

### Overview

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## HPE Networking Comware Switch Series 5710 QuickSpecs

HPE Networking Comware Switch Series 5710 is a family of high-performance, low-latency access switches aimed at providing superior edge device connectivity in modern spine leaf data centers.

HPE Networking Comware Switch Series 5710 is ideally suited for deployment at the server access layer of large and medium-sized enterprise data centers. It delivers lower TCO while enhancing networking performance to support demanding virtualized applications and server-to-server traffic. Resilience and ease of management come hand-in-hand with the Networking Comware 5710.



HPE Networking Comware 5710 48SFP+ 6QSFP+ or 2QSFP28 Switch (JL585A)



HPE Networking Comware 5710 48XGT 6QSFP+ or 2QSFP28 Switch (JL586A)

### Overview



HPE Networking Comware 5710 24SFP+ 6QSFP+ or 2QSFP28 Switch (JL587A)



HPE Networking Comware 5710 24XGT 6QSFP+ or 2QSFP28 Switch (JL689A)

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### Models

HPE Networking Comware Switch 48SFP+ 6QSFP+ or 2QSFP28 5710	JL585A
HPE Networking Comware Switch 48XGT 6QSFP+ or 2QSFP28 5710	JL586A
HPE Networking Comware Switch 24SFP+ 6QSFP+ or 2QSFP28 5710	JL587A
HPE Networking Comware Switch 24XGT 6QSFP+ or 2QSFP28 5710	JL689A

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### Key features

- High-performance, low-latency data center top-of-rack (ToR) switch aimed at expanding port connectivity while adding local switching capacity
- HPE Intelligent Resilient Fabric (IRF) for virtualization and two-tier networks
- High 1/10GbE wirespeed ports with 40GbE and 100GbE uplinks
- Layer 2 and Layer 3 features with static routing and RIP
- Support converged applications with data center bridging (DCB) features such as priority-based flow control (PFC) IEEE 802.1Qbb, quantized congestion notification (QCN) IEEE 802.1Qau, enhanced transmission selection (ETS) IEEE 802.1Qaz, and data center bridging capability exchange (DCBx) IEEE 802.1Qaz, and FCoE
- New made in USA TAA SKUs introduced for customers who have concerns with 'made in China' products. These SKUs are provide additional security as a combination of manual and automated source code analysis is performed to identify common programming issues and address any security weaknesses.

### Standard Features

#### Quality of Service (QoS)

Powerful QoS features

- Flexible classification

Flow classification is based on DSCP field, MAC address, IP protocol type, source address, destination address, or port number of an application.

- Feature queue scheduling

Flexible queuing and scheduling algorithms are configured on a per-port or per-queue basis, including strict priority (SP), weighted round robin (WRR), SP+WRR, weighted fair queuing (WFQ), and SP+WFQ.

- QPPB

QoS Policy Propagation via BGP, often abbreviated to QPPB, is a mechanism that allows propagation of QoS policy and classification by the sending party based on access lists, community lists, and autonomous system paths in the Border Gateway Protocol (BGP) thus helping to classify based on destination instead of source address.

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#### Data center optimized

- Versatile server connectivity

HPE Networking Comware Switch Series 5710 enables scaling of the server edge with 1GbE and 10GbE ToR deployments with high-density 24- and 48-port solutions delivered in a 1RU form factor. These switches can be set up as stand-alone Layer 2 and Layer 3 switches. The high server port density of the 5710 Switch is backed by 40GbE QSFP+ or 100GbE QSFP28 uplinks to deliver the availability of needed bandwidth for demanding applications. Each 40GbE QSFP+ port can also be configured as four 10GbE ports by using a 40GbE-to-10GbE splitter cable.

- High-performance switching

Cut-through and nonblocking architecture delivers low latency (1.5-2.5  $\mu$ s for 10GbE) for very demanding enterprise applications. HPE Networking Comware 5710 switches also deliver high-performance switching capacity and wirespeed packet forwarding for demanding data center environments. Local switching capacity and packet forwarding enable the switch to participate in the network and enhance networking capacity available for servers.

- Higher scalability

HPE IRF technology simplifies the architecture of server access networks; up to 10 HPE Networking Comware 5710 physical switches can be combined into one virtual switch configuration and are managed using a single IP address. HPE IRF enables this switch to deliver the unmatched scalability of virtualized switches and flatter two-tier networks, which reduces cost and complexity.

- Advanced modular operating system

Comware v7 network operating system's modular design and multiple processes bring native high stability, independent process monitoring, and a restart. The OS also allows individual software modules to be upgraded for higher availability and supports enhanced serviceability functions like hitless software upgrades with In Service Software Upgrade (ISSU)

- Reversible airflow

It is enhanced for data center hot-cold aisle deployment with reversible airflow-for either front-to-back or back-to-front airflow.

- Redundant fans and power supplies

1+1 internal redundant and hot-pluggable power supplies and multiple fan trays enhance reliability and availability.

- Data Center Bridging (DCB) protocols

Provides support for priority-based flow control (PFC) IEEE 802.1Qbb, quantized congestion notification (QCN) IEEE 802.1Qau, enhanced transmission selection (ETS) IEEE 802.1Qaz, and data center bridging capability exchange (DCBx) IEEE 802.1Qaz for converged applications.

- FCoE support

Provides support for Fibre Channel over Ethernet (FCoE) including Fibre Channel Forwarder (FCF), transit, and N-port virtualization (NPV)

- Jumbo frames

Frame sizes of up to 10,000 bytes allow high-performance remote backup and disaster-recovery services to be enabled.

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#### Management and manageability

- Full-featured console

Provides a safe, easy-to-use CLI for configuring the module via SSH or a switch console; provides direct real-time session visibility

- Remote configuration and management

### Standard Features

- Is available through a secure CLI over Telnet and SSH; Role-Based Access Control (RBAC) provides multiple levels of access; configuration rollback and multiple configurations on the flash provide ease of operation; remote visibility is provided with sFlow® and Simple Network Management Protocol (SNMP) v1/v2/v3, and is fully supported in HPE Intelligent Management Center (IMC)
- Management security
  - Restricts access to critical configuration commands; offers multiple privilege levels with password protection; access control lists (ACLs) provide Telnet and SNMP access; local and remote syslog capabilities allow logging of access
- Command authorization
  - Leverages Remote Authentication Dial-In User Service (RADIUS) to link a custom list of CLI commands to an individual network administrator's login; an audit trail documents activity
- Troubleshooting
  - Ingress and egress port monitoring
    - Enable network problem solving
  - Traceroute and ping
    - Enable testing of network connectivity
- File copy
  - Allows users to copy switch files to and from a USB flash drive
- Support for multiple configuration files
- Dual flash images
  - Provides independent primary and secondary operating system files for backup while upgrading
- SNMPv1, v2c, and v3
  - Facilitate centralized discovery, monitoring, and safer management of networking devices
- Out-of-band interface
  - Isolates management traffic from user data plane traffic for complete isolation and total reachability, no matter what happens in the data plane
- ISSU and hot patching
  - Provide hitless IRF-based software upgrades and hitless patching of the modular operating system
- Auto-configuration
  - Provides automatic configuration via DHCP auto-configuration, NETCONF, and Python scripting
- IPv6 over IPv4, 6to4, and ISATAP Tunnel
- RSPAN and ERSPAN
- Ethernet OAM (802.3ah) and Connectivity Fault Detection (CFD) (802.1ag)
- Symmetric load balancing for link aggregation and ECMP
- Layer 2 protocol tunneling (L2PT) support for virtual private networks (VPNs)
- Buffer monitoring
- Collaboration with VMware® controller and Nuage controller
- OVSDB QoS and OVSDB ACL
- 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
- Logging
  - Provides local and remote logging of events via SNMP (v2c and v3) and syslog; provides log throttling and log filtering to reduce the number of log events generated
- Information center
  - Provides a central repository for system and network information; aggregates logs, traps, and debugging information generated by the system and maintains them in order of severity; outputs the network information to multiple channels based on user-defined rules
- Remote intelligent mirroring
  - Mirrors selected traffic to destination on same device or mirrors destination on different devices
- Puppet/Chef/YANG support
- Network management
  - HPE IMC** centrally configures, updates, monitors, and troubleshoots

### Standard Features

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#### Resiliency and high availability

- HPE IRF technology
    - Enables an HPE Networking Comware to deliver resilient, scalable, and secured data center network for physical and virtualized environment; groups up to 10 HPE Networking Comware Switch Series 5710 in an HPE IRF configuration, allowing them to be configured and managed as a single virtual switch with a single IP address; simplifies ToR and spine/leaf deployments and management, reducing data center deployment and operating expenses
  - IEEE 802.1w Rapid Convergence Spanning Tree Protocol
    - Increases network uptime through faster recovery from failed links
  - IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
    - Provides high link availability in multiple VLAN environments by allowing Multiple Spanning Trees
  - Hitless patch upgrades
    - Allows patches and new service features to be installed without restarting the equipment, increasing network uptime and facilitating maintenance
  - Device Link Detection Protocol (DLDP)
    - Monitors link connectivity and shuts down ports at both ends if unidirectional traffic is detected, preventing loops in STP-based networks
  - Smart Link and RRPP and load balancing among Smart Link multiple instances and RRPP multiple instances
  - DRNI
    - Provides a resilient interconnect using multiple links among one or more nodes in a network
  - ERPS
    - Provides fast protection and recovery switching for Ethernet traffic
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#### Layer 2 switching

- ARP
    - Supports static, dynamic, and reverse ARP and ARP proxy
  - Flow Control
    - IEEE 802.3x Flow Control provides intelligent congestion management via PAUSE frames
  - Ethernet link aggregation
    - Provides IEEE 802.3ad Link Aggregation of up to 128 groups of 16 ports; support for Link Aggregation Control Protocol (LACP), LACP Local Forwarding First, and LACP Short-time provides a fast, resilient environment that is ideal for the data center
  - Spanning Tree Protocol (STP)
    - STP (IEEE 802.1D), Rapid STP (RSTP, IEEE 802.1w), and Multiple STP (MSTP) (IEEE 802.1s)
  - VLAN support
    - Provides support for 4094 VLANs based on port: VLAN mapping, Q-in-Q, and Selective Q-in-Q
  - Internet Group Management Protocol (IGMP) support
    - Provides support for IGMP snooping v1/v2/v3, Protocol Independent Multicast (PIM) snooping, Multicast Listener Discovery (MLD) snooping v1/v2, and IPv6 PIM snooping
  - DHCP support at Layer 2
    - Provides full DHCP snooping support for DHCP Snooping Option 82, DHCP Relay Option 82, DHCP Snooping Trust, and DHCP Snooping Item Backup
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#### 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; 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 and supports client and server; DHCP Relay enables DHCP operation across subnets
  - Connectivity Fault Management (IEEE 802.1AG) and Ethernet in the First Mile (IEEE 802.3ah)
    - Provides additional monitoring that can be used for fast fault detection and recovery
  - Virtual Extensible LAN (VXLAN)
    - VXLAN L2 and L3 gateway support for up to 2K tunnels
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### Standard Features

#### Convergence

- LLDP-MED (Media Endpoint Discovery)

Defines a standard extension of LLDP that stores values for parameters such as QoS and VLAN to automatically configure network devices such as IP phones

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#### Security

HPE Networking Comware Switch Series 5710 fully meets customer requirements in security design and provides a complete network security solution. It provides the following network security features:

- ACLs

Provides IP Layer 3 filtering based on source, destination IP address, or subnet, and source, destination TCP, or UDP port number

- RADIUS/TACACS+

Eases switch management security administration by using a password authentication server

- Secure shell (SSH)

Encrypts transmitted data for safe remote CLI access over IP networks

- IEEE 802.1X and RADIUS network logins

Controls port-based access for authentication and accountability

- Terminal and user access control

- Hierarchical user management and password protection

- IP source guard

- Blackhole MAC address entries

- MAC learning limit

- MAC address and port number binding

- SSH 2.0

- Port isolation

- IEEE 802.1X-compliant user access authentication

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

- Local and RADIUS authentications

- Ethernet frame and upper-layer packet filtering and validity authentication:

- ACL

- Packet filtering based on packet header fields from Layer 2 through Layer 4, including source MAC, destination MAC, source IP (IPv4/IPv6), destination IP (IPv4/IPv6), port number, and protocol type

- SNMPv3 encryption and authentication

- Address Resolution Protocol (ARP) attack protection features such as ARP attack detection

- RA guard, ND snooping and detection
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### Standard Features

#### Layer 3 routing

- Equal-Cost Multipath (ECMP)  
Enables multiple equal-cost links in a routing environment to increase link redundancy and scale bandwidth
  - Layer 3 IPv4 routing  
Provides routing of IPv4 at media speed; supports static routes, RIP, and RIPv2
  - Dual IP stack  
Maintains separate stacks for IPv4 and IPv6 to ease the transition from an IPv4-only network to an IPv6-only network design
  - Bidirectional Forwarding Detection (BFD)  
Enables link connectivity monitoring and reduces network convergence time for RIP, OSPF, BGP, IS-IS, Virtual Router Redundancy Protocol (VRRP), MPLS, and IRF
  - Layer 3 IPv6 routing  
Provides routing of IPv6 at media speed; supports static routing and RIPng
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#### Warranty and support

- 1-year warranty
- See [Warranty and support summary](#) for details on what is included with your product purchase.
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#### Software releases

To find software for your product, refer to <http://www.hpe.com/networking/support>; for details on the software releases available with your product purchase, refer to [Warranty and support summary](#).

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### Configuration Information

#### BTO Models

Rule #	Description	SKU
Standard Switch Chassis		
1, 2, 3, 4, 5, 6	HPE Networking Comware Switch 48SFP+ 6QSFP+ or 2QSFP28 5710	JL585A
1, 2, 3, 4, 5	HPE Networking Comware Switch 48XGT 6QSFP+ or 2QSFP28 5710	JL586A
1, 2, 3, 4, 5, 6	HPE Networking Comware Switch 24SFP+ 6QSFP+ or 2QSFP28 5710	JL587A
1, 2, 3, 4, 5	HPE Networking Comware Switch 24XGT 6QSFP+ or 2QSFP28 5710	JL689A
TAA Switch Chassis		
1, 2, 3, 4, 5, 6, 8	HPE Networking Comware Switch 48p SFP+ 1G/10G 6p QSFP+ 40G 2p QSFP28 100G TAA 5710	S3K83A
1, 2, 3, 4, 5, 8	HPE Networking Comware Switch 48p 10GBASE-T 6p QSFP+ 40G 2p QSFP28 100G TAA 5710	S3K84A
1, 2, 3, 4, 5, 6, 8	HPE Networking Comware Switch 24p SFP+ 1G/10G 6p QSFP+ 40G 2p QSFP28 100G TAA 5710	S3K85A
1, 2, 3, 4, 5, 8	HPE Networking Comware Switch 24p 10GBASE-T 6p QSFP+ 40G 2p QSFP28 100G TAA 5710	S3K86A
Configuration Rules		
1	<b>The following Transceivers install into this Switch's SFP Management Port:</b> HPE Networking X115 100M SFP LC FX Transceiver HPE Networking X110 100M SFP LC LX Transceiver HPE Networking X120 1G SFP LC LH100 Transceiver	JD102B JD120B JD103A
2	<b>The following Transceivers install into this Switch's SFP+ Ports:</b> HPE Networking X130 10G SFP+ LC BiDi 10km-Uplink Transceiver HPE Networking X130 10G SFP+ LC BiDi 10km-Downlink Transceiver HPE Networking X130 10G SFP+ LC SR Transceiver HPE Networking X130 10G SFP+ LC LR Transceiver HPE Networking X240 10G SFP+ SFP+ 0.65m DAC Cable HPE Networking X240 10G SFP+ SFP+ 1.2m DAC Cable HPE Networking X240 10G SFP+ SFP+ 3m DAC Cable HPE Networking X240 10G SFP+ SFP+ 5m DAC Cable HPE Networking X2A0 10G SFP+ to SFP+ 7m Active Optical Cable HPE Networking X2A0 10G SFP+ to SFP+ 10m Active Optical Cable HPE Networking X2A0 10G SFP+ to SFP+ 20m Active Optical Cable	JL737A JL738A JD092B JD094B JD095C JD096C JD097C JG081C JL290A JL291A JL292A
3	<b>The following Transceivers install into this switch's QSFP+ Ports:</b> HPE Networking X140 40G QSFP+ MPO SR4 Transceiver HPE Networking X140 40G QSFP+ CSR4 300m Transceiver HPE Networking X140 40G QSFP+ LC BiDi 100m MM Transceiver HPE Networking X140 40G QSFP+ LC LR4 SM 10km 1310nm Transceiver HPE Networking X140 40G QSFP+ LC LR4L 2km SM Transceiver HPE QSFP/SFP+ Adapter Kit HPE Networking Comware X240 40G QSFP+ QSFP+ 1m Direct Attach Copper Cable HPE Networking Comware X240 40G QSFP+ QSFP+ 3m Direct Attach Copper Cable HPE Networking Comware X240 40G QSFP+ QSFP+ 5m Direct Attach Copper Cable HPE Networking Comware X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable HPE Networking Comware X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable HPE Networking Comware X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable	JG325B JG709A JL251A JG661A JL286A 655874-B21 JG326A JG327A JG328A JG329A JG330A JG331A

### Configuration Information

	HPE Networking X2A0 40G QSFP+ to QSFP+ 7m Active Optical Cable	JL287A
	HPE Networking X2A0 40G QSFP+ to QSFP+ 10m Active Optical Cable	JL288A
	HPE Networking X2A0 40G QSFP+ to QSFP+ 20m Active Optical Cable	JL289A
4	<b>The following 100G Transceivers install into this switch's QSFP+/QSFP28 Ports:</b>	
	HPE Networking X150 100G QSFP28 MPO SR4 100m MM Transceiver	JL274A
	HPE Networking X150 100G QSFP28 LC BiDi 100m MM Transceiver	JQ344A
	HPE Networking X150 100G QSFP28 eSR4 300m MM Transceiver	JH672A
	HPE Networking X150 100G QSFP28 PSM4 500m SM Transceiver	JH420A
	HPE Networking X150 100G QSFP28 LC LR4 10km SM Transceiver	JL275A
	HPE Networking X150 100G QSFP28 CWDM4 2km SM Transceiver	JH673A
	HPE Networking X240 100G QSFP28 1m DAC Cable	JL271A
	HPE Networking X240 100G QSFP28 3m DAC Cable	JL272A
	HPE Networking X240 100G QSFP28 5m DAC Cable	JL273A
	HPE Networking X2A0 100G QSFP28 to QSFP28 7m Active Optical Cable	JL276A
	HPE Networking X2A0 100G QSFP28 to QSFP28 10m Active Optical Cable	JL277A
	HPE Networking X2A0 100G QSFP28 to QSFP28 20m Active Optical Cable	JL278A
5	<b>If selecting an SFP+ XCVR for this switch for use on the 6QSFP+/SFP28 uplink ports, then add qty 1 of the following adapter Kit per SFP+ XCVR;</b>	
	HPE QSFP/SFP+ Adapter Kit	655874-B21
6	<b>The following Transceivers install into this Switch's SFP+ Ports:</b>	
	HPE Networking X120 1G SFP RJ45 T Transceiver	JD089B
	HPE Networking X120 1G SFP LC LH100 Transceiver	JD103A
	HPE Networking X120 1G SFP LC SX Transceiver	JD118B
	HPE Networking X120 1G SFP LC LX Transceiver	JD119B
8	<b>TAA compliance versions: Products are Made in Puerto Rico (territory of the United States). Product software source code is analyzed to ensure security robustness in the United States by HPE employees with US citizenship.</b>	
<b>Notes:</b>	<b><a href="#">OCA Only Model Selection Form - HPE Aruba Networking &gt; Switches &gt; HPE Networking Comware &gt; Access &gt; 5710 Switch Series</a></b>	

### Rack Level Integration CTO Models

Rule #	Description	SKU
	Standard Switch Chassis	
1, 2, 3, 4, 5, 6, 7	HPE Networking Comware Switch 48SFP+ 6QSFP+ or 2QSFP28 5710	JL585A
1, 2, 3, 4, 5, 6	HPE Networking Comware Switch 48XGT 6QSFP+ or 2QSFP28 5710	JL586A
1, 2, 3, 4, 5, 6, 7	HPE Networking Comware Switch 24SFP+ 6QSFP+ or 2QSFP28 5710	JL587A
1, 2, 3, 4, 5, 6	HPE Networking Comware Switch 24XGT 6QSFP+ or 2QSFP28 5710	JL689A
	TAA Switch Chassis	
1, 2, 3, 4, 5, 6, 7, 8	HPE Networking Comware Switch 48p SFP+ 1G/10G 6p QSFP+ 40G 2p QSFP28 100G TAA 5710	S3K83A
1, 2, 3, 4, 5, 6, 8	HPE Networking Comware Switch 48p 10GBASE-T 6p QSFP+ 40G 2p QSFP28 100G TAA 5710	S3K84A
1, 2, 3, 4, 5, 6, 7, 8	HPE Networking Comware Switch 24p SFP+ 1G/10G 6p QSFP+ 40G 2p QSFP28 100G TAA 5710	S3K85A
1, 2, 3, 4, 5, 7, 8	HPE Networking Comware Switch 24p 10GBASE-T 6p QSFP+ 40G 2p QSFP28 100G TAA 5710	S3K86A
	Configuration Rules	

### Configuration Information

Rule #	Description	SKU
1	The following Transceivers install into this Switch's SFP Management Port: (Use #0D1 or #B01 quoted to switch if switch is CTO) - if applicable	
	HPE Networking X115 100M SFP LC FX Transceiver	JD102B
	HPE Networking X110 100M SFP LC LX Transceiver	JD120B
	HPE Networking X120 1G SFP LC LH100 Transceiver	JD103A
2	The following Transceivers install into this Switch's SFP+ Ports: (Use #0D1 or #B01 quoted to switch if switch is CTO) - if applicable	
	HPE Networking X130 10G SFP+ LC BiDi 10km-Uplink Transceiver	JL737A
	HPE Networking X130 10G SFP+ LC BiDi 10km-Downlink Transceiver	JL738A
	HPE Networking X120 1G SFP RJ45 T Transceiver	JD089B
	HPE Networking X120 1G SFP LC LH100 Transceiver	JD103A
	HPE Networking X120 1G SFP LC SX Transceiver	JD118B
	HPE Networking X120 1G SFP LC LX Transceiver	JD119B
	HPE Networking X130 10G SFP+ LC SR Transceiver	JD092B
	HPE Networking X130 10G SFP+ LC LR Transceiver	JD094B
	HPE Networking X240 10G SFP+ SFP+ 0.65m DAC Cable	JD095C
	HPE Networking X240 10G SFP+ SFP+ 1.2m DAC Cable	JD096C
	HPE Networking X240 10G SFP+ SFP+ 3m DAC Cable	JD097C
	HPE Networking X240 10G SFP+ SFP+ 5m DAC Cable	JG081C
	HPE Networking X2A0 10G SFP+ to SFP+ 7m Active Optical Cable	JL290A
	HPE Networking X2A0 10G SFP+ to SFP+ 10m Active Optical Cable	JL291A
	HPE Networking X2A0 10G SFP+ to SFP+ 20m Active Optical Cable	JL292A
3	The following Transceivers install into this switch's QSFP+ Ports: (Use #0D1 or #B01 quoted to switch if switch is CTO) - if applicable	
	HPE Networking X140 40G QSFP+ MPO SR4 Transceiver	JG325B
	HPE Networking X140 40G QSFP+ CSR4 300m Transceiver	JG709A
	HPE Networking X140 40G QSFP+ LC BiDi 100m MM Transceiver	JL251A
	HPE Networking X140 40G QSFP+ LC LR4 SM 10km 1310nm Transceiver	JG661A
	HPE Networking X140 40G QSFP+ LC LR4L 2km SM Transceiver	JL286A
	HPE QSFP/SFP+ Adapter Kit	655874-B21
	HPE Networking Comware X240 40G QSFP+ QSFP+ 1m Direct Attach Copper Cable	JG326A
	HPE Networking Comware X240 40G QSFP+ QSFP+ 3m Direct Attach Copper Cable	JG327A
	HPE Networking Comware X240 40G QSFP+ QSFP+ 5m Direct Attach Copper Cable	JG328A
	HPE Networking Comware X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable	JG329A
	HPE Networking Comware X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable	JG330A
	HPE Networking Comware X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable	JG331A
	HPE Networking X2A0 40G QSFP+ to QSFP+ 7m Active Optical Cable	JL287A
	HPE Networking X2A0 40G QSFP+ to QSFP+ 10m Active Optical Cable	JL288A
	HPE Networking X2A0 40G QSFP+ to QSFP+ 20m Active Optical Cable	JL289A
4	The following 100G Transceivers install into this switch's QSFP+/QSFP28 Ports: (Use #0D1 or #B01 quoted to switch if switch is CTO) - if applicable	
	HPE Networking X150 100G QSFP28 MPO SR4 100m MM Transceiver	JL274A
	HPE Networking X150 100G QSFP28 LC BiDi 100m MM Transceiver	JQ344A
	HPE Networking X150 100G QSFP28 eSR4 300m MM Transceiver	JH672A
	HPE Networking X150 100G QSFP28 PSM4 500m SM Transceiver	JH420A
	HPE Networking X150 100G QSFP28 LC LR4 10km SM Transceiver	JL275A
	HPE Networking X150 100G QSFP28 CWDM4 2km SM Transceiver	JH673A
	HPE Networking X240 100G QSFP28 1m DAC Cable	JL271A
	HPE Networking X240 100G QSFP28 3m DAC Cable	JL272A
	HPE Networking X240 100G QSFP28 5m DAC Cable	JL273A
	HPE Networking X2A0 100G QSFP28 to QSFP28 7m Active Optical Cable	JL276A

### Configuration Information

	HPE Networking X2A0 100G QSFP28 to QSFP28 10m Active Optical Cable	JL277A
	HPE Networking X2A0 100G QSFP28 to QSFP28 20m Active Optical Cable	JL278A
5	If HPE CTO Switch Chassis is selected for Rack Level Integration, Then the Switch needs to integrate (with #0D1) to the HPE Rack.	
6	If selecting an SFP+ XCVR for this switch for use on the 6QSFP+/SFP28 uplink ports, then add qty 1 of the following adapter Kit per SFP+ XCVR;	
	HPE QSFP/SFP+ Adapter Kit	655874-B21
7	The following Transceivers install into this Switch's SFP+ Ports:	
	HPE Networking X120 1G SFP RJ45 T Transceiver	JD089B
	HPE Networking X120 1G SFP LC LH100 Transceiver	JD103A
	HPE Networking X120 1G SFP LC SX Transceiver	JD118B
	HPE Networking X120 1G SFP LC LX Transceiver	JD119B
8	TAA compliance versions: Products are Made in Puerto Rico (territory of the United States). Product software source code is analyzed to ensure security robustness in the United States by HPE employees with US citizenship.	
<b>Notes:</b>	Clic UNB - If an option is ordered with #0D1/#B01, then the switch must have #0D1 option.	

### Transceivers

Remarks	Description	SKU
	SFP Transceivers	
	HPE Networking X115 100M SFP LC FX Transceiver	JD102B
	HPE Networking X110 100M SFP LC LX Transceiver	JD120B
	HPE Networking X120 1G SFP RJ45 T Transceiver	JD089B
	HPE Networking X120 1G SFP LC LH100 Transceiver	JD103A
	HPE Networking X120 1G SFP LC SX Transceiver	JD118B
	HPE Networking X120 1G SFP LC LX Transceiver	JD119B
<b>Notes:</b>	The 48 ports chassis (fiber JL585A and copper JL586A) do NOT support 1G configuration on ports 29 to 36 included. 40 x 1 /10G ports 8 x 10G ports	
	SFP+ Transceivers	
	HPE Networking X130 10G SFP+ LC BiDi 10km-Uplink Transceiver	JL737A
	HPE Networking X130 10G SFP+ LC BiDi 10km-Downlink Transceiver	JL738A
	HPE Networking X130 10G SFP+ LC SR Transceiver	JD092B
	HPE Networking X130 10G SFP+ LC LR Transceiver	JD094B
	HPE Networking X240 10G SFP+ SFP+ 0.65m DAC Cable	JD095C
	HPE Networking X240 10G SFP+ SFP+ 1.2m DAC Cable	JD096C
	HPE Networking X240 10G SFP+ SFP+ 3m DAC Cable	JD097C
	HPE Networking X240 10G SFP+ SFP+ 5m DAC Cable	JG081C
	HPE Networking X2A0 10G SFP+ to SFP+ 7m Active Optical Cable	JL290A
	HPE Networking X2A0 10G SFP+ to SFP+ 10m Active Optical Cable	JL291A
	HPE Networking X2A0 10G SFP+ to SFP+ 20m Active Optical Cable	JL292A

### Configuration Information

#### QSFP+ Transceivers

HPE Networking X140 40G QSFP+ MPO SR4 Transceiver	JG325B
HPE Networking X140 40G QSFP+ CSR4 300m Transceiver	JG709A
HPE Networking X140 40G QSFP+ LC BiDi 100m MM Transceiver	JL251A
HPE Networking X140 40G QSFP+ LC LR4 SM 10km 1310nm Transceiver	JG661A
HPE Networking X140 40G QSFP+ LC LR4L 2km SM Transceiver	JL286A
HPE QSFP/SFP+ Adapter Kit	655874-B21
HPE Networking Comware X240 40G QSFP+ QSFP+ 1m Direct Attach Copper Cable	JG326A
HPE Networking Comware X240 40G QSFP+ QSFP+ 3m Direct Attach Copper Cable	JG327A
HPE Networking Comware X240 40G QSFP+ QSFP+ 5m Direct Attach Copper Cable	JG328A
HPE Networking Comware X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable	JG329A
HPE Networking Comware X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable	JG330A
HPE Networking Comware X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable	JG331A
HPE Networking X2A0 40G QSFP+ to QSFP+ 7m Active Optical Cable	JL287A
HPE Networking X2A0 40G QSFP+ to QSFP+ 10m Active Optical Cable	JL288A
HPE Networking X2A0 40G QSFP+ to QSFP+ 20m Active Optical Cable	JL289A

#### QSFP28 Transceivers

HPE Networking X150 100G QSFP28 MPO SR4 100m MM Transceiver	JL274A
HPE Networking X150 100G QSFP28 LC BiDi 100m MM Transceiver	JQ344A
HPE Networking X150 100G QSFP28 eSR4 300m MM Transceiver	JH672A
HPE Networking X150 100G QSFP28 PSM4 500m SM Transceiver	JH420A
HPE Networking X150 100G QSFP28 LC LR4 10km SM Transceiver	JL275A
HPE Networking X150 100G QSFP28 CWDM4 2km SM Transceiver	JH673A
HPE Networking X240 100G QSFP28 1m DAC Cable	JL271A
HPE Networking X240 100G QSFP28 3m DAC Cable	JL272A
HPE Networking X240 100G QSFP28 5m DAC Cable	JL273A
HPE Networking X2A0 100G QSFP28 to QSFP28 7m Active Optical Cable	JL276A
HPE Networking X2A0 100G QSFP28 to QSFP28 10m Active Optical Cable	JL277A
HPE Networking X2A0 100G QSFP28 to QSFP28 20m Active Optical Cable	JL278A

### Internal Power Supplies

Rule #	Description	SKU
	System (std 0 // max 2) User Selection (min 1 // max 2) per switch enclosure	
<a href="#">1, 2, 3, 5, 7</a>	HPE Networking 5710 250W FB AC Power Supply Unit	JL589A
	HPE Networking 5710 250W Front-to-Back AC Power Supply PDU NA JP or TW	JL589A#B2B
	HPE Networking 5710 250W Front-to-Back AC Power Supply PDU ROW	JL589A#B2C
	HPE Networking 5710 250W Front-to-Back AC Power Supply United States 220 volt	JL589A#B2E
	HPE Networking 5710 250W Front-to-Back AC Power Supply	JL589A#AC3
<a href="#">1, 2, 3, 6, 7</a>	HPE Networking 5710 250W BF AC Power Supply Unit	JL590A
	HPE FlexFabric 5710 250W Back-to-Front AC Power Supply PDU NA, JP or TW	JL590A#B2B
	HPE FlexFabric 5710 250W Back-to-Front AC Power Supply PDU ROW	JL590A#B2C
	HPE FlexFabric 5710 250W Back-to-Front AC Power Supply United States 220 volt	JL590A#B2E
	HPE FlexFabric 5710 250W Back-to-Front AC Power Supply	JL590A#AC3
<a href="#">1, 2, 4, 5, 7</a>	HPE Networking 5710 450W FB AC Power Supply Unit	JL592A

### Configuration Information

	HPE FlexFabric 5710 450W Front-to-Back AC Power Supply PDU NA, JP or TW	JL592A#B2B
	HPE FlexFabric 5710 450W Front-to-Back AC Power Supply PDU ROW	JL592A#B2C
	HPE FlexFabric 5710 450W Front-to-Back AC Power Supply United States 220 volt	JL592A#B2E
	HPE FlexFabric 5710 450W Front-to-Back AC Power Supply	JL592A#AC3
1, 2, 4, 6, 7	HPE Networking 5710 450W BF AC Power Supply Unit	JL593A
	HPE FlexFabric 5710 450W Back-to-Front AC Power Supply PDU NA, JP or TW	JL593A#B2B
	HPE FlexFabric 5710 450W Back-to-Front AC Power Supply PDU ROW	JL593A#B2C
	HPE FlexFabric 5710 450W Back-to-Front AC Power Supply United States 220 volt	JL593A#B2E
	HPE FlexFabric 5710 450W Back-to-Front AC Power Supply	JL593A#AC3
1, 4, 5	HPE Networking 5710 450W 48V FB DC Power Supply Unit	JL688A

#### Configuration Rules

Rule #	Description	SKU
1	If 2 power supplies are selected they must be the same SKU number.	
2	Localization (Wall Power Cord) required on orders without #B2B, #B2C (PDU Power Cord, #B2E and #AC3. (See Localization Menu) <b>Notes:</b> When Switches/Routers are Factory Racked, Then #B2B, or #B2C should be the Defaulted Power Cable option on the Switches/Routers.	
3	This power supply is only supported on JL585A, JL587A, S3K83A, S3K85A.	
4	This power supply is only supported on JL585A, JL586A, JL587A, JL589A, S3K83A, S3K84A, S3K85A, S3K86A.	
5	If this Front to Back PSU is selected, then only allow customer to select the following FanTray under Switch Enclosure Options Section: JL594A - HPE X721 FB Fan Tray	
6	If this Back to Front PSU is selected, then only allow customer to select the following FanTray under Switch Enclosure Options Section: JL595A - HPE X722 BF Fan Tray	
7	Unbuildable/FAN required, generates CFGU: If order is quoted for India and contains "#B2C" Option, then Display the following: – For BTO shipments to India: Please replace <Base Model>#B2C option with <Base Model>#AC3 in the Bill of Materials and add the appropriate INDIA PDU Power Cord below via Ad-Hoc:	
	HPE Networking 2.0m C13 to C14 PDU India Power Cord	JL671A
	HPE Networking 2.5m C15 to C14 PDU India Power Cord	JL672A
	HPE Networking 2.5m C19 to C20 PDU India Power Cord	JL673A

**Notes:** Drop down under power supply should offer the following options and results:

- Switch/Router/Power Supply to PDU Power Cord - #B2B in North America, Mexico, Taiwan, and Japan or #B2C ROW.  
(Configurators Default B2B or B2C for Rack Level CTO)
- Switch/Router/Power Supply to Wall Power Cord - Localized Option  
(Configurators Default for BTO and Box Level CTO)
- High Volt Switch/Router/Power Supply to Wall Power Cord - #B2E Option.  
(Offered only in North America, Mexico, Taiwan, and Japan)
- No Power Cord Selected - #AC3 Option
- The 450 Watt PSUs are supported in the SFP+ Switches but are not required.

### Switch Options

Remarks	Description	SKU
	Fan Trays	
	For JL585A, JL587A and JL689A System (std 0 // max 4) User Selection (min 4 // max 4) per switch	
	For JL586A System (std 0 // max 5) User Selection (min 5 // max 5) per switch	
	For S3K83A, S3K85A and S3K86A System (std 0 // max 4) User Selection (min 4 // max 4) per switch	
	For S3K84A System (std 0 // max 5) User Selection (min 5 // max 5) per switch	
	HPE Networking X721 FB Fan Tray	JL594A
	HPE Networking X722 BF Fan Tray	JL595A

### Configuration Information

**Notes:** Fan Trays cannot be mixed in the same switch enclosure  
This Fan Tray is only supported on JL585A, JL586A, JL587A, JL689A, S3K83A,  
S3K84A, S3K85A, S3K86A

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### Technical Specifications

HPE Networking Comware Switch 48SFP+ 6QSFP+ or 2QSFP28 5710 (JL585A)	
I/O ports and slots	48 1/10G SFP+ ports 6 x 40GbE ports or 3 x 40GbE ports and 1 x 100G port or 2 x 100GbE port
Additional ports and slots	Management ports 1 10M/100M/1000MBASE-T copper port 1 SFP port
	Console ports 1 mini USB console port 1 serial console port
Power supplies	2 power supply slots 1 minimum power supply required (ordered separately). Power supplies are hot swappable. For 1:1 redundancy this system requires two same-type power supplies to function properly.
Fan tray	4 fan tray slots The customer must order fan trays, as they are not included with the switch. This system requires four same-direction airflow fan trays to function properly. A failed fan tray must be replaced immediately. Fans are hot swappable
Physical characteristics	Dimensions 44 mm x 440 mm x 400 mm (1.73 in. x 17.32 in. x 15.75 in.) (1U height)
	Weight 10 kg (22.05 lb)
Memory and processor	1 GB flash, 4 GB SDRAM; packet buffer size: 12 MB
Performance	10 Gbps Latency (64-byte packets)
	Throughput 1071 Mpps
	Routing/Switching capacity 1440 Gbps
	Routing table size 16K entries (IPv4), 8K entries (IPv6)
	MAC address table size 208K entries
	ARP table Size 68K (1K static)
Reliability	MTBF (years) 135.90
Environment	Operating temperature 32°F to 113°F (0°C to 45°C)
	Operating relative humidity 10% to 90%, noncondensing
	Acoustic Low-speed fan: 52.5 dB; high-speed fan: 68.7 dB
Electrical characteristics	Frequency 50/60 Hz
	Maximum heat dissipation 607 BTU/hr
	AC voltage 100 VAC-240 VAC; Max. voltage: 264 VAC @ 50 Hz/60 Hz Max. output power: 250W / 450W depending on PSU selected Idle power: 74W / 108W Max. output power: 250W
	<b>Notes:</b> 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; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; EN 60950-1; AS/NZS 60950-1; CNS 14336-1
Emissions	VCCI Class A; EN 55032 Class A; ICES-003 Class A; AS/NZS CISPR 32 Class A; EN 61000-3-2; EN 61000-3-3; FCC (CFR 47, Part 15) Class A; CISPR 32 Class A; CNS 13438; KN32; TCVN 7189; Anatel Resolution 442; ETSI EN 300-386
Immunity	ETSI EN 300 386; EN 55024; KN35; CISPR 24
Management	IMC; CLI; out-of-band management; SNMP Manager; Telnet; FTP
Services	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> 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.

### Technical Specifications

HPE Networking Comware Switch 48XGT 6QSFP+ or 2QSFP28 5710 (JL586A)	
I/O ports and slots	40 x 1/10GBASE-T and 8 x 10GBASE-T ports 6 x 40GbE ports or 3 x 40GbE ports and 1 x 100G port or 2 x 100GbE port
Additional ports and slots	Management ports 1 10M/100M/1000MBASE-T copper port 1 SFP port
	Console ports 1 mini USB console port 1 serial console port
Power supplies	2 power supply slots 1 minimum power supply required (ordered separately). Power supplies are hot swappable. For 1:1 redundancy this system requires two same-type power supplies to function properly.
Fan tray	5 fan tray slots The customer must order fan trays, as they are not included with the switch. This system requires four same-direction airflow fan trays to function properly. A failed fan tray must be replaced immediately. Fans are hot swappable
Physical characteristics	Dimensions 44 mm x 440 mm x 460 mm (1.73 in. x 17.32 in. x 18.11 in.) (1U height)
	Weight 10 kg (22.05 lb)
Memory and processor	1 GB flash, 4 GB SDRAM; packet buffer size: 12 MB
Performance	10 Gbps Latency (64-byte packets)
	Throughput 1071 Mpps
	Routing/Switching capacity 1440 Gbps
	Routing table size 16K entries (IPv4), 8K entries (IPv6)
	MAC address table size 208K entries
	ARP table Size 68K (1K static)
Reliability	MTBF (years) 114.43
Environment	Operating temperature 32°F to 113°F (0°C to 45°C)
	Operating relative humidity 10% to 90%, noncondensing
	Acoustic Low-speed fan: 52.4 dB; high-speed fan: 68.6 dB
Electrical characteristics	Frequency 50/60 Hz
	Maximum heat dissipation 900 BTU/hr
	AC voltage 100-240 VAC; Max. voltage: 264 VAC @ 50Hz/60 Hz Max. output power: 450W Idle power: 108W
	<b>Notes:</b> 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; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; EN 60950-1; AS/NZS 60950-1; CNS 14336-1
Emissions	VCCI Class A; EN 55032 Class A; ICES-003 Class A; AS/NZS CISPR 32 Class A; EN 61000-3-2; EN 61000-3-3; FCC (CFR 47, Part 15) Class A; CISPR 32 Class A; CNS 13438; KN32; TCVN 7189; Anatel Resolution 442; ETSI EN 300-386
Immunity	ETSI EN 300 386; EN 55024; KN35; CISPR 24
Management	IMC; CLI; out-of-band management; SNMP Manager; Telnet; FTP
Services	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> 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.

### Technical Specifications

HPE Networking Comware Switch 24SFP+ 6QSFP+ or 2QSFP28 5710 (JL587A)	
I/O ports and slots	24 x 1/10G SFP+ ports 6 x 40GbE ports or 3 x 40GbE ports and 1 x 100G port or 2 x 100GbE port
Additional ports and slots	Management ports 1 10M/100M/1000MBASE-T copper port 1 SFP port
	Console ports 1 mini USB console port 1 serial console port
Power supplies	2 power supply slots 1 minimum power supply required (ordered separately). Power supplies are hot swappable. For 1:1 redundancy this system requires two same-type power supplies to function properly.
Fan tray	4 fan tray slots The customer must order fan trays, as they are not included with the switch. This system requires four same-direction airflow fan trays to function properly. A failed fan tray must be replaced immediately. Fans are hot swappable
Physical characteristics	Dimensions 44 mm x 440 mm x 400 mm (1.73 in. x 17.32 in. x 15.75 in.) (1U height)
	Weight 10 kg (22.05 lb)
Memory and processor	1 GB flash, 4 GB SDRAM; packet buffer size: 12 MB
Performance	10 Gbps Latency (64-byte packets)
	Throughput 714 Mpps
	Routing/Switching capacity 960 Gbps
	Routing table size 16K entries (IPv4), 8K entries (IPv6)
	MAC address table size 208K entries
	ARP table Size 68K (1K static)
Reliability	MTBF (years) 145.41
Environment	Operating temperature 32°F to 113°F (0°C to 45°C)
	Operating relative humidity 10% to 90%, noncondensing
	Acoustic Low-speed fan: 52.4 dB; high-speed fan: 68.7 dB
Electrical characteristics	Frequency 50/60 Hz
	Maximum heat dissipation 457 BTU/hr
	AC voltage 100 VAC-240 VAC; Max. voltage: 264 VAC @ 50 Hz/60 Hz Max. output power: 250W / 450W depending on PSU selected Idle power: 74W / 108W
	<b>Notes:</b> 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; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; EN 60950-1; AS/NZS 60950-1; CNS 14336-1
Emissions	VCCI Class A; EN 55032 Class A; ICES-003 Class A; AS/NZS CISPR 32 Class A; EN 61000-3-2; EN 61000-3-3; FCC (CFR 47, Part 15) Class A; CISPR 32 Class A; CNS 13438; KN32; TCVN 7189; Anatel Resolution 442; ETSI EN 300-386
Immunity	ETSI EN 300 386; EN 55024; KN35; CISPR 24
Management	IMC; CLI; out-of-band management; SNMP Manager; Telnet; FTP
Services	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> 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.

### Technical Specifications

HPE Networking Comware Switch 24XGT 6QSFP+ or 2QSFP28 5710 (JL689A)	
I/O ports and slots	24 x 1/10GBASE-T ports 6 x 40GbE ports or 3 x 40GbE ports and 1 x 100G port or 2 x 100GbE port
Additional ports and slots	Management ports 1 10M/100M/1000MBASE-T copper port 1 SFP port
	Console ports 1 mini USB console port 1 serial console port
Power supplies	2 power supply slots 1 minimum power supply required (ordered separately). Power supplies are hot swappable. For 1:1 redundancy this system requires two same-type power supplies to function properly.
Fan tray	4 fan tray slots The customer must order fan trays, as they are not included with the switch. This system requires four same-direction airflow fan trays to function properly. A failed fan tray must be replaced immediately. Fans are hot swappable
Physical characteristics	Dimensions 44 mm x 440 mm x 460 mm (1.73 in. x 17.32 in. x 18.11 in.) (1U height)
	Weight 9.9 kg (21.83 lb)
Memory and processor	1 GB flash, 4 GB SDRAM; packet buffer size: 12 MB
Performance	10 Gbps Latency (64-byte packets)
	Throughput 714 Mpps
	Routing/Switching capacity 960 Gbps
	Routing table size 16K entries (IPv4), 8K entries (IPv6)
	MAC address table size 208K entries
	ARP table Size 68K (1K static)
Reliability	MTBF (years) 43.12
Environment	Operating temperature 32°F to 113°F (0°C to 45°C)
	Operating relative humidity 10% to 90%, noncondensing
	Acoustic Low-speed fan: 52.7 dB; high-speed fan: 67.0 dB
Electrical characteristics	Frequency 50/60 Hz
	Maximum heat dissipation 624 BTU/hr
	AC voltage 100 VAC-240 VAC; Max. voltage: 264 VAC @ 50 Hz/60 Hz Max. output power: 450W
	<b>Notes:</b> 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; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; EN 60950-1; AS/NZS 60950-1; CNS 14336-1
Emissions	VCCI Class A; EN 55032 Class A; ICES-003 Class A; AS/NZS CISPR 32 Class A; EN 61000-3-2; EN 61000-3-3; FCC (CFR 47, Part 15) Class A; CISPR 32 Class A; CNS 13438; KN32; TCVN 7189; Anatel Resolution 442; ETSI EN 300-386
Immunity	ETSI EN 300 386; EN 55024; KN35; CISPR 24
Environmental	RoHS compliant
Management	IMC; CLI; out-of-band management; SNMP Manager; Telnet; FTP
Services	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

### Standards and protocols

Applies to all products in series

- IEEE 802.1ad Q-in-Q
- IEEE 802.1AX-2008 Link Aggregation IEEE 802.1D MAC Bridges
- IEEE 802.1p Priority IEEE 802.1Q VLANs
- IEEE 802.1Q VLANs
- IEEE 802.1Qau Quantized Congestion Notification (QCN)
- IEEE 802.1Qaz Enhanced Transmission Selection (ETS)

### Technical Specifications

- IEEE 802.1Qaz Data Center Bridging Capability Exchange (DCBx)
- IEEE 802.1Qbb Priority-based Flow Control (PFC)
- IEEE 802.1s Multiple Spanning Trees
- IEEE 802.1w Rapid Reconfiguration of Spanning Tree
- IEEE 802.3ad LACP
- IEEE 802.3ae 10-Gigabit Ethernet IEEE 802.3ag Ethernet OAM
- IEEE 802.3ah EFM over Point to Point Fiber-EFMF
- IEEE 802.3x Flow Control
- 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 856 TELNET
- RFC 868 Time Protocol
- RFC 896 Congestion Control in IP/TCP Internetworks
- RFC 950 Internet Standard Subnetting Procedure
- RFC 1027 Proxy ARP
- RFC 1058 RIPv1
- RFC 1091 Telnet Terminal-Type Option
- RFC 1141 Incremental updating of the Internet checksum
- RFC 1142 OSI IS-IS Intra-domain Routing Protocol
- RFC 1191 Path MTU discovery
- RFC 1213 Management Information Base for Network Management of TCP/IP-based internets
- RFC 1253 (OSPFv2)
- RFC 1531 Dynamic Host Configuration Protocol
- RFC 1533 DHCP Options and BOOTP Vendor Extensions
- RFC 1534 DHCP/BOOTP Interoperation
- RFC 1541 DHCP
- RFC 1542 Clarifications and Extensions for the Bootstrap Protocol
- RFC 1591 DNS (client only)
- RFC 1624 Incremental Internet Checksum
- RFC 1723 RIP v2
- RFC 1812 IPv4 Routing
- RFC 2030 Simple Network Time Protocol (SNTP) v4
- RFC 2131 DHCP
- RFC 2236 IGMP Snooping
- RFC 2338 VRRP
- RFC 2453 RIPv2
- RFC 2581 TCP Congestion Control
- RFC 2644 Directed Broadcast Control
- RFC 2767 Dual Stacks IPv4 & IPv6
- RFC 2865 RADIUS
- RFC 2868 RADIUS Attributes for Tunnel Protocol Support
- RFC 2890 Key and Sequence Number Extensions to GRE
- RFC 3046 DHCP Relay Agent Information Option
- RFC 3411 An Architecture for Describing SNMP Management Frameworks
- RFC 3412 Message Processing and Dispatching for the SNMP
- RFC 3413 SNMP Applications
- RFC 3416 Protocol Operations for SNMP
- RFC 3417 Transport Mappings for the SNMP
- RFC 3418 Management Information Base (MIB) for the SNMP
- RFC 3768 VRRP
- RFC 4250 The SSH Protocol Assigned Numbers
- RFC 4251 The SSH Protocol Architecture
- RFC 4252 The SSH Authentication Protocol
- RFC 4253 The SSH Transport Layer Protocol
- RFC 4254 The SSH Connection Protocol
- RFC 4292 IP Forwarding Table MIB

### Technical Specifications

- RFC 4293 Management Information Base for the IP
- RFC 4419 Diffie-Hellman Group Exchange for the SSH Transport Layer Protocol
- RFC 4594 Configuration Guidelines for DiffServ Service Classes
- RFC 4601 PIM-Sparse Mode (PIM-SM): Protocol Specification (Revised)
- RFC 4604 using IGMPv3 and MLD Protocol Version 2 (MLDv2) for Source-Specific Multicast
- RFC 4607 Source-Specific Multicast for IP
- RFC 4941 Privacy Extensions for Stateless Address Autoconfiguration in IPv6
- RFC 5340 OSPF for IPv6
- RFC 5905 Network Time Protocol Version 4: Protocol and Algorithms Specification
- RFC 2929 RADIUS Support DS for RADIUS

### BGP

- RFC 1163 BGP
- RFC 1771 BGPv4
- RFC 1997 BGP Communities Attribute
- RFC 2918 Route Refresh Capability
- RFC 3392 Capabilities Advertisement with BGP-4
- RFC 4271 A Border Gateway Protocol 4 (BGP-4)
- RFC 4360 BGP Extended Communities Attribute
- RFC 4456 BGP Route Reflection: An alternative to Full Mesh Internal BGP (IBGP)

### Network management

- RFC 2580 Conformance Statements for SMIv2
- RFC 3164 BSD Syslog Protocol

### Device management

- RFC 1157 SNMPv1/v2c
- RFC 1305 NTPv3
- RFC 1591 DNS (client)
- RFC 1902 (SNMPv2)
- RFC 1908 (SNMPv1/2 coexistence)
- RFC 2573 (SNMPv3 applications)
- RFC 2576 (coexistence between SNMPv1, v2, v3)
- RFC 2819 RMON
- Multiple configuration files Multiple software images SSHv1/SSHv2 TACACS/TACACS+

### IPv6

- RFC 2080 RIPng for IPv6
- RFC 2460 IPv6 Specification
- RFC 2461 IPv6 Neighbor Discovery
- RFC 2462 IPv6 Stateless Address Autoconfiguration
- RFC 2463 ICMPv6
- RFC 2464 Transmission of IPv6 over Ethernet Networks
- RFC 2473 Generic Packet Tunneling in IPv6
- RFC 2545 Use of MP-BGP-4 for IPv6
- RFC 2563 ICMPv6
- RFC 2711 IPv6 Router Alert Option
- RFC 2740 OSPFv3 for IPv6
- RFC 2767 Dual stacks IPv4 & IPv6
- RFC 3315 DHCPv6 (client and relay)
- RFC 3484 Default Address Selection for IPv6
- RFC 3810 MLDv2 for IPv6
- RFC 4213 Basic Transition Mechanisms for IPv6 Hosts and Routers
- RFC 4291 IP Version 6 Addressing Architecture
- RFC 4443 ICMPv6
- RFC 4552 Authentication/Confidentiality for OSPFv3
- RFC 4862 IPv6 Stateless Address Autoconfiguration
- RFC 5095 Deprecation of Type 0 Routing Headers in IPv6

### Technical Specifications

#### OSPF

- RFC 1587 OSPF NSSA
- RFC 2328 OSPFv2
- RFC 3101 OSPF NSSA
- RFC 3137 OSPF Stub Router Advertisement
- RFC 3623 Graceful OSPF Restart
- RFC 4811 OSPF Out-of-Band LSDB Resynchronization
- RFC 4812 OSPF Restart Signaling
- RFC 4813 OSPF Link-Local Signaling

#### Security

- RFC 1321 The MD5 Message-Digest Algorithm
- RFC 2818 HTTP Over TLS
- RFC 6192 Partial Support-Protecting the Router Control Plane
- ACLs SSHv2

#### MIBs

- RFC 1213 MIB II
  - RFC 1907 SNMPv2 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 2737 Entity MIB (Version 2)
  - RFC 3414 SNMP-User based-SM MIB
  - RFC 3415 SNMP-View based-ACM MIB
  - LLDP-EXT-DOT1-MIB
  - LLDP-EXT-DOT3-MIB
  - LLDP-MIB
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#### QoS/CoS

- IEEE 802.1p (CoS)
  - RFC 2475 DiffServ Architecture
  - RFC 2597 DiffServ Assured Forwarding (AF)
  - RFC 3247 Supplemental Information for the New Definition of the Expedited Forwarding Per-Hop Behavior (EF PHB)
  - RFC 3260 New Terminology and Clarifications for DiffServ
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### Summary of Changes

Date	Version History	Action	Description of Change
27-Feb-2026	<a href="#">Version 21</a>	Changed	Rebranding update applied to QuickSpecs
02-Dec-2024	<a href="#">Version 20</a>	Changed	Configuration Information and Technical Specifications sections were updated.
14-Oct-2024	<a href="#">Version 19</a>	Changed	Configuration Information section was updated.
01-Jul-2024	<a href="#">Version 18</a>	Changed	Overview and Configuration Information sections were updated.
04-Dec-2023	<a href="#">Version 17</a>	Changed	Series name was updated.
04-Apr-2022	<a href="#">Version 16</a>	Changed	Technical Specifications section was updated.
26-Apr-2021	<a href="#">Version 15</a>	Changed	Updated list of supported transceivers in Configuration Information section.
01-Mar-2021	<a href="#">Version 14</a>	Changed	SKU was removed in Configuration Information section.
02-Nov-2020	<a href="#">Version 13</a>	Changed	Configuration Information section was updated.
06-Jul-2020	<a href="#">Version 12</a>	Changed	Configuration Information section was updated.
04-May-2020	<a href="#">Version 11</a>	Changed	Configuration Information and Related Options sections were updated.
23-Mar-2020	<a href="#">Version 10</a>	Changed	Configuration Information section was updated.
02-Dec-2019	<a href="#">Version 9</a>	Changed	Configuration Information was updated. New SKU was added.
04-Nov-2019	<a href="#">Version 8</a>	Changed	Related Options was updated.
03-Sep-2019	<a href="#">Version 7</a>	Changed	Related Options and Configuration Information were updated New SKUs were added to Configuration Information and Related Options.
01-Jul-2019	<a href="#">Version 6</a>	Changed	Overview, Standard Features, Configuration Information and Technical Specification sections were updated. New JL689A model was added.
03-Jun-2019	<a href="#">Version 5</a>	Changed	Standard Features section was updated
13-May-2019	<a href="#">Version 4</a>	Changed	The JL586A I/O ports and slots was updated.
02-Apr-2019	<a href="#">Version 3</a>	Changed	Obsolete SKUs were removed. New SKUs were added. Related option section was updated.
01-Oct-2018	<a href="#">Version 2</a>	Changed	Recommended and Extended markings removed from the document.
06-Aug-2018	<a href="#">Version 1</a>	New	New QuickSpecs

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