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HPE Networking Instant On Switch 1940 QuickSpecs

High-Performance, Smart-Managed Switches Designed with Small Businesses in Mind

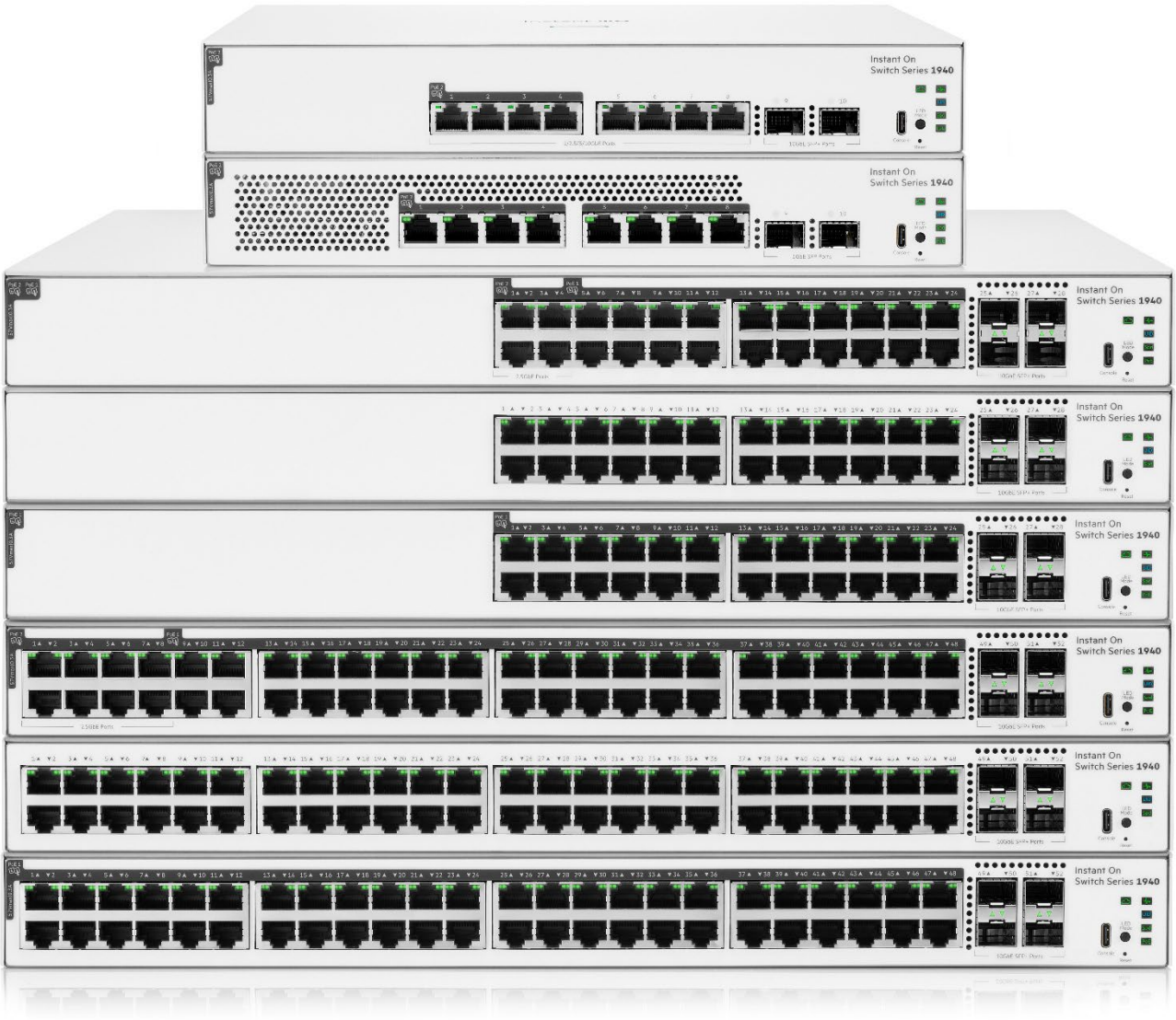
Whether you operate a retail store, a creative agency, or a technology startup, a reliable and secure network is vital for your business success. The HPE Instant On 1940 switch provides an enterprise-grade, smart-managed solution that is easy to deploy, cost-effective, and built to support your growing needs.

The Instant On 1940 offers advanced Layer 2, static routing, high-performance Gigabit ports, and comprehensive security capabilities, making it ideal for bandwidth-intensive applications such as VoIP, video conferencing, and IoT deployments. Its flexible configuration options and robust management tools enable you to ensure consistent, high-speed connectivity across your network for PoE and throughput demanding clients across your network

Overview

Using either the Instant On mobile app or the cloud-based web portal, you can quickly set up, monitor and manage the 1940 switch series from anywhere at any time. What's more, up to 60W PoE power delivery is available out-of-the-box for your class 6 PoE devices, like access points, surveillance cameras and VoIP phones, all easily managed from the same platform.

Built-in security features protect your network from unauthorized access by allowing you to segment traffic and define access to each area of the network. And all of this is included in the price of the hardware – there are no hidden subscription or licensing fees.



HPE Networking Instant On 1940 Switches Family

Overview

Key Features

- **Flexible Smart Rate Portfolio:** Cloud-managed Layer 2+ switches in 8-, 24-, and 48-port models, with select Smart Rate Multi-Gigabit access and SFP/SFP+ uplinks.
- **High-Capacity Power:** Up to 600W PoE budget, supporting Class 4 and Class 6 devices such as Wi-Fi APs, PTZ cameras, locks, and IoT endpoints.
- **Enterprise-Grade Security:** Help protect SMB networks with ACLs, IEEE 802.1X, and traffic segmentation.
- **Hardware-Rooted Trust:** TPM 2.0, port security, and RADIUS/TACACS+ authentication strengthen system-level protection.
- **Energy-Efficient Operations:** Always-On PoE, Fast PoE, IEEE 802.3az, and cloud power dashboards help reduce energy use.
- **Cloud-Managed Simplicity:** Deploy, monitor, and manage multiple business locations, up to 125 devices per site through the mobile app or Cloud Portal.

Standard Features

Simplicity at Its Best

- Smart-managed switches that work together with Instant On APs right out of the box
- Mobile app to easily setup, monitor and manage your network

Security You Can Count On

- Protect your network from unauthorized access with 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.

The Instant On Differentiators

Easy Setup 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.

Non-intrusive, Aesthetic Design

HPE Networking Instant On switches are designed to complement the sleek and clean look of the Instant On access points, and to blend discreetly into your site's environment. The 8-port models, as well as the 24- and 48-port non-PoE models, are fan-less, making them ideal for quiet office deployments.

High Performance with Flexible Options

The series consists of four (4) Class 6 PoE switches, (2) Clas 4 PoE switches, and two (2) non-PoE switches including 8- 24- and 48-port Gigabit Ethernet switches. The two (2) dedicated 1G SFP fiber ports on 8-port models, and four (4) dedicated 1G/10G SFP+ fiber ports on 24-/48-port models, ensure high performance and eliminate traffic bottlenecks across the network. Customizable features include basic Layer 2 features like VLANs and link aggregation, as well as advanced features such as Layer 3 IPv4 static routing, ACLs, and Spanning Tree Protocols, and IPv6 Host mode.

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 or VPN. You can also update firmware on your Instant On devices directly from the cloud whenever you want, from wherever you are.

Site inventory

The site inventory feature on the Instant On mobile app shows you all switches and AP's on a single screen, allowing you to quickly identify non-functioning devices and troubleshoot accordingly.

Standard Features

Multi-Site Management
The cloud-hosted web interface and mobile app make it easy to 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.

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.

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.

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.

Port Mirroring
Enables traffic on a port or VLAN to be simultaneously sent to a network analyzer for monitoring.

Event Logging and Alerts
Provides detailed information for problem identification and resolution.

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

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.

Standard Features

Schedule Configuration
Global Schedule feature can be applied to time-based ACLs, port or interface shutdown, or PoE power delivery; up to 3 schedules can be configured. 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.).

Quality of Service (QoS)

Class of Service (CoS)
The Class of Service (CoS) queueing feature allows direct configuration of certain aspects of switch queueing. This provides the desired QoS behavior for different types of network traffic.

Queue Scheduling
Allows administrator to configure parameters for the amount of bandwidth used by the queue, the queue, the queue depth during times of congestion, and the scheduling of packet transmission. Queue Scheduler types supported are weighted round robin (WRR) or strict priority queuing (SP).

Traffic prioritization
Prioritizes time sensitive traffic such as VoIP and video based on DSCP or IEEE 802.1p markings, ensuring these packets receive higher forwarding precedence. Administrators may also remap priorities to elevate selected traffic into higher priority queues.

Traffic shaping
Sets the limit on how much traffic can leave a port. The limit on maximum transmission bandwidth has the effect of smoothing temporary traffic bursts over time so that the transmitted traffic rate is bound to the interface.

Rate limiting
The switch supports configurable interface thresholds to limit broadcast, multicast, or unicast traffic based on bandwidth utilization or packet/frame rates. When these thresholds are exceeded, the switch can be programmed to shut down the port or generate an SNMP trap notification.

Global Trust Mode
Global Trust Mode defines which traffic markings the switch trusts for QoS classification (IEEE 802.1p, DSCP, or Untrusted), ensuring predictable and secure handling of prioritized traffic.

Auto-voice VLAN
Automatically identifies IP phones and prioritizes their voice traffic. The switch simplifies VoIP deployment by OUI or detecting voice protocols (SIP, H.323, SCCP) and assigning the associated ports to a dedicated voice VLAN with the appropriate CoS priority.

Standard Features

Layer 2 Switching

Flow control

With IEEE 802.3x flow control enabled, a slower switch can pause a faster switch to prevent buffer overload. HPE Networking Instant On 1940 models now supports both symmetric and asymmetric flow control, allowing traffic to be paused or slowed more effectively when needed.

Spanning Tree Protocol (STP)

Supports standard IEEE 802.1D STP, IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) for faster convergence, and IEEE 802.1s Multiple Spanning Tree Protocol (MSTP supported on local web only). Supports up to eight (8) instances of MSTP.

BPDU filtering

When BPDU Filtering is enabled on an interface where Spanning Tree Protocol (STP) is disabled, it blocks the port from sending or receiving BPDUs, to avoid any unexpected Spanning Tree modifications.

Loop protection

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

IGMP snooping

IGMP snooping allows the switch to forward IPv4 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 which affects network performance. HPE Networking Instant On 1940 models support IGMP v1, v2, v3 protocols.

Link aggregation

HPE Networking Instant On 1940 can create high bandwidth connections to reduce network bottlenecks using Link Aggregation Control Protocol (LACP) or static configuration up to 16 link aggregation groups (LAGs) with up to eight (8) ports each depending on models.

Link Layer Discovery Protocol (LLDP)

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

Media Endpoint Discovery (LLDP-MED)

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 provides better administration, security, and multicast traffic management.

HPE Networking Instant On 1940 Switch Series supports up to 256 VLANs in 1-4093 VLAN IDs; VLAN 4094 is reserved for internal system use. The default management VLAN ID is 1.

Standard Features

Port mirroring and Remote Switched Port Analyzer (RSPAN)

Port Mirroring feature creates a copy of the traffic that the source interface handles and sends it to a probe port (also known as destination port). Multiple switch ports can be configured as source interfaces, with each port mirrored to the same diagnostic port.

RSPAN is used to mirror traffic from source ports or VLANs on one switch to a destination port on a different switch.

Auto recovery

Automatically brings a port or service back online after it has been shut down due to an error condition.

Auto VLAN

Allows automatic detection of any connected access point or security cameras, then placed into pre-defined VLANs with high-priority QoS.

Jumbo frame support

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

Layer 3 Routing

Static IPv4 routing

Supports up to 32 IPv4 routing interfaces, and up to 32 IPv4 static routes. Manual or DHCP IP address assignments can be configured to an individual port or VLAN.

Address Resolution Protocol (ARP)

The Address Resolution Protocol (ARP) associates a layer 2 MAC address with a layer 3 IPv4 address. Both dynamic and manual ARP entries are supported.

Network Security

TPM-based security

Includes a Trusted Platform Module (TPM 2.0) to provide a tamper-resistant, hardware-based root of trust. Generating, storing, and isolating cryptographic keys directly in secure silicon rather than software, Instant On switches ensure an authenticated, highly secure connection to the Instant On cloud portal and prevent software-based spoofing, credential theft, and unauthorized device impersonation.

AAA-based Authentication and Accounting

Provides AAA based controls for viewing and configuring authentication lists used for both switch management access and client network access. Each authentication list defines the sequence of methods – RADIUS, TACACS+, or the local database – used to validate user credentials.

RADIUS

Remote Authentication Dial-In User Service (RADIUS) servers provide additional security for networks. The HPE Networking Instant On 1940 Switch Series includes a RADIUS client that can contact one or more RADIUS servers for various Authentication and Accounting (AAA) services. The switch can connect to up to two (2) RADIUS servers.

Standard Features

RADIUS assigned VLANs – Dynamic VLAN Creation
Automatically assigns users to the appropriate VLAN based on their identity and location. If desired, the switch can be configured to enable dynamic creation of a VLAN, if the VLAN does not already exist.

RADIUS accounting
RADIUS accounting logs user session activity so administrators can track usage, troubleshoot issues, and maintain security visibility.

TACACS+
TACACS provides access control for networked devices via one or more centralized servers. Like RADIUS, this protocol simplifies authentication by making use of a single database that can be shared by many clients on the network.

Manager Access List
Ensures that only known and trusted devices are allowed to remotely manage the switch. The administrator may elect to configure a management access control list. The Management Access Control List allows configuration of rules, services and profiles to manage the switch management access via TCP/IP.

Source Interface Configuration
Provides an option for the user to select any configured IP interfaces for management traffic, to direct management traffic to/from the switch on an IP interface. TACACS+, RADIUS, SNMP, NTP and Remote SYSLOG support use of this feature.

Access Control Lists & Threat Prevention

Access Control Lists (ACLs)
Enables network traffic filtering by creating an ACL, adds rules and match criteria to an ACL, and applies the ACL to one or more interfaces or a VLAN. Supports ingress/egress IPv4 and/or MAC ACLs with up to 2048 ACEs depending on the switch model.

Port access control
Authentication of network users via IEEE 802.1X or mac-Auth on a per-port basis prior to permitting network access. Port authentication includes RADIUS assigned VLAN and dynamic VLAN creation.

Port security – MAC Lockout
Allows administrator to limit the number of MAC addresses or configure specific 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, preventing unknown devices from forwarding packets into the network.

Local MAC-Auth
Local MAC Authentication allows a network device to authenticate clients based on their MAC address before granting network access, via a user-defined list. This method is commonly used for devices that cannot support 802.1X authentication, such as IP phones, or legacy devices.

Standard Features

Protected ports
The Protected Ports feature delivers enhanced internal security and cost-effective threat containment by preventing unnecessary device-to-device communication within the network. Protected Ports (Secure Isolation) and Unprotected Ports (Trusted Access) can be used for this purpose.

Spoofing Mitigation & Traffic Safeguards
Automatic Denial of Service (DoS) protection
Automatic DoS protection is a network security feature that detects and blocks traffic patterns that look like a DoS or Dynamic DoS (DDoS) attack without requiring manual intervention.

Global Storm Control
Storm Control feature protects against conditions where incoming packets flood the LAN, causing network performance degradation. Storm Control provides protection for unicast traffic with an unknown destination, and for broadcast and multicast traffic.

DHCP snooping
DHCP snooping acts like a firewall between untrusted hosts and DHCP servers. DHCP snooping differentiates between untrusted interfaces connected to the end user and trusted interfaces connected to the DHCP server or another switch.

IP Source Guard
IP Source Guard utilizes the DHCP snooping database to deny network access from untrusted sources.

ARP attack prevention
ARP attack protection helps intercept, log and discard ARP packets with invalid IP-to-MAC address bindings, protecting the network from common man-in-the middle attacks.

Link flap prevention
Minimizes network disruption and instability by automatically detecting and disabling ports that experience link flap events – a link flap event happens when a port repeatedly switches between link up and link down.

Uni-Directional Link Detection (UDLD)
Allows detection of unidirectional traffic from connected devices when bi-directional traffic is expected.

Performance and Efficiency

Energy Efficient Ethernet (EEE)
Compliant with IEEE 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 Savings Status
The switch provides an estimated cumulative energy savings due to green Ethernet features being enabled.

Standard Features

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 8-port models, 24- and 48-port non-PoE models, making the switches ideal for office deployments.

Additional 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
Enables automatic configuring of the initial settings such IP address, device information, and system time. VLAN wizard can be used for setting up initial VLAN IDs and port membership.

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 for 50 inbound IPv4 and MAC ACLs with up to 480 ACEs.

IPv6 Host
Enables switches to be managed and deployed at the IPv6 network's edge.

Rate Limiting
Sets and enforces per-port ingress traffic limits based on percentages or packets per second.

Protected Ports
Ports in a port isolation group are restricted from forwarding Layer 2 traffic between ports in that group, providing data privacy and security.

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.

User Account Management
Password strength checking and aging feature provides enhanced security to user account administration to the local web management interface.

Additionally, user account authentication can now be done via RADIUS to access the web-interface.'

Secure Sockets Layer (SSL)
Encrypts all HTTP traffic, secures access to the local browser-based management of the switch.

Standard Features

SNMPv1, v2c, and v3
Facilitates remote management with SNMP management station that discovers and monitors the switch.

Remote Monitoring (RMON)
Provides advanced monitoring and reporting capabilities for statistics, history, alarms and events. RMON data is retrieved from the switch through a network management platform over SNMP.

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.

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 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.

Configuration Information

BTO Base Models

Instant On 1940

Description	SKU
HPE Networking Instant On Switch 8p Gigabit CL6 PoE 2p SFP 124W 1940	S4A29A
HPE Networking Instant On Switch 8p Gigabit CL6 PoE 2p SFP 124W 1940 PDU	S4A29A#B2B
HPE Networking Instant On Switch 8p Gigabit CL6 PoE 2p SFP 124W 1940 PDU	S4A29A#B2C
HPE Networking Instant On Switch 8p Gigabit CL6 PoE 2p SFP 124W 1940 220v	S4A29A#B2E
HPE Networking Instant On Switch 8p Gigabit CL6 PoE 2p SFP 124W 1940 No Loc	S4A29A#AC3
HPE Networking Instant On Switch 24p Gigabit 4p SFP+ 1940	S4A30A
HPE Networking Instant On Switch 24p Gigabit 4p SFP+ 1940 PDU	S4A30A#B2B
HPE Networking Instant On Switch 24p Gigabit 4p SFP+ 1940 PDU	S4A30A#B2C
HPE Networking Instant On Switch 24p Gigabit 4p SFP+ 1940 220v	S4A30A#B2E
HPE Networking Instant On Switch 24p Gigabit 4p SFP+ 1940 No Loc	S4A30A#AC3
HPE Networking Instant On Switch 24p Gigabit CL4 PoE 4p SFP+ 240W 1940	S4A31A
HPE Networking Instant On Switch 24p Gigabit CL4 PoE 4p SFP+ 240W 1940	S4A31AB2B
HPE Networking Instant On Switch 24p Gigabit CL4 PoE 4p SFP+ 240W 1940 PDU	S4A31A#B2C
HPE Networking Instant On Switch 24p Gigabit CL4 PoE 4p SFP+ 240W 1940 220v	S4A31A#B2E
HPE Networking Instant On Switch 24p Gigabit CL4 PoE 4p SFP+ 240W 1940 No Loc	S4A31A#AC3
HPE Networking Instant On Switch 20p Gigabit CL4 4p SR2.5G CL6 PoE 4p SFP+ 370W 1940	S4A32A
HPE Networking Instant On Switch 20p Gigabit CL4 4p SR2.5G CL6 PoE 4p SFP+ 370W 1940 PDU	S4A32A#B2B
HPE Networking Instant On Switch 20p Gigabit CL4 4p SR2.5G CL6 PoE 4p SFP+ 370W 1940 PDU	S4A32A#B2C
HPE Networking Instant On Switch 20p Gigabit CL4 4p SR2.5G CL6 PoE 4p SFP+ 370W 1940 220v	S4A32A#B2E
HPE Networking Instant On Switch 20p Gigabit CL4 4p SR2.5G CL6 PoE 4p SFP+ 370W 1940 No Loc	S4A32A#AC3
HPE Networking Instant On Switch 48p Gigabit 4p SFP+ 1940	S4A33A
HPE Networking Instant On Switch 48p Gigabit 4p SFP+ 1940 PDU	S4A33A#B2B
HPE Networking Instant On Switch 48p Gigabit 4p SFP+ 1940 PDU	S4A33A#B2C
HPE Networking Instant On Switch 48p Gigabit 4p SFP+ 1940 220v	S4A33A#B2E
HPE Networking Instant On Switch 48p Gigabit 4p SFP+ 1940 No Loc	S4A33A#AC3
HPE Networking Instant On Switch 48p Gigabit CL4 PoE 4p SFP+ 370W 1940	S4A34A
HPE Networking Instant On Switch 48p Gigabit CL4 PoE 4p SFP+ 370W 1940 PDU	S4A34A#B2B
HPE Networking Instant On Switch 48p Gigabit CL4 PoE 4p SFP+ 370W 1940 PDU	S4A34A#B2C
HPE Networking Instant On Switch 48p Gigabit CL4 PoE 4p SFP+ 370W 1940 220v	S4A34A#B2E
HPE Networking Instant On Switch 48p Gigabit CL4 PoE 4p SFP+ 370W 1940 No Loc	S4A34A#AC3
HPE Networking Instant On Switch 40p Gigabit CL4 8p SR2.5G CL6 PoE 4p SFP+ 600W 1940	S4A35A
HPE Networking Instant On Switch 40p Gigabit CL4 8p SR2.5G CL6 PoE 4p SFP+ 600W 1940 PDU	S4A35A#B2B
HPE Networking Instant On Switch 40p Gigabit CL4 8p SR2.5G CL6 PoE 4p SFP+ 600W 1940 PDU	S4A35A#B2C
HPE Networking Instant On Switch 40p Gigabit CL4 8p SR2.5G CL6 PoE 4p SFP+ 600W 1940 220v	S4A35A#B2E
HPE Networking Instant On Switch 40p Gigabit CL4 8p SR2.5G CL6 PoE 4p SFP+ 600W 1940 No Loc	S4A35A#AC3
HPE Networking Instant On Switch 8p SR10 4p CL6 PoE 2p SFP+ 120W 1940	S4A36A
HPE Networking Instant On Switch 8p SR10 4p CL6 PoE 2p SFP+ 120W 1940 PDU	S4A36A#B2B
HPE Networking Instant On Switch 8p SR10 4p CL6 PoE 2p SFP+ 120W 1940 PDU	S4A36A#B2C
HPE Networking Instant On Switch 8p SR10 4p CL6 PoE 2p SFP+ 120W 1940 220v	S4A36A#B2E
HPE Networking Instant On Switch 8p SR10 4p CL6 PoE 2p SFP+ 120W 1940 No Loc	S4A36A#AC3

Configuration Information

Transceivers

Notes: Localization (Wall Power Cord) required on orders without B2B or B2C (PDU Power Cord).
(See HPN Localization Menu)

SFP Transceivers

Notes: The following Transceivers install into this switch

Description	SKU
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 Networking Instant On 1G SFP RJ45 100m Cat5e Transceiver	R9D17B

SFP+ Transceivers

Notes: The following Transceivers install into this switch

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 Networking Instant On 10G SFP+ LC SR 300m OM3 MMF Transceiver	R9D18A
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

Technical Specifications

Specifications	HPE Networking Instant On Switch 8p Gigabit CL6 PoE 2p SFP 124W 1940	HPE Networking Instant On Switch 24p Gigabit 4p SFP+ 1940	HPE Networking Instant On Switch 24p Gigabit CL4 PoE 4p SFP+ 240W 1940	HPE Networking Instant On Switch 20p Gigabit CL4 4p SR2.5G CL6 PoE 4p SFP+ 370W 1940
	S4A29A	S4A30A	S4A31A	S4A32A
I/O ports and slots				
Access	8 RJ-45 autosensing 10/100/1000BASE-T ports with IEEE 802.3af/at/bt Class 6 PoE (ports 1-8) (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	24 RJ-45 autosensing 10/100/1000BASE-T ports (ports 1-24) (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	24 RJ-45 autosensing 10/100/1000BASE-T ports with IEEE 802.3af/at Class 4 PoE (ports 1-24) (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	4 RJ-45 autosensing 100M/1G/2.5GBASE-T ports with IEEE 802.3af/at/bt Class 6 PoE (ports 1-4) 20 RJ-45 autosensing 10/100/1000BASE-T ports with IEEE 802.3af/at Class 4 PoE (ports 5-24) (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3bz Type 2500BASE-T) Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T/2500BASE-T: full only
Uplink	2x SFP 1GbE ports (ports 9-10)	4x SFP+ 1/10GbE ports (ports 25-28)	4x SFP+ 1/10GbE ports (ports 25-28)	4x SFP+ 1/10GbE ports (ports 25-28)
Console port	1x USB-C Console Port	1x USB-C Console Port	1x USB-C Console Port	1x USB-C Console Port

Technical Specifications

Physical Characteristics				
Dimensions (Depth x Width x Height) Specify in both 'inch' and 'cm'	11.65 x 11.61 x 1.73 in (29.60 x 29.50 x 4.40 cm)	12.09 x 17.48 x 1.73 in (30.70 x 44.40 x 4.40 cm)	12.09 x 17.48 x 1.73 in (30.70 x 44.40 x 4.40 cm)	14.44 x 17.48 x 1.73 in (36.70 x 44.40 x 4.40 cm)
Weight Specify in both 'lb' and 'kg'	4.80 lb (2.18 kg)	6.70 lb (3.04 kg)	8.02 lb (3.64 kg)	9.65 lb (4.38 kg)
Processor and memory				
Processor Type/Frequency	ARM Cortex-A9 @ 1.2 GHz	ARM Cortex-A9 @ 1.25 GHz	ARM Cortex-A9 @ 1.25 GHz	ARM Cortex-A9 @ 1.25 GHz
SDRAM	1 GB	1 GB	1 GB	1 GB
Flash	512 MB	512 MB	512 MB	512 MB
Packet Buffer Size	0.5 MB	2 MB	2 MB	2 MB
Scale				
Jumbo frames support	Up to 9216 bytes	Up to 9216 bytes	Up to 9216 bytes	Up to 9216 bytes
Switching capacity	20 Gbps	128 Gbps	128 Gbps	140 Gbps
MAC Address table size (# of entries)	16,000 entries	16,000 entries	16,000 entries	16,000 entries
Routing Table size (# of static entries)	32 IPv4	32 IPv4	32 IPv4	32 IPv4
Maximum VLAN supported	256	256	256	256
IPv4 Host Table (ARP)	509 entries	509 entries	509 entries	509 entries
IPv6 Host Table (ND)	n/a	n/a	n/a	n/a
IPv4 Unicast Static Routes	32	32	32	32
MAC Table Capacity	16K entries	16K entries	16K entries	16K entries
IGMP Groups	1K	1k	1k	1k
IPv4/MAC ACL Entries (ingress)	100	100	100	100
IPv4/MAC ACL Entries (egress)	unsupported	512	512	512
Maximum ACEs	2048	2048	2048	2048
Link aggregation groups (LAG)	8	16	16	16
LAG members	4	4	4	4
Performance				
Latency				
100 Mb Latency (LIFO)	< 10.3 µSec	< 6.5 µSec	< 6.5 µSec	< 5.9 µSec
1000 Mb Latency (LIFO)	< 5.8 µSec	< 2.7 µSec	< 2.7 µSec	< 1.7 µSec

Technical Specifications

2500 Mb Latency (LIFO)	N/A	N/A	N/A	< 5.4 µSec
5000 Mb Latency (LIFO)	N/A	N/A	N/A	N/A
10000 Mb Latency (LIFO)	N/A	< 0.75 µSec	< 0.75 µSec	< 0.82 µSec
Throughput				
Throughput (Mpps) @ 64 bytes packet	14.88 Mpps	95 Mpps	95 Mpps	104 Mpps
Reliability				
Reliability MTBF (years)	99	178	102	67
Environment				
Operating temperature	32°F to 104°F (0°C to 40°C)	32°F to 104°F (0°C to 40°C)	32°F to 104°F (0°C to 40°C)	32°F to 104°F (0°C to 40°C)
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Operating relative humidity	15% to 95% @ 104°F (40°C) non-condensing	15% to 95% @ 104°F (40°C) non-condensing	15% to 95% @ 104°F (40°C) non-condensing	15% to 95% @ 104°F (40°C) non-condensing
Nonoperating/Storage relative humidity	15% to 95% @ 140°F (60°C) non-condensing	15% to 95% @ 140°F (60°C) non-condensing	15% to 95% @ 140°F (60°C) non-condensing	15% to 95% @ 140°F (60°C) non-condensing
Altitude	up to 10,000 ft (3 km)	up to 10,000 ft (3 km)	up to 10,000 ft (3 km)	up to 10,000 ft (3 km)
Acoustics				
Acoustics measured in 23°C semi-anechoic chamber with a loading of 100% traffic and 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)	N/A	Sound Pressure, LpAm (Bystander) = 20 dB	Sound Pressure, LpAm (Bystander) = 20 dB	Sound Pressure, LpAm (Bystander) = 20 dB
	N/A	Sound Power, LWAd = 3.4 Bel	Sound Power, LWAd = 3.5 Bel	Sound Power, LWAd = 3.4 Bel

Technical Specifications

Fans (i.e. Fan-less, Fixed, Modular, and if possible, number of fans)	Fan-less	Fixed Fans Fan Qty: 1 Non Field-Replaceable-Unit	Fixed Fans Fan Qty: 2 Non Field-Replaceable-Unit	Fixed Fans Fan Qty: 2 Non Field-Replaceable-Unit
Primary Airflow	N/A	left-to-right	left-to-right	left-to-right
Electrical Characteristics				
Frequency	50 Hz/60 Hz	50 Hz/60 Hz	50 Hz/60 Hz	50 Hz/60 Hz
AC voltage	100 - 127 VAC / 200 - 240 VAC	100 - 127 VAC / 200 - 240 VAC	100 - 127 VAC / 200 - 240 VAC	100 - 127 VAC / 200 - 240 VAC
Current	1.49/0.75 A	0.45/0.33 A	3.00/1.52 A	4.53/2.28 A
Maximum heat dissipation BTU/hr and kj/hr (100% traffic rate)	100-127V: 47.0 BTU/hr, 49.6 Kj/hr 200-220V: 44.5 BTU/hr, 46.9 Kj/hr	100-127V: 86.4 BTU/hr, 91.2 Kj/hr 200-220V: 88.2 BTU/hr, 93.1 Kj/hr	100-127V: 119.8 BTU/hr, 126.4 Kj/hr 200-220V: 118.6 BTU/hr, 125.1 Kj/hr	100-127V: 135.3 BTU/hr, 142.7 Kj/hr 200-220V: 134.5 BTU/hr, 141.9 Kj/hr
Maximum heat dissipation BTU/hr and kj/hr (100% traffic rate + 100% PoE)	100-127V: 508.4 BTU/hr, 536.4 Kj/hr 200-220V: 499.0 BTU/hr, 526.5 Kj/hr	N/A	100-127V: 1039.6 BTU/hr, 1096.8 Kj/hr 200-220V: 1021.7 BTU/hr, 1078.0 Kj/hr	100-127V: 1545.6 BTU/hr, 1630.7 Kj/hr 200-220V: 1524.3 BTU/hr, 1608.2 Kj/hr
Maximum heat dissipation BTU/hr and kj/hr (Idle)	100-127V: 35.0 BTU/hr, 36.9 Kj/hr 200-220V: 34.1 BTU/hr, 36.0 Kj/hr	100-127V: 40.4 BTU/hr, 42.6 Kj/hr 200-220V: 41.4 BTU/hr, 43.7 Kj/hr	100-127V: 61.3 BTU/hr, 64.7 Kj/hr 200-220V: 59.3 BTU/hr, 62.6 Kj/hr	100-127V: 62.8 BTU/hr, 66.3 Kj/hr 200-220V: 61.6 BTU/hr, 65.0 Kj/hr
Power consumption (100% traffic rate)	100-127V: 13.8W 200-220V: 13.1W	100-127V: 25.3W 200-220V: 25.9W	100-127V: 35.1W 200-220V: 34.7W	100-127V: 39.6W 200-220V: 39.4W
Power consumption (100% traffic rate + 100% PoE)	100-127V: 149.0W 200-220V: 146.3W	N/A	100-127V: 304.7W 200-220V: 299.4W	100-127V: 453.0W 200-220V: 446.7W
Power consumption (Idle)	100-127V: 10.2W 200-220V: 10.0W	100-127V: 11.8W 200-220V: 12.1W	100-127V: 18.0W 200-220V: 17.4W	100-127V: 18.4W 200-220V: 18.1W
PoE power	124W Class 6 PoE	N/A	240W Class 4 PoE	370W Class 4/Class 6 PoE (Class 6 PoE on 2.5G Ports)
Power supply	Internal Power Supply	Internal Power Supply	Internal Power Supply	Internal Power Supply

Technical Specifications

Safety				
Compliance	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	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	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	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
Emissions				
Compliance	EN 55032:2015/ CISPR 32, Class A FCC CFR 47 Part 15: 2018, Class A ICES-003, Class A VCCI-32, Class A CNS 13438, Class A KS C 9832, Class A AS/NZS CISPR 32, Class A	EN 55032:2015/ CISPR 32, Class A FCC CFR 47 Part 15: 2018, Class A ICES-003, Class A VCCI-32, Class A CNS 13438, Class A KS C 9832, Class A AS/NZS CISPR 32, Class A	EN 55032:2015/ CISPR 32, Class A FCC CFR 47 Part 15: 2018, Class A ICES-003, Class A VCCI-32, Class A CNS 13438, Class A KS C 9832, Class A AS/NZS CISPR 32, Class A	EN 55032:2015/ CISPR 32, Class A FCC CFR 47 Part 15: 2018, Class A ICES-003, Class A VCCI-32, Class A CNS 13438, Class A KS C 9832, Class A AS/NZS CISPR 32, Class A
Immunity				
Generic	BS/EN 55035, CISPR 35, KS C 9835	BS/EN 55035, CISPR 35, KS C 9835	BS/EN 55035, CISPR 35, KS C 9835	BS/EN 55035, CISPR 35, KS C 9835
EN	EN 55035, CISPR 35	EN 55035, CISPR 35	EN 55035, CISPR 35	EN 55035, CISPR 35
ESD	IEC 61000-4-2	IEC 61000-4-2	IEC 61000-4-2	IEC 61000-4-2
Radiated	IEC 61000-4-3	IEC 61000-4-3	IEC 61000-4-3	IEC 61000-4-3
EFT/Burst	IEC 61000-4-4	IEC 61000-4-4	IEC 61000-4-4	IEC 61000-4-4
Surge	IEC 61000-4-5	IEC 61000-4-5	IEC 61000-4-5	IEC 61000-4-5
Conducted	IEC 61000-4-6	IEC 61000-4-6	IEC 61000-4-6	IEC 61000-4-6
Power frequency magnetic field	IEC 61000-4-8	IEC 61000-4-8	IEC 61000-4-8	IEC 61000-4-8
Voltage dips and interruptions	IEC 61000-4-11	IEC 61000-4-11	IEC 61000-4-11	IEC 61000-4-11
Harmonics	EN 61000-3-2, IEC 61000-3-2	EN 61000-3-2, IEC 61000-3-2	EN 61000-3-2, IEC 61000-3-2	EN 61000-3-2, IEC 61000-3-2
Flicker	EN 61000-3-3, IEC 61000-3-3	EN 61000-3-3, IEC 61000-3-3	EN 61000-3-3, IEC 61000-3-3	EN 61000-3-3, IEC 61000-3-3
Device Management				
Options	Instant On Cloud Portal; Mobile App; Web Browser; SNMP Manager; DOCs (Telnet, SSH) Console Port (USB-C)	Instant On Cloud Portal; Mobile App; Web Browser; SNMP Manager; DOCs (Telnet, SSH) Console Port (USB-C)	Instant On Cloud Portal; Mobile App; Web Browser; SNMP Manager; DOCs (Telnet, SSH) Console Port (USB-C)	Instant On Cloud Portal; Mobile App; Web Browser; SNMP Manager; DOCs (Telnet, SSH) Console Port (USB-C)

Technical Specifications

Mounting Kit				
Options	Mounts in an EIA standard 19 in. telco rack or equipment cabinet. 2-post rack kit included Supports table-top mounting Supports rack-mounting, using the brackets provided Supports wall-mounting, using the brackets provided, with ports facing either up or down Supports under-table, using the brackets provided, with top-surface facing upward or downward	Mounts in an EIA standard 19 in. telco rack or equipment cabinet. 2-post rack kit included Supports table-top mounting Supports rack-mounting, using the brackets provided Supports wall-mounting, using the brackets provided, with ports facing either up or down Supports under-table, using the brackets provided, with top-surface facing upward or downward	Mounts in an EIA standard 19 in. telco rack or equipment cabinet. 2-post rack kit included Supports table-top mounting Supports rack-mounting, using the brackets provided Supports wall-mounting, using the brackets provided, with ports facing either up or down Supports under-table, using the brackets provided, with top-surface facing upward or downward	Mounts in an EIA standard 19 in. telco rack or equipment cabinet. 2-post rack kit included Supports table-top mounting Supports rack-mounting, using the brackets provided Supports wall-mounting, using the brackets provided, with ports facing either up or down Supports under-table, using the brackets provided, with top-surface facing upward or downward
Transceivers				
Options	Refer to SFP supported list table	Refer to SFP/SFP+ supported list table	Refer to SFP/SFP+ supported list table	Refer to SFP/SFP+ supported list table

Technical Specifications

Specifications	HPE Networking Instant On Switch 48p Gigabit 4p SFP+ 1940	HPE Networking Instant On Switch 48p Gigabit CL4 PoE 4p SFP+ 370W 1940	HPE Networking Instant On Switch 40p Gigabit CL4 8p SR2.5G CL6 PoE 4p SFP+ 600W 1940	HPE Networking Instant On Switch 8p SR10 4p CL6 PoE 2p SFP+ 120W 1940
	S4A33A	S4A34A	S4A35A	S4A36A
I/O ports and slots				
Access	48 RJ-45 autosensing 10/100/1000BASE-T ports (ports 1-48) (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	48 RJ-45 autosensing 10/100/1000BASE-T ports with IEEE 802.3af/at Class 4 PoE (ports 1-48) (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	8 RJ-45 autosensing 100M/1G/2.5GBASE-T ports with IEEE 802.3af/at/bt Class 6 PoE (ports 1-8) 40 RJ-45 autosensing 10/100/1000BASE-T ports with IEEE 802.3af/at Class 4 PoE (ports 9-48) (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3bz Type 2500BASE-T) Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T/2500BASE-T: full only	4 RJ-45 autosensing 100M/1G/2.5G/5G/10GBASE-T ports with IEEE 802.3af/at/bt Class 6 PoE (ports 1-4) 4 RJ-45 autosensing 100M/1G/2.5G/5G/10GBASE-T ports (ports 5-8) (IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3bz Type 2500BASE-T, IEEE 802.3bz Type 5000BASE-T, IEEE 802.3an Type 10000BASE-T) Duplex: 100BASE-TX: half or full; 1000BASE-T/2500BASE-T/5000BASE-T/10GBASE-T: full only
Uplink	4x SFP+ 1/10GbE ports (ports 49-52)	4x SFP+ 1/10GbE ports (ports 49-52)	4x SFP+ 1/10GbE ports (ports 49-52)	2x SFP+ 1/10GbE ports (ports 9-10)
Console port	1x USB-C Console Port	1x USB-C Console Port	1x USB-C Console Port	1x USB-C Console Port

Technical Specifications

Physical Characteristics				
Dimensions (Depth x Width x Height) Specify in both 'inch' and 'cm'	14.44 x 17.48 x 1.73 in (36.70 x 44.40 x 4.40 cm)	14.44 x 17.48 x 1.73 in (36.70 x 44.40 x 4.40 cm)	14.44 x 17.48 x 1.73 in (36.70 x 44.40 x 4.40 cm)	11.65 x 11.61 x 1.73 in (29.60 x 29.50 x 4.40 cm)
Weight Specify in both 'lb' and 'kg'	8.31 lb (3.77 kg)	10.69 lb (4.85 kg)	10.76 lb (4.88 kg)	5.45 lb (2.47 kg)
Processor and memory				
Processor Type/Frequency	ARM Cortex-A9 @ 1.25 GHz	ARM Cortex-A9 @ 1.25 GHz	ARM Cortex-A9 @ 1.25 GHz	ARM Cortex-A9 @ 1.25 GHz
SDRAM	1 GB	1 GB	1 GB	1 GB
Flash	512 MB	512 MB	512 MB	512 MB
Packet Buffer Size	4 MB	4 MB	4 MB	2 MB
Scale				
Jumbo frames support	Up to 9216 bytes	Up to 9216 bytes	Up to 9216 bytes	Up to 9216 bytes
Switching capacity	176 Gbps	176 Gbps	200 Gbps	200 Gbps
MAC Address table size (# of entries)	16,000 entries	16,000 entries	16,000 entries	16,000 entries
Routing Table size (# of static entries)	32 IPv4	32 IPv4	32 IPv4	32 IPv4
Maximum VLAN supported	256	256	256	256
IPv4 Host Table (ARP)	509 entries	509 entries	509 entries	509 entries
IPv6 Host Table (ND)	n/a	n/a	n/a	n/a
IPv4 Unicast Static Routes	32	32	32	32
MAC Table Capacity	16K entries	16K entries	16K entries	16K entries
IGMP Groups	1k	1k	1k	1K
IPv4/MAC ACL Entries (ingress)	100	100	100	100
IPv4/MAC ACL Entries (egress)	512	512	512	512
Maximum ACEs	2048	2048	2048	2048
Link aggregation groups (LAG)	16	16	16	8
LAG members	8	8	8	4

Technical Specifications

Performance				
Latency				
100 Mb Latency (LIFO)	< 6.5 µSec	< 6.5 µSec	< 6.5 µSec	< 5.3 µSec
1000 Mb Latency (LIFO)	< 2.7 µSec	< 2.7 µSec	< 2.7 µSec	< 2.1 µSec
2500 Mb Latency (LIFO)	N/A	N/A	< 5.4 µSec	< 5.4 µSec
5000 Mb Latency (LIFO)	N/A	N/A	N/A	< 3.0 µSec
10000 Mb Latency (LIFO)	< 0.75 µSec	< 0.75 µSec	< 0.75 µSec	< 0.86 µSec
Throughput				
Throughput (Mpps) @ 64 bytes packet	131 Mpps	131 Mpps	148.8 Mpps	148.8 Mpps
Reliability				
Reliability MTBF (years)	163	108	65	64
Environment				
Operating temperature	32°F to 104°F (0°C to 40°C)	32°F to 104°F (0°C to 40°C)	32°F to 104°F (0°C to 40°C)	32°F to 104°F (0°C to 40°C)
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Operating relative humidity	15% to 95% @ 104°F (40°C) non-condensing	15% to 95% @ 104°F (40°C) non-condensing	15% to 95% @ 104°F (40°C) non-condensing	15% to 95% @ 104°F (40°C) non-condensing
Nonoperating/Storage relative humidity	15% to 95% @ 140°F (60°C) non-condensing	15% to 95% @ 140°F (60°C) non-condensing	15% to 95% @ 140°F (60°C) non-condensing	15% to 95% @ 140°F (60°C) non-condensing
Altitude	up to 10,000 ft (3 km)	up to 10,000 ft (3 km)	up to 10,000 ft (3 km)	up to 10,000 ft (3 km)

Technical Specifications

Acoustics				
Acoustics measured in 23°C semi-anechoic chamber with a loading of 100% traffic and 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)	Sound Pressure, LpAm (Bystander) = 25 dB	Sound Pressure, LpAm (Bystander) = 20 dB	Sound Pressure, LpAm (Bystander) = 23 dB	Sound Pressure, LpAm (Bystander) = 22 dB
	Sound Power, LWAd = 3.9 Bel	Sound Power, LWAd = 3.4 Bel	Sound Power, LWAd = 3.8 Bel	Sound Power, LWAd = 3.6 Bel
Fans (i.e. Fan-less, Fixed, Modular, and if possible, number of fans)	Fixed Fans Fan Qty: 1 Non Field-Replaceable-Unit	Fixed Fans Fan Qty: 3 Non Field-Replaceable-Unit	Fixed Fans Fan Qty: 3 Non Field-Replaceable-Unit	Fixed Fans Fan Qty: 1 Non Field-Replaceable-Unit
Primary Airflow	left-to-right	left-to-right	left-to-right	left-to-right
Electrical Characteristics				
Frequency	50 Hz/60 Hz	50 Hz/60 Hz	50 Hz/60 Hz	50 Hz/60 Hz
AC voltage	100 - 127 VAC / 200 - 240 VAC	100 - 127 VAC / 200 - 240 VAC	100 - 127 VAC / 200 - 240 VAC	100 - 127 VAC / 200 - 240 VAC
Current	0.71/0.46 A	4.70/2.36 A	7.26/3.51 A	1.66/0.86 A
Maximum heat dissipation BTU/hr and kj/hr (100% traffic rate)	100-127V: 132.3 BTU/hr, 139.6 Kj/hr 200-220V: 131.2 BTU/hr, 138.4 Kj/hr	100-127V: 189.7 BTU/hr, 200.1 Kj/hr 200-220V: 185.7 BTU/hr, 195.9 Kj/hr	100-127V: 208.1 BTU/hr, 219.6 Kj/hr 200-220V: 206.8 BTU/hr, 218.2 Kj/hr	100-127V: 112.6 BTU/hr, 118.8 Kj/hr 200-220V: 107.4 BTU/hr, 113.3 Kj/hr
Maximum heat dissipation BTU/hr and kj/hr (100% traffic rate + 100% PoE)	N/A	100-127V: 1590.3 BTU/hr, 1677.9 Kj/hr 200-220V: 1544.2 BTU/hr, 1629.2 Kj/hr	100-127V: 2477.1 BTU/hr, 2613.5 Kj/hr 200-220V: 2383.6 BTU/hr, 2514.8 Kj/hr	100-127V: 566.4 BTU/hr, 597.6 Kj/hr 200-220V: 555.2 BTU/hr, 585.8 Kj/hr
Maximum heat dissipation BTU/hr and kj/hr (Idle)	100-127V: 68.6 BTU/hr, 72.4 Kj/hr 200-220V: 68.0 BTU/hr, 71.7 Kj/hr	100-127V: 90.0 BTU/hr, 95.0 Kj/hr 200-220V: 88.0 BTU/hr, 92.8 Kj/hr	100-127V: 89.6 BTU/hr, 94.5 Kj/hr 200-220V: 89.4 BTU/hr, 94.3 Kj/hr	100-127V: 56.7 BTU/hr, 59.8 Kj/hr 200-220V: 53.1 BTU/hr, 56.0 Kj/hr

Technical Specifications

Power consumption (100% traffic rate)	100-127V: 38.8 W 200-220V: 38.5 W	100-127V: 55.6W 200-220V: 54.4W	100-127V: 61.0W 200-220V: 60.6W	100-127V: 33.0W 200-220V: 31.5W
Power consumption (100% traffic rate + 100% PoE)	N/A	100-127V: 466.1W 200-220V: 452.6W	100-127V: 726W 200-220V: 698.6W	100-127V: 166.0W 200-220V: 162.7W
Power consumption (Idle)	100-127V: 20.1W 200-220V: 19.9W	100-127V: 26.4W 200-220V: 25.8W	100-127V: 26.2W 200-220V: 26.2W	100-127V: 16.6W 200-220V: 15.6W
PoE power	N/A	370W Class 4 PoE	600W Class 4/Class 6 PoE (Class 6 on 2.5G ports)	120W Class 6 PoE (4 ports only)
Power supply	Internal Power Supply	Internal Power Supply	Internal Power Supply	Internal Power Supply
Safety				
Compliance	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	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	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	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
Emissions				
Compliance	EN 55032:2015/ CISPR 32, Class A FCC CFR 47 Part 15: 2018, Class A ICES-003, Class A VCCI-32, Class A CNS 13438, Class A KS C 9832, Class A AS/NZS CISPR 32, Class A	EN 55032:2015/ CISPR 32, Class A FCC CFR 47 Part 15: 2018, Class A ICES-003, Class A VCCI-32, Class A CNS 13438, Class A KS C 9832, Class A AS/NZS CISPR 32, Class A	EN 55032:2015/ CISPR 32, Class A FCC CFR 47 Part 15: 2018, Class A ICES-003, Class A VCCI-32, Class A CNS 13438, Class A KS C 9832, Class A AS/NZS CISPR 32, Class A	EN 55032:2015/ CISPR 32, Class A FCC CFR 47 Part 15: 2018, Class A ICES-003, Class A VCCI-32, Class A CNS 13438, Class A KS C 9832, Class A AS/NZS CISPR 32, Class A
Immunity				
Generic	BS/EN 55035, CISPR 35, KS C 9835	BS/EN 55035, CISPR 35, KS C 9835	BS/EN 55035, CISPR 35, KS C 9835	BS/EN 55035, CISPR 35, KS C 9835
EN	EN 55035, CISPR 35	EN 55035, CISPR 35	EN 55035, CISPR 35	EN 55035, CISPR 35
ESD	IEC 61000-4-2	IEC 61000-4-2	IEC 61000-4-2	IEC 61000-4-2
Radiated	IEC 61000-4-3	IEC 61000-4-3	IEC 61000-4-3	IEC 61000-4-3
EFT/Burst	IEC 61000-4-4	IEC 61000-4-4	IEC 61000-4-4	IEC 61000-4-4
Surge	IEC 61000-4-5	IEC 61000-4-5	IEC 61000-4-5	IEC 61000-4-5
Conducted	IEC 61000-4-6	IEC 61000-4-6	IEC 61000-4-6	IEC 61000-4-6

Technical Specifications

Power frequency magnetic field	IEC 61000-4-8	IEC 61000-4-8	IEC 61000-4-8	IEC 61000-4-8
Voltage dips and interruptions	IEC 61000-4-11	IEC 61000-4-11	IEC 61000-4-11	IEC 61000-4-11
Harmonics	EN 61000-3-2, IEC 61000-3-2	EN 61000-3-2, IEC 61000-3-2	EN 61000-3-2, IEC 61000-3-2	EN 61000-3-2, IEC 61000-3-2
Flicker	EN 61000-3-3, IEC 61000-3-3	EN 61000-3-3, IEC 61000-3-3	EN 61000-3-3, IEC 61000-3-3	EN 61000-3-3, IEC 61000-3-3
Device Management				
Options	Instant On Cloud Portal; Mobile App; Web Browser; SNMP Manager; DOCs (Telnet, SSH) Console Port (USB-C)	Instant On Cloud Portal; Mobile App; Web Browser; SNMP Manager; DOCs (Telnet, SSH) Console Port (USB-C)	Instant On Cloud Portal; Mobile App; Web Browser; SNMP Manager; DOCs (Telnet, SSH) Console Port (USB-C)	Instant On Cloud Portal; Mobile App; Web Browser; SNMP Manager; DOCs (Telnet, SSH) Console Port (USB-C)
Mounting Kit				
Options	Mounts in an EIA standard 19 in. telco rack or equipment cabinet. 2-post rack kit included Supports table-top mounting Supports rack-mounting, using the brackets provided Supports wall-mounting, using the brackets provided, with ports facing either up or down Supports under-table, using the brackets provided, with top-surface facing upward or downward	Mounts in an EIA standard 19 in. telco rack or equipment cabinet. 2-post rack kit included Supports table-top mounting Supports rack-mounting, using the brackets provided Supports wall-mounting, using the brackets provided, with ports facing either up or down Supports under-table, using the brackets provided, with top-surface facing upward or downward	Mounts in an EIA standard 19 in. telco rack or equipment cabinet. 2-post rack kit included Supports table-top mounting Supports rack-mounting, using the brackets provided Supports wall-mounting, using the brackets provided, with ports facing either up or down Supports under-table, using the brackets provided, with top-surface facing upward or downward	Mounts in an EIA standard 19 in. telco rack or equipment cabinet. 2-post rack kit included Supports table-top mounting Supports rack-mounting, using the brackets provided Supports wall-mounting, using the brackets provided, with ports facing either up or down Supports under-table, using the brackets provided, with top-surface facing upward or downward
Transceivers				
Options	Refer to SFP/SFP+ supported list table	Refer to SFP/SFP+ supported list table	Refer to SFP/SFP+ supported list table	Refer to SFP/SFP+ supported list table

Standard Compliance

IEEE Standards Support		
IEEE Standard	**Protocol / Technology Title**	**Functional Category**
IEEE 802.3	10BASE-T	Physical / Data Link Layer
IEEE 802.3u	100BASE-TX	
IEEE 802.3ab	1000BASE-T	
IEEE 802.3z	1000BASE-X	
IEEE 802.3bz	2500BASE-T	
IEEE 802.3bz	5000BASE-T	
IEEE 802.3an	10000BASE-T	
IEEE 802.3ae	10 Gigabit Ethernet (10GbE) over fiber optics	
IEEE 802.1D	Spanning Tree Protocol (STP)	Layer 2 Loop Prevention
IEEE 802.1w	Rapid Spanning Tree Protocol (RSTP)	
IEEE 802.1S	Multiple Spanning Tree Protocol (MSTP)	
IEEE 802.3ad	Link Aggregation Control Protocol (LACP)	Link Aggregation / Trunking
IEEE 802.1AB	Link Layer Discovery Protocol	Network Discovery and Topology Management
IEEE 802.1X	Port access authentication	Network Security
IEEE 802.2af	PoE (PoE models only)	Power Delivery
IEEE 802.3at	PoE (PoE models only)	
IEEE 802.3bt	PoE (PoE models only)	
IEEE 802.1p	Priority	Quality of Service
IEEE 802.1Q	VLANS	Segmentation
IEEE 802.3az	Energy Efficient Ethernet	Sustainability
IEEE 802.3x	Flow control	Traffic Management

IETF Standards Support		
RFC	**Protocol / Technology Title**	**Functional Category**
RFC 1123	Requirements for Internet Hosts - Application and Support	Core Internet Architecture
RFC 1700	Assigned Numbers	
RFC 4251	The Secure Shell (SSH) Protocol Architecture	
RFC 920	Domain Requirements	
RFC 2992	Analysis of an Equal-Cost Multi-Path Algorithm	ECMP Load Balancing Algorithm
RFC 1071	Computing the Internet Checksum	Error Detection / Integrity
RFC 1141	Incremental Updating of the Internet Checksum	
RFC 1624	Computation of the Internet Checksum via Incremental Update	
RFC 1350	The TFTP Protocol (Revision 2)	File Transfer
RFC 783	TFTP Protocol (revision 2)	

Technical Specifications

RFC 1533	DHCP Options and BOOTP Vendor Extensions	IP Allocation / Provisioning
RFC 1542	Clarifications and Extensions for the Bootstrap Protocol	
RFC 2131	Dynamic Host Configuration Protocol (DHCP client)	
RFC 2132	DHCP Options and BOOTP Vendor Extensions (Update)	
RFC 951	Bootstrap Protocol (BOOTP)	
RFC 4862	IPv6 Stateless Address Autoconfiguration (obsoletes RFC 2462)	IP Allocation / SLAAC
RFC 1027	Using ARP to Implement Transparent Subnet Gateways	IP-to-MAC
RFC 826	An Ethernet Address Resolution Protocol (ARP)	
RFC 5214	ISATAP tunneling (which obsoletes RFC 4214)	IPv4-to-IPv6 Transition / Tunneling
RFC 5171	Cisco Systems UniDirectional Link Detection (UDLD) Protocol	Link Layer Failure Detection
RFC 2236	Internet Group Management Protocol, Version 2	Multicast Management
RFC 3376	Internet Group Management Protocol, Version 3	
RFC 4861	Neighbor discovery for IPv6 (which obsoletes RFC 2461)	Neighbor Discovery / Control
RFC 4007	IPv6 scoped address architecture RFC 3484: default address selection mechanism	Network Addressing
RFC 4291	IPv6 address architecture RFC 4291: IPv6 addressing architecture (which obsoletes RFC 3513)	
RFC 919	Broadcasting Internet Datagrams	
RFC 922	Broadcasting Internet Datagrams in the Presence of Subnets	
RFC 950	Internet Standard Subnetting Procedure	
RFC 4443	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification (obsoletes RFC 2463)	Network Diagnostics
RFC 792	Internet Control Message Protocol (ICMP)	
RFC 1155	Structure and Identification of Management Information for TCP/IP-based Internets	Network Management
RFC 1157	A Simple Network Management Protocol (SNMP)	
RFC 1213	Management Information Base for Network Management of TCP/IP-based internets: MIB-II	
RFC 1215	A Convention for Defining Traps for use with the SNMP	
RFC 1286	Definitions of Managed Objects for Bridges	
RFC 1442	Structure of Management Information for version 2 of the Simple Network Management Protocol (SNMPv2)	
RFC 1451	Manager-to-Manager Management Information Base	
RFC 1493	Definitions of Managed Objects for Bridges	
RFC 1573	Evolution of the Interfaces Group of MIB-II	
RFC 1643	Definitions of Managed Objects for the Ethernet-like Interface Types	

Technical Specifications

RFC 1757	Remote Network Monitoring Management Information Base	
RFC 1907	Management Information Base for Version 2 of the Simple Network Management Protocol (SNMPv2)	
RFC 2011	SNMPv2 Management Information Base for the Internet Protocol using SMIv2	
RFC 2012	SNMPv2 Management Information Base for the Transmission Control Protocol using SMIv2	
RFC 2013	SNMPv2 Management Information Base for the User Datagram Protocol using SMIv2	
RFC 2021	Remote Network Monitoring Management Information Base Version 2 using SMIv2 (RMON2)	
RFC 2233	The Interfaces Group MIB using SMIv2	
RFC 2576	Coexistence between Version 1, Version 2, and Version 3 of the Internet-standard Network Management Framework	
RFC 2579	Textual Conventions for SMIv2	
RFC 2580	Conformance Statements for SMIv2	
RFC 2618	RADIUS Authentication Client MIB	
RFC 2618	RADIUS Authentication Client MIB	
RFC 2620	RADIUS Accounting Client MIB	
RFC 2665	Definitions of Managed Objects for the Ethernet-like Interface Types	
RFC 2666	Definitions of Object Identifiers for Identifying Ethernet Chipsets	
RFC 2674	Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual Extensions	
RFC 2737	Entity MIB (Version 2)	
RFC 2819	Remote Network Monitoring Management Information Base	
RFC 2863	The Interfaces Group MIB	
RFC 2925	Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations	
RFC 3019	IP Version 6 Management Information Base for the Multicast Listener Discovery Protocol	
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)	

Technical Specifications

RFC 3415	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)	
RFC 3416	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)	
RFC 4293	MIB IPv6: textual conventions and general group RFC 3595: textual conventions for IPv6 flow label	
RFC 5519	Multicast Group Membership Discovery MIB	
RFC 2460	IPv6 specification	Network Routing
RFC 791	Internet Protocol (IP)	
RFC 4419	Diffie-Hellman Group Exchange for the SSH Transport Layer Protocol	Network Security
RFC 4432	RSA Key Exchange for the Secure Shell (SSH) Transport Layer Protocol	
RFC 4345	Improved Arcfour Modes for the Secure Shell (SSH) Transport Layer Protocol	
RFC 5656	Elliptic Curve Algorithm Integration for the SSH Transport Layer	
RFC 2827	Network Ingress Filtering: Defeating Denial of Service Attacks which employ IP Source Address Spoofing	
RFC 4252	The Secure Shell (SSH) Authentication Protocol	
RFC 4253	The Secure Shell (SSH) Transport Layer Protocol	
RFC 4254	The Secure Shell (SSH) Connection Protocol	
RFC 4256	Generic Message Exchange Authentication (Keyboard-Interactive)	
RFC 4335	The Secure Shell (SSH) Session Channel Break Extension	
RFC 4344	SSH Transport Layer Cryptographic Algorithms	
RFC 5647	AES-GCM Subsystem for SSH	
RFC 5722	Handling of Overlapping IPv6 Fragments	
RFC 2030	Simple Network Time Protocol (SNTP) Version 4 for IPv4, IPv6 and OSI	Network Time / Sync
RFC 4330	Simple Network Time Protocol (SNTP) Version 4 for IPv4, IPv6 and OSI	
RFC 1042	A Standard for the Transmission of IP Datagrams over IEEE 802 Networks	Packet Encapsulation
RFC 2464	Transmission of IPv6 Packets over Ethernet Networks	
RFC 894	A Standard for the Transmission of IP Datagrams over Ethernet Networks	
RFC 4250	The Secure Shell (SSH) Protocol Assigned Numbers	Protocol Parameter Registry
RFC 4716	The Secure Shell (SSH) Public Key File Format	Public Key Management
RFC 2474	Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers	QoS

Technical Specifications

RFC 854	Telnet Protocol Specification	Remote Management
RFC 855	Telnet Option Specifications	
RFC 856	Telnet Binary Transmission	
RFC 858	Telnet Suppress Go Ahead Option	
RFC 3164	The BSD Syslog Protocol	System Logging
RFC 5424	The Syslog Protocol	
RFC 768	User Datagram Protocol (UDP)	Transport Layer
RFC 793	Transmission Control Protocol (TCP)	
RFC 813	Window and Acknowledgement Strategy in TCP	
RFC 879	The TCP Maximum Segment Size and Related Topics	
RFC 896	Congestion Control in IP/TCP Internetworks	
RFC 3261	SIP: Session Initiation Protocol	VoIP Signaling
RFC 1867	Form-based File Upload in HTML	Web Application Layer
RFC 2616	Hypertext Transfer Protocol -- HTTP/1.1	

Summary of Changes

Date	Version History	Action	Description of Change
03-Aug-2026	Version 1	New	New QuickSpecs

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