Hewlett Packard Enterprise

Data sheet

HPE 5120 EI Switch Series

Key features

- High scalability for investment protection
- Support for multiple services
- Comprehensive security control policies
- Diversified quality of service (QoS) policies
- Excellent manageability

Product overview

The HPE 5120 EI Switch Series is comprised of Gigabit Ethernet switches that support static Layer 3 routing, diversified services, and IPv6 forwarding, as well as provide up to four 10-Gigabit Ethernet (10GbE) extended interfaces. Unique Intelligent Resilient Framework (IRF) technology creates a virtual fabric by managing several switches as one logical device, which increases network resilience, performance, and availability, while reducing operational complexity. These switches provide Gigabit Ethernet access and can be used at the edge of a network or to connect server clusters in data centers. High scalability provides investment protection with two expansion slots, each of which can support two-port 10GbE expansion modules. High availability, simplified management, and comprehensive security control policies are among the key features that distinguish this series.

Features and benefits

Quality of service

- Broadcast control
  Allows limitation of broadcast traffic rate to cut down on unwanted network broadcast traffic
- Advanced classifier-based QoS
  Classifies traffic using multiple match criteria based on Layer 2, 3, and 4 information; and applies QoS policies such as setting priority level and rate limit to selected traffic on a port, VLAN, or whole switch
- Powerful QoS feature
  Supports the following congestion actions: strict priority (SP) queuing, weighted round-robin (WRR), and SP+WRR
- Traffic policing
  Supports Committed Access Rate (CAR) and line rate

Management

- Friendly port names
  Allow assignment of descriptive names to ports
- Remote configuration and management
  Enable configuration and management through a secure Web browser or a CLI located on a remote device
- Manager and operator privilege levels
  Provide read-only (operator) and read/write (manager) access on CLI and Web browser management interfaces
- Command authorization
  Leverages HWTACACS to link a custom list of CLI commands to an individual network administrator's login; and also provides an audit trail
- Secure Web GUI
  Provides a secure, easy-to-use graphical interface for configuring the module via HTTPS
- Multiple configuration files
  Store easily to the flash image
- Complete session logging
  Provides detailed information for problem identification and resolution
- SNMPv1, v2c, and v3
  Facilitate centralized discovery, monitoring, and secure management of networking devices

- Remote monitoring (RMON)
  Uses standard SNMP to monitor essential network functions; and supports events, alarm, history, and statistics group plus a private alarm extension group
- IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
  Advertises and receives management information from adjacent devices on a network, facilitating easy mapping by network management applications
- sFlow® (RFC 3176)
  Provides scalable ASIC-based wirespeed network monitoring and accounting with no impact on network performance. This allows network operators to gather a variety of sophisticated network statistics and information for capacity planning and real-time network monitoring purposes
- Management VLAN
  Segments traffic to and from management interfaces, including CLI/telnet, a Web browser interface, and SNMP
- Remote intelligent mirroring
  Mirrors ingress/egress ACL-selected traffic from a switch port or VLAN to a local or remote switch port anywhere on the network
- Device Link Detection Protocol (DLDP)
  Monitors a cable between two switches and shuts down the ports on both ends if the cable is broken, which prevents network problems such as loops
- IPv6 management
  Provides future-proof networking because the switch is capable of being managed whether the attached network is running IPv4 or IPv6; and supports pingv6, tracertv6, Telnetv6, TFTPv6, DNSv6, syslogv6, FTPv6, SNMPv6, DHCPv6, and RADIUS for IPv6
- Troubleshooting
  Ingress and egress port monitoring enables network problem solving; virtual cable tests provide visibility into cable problems

Connectivity

- Auto-MDIX
  Automatically adjusts for straight-through or crossover cables on all 10/100/1000 ports
- Flow control
  Provides back pressure using standard IEEE 802.3x, reducing congestion in heavy traffic situations
- Jumbo packet support
  Supports up to 9,216-byte frame size to improve the performance of large data transfers

- High-density connectivity
  Provides up to 48 fixed 10/100/1000BASE-T ports in a Layer 2/Layer 3 switch
- Optional 10GbE ports
  Deliver, through the use of optional modules, additional 10GbE connections, which are available for uplinks or high-bandwidth server connections; and flexibly support copper, XFP, SFP+, or CX4 local connections
- IEEE 802.3at Power over Ethernet (PoE+) support
  Simplifies deployment and dramatically reduces installation costs by helping to eliminate the time and cost involved in supplying local power at each access point location
- Ethernet operations, administration, and maintenance (OAM)
  Detects data link layer problems that occurred in the "last mile" using the IEEE 802.3ah OAM standard; and monitors the status of the link between two devices
- High-bandwidth CX4 local stacking
  Achieves 12 Gb/s per connection when using local CX4 stacking, allowing for up to 96 Gb/s total stacking bandwidth (full duplex) in a resilient stacking configuration

Performance

- Nonblocking architecture
  Up to 192 Gb/s nonblocking switching fabric provides wirespeed switching with up to 143 million pps throughput
- Hardware-based wirespeed access control lists (ACLs)
  Help provide high levels of security and ease of administration without impacting network performance with a feature-rich TCAM-based ACL implementation

Resiliency and high availability

- Separate data and control paths
  Separate control from services and keeps service processing isolated; and increases security and performance
- External redundant power supply
  Provides high reliability
- Smart link
  Allows 50 ms failover between links
- Spanning Tree/MSTP, RSTP
  Provides redundant links while preventing network loops

- Rapid Ring Protection Protocol (RRPP)
  Connects multiple switches in a high-performance ring using standard Ethernet technology; and traffic can be rerouted around the ring in less than 50 ms, reducing the impact on traffic and applications
- Intelligent Resilient Framework (IRF)
  Creates virtual resilient switching fabrics, where two or more switches perform as a single L2 switch and L3 router; switches do not have to be co-located and can be part of a disaster-recovery system; servers or switches can be attached using standard LACP for automatic load balancing and high availability; and can help eliminate the need for complex protocols like Spanning Tree Protocol, Equal-Cost Multipath (ECMP), or VRRP, thereby simplifying network operation

Layer 2 switching

- 16K MAC address table
  Provides access to many Layer 2 devices
- VLAN support and tagging
  Support IEEE 802.1Q with 4,094 simultaneous VLAN IDs
- GARP VLAN Registration Protocol
  Allows automatic learning and dynamic assignment of VLANs
- IEEE 802.1ad QinQ and selective QinQ
  Increase the scalability of an Ethernet network by providing a hierarchical structure; connect multiple LANs on a high-speed campus or metro network
- 10GbE port aggregation
  Allows grouping of ports to increase overall data throughput to a remote device
- Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) protocol snooping
  Control and manage the flooding of multicast packets in a Layer 2 network
- Per-VLAN Spanning Tree Plus (PVST+)
  Allows each VLAN to build a separate spanning tree to improve link bandwidth usage in network environments with multiple VLANs

Layer 3 services

- Address Resolution Protocol (ARP)
  Determines the MAC address of another IP host in the same subnet; supports static ARPs; gratuitous ARP allows detection of duplicate IP addresses; and proxy ARP allows normal ARP operation between subnets or when subnets are separated by a Layer 2 network
- Dynamic Host Configuration Protocol (DHCP)
  Simplifies the management of large IP networks; supports client; and DHCP Relay enables DHCP operation across subnets
- Loopback interface address
  Defines an address that can always be reachable, improving diagnostic capability
- User Datagram Protocol (UDP) helper function
  Allows UDP broadcasts to be directed across router interfaces to specific IP unicast or subnet broadcast addresses and prevents server spoofing for UDP services such as DHCP
- Route maps
  Provide more control during route redistribution; and allow filtering and altering of route metrics

Layer 3 routing

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

Security

- Access control lists (ACLs)
  Provide IP Layer 2 to Layer 4 traffic filtering; and supports global ACL, VLAN ACL, port ACL, and IPv6 ACL
- IEEE 802.1X
  Industry-standard method of user authentication using an IEEE 802.1X supplicant on the client in conjunction with a RADIUS server
- MAC-based authentication
  Client is authenticated with the RADIUS server based on the client's MAC address

- Identity-driven security and access control
  - Per-user ACLs
    Permit or deny user access to specific network resources based on user identity and time of day, allowing multiple types of users on the same network to access specific network services without risking network security or providing unauthorized access to sensitive data
  - Automatic VLAN assignment
    Automatically assigns users to the appropriate VLAN based on their identities
- Secure management access
  Delivers secure encryption of all access methods (CLI, GUI, or MIB) through SSHv2, SSL, and/or SNMPv3
- Secure FTP
  Allows secure file transfer to and from the switch; protects against unwanted file downloads or unauthorized copying of a switch configuration file
- Guest VLAN
  Provides a browser-based environment to authenticated clients that is similar to IEEE 802.1X
- Endpoint Admission Defense (EAD)
  Provides security policies to users accessing a network
- Port security
  Allows access only to specified MAC addresses, which can be learned or specified by the administrator
- Port isolation
  Secures and adds privacy, and prevents malicious attackers from obtaining user information
- STP BPDU port protection
  Blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks
- STP root guard
  Protects the root bridge from malicious attacks or configuration mistakes
- DHCP protection
  Blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks

- IP source guard
  Helps prevent IP spoofing attacks
- Dynamic ARP protection
  Blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
- RADIUS/HWTACACS
  Eases switch management security administration by using a password authentication server

Convergence

- IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
  Facilitates easy mapping using network management applications with LLDP automated device discovery protocol
- LLDP-MED
  Is a standard extension that automatically configures network devices, including LLDP-capable IP phones
- LLDP-CDP compatibility
  Receives and recognizes CDP packets from Cisco's IP phones for seamless interoperation
- IEEE 802.3af Power over Ethernet
  Provides up to 15.4 W per port to PoE-powered devices such as IP phones, wireless access points, and video cameras
- PoE allocations
  Support multiple methods (automatic, IEEE 802.3af class, LLDP-MED, or user-specified) to allocate PoE power for more efficient energy savings
- Voice VLAN
  Automatically assigns VLAN and priority for IP phones, simplifying network configuration and maintenance
- IP multicast snooping (data-driven IGMP)
  Prevents flooding of IP multicast traffic

Device support

- Cisco pre-standard PoE support
  Detects and provides power to Cisco's pre-standard PoE devices such as wireless LAN access points and IP phones

Additional information

- Green IT and power
  Improve energy efficiency through the use of the latest advances in silicon development; and shuts off unused ports and utilizes variable-speed fans, reducing energy costs
- Green initiative support
  Provides support for RoHS and WEEE regulations

Warranty and support

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

HPE 5120 EI Switch Series
Specifications

	 **HPE 5120-48G EI SWITCH WITH 2 INTERFACE SLOTS (JE069A)**	 **HPE 5120-48G EI SWITCH (JE067A)**	 **HPE 5120-24G EI SWITCH WITH 2 INTERFACE SLOTS (JE068A)**
I/O ports and slots	44 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Media Type: Auto-MDIX; Duplex: 10BASE-T/ 100BASE-TX: half or full; 1000BASE-T: full only 4 dual-personality ports; autosensing 10/100/1000BASE-T or SFP 2 port expansion module slots Supports a maximum of 48 autosensing 10/100/1000 ports	44 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Media Type: Auto- MDIX; Duplex: 10BASE-T/ 100BASE-TX: half or full; 1000BASE-T: full only 4 dual-personality ports; autosensing 10/100/1000BASE-T or SFP Supports a maximum of 48 autosensing 10/100/1000 ports	20 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/ 100BASE-TX: half or full; 1000BASE-T: full only 4 dual-personality ports; autosensing 10/100/1000BASE-T or SFP 2 port expansion module slots
Additional ports and slots	1 RJ-45 serial console port	1 RJ-45 serial console port	1 RJ-45 serial console port
Physical characteristics			
Dimensions	17.32(w) x 11.81(d) x 1.72(h) in (44 x 30x 4.36 cm) (1U height)	17.32(w) x 11.81(d) x 1.72(h) in (44 x 30x 4.37 cm) (1U height)	17.32(w) x 11.81(d) x 1.72(h) in (44 x 30 x4.37 cm) (1U height)
Weight	11.02 lb (5 kg)	11.02 lb (5 kg)	9.92 lb (4.5 kg)
Memory and processor	128 MB SDRAM, 16 MB flash; packet buffer size: 4 MB	128 MB SRAM, 16 MB flash; packet buffer size: 4 MB	128 MB SDRAM, 16 MB flash; packet buffer size: 2 MB
Mounting and enclosure	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included)	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included)	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included)
Performance			
1000 Mb Latency	< 3.2 µs	< 3.2 µs	< 3.2 µs
10 Gb/s Latency	< 2.6 µs	< 2.6 µs	< 2.6 µs
Throughput	142.9 million pps	71.4 million pps	107.2 million pps
Routing/Switching capacity	192 Gb/s	96 Gb/s	144 Gb/s
Routing table size	32 entries (IPv4)	32 entries (IPv4)	32 entries (IPv4)
Environment			
Operating temperature	32°F to 113°F (0°C to 45°C)	32°F to 113°F (0°C to 45°C)	32°F to 113°F (0°C to 45°C)
Operating relative humidity	10% to 90%, noncondensing	10% to 90%, noncondensing	10% to 90%, noncondensing
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)
Nonoperating/Storage relative humidity	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing
Acoustic	Fan-speed low: 41.3dB; Fan-speed high: 50.1dB; ISO 7779	Fan-speed low: 41.3dB; Fan-speed high: 50.1dB; ISO 7779	Fan-speed low: 42.6dB; Fan-speed high: 49.7dB; ISO 7779

HPE 5120 EI Switch Series

Specifications (continued)

	HPE 5120-48G EI SWITCH WITH 2 INTERFACE SLOTS (JE069A)	HPE 5120-48G EI SWITCH (JE067A)	HPE 5120-24G EI SWITCH WITH 2 INTERFACE SLOTS (JE068A)
Electrical characteristics			
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Maximum heat dissipation	495 BTU/hr (522.23 kJ/hr)	375 BTU/hr (395.63 kJ/hr)	351 BTU/hr (370.3 kJ/hr)
AC voltage	100 - 240 VAC	100 - 240 VAC	100 - 240 VAC
Maximum power rating	145 W	110 W	103 W
Idle power	55 W	54 W	36 W
	Notes Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
Safety	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance
Emissions	FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR 22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR 22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR 22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A
Management	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager
Services	Refer to the Hewlett Packard Enterprise website at **hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services, and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	Refer to the Hewlett Packard Enterprise website at **hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services, and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	Refer to the Hewlett Packard Enterprise website at **hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services, and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

HPE 5120 EI Switch Series
Specifications (continued)

	 **HPE 5120-24G EI SWITCH (JE066A)**	 **HPE 5120-48G-POE+ EI SWITCH WITH 2 INTERFACE SLOTS (JG237A)**	 **HPE 5120-24G-POE+ EI SWITCH WITH 2 INTERFACE SLOTS (JG236A)**
I/O ports and slots	20 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 dual-personality ports; autosensing 10/100/1000BASE-T or SFP	44 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 dual-personality ports; PoE+ autosensing 10/100/1000BASE-T or SFP 2 port expansion module slots Supports a maximum of 48 autosensing 10/100/1000 ports	20 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 dual-personality ports; PoE+ autosensing 10/100/1000BASE-T or SFP 2 port expansion module slots
Additional ports and slots	1 RJ-45 serial console port	1 RJ-45 serial console port	1 RJ-45 serial console port
Physical characteristics			
Dimensions	17.32(w) x 11.81(d) x 1.72(h) in (44 x 30x 4.36 cm) (1U height)	17.32(w) x 16.54(d) x 1.72(h) in (43.99 x 42.01 x 4.37 cm) (1U height)	17.32(w) x 16.54(d) x 1.72(h) in (43.99 x 42.01 x 4.37 cm) (1U height)
Weight	9.92 lb (4.5 kg)	16.53 lb (7.5 kg)	15.43 lb (7 kg)
Memory and processor	128 MB SDRAM, 16 MB flash; packet buffer size: 2 MB	128 MB SDRAM, 16 MB flash; packet buffer size: 4 MB	128 MB SDRAM, 16 MB flash; packet buffer size: 2 MB
Mounting and enclosure	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included)	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included)	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included)
Performance			
1000 Mb Latency	< 3.2 µs	< 3.2 µs	< 3.2 µs
10 Gb/s Latency	< 2.6 µs	< 2.6 µs	< 2.6 µs
Throughput	35.7 million pps	142.9 million pps	107.2 million pps
Routing/Switching capacity	48 Gb/s	192 Gb/s	144 Gb/s
Routing table size	32 entries (IPv4)	32 entries (IPv4)	32 entries (IPv4)
Environment			
Operating temperature	32°F to 113°F (0°C to 45°C)	32°F to 113°F (0°C to 45°C)	32°F to 113°F (0°C to 45°C)
Operating relative humidity	10% to 90%, noncondensing	10% to 90%, noncondensing	10% to 90%, noncondensing
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)
Nonoperating/Storage relative humidity	5% to 95%, noncondensing	10% to 90%, noncondensing	5% to 95%, noncondensing
Acoustic	Low-speed fan: 42.6dB; High-speed fan: 49.7dB; ISO 7779	Low-speed fan: 49.5dB; High-speed fan: 54.1dB; ISO 7779	Low-speed fan: 41.5dB; High-speed fan: 51.1dB; ISO 7779

HPE 5120 EI Switch Series

Specifications (continued)

	HPE 5120-24G EI SWITCH (JE066A)	HPE 5120-48G-POE+ EI SWITCH WITH 2 INTERFACE SLOTS (JG237A)	HPE 5120-24G-POE+ EI SWITCH WITH 2 INTERFACE SLOTS (JG236A)
Electrical characteristics			
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Maximum heat dissipation	212 BTU/hr (223.66 kJ/hr)	2221 BTU/hr (2343.15 kJ/hr). Max heat dissipation for AC is 2221 BTU/hr and 3142 BTU/hr for RPS (Redundant Power Supply).	1996 BTU/hr (2105.78 kJ/hr). Max heat dissipation for AC is 1996 BTU/hr and 1675 BTU/hr for RPS (Redundant Power Supply).
AC voltage	100 - 240 VAC	100 - 240 VAC	100 - 240 VAC
Maximum power rating	62 W	651 W	585 W
Idle power	35 W	90 W	65 W
PoE power		370 W PoE+	370 W PoE+
	Notes Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS). With AC input, the maximum power consumption is 651W; 281W for system, 370W for PoE. With RPS input, the maximum power consumption is 921W; 181W for system, 740W for PoE.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS). With AC input, the maximum power consumption is 585W; 215W for system, 370W for PoE. With DC input, the maximum power consumption is 491W; 121W for system, 370W for PoE.
Safety	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance
Emissions	FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR 22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR 22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR 22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A
Management	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager
Services	Refer to the Hewlett Packard Enterprise website at **hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services, and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	Refer to the Hewlett Packard Enterprise website at **hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services, and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	Refer to the Hewlett Packard Enterprise website at **hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services, and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

HPE 5120 EI Switch Series
Specifications (continued)

STANDARDS AND PROTOCOLS
(APPLIES TO ALL PRODUCTS IN SERIES)

Device management	RFC 1157 SNMPv1/v2c RFC 1305 NTPv3 RFC 2573 (SNMPv3 Applications)	RFC 2819 (RMON groups Alarm, Event, History and Statistics only) RFC 3416 (SNMP Protocol Operations v2) HTML and telnet management	Multiple Configuration Files SNMP v3 and RMON RFC support SSHv1/SSHv2 Secure Shell TACACS/TACACS+ Web UI
General protocols	IEEE 802.1ad Q-in-Q IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1s Multiple Spanning Trees IEEE 802.1w Rapid Reconfiguration of Spanning Tree IEEE 802.1X PAE IEEE 802.3 Type 10BASE-T IEEE 802.3ab 1000BASE-T IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3ae 10-Gigabit Ethernet IEEE 802.3af Power over Ethernet IEEE 802.3i 10BASE-T IEEE 802.3u 100BASE-X IEEE 802.3x Flow Control IEEE 802.3z 1000BASE-X	RFC 768 UDP RFC 783 TFTP Protocol (revision 2) RFC 791 IP RFC 792 ICMP RFC 793 TCP RFC 826 ARP RFC 854 TELNET RFC 951 BOOTP RFC 1213 Management Information Base for Network Management of TCP/IP-based internets RFC 1305 NTPv3 RFC 1350 TFTP Protocol (revision 2) RFC 1519 CIDR RFC 1812 IPv4 Routing RFC 1866 Hypertext Markup Language - 2.0 RFC 2131 DHCP RFC 2236 IGMP Snooping RFC 2616 HTTP Compatibility v1.1	RFC 2665 Definitions of Managed Objects for the Ethernet-like Interface Types RFC 2668 Definitions of Managed Objects for IEEE 802.3 Medium Attachment Units (MAUs) RFC 2865 Remote Authentication Dial In User Service (RADIUS) RFC 2866 RADIUS Accounting RFC 3414 User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3) RFC 3415 View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP) RFC 3418 Management Information Base (MIB) for the Simple Network Management Protocol (SNMP) RFC 4213 Basic IPv6 Transition Mechanisms 802.1r - GARP Proprietary Attribute Registration Protocol (GPRP)
IPv6	RFC 2461 IPv6 Neighbor Discovery RFC 2463 ICMPv6	RFC 3162 RADIUS and IPv6 RFC 3306 Unicast-Prefix-based IPv6 Multicast Addresses	RFC 3315 DHCPv6 (client and relay)
MIBs	RFC 1212 Concise MIB Definitions RFC 1213 MIB II RFC 1493 Bridge MIB RFC 1757 Remote Network Monitoring MIB RFC 2096 IP Forwarding Table MIB RFC 2233 Interface MIB RFC 2571 SNMP Framework MIB RFC 2572 SNMP-MPD MIB	RFC 2573 SNMP-Notification MIB RFC 2573 SNMP-Target MIB RFC 2574 SNMP USM MIB RFC 2618 RADIUS Authentication Client MIB RFC 2620 RADIUS Accounting Client MIB RFC 2665 Ethernet-Like-MIB RFC 2668 802.3 MAU MIB	RFC 2674 802.1p and IEEE 802.1Q Bridge MIB RFC 2737 Entity MIB (Version 2) RFC 2819 RMON MIB RFC 2863 The Interfaces Group MIB RFC 2925 Ping MIB RFC 3414 SNMP-User based-SM MIB RFC 3415 SNMP-View based-ACM MIB RFC 3418 MIB for SNMPv3 RFC 3621 Power Ethernet MIB
Network management	IEEE 802.1AB Link Layer Discovery Protocol (LLDP)	RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events)	ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED) SNMPv1/v2c/v3
Security	IEEE 802.1X Port Based Network Access Control RFC 1492 TACACS+ RFC 2138 RADIUS Authentication	RFC 2139 RADIUS Accounting RFC 2865 RADIUS (client only) RFC 2866 RADIUS Accounting	Secure Sockets Layer (SSL) SSHv2 Secure Shell

HPE 5120 EI Switch Series accessories

Modules	HPE 5500 2-port 10GbE XFP Module (JD359B) HPE 5500 2-port 10GbE Local Connect Module (JD360B) HPE 5500 1-port 10GbE XFP Module (JD361B) HPE 5500/5120 2-port 10GbE SFP+ Module (JD368B) HPE 5500/4800 2-port GbE SFP Module (JD367A) HPE 5500/5120 2-port 10GBASE-T Module (JG535A)
Transceivers	HPE X125 1G SFP LC LH40 1310nm Transceiver (JD061A) HPE X120 1G SFP LC LH40 1550nm Transceiver (JD062A) HPE X125 1G SFP LC LH70 Transceiver (JD063B) HPE X130 10G SFP+ LC SR Transceiver (JD092B) HPE X130 10G SFP+ LC LRM Transceiver (JD093B) HPE X130 10G SFP+ LC LR Transceiver (JD094B) HPE X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable (JD095C) HPE X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable (JD096C) HPE X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable (JD097C) HPE X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable (JG081C) HPE X240 10G SFP+ SFP+ 7m Direct Attach Copper Cable (JC784C) HPE X130 10G XFP LC LR Transceiver (JD108B) HPE X130 10G XFP LC SR Transceiver (JD117B) HPE X120 1G SFP LC SX Transceiver (JD118B) HPE X120 1G SFP LC LX Transceiver (JD119B) HPE X135 10G XFP LC ER Transceiver (JD121A) HPE X120 1G SFP LC BX 10-U Transceiver (JD098B) HPE X120 1G SFP LC BX 10-D Transceiver (JD099B) HPE X120 1G SFP RJ45 T Transceiver (JD089B) HPE X130 10G SFP+ LC ER 40km Transceiver (JG234A) HPE X130 10G SFP+ LC LH 80km Transceiver (JG915A)

Cables	HPE X230 Local Connect 100cm CX4 Cable (JD364B) HPE X230 CX4 to CX4 3m Cable (JD365A) HPE 0.5 m Multimode OM3 LC/LC Optical Cable (AJ833A) HPE 1 m Multimode OM3 LC/LC Optical Cable (AJ834A) HPE 2 m Multimode OM3 LC/LC Optical Cable (AJ835A) HPE 5 m Multimode OM3 LC/LC Optical Cable (AJ836A) HPE 15 m Multimode OM3 LC/LC Optical Cable (AJ837A) HPE 30 m Multimode OM3 LC/LC Optical Cable (AJ838A) HPE 50 m Multimode OM3 LC/LC Optical Cable (AJ839A) HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable (QK732A) HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable (QK733A) HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable (QK734A) HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable (QK735A) HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable (QK736A) HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable (QK737A) HPE X230 Local Connect 50cm CX4 Cable (JD363B)
Power Supply	HPE RPS 800 Redundant Power Supply (JD183A) HPE RPS1600 Redundant Power System (JG136A) HPE RPS1600 1600W AC Power Supply (JG137A)
Power cords	HPE X290 1000 A JD5 2m RPS Cable (JD187A) HPE X290 500/800 1m RPS Cable (JD190A)

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4AA3-0725ENW, September 2017, Rev. 10

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