

Overview

HPE FlexFabric 5710 Switch Series



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



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



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

## Overview

### Models

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

### 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

### Product overview

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

HPE FlexFabric 5710 Switch Series 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 FlexFabric 5710. While IRF reduces management complexities, it also delivers agility with < 50 ms convergence time.

### Features and benefits

#### 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.

#### Data center optimized

- **Versatile server connectivity**  
HPE FlexFabric 5710 Switch Series 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.

## Overview

- **High-performance switching**  
Cut-through and nonblocking architecture delivers low latency (~1.5  $\mu$ s for 10GbE) for very demanding enterprise applications. HPE FlexFabric 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 HPE FlexFabric 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.

## Management and manageability

- **Fullfeatured 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**  
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

## Overview

- **sFlow (RFC 3176)**  
Provides wirespeed traffic accounting and monitoring
- **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 real-time network monitoring purposes
- **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

## Resiliency and high availability

- **HPE IRF technology**  
Enables an HPE FlexFabric to deliver resilient, scalable, and secured data center network for physical and virtualized environment; groups up to HPE FlexFabric 5710 Switch Series 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)**

## Overview

- **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

## Security

HPE FlexFabric 5710 Switch Series 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**

## 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

## Overview

- **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

## 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
- **Operations, administration and maintenance (OAM) support**  
provides support for 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

## 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
- **Static IPv6 routing**  
Provides simple manually configured IPv6 routing
- **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 RIPv6

## 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

## Warranty and support

## Overview

- **1-year warranty**  
see <http://www.hpe.com/networking/warrantysummary> for warranty and support information included with your product purchase.
  - **Software releases**  
to find software for your product, refer to <http://www.hpe.com/networking/support>; for details on the software releases available with your product purchase, refer to <http://www.hpe.com/networking/warrantysummary>
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**HPE Recommended Options** have the best performance, value and availability.

**Recommended Options** have been selected by Hewlett Packard Enterprise experts to provide the right technology for a range of workloads and market segments. Fully integrated into the ProLiant management and security experience, Recommended Options provide the best fit with timely availability. **[View the list for your region.](#)**

**Extended Options** provide an extended catalog of products tailored for customers in specific markets or with specific workloads, requiring the utmost in performance or value. Fully integrated into the ProLiant management and security experience, Extended Options represent great value and performance but typically have a longer lead-time.

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## Configuration

### BTO Models

#### Standard Switch Chassis

##### HPE FlexFabric 5710 48SFP+ 6QSFP+ or 2QSFP28 Switch

- 48 - 1/10GbE SFP/SFP+ ports (min=0 \ max=48 SFP/SFP+ Transceivers)
- 6QS+/2QS28 ports, configurable as follows:
  - 6 - 40GbE QSFP+ ports (min=0 \ max=6 QSFP+ Transceivers)  
OR
  - A maximum of 2 - 100GbE QSFP28 ports (min=0 \ max=2 QSFP28 Transceivers)  
OR
  - A maximum of 3 - 40GbE QSFP+ ports and 1 - 100GbE QSFP28 port (max=3 QSFP+ & max=1 QSFP28 Transceivers)
- 1 - 100M SFP management Port (min=0 \ max=1 SFP Transceiver)
- 1 Power Supply Required
- Must select min 4 Fan Tray
- 1U - Height

JL585A

See  
Configuration  
**NOTE: 1, 2, 3,**  
**4**

##### HPE FlexFabric 5710 48XGT 6QSFP+ or 2QSFP28 Switch

- 48 RJ45 1/10GBase-T Copper ports
- 6QS+/2QS28 ports, configurable as follows:
  - 6 - 40GbE QSFP+ ports (min=0 \ max=6 QSFP+ Transceivers)  
OR
  - A maximum of 2 - 100GbE QSFP28 ports (min=0 \ max=2 QSFP28 Transceivers)  
OR
  - A maximum of 3 - 40GbE QSFP+ ports and 1 - 100GbE QSFP28 port (max=3 QSFP+ & max=1 QSFP28 Transceivers)
- 1 - 100M SFP management Port (min=0 \ max=1 SFP Transceiver)
- 1 Power Supply Required
- Must select min 5 Fan Tray
- 1U - Height

JL586A

See Configuration  
**NOTE:1, 3, 4**

##### HPE FlexFabric 5710 24SFP+ 6QSFP+ or 2QSFP28 Switch

- 24 - 1/10GbE SFP/SFP+ ports (min=0 \ max=24 SFP/SFP+ Transceivers)
- 6QS+/2QS28 ports, configurable as follows:
  - 6 - 40GbE QSFP+ ports (min=0 \ max=6 QSFP+ Transceivers)  
OR
  - A maximum of 2 - 100GbE QSFP28 ports (min=0 \ max=2 QSFP28 Transceivers)  
OR
  - A maximum of 3 - 40GbE QSFP+ ports and 1 - 100GbE QSFP28 port (max=3 QSFP+ & max=1 QSFP28 Transceivers)
- 1 - 100M SFP management Port (min=0 \ max=1 SFP Transceiver)
- 1 Power Supply Required
- Must select min 4 Fan Tray
- 1U - Height

JL587A

See Configuration  
**NOTE: 1, 2, 3, 4**



## Configuration

### Note 1 The following Transceivers install into this Switch's SFP Management Port:

HPE X115 100M SFP LC FX Transceiver	JD102B
HPE X110 100M SFP LC LX Transceiver	JD120B
HPE X110 100M SFP LC LH40 Transceiver	JD090A

### Note 2 The following Transceivers install into this Switch's SFP+ Ports:

HPE X120 1G SFP RJ45 T Transceiver	JD089B
HPE X120 1G SFP LC SX Transceiver	JD118B
HPE X120 1G SFP LC LX Transceiver	JD119B
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 LR Transceiver	JD094B
HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
HPE FlexNetwork X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
HPE X2A0 10G SFP+ to SFP+ 7m Active Optical Cable	JL290A
HPE X2A0 10G SFP+ to SFP+ 10m Active Optical Cable	JL291A
HPE X2A0 10G SFP+ to SFP+ 20m Active Optical Cable	JL292A

### Note 3 The following Transceivers install into this switch's QSFP+ Ports:

HPE X140 40G QSFP+ MPO SR4 Transceiver	JG325B
HPE X140 40G QSFP+ MPO MM 850nm CSR4 300m Transceiver	JG709A
HPE X140 40G QSFP+ LC BiDi 100m MM Transceiver	JL251A
HPE X140 40G QSFP+ LC LR4 SM 10km 1310nm Transceiver	JG661A
HPE X140 40G QSFP+ LC LR4L 2km SM Transceiver	JL286A
HPE FlexNetwork X240 40G QSFP+ QSFP+ 1m Direct Attach Copper Cable	JG326A
HPE FlexNetwork X240 40G QSFP+ QSFP+ 3m Direct Attach Copper Cable	JG327A
HPE FlexNetwork X240 40G QSFP+ QSFP+ 5m Direct Attach Copper Cable	JG328A
HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable	JG329A
HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable	JG330A
HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable	JG331A
HPE X2A0 40G QSFP+ to QSFP+ 7m Active Optical Cable	JL287A
HPE X2A0 40G QSFP+ to QSFP+ 10m Active Optical Cable	JL288A
HPE X2A0 40G QSFP+ to QSFP+ 20m Active Optical Cable	JL289A

### Note 4 The following 100G Transceivers install into this switch's QSFP+/QSFP28 Ports:

HPE X150 100G QSFP28 MPO SR4 100m MM Transceiver	JL274A
HPE X150 100G QSFP28 MPO PSM4 500m SM Transceiver	JH420A
HPE X150 100G QSFP28 LC LR4 10km SM Transceiver	JL275A
HPE X150 100G QSFP28 CWDM4 2km SM Transceiver	JH673A
HPE X240 100G QSFP28 to QSFP28 1m Direct Attach Copper Cable	JL271A
HPE X240 100G QSFP28 to QSFP28 3m Direct Attach Copper Cable	JL272A
HPE X240 100G QSFP28 to QSFP28 5m Direct Attach Copper Cable	JL273A
HPE X2A0 100G QSFP28 to QSFP28 7m Active Optical Cable	JL276A

## Configuration

HPE X2A0 100G QSFP28 to QSFP28 10m Active Optical Cable  
HPE X2A0 100G QSFP28 to QSFP28 20m Active Optical Cable

JL277A  
JL278A

### Remarks

OCA Only Model Selection Form -  
HPE Offering > DataCenter Networking > FlexFabric Switches - Access:  
HPE Flexfabric 5710 Switch Series

## Rack Level Integration CTO Models

### Standard Switch Chassis

HPE FlexFabric 5710 48SFP+ 6QSFP+ or 2QSFP28 Switch

JL585A

- 48 - 1/10GbE SFP/SFP+ ports (min=0 \ max=48 SFP/SFP+ Transceivers)
- 6 QS+/2QS28 ports, configurable as follows:
  - 6 - 40GbE QSFP+ ports (min=0 \ max=6 QSFP+ Transceivers)
  - OR
  - A maximum of 2 - 100GbE QSFP28 ports (min=0 \ max=2 QSFP28 Transceivers)
  - OR
  - A maximum of 3 - 40GbE QSFP+ ports and 1 - 100GbE QSFP28 port (max=3 QSFP+ & max=1 QSFP28 Transceivers)
- 1 - 100M SFP management Port (min=0 \ max=1 SFP Transceiver)
- 1 Power Supply Required
- Must select min 4 Fan Tray
- 1U - Height

See  
Configuration  
**NOTE: 1, 2, 3,**  
**4, 5**

HPE FlexFabric 5710 48XGT 6QSFP+ or 2QSFP28 Switch

JL586A

- 48 RJ45 1/10GBase-T Copper ports
- 6 QS+/2QS28 ports, configurable as follows:
  - 6 - 40GbE QSFP+ ports (min=0 \ max=6 QSFP+ Transceivers)
  - OR
  - A maximum of 2 - 100GbE QSFP28 ports (min=0 \ max=2 QSFP28 Transceivers)
  - OR
  - A maximum of 3 - 40GbE QSFP+ ports and 1 - 100GbE QSFP28 port (max=3 QSFP+ & max=1 QSFP28 Transceivers)
- 1 - 100M SFP management Port (min=0 \ max=1 SFP Transceiver)
- 1 Power Supply Required
- Must select min 5 Fan Tray
- 1U - Height

See Configuration  
**NOTE: 1, 3, 4, 5**

HPE FlexFabric 5710 24SFP+ 6QSFP+ or 2QSFP28 Switch

JL587A

- 24 - 1/10GbE SFP/SFP+ ports (min=0 \ max=24 SFP/SFP+ Transceivers)
- 6QS+/2QS28 ports, configurable as follows:
  - 6 - 40GbE QSFP+ ports (min=0 \ max=6 QSFP+ Transceivers)
  - OR
  - A maximum of 2 - 100GbE QSFP28 ports (min=0 \ max=2 QSFP28 Transceivers)
  - OR
  - A maximum of 3 - 40GbE QSFP+ ports and 1 - 100GbE QSFP28 port (max=3 QSFP+ & max=1 QSFP28 Transceivers)
- 1 - 100M SFP management Port (min=0 \ max=1 SFP Transceiver)
- 1 Power Supply Required

See Configuration  
**NOTE: 1, 2, 3, 4, 5**

## Configuration

- Must select min 4 Fan Tray
- 1U - Height1U - Height

### Configuration Rules

**Note 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 X115 100M SFP LC FX Transceiver	JD102B
HPE X110 100M SFP LC LX Transceiver	JD120B
HPE X110 100M SFP LC LH40 Transceiver	JD090A

**Note 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 X120 1G SFP RJ45 T Transceiver	JD089B
HPE X120 1G SFP LC SX Transceiver	JD118B
HPE X120 1G SFP LC LX Transceiver	JD119B
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 LR Transceiver	JD094B
HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
HPE FlexNetwork X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
HPE X2A0 10G SFP+ to SFP+ 7m Active Optical Cable	JL290A
HPE X2A0 10G SFP+ to SFP+ 10m Active Optical Cable	JL291A
HPE X2A0 10G SFP+ to SFP+ 20m Active Optical Cable	JL292A

**Note 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 X140 40G QSFP+ MPO SR4 Transceiver	JG325B
HPE X140 40G QSFP+ MPO MM 850nm CSR4 300m Transceiver	JG709A
HPE X140 40G QSFP+ LC BiDi 100m MM Transceiver	JL251A
HPE X140 40G QSFP+ LC LR4 SM 10km 1310nm Transceiver	JG661A
HPE X140 40G QSFP+ LC LR4L 2km SM Transceiver	JL286A
HPE FlexNetwork X240 40G QSFP+ QSFP+ 1m Direct Attach Copper Cable	JG326A
HPE FlexNetwork X240 40G QSFP+ QSFP+ 3m Direct Attach Copper Cable	JG327A
HPE FlexNetwork X240 40G QSFP+ QSFP+ 5m Direct Attach Copper Cable	JG328A
HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable	JG329A
HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable	JG330A
HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable	JG331A
HPE X2A0 40G QSFP+ to QSFP+ 7m Active Optical Cable	JL287A
HPE X2A0 40G QSFP+ to QSFP+ 10m Active Optical Cable	JL288A
HPE X2A0 40G QSFP+ to QSFP+ 20m Active Optical Cable	JL289A

**Note 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

## Configuration

HPE X150 100G QSFP28 MPO SR4 100m MM Transceiver	JL274A
HPE X150 100G QSFP28 MPO PSM4 500m SM Transceiver	JH420A
HPE X150 100G QSFP28 LC LR4 10km SM Transceiver	JL275A
HPE X150 100G QSFP28 CWD4 2km SM Transceiver	JH673A
HPE X240 100G QSFP28 to QSFP28 1m Direct Attach Copper Cable	JL271A
HPE X240 100G QSFP28 to QSFP28 3m Direct Attach Copper Cable	JL272A
HPE X240 100G QSFP28 to QSFP28 5m Direct Attach Copper Cable	JL273A
HPE X2A0 100G QSFP28 to QSFP28 7m Active Optical Cable	JL276A
HPE X2A0 100G QSFP28 to QSFP28 10m Active Optical Cable	JL277A
HPE X2A0 100G QSFP28 to QSFP28 20m Active Optical Cable	JL278A

**Note 4** If HPE CTO Switch Chassis is selected for Rack Level Integration, Then the Switch needs to integrate (with #OD1) to the HPE Rack.

### Remarks

Clic UNB - If an option is ordered with #OD1/#B01, then the switch must have #OD1 option.

## Transceivers

### SFP Transceivers

HPE X115 100M SFP LC FX Transceiver	JD102B
HPE X110 100M SFP LC LX Transceiver	JD120B
HPE X110 100M SFP LC LH40 Transceiver	JD090A
HPE X120 1G SFP RJ45 T Transceiver	JD089B
HPE X120 1G SFP LC SX Transceiver	JD118B
HPE X120 1G SFP LC LX Transceiver	JD119B
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

### SFP+ Transceivers

HPE X130 10G SFP+ LC SR Transceiver	JD092B
HPE X130 10G SFP+ LC LR Transceiver	JD094B
HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
HPE FlexNetwork X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
HPE X2A0 10G SFP+ to SFP+ 7m Active Optical Cable	JL290A
HPE X2A0 10G SFP+ to SFP+ 10m Active Optical Cable	JL291A
HPE X2A0 10G SFP+ to SFP+ 20m Active Optical Cable	JL292A

### QSFP+ Transceivers

HPE X140 40G QSFP+ MPO SR4 Transceiver	JG325B
HPE X140 40G QSFP+ MPO MM 850nm CSR4 300m Transceiver	JG709A
HPE X140 40G QSFP+ LC BiDi 100m MM Transceiver	JL251A
HPE X140 40G QSFP+ LC LR4 SM 10km 1310nm Transceiver	JG661A

## Configuration

HPE X140 40G QSFP+ LC LR4L 2km SM Transceiver	JL286A
HPE FlexNetwork X240 40G QSFP+ QSFP+ 1m Direct Attach Copper Cable	JG326A
HPE FlexNetwork X240 40G QSFP+ QSFP+ 3m Direct Attach Copper Cable	JG327A
HPE FlexNetwork X240 40G QSFP+ QSFP+ 5m Direct Attach Copper Cable	JG328A
HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable	JG329A
HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable	JG330A
HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable	JG331A
HPE X2A0 40G QSFP+ to QSFP+ 7m Active Optical Cable	JL287A
HPE X2A0 40G QSFP+ to QSFP+ 10m Active Optical Cable	JL288A
HPE X2A0 40G QSFP+ to QSFP+ 20m Active Optical Cable	JL289A

## QSFP28 Transceivers

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

## Internal Power Supplies

System (std 0 // max 2) User Selection (min 1 // max 2) per switch enclosure

HPE FlexFabric 5710 250W Front-to-Back AC Power Supply	JL589A
<ul style="list-style-type: none"> <li>includes 1 x c13, 250w</li> </ul>	See Configuration <b>NOTE: 1, 2, 3</b>
PDU Cable NA/MEX/TW/JP	JL589A#B2B
<ul style="list-style-type: none"> <li>C15 PDU Jumper Cord (NA/MEX/TW/JP)</li> </ul>	
PDU Cable ROW	JL589A#B2C
<ul style="list-style-type: none"> <li>C15 PDU Jumper Cord (ROW)</li> </ul>	
High Volt Switch/Router to Wall Power Cord	JL589A#B2E
<ul style="list-style-type: none"> <li>NEMA L6-20P Cord (NA/MEX/JP/TW)</li> </ul>	
No Power Cord	JL589A#AC3
<ul style="list-style-type: none"> <li>No Localized Power Cord Selected</li> </ul>	
HPE FlexFabric 5710 250W Back-to-Front AC Power Supply	JL590A
<ul style="list-style-type: none"> <li>includes 1 x c13, 250w</li> </ul>	See Configuration <b>NOTE: 1, 2, 3</b>

## Configuration

PDU Cable NA/MEX/TW/JP	JL590A#B2B
<ul style="list-style-type: none"> <li>C15 PDU Jumper Cord (NA/MEX/TW/JP)</li> </ul>	
PDU Cable ROW	JL590A#B2C
<ul style="list-style-type: none"> <li>C15 PDU Jumper Cord (ROW)</li> </ul>	
High Volt Switch to Wall Power Cord	JL590A#B2E
<ul style="list-style-type: none"> <li>NEMA L6-20P Cord (NA/MEX/JP/TW)</li> </ul>	
No Power Cord	JL590A#AC3
<ul style="list-style-type: none"> <li>No Localized Power Cord Selected</li> </ul>	
HPE FlexFabric 5710 450W Front-to-Back AC Power Supply	JL592A
<ul style="list-style-type: none"> <li>includes 1 x c13, 450w</li> </ul>	See Configuration <b>NOTE: 1, 2, 4</b>
PDU Cable NA/MEX/TW/JP	JL592A#B2B
<ul style="list-style-type: none"> <li>C15 PDU Jumper Cord (NA/MEX/TW/JP)</li> </ul>	
PDU Cable ROW	JL592A#B2C
<ul style="list-style-type: none"> <li>C15 PDU Jumper Cord (ROW)</li> </ul>	
High Volt Switch to Wall Power Cord	JL592A#B2E
<ul style="list-style-type: none"> <li>NEMA L6-20P Cord (NA/MEX/JP/TW)</li> </ul>	
No Power Cord	JL592A#AC3
<ul style="list-style-type: none"> <li>No Localized Power Cord Selected</li> </ul>	
HPE FlexFabric 5710 450W Back-to-Front AC Power Supply	JL593A
<ul style="list-style-type: none"> <li>includes 1 x c13, 450w</li> </ul>	See Configuration <b>NOTE: 1, 2, 4</b>
PDU Cable NA/MEX/TW/JP	JL593A#B2B
<ul style="list-style-type: none"> <li>C15 PDU Jumper Cord (NA/MEX/TW/JP)</li> </ul>	
PDU Cable ROW	JL593A#B2C
<ul style="list-style-type: none"> <li>C15 PDU Jumper Cord (ROW)</li> </ul>	
High Volt Switch to Wall Power Cord	JL593A#B2E
<ul style="list-style-type: none"> <li>NEMA L6-20P Cord (NA/MEX/JP/TW)</li> </ul>	
No Power Cord	JL593A#AC3
<ul style="list-style-type: none"> <li>No Localized Power Cord Selected</li> </ul>	

### Configuration Rules:

**Note 1** If 2 power supplies are selected they must be the same SKU number.

Configuration

- Note 2Localization (Wall Power Cord) required on orders without #B2B, #B2C (PDU Power Cord, #B2E and #AC3. (See Localization Menu)  
REMARK: When Switches/Routers are Factory Racked, Then #B2B, or #B2C should be the Defaulted Power Cable option on the Switches/Routers.
- Note 3This power supply is only supported on JL585A and JL587A.
- Note 4This power supply is only supported on JL585A, JL586A and JL587A.
- Remarks

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

OCA Blue Note:  
The 450 Watt PSUs are supported in the SFP+ Switches but are not required.

Switch Options

Fan Trays

For JL585A and JL587A 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	
HPE FlexFabric X721 Front-to-Back Fan Tray	JL594A See Configuration <b>NOTE: 1, 2</b>
HPE FlexFabric X722 Back-to-Front Fan Tray	JL595A See Configuration <b>NOTE: 1, 2</b>

Configuration Rules

- Note 1Fan Trays cannot be mixed in the same switch enclosure
- Note 2This Fan Tray is only supported on JL585A, JL586A, JL587A.

## Technical Specifications

### HPE FlexFabric 5710 48SFP+ 6QSFP+ or 2QSFP28 Switch (JL585A)

<b>I/O ports and slots</b>	48 1/10G SFP+ ports 6 x 40GbE ports or 3 x 40GbE ports and 1 x 100G port or 2 x 100GbE port	
<b>Additional ports and slots</b>	<b>Management ports</b>	1 10M/100M/1000MBASE-T copper port 1 SFP port
	<b>Console ports</b>	1 mini USB console port 1 serial console port
<b>Power supplies</b>	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.	
<b>Fan tray</b>	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	
<b>Physical characteristics</b>	<b>Dimensions</b>	44 mm x 440 mm x 400 mm (1.73 in. x 17.32 in. x 15.75 in.) (1U height)
	<b>Weight</b>	10 kg (22.05 lb)
<b>Memory and processor</b>	1 GB flash, 4 GB SDRAM; packet buffer size: 12 MB	
<b>Performance</b>	<b>10 Gbps Latency</b>	(64-byte packets)
	<b>Throughput</b>	1071 Mpps
	<b>Routing/Switching capacity</b>	1440 Gbps
	<b>Routing table size</b>	16K entries (IPv4), 8K entries (IPv6)
	<b>MAC address table size</b>	208K entries
	<b>ARP table Size</b>	68K (1K static)
<b>Reliability</b>	<b>MTBF (years)</b>	135.90
<b>Environment</b>	<b>Operating temperature</b>	32°F to 113°F (0°C to 45°C)
	<b>Operating relative humidity</b>	10% to 90%, noncondensing
	<b>Acoustic</b>	Low-speed fan: 52.5 dB; high-speed fan: 68.7 dB
<b>Electrical characteristics</b>	<b>Frequency</b>	50/60 Hz
	<b>Maximum heat dissipation</b>	607 BTU/hr
	<b>AC voltage</b>	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.
<b>Safety</b>	UL 60950-1; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; EN 60950-1; AS/NZS 60950-1; CNS 14336-1	



## Technical Specifications

<b>Emissions</b>	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
<b>Immunity</b>	ETSI EN 300 386; EN 55024; KN35; CISPR 24
<b>Management</b>	IMC; CLI; out-of-band management; SNMP Manager; Telnet; FTP
<b>Services</b>	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.

### HPE FlexFabric 5710 48XGT 6QSFP+ or 2QSFP28 Switch (JL586A)

<b>I/O ports and slots</b>	48 1/10G SFP+ ports 6 x 40GbE ports or 3 x 40GbE ports and 1 x 100G port or 2 x 100GbE port
<b>Additional ports and slots</b>	<b>Management ports</b> 1 10M/100M/1000MBASE-T copper port 1 SFP port <b>Console ports</b> 1 mini USB console port 1 serial console port
<b>Power supplies</b>	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.
<b>Fan tray</b>	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
<b>Physical characteristics</b>	<b>Dimensions</b> 44 mm x 440 mm x 460 mm (1.73 in. x 17.32 in. x 18.11 in.) (1U height) <b>Weight</b> 10 kg (22.05 lb)
<b>Memory and processor</b>	1 GB flash, 4 GB SDRAM; packet buffer size: 12 MB
<b>Performance</b>	<b>10 Gbps Latency</b> (64-byte packets) <b>Throughput</b> 1071 Mpps <b>Routing/Switching capacity</b> 1440 Gbps <b>Routing table size</b> 16K entries (IPv4), 8K entries (IPv6) <b>MAC address table size</b> 208K entries <b>ARP table Size</b> 68K (1K static)
<b>Reliability</b>	<b>MTBF (years)</b> 114.43
<b>Environment</b>	<b>Operating temperature</b> 32°F to 113°F (0°C to 45°C) <b>Operating relative humidity</b> 10% to 90%, noncondensing <b>Acoustic</b> Low-speed fan: 52.4 dB; high-speed fan: 68.6 dB
<b>Electrical characteristics</b>	<b>Frequency</b> 50/60 Hz <b>Maximum heat dissipation</b> 900 BTU/hr <b>AC voltage</b> 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

## Technical Specifications

theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.

<b>Safety</b>	UL 60950-1; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; EN 60950-1; AS/NZS 60950-1; CNS 14336-1
<b>Emissions</b>	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
<b>Immunity</b>	ETSI EN 300 386; EN 55024; KN35; CISPR 24
<b>Management</b>	IMC; CLI; out-of-band management; SNMP Manager; Telnet; FTP
<b>Services</b>	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.

### HPE FlexFabric 5710 24SFP+ 6QSFP+ or 2QSFP28 Switch (JL587A)

<b>I/O ports and slots</b>	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
<b>Additional ports and slots</b>	<b>Management ports</b> 1 10M/100M/1000MBASE-T copper port 1 SFP port <b>Console ports</b> 1 mini USB console port 1 serial console port
<b>Power supplies</b>	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.
<b>Fan tray</b>	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
<b>Physical characteristics</b>	<b>Dimensions</b> 44 mm x 440 mm x 400 mm (1.73 in. x 17.32 in. x 15.75 in.) (1U height) <b>Weight</b> 10 kg (22.05 lb)
<b>Memory and processor</b>	1 GB flash, 4 GB SDRAM; packet buffer size: 12 MB
<b>Performance</b>	<b>10 Gbps Latency</b> (64-byte packets) <b>Throughput</b> 714 Mpps <b>Routing/Switching capacity</b> 960 Gbps <b>Routing table size</b> 16K entries (IPv4), 8K entries (IPv6) <b>MAC address table size</b> 208K entries <b>ARP table Size</b> 68K (1K static)
<b>Reliability</b>	<b>MTBF (years)</b> 145.41
<b>Environment</b>	<b>Operating temperature</b> 32°F to 113°F (0°C to 45°C) <b>Operating relative humidity</b> 10% to 90%, noncondensing <b>Acoustic</b> Low-speed fan: 52.4 dB; high-speed fan: 68.7 dB
<b>Electrical characteristics</b>	<b>Frequency</b> 50/60 Hz <b>Maximum heat dissipation</b> 457 BTU/hr <b>AC voltage</b> 100 VAC–240 VAC; Max. voltage: 264 VAC @ 50 Hz/60 Hz

## Technical Specifications

		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.
<b>Safety</b>	UL 60950-1; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; EN 60950-1; AS/NZS 60950-1; CNS 14336-1	
<b>Emissions</b>	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	
<b>Immunity</b>	ETSI EN 300 386; EN 55024; KN35; CISPR 24	
<b>Management</b>	IMC; CLI; out-of-band management; SNMP Manager; Telnet; FTP	
<b>Services</b>	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 BGP

(applies to all products in series)

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)

### 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+

### General protocols

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)  
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

## Technical Specifications

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  
RFC 4293 Management Information Base for the IP  
RFC 4419 Diffie-Hellman Group Exchange for the SSH Transport Layer Protocol

## Technical Specifications

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

### 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

### 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

### Network management

RFC 2580 Conformance Statements for SMIv2  
RFC 3164 BSD Syslog Protocol

### OSPF

RFC 1587 OSPF NSSA  
RFC 2328 OSPFv2  
RFC 3101 OSPF NSSA  
RFC 3137 OSPF Stub Router Advertisement

## Technical Specifications

RFC 3623 Graceful OSPF Restart  
RFC 4811 OSPF Out-of-Band LSDB Resynchronization  
RFC 4812 OSPF Restart Signaling  
RFC 4813 OSPF Link-Local Signaling

### 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

### Security

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

## Accessories

### HPE FlexFabric 5710 Switch Series accessories

#### HPE FlexFabric 5710 48SFP+ 6QSFP+ or 2QSFP28 Switch (JL585A)

HPE FlexFabric 5710 250W Front-to-Back AC Power Supply	JL589A
HPE FlexFabric 5710 250W Back-to-Front AC Power Supply	JL590A
HPE FlexFabric 5710 450W Front-to-Back AC Power Supply	JL592A <sup>1</sup>
HPE FlexFabric 5710 450W Back-to-Front AC Power Supply	JL593A <sup>1</sup>
HPE FlexFabric X721 Front-to-Back Fan Tray	JL594A
HPE FlexFabric X722 Back-to-Front Fan Tray	JL595A

#### HPE FlexFabric 5710 48XGT 6QSFP+ or 2QSFP28 Switch (JL586A)

HPE FlexFabric 5710 450W Front-to-Back AC Power Supply	JL592A
HPE FlexFabric 5710 450W Back-to-Front AC Power Supply	JL593A
HPE FlexFabric X721 Front-to-Back Fan Tray	JL594A
HPE FlexFabric X722 Back-to-Front Fan Tray	JL595A

#### HPE FlexFabric 5710 24SFP+ 6QSFP+ or 2QSFP28 Switch (JL587A)

HPE FlexFabric 5710 250W Front-to-Back AC Power Supply	JL589A
HPE FlexFabric 5710 250W Back-to-Front AC Power Supply	JL590A
HPE FlexFabric 5710 450W Front-to-Back AC Power Supply	JL592A <sup>1</sup>
HPE FlexFabric 5710 450W Back-to-Front AC Power Supply	JL593A <sup>1</sup>
HPE FlexFabric X721 Front-to-Back Fan Tray	JL594A
HPE FlexFabric X722 Back-to-Front Fan Tray	JL595A

<sup>1</sup> 450W AC PSUs are compatible but not required. The 250W AC PSU and 450W AC PSU cannot be installed in the same switch. For 1:1 redundancy this system requires two same-type power supplies to function properly.

## Optics

### Management ports

HPE X115 100M SFP LC FX Transceiver	JD102B
HPE X110 100M SFP LC LX Transceiver	JD120B
HPE X110 100M SFP LC LH40 Transceiver	JD090A

### Gigabit SFP+ modules

#### Gigabit SFP+ transceiver modules

HPE X120 1G SFP RJ45 T Transceiver	JD089B
HPE X120 1G SFP LC SX Transceiver	JD118B
HPE X120 1G SFP LC LX Transceiver	JD119B
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

### 10-Gigabit SFP+ modules and cables

#### 10-Gigabit SFP+ transceiver modules available for the SFP+ ports and SFP28 ports

## Accessories

HPE X130 10G SFP+ LC SR Transceiver	JD092B
HPE X130 10G SFP+ LC LR Transceiver	JD094B

### 10-Gigabit SFP+ copper cables available for the SFP+ ports and SFP28 ports

HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
HPE FlexNetwork X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C

### 10-Gigabit SFP+ fiber cables available for the SFP+ ports and SFP28 ports

HPE X2A0 10G SFP+ to SFP+ 7m Active Optical Cable	JL290A
HPE X2A0 10G SFP+ to SFP+ 10m Active Optical Cable	JL291A
HPE X2A0 10G SFP+ to SFP+ 20m Active Optical Cable	JL292A

## 40-Gigabit QSFP+ modules and cables

### QSFP+ transceiver modules available for the QSFP+ and QSFP28 ports

HPE X140 40G QSFP+ MPO SR4 Transceiver	JG325B
HPE X140 40G QSFP+ MPO MM 850nm CSR4 300m Transceiver	JG709A
HPE X140 40G QSFP+ LC BiDi 100m MM Transceiver	JL251A
HPE X140 40G QSFP+ LC LR4 SM 10km 1310nm Transceiver	JG661A
HPE X140 40G QSFP+ LC LR4L 2km SM Transceiver	JL286A

### QSFP+ copper cables available for the QSFP+ and QSFP28 ports

HPE FlexNetwork X240 40G QSFP+ QSFP+ 1m Direct Attach Copper Cable	JG326A
HPE FlexNetwork X240 40G QSFP+ QSFP+ 3m Direct Attach Copper Cable	JG327A
HPE FlexNetwork X240 40G QSFP+ QSFP+ 5m Direct Attach Copper Cable	JG328A

### QSFP+ to 4 x SFP+ copper cables available for the QSFP+ and QSFP28 ports

HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable	JG329A
HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable	JG330A
HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable	JG331A

### QSFP+ fiber cables available for the QSFP+ and QSFP28 ports

HPE X2A0 40G QSFP+ to QSFP+ 7m Active Optical Cable	JL287A
HPE X2A0 40G QSFP+ to QSFP+ 10m Active Optical Cable	JL288A
HPE X2A0 40G QSFP+ to QSFP+ 20m Active Optical Cable	JL289A

## 100-Gigabit QSFP28 modules and cables

### QSFP28 transceiver modules available for the QSFP28 ports

HPE X150 100G QSFP28 MPO SR4 100m MM Transceiver	JL274A
HPE X150 100G QSFP28 MPO PSM4 500m SM Transceiver	JH420A
HPE X150 100G QSFP28 LC LR4 10km SM Transceiver	JL275A
HPE X150 100G QSFP28 CWDM4 2km SM Transceiver	JH673A

### QSFP28 copper cables available for the QSFP28 ports

HPE X240 100G QSFP28 to QSFP28 1m Direct Attach Copper Cable	JL271A
HPE X240 100G QSFP28 to QSFP28 3m Direct Attach Copper Cable	JL272A



Accessories

HPE X240 100G QSFP28 to QSFP28 5m Direct Attach Copper Cable	JL273A
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**QSFP28 fiber cables available for the QSFP28 ports**

HPE X2A0 100G QSFP28 to QSFP28 7m Active Optical Cable	JL276A
HPE X2A0 100G QSFP28 to QSFP28 10m Active Optical Cable	JL277A
HPE X2A0 100G QSFP28 to QSFP28 20m Active Optical Cable	JL278A

## Summary of Changes

Date	Version History	Action	Description of Change
06-Aug-2018	Version 1	Created	Document creation



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