved from the switch through a network management platform over SNMP (supported on local web only).

### Cable Diagnostic Tool

Provides the mechanism to detect and report potential cabling issues, such as cable opens or cable shorts on copper links, in addition to providing distance to the fault and total length of cable (supported on local web only).



## Standard Features

### **Ping IPv4/IPv6**

The switch supports both ICMP for sending ping requests to IPv4 addresses and ICMPv6 for sending ping requests to IPv6 addresses (IPv6 supported on local web only).

### **Traceroute IPv4/IPv6**

Provides information about the route a packet takes from the switch to a specific IPv4 or IPv6 address as well as the amount of time it takes for the packet to reach its destination (IPv6 supported on local web only).

### **Support File**

Includes summary information for the switch including the current switch configuration, statistics and buffered log messages (supported on local web only).

### **MAC Address Table**

Also known as the bridge table or the forwarding database, this table enables the switch to forward traffic through the appropriate port and supports up to 16K MAC address entries.

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### **Warranty, Service And Support**

HPE Networking Instant On Limited Lifetime Support provides 24X7 phone support for the first 90 days and chat support for the entire warranty period. Community support is included for the life of the product.

Refer to the Hewlett Packard Enterprise website at [hpe.com/networking/services](http://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.

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## Configuration Information

### BTO Base Models

Rule #	Description	SKU
1, 2	HPE Networking Instant On Switch 24p Gigabit 2p 10GBT 2p SFP+ 1960 <ul style="list-style-type: none"> <li>24 RJ-45 autosensing 10/100/1000 ports</li> <li>2 SFP+ fixed 1000/10000 SFP+ ports</li> <li>min=0 \ max=2 SFP\SFP+ Transceivers</li> <li>2 RJ-45 1/10GBASE-T ports</li> <li>1U - Height</li> </ul>	JL806A
	HPE Networking Instant On Switch 24p Gigabit 2p 10GBT 2p SFP+ 1960 <ul style="list-style-type: none"> <li>C13 PDU Jumper Cord (NA/MX/TW/JP)</li> </ul>	JL806A
	HPE Networking Instant On Switch 24p Gigabit 2p 10GBT 2p SFP+ 1960 <ul style="list-style-type: none"> <li>C13 PDU Jumper Cord (ROW)</li> </ul>	JL806A
	HPE Networking Instant On Switch 24p Gigabit 2p 10GBT 2p SFP+ 1960 <ul style="list-style-type: none"> <li>HPE 2.3m C13 to NEMA 6-15P Pwr Cord(J9936A)</li> </ul>	JL806A
	HPE Networking Instant On Switch 24p Gigabit 2p 10GBT 2p SFP+ 1960 <ul style="list-style-type: none"> <li>No Localized Power Cord Selected</li> </ul>	JL806A
1, 2	HPE Networking Instant On Switch 48p Gigabit 2p 10GBT 2p SFP+ 1960 <ul style="list-style-type: none"> <li>48 RJ-45 autosensing 10/100/1000 ports</li> <li>2 SFP+ fixed 1000/10000 SFP+ ports</li> <li>min=0 \ max=2 SFP\SFP+ Transceivers</li> <li>2 RJ-45 1/10GBASE-T ports</li> <li>1U - Height</li> </ul>	JL808A
	HPE Networking Instant On Switch 48p Gigabit 2p 10GBT 2p SFP+ 1960 <ul style="list-style-type: none"> <li>C13 PDU Jumper Cord (NA/MX/TW/JP)</li> </ul>	JL808A
	HPE Networking Instant On Switch 48p Gigabit 2p 10GBT 2p SFP+ 1960 <ul style="list-style-type: none"> <li>C13 PDU Jumper Cord (ROW)</li> </ul>	JL808A
	HPE Networking Instant On Switch 48p Gigabit 2p 10GBT 2p SFP+ 1960 <ul style="list-style-type: none"> <li>HPE 2.3m C13 to NEMA 6-15P Pwr Cord(J9936A)</li> </ul>	JL808A
	HPE Networking Instant On Switch 48p Gigabit 2p 10GBT 2p SFP+ 1960 <ul style="list-style-type: none"> <li>No Localized Power Cord Selected</li> </ul>	JL808A
1, 2	HPE Networking Instant On Switch 20p Gigabit CL4 4p Gigabit CL6 PoE 2p 10GBT 2p SFP+ 370W 1960 <ul style="list-style-type: none"> <li>24 RJ-45 autosensing 10/100/1000 Class4 and Class6 PoE ports</li> <li>2 SFP+ fixed 1000/10000 SFP+ ports</li> <li>min=0 \ max=2 SFP\SFP+ Transceivers</li> <li>2 RJ-45 1/10GBASE-T ports</li> <li>1U - Height</li> </ul>	JL807A
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1, 2	HPE Networking Instant On Switch 40p Gigabit CL4 8p Gigabit CL6 PoE 2p 10GBT 2p SFP+ 600W 1960 <ul style="list-style-type: none"> <li>48 RJ-45 autosensing 10/100/1000 Class4 and Class6 PoE ports</li> </ul>	JL809A

## Configuration Information

	<ul style="list-style-type: none"> <li>• 2 SFP+ fixed 1000/10000 SFP+ ports</li> <li>• min=0 \ max=2 SFP\SFP+ Transceivers</li> <li>• 2 RJ-45 1/10GBASE-T ports</li> <li>• 1U - Height</li> </ul>	
	HPE Networking Instant On Switch 40p Gigabit CL4 8p Gigabit CL6 PoE 2p 10GBT 2p SFP+ 600W 1960	JL809A
	<ul style="list-style-type: none"> <li>• C13 PDU Jumper Cord (NA/MX/TW/JP)</li> </ul>	
	HPE Networking Instant On Switch 40p Gigabit CL4 8p Gigabit CL6 PoE 2p 10GBT 2p SFP+ 600W 1960	JL809A
	<ul style="list-style-type: none"> <li>• C13 PDU Jumper Cord (ROW)</li> </ul>	
	HPE Networking Instant On Switch 40p Gigabit CL4 8p Gigabit CL6 PoE 2p 10GBT 2p SFP+ 600W 1960	JL809A
	<ul style="list-style-type: none"> <li>• HPE 2.3m C13 to NEMA 6-15P Pwr Cord(J9936A)</li> </ul>	
	HPE Networking Instant On Switch 40p Gigabit CL4 8p Gigabit CL6 PoE 2p 10GBT 2p SFP+ 600W 1960	JL809A
1, 2	<ul style="list-style-type: none"> <li>• No Localized Power Cord Selected</li> </ul>	
	HPE Networking Instant On Switch 12p 10GBT 4p SFP+ 1960	JL805A
	<ul style="list-style-type: none"> <li>• 12 RJ-45 autosensing 100/1000/10GBASE-T ports</li> <li>• 4 SFP+ fixed 1000/10000 SFP+ ports</li> <li>• min=0 \ max=4 SFP\SFP+ Transceivers</li> <li>• 1U - Height</li> </ul>	
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	HPE Networking Instant On Switch 12p 10GBT 4p SFP+ 1960	JL805A
	<ul style="list-style-type: none"> <li>• No Localized Power Cord Selected</li> </ul>	
1, 2	HPE Networking Instant On Switch 8p Gigabit CL4 4p SR2.5G CL6 PoE 2p 10GBT 2p SFP+ 480W 1960	SOF35A
	<ul style="list-style-type: none"> <li>• 4 RJ-45 autosensing 1G/2.5GBASE-T ports with IEEE 802.af/at/bt CL6 PoE</li> <li>• 8 RJ-45 autosensing 10/100/1000BASE-T ports with IEEE 802.af/at CL4 PoE</li> <li>• 2 SFP+ fixed 1000/10000 SFP+ ports</li> <li>• min=0 \ max=2 SFP\SFP+ Transceivers</li> <li>• 2 RJ-45 autosensing 100/1000/10GBASE-T ports</li> <li>• 1U - Height</li> </ul>	
	HPE Networking Instant On Switch 8p Gigabit CL4 4p SR2.5G CL6 PoE 2p 10GBT 2p SFP+ 480W 1960	SOF35A
	<ul style="list-style-type: none"> <li>• C13 PDU Jumper Cord (NA/MX/TW/JP)</li> </ul>	
	HPE Networking Instant On Switch 8p Gigabit CL4 4p SR2.5G CL6 PoE 2p 10GBT 2p SFP+ 480W 1960	SOF35A
	<ul style="list-style-type: none"> <li>• C13 PDU Jumper Cord (ROW)</li> </ul>	
	HPE Networking Instant On Switch 8p Gigabit CL4 4p SR2.5G CL6 PoE 2p 10GBT 2p SFP+ 480W 1960	SOF35A
	<ul style="list-style-type: none"> <li>• HPE 2.3m C13 to NEMA 6-15P Pwr Cord(J9936A)</li> </ul>	
	HPE Networking Instant On Switch 8p Gigabit CL4 4p SR2.5G CL6 PoE 2p 10GBT 2p SFP+ 480W 1960	SOF35A
	<ul style="list-style-type: none"> <li>• No Localized Power Cord Selected</li> </ul>	

### Configuration Rules

Rule #	Description
1	The following Transceivers install into this switch:



## Configuration Information

HPE Networking Instant On 1G LX SFP LC 10km SMF Transceiver	S0G20A
HPE Networking Instant On 1G SFP LC SX 500m OM2 MMF Transceiver	R9D16A
HPE Networking Instant On 1G SFP RJ45 100m Cat5e Transceiver	R9D17A
HPE Aruba Networking 1G SFP LC LX 10km SMF Transceiver	J4859D
HPE Networking Instant On 10G LR SFP+ LC 10km SMF Transceiver	S0G21A
HPE Networking Instant On 10GBASE-T RJ45 30m Cat6a Transceiver	S0G18A
HPE Networking Instant On 10G SFP+ LC SR 300m OM3 MMF Transceiver	R9D18A
HPE Aruba Networking 10G SFP+ LC LR 10km SMF Transceiver	J9151E
HPE Networking Instant On 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	R9D19A
HPE Networking Instant On 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	R9D20A

### 2 Localization (Wall Power Cord) required on orders without #B2B, #B2C, #B2E and #AC3 (PDU Power Cord). (See Localization Menu)

- Notes:**
- Drop down under power supply should offer the following options and results:
    - Switch/Router to PDU Power Cord - #B2B in NA, Mexico, Taiwan, and Japan or #B2C ROW.
    - Switch/Router/Power Supply to Wall Power Cord - Localized Option (OCA 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)
  - No Localized Power Cord Selected - #AC3 Option
  - OCA Only Model Selection Form – HPE Aruba Networking > HPE NW Instant On > IOn Switches: 1960 IOn Switch Series

## Transceivers

### SFP Transceivers

Rule #	Description	SKU
	HPE Networking Instant On 1G LX SFP LC 10km SMF Transceiver	S0G20A
	HPE Aruba Networking Instant On 1G SFP LC SX 500m OM2 MMF Transceiver	R9D16A
	HPE Aruba Networking Instant On 1G SFP RJ45 T 100m Cat5e Transceiver	R9D17A
	HPE Aruba Networking 1G SFP LC LX 10km SMF Transceiver	J4859D

### SFP+ Transceivers

Rule #	Description	SKU
	HPE Networking Instant On 10G LR SFP+ LC 10km SMF Transceiver	S0G21A
	HPE Networking Instant On 10GBASE-T RJ45 30m Cat6a Transceiver	S0G18A
	HPE Aruba Networking Instant On 10G SFP+ LC SR 300m OM3 MMF Transceiver	R9D18A
	HPE Aruba Networking 10G SFP+ LC LR 10km SMF Transceiver	J9151E
	Aruba Instant On 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	R9D19A
	Aruba Instant On 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	R9D20A



## Technical Specifications

<b>Aruba Instant On 1960 12XGT 4SFP+ Switch (JL805A)</b>	
<b>I/O ports and slots</b>	
	12 RJ-45 autosensing 100/1000/10GBASE-T ports (IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3an 10GBASE-T); Duplex: 100BASE-TX: half or full; 1000BASE-T: full only 10GBASE-T: full only 4 SFP+ 10GbE ports
<b>Dimensions</b>	350.5(d) x 442.5(w) x 43.95(h) mm
<b>Weight</b>	9.6 lb (4.3 kg)
<b>CPU</b>	Single Core ARMv7 Cortex-A9 @2Ghz
<b>100 Mb Latency</b>	< 7.4 uSec
<b>1000 Mb Latency</b>	< 4.2 uSec
<b>10000 Mb Latency</b>	< 1.1 uSec
<b>Throughput (Mpps)</b>	238 Mpps
<b>Capacity</b>	320 Gbps
<b>Routing Table size (# of static entries)</b>	512 IPv4/IPv6
<b>MAC Address table size (# of entries)</b>	16,000 entries
<b>Reliability MTBF (years)</b>	88.8
<b>Operating temperature</b>	0-40°C, 0-10,000 ft
<b>Operating relative humidity</b>	15% to 95% @ 104°F (40°C) non-condensing
<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C) up to 15000 ft
<b>Nonoperating/Storage relative humidity</b>	15% to 90% @ 149°F (65°C) non-condensing
<b>Altitude</b>	up to 10,000 ft (3 km)
<b>Acoustics<sup>1</sup></b>	LWAd = 4.0 Bel  <b>Notes<sup>1</sup>:</b> 1 Acoustics measured in 23°C semi-anechoic chamber with a loading of 100% traffic and (for JL807A and JL809A) 50% PoE on all ports. Measured in accordance with ISO 7779. Declared in accordance with ECMA-109:2010. Values presented are the Declared A-Weighted Sound Power Level (LWAd) and the mean Bystander A-Weighted Sound Pressure Level (LpAm)
<b>Electrical Characteristics</b>	
<b>Frequency</b>	50Hz/60Hz
<b>AC voltage</b>	100-127VAC / 200-240VAC
<b>Current</b>	1.3A/0.4A
<b>Maximum power rating</b>	100-127V: 130W 200-220V: 160W
<b>Idle power</b>	100-127V: 60W 200-220V: 80W
<b>PoE power</b>	–
<b>Power Supply</b>	Internal power supply
<b>Safety</b>	EN/IEC 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 EN/IEC 62368-1, 2nd. & 3rd. Ed. UL 62368-1, 2nd. & 3rd. Ed. CAN/CSA C22.2 No. 62368-1, 2nd. & 3rd. Ed. EN/IEC 60825-1:2014 Class 1
<b>Emissions</b>	EN 55032:2015/CISPR 32, Class A FCC CFR 47 Part 15: 2018 Class A ICES-003 Class A VCCI Class A CNS 13438 Class A KN 32 Class A AS/NZS CISPR 32 Class A

## Technical Specifications

<b>Generic</b>	EN 55035, CISPR 35, KN35
<b>EN</b>	EN 55035, CISPR 35
<b>ESD</b>	EN/IEC 61000-4-2
<b>Radiated</b>	EN/IEC 61000-4-3
<b>EFT/Burst</b>	EN/IEC 61000-4-4
<b>Surge</b>	EN/IEC 61000-4-5
<b>Conducted</b>	EN/IEC 61000-4-6
<b>Power frequency magnetic field</b>	EN/IEC 61000-4-8
<b>Voltage dips and interruptions</b>	EN/IEC 61000-4-11
<b>Harmonics</b>	EN/IEC 61000-3-2
<b>Flicker</b>	EN /IEC 61000-3-3
<b>Device Management</b>	Aruba Instant On Cloud; Web browser; SNMP Manager
<b>Mounting Positions and Supported Racking</b>	<ul style="list-style-type: none"> <li>Mounts in an EIA-standard 19 in. telco rack or equipment cabinet. 2-post rack kit included</li> <li>Supports table-top mounting</li> <li>Supports rack-mounting</li> <li>Supports wall-mounting with ports facing either up or down</li> <li>Supports under-table mounting using the brackets provided</li> </ul>
<b>Transceivers</b>	<ul style="list-style-type: none"> <li>Aruba Instant On 1G SFP LC SX 500m OM2 MMF Transceiver (R9D16A)</li> <li>Aruba 1G SFP LC LX 10km SMF Transceiver (J4859D)</li> <li>Aruba Instant On 1G SFP RJ45 T 100m Cat5e Transceiver (R9D17A)</li> <li>Aruba Instant On 10G SFP+ LC SR 300m OM3 MMF Transceiver (R9D18A)</li> <li>Aruba 10G SFP+ LC LR 10km SMF Transceiver (J9151E)</li> <li>Aruba 10G SFP+ to SFP+ 1m DAC (J9281D)</li> <li>Aruba 10G SFP+ to SFP+ 3m DAC (J9283D)</li> </ul>

### Aruba Instant On 1960 24G 2XGT 2SFP+ Switch (JL806A)

#### Specifications

<b>I/O ports and slots</b>	24 RJ-45 autosensing 10/100/1000 Mbps 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 2 SFP+ 10GbE ports 2 10GBASE-T ports
<b>Dimensions</b>	350.5(d) x 442.5(w) x 43.95(h) mm
<b>Weight</b>	8.7 lb (3.9 kg)
<b>CPU</b>	Single-Core ARM v7 Cortex-A9 @800MHz
<b>100 Mb Latency</b>	< 4.4 uSec
<b>1000 Mb Latency</b>	< 2.2 uSec
<b>10000 Mb Latency</b>	< 1.1 uSec
<b>Throughput (Mpps)</b>	95 Mpps
<b>Capacity</b>	128 Gbps
<b>Routing Table size (# of static entries)</b>	32 IPv4/IPv6
<b>MAC Address table size (# of entries)</b>	16,000 entries
<b>Reliability MTBF (years)</b>	123.0
<b>Operating temperature</b>	0-40°C, 0-10,000 ft
<b>Operating relative humidity</b>	15% to 95% @ 104°F (40°C) non-condensing
<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C) up to 15000 ft

## Technical Specifications

<b>Nonoperating/Storage relative humidity</b>	15% to 90% @ 149°F (65°C) non-condensing
<b>Altitude</b>	up to 10,000 ft (3 km)
<b>Acoustics<sup>1</sup></b>	Fanless <b>Notes<sup>1</sup>:</b> 1 Acoustics measured in 23°C semi-anechoic chamber with a loading of 100% traffic and (for JL807A and JL809A) 50% PoE on all ports. Measured in accordance with ISO 7779. Declared in accordance with ECMA-109:2010. Values presented are the Declared A-Weighted Sound Power Level (LWAd) and the mean Bystander A-Weighted Sound Pressure Level (LpAm)
<b>Electrical Characteristics</b>	
<b>Frequency</b>	50Hz/60Hz
<b>AC voltage</b>	100-127VAC / 200-240VAC
<b>Current</b>	0.6A/0.2A
<b>Maximum power rating</b>	100-127V: 60W 200-220V: 80W
<b>Idle power</b>	100-127V: 30W 200-220V: 40W
<b>PoE power</b>	–
<b>Power Supply</b>	Internal power supply
<b>Safety</b>	EN/IEC 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 EN/IEC 62368-1, 2nd. & 3rd. Ed. UL 62368-1, 2nd. & 3rd. Ed. CAN/CSA C22.2 No. 62368-1, 2nd. & 3rd. Ed. EN/IEC 60825-1:2014 Class 2
<b>Emissions</b>	EN 55032:2015/CISPR 32, Class A FCC CFR 47 Part 15: 2018 Class A ICES-003 Class A VCCI Class A CNS 13438 Class A KN 32 Class A AS/NZS CISPR 32 Class A
<b>Generic</b>	EN 55035, CISPR 35, KN35
<b>EN</b>	EN 55035, CISPR 35
<b>ESD</b>	EN/IEC 61000-4-2
<b>Radiated</b>	EN/IEC 61000-4-3
<b>EFT/Burst</b>	EN/IEC 61000-4-4
<b>Surge</b>	EN/IEC 61000-4-5
<b>Conducted</b>	EN/IEC 61000-4-6
<b>Power frequency magnetic field</b>	EN/IEC 61000-4-8
<b>Voltage dips and interruptions</b>	EN/IEC 61000-4-11
<b>Harmonics</b>	EN/IEC 61000-3-2
<b>Flicker</b>	EN /IEC 61000-3-3
<b>Device Management</b>	Aruba Instant On Cloud; Web browser; SNMP Manager
<b>Mounting Positions and Supported Racking</b>	<ul style="list-style-type: none"> <li>Mounts in an EIA-standard 19 in. telco rack or equipment cabinet. 2-post rack kit included</li> <li>Supports table-top mounting</li> <li>Supports rack-mounting</li> <li>Supports wall-mounting with ports facing either up or down</li> <li>Supports under-table mounting using the brackets provided</li> <li>Must be mounted top surface up. To prevent possible impact to long-term reliability, product should not be mounted upside-down</li> </ul>
<b>Transceivers</b>	<ul style="list-style-type: none"> <li>Aruba Instant On 1G SFP LC SX 500m OM2 MMF Transceiver (R9D16A)</li> </ul>





## Technical Specifications

	<ul style="list-style-type: none"> <li>• Aruba 1G SFP LC LX 10km SMF Transceiver (J4859D)</li> <li>• Aruba Instant On 1G SFP RJ45 T 100m Cat5e Transceiver (R9D17A)</li> <li>• Aruba Instant On 10G SFP+ LC SR 300m OM3 MMF Transceiver (R9D18A)</li> <li>• Aruba 10G SFP+ LC LR 10km SMF Transceiver (J9151E)</li> <li>• Aruba 10G SFP+ to SFP+ 1m DAC (J9281D)</li> <li>• Aruba 10G SFP+ to SFP+ 3m DAC (J9283D)</li> </ul>
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### Aruba Instant On 1960 24G 20p Class4 4p Class6 PoE 2XGT 2SFP+ 370W Switch (JL807A)

#### Specifications

<b>I/O ports and slots</b>	24 RJ-45 autosensing 10/100/1000 Mbps ports including 20 CL4 and 4 CL6 PoE ports IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at Class 4, IEEE 802.3bt Class 6); Duplex: 10BASE-T/100BASE TX: half or full; 1000BASE-T: full only 2 SFP+ 10GbE ports 2 10GBASE-T ports
<b>Dimensions</b>	350.5(d) x 442.5(w) x 43.95(h) mm
<b>Weight</b>	10.4 lb (4.7 kg)
<b>CPU</b>	Single-Core ARM v7 Cortex-A9 @800MHz
<b>100 Mb Latency</b>	< 4.4 uSec
<b>1000 Mb Latency</b>	< 2.2 uSec
<b>10000 Mb Latency</b>	< 1.1 uSec
<b>Throughput (Mpps)</b>	95 Mpps
<b>Capacity</b>	128 Gbps
<b>Routing Table size (# of static entries)</b>	32 IPv4/IPv6
<b>MAC Address table size (# of entries)</b>	16,000 entries
<b>Reliability MTBF (years)</b>	65.3
<b>Operating temperature</b>	0-40°C, 0-10,000 ft
<b>Operating relative humidity</b>	15% to 95% @ 104°F (40°C) non-condensing
<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C) up to 15000 ft
<b>Nonoperating/Storage relative humidity</b>	15% to 90% @ 149°F (65°C) non-condensing
<b>Altitude</b>	up to 10,000 ft (3 km)
<b>Acoustics<sup>1</sup></b>	LWAd = 3.5 Bel <b>Notes<sup>1</sup>:</b> 1 Acoustics measured in 23°C semi-anechoic chamber with a loading of 100% traffic and (for JL807A and JL809A) 50% PoE on all ports. Measured in accordance with ISO 7779. Declared in accordance with ECMA-109:2010. Values presented are the Declared A-Weighted Sound Power Level (LWAd) and the mean Bystander A-Weighted Sound Pressure Level (LpAm)
<b>Electrical Characteristics</b>	
<b>Frequency</b>	50Hz/60Hz
<b>AC voltage</b>	100-127VAC / 200-240VAC
<b>Current</b>	5.0A/0.4A
<b>Maximum power rating</b>	100-127V: 500W 200-220V: 480W
<b>Idle power</b>	100-127V: 40W 200-220V: 80W
<b>PoE power</b>	Total 370 W PoE Power (Up to 240 W of Class 6 or 370 W of Class 4 PoE)
<b>Power Supply</b>	Internal power supply
<b>Safety</b>	EN/IEC 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 EN/IEC 62368-1, 2nd. & 3rd. Ed. UL 62368-1, 2nd. & 3rd. Ed. CAN/CSA C22.2 No. 62368-1, 2nd. & 3rd. Ed.

## Technical Specifications

	EN/IEC 60825-1:2014 Class 3
<b>Emissions</b>	EN 55032:2015/CISPR 32, Class A FCC CFR 47 Part 15: 2018 Class A ICES-003 Class A VCCI Class A CNS 13438 Class A KN 32 Class A AS/NZS CISPR 32 Class A
<b>Generic</b>	EN 55035, CISPR 35, KN35
<b>EN</b>	EN 55035, CISPR 35
<b>ESD</b>	EN/IEC 61000-4-2
<b>Radiated</b>	EN/IEC 61000-4-3
<b>EFT/Burst</b>	EN/IEC 61000-4-4
<b>Surge</b>	EN/IEC 61000-4-5
<b>Conducted</b>	EN/IEC 61000-4-6
<b>Power frequency magnetic field</b>	EN/IEC 61000-4-8
<b>Voltage dips and interruptions</b>	EN/IEC 61000-4-11
<b>Harmonics</b>	EN/IEC 61000-3-2
<b>Flicker</b>	EN /IEC 61000-3-3
<b>Device Management</b>	Aruba Instant On Cloud; Web browser; SNMP Manager
<b>Mounting Positions and Supported Racking</b>	<ul style="list-style-type: none"> <li>Mounts in an EIA-standard 19 in. telco rack or equipment cabinet. 2-post rack kit included</li> <li>Supports table-top mounting</li> <li>Supports rack-mounting</li> <li>Supports wall-mounting with ports facing either up or down</li> <li>Supports under-table mounting using the brackets provided</li> </ul>
<b>Transceivers</b>	<ul style="list-style-type: none"> <li>Aruba Instant On 1G SFP LC SX 500m OM2 MMF Transceiver (R9D16A)</li> <li>Aruba 1G SFP LC LX 10km SMF Transceiver (J4859D)</li> <li>Aruba Instant On 1G SFP RJ45 T 100m Cat5e Transceiver (R9D17A)</li> <li>Aruba Instant On 10G SFP+ LC SR 300m OM3 MMF Transceiver (R9D18A)</li> <li>Aruba 10G SFP+ LC LR 10km SMF Transceiver (J9151E)</li> <li>Aruba 10G SFP+ to SFP+ 1m DAC (J9281D)</li> <li>Aruba 10G SFP+ to SFP+ 3m DAC (J9283D)</li> </ul>

### Aruba Instant On 1960 48G 2XGT 2SFP+ Switch (JL808A)

#### Specifications

<b>I/O ports and slots</b>	48 RJ-45 autosensing 10/100/1000 Mbps 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 2 SFP+ 10GbE ports 2 10GBASE-T ports
<b>Dimensions</b>	350.5(d) x 442.5(w) x 43.95(h) mm
<b>Weight</b>	9.8 lb (4.4 kg)
<b>CPU</b>	Single-Core ARM v7 Cortex-A9 @800MHz
<b>100 Mb Latency</b>	< 4.4 uSec
<b>1000 Mb Latency</b>	< 2.2 uSec
<b>10000 Mb Latency</b>	< 1.1 uSec
<b>Throughput (Mpps)</b>	131 Mpps
<b>Capacity</b>	176 Gbps
<b>Routing Table size (# of static entries)</b>	32 IPv4/IPv6

## Technical Specifications

<b>MAC Address table size (# of entries)</b>	16,000 entries
<b>Reliability MTBF (years)</b>	109.4
<b>Operating temperature</b>	0-40°C, 0-10,000 ft
<b>Operating relative humidity</b>	15% to 95% @ 104°F (40°C) non-condensing
<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C) up to 15000 ft
<b>Nonoperating/Storage relative humidity</b>	15% to 90% @ 149°F (65°C) non-condensing
<b>Altitude</b>	up to 10,000 ft (3 km)
<b>Acoustics<sup>1</sup></b>	LWAd = 2.9 Bel  <b>Notes<sup>1</sup>:</b> 1 Acoustics measured in 23°C semi-anechoic chamber with a loading of 100% traffic and (for JL807A and JL809A) 50% PoE on all ports. Measured in accordance with ISO 7779. Declared in accordance with ECMA-109:2010. Values presented are the Declared A-Weighted Sound Power Level (LWAd) and the mean Bystander A-Weighted Sound Pressure Level (LpAm)
<b>Electrical Characteristics</b>	
<b>Frequency</b>	50Hz/60Hz
<b>AC voltage</b>	100-127VAC / 200-240VAC
<b>Current</b>	1.1A/0.4A
<b>Maximum power rating</b>	100-127V: 110W 200-220V: 120W
<b>Idle power</b>	100-127V: 60W 200-220V: 80W
<b>PoE power</b>	–
<b>Power Supply</b>	Internal power supply
<b>Safety</b>	EN/IEC 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 EN/IEC 62368-1, 2nd. & 3rd. Ed. UL 62368-1, 2nd. & 3rd. Ed. CAN/CSA C22.2 No. 62368-1, 2nd. & 3rd. Ed. EN/IEC 60825-1:2014 Class 4
<b>Emissions</b>	EN 55032:2015/CISPR 32, Class A FCC CFR 47 Part 15: 2018 Class A ICES-003 Class A VCCI Class A CNS 13438 Class A KN 32 Class A AS/NZS CISPR 32 Class A
<b>Generic</b>	EN 55035, CISPR 35, KN35
<b>EN</b>	EN 55035, CISPR 35
<b>ESD</b>	EN/IEC 61000-4-2
<b>Radiated</b>	EN/IEC 61000-4-3
<b>EFT/Burst</b>	EN/IEC 61000-4-4
<b>Surge</b>	EN/IEC 61000-4-5
<b>Conducted</b>	EN/IEC 61000-4-6
<b>Power frequency magnetic field</b>	EN/IEC 61000-4-8
<b>Voltage dips and interruptions</b>	EN/IEC 61000-4-11
<b>Harmonics</b>	EN/IEC 61000-3-2
<b>Flicker</b>	EN /IEC 61000-3-3
<b>Device Management</b>	Aruba Instant On Cloud; Web browser; SNMP Manager
<b>Mounting Positions and Supported Racking</b>	<ul style="list-style-type: none"> <li>Mounts in an EIA-standard 19 in. telco rack or equipment cabinet. 2-post rack kit included</li> </ul>

## Technical Specifications

	<ul style="list-style-type: none"> <li>• Supports table-top mounting</li> <li>• Supports rack-mounting</li> <li>• Supports wall-mounting with ports facing either up or down</li> <li>• Supports under-table mounting using the brackets provided</li> </ul>
<b>Transceivers</b>	<ul style="list-style-type: none"> <li>• Aruba Instant On 1G SFP LC SX 500m OM2 MMF Transceiver (R9D16A)</li> <li>• Aruba 1G SFP LC LX 10km SMF Transceiver (J4859D)</li> <li>• Aruba Instant On 1G SFP RJ45 T 100m Cat5e Transceiver (R9D17A)</li> <li>• Aruba Instant On 10G SFP+ LC SR 300m OM3 MMF Transceiver (R9D18A)</li> <li>• Aruba 10G SFP+ LC LR 10km SMF Transceiver (J9151E)</li> <li>• Aruba 10G SFP+ to SFP+ 1m DAC (J9281D)</li> <li>• Aruba 10G SFP+ to SFP+ 3m DAC (J9283D)</li> </ul>

### Aruba Instant On 1960 48G 40p Class4 8p Class6 PoE 2XGT 2SFP+ 600W Switch (JL809A)

#### Specifications

<b>I/O ports and slots</b>	48 RJ-45 autosensing 10/100/1000 Mbps ports including 40 CL4 and 8 CL6 PoE ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at Class 4, IEEE 802.3bt Class 6); Duplex: 10BASE-T/100BASE TX: half or full; 1000BASE-T: full only 2 SFP+ 10GbE ports 2 10GBASE-T ports
<b>Dimensions</b>	402.75(d) x 442.5(w) x 43.95(h) mm
<b>Weight</b>	10.8 lb (4.9 kg)
<b>CPU</b>	Single-Core ARM v7 Cortex-A9 @800MHz
<b>100 Mb Latency</b>	< 4.4 uSec
<b>1000 Mb Latency</b>	< 2.2 uSec
<b>10000 Mb Latency</b>	< 1.1 uSec
<b>Throughput (Mpps)</b>	131 Mpps
<b>Capacity</b>	176 Gbps
<b>Routing Table size (# of static entries)</b>	32 IPv4/IPv6
<b>MAC Address table size (# of entries)</b>	16,000 entries
<b>Reliability MTBF (years)</b>	68.0
<b>Operating temperature</b>	0-40°C, 0-10,000 ft
<b>Operating relative humidity</b>	15% to 95% @ 104°F (40°C) non-condensing
<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C) up to 15000 ft
<b>Nonoperating/Storage relative humidity</b>	15% to 90% @ 149°F (65°C) non-condensing
<b>Altitude</b>	up to 10,000 ft (3 km)
<b>Acoustics<sup>1</sup></b>	LWAd = 3.6 Bel  <b>Notes<sup>1</sup>:</b> 1 Acoustics measured in 23°C semi-anechoic chamber with a loading of 100% traffic and (for JL807A and JL809A) 50% PoE on all ports. Measured in accordance with ISO 7779. Declared in accordance with ECMA-109:2010. Values presented are the Declared A-Weighted Sound Power Level (LWAd) and the mean Bystander A-Weighted Sound Pressure Level (LpAm)
<b>Electrical Characteristics</b>	
<b>Frequency</b>	50Hz/60Hz
<b>AC voltage</b>	100-127VAC / 200-240VAC
<b>Current</b>	7.9A/0.5A
<b>Maximum power rating</b>	100-127V: 790W 200-220V: 760W
<b>Idle power</b>	100-127V: 60W 200-220V: 100W

## Technical Specifications

<b>PoE power</b>	Total 600 W PoE Power (Up to 480 W of Class 6 or 600 W of Class 4 PoE)
<b>Power Supply</b>	Internal power supply
<b>Safety</b>	EN/IEC 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 EN/IEC 62368-1, 2nd. & 3rd. Ed. UL 62368-1, 2nd. & 3rd. Ed. CAN/CSA C22.2 No. 62368-1, 2nd. & 3rd. Ed. EN/IEC 60825-1:2014 Class 5
<b>Emissions</b>	EN 55032:2015/CISPR 32, Class A FCC CFR 47 Part 15: 2018 Class A ICES-003 Class A VCCI Class A CNS 13438 Class A KN 32 Class A AS/NZS CISPR 32 Class A
<b>Generic</b>	EN 55035, CISPR 35, KN35
<b>EN</b>	EN 55035, CISPR 35
<b>ESD</b>	EN/IEC 61000-4-2
<b>Radiated</b>	EN/IEC 61000-4-3
<b>EFT/Burst</b>	EN/IEC 61000-4-4
<b>Surge</b>	EN/IEC 61000-4-5
<b>Conducted</b>	EN/IEC 61000-4-6
<b>Power frequency magnetic field</b>	EN/IEC 61000-4-8
<b>Voltage dips and interruptions</b>	EN/IEC 61000-4-11
<b>Harmonics</b>	EN/IEC 61000-3-2
<b>Flicker</b>	EN /IEC 61000-3-3
<b>Device Management</b>	Aruba Instant On Cloud; Web browser; SNMP Manager
<b>Mounting Positions and Supported Racking</b>	<ul style="list-style-type: none"> <li>Mounts in an EIA-standard 19 in. telco rack or equipment cabinet. 2-post rack kit included</li> <li>Supports table-top mounting</li> <li>Supports rack-mounting</li> <li>Supports wall-mounting with ports facing either up or down</li> <li>Supports under-table mounting using the brackets provided</li> </ul>
<b>Transceivers</b>	<ul style="list-style-type: none"> <li>Aruba Instant On 1G SFP LC SX 500m OM2 MMF Transceiver (R9D16A)</li> <li>Aruba 1G SFP LC LX 10km SMF Transceiver (J4859D)</li> <li>Aruba Instant On 1G SFP RJ45 T 100m Cat5e Transceiver (R9D17A)</li> <li>Aruba Instant On 10G SFP+ LC SR 300m OM3 MMF Transceiver (R9D18A)</li> <li>Aruba 10G SFP+ LC LR 10km SMF Transceiver (J9151E)</li> <li>Aruba 10G SFP+ to SFP+ 1m DAC (J9281D)</li> <li>Aruba 10G SFP+ to SFP+ 3m DAC (J9283D)</li> </ul>

### Aruba Instant On 1960 8p 1G Class 4 4p SR1G/2.5G Class 6 PoE 2p 10GBASE-T 2p SFP+ 480W Switch (SOF35A)

#### Specifications

<b>I/O ports and slots</b>	4 RJ-45 autosensing 1G/2.5GBASE-T ports with IEEE 802.af/at/bt CL6 PoE 8 RJ-45 autosensing 10/100/1000BASE-T ports with IEEE 802.af/at CL4 PoE (IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3bz Type 2.5GBase-T, IEEE 802.an 10GBASE-T); Duplex: 100BASE-TX: half or full; 1000BASE-T: full only 10GBASE-T: full only 2 SFP+ 10GbE ports 2 RJ-45 autosensing 100/1000/10GBASE-T ports
<b>Dimensions</b>	1.73 x 17.44 x 13.78 in (4.39 x 44.3 x 35 cm)

## Technical Specifications

<b>Weight</b>	11.55lb (5.24kg)
<b>Processor and Memory</b>	Single-Core ARM v7 Cortex-A9 @800MHz 1GB DDR3; 512MB NAND flash; Packet buffer size: 1.5 MB
<b>Performance</b>	
<b>100 Mb Latency<sup>1</sup></b>	< 4.1 uSec
<b>1000 Mb Latency<sup>1</sup></b>	< 1.8 uSec
<b>2.5G Latency<sup>1</sup></b>	< 6.7 uSec
<b>10G Latency<sup>1</sup></b>	< 2.8 uSec
<b>Throughput (Mpps)<sup>1</sup></b>	172 Mpps
<b>Notes:</b> <sup>1</sup> Tested with 64 byte packet size	
<b>Maximum Stacking Capacity</b>	80 Gbps
<b>Maximum Standalone Switching Capacity</b>	116Gbps
<b>Routing Table size (# of static entries)</b>	992
<b>MAC Address table size (# of entries)</b>	16,000 entries
<b>Reliability MTBF (years)</b>	40.8
<b>Environment</b>	
<b>Operating temperature</b>	0-40°C, 0-10,000 ft
<b>Operating relative humidity</b>	15% to 95% @ 104°F (40°C) non-condensing
<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C) up to 15000 ft
<b>Nonoperating/Storage relative humidity</b>	15% to 90% @ 149°F (65°C) non-condensing
<b>Altitude</b>	up to 10,000 ft (3 km)
<b>Acoustics<sup>2</sup></b>	LWAd = 3.4 Bel
<b>Notes:</b> <sup>2</sup> 1 Acoustics measured in 23°C semi-anechoic chamber with a loading of 100% traffic and (for JL807A and JL809A) 50% PoE on all ports. Measured in accordance with ISO 7779. Declared in accordance with ECMA-109:2010. Values presented are the Declared A-Weighted Sound Power Level (LWAd) and the mean Bystander A-Weighted Sound Pressure Level (LpAm)	
<b>Electrical Characteristics</b>	
<b>Frequency</b>	50Hz/60Hz
<b>AC voltage</b>	100-127VAC / 200-240VAC
<b>Current</b>	6.4A/3.0A
<b>Maximum power rating</b>	100-127V: 635W 200-220V: 623W
<b>Idle power</b>	100-127V: 34W 200-220V: 40W
<b>PoE power</b>	480W
<b>Power Supply</b>	Internal power supply
<b>Safety</b>	EN/IEC 62368-1, 2nd. & 3rd. Ed. UL 62368-1, 3rd. Ed. CAN/CSA C22.2 No. 62368-1, 3rd. Ed. EN/IEC 60825-1:2014 Class 1
<b>Emissions</b>	EN 55032:2015/CISPR 32, Class A FCC CFR 47 Part 15: 2020 Class A ICES-003 Class A VCCI Class A CNS 15936 Class A

## Technical Specifications

	KN 32 Class A AS/NZS CISPR 32 Class A
<b>Generic</b>	EN 55035, CISPR 35, KN35
<b>EN</b>	EN 55035, CISPR 35
<b>ESD</b>	EN/IEC 61000-4-2
<b>Radiated</b>	EN/IEC 61000-4-3
<b>EFT/Burst</b>	EN/IEC 61000-4-4
<b>Surge</b>	EN/IEC 61000-4-5
<b>Conducted</b>	EN/IEC 61000-4-6
<b>Power frequency magnetic field</b>	EN/IEC 61000-4-8
<b>Voltage dips and interruptions</b>	EN/IEC 61000-4-11
<b>Harmonics</b>	EN/IEC 61000-3-2
<b>Flicker</b>	EN /IEC 61000-3-3
<b>Device Management</b>	Aruba Instant On Cloud; Web browser; SNMP Manager
<b>Mounting Positions and Supported Racking</b>	<ul style="list-style-type: none"> <li>• Mounts in an EIA-standard 19 in. telco rack or equipment cabinet. 2-post rack kit included</li> <li>• Supports table-top mounting</li> <li>• Supports rack-mounting</li> <li>• Supports wall-mounting with ports facing either up or down</li> <li>• Supports under-table mounting using the brackets provided</li> </ul>
<b>Transceivers</b>	<ul style="list-style-type: none"> <li>• Aruba Instant On 1G SFP LC SX 500m OM2 MMF Transceiver (R9D16A)</li> <li>• Aruba 1G SFP LC LX 10km SMF Transceiver (J4859D)</li> <li>• Aruba Instant On 1G SFP RJ45 T 100m Cat5e Transceiver (R9D17A)</li> <li>• Aruba Instant On 10G SFP+ LC SR 300m OM3 MMF Transceiver (R9D18A)</li> <li>• Aruba 10G SFP+ LC LR 10km SMF Transceiver (J9151E)</li> <li>• Aruba Instant On 10G SFP+ to SFP+ 1m DAC (R9D19A)</li> <li>• Aruba Instant On 10G SFP+ to SFP+ 3m DAC (R9D20A)</li> </ul>



## Technical Specifications

### Standards and Protocols (applies to all products in series)

- IEEE 802.3 10BASE-T
- IEEE 802.3u 100BASE-TX
- IEEE 802.3ab 1000BASE-T
- IEEE 802.3z 1000BASE-X
- IEEE 802.2af PoE 1 (PoE models only)
- IEEE 802.3at PoE 1 (PoE models only)
- IEEE 802.3x Flow control
- IEEE 802.1Q VLANs
- IEEE 802.1p Priority
- IEEE 802.3ad Link Aggregation Control Protocol (LACP)
- IEEE 802.1X Port Access Authentication
- IEEE 802.3az Energy Efficient Ethernet
- IEEE 802.1D: Spanning Tree Protocol
- IEEE 802.1W: Rapid Spanning Tree Protocol
- IEEE 802.1S: Multiple Spanning Tree Protocol
- IEEE 802.1AB Link Layer Discovery Protocol
- Denial of service protection
- CPU DoS protection

### IETF Standards Support

- RFC 768
- RFC 783
- RFC 791
- RFC 792
- RFC 793
- RFC 813
- RFC 879
- RFC 896
- RFC 826
- RFC 894
- RFC 919
- RFC 922
- RFC 950
- RFC 1042
- RFC 1071
- RFC 1123
- RFC 1141
- RFC 1155
- RFC 1157
- RFC 1350
- RFC 1533
- RFC 1541
- RFC 1624
- RFC 1700
- RFC1867
- RFC 2030
- RFC2616
- RFC 2131
- RFC 2132





## Technical Specifications

- RFC 3164
- RFC 5424
- RFC3411
- RFC3412
- RFC3413
- RFC3414
- RFC3415
- RFC2576
- RFC 4330
- RFC 3268
- RFC 4251
- RFC 4252
- RFC 4253
- RFC 4254
- RFC 4716
- RFC 4419
- RFC 2869
- RFC 3580
- RFC 2474
- RFC 4541

### IETF Standards Management Support

- RFC 1213
- RFC 1215
- RFC 1286
- RFC 1442
- RFC 1451
- RFC 1493
- RFC 1573
- RFC 1643
- RFC 1757
- RFC 1907
- RFC 2011
- RFC 2012
- RFC 2013
- RFC 2233
- RFC 2578
- RFC 2618
- RFC 2865
- RFC 2866
- RFC 2869
- RFC 2665
- RFC 2666
- RFC 2674
- RFC 2737
- RFC 2819
- RFC 2863
- RFC 4022
- RFC 4113
- RFC 1212



## Technical Specifications

- RFC 1901
- RFC 1908
- RFC 2271
- RFC 2295
- RFC 2576
- RFC 2579
- RFC 2580
- RFC 3410
- RFC 3417
- RFC 2620

### IETF Standard SNMP Traps Supported

- RFC 1157
- RFC 1493
- RFC 1215
- RFC 3416
- RFC 3418

### IETF IPv6 Support

- RFC 1981
- RFC 2460
- RFC 2464
- RFC 2465
- RFC 2466
- RFC 2526
- RFC 2710
- RFC 2711
- RFC 2732
- RFC 3484
- RFC 3587
- RFC 3879
- RFC 4001
- RFC 4007
- RFC 4113
- RFC 4147
- RFC 4193
- RFC 4213
- RFC 4291
- RFC 4292
- RFC 4293
- RFC 4294
- RFC 4443
- RFC 4773
- RFC 4786
- RFC 4861
- RFC 4862
- RFC 4943
- RFC 5095
- RFC 5220
- RFC 5221
- RFC 5350



## Technical Specifications

- RFC 5722
  - RFC 5942
  - RFC 5952
  - RFC 6177
  - RFC 3736
  - RFC 2365
- 



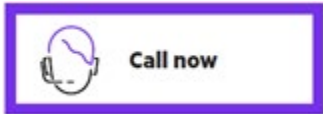
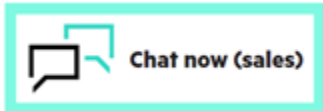
## Summary of Changes

Date	Version History	Action	Description of Change
03-Jun-2024	Version 10	Changed	Configuration Information section was updated.
01-Apr-2024	Version 9	Changed	Configuration Information section was updated.
04-Dec-2023	Version 8	Changed	Series name was updated.
05-Sep-2023	Version 7	Changed	Standard Features, Configuration Information and Technical Specifications sections were updated.
24-Jul-2023	Version 6	Changed	Technical Specifications section was updated.
12-Dec-2022	Version 5	Changed	Configuration Information section was updated.
01-Aug-2022	Version 4	Changed	Configuration Information and Technical Specifications sections were updated.
04-Apr-2022	Version 3	Changed	Configuration Information section was updated.
07-Feb-2022	Version 2	Changed	Configuration Information section was updated.
01-Nov-2021	Version 1	New	New QuickSpecs



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