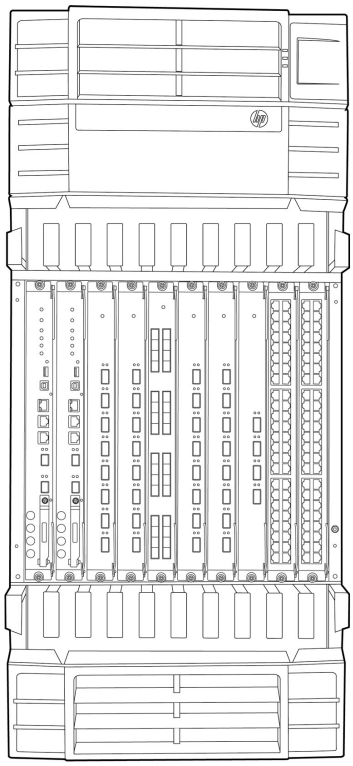
Product overview

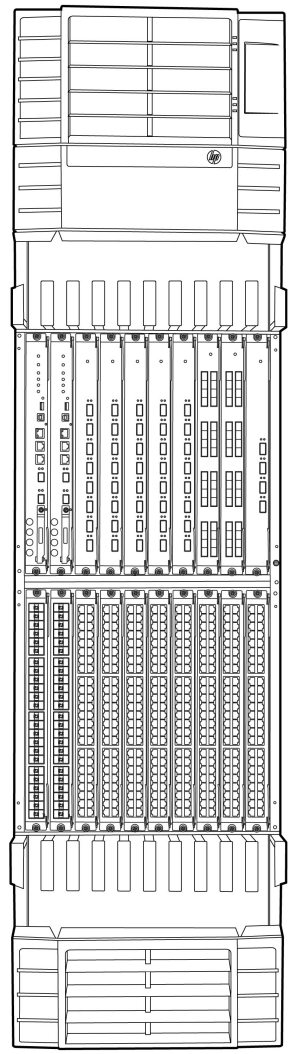
The HP 12500 Switch Series is a family of powerful, next-generation routing switches with outstanding capacity and scale for the network core or data center.

Designed for high performance with nonblocking and distributed Clos architecture, these switches deliver up to 24.3 Tbps switching capacity and 10.8 Bpps throughput with up to 400 Gbps per line card slot.

The 12500 switches also have energy-efficiency features that drive down operational expenses and are ideal for organizations contemplating large-scale data center consolidations, business continuity and disaster recovery sites, metropolitan area network deployments, and other applications requiring a robust, reliable and highly available switching platform.



HP 12508 Switch



HP 12518 Switch

Overview

Key features

- Optimized for cata centers with extensive virtualization and convergence featured
- Broad interface options from 1G to 40G scaling up to 24.3 Tbps switching capacity
- SDN ready with Open Flow 1.3 support
- Large Layer 2 and Layer 3 tables to support large scale deployments
- Fully redundant architecture with hot swappable components

Features and benefits

Data center optimized

- **NEW Scalable Layer 2 fabrics**
  build flexible, resilient, and scalable Layer 2 fabrics with SPB and HP IRF
- **Multitenant Device Context (MDC)**
  is an innovative data center virtualization solution that enables multi-tenancy, giving customers the ability to virtualize a physical switch into multiple logical devices, with each logical switch having its own tenants
- **HP Ethernet Virtual Interconnect (EVI)**
  is an HP Virtual Application Network innovation that provides a Layer 2 extension across the data center to simplify the interconnectivity of geographically disperse data centers
- **NEW Data Center Bridging (DCB) protocols**
  provide support for IEEE 802.1Qaz Data Center Bridging Exchange (DCBX), Enhanced Transmission Selection (ETS), and IEEE 802.1Qbb Priority Flow Control (PFC) for converged fabrics
- **NEW Fibre Channel over Ethernet (FCoE) features**
  deliver support for FCoE, including expansion, fabric, trunk VF and N ports, and aggregation of E-port and N-port virtualization
- **Accelerated perfomance with jumbo frames**
  for intra-data-center communication, or for data center to data center traffic (disaster recovery), reducing the amount of time required for data backup and recovery
- **Network load balancing (NLB) multicast ARP**
  Microsoft® NLB co-works with multicast ARP to provide servers with load balancing and fault switchover, which lowers costs and investment

Software-defined networking

- **NEW Supports OpenFlow 1.3 specifications**
  to enable SDN by allowing separation of the data (packet forwarding) and control (routing decision) paths

Performance

- **NEW High performance design with nonblocking and distributed Clos architecture**
  delivers up to 24.3 Tbps switching capacity and 10.8 Bpps throughput with up to 400 Gbps per line card slot
- **NEW High-density 1GbE,10GbE and 40GbE interface connectivity**
  offers up to 18 interface module slots to scale up to 864 1GbE and 1/10GbE and 288 40GbE ports
- **Hardware-based wirespeed access control lists (ACLs)**
  help provide high levels of security and ease of administration without impacting network performance with a feature-rich TCAM-based ACL implementation
- **High-performance processor system**
  the supervisor module uses three different processors to isolate key tasks: control plane (STP, OSPF, BGP, MPLS, etc.), fast recovery protocols (RRPP, BFD, etc.), and chassis management (temperature, power, etc.)

Product architecture

Overview

- **Distributed architecture with separation of data and control planes**
  delivers enhanced fault tolerance and facilitates continuous operation and zero service disruption during planned or unplanned control-plane events
- **Advanced Comware modular operating system**
  brings modularity, enhanced serviceability, stability and independent process monitoring through modern Comware v7 Operating System
- **In-Service Software Upgrade (ISSU)**
  provides an upgrade of the entire chassis, or an individual task or process, with zero packet loss

Resiliency and high availability

- **Intelligent Resilient Framework (IRF)**
  creates virtual resilient switching fabrics, where two or more switches perform as a single L2 switch and L3 router; switches do not have to be co-located and can be part of a disaster-recovery system; servers or switches can be attached using standard LACP for automatic load balancing and high availability; can eliminate the need for complex protocols like Spanning Tree Protocol, Equal-Cost Multipath (ECMP), or VRRP, thereby simplifying network operation
- **Ultrafast protocol convergence**
  enables link connectivity monitoring and reduces network convergence time for RIP, OSPF, BGP, IS-IS, VRRP, MPLS, and IRF
- **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
- **Complete set of routing protocols (Layer 3 IPv4 and IPv6)**
  support virtually all existing routing protocols (RIP, OSPF, IS-IS, and BGP) for both Layer 3 IPv4 and Layer 3 IPv6; complete support of PIM-DM, PIM-SM, PIM-SSM, and MSDP
- **Hot patching**
  the 12500 switch series supports hot patching, allowing in-service patching for some isolated software problems
- **Non Stop Forwarding/Graceful Restart (NSF/GR)**
  using standardized-based IETF protocols, the 12500 switch series provides nonstop forwarding (switching/routing) for Layer 3 routing protocols (control plane – OSPF, BGP, and MPLS), providing hitless failover
- **Fully redundant and hot swappable components**
  providing full hardware redundancy for each component including power supplies, fan trays, supervisor modules and fabric modules to enable the highest level of availability
- **Rapid Ring Protection Protocol (RRPP)**
  provides fast recovery for ring Ethernet-based topology

Quality of Service (QoS)

- **Virtual Output Queue (VOQ)**
  prevents head-of-line (HOL) blocking per port at peak time and distributes it over a period of time, increasing switch performance
- **IEEE 802.1p prioritization**
  delivers data to devices based on the priority and type of traffic
- **Layer 4 prioritization**
  enables prioritization based on TCP/UDP port numbers
- **Broadcast control**
  allows limitation of broadcast traffic rate to cut down on unwanted network broadcast traffic
- **Advanced classifier-based QoS**
  classifies traffic using multiple match criteria based on Layer 2, 3, and 4 information; applies QoS policies such as setting priority level and rate limit to selected traffic on a per-port or per-VLAN basis
- **Bandwidth shaping**

Overview

- **Port-based rate limiting**
  provides per-port ingress-/egress-enforced maximum bandwidth
- **Classifier-based rate limiting**
  uses access control lists (ACLs) to enforce maximum bandwidth for ingress/egress traffic on each port

Compartmentalization

- **Department protection**
  using network virtualization standards (QinQ, VRF, and MPLS), the 12500 switch series allows organizations to isolate different business units with different resources (VRFs); using standard-based mechanisms, the network is completely virtualized, reducing cost and operations
- **IEEE 802.1ah Provider Backbone Bridge (MAC in MAC)**
  Provider Backbone Bridge (PBB) is a Layer 2 VPN technology that allows a complete separation of customer and provider domains by sealing the user MAC in the service provider MAC, which enhances the scalability of an Ethernet network

Layer 2 switching

- **Multiple VLAN Registration Protocol (MVRP)**
  helps to maintain VLAN configuration dynamically based on current network configurations
- **GARP VLAN Registration Protocol**
  allows automatic learning and dynamic assignment of VLANs
- **IP multicast snooping and data-driven IGMP**
  automatically prevents flooding of IP multicast traffic
- **IEEE 802.1ad QinQ**
  increases the scalability of an Ethernet network by providing a hierarchical structure; connects multiple LANs on a high-speed campus or metro network
- **Bridge Protocol Data Unit (BPDU) tunneling**
  transmits Spanning Tree Protocol BPDUs transparently, allowing correct tree calculations across service providers, WANs, or MANs
- **VLAN support and tagging**
  supports IEEE 802.1Q (4K VLAN IDs)
- **Spanning Tree**
  the 12500 switch series supports the entire set of STP protocols (STP, RSTP, and MSTP), facilitating a complete integration with standard networks

Layer 3 routing

- **Layer 3 IPv4 routing**
  provides routing of IPv4 at media speed; supports static routes, RIP and RIPv2, OSPF, IS-IS, and BGP
- **RIP and RIPng support**
  provides complete support of RIP for both IPv4 and IPv6
- **OSPF and OSPFv3 support**
  provides complete support of OSPF for both IPv4 and IPv6
- **IS-IS and IS-ISv6 support**
  provides complete support of IS-IS for both IPv4 and IPv6
- **Equal-Cost Multipath (ECMP)**
  enables multiple equal-cost links in a routing environment to increase link redundancy and scale bandwidth
- **Layer 3 IPv6 routing**
  provides routing of IPv6 at media speed; supports static routes, RIPng, OSPFv3, IS-ISv6, and BGP4+
- **IPv6 tunneling**
  allows a smooth transition from IPv4 to IPv6 by encapsulating IPv6 traffic over an existing IPv4 infrastructure

Overview

- **Complete multicast protocol stack**
  PIM-DM, PIM-SM, PIM-SSM, MSDP, and extensions to BGP provide one of the most complete multicast protocol stacks
- **Policy routing**
  allows custom filters for increased performance and security; supports ACLs, IP prefix, AS paths, community lists, and aggregate policies
- **MPLS support**
  provides extended support of MPLS, including MPLS VPNs and MPLS Traffic Engineering (MPLS TE)
- **VPLS support**
  provides extended support of VPLS for data center to data center communication at Layer 2; provides support of hierarchical VPLS for scalability

Management

- **sFlow**
  provides scalable, ASIC-based network monitoring and accounting; this allows network operators to gather a variety of sophisticated network statistics and information for capacity planning and real-time network monitoring purposes
- **IEEE 802.1ab LLDP discovery**
  advertises and receives management information from adjacent devices on a network, facilitating easy mapping by network management applications
- **USB support**
  - **File copy**
    allows users to copy switch files to and from a USB flash drive
- **Multiple configuration files**
  can be stored to the flash image
- **Command-line interface (CLI)**
  provides a secure, easy-to-use CLI for configuring the module via SSH or a switch console; provides direct real-time session visibility
- **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
- **Management interface control**
  each of the following interfaces can be enabled or disabled depending on security preferences: console port, telnet port, and SSH port
- **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
- **Network management**
  Intelligent Management Console (IMC) centrally configures, updates, monitors, and troubleshoots
- **Network management**
  SNMP v2c/v3 MIB-II with traps
- **RADIUS accounting**
  logs all session details that can be used to generate usage reports or interface to a billing system
- **RMON**
  provides advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- **Remote Intelligent Mirroring**
  mirrors ingress ACL-selected traffic from a switch port or VLAN to a local or remote switch port anywhere on the network

Connectivity

- **IPv6 native support**:

Overview

- **IPv6 host**
  enables switches to be managed and deployed at the IPv6 network's edge
- **Dual stack (IPv4 and IPv6)**
  transitions from IPv4 to IPv6, supporting connectivity for both protocols
- **Multicast Listener Discovery (MLD) snooping**
  forwards IPv6 multicast traffic to the appropriate interface
- **IPv6 ACL/QoS**
  supports ACL and QoS for IPv6 network traffic, preventing traffic flooding
- **IPv6 routing**
  supports IPv6 static routes and IPv6 versions of RIP and OSPF routing protocols

Security

- **Control Plane Policing (CoPP)**
  provides protection against DoS attacks at infrastructure routers and switches and ease of configuration for control plane policies
- **IEEE 802.1X and RADIUS network logins**
  control port-based access for authentication and accountability
- **Secure FTP**
  allows secure file transfer to and from the switch; protects against unwanted file downloads or unauthorized copying of a switch configuration file
- **Switch management logon security**
  can require either RADIUS or TACACS+ authentication for secure switch CLI logon
- **DHCP protection**
  blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks
- **Dynamic ARP protection**
  blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
- **Secure Shell (SSHv2)**
  encrypts all transmitted data for secure, remote CLI access over IP networks
- **Secure management access**
  securely encrypts all access methods (CLI, GUI, or MIB) through SSHv2 and SNMPv3
- **Access control lists (ACLs)**
  provide IPv4 and IPv6 filtering based on source/destination IP address/subnet and source/destination TCP/UDP port number
- **Media access control (MAC) authentication**
  provides simple authentication based on a user's MAC address; supports local or RADIUS-based authentication

Convergence

- **Layer 2, 3, and 4 QoS mechanisms**
  support DiffServ priority tagging based on IP address, IP Type of Service (ToS), Layer 3 protocol, TCP/UDP port number, and source port
- **IP multicast snooping and data-driven IGMP**
  automatically prevent flooding of IP multicast traffic
- **LLDP-MED**
  is a standard extension that automatically configures network devices, including LLDP-capable IP phones
- **Internet Group Management Protocol (IGMP)**
  is used by IP hosts to establish and maintain multicast groups; supports IGMPv1, v2, and v3; utilizes Any-Source Multicast (ASM) or Source-Specific Multicast (SSM) to manage IPv4 multicast networks
- **Protocol Independent Multicast (PIM)**
  is used for IPv4 and IPv6 multicast applications; supports PIM Dense Mode (PIM-DM), Sparse Mode (PIM-SM), and Source-Specific

Overview

Mode (PIM-SSM)

- **Multicast Source Discovery Protocol (MSDP)**
  is used for inter-domain multicast applications, allowing multiple PIM-SM domains to interoperate
- **Multicast VLAN**
  allows multiple VLANs to receive the same IPv4 or IPv6 multicast traffic, lessening network bandwidth demand by reducing or eliminating multiple streams to each VLAN

Monitor and diagnostics

- **Port mirroring**
  enables traffic on a port to be simultaneously sent to a network
  analyzer for monitoring
- **Connectivity fault detection (IEEE 802.1ag)**
  connectivity fault detection (CFD) provides a Layer 2 link Operations, Administration, and Maintenance (OAM) mechanism used for link connectivity detection and fault locating

Integration

- **12500 VPN 20 Gb/s Firewall Module**
  provides enhanced stateful packet inspection and filtering; supports flexible security zones and virtual firewall containment; delivers advanced VPN services with 3DES and AES encryption at high performance and low latency; offers Web content filtering and application prioritization and optimization

Investment protection

- **Modular switch fabric**
  provides investment protection by enabling future performance upgrades and increased port density
- **Environmentally friendly**
  ROHS support and low power consumption based on the latest technology provide outstanding power efficiency

Warranty and support

- **1-year warranty**
  with advance replacement and 10-calendar-day delivery (available in most countries)
- **Electronic and telephone support**
  limited electronic and business-hours telephone support is available from HP for the entire warranty period; to reach our support centers, refer to **www.hp.com/networking/contact-support**; for details on the duration of support provided with your product purchase, refer to **www.hp.com/networking/warrantysummary**
- **Software releases**
  to find software for your product, refer to **www.hp.com/networking/support**; for details on the software releases available with your product purchase, refer to **www.hp.com/networking/warrantysummary**

Configuration

Build To Order:

BTO is a standalone unit with no integration. BTO products ship standalone are not part of a CTO or Rack-Shippable solution.

HP 12504 AC Switch Chassis JC654A

- 2 - MPUx (Management Ports)
- 4 - I/O module slots
- 4 - Fabric module slots
- Must select min 1 Management Module
- Must select min 3 Power Supply
- Must select min 1 PEM
- Must select Min 1 Fans
- Must select Min 4 Fabric Modules
- 10U - Height Rack

HP 12504 DC Switch Chassis JC655A

- 2 - MPUx (Management Ports)
- 4- I/O module slots
- 4 - Fabric module slots
- Must select min 1 Management Module
- Must select min 3 Power Supply
- 1 PEM included
- Must select Min 1 Fans
- Must select Min 4 Fabric Modules
- 10U - Height Rack

HP 12508 AC Switch Chassis JF431C

- 2 - MPUx (Management Ports)
- 8- I/O module slots
- 9 - Fabric module slots
- Must select min 1 Management Module
- Must select min 3 Power Supply
- Must select min 1 PEM
- Must select Min 2 Fans
- Must select Min 8 Fabric Modules
- 22U - Height Rack

HP FlexFabric 12508E AC Switch Chassis JG782A

- 2 - MPUx (Management Ports)
- 8- I/O module slots
- 9 - Fabric module slots
- Must select min 1 Management Module
- Must select min 3 Power Supply
- PEM included
- Must select Min 2 Fans
- Must select Min 8 Fabric Modules
- 22U - Height Rack

PDU Cable NA/MEX/TW/JP JG782A#B2B

Configuration

- C19 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW JG782A#B2C
- C19 PDU Jumper Cord (ROW)

High Volt Power Entry Module to Wall Power Cord JG782A#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

HP 12508 DC Switch Chassis JC652A
- 2 - MPUx (Management Ports)
- 8- I/O module slots
- 9 - Fabric module slots
- Must select min 1 Management Module
- Must select min 3 Power Supply
- 1 PEM included
- Must select Min 2 Fans
- Must select Min 8 Fabric Modules
- 22U - Height Rack

HP FlexFabric 12508E DC Switch Chassis JG783A
- 2 - MPUx (Management Ports)
- 8- I/O module slots
- 9 - Fabric module slots
- Must select min 1 Management Module
- Must select min 3 Power Supply
- PEM included
- Must select Min 2 Fans
- Must select Min 8 Fabric Modules
- 22U - Height Rack

HP 12518 AC Switch Chassis JF430C
- 2 - MPUx (Management Ports)
- 18 - I/O module slots
- 9 - Fabric module slots
- Must select min 1 Management Module
- Must select min 6 Power Supply
- Must select min 2 PEM
- Must select min 2 Fans
- Must select Min 8 Fabric Modules
- 38U - Height Rack

HP FlexFabric 12518E AC Switch Chassis JG784A
- 2 - MPUx (Management Ports)
- 18 - I/O module slots
- 9 - Fabric module slots
- Must select min 1 Management Module
- Must select min 6 Power Supply
- PEM included
- Must select min 2 Fans

Configuration

- Must select Min 8 Fabric Modules
- 38U - Height Rack

PDU Cable NA/MEX/TW/JP JG784A#B2B
- C19 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW JG784A#B2C
- C19 PDU Jumper Cord (ROW)

High Volt Power Entry Module to Wall Power Cord JG784A#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

HP 12518 DC Switch Chassis JC653A
- 2 - MPUx (Management Ports)
- 18 - I/O module slots
- 9 - Fabric module slots
- Must select min 1 Management Module
- Must select min 6 Power Supply
- 2 PEM included
- Must select min 2 Fans
- Must select Min 8 Fabric Modules
- 38U - Height Rack

HP FlexFabric 12518E DC Switch Chassis JG785A
- 2 - MPUx (Management Ports)
- 18 - I/O module slots
- 9 - Fabric module slots
- Must select min 1 Management Module
- Must select min 6 Power Supply
- PEM included
- Must select min 2 Fans
- Must select Min 8 Fabric Modules
- 38U - Height Rack

Box Level Integration CTO Models

CTO Solution Sku

HP 125xx CTO Switch Solution JG477A
- SSP trigger sku

CTO Switch Chassis

HP 12504 AC Switch Chassis JC654A
- 2 - MPUx (Management Ports)
- 4 - I/O module slots
- 4 - Fabric module slots

See Configuration Note:1, 2

Configuration

- Must select min 1 Management Module
- Must select min 3 Power Supply
- Must select min 1 PEM
- Must select Min 1 Fans
- Must select Min 4 Fabric Modules
- 10U - Height Rack

HP 12504 DC Switch Chassis — JC655A

- 2 - MPUx (Management Ports)
- 4- I/O module slots
- 4 - Fabric module slots
- Must select min 1 Management Module
- Must select min 3 Power Supply
- 1 PEM included
- Must select Min 1 Fans
- Must select Min 4 Fabric Modules
- 10U - Height Rack

See Configuration Note:2, 3

Configuration Rules:

Note 1 — If this Switch is selected at least one of these Power Supply is required: (Use #0D1 if switch is CTO)
JF429A - HP 12500 2000W AC Power Supply

Note 2 — If the Switch Chassis is to be Box Level Factory Integrated (CTO)), Then the #0D1 is required on the Switch Chassis and integrated to the JG477A - HP 125xx CTO Switch Solution (Min 1/Max 1 Switch per SSP)

Note 3 — If this Switch is selected at least one of these Power Supplies is required: (Use #0D1 if switch is CTO)
JC651A - HP 12500 1800W DC Power Supply

Rack Level Integration CTO Models

HP 12504 AC Switch Chassis — JC654A

- 2 - MPUx (Management Ports)
- 4 - I/O module slots
- 4 - Fabric module slots
- Must select min 1 Management Module
- Must select min 3 Power Supply
- Must select min 1 PEM
- Must select Min 1 Fans
- Must select Min 4 Fabric Modules
- 10U - Height Rack

See Configuration Note:1, 2, 3

HP 12504 DC Switch Chassis — JC655A

- 2 - MPUx (Management Ports)
- 4 - I/O module slots
- 4 - Fabric module slots
- Must select min 1 Management Module
- Must select min 3 Power Supply

See Configuration Note: 3, 4

Configuration

- 1 PEM included
- Must select Min 1 Fans
- Must select Min 4 Fabric Modules
- 10U - Height Rack

HP 12508 AC Switch Chassis — JF431C

- 2 - MPUx (Management Ports)
- 8- I/O module slots
- 9 - Fabric module slots
- Must select min 1 Management Module
- Must select min 3 Power Supply
- Must select min 1 PEM
- Must select Min 2 Fans
- Must select Min 8 Fabric Modules
- 22U - Height Rack

See Configuration Note:1, 2, 3

HP FF 12508E AC Switch Chassis — JG782A

- 2 - MPUx (Management Ports)
- 8- I/O module slots
- 9 - Fabric module slots
- Must select min 1 Management Module
- Must select min 3 Power Supply
- PEM included
- Must select Min 2 Fans
- Must select Min 8 Fabric Modules
- 22U - Height Rack

See Configuration Note:1, 3

PDU Cable NA/MEX/TW/JP — JG782A#B2B

- C19 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW — JG782A#B2C

- C19 PDU Jumper Cord (ROW)

HP 12508 DC Switch Chassis — JC652A

- 2 - MPUx (Management Ports)
- 8- I/O module slots
- 9 - Fabric module slots
- Must select min 1 Management Module
- Must select min 3 Power Supply
- 1 PEM included
- Must select Min 2 Fans
- Must select Min 8 Fabric Modules
- 22U - Height Rack

See Configuration Note: 3, 4

HP FF 12508E DC Switch Chassis — JG783A

- 2 - MPUx (Management Ports)
- 8- I/O module slots
- 9 - Fabric module slots
- Must select min 1 Management Module

See Configuration Note: 3, 4

Configuration

- Must select min 3 Power Supply
- PEM included
- Must select Min 2 Fans
- Must select Min 8 Fabric Modules
- 22U - Height Rack

HP 12518 AC Switch Chassis — JF430C

- 2 - MPUx (Management Ports)
- 18 - I/O module slots
- 9 - Fabric module slots
- Must select min 1 Management Module
- Must select min 6 Power Supply
- Must select min 2 PEM
- Must select min 2 Fans
- Must select Min 8 Fabric Modules
- 38U - Height Rack

See Configuration Note:1, 2, 3

HP FF 12518E AC Switch Chassis — JG784A

- 2 - MPUx (Management Ports)
- 18 - I/O module slots
- 9 - Fabric module slots
- Must select min 1 Management Module
- Must select min 6 Power Supply
- PEM included
- Must select min 2 Fans
- Must select Min 8 Fabric Modules
- 38U - Height Rack

See Configuration Note:1, 3

PDU Cable NA/MEX/TW/JP — JG784A#B2B

- C19 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW — JG784A#B2C

- C19 PDU Jumper Cord (ROW)

HP 12518 AC Switch Chassis — JC653A

- 2 - MPUx (Management Ports)
- 18 - I/O module slots
- 9 - Fabric module slots
- Must select min 1 Management Module
- Must select min 6 Power Supply
- 2 PEM included
- Must select min 2 Fans
- Must select Min 8 Fabric Modules
- 38U - Height Rack

See Configuration Note: 3, 4

HP FF 12518E DC Switch Chassis — JG785A

- 2 - MPUx (Management Ports)
- 18 - I/O module slots
- 9 - Fabric module slots

See Configuration Note: 3, 4

Configuration

- Must select min 1 Management Module
- Must select min 6 Power Supply
- PEM included
- Must select min 2 Fans
- Must select Min 8 Fabric Modules
- 38U - Height Rack

Configuration Rules:

Note 1	If this Switch is selected at least one of these Power Supply is required: (Use #0D1 if switch is CTO) JF429A - HP 12500 2000W AC Power Supply
Note 2	When Switches/Routers are Factory Racked, Then #B2B, or #B2C should be the Defaulted Power Cable option on the Power Electrical Module. (See Drop down remark in the "Internal Power Supplies" section.)
Note 3	If HP CTO Switch Chassis is selected to be Rack Level Integration, Then the CTO Switch Chassis needs to integrate (with #0D1) to the BW966A or BW968A HP Universal Rack Only. (Default to the BW966A.)
Note 4	If this Switch is selected at least one of these Power Supplies is required: (Use #0D1 if switch is CTO) JC651A - HP 12500 1800W DC Power Supply

Internal Power Supplies

12508 and 12504 - System (std 0 // max 6) User Selection (min 3 // max 6)

12508E - System (std 0 // max 8) User Selection (min 3 // max 8)

12518 - System (std 0 // max 12) User Selection (min 6 // max 12)

12518E - System (std 0 // max 16) User Selection (min 6 // max 16)

HP 12500 2000W AC Power Supply	JF429A See Configuration Note:1
HP 12500 1800W DC Power Supply	JC651A See Configuration Note:2

Configuration Rules:

Note 1	Supported on Switches JC654A, JF431C, JF430C, JG782A and JG784A only.
Note 2	Supported on Switches JC655A, JC652A, JC653A, JG783A and JG785A only.
Remarks:	12504 and 12508 only - Default 6 power supplies and allow the user to change down to 3.

12508E only - Default 6 power supplies and allow the user to change down to 3.

12518 only - Default 12 power supplies and allow the user to change down to 6.

12518E only - Default 12 power supplies and allow the user to change down to 6.

The power module support load balancing and N+1/N+M redundancy. Deploying N+1 power redundancy
The total number of power modules (JF431C, JF430C) = Ceiling (total power load of the chassis/2000) + 1
For example, if the total load of the chassis is 3000 W, the number of power modules must be 2 + 1 = 3.
Deploying 1:1 power redundancy
JF431C-Requires 6 power modules.
JF430C-Total number of power modules = [Ceiling (total power load of the chassis/2000)] x 2
For example, if the total power load of the chassis is 7000 W, the total number of power modules must be (4 + 1) x 2 = 10.

Localization is not required on these internal AC power supplies. Localization is covered on the chassis for the 125x8E AC models (JG782A, JG784A), or on the PEMs listed below for the AC 125xx models (JC654A, JF431C, JF430C).

Localization

HP 12500 AC Power Entry Module - Chile - English localization JF426A#A1X
- Power Cord: Quantity :6, CEI 23-50, C19 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet, Store Part# :8121-0923

HP 12500 AC Power Entry Module - U.S. - English localization JF426A#ABA
- Power Cord: Quantity :6, NEMA 5-20P, C19 STRAIGHT, 125 V, 15 A, 2.5 meters, 8.21 feet, Store Part# :8120-6361

HP 12500 AC Power Entry Module - Europe - English localization JF426A#ABA
- Power Cord: Quantity :6, NEMA 6-20P / L6-20P, C19 STRAIGHT, 250 V, 20 A, 2.5 meters, 8.21 feet, Store Part# :8120-6360

HP 12500 AC Power Entry Module - Europe - English localization JF426A#ABB
- Power Cord: Quantity :6, CEE 7-VII, C19 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet, Store Part# :8120-6352

HP 12500 AC Power Entry Module - Australia - English localization JF426A#ABG
- Power Cord: Quantity :6, AS/NZS 3112, C19 STRAIGHT, 250 V, 15 A, 2.5 meters, 8.21 feet, Store Part# :8120-6351

HP 12500 AC Power Entry Module - Brazil - Portuguese localization JF426A#AC4
- Power Cord: Quantity :6, NBR 14136 Fig13, C19 STRAIGHT, 250 V, 2.5 A, 2.5 meters, 8.21 feet, Store Part# :8121-1101

HP 12500 AC Power Entry Module - Korea - English localization JF426A#AC6
- Power Cord: Quantity :6, CEE 7-VII, C19 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet, Store Part# :8120-6352

Configuration

HP 12500 AC Power Entry Module - United Kingdom - English localization JF426A#ACC
- Power Cord: Quantity :6, BS 1363/A, C19 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet, Store Part# :8120-6353

HP 12500 AC Power Entry Module - Switzerland - English localization JF426A#ACD
- Power Cord: Quantity :6, IEC 309, C19 STRAIGHT, 250 V, 16 A, 2.5 meters, 8.21 feet, Store Part# :8121-1287

HP 12500 AC Power Entry Module - Denmark - English localization JF426A#ACE
- Power Cord: Quantity :6, IEC 309, C19 STRAIGHT, 250 V, 16 A, 2.5 meters, 8.21 feet, Store Part# :8121-1287

HP 12500 AC Power Entry Module - Japan - English localization JF426A#ACF
- Power Cord: Quantity :6, NEMA 5-20P, C19 STRAIGHT, 125 V, 15 A, 2.5 meters, 8.21 feet, Store Part# :8120-6361

HP 12500 AC Power Entry Module - India - English localization JF426A#ACJ
- Power Cord: Quantity :6, SABS 164, C19 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet, Store Part# :8121-0915

HP 12500 AC Power Entry Module - South Africa - English localization JF426A#ACQ
- Power Cord: Quantity :6, SABS 164, C19 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet, Store Part# :8121-0915

HP 12500 AC Power Entry Module - Israel - English localization JF426A#AKJ
- Power Cord: Quantity :6, SI 32 90-DEG, C19 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet, Store Part# :8121-1010

HP 12500 AC Power Entry Module - Thailand - English localization JF426A#AKL
- Power Cord: Quantity :6, NEMA 5-15P, C19 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet, Store Part# :8121-0922

HP 12500 AC Power Entry Module - China - English localization JF426A#AKM
- Power Cord: Quantity :6, GB 1002, C19 STRAIGHT, 250 V, 16 A, 2.5 meters, 8.21 feet, Store Part# :8121-0924

HP 12500 AC Power Entry Module - Taiwan - English localization JF426A#ARB
- Power Cord: Quantity :6, CNS 690 Type 2(3), C19 STRAIGHT, 125 V, 15 A, 2.5 meters, 8.21 feet, Store Part# :8121-1286

HP 12500 AC Power Entry Module - Argentina - English localization JF426A#ARM
- Power Cord: Quantity :6, IRAM 2073, C19 STRAIGHT, 250 V, 16 A, 2.5 meters, 8.21 feet, Store Part# :8121-0925

HP 12500 AC Power Entry Module - L6-20 220V-NA JF426A#B2E
- Power Cord: Quantity :6, NEMA 6-20P / L6-20P, C19 STRAIGHT, 250 V, 20 A, 2.5 meters, 8.21 feet, Store Part# :8120-6360

Part Store URL: http://h20141.www2.hp.com/Hpparts/CountryChoice.aspx?mscssid=&valid=False

Configuration Rules:

Configuration

Note 1 Supported on Switches JC654A, JF431C and JF430C only.

Note 2 Supported on Switches JC655A, JC652A and JC653A only.

Remarks: 12504 and 12508 only - Default 6 power supplies and allow the user to change down to 3.

12518 only - Default 12 power supplies and allow the user to change down to 6.

- The power module support load balancing and N+1/N+M redundancy. Deploying N+1 power redundancy
- The total number of power modules (JF431C, JF430C) = Ceiling (total power load of the chassis/2000) + 1
  For example, if the total load of the chassis is 3000 W, the number of power modules must be 2 + 1 = 3.
- Deploying 1:1 power redundancy
- JF431C-Requires 6 power modules.
- JF430C-Total number of power modules = [Ceiling (total power load of the chassis/2000)] x 2
  For example, if the total power load of the chassis is 7000 W, the total number of power modules must be (4 + 1) x 2 = 10.

Power Electrical Module

12504 and 12508 Only - System (std 0 // max 1) User Selection (min 1 // max 1)

12518 - System (std 0 // max 2) User Selection (min 2 // max 2)

HP 12500 AC Power Entry Module	JF426A See Configuration Note:1, 2, 3,4
PDU Cable NA/MEX/TW/JP • C19 PDU Jumper Cord (NA/MEX/TW/JP)	JF426A#B2B
PDU Cable ROW • C19 to C20 Jumper Cord	JF426A #B2C
High Volt Power Entry Module to Wall Power Cord • NEMA L6-20P Cord (NA/MEX/JP/TW)	JF426A #B2E

Configuration Rules:

Note 1 Supported on Switch JC654x, JF431x and JF430x only.

Note 2 Localization required on orders without #B2B, #B2C or #B2E options.

Note 3 When Switches/Routers are Factory Racked, Then #B2B, or #B2C should be the Defaulted Power Cable option on the Power Electrical Module. (See Drop down remark in the "Internal Power Supplies" section.)

Configuration

Note 4 #B2E is Offered only in NA, Mexico, Taiwan and Japan.

Remarks: Drop down under power supply should offer the following options and results:
Power Electrical Module to PDU Power Cord - #B2B in North America, Mexico, Taiwan, and Japan or #B2C ROW. (Watson Default B2B or B2C for Rack Level CTO)
Power Electrical Module to Wall Power Cord - Localized Option (Watson Default for BTO and Box Level CTO)
High Volt Power Electrical Module to Wall Power Cord - #B2E Option. (Offered only in North America, Mexico, Taiwan, and Japan)

Enter the following menu selections as integrated to the CTO Model X above if order is factory built.

Modules

Fabric Modules

12504 - System (std 0 // max 4) User Selection (min 4 // max 4) per Switch

12508 and 12518 System (std 0 // max 9) User Selection (min 8 // max 9) per Switch

HP 12508 Fabric Module	JC067B See Configuration Note:1, 4
HP 12518 Fabric Module	JC066A See Configuration Note:2, 4
HP 1250x G2 Fabric Module	JC658A See Configuration Note:1, 3, 4
HP 12518 G2 Fabric Module	JC657A See Configuration Note:2, 4
HP FF 12508E Fabric Mod	JG798A See Configuration Note:4, 6
HP FF 12518E Fabric Mod	JG800A See Configuration Note:4, 7

Configuration Rules:

Configuration

Note 1 Supported on Switch JF431C and JC652A Switch Chassis only.

Note 2 Supported on Switch JF430C and JC653A Switch Chassis only.

Note 3 Supported on Switch JC654A and JC655A Switch Chassis only.

Note 4 Fabric Modules cannot be mixed, They must all be the same SKU.

Note 6 Supported on Switch JG782A and JG783A Switch Chassis only.

Note 7 Supported on Switch JG784A and JG785A Switch Chassis only.

Remarks: 12504 Only - Default 4 of the JC658A Fabric Modules.

12508 and 12518 Only - Default 9 of the JC658A or JC657A Fabric Modules and allow the user to change to 8 if desired.

12508E and 12518E Only - Default 9 of the JG798A or JG800A Fabric Modules and allow the user to change to 8 if desired.

Management Modules

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

HP 12500 Main Processing Unit — JC072B
- No supported Transceivers

See Configuration Note:1, 3

HP 12500 Type A MPU w/Comware v7 OS — JG497A
- No supported Transceivers

See Configuration Note:1, 3

HP FF 12500E MPU — JG802A
- No supported Transceivers

See Configuration Note:1, 4

Configuration Rules:

Note 1 Management Modules cannot be mixed, They must all be the same SKU.

Note 3 Supported on JF431C, JC652A, JF430C, JC653A, JC654A and JC655A Switch Chassis only.

Note 4 Supported on JG782A, JG783A, JG784A and JG785A Switch Chassis only.

Remarks: Default 2 of the J072B's but allow to go down 1.

Configuration

I/O Modules

12504 - System (std 0 // max 4) User Selection (min 0 // max 4)

12508 - System (std 0 // max 8) User Selection (min 0 // max 8)

12518 - System (std 0 // max 18) User Selection (min 0 // max 18)

HP 12500 48-port GbE SFP LEB Module • Min 0 // Max 48 SFP Transceivers	JC075B See Configuration Note:3
HP 12500 48-port GbE SFP LEC Module • Min 0 // Max 48 SFP Transceivers	JC069B See Configuration Note:3
HP 12500 8-port 10GbE XFP LEB Module • Min 0 // Max 8 XFP Transceivers	JC073B See Configuration Note:1, 5
HP 12500 32-port 10GbE SFP+ REB Module • Min 0 // Max 32 SFP+ Transceivers	JC064B See Configuration Note:1, 4
HP 12500 8-port 10GbE XFP LEC Module • Min 0 // Max 8 XFP Transceivers	JC068B See Configuration Note:1, 5
HP 12500 32-port 10GbE SFP+ REC Module • Min 0 // Max 32 SFP+ Transceivers	JC476B See Configuration Note:1, 4
HP 12500 48-port Gig-T LEB Module • No supported Transceivers	JC074B
HP 12500 48-port Gig-T LEC Module • No supported Transceivers	JC065B
HP 12500 20Gbps VPN Firewall Module • min=0 \ max=2 SFP Transceivers	JG371A See Configuration Note:7,9
HP 12500 VPN Firewall Module • min=0 \ max=2 SFP Transceivers	JC635A See Configuration Note:7

Configuration

HP 12500 8-port 10GbE SFP+ LEF Module — JC659A
- Min 0 // Max 8 SFP+ Transceivers

See Configuration Note:4

HP 12500 48-port GbE SFP LEF Module — JC660A
- Min 0 // Max 48 SFP Transceivers

See Configuration Note:3

HP 12500 8-port 10GbE SFP+ LEB Module — JC780A
- Min 0 // Max 8 SFP+ Transceivers

See Configuration Note:4

HP 12500 8-port 10GbE SFP+ LEC Module — JC781A
- Min 0 // Max 8 SFP+ Transceivers

See Configuration Note:4

HP 12500 16-port 10GbE SFP+ LEB Module — JC782A
- Min 0 // Max 16 SFP+ Transceivers

See Configuration Note:4, 6

HP 12500 16-port 10GbE SFP+ LEC Module — JC783A
- Min 0 // Max 16 SFP+ Transceivers

See Configuration Note:4, 6

HP 12500 48-port Gig-T LEC TAA Module — JC809A
- No supported Transceivers

HP 12500 8-port 10GbE XFP LEC TAA Mod — JC810A
- Min 0 // Max 8 XFP Transceivers

See Configuration Note:5

HP 12500 48-port GbE SFP LEC TAA Module — JC811A
- Min 0 // Max 48 SFP Transceivers

See Configuration Note:3

HP 12500 32p 10GbE SFP+ REC TAA Module — JC812A
- Min 0 // Max 32 SFP+ Transceivers

See Configuration Note:4

HP 12500 8-port 10GbE SFP+ LEC TAA Mod — JC813A
- Min 0 // Max 8 SFP+ Transceivers

See Configuration Note:4

HP 12500 16p 10GbE SFP+ LEC TAA Module — JC814A
- Min 0 // Max 16 SFP+ Transceivers

See Configuration Note:4, 6

Configuration

HP 12500 8-port 10GbE SFP+ LEF TAA Mod — JC817A
- Min 0 // Max 8 SFP+ Transceivers — See Configuration Note:4

HP 12500 48-port GbE SFP LEF TAA Module — JC818A
- Min 0 // Max 48 SFP Transceivers — See Configuration Note:3

HP FF 12500 16p 40GbE QSFP+ FD Mod — JG790A
- Min 0 // Max 16 QSFP+ Transceivers — See Configuration Note:2, 10

HP FF 12500 48p 1/10GbE SFP+ FD Mod — JG796A
- Min 0 // Max 48 SFP+ Transceivers — See Configuration Note:3, 4, 10

HP FF 12500 40p 1/10GbE SFP+ FD Mod — JG792A
- Min 0 // Max 40 SFP+ Transceivers — See Configuration Note:3, 4, 10

HP FF 12500 40p 1/10GbE SFP+ FG Mod — JG794A
- Min 0 // Max 40 SFP+ Transceivers — See Configuration Note:3, 4, 10

Configuration Rules:

Note 1 — If this Modules is selected with the JF430C - HP A12518 Switch Chassis and ANY of the below Fabric Modules, Then its Max = 14:

HP 12518 Fabric Module	JC066A
HP 12518 TAA-compliant Fabric Module	JC819A

Note 2 — The following 40G Transceivers install into this Module:

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

Note 3 — The following Transceivers install into this Module:

HP X170 1G SFP LC LH70 1550 Transceiver	JD109A
HP X170 1G SFP LC LH70 1570 Transceiver	JD110A
HP X170 1G SFP LC LH70 1590 Transceiver	JD111A
HP X170 1G SFP LC LH70 1610 Transceiver	JD112A
HP X170 1G SFP LC LH70 1470 Transceiver	JD113A
HP X170 1G SFP LC LH70 1490 Transceiver	JD114A
HP X170 1G SFP LC LH70 1510 Transceiver	JD115A
HP X170 1G SFP LC LH70 1530 Transceiver	JD116A
HP X120 1G SFP LC LH100 Transceiver	JD103A

Configuration

	HP X125 1G SFP LC LH40 1310nm Transceiver	JD061A
	HP X120 1G SFP LC LH40 1550nm Transceiver	JD062A
	HP X120 1G SFP RJ45 T Transceiver	JD089B
	HP X120 1G SFP LC SX Transceiver	JD118B
	HP X120 1G SFP LC LX Transceiver	JD119B
	HP X125 1G SFP LC LH70 Transceiver	JD063A
	HP X120 1G SFP LC BX 10-U Transceiver	JD098B
	HP X120 1G SFP LC BX 10-D Transceiver	JD099B
	HP X114 100M SFP LC FX Transceiver	JF833A
	HP X120 100M/1G SFP LC LX Transceiver	JF832A
Note 4	The following Transceivers install into this Module:	
	HP X130 10G SFP+ LC SR Transceiver	JD092A
	HP X130 10G SFP+ LC LRM Transceiver	JD093A
	HP X130 10G SFP+ LC LR Transceiver	JD094A
	HP X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097B
	HP X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
	HP X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
	HP X130 10G SFP+ LC ER 40km Transceiver	JG234A
	HP X240 10G SFP+ SFP+ 7m Direct Attach Copper Cable	JC784C
Note 5	The following Transceivers install into this Module:	
	HP X135 10G XFP LC ER Transceiver	JD121A
	HP X130 10G XFP LC LR Single Mode 10km 1310nm Transceiver	JD108B
	HP X130 10G XFP LC SR Transceiver	JD117B
	HP X130 10G XFP LC ZR Single Mode 80km 1550nm Transceiver	JD107A
	HP X180 10G XFP LC LH 80km 1538.98nm DWDM Transceiver	JG226A
	HP X180 10G XFP LC LH 80km 1539.77nm DWDM Transceiver	JG227A
	HP X180 10G XFP LC LH 80km 1540.56nm DWDM Transceiver	JG228A
	HP X180 10G XFP LC LH 80km 1542.14nm DWDM Transceiver	JG229A
	HP X180 10G XFP LC LH 80km 1542.94nm DWDM Transceiver	JG230A
	HP X180 10G XFP LC LH 80km 1558.98nm DWDM Transceiver	JG231A
	HP X180 10G XFP LC LH 80km 1559.79nm DWDM Transceiver	JG232A
	HP X180 10G XFP LC LH 80km 1560.61nm DWDM Transceiver	JG233A
Note 6	If this Module is selected then ONLY the following Fabric Modules must be selected as well:	
	HP 12518 G2 Fabric Module	JC657A
	HP 1250x G2 Fabric Module	JC658A
	HP 1250x TAA-compliant G2 Fabric Module	JC815A
	HP 12518 TAA-compliant G2 Fabric Module	JC816A
	HP 12518 G2 Fabric Module	JC657A
	HP 1250x G2 Fabric Module	JC658A
Note 7	The following Transceivers install into this Module: (Use #0D1 if switch is CTO) - if applicable	
	HP X125 1G SFP LC LH40 1310nm Transceiver	JD061A

Configuration

	HP X120 1G SFP LC LH40 1550nm Transceiver	JD062A
	HP X125 1G SFP LC LH70 Transceiver	JD063B
	HP X120 1G SFP LC SX Transceiver	JD118B
	HP X120 1G SFP LC LX Transceiver	JD119B
Note 9	These modules are Not Supported with Management Module JG497A - HP 12500 Type A MPU w/Comware v7 OS. They are Only Supported with Management Modules JC072B - HP 12500 Main Processing Unit and JC808A - HP 12500 TAA Main Processing Unit and JG802A HP FF 12500E MPU.	
Note 10	Supported on JF431C, JC652A, JF430C, JC653A, JC654A, JC655A, JG782A, JG783A, JG784A and JG785A Switch Chassis only.	
Remarks	JC073B, JC064B, JC068B, and JC476B - Do not install the card in any of the following slots: slot 16, 17, 18, or 19 of the S12518.	

Transceivers

SFP Transceivers

HP X170 1G SFP LC LH70 1550 Transceiver	JD109A
HP X170 1G SFP LC LH70 1570 Transceiver	JD110A
HP X170 1G SFP LC LH70 1590 Transceiver	JD111A
HP X170 1G SFP LC LH70 1610 Transceiver	JD112A
HP X170 1G SFP LC LH70 1470 Transceiver	JD113A
HP X170 1G SFP LC LH70 1490 Transceiver	JD114A
HP X170 1G SFP LC LH70 1510 Transceiver	JD115A
HP X170 1G SFP LC LH70 1530 Transceiver	JD116A
HP X120 1G SFP LC LH100 Transceiver	JD103A
HP X125 1G SFP LC LH40 1310nm XCVR	JD061A
HP X120 1G SFP LC LH40 1550nm XCVR	JD062A
HP X125 1G SFP LC LH70 Transceiver	JD063B
HP X120 1G SFP RJ45 T Transceiver	JD089B
HP X120 1G SFP LC SX Transceiver	JD118B
HP X120 1G SFP LC LX Transceiver	JD119B
HP X120 1G SFP LC BX 10-U Transceiver	JD098B
HP X120 1G SFP LC BX 10-D Transceiver	JD099B
HP X110 100M SFP LC FX Transceiver	JF833A
HP X120 100M/1G SFP LC LX Transceiver	JF832A

SFP+ Transceivers

HP X130 10G SFP+ LC SR Transceiver	JD092B
HP X130 10G SFP+ LC LRM Transceiver	JD093B
HP X130 10G SFP+ LC LR Transceiver	JD094B

Configuration

HP X130 10G SFP+ LC ER 40km Transceiver	JG234A
HP X240 10G SFP+ SFP+ 3m DAC Cable	JD097C#B01
HP X240 10G SFP+ SFP+ 5m DAC Cable	JG081C#B01
HP X240 10G SFP+ 7m DAC Cable	JC784C#B01

QSFP+ Transceivers

HP X140 40G QSFP+ LC LR4 SM XCVR	JG661A
HP X140 40G QSFP+ MPO SR4 XCVR	JG325B
HP X140 40G QSFP+ CSR4 300m XCVR	JG709A

XFP Transceivers

HP X135 10G XFP LC ER Transceiver	JD121A
HP X130 10G XFP LC ZR 1550nm Transceiver	JD107A
HP X130 10G XFP LC SR Transceiver	JD117B
HP X130 10G XFP LC LR 1310nm Transceiver	JD108B
HP X135 10G XFP LC ER Transceiver	JG226A
HP X130 10G XFP SC ZR Transceiver	JG227A
HP X130 10G XFP LC SR Transceiver	JG228A
HP X130 10G XFP SC LR Transceiver	JG229A
HP X135 10G XFP LC ER Transceiver	JG230A
HP X130 10G XFP SC ZR Transceiver	JG231A
HP X130 10G XFP LC SR Transceiver	JG232A
HP X130 10G XFP SC LR Transceiver	JG233A

Server Specific Options

HP Premier Flex LC/LC OM4 2f 1m Cbl	QK732A
HP Premier Flex LC/LC OM4 2f 2m Cbl	QK733A
HP Premier Flex LC/LC OM4 2f 5m Cbl	QK734A
HP Premier Flex LC/LC OM4 2f 15m Cbl	QK735A
HP Premier Flex LC/LC OM4 2f 30m Cbl	QK736A
HP Premier Flex LC/LC OM4 2f 50m Cbl	QK737A

Cable Guides

System (std 0 // max 1) User Selection (min 0 // max 1) Per Switch

HP 12500 Side Cable Management Guide	JC084A
HP 12508 Cable Guides for AC Pwr Switch	JC785A See Configuration Note:1

Configuration

HP 12518 Cable Guides for AC Pwr Switch	JC786A See Configuration Note:2
HP 12508 Cable Guides for DC Pwr Switch	JC787A See Configuration Note:3
HP 12518 Cable Guides for DC Pwr Switch	JC788A See Configuration Note:4
HP 12508E Optional Cbl Guide for AC Swch	JG830A See Configuration Note:5
HP 12518E Optional Cbl Guide for AC Swch	JG831A See Configuration Note:6
HP 12508E Optional Cbl Guide for DC Swch	JG832A See Configuration Note:7
HP 12518E Optional Cbl Guide for DC Swch	JG833A See Configuration Note:8

Configuration Rules:

Note 1	Supported on Switch JF431x - HP 12508 AC Switch Chassis only.
Note 2	Supported on Switch JF430x - HP 12518 AC Switch Chassis only.
Note 3	Supported on Switch JC652x -HP 12508 DC Switch Chassis only.
Note 4	Supported on Switch JC653x - HP 12518 DC Switch Chassis only.
Note 5	Supported on Switch JG782A - HP FF 12508E AC Switch Chassis only.
Note 6	Supported on Switch JG784A - HP FF 12518E AC Switch Chassis only.
Note 7	Supported on Switch JG783A - HP FF 12508E DC Switch Chassis only.
Note 8	Supported on Switch JG785A - HP FF 12518E DC Switch Chassis only.

Configuration

Remarks: These items are optional .and used by customers for I/O cabling management.

Fan Assemblies

12504 Only - System (std 0 // max 1) User Selection (min 1 // max 1) Per Switch

12508 and 12518 Only - System (std 0 // max 2) User Selection (min 2 // max 2) Per Switch

HP 12504 Fan Assembly	JC664A See Configuration Note:3
HP 12518 Fan Assembly	JC080A See Configuration Note:2
HP 12508 Fan Assembly	JC081A See Configuration Note:1
HP FF 12500E Fan Tray Assembly	JG805A See Configuration Note:4

Configuration Rules:

Note 1 Supported on Switch JF431C and JC652A Switch Chassis only.

Note 2 Supported on Switch JF430C and JC653A Switch Chassis only.

Note 3 Supported on Switch JC654A and JC655A Switch Chassis only.

Note 4 Supported on JG782A, JG783A, JG784A and JG785A Switch Chassis only

Air Filter Assemblies

System (std 0 // max 1) User Selection (min 0 // max 1)

HP 12508 Optional Air Filter	JC082A See Configuration Note:1
HP 12518 Optional Air Filter	JC083A See Configuration Note:2

Configuration

HP FF 12508E Optional Air Filter	JG808A See Configuration Note:3
HP FF 12518E Optional Air Filter	JG809A See Configuration Note:4

Configuration Rules:

Note 1 Supported on Switch JF431C and JC652A Switch Chassis only.

Note 2 Supported on Switch JF430C and JC653A Switch Chassis only.

Note 3 Supported on Switch JF431C, JC652A, JG782A and JG783A Switch Chassis only.

Note 4 Supported on Switch JF430C, JC653A, JG784A and JG785A Switch Chassis only.

Power Monitor Module

System (std 0 // max 1) User Selection (min 0 // max 1) Per Switch

HP 12500 Spare Power Monitor Module	JC502A See Configuration Note:1
HP FF 12500E Spare Pwr Monitor Mod	JG804A See Configuration Note:2

Configuration Rules:

Note 1 This item is only used to replace the Power Monitor Module of a JF431C, JF430C, JC652C and JC653A . A host is delivered with the Power Monitor Module.

Note 2 This item is only used to replace the Power Monitor Module of an JG782A, JG784A, JG783A and JG785A . A host is delivered with the Power Monitor Module.

Power Cables

12500 only-System (std 0 // max 6 or 12) User Selection (min 0 // max 6 or 12)

12500E only-System (std 0 // max 8 or 16) User Selection (min 0 // max 8 or 16)

HP X210 10m JG-to-bare 72v DC Pwr Cable	JG280A

Configuration

See Configuration Note:1

Configuration Rules:

Note 1 If the DC Power Supplies are selected, Then the number of DC power cables should match the number of DC power supplies.

Compact Flash cards

HP X600 1G Compact Flash Card JC684A
- Parts List Only

HP FF 4GB Compact Flash Card JG806A
- Parts List Only

See Configuration Note:1

Configuration Rules:

Note 1 Supported on MPU Module JG802A only.

SDRAM

HP X610 1GB DDR2 SDRAM Memory JC071A
- Parts List Only

HP FF 4GB DDR3 SDRAM JG807A
- Parts List Only

See Configuration Note:1

Configuration Rules:

Note 1 Supported on MPU Module JG802A only.

Mounting Kit

HP X421 Chassis Universal 4-post Rack Mounting Kit JC665A

Configuration Rules:

Remarks: This item is optional and used by customers to allow the chassis to slide in and out of the rack

Technical Specifications

HP 12504 AC Switch Chassis (JC654A)

I/O ports and slots	4 open module slots Supports a maximum of 192 Gigabit Ethernet ports or 192 1/10GbE ports or 64 40GbE ports, or a combination	
Additional ports and slots	2 MPU (for management modules) slots 4 switch fabric slots	
Physical characteristics	**Dimensions**	17.4(w) x 27.87(d) x 17.4(h) in (44.2 x 70.8 x 44.2 cm) (10U height)
	Weight	132.28 lb (60 kg)
	Full configuration weight	220.46 lb (100 kg)
Memory and processor	**Gigabit Module**	PowerPC @ 667 MHz, 1 GB RAM; packet buffer size: 512 MB (Ingress, shared by 24 1-GbE ports)
	10G Module	PowerPC @ 667 MHz, 1 GB RAM; packet buffer size: 512 MB (Ingress/shared by 2 10GbE ports)
	Management Module	Primary CPU: PowerPC @ 1000 MHz, 128 MB flash, 256 MB compact flash, 4 GB RAM
	Fabric	PowerPC @ 400 MHz, 128 MB RAM
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet	
Performance	**Throughput**	1920 Mpps
	Routing/Switching capacity	3240 Gb/s
Environment	**Operating temperature**	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	5% to 95%, non-condensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
Electrical characteristics	**Frequency**	50/60 Hz
	Maximum heat dissipation	8123 BTU/hr (8569.77 kJ/hr)
	AC voltage	100-120/200-240 VAC
	Maximum power rating	2380 W
	Notes	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	CE Labeled; cUL Certified; UL Listed; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60825; IEC 60950-1:2001 (with CB Report); CAN/CSA-C22.2 No. 60950-1-03; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; UL 60950-1:2003; EN 60950-1:2001; ROHS Compliance	
Emissions	VCCI Class A; EN 55022 Class A; VCCI V-3/2000.04; ICES-003 Class A; AS/NZS CISPR22 Class A; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	

Technical Specifications

Immunity	**Generic**	ETSI EN 300 386 V1.3.3
	EN	EN 55024:1998+ A1:2001 + A2:2003
	ESD	EN 61000-4-2; IEC61000-4-2
	Radiated	EN 61000-4-3; IEC61000-4-3
	EFT/Burst	EN 61000-4-4; IEC61000-4-4
	Surge	EN 61000-4-5; IEC61000-4-5
	Conducted	EN 61000-4-6; IEC61000-4-6
	Power frequency magnetic field	IEC 61000-4-8; EN61000-4-8
	Voltage dips and interruptions	EN 61000-4-11; IEC61000-4-11
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	IMC - Intelligent Management Center; command-line interface; out-of-band management (serial RS-232C); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; terminal interface (serial RS-232C); modem interface	
Services	3-year, 4-hour onsite, 24x7 coverage for hardware (U7M17E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U7M19E) 3-year, 24x7 SW phone support, software updates (U7M25E) 4-year, 4-hour onsite, 13x5 coverage for hardware (U7M30E) 4-year, 4-hour onsite, 24x7 coverage for hardware (U7M32E) 4-year, 4-hour onsite, 24x7 coverage for hardware (U7M45E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U7M39E) 4-year, 24x7 SW phone support, software updates (U7M38E) 5-year, 4-hour onsite, 13x5 coverage for hardware (U7M43E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U7M52E) 5-year, 24x7 SW phone support, software updates (U7M51E) 3 Yr 6 hr Call-to-Repair Onsite (U7M22E) 3 Yr 6 hr Call-to-Repair Onsite (U7M22E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UW992E) 4 Yr 6 hr Call-to-Repair Onsite (U7M35E 5 Yr 6 hr Call-to-Repair Onsite (U7M48E) 3-year, 4-hour onsite, 13x5 coverage for HW, 13x5 SW phone support and SW updates (U7M26E) 1-year, 4-hour onsite, 13x5 coverage for hardware (U7M05E) 1-year, 4-hour onsite, 24x7 coverage for hardware (U7M07E) 1-year, 6 hour Call-To-Repair Onsite for hardware (U7M09E) 1-year, 24x7 software phone support, software updates (U7M11E) 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U7M12E) 1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U7M03E) 1 year, 24x7 software phone support, software updates + 4 hour hardware exchange (U7M04E) 3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U7M13E) 3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U7M14E) 3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U7M15E) 4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange	

(U7M27E)
4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U7M28E)
5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U7M40E)
5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U7M41E)
3 Yr NBD Onsite Proactive Care (U7M16E)
4 Yr NBD Onsite Proactive Care (U7M29E)
5 Yr NBD Onsite Proactive Care (U7M42E)
3 Yr 4hr/24x7 Proactive Care (U7M20E)
4 Yr 4hr/24x7 Proactive Care (U7M33E)
5 Yr 4hr/24x7 Proactive Care (U7M46E)
3 Yr 6hr CTR Proactive Care (U7M23E)
4 Yr 6hr CTR Proactive Care (U7M36E)
5 Yr 6hrCTR Proactive Care (U7M49E)

Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP 12504 DC Switch Chassis (JC655A)

I/O ports and slots	4 open module slots Supports a maximum of 192 Gigabit Ethernet ports or 192 1/10GbE ports or 64 40GbE ports, or a combination	
Additional ports and slots	2 MPU (for management modules) slots 4 switch fabric slots	
Physical characteristics	**Dimensions**	17.4(w) x 27.87(d) x 17.4(h) in (44.2 x 70.8 x 44.2 cm) (10U height)
	Weight	132.28 lb (60 kg)
	Full configuration weight	220.46 lb (100 kg)
Memory and processor	**Gigabit Module**	PowerPC @ 667 MHz, 1 GB RAM; packet buffer size: 512 MB (Ingress, shared by 24 1-GbE ports)
	10G Module	PowerPC @ 667 MHz, 1 GB RAM; packet buffer size: 512 MB (Ingress/shared by 2 10GbE ports)
	Management Module	Primary CPU: PowerPC @ 1000 MHz, 128 MB flash, 256 MB compact flash, 4 GB RAM
	Fabric	PowerPC @ 400 MHz, 128 MB RAM
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet	
Performance	**Throughput**	1920 Mpps
	Routing/Switching capacity	3240 Gb/s
Environment	**Operating temperature**	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	5% to 95%, non-condensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)

Technical Specifications

	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
Electrical characteristics	**Maximum heat dissipation**	8123 BTU/hr (8569.77 kJ/hr)
	DC Voltage	-48 to -60 VDC
	Maximum power rating	2380 W
	Notes	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	CE Labeled; cUL Certified; UL Listed; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60825; IEC 60950-1:2001 (with CB Report); CAN/CSA-C22.2 No. 60950-1-03; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; UL 60950-1:2003; EN 60950-1:2001; ROHS Compliance	
Emissions	VCCI Class A; EN 55022 Class A; VCCI V-3/2000.04; ICES-003 Class A; AS/NZS CISPR22 Class A; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	
Immunity	**Generic**	ETSI EN 300 386 V1.3.3
	EN	EN 55024:1998+ A1:2001 + A2:2003
	ESD	EN 61000-4-2; IEC61000-4-2
	Radiated	EN 61000-4-3; IEC61000-4-3
	EFT/Burst	EN 61000-4-4; IEC61000-4-4
	Surge	EN 61000-4-5; IEC61000-4-5
	Conducted	EN 61000-4-6; IEC61000-4-6
	Power frequency magnetic field	IEC 61000-4-8; EN61000-4-8
	Voltage dips and interruptions	EN 61000-4-11; IEC61000-4-11
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	IMC - Intelligent Management Center; command-line interface; out-of-band management (serial RS-232C); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; terminal interface (serial RS-232C); modem interface	
Services	3-year, 4-hour onsite, 24x7 coverage for hardware (U7M17E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U7M19E) 3-year, 24x7 SW phone support, software updates (U7M25E) 4-year, 4-hour onsite, 13x5 coverage for hardware (U7M30E) 4-year, 4-hour onsite, 24x7 coverage for hardware (U7M32E) 4-year, 4-hour onsite, 24x7 coverage for hardware (U7M45E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U7M39E) 4-year, 24x7 SW phone support, software updates (U7M38E) 5-year, 4-hour onsite, 13x5 coverage for hardware (U7M43E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U7M52E) 5-year, 24x7 SW phone support, software updates (U7M51E) 3 Yr 6 hr Call-to-Repair Onsite (U7M22E) 3 Yr 6 hr Call-to-Repair Onsite (U7M22E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UW992E)	

4 Yr 6 hr Call-to-Repair Onsite (U7M35E
5 Yr 6 hr Call-to-Repair Onsite (U7M48E)
3-year, 4-hour onsite, 13x5 coverage for HW, 13x5 SW phone support and SW updates (U7M26E)
1-year, 4-hour onsite, 13x5 coverage for hardware (U7M05E)
1-year, 4-hour onsite, 24x7 coverage for hardware (U7M07E)
1-year, 6 hour Call-To-Repair Onsite for hardware (U7M09E)
1-year, 24x7 software phone support, software updates (U7M11E)
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U7M12E)
1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U7M03E)
1 year, 24x7 software phone support, software updates + 4 hour hardware exchange (U7M04E)
3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U7M13E)
3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U7M14E)
3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U7M15E)
4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U7M27E)
4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U7M28E)
5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U7M40E)
5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U7M41E)
3 Yr NBD Onsite Proactive Care (U7M16E)
4 Yr NBD Onsite Proactive Care (U7M29E)
5 Yr NBD Onsite Proactive Care (U7M42E)
3 Yr 4hr/24x7 Proactive Care (U7M20E)
4 Yr 4hr/24x7 Proactive Care (U7M33E)
5 Yr 4hr/24x7 Proactive Care (U7M46E)
3 Yr 6hr CTR Proactive Care (U7M23E)
4 Yr 6hr CTR Proactive Care (U7M36E)
5 Yr 6hrCTR Proactive Care (U7M49E)

Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP 12508 AC Switch Chassis (JF431C)

I/O ports and slots	8 open module slots Supports a maximum of 384 Gigabit Ethernet ports or 384 1/10GbE ports or 128 40GbE ports, or a combination	
Additional ports and slots	2 MPU (for management modules) slots 9 switch fabric slots	
Physical characteristics	**Dimensions**	17.4(d) x 29.13(w) x 38.39(h) in. (44.2 x 73.99 x 97.51 cm) (22U height)
	Weight	209.44 lb (95 kg)
	Full configuration weight	374.78 lb. (170 kg)
Memory and processor	**Gigabit Module**	PowerPC @ 667 MHz, 1 GB RAM; packet buffer size: 512 MB RAM (Ingress, shared by 24 1-GbE ports)

Technical Specifications

	10G Module	PowerPC @ 667 MHz, 1 GB RAM; packet buffer size: 512 MB (Ingress/shared by 2 10GbE ports)
	Management Module	Primary CPU: PowerPC @ 1000 MHz, 128 MB flash MB, 256 MB compact flash, 4 GB RAM
	Fabric	PowerPC @ 400 MHz, 128 MB RAM MB
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet	
Performance	**Throughput**	3840 Mpps
	Routing/Switching capacity	6120 Gb/s
Environment	**Operating temperature**	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	5% to 95%, non-condensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
Electrical characteristics	**Frequency**	50/60 Hz
	Achieved Miercom Certified Green Award*	
	* Products within this series have achieved sufficient scores in each of the rated criteria to achieve the Miercom Certified Green distinction Award. See the Specifications section of this series for more information.	
	Description	10GbE modules consume half the power compared to competitive products; redundant, scalable, 90% efficient power supplies deliver high reliability in the data center; new ASIC technology has low power consumption when providing rich features.
	Maximum heat dissipation	14587 BTU/hr (15389.29 kJ/hr)
	AC voltage	100-120/200-240 VAC
	Maximum power rating	4750 W
	Notes	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	CE Labeled; cUL Certified; UL Listed; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60825; IEC 60950-1:2001 (with CB Report); CAN/CSA-C22.2 No. 60950-1-03; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; UL 60950-1:2003; EN 60950-1:2001; ROHS Compliance	
Emissions	VCCI Class A; EN 55022 Class A; VCCI V-3/2000.04; ICES-003 Class A; AS/NZS CISPR22 Class A; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	
Immunity	**Generic**	ETSI EN 300 386 V1.3.3
	EN	EN 55024:1998+ A1:2001 + A2:2003
	ESD	EN 61000-4-2; IEC61000-4-2
	Radiated	EN 61000-4-3; IEC61000-4-3

	EFT/Burst	EN 61000-4-4; IEC61000-4-4
	Surge	EN 61000-4-5; IEC61000-4-5
	Conducted	EN 61000-4-6; IEC61000-4-6
	Power frequency magnetic field	IEC 61000-4-8; EN61000-4-8
	Voltage dips and interruptions	EN 61000-4-11; IEC61000-4-11
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management		IMC - Intelligent Management Center; command-line interface; out-of-band management (serial RS-232C); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; terminal interface (serial RS-232C); modem interface
Services		3-year, 4-hour onsite, 13x5 coverage for hardware (UW984E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UW987E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UW990E) 3-year, 24x7 SW phone support, software updates (UW993E) Installation with minimum configuration, system-based pricing (UX034E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UW985E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UW988E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UW991E) 4-year, 24x7 SW phone support, software updates (UW994E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UW986E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UW989E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UW992E) 5-year, 24x7 SW phone support, software updates (UW995E) 3 Yr 6 hr Call-to-Repair Onsite (UW996E) 4 Yr 6 hr Call-to-Repair Onsite (UW997E) 5 Yr 6 hr Call-to-Repair Onsite (UW998E) 1-year, 4-hour onsite, 13x5 coverage for hardware (HR494E) 1-year, 4-hour onsite, 24x7 coverage for hardware (HR495E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HR498E) 1-year, 24x7 software phone support, software updates (HR497E) 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR496E) Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office

HP 12508 DC Switch Chassis (JC652A)

I/O ports and slots	8 open module slots Supports a maximum of 384 Gigabit Ethernet ports or 384 1/10GbE ports or 128 40GbE ports, or a combination
Additional ports and slots	2 MPU (for management modules) slots 9 switch fabric slots

Technical Specifications

Physical characteristics	**Dimensions**	17.4(d) x 29.13(w) x 38.39(h) in. (44.2 x 73.99 x 97.51 cm) (22U height)
	Weight	209.44 lb (95 kg)
	Full configuration weight	374.78 lb. (170 kg)
Memory and processor	**Gigabit Module**	PowerPC @ 667 MHz, 1 GB RAM; packet buffer size: 512 MB RAM (Ingress, shared by 24 1-GbE ports)
	10G Module	PowerPC @ 667 MHz, 1 GB RAM; packet buffer size: 512 MB (Ingress/shared by 2 10GbE ports)
	Management Module	Primary CPU: PowerPC @ 1000 MHz, 128 MB flash MB, 256 MB compact flash, 4 GB RAM
	Fabric	PowerPC @ 400 MHz, 128 MB RAM MB
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet	
Performance	**Throughput**	3840 Mpps
	Routing/Switching capacity	6120 Gb/s
Environment	**Operating temperature**	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	5% to 95%, non-condensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
Electrical characteristics	**Maximum heat dissipation**	14587 BTU/hr (15389.29 kJ/hr)
	DC voltage	-48 to -60 VDC
	Maximum power rating	4750 W
	Notes	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	CE Labeled; cUL Certified; UL Listed; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60825; IEC 60950-1:2001 (with CB Report); CAN/CSA-C22.2 No. 60950-1-03; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; UL 60950-1:2003; EN 60950-1:2001; ROHS Compliance	
Emissions	VCCI Class A; EN 55022 Class A; VCCI V-3/2000.04; ICES-003 Class A; AS/NZS CISPR22 Class A; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	
Immunity	**Generic**	ETSI EN 300 386 V1.3.3
	EN	EN 55024:1998+ A1:2001 + A2:2003
	ESD	EN 61000-4-2; IEC61000-4-2
	Radiated	EN 61000-4-3; IEC61000-4-3
	EFT/Burst	EN 61000-4-4; IEC61000-4-4
	Surge	EN 61000-4-5; IEC61000-4-5
	Conducted	EN 61000-4-6; IEC61000-4-6

Technical Specifications

	Power frequency magnetic field	IEC 61000-4-8; EN61000-4-8
	Voltage dips and interruptions	EN 61000-4-11; IEC61000-4-11
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	IMC - Intelligent Management Center; command-line interface; out-of-band management (serial RS-232C); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; terminal interface (serial RS-232C); modem interface	
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (UW984E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UW987E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UW990E) 3-year, 24x7 SW phone support, software updates (UW993E) Installation with minimum configuration, system-based pricing (UX034E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UW985E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UW988E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UW991E) 4-year, 24x7 SW phone support, software updates (UW994E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UW986E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UW989E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UW992E) 5-year, 24x7 SW phone support, software updates (UW995E) 3 Yr 6 hr Call-to-Repair Onsite (UW996E) 4 Yr 6 hr Call-to-Repair Onsite (UW997E) 5 Yr 6 hr Call-to-Repair Onsite (UW998E) 1-year, 4-hour onsite, 13x5 coverage for hardware (HR494E) 1-year, 4-hour onsite, 24x7 coverage for hardware (HR495E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HR498E) 1-year, 24x7 software phone support, software updates (HR497E) 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR496E) Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office	

HP 12518 AC Switch Chassis (JF430C)

I/O ports and slots	18 open module slots Supports a maximum of 864 Gigabit Ethernet ports or 864 1/10GbE ports or 288 40GbE ports, or a combination	
Additional ports and slots	2 MPU (for management modules) slots 9 switch fabric slots	
Physical characteristics	**Dimensions**	17.4(d) x 29.13(w) x 66.38(h) in. (44.2 x 73.99 x 168.61 cm) (38U height)
	Weight	352.74 lb (160 kg)
	Full configuration weight	639.33 lb (290 kg)
Memory and processor	**Gigabit Module**	PowerPC @ 667 MHz, 1 GB RAM; packet buffer size: 512 MB RAM (Ingress, shared by 24 1-GbE ports)

Technical Specifications

	10G Module	PowerPC @ 667 MHz, 1 GB RAM; packet buffer size: 512 MB (Ingress/shared by 2 10GbE ports)
	Management Module	Primary CPU: PowerPC @ 1000 MHz, 128 MB flash MB, 256 MB compact flash, 4 GB RAM
	Fabric	PowerPC @ 400 MHz, 128 MB RAM MB
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet	
Performance	**Throughput**	8640 Mpps
	Routing/Switching capacity	13.3 Tb/s
Environment	**Operating temperature**	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	5% to 95%, non-condensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
Electrical characteristics	**Frequency**	50/60 Hz
	Maximum heat dissipation	32859 BTU/hr (34666.24 kJ/hr)
	AC voltage	100-120/200-240 VAC
	Maximum power rating	10700 W
	Notes	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	CE Labeled; cUL Certified; UL Listed; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60825; IEC 60950-1:2001 (with CB Report); CAN/CSA-C22.2 No. 60950-1-03; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; UL 60950-1:2003; EN 60950-1:2001; ROHS Compliance	
Emissions	VCCI Class A; EN 55022 Class A; VCCI V-3/2000.04; ICES-003 Class A; AS/NZS CISPR22 Class A; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	
Immunity	**Generic**	ETSI EN 300 386 V1.3.3
	EN	EN 55024:1998+ A1:2001 + A2:2003
	ESD	EN 61000-4-2; IEC61000-4-2
	Radiated	EN 61000-4-3; IEC61000-4-3
	EFT/Burst	EN 61000-4-4; IEC61000-4-4
	Surge	EN 61000-4-5; IEC61000-4-5
	Conducted	EN 61000-4-6; IEC61000-4-6
	Power frequency magnetic field	IEC 61000-4-8; EN61000-4-8
	Voltage dips and interruptions	EN 61000-4-11; IEC61000-4-11

Technical Specifications

	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	IMC - Intelligent Management Center; command-line interface; out-of-band management (serial RS-232C); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; terminal interface (serial RS-232C); modem interface	
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (UX046E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UX049E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UX052E) 3-year, 24x7 SW phone support, software updates (UX055E) Installation with minimum configuration, system-based pricing (UX034E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UX047E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UX050E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX053E) 4-year, 24x7 SW phone support, software updates (UX056E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UX048E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UX051E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX054E) 5-year, 24x7 SW phone support, software updates (UX057E) 3 Yr 6 hr Call-to-Repair Onsite (UX058E) 4 Yr 6 hr Call-to-Repair Onsite (UX059E) 5 Yr 6 hr Call-to-Repair Onsite (UX060E) 1-year, 4-hour onsite, 13x5 coverage for hardware (HR489E) 1-year, 4-hour onsite, 24x7 coverage for hardware (HR490E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HR493E) 1-year, 24x7 software phone support, software updates (HR492E) 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR491E) Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office	

HP 12518 DC Switch Chassis (JC653A)

I/O ports and slots	18 open module slots Supports a maximum of 864 Gigabit Ethernet ports or 864 1/10GbE ports or 288 40GbE ports, or a combination	
Additional ports and slots	2 MPU (for management modules) slots 9 switch fabric slots	
Physical characteristics	**Dimensions**	17.4(d) x 29.13(w) x 66.38(h) in. (44.2 x 73.99 x 168.61 cm) (38U height)
	Weight	352.74 lb (160 kg)
	Full configuration weight	639.33 lb (290 kg)
Memory and processor	**Gigabit Module**	PowerPC @ 667 MHz, 1 GB RAM; packet buffer size: 512 MB RAM (Ingress, shared by 24 1-GbE ports)
	10G Module	PowerPC @ 667 MHz, 1 GB RAM; packet buffer size: 512 MB (Ingress/shared by 2 10GbE ports)
	Management Module	Primary CPU: PowerPC @ 1000 MHz, 128 MB flash MB, 256 MB compact flash, 4 GB RAM

Technical Specifications

	Fabric	PowerPC @ 400 MHz, 128 MB RAM MB
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet	
Performance	**Throughput**	8640 Mpps
	Routing/Switching capacity	13.3 Tb/s
Environment	**Operating temperature**	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	5% to 95%, non-condensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
Electrical characteristics	**Maximum heat dissipation**	32859 BTU/hr (34666.24 kJ/hr)
	Maximum power rating	10700 W
	DC Voltage	-48 to -60 VDC
	Notes	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	CE Labeled; cUL Certified; UL Listed; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60825; IEC 60950-1:2001 (with CB Report); CAN/CSA-C22.2 No. 60950-1-03; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; UL 60950-1:2003; EN 60950-1:2001; ROHS Compliance	
Emissions	VCCI Class A; EN 55022 Class A; VCCI V-3/2000.04; ICES-003 Class A; AS/NZS CISPR22 Class A; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	
Immunity	**Generic**	ETSI EN 300 386 V1.3.3
	EN	EN 55024:1998+ A1:2001 + A2:2003
	ESD	EN 61000-4-2; IEC61000-4-2
	Radiated	EN 61000-4-3; IEC61000-4-3
	EFT/Burst	EN 61000-4-4; IEC61000-4-4
	Surge	EN 61000-4-5; IEC61000-4-5
	Conducted	EN 61000-4-6; IEC61000-4-6
	Power frequency magnetic field	IEC 61000-4-8; EN61000-4-8
	Voltage dips and interruptions	EN 61000-4-11; IEC61000-4-11
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	IMC - Intelligent Management Center; command-line interface; out-of-band management (serial RS-232C); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; terminal interface (serial RS-232C); modem interface	
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (UX046E)	

3-year, 4-hour onsite, 24x7 coverage for hardware (UX049E)
3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UX052E)
3-year, 24x7 SW phone support, software updates (UX055E)
Installation with minimum configuration, system-based pricing (UX034E)
4-year, 4-hour onsite, 13x5 coverage for hardware (UX047E)
4-year, 4-hour onsite, 24x7 coverage for hardware (UX050E)
4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX053E)
4-year, 24x7 SW phone support, software updates (UX056E)
5-year, 4-hour onsite, 13x5 coverage for hardware (UX048E)
5-year, 4-hour onsite, 24x7 coverage for hardware (UX051E)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX054E)
5-year, 24x7 SW phone support, software updates (UX057E)
3 Yr 6 hr Call-to-Repair Onsite (UX058E)
4 Yr 6 hr Call-to-Repair Onsite (UX059E)
5 Yr 6 hr Call-to-Repair Onsite (UX060E)
1-year, 4-hour onsite, 13x5 coverage for hardware (HR489E)
1-year, 4-hour onsite, 24x7 coverage for hardware (HR490E)
1-year, 6 hour Call-To-Repair Onsite for hardware (HR493E)
1-year, 24x7 software phone support, software updates (HR492E)
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR491E)

Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office

HP FlexFabric 12508E AC Switch Chassis (JG782A)

I/O ports and slots	8 open module slots Supports a maximum of 384 Gigabit Ethernet ports or 384 1/10GbE ports or 128 40GbE ports	
Additional ports and slots	2 MPU (for management modules) slots 9 switch fabric slots	
Physical characteristics	**Dimensions**	17.4(w) x 29.13(d) x 38.39(h) in (44.2 x 74.0 x 97.51 cm) (22U height)
	Weight	242.51 lb (110 kg)
	Full configuration weight	374.78 lb (170 kg)
Memory and processor	**Gigabit Module**	PowerPC @ 667, 1 GB RAM; packet buffer size: 512 MB (Ingress, shared by 24 1-GbE ports)
	10G Module	PowerPC @ 667 MHz, 1 GB RAM; packet buffer size: 512 MB (Ingress, shared by 24 1-GbE ports)
	Management Module	Quad Core CPU @ 1800 MHz, 512 MB flash, 4 GB compact flash, 8 GB RAM
	Fabric	PowerPC @ 400 MHz, 128 MB RAM
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet	
Performance	**Throughput**	4800 Mpps
	Routing/Switching capacity	10.8 Tb/s
Environment	**Operating temperature**	32°F to 104°F (0°C to 40°C)

Technical Specifications

	Operating relative humidity	5% to 95%, non-condensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
Electrical characteristics	**Frequency**	50/60 Hz Achieved Miercom Certified Green Award
	Description	10GbE modules consume half the power compared to competitive products; redundant, scalable, 90% efficient power supplies deliver high reliability in the data center; new ASIC technology has low power consumption when providing rich features.
	Maximum heat dissipation	14587 BTU/hr (15389.29 kJ/hr)
	AC voltage	100 - 120 / 200 - 240 VAC
	Maximum power rating	4750 W
	Notes	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	CE Labeled; cUL Certified; UL Listed; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60825; IEC 60950-1:2001 (with CB Report); CAN/CSA-C22.2 No. 60950-1-03; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; UL 60950-1:2003; EN 60950-1:2001; ROHS Compliance	
Emissions	VCCI Class A; EN 55022 Class A; VCCI V-3/2000.04; ICES-003 Class A; AS/NZS CISPR22 Class A; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	
Immunity	**Generic**	ETSI EN 300 386 V1.3.3
	EN	EN 55024:1998+ A1:2001 + A2:2003
	ESD	EN 61000-4-2; IEC61000-4-2
	Radiated	EN 61000-4-3; IEC61000-4-3
	EFT/Burst	EN 61000-4-4; IEC61000-4-4
	Surge	EN 61000-4-5; IEC61000-4-5
	Conducted	EN 61000-4-6; IEC61000-4-6
	Power frequency magnetic field	IEC 61000-4-8; EN61000-4-8
	Voltage dips and interruptions	EN 61000-4-11; IEC61000-4-11
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	IMC - Intelligent Management Center; command-line interface; out-of-band management (serial RS-232C); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; terminal interface (serial RS-232C); modem interface	

Technical Specifications

Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office	

HP FlexFabric 12508E DC Switch Chassis (JG783A)

I/O ports and slots	8 open module slots Supports a maximum of 384 Gigabit Ethernet ports or 384 1/10GbE ports or 128 40GbE ports	
Additional ports and slots	2 MPU (for management modules) slots 9 switch fabric slots	
Physical characteristics	**Dimensions**	17.4(w) x 29.13(d) x 38.39(h) in (44.2 x 73.99 x 97.51 cm) (22U height)
	Weight	209.44 lb (95 kg)
	Full configuration weight	374.78 lb (170 kg)
Memory and processor	**Gigabit Module**	PowerPC @ 667 MHz, 1 GB RAM; packet buffer size: 512 MB (Ingress, shared by 24 1-GbE ports)
	10G Module	PowerPC @ 667 MHz, 1 GB RAM; packet buffer size: 512 MB (Ingress/shared by 2 10GbE ports)
	Management Module	Quad Core CPU @ 1800 MHz, 512 MB flash, 4 GB compact flash, 8 GB RAM
	Fabric	PowerPC @ 400 MHz, 128 MB RAM
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet	
Performance	**Throughput**	4800 Mpps
	Routing/Switching capacity	10.8 Tb/s
Environment	**Operating temperature**	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	5% to 95%, non-condensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
Electrical characteristics	**Maximum heat dissipation**	14587 BTU/hr (15389.29 kJ/hr)
	Maximum power rating	4750 W
	DC Voltage	-48 to -60 VDC
	Notes	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	CE Labeled; cUL Certified; UL Listed; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60825; IEC 60950-1:2001 (with CB Report); CAN/CSA-C22.2 No. 60950-1-03; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; UL 60950-1:2003; EN 60950-1:2001; ROHS Compliance	
Emissions	VCCI Class A; EN 55022 Class A; VCCI V-3/2000.04; ICES-003 Class A; AS/NZS CISPR22 Class A; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	

Technical Specifications

Immunity	**Generic**	ETSI EN 300 386 V1.3.3
	EN	EN 55024:1998+ A1:2001 + A2:2003
	ESD	EN 61000-4-2; IEC61000-4-2
	Radiated	EN 61000-4-3; IEC61000-4-3
	EFT/Burst	EN 61000-4-4; IEC61000-4-4
	Surge	EN 61000-4-5; IEC61000-4-5
	Conducted	EN 61000-4-6; IEC61000-4-6
	Power frequency magnetic field	IEC 61000-4-8; EN61000-4-8
	Voltage dips and interruptions	EN 61000-4-11; IEC61000-4-11
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	IMC - Intelligent Management Center; command-line interface; out-of-band management (serial RS-232C); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; terminal interface (serial RS-232C); modem interface	
Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office	

HP FlexFabric 12518E AC Switch Chassis (JG784A)

I/O ports and slots	18 open module slots Supports a maximum of 864 Gigabit Ethernet ports or 864 1/10GbE ports or 288 40GbE ports, or a combination	
Additional ports and slots	2 MPU (for management modules) slots 9 switch fabric slots	
Physical characteristics	**Dimensions**	17.4(w) x 29.13(d) x 66.38(h) in (44.2 x 73.99 x 168.61 cm) (38U height)
	Weight	352.74 lb (160 kg)
	Full configuration weight	639.33 lb (290 kg)
Memory and processor	**Gigabit Module**	PowerPC @ 667, 1 GB RAM; packet buffer size: 512 MB (Ingress, shared by 24 1-GbE ports)
	10G Module	PowerPC @ 667 MHz, 1 GB RAM; packet buffer size: 512 MB (Ingress/shared by 2 10GbE ports)
	Management Module	Quad Core CPU @ 1800 MHz, 512 MB flash, 4 GB compact flash, 8 GB RAM
	Fabric	PowerPC @ 400 MHz, 128 MB RAM
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet	
Performance	**Throughput**	10.8 Bpps
	Routing/Switching capacity	24.3 Tb/s
Environment	**Operating temperature**	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	5% to 95%, non-condensing

Technical Specifications

	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
Electrical characteristics	**Frequency**	50/60 Hz
	Maximum heat dissipation	32859 BTU/hr (34666.24 kJ/hr)
	AC voltage	100 - 120 / 200 - 240 VAC
	Maximum power rating	10700 W
	Notes	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	CE Labeled; cUL Certified; UL Listed; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60825; IEC 60950-1:2001 (with CB Report); CAN/CSA-C22.2 No. 60950-1-03; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; UL 60950-1:2003; EN 60950-1:2001; ROHS Compliance	
Emissions	VCCI Class A; EN 55022 Class A; VCCI V-3/2000.04; ICES-003 Class A; AS/NZS CISPR22 Class A; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	
Immunity	**Generic**	ETSI EN 300 386 V1.3.3
	EN	EN 55024:1998+ A1:2001 + A2:2003
	ESD	EN 61000-4-2; IEC61000-4-2
	Radiated	EN 61000-4-3; IEC61000-4-3
	EFT/Burst	EN 61000-4-4; IEC61000-4-4
	Surge	EN 61000-4-5; IEC61000-4-5
	Conducted	EN 61000-4-6; IEC61000-4-6
	Power frequency magnetic field	IEC 61000-4-8; EN61000-4-8
	Voltage dips and interruptions	EN 61000-4-11; IEC61000-4-11
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	IMC - Intelligent Management Center; command-line interface; out-of-band management (serial RS-232C); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; terminal interface (serial RS-232C); modem interface	
Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office	

HP FlexFabric 12518E DC Switch Chassis (JG785A)

I/O ports and slots	18 open module slots Supports a maximum of 864 Gigabit Ethernet ports or 864 1/10GbE ports or 288 40GbE ports, or a combination

Technical Specifications

Additional ports and slots	2 MPU (for management modules) slots 9 switch fabric slots	
Physical characteristics	**Dimensions**	17.4(w) x 29.13(d) x 66.38(h) in (44.2 x 73.99 x 168.61 cm) (38U height)
	Weight	352.74 lb (160 kg)
	Full configuration weight	639.33 lb (290 kg)
Memory and processor	**Gigabit Module**	PowerPC @ 667 MHz, 1 GB RAM; packet buffer size: 512 MB (Ingress, shared by 24 1-GbE ports)
	10G Module	PowerPC @ 667 MHz, 1 GB RAM; packet buffer size: 512 MB (Ingress/shared by 2 10GbE ports)
	Management Module	Quad Core CPU @ 1800 MHz, 512 MB flash, 4 GB compact flash, 8 GB RAM
	Fabric	PowerPC @ 400 MHz, 128 MB RAM
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet	
Performance	**Throughput**	10.8 Bpps
	Routing/Switching capacity	24.3 Tb/s
Environment	**Operating temperature**	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	5% to 95%, non-condensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
Electrical characteristics	**Maximum heat dissipation**	32859 BTU/hr (34666.24 kJ/hr)
	Maximum power rating	10700 W
	DC Voltage	-48 to -60 VDC
	Notes	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	CE Labeled; cUL Certified; UL Listed; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60825; IEC 60950-1:2001 (with CB Report); CAN/CSA-C22.2 No. 60950-1-03; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; UL 60950-1:2003; EN 60950-1:2001; ROHS Compliance	
Emissions	VCCI Class A; EN 55022 Class A; VCCI V-3/2000.04; ICES-003 Class A; AS/NZS CISPR22 Class A; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	
Immunity	**Generic**	ETSI EN 300 386 V1.3.3
	EN	EN 55024:1998+ A1:2001 + A2:2003
	ESD	EN 61000-4-2; IEC61000-4-2
	Radiated	EN 61000-4-3; IEC61000-4-3
	EFT/Burst	EN 61000-4-4; IEC61000-4-4
	Surge	EN 61000-4-5; IEC61000-4-5

Technical Specifications

	Conducted	EN 61000-4-6; IEC61000-4-6
	Power frequency magnetic field	IEC 61000-4-8; EN61000-4-8
	Voltage dips and interruptions	EN 61000-4-11; IEC61000-4-11
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	IMC - Intelligent Management Center; command-line interface; out-of-band management (serial RS-232C); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; terminal interface (serial RS-232C); modem interface	
Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office	

Standards and protocols (applies to all products in series)

BGP
RFC 1657 Definitions of Managed Objects for BGPv4
RFC 1771 BGPv4
RFC 1772 Application of the BGP
RFC 1773 Experience with the BGP-4 Protocol
RFC 1774 BGP-4 Protocol Analysis
RFC 1997 BGP Communities Attribute
RFC 1998 PPP Gandalf FZA Compression Protocol
RFC 2385 BGP Session Protection via TCP MD5
RFC 2439 BGP Route Flap Damping
RFC 2796 BGP Route Reflection
RFC 2842 Capability Advertisement with BGP-4
RFC 2858 BGP-4 Multi-Protocol Extensions
RFC 2918 Route Refresh Capability

Denial of service protection
RFC 2267 Network Ingress Filtering
Automatic Filtering of well known Denial of Service Packets
CPU DoS Protection
Rate Limiting by ACLs

Device management
RFC 1155 Structure and Mgmt Information (SMIv1)
RFC 1157 SNMPv1/v2c
RFC 1305 NTPv3
RFC 1945 Hypertext Transfer Protocol -- HTTP/1.0
RFC 2452 MIB for TCP6
RFC 2454 MIB for UDP6
RFC 2573 (SNMPv3 Applications)
RFC 2578-2580 SMIv2
RFC 2579 (SMIv2 Text Conventions)
RFC 2580 (SMIv2 Conformance)
RFC 2819 (RMON groups Alarm, Event, History and
RFC 2466 ICMPv6 MIB
RFC 2571 SNMP Framework MIB
RFC 2572 SNMP-MPD MIB
RFC 2573 SNMP-Target MIB
RFC 2613 SMON MIB
RFC 2618 RADIUS Client MIB
RFC 2620 RADIUS Accounting MIB
RFC 2665 Ethernet-Like-MIB
RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
RFC 2737 Entity MIB (Version 2)
RFC 2787 VRRP MIB
RFC 2819 RMON MIB
RFC 2863 The Interfaces Group MIB
RFC 2925 Ping MIB
RFC 2932IP (Multicast Routing MIB)
RFC 2933 IGMP MIB
RFC 3273 HC-RMON MIB
RFC 3414 SNMP-User based-SM MIB
RFC 3415 SNMP-View based-ACM MIB
RFC 3418 MIB for SNMPv3
RFC 3621 Power Ethernet MIB
RFC 3813 MPLS LSR MIB
RFC 3814 MPLS FTN MIB
RFC 3815 MPLS LDP MIB
RFC 3826 AES for SNMP's USM MIB
RFC 4133 Entity MIB (Version 3)
LLDP-EXT-DOT1-MIB
LLDP-EXT-DOT3-MIB
LLDP-MIB

MPLS
RFC 2205 Resource ReSerVation Protocol (RSVP) - Version 1 Functional Specification
RFC 2209 Resource ReSerVation Protocol (RSVP)

Statistics only)
RFC 2819 RMON
RFC 3417 (SNMP Transport Mappings)
SNMP v3 and RMON RFC support
SSHv1/SSHv2 Secure Shell
TACACS/TACACS+

General protocols
IEEE 802.1ad Q-in-Q
IEEE 802.1ag Service Layer OAM
IEEE 802.1ah Provider Backbone Bridges
IEEE 802.1D MAC Bridges
IEEE 802.1p Priority
IEEE 802.1Q VLANs
IEEE 802.1s Multiple Spanning Trees
IEEE 802.1v VLAN classification by Protocol and Port
IEEE 802.1w Rapid Reconfiguration of Spanning Tree
IEEE 802.1X PAE
IEEE 802.3ab 1000BASE-T
IEEE 802.3ad Link Aggregation (LAG)
IEEE 802.3ae 10-Gigabit Ethernet
IEEE 802.3ah Ethernet in First Mile over Point to Point Fiber - EFMF
IEEE 802.3i 10BASE-T
IEEE 802.3u 100BASE-X
IEEE 802.3x Flow Control
IEEE 802.3z 1000BASE-X
RFC 768 UDP
RFC 783 TFTP Protocol (revision 2)
RFC 791 IP
RFC 792 ICMP
RFC 793 TCP
RFC 826 ARP
RFC 854 TELNET
RFC 868 Time Protocol
RFC 903 RARP
RFC 951 BOOTP
RFC 959 File Transfer Protocol (FTP)
RFC 1027 Proxy ARP
RFC 1042 IP Datagrams
RFC 1350 TFTP Protocol (revision 2)
RFC 1519 CIDR
RFC 1542 BOOTP Extensions
RFC 1812 IPv4 Routing
RFC 2131 DHCP
RFC 2338 VRRP
RFC 2784 Generic Routing Encapsulation (GRE)
RFC 2865 Remote Authentication Dial In User Service (RADIUS)

IP multicast
RFC 2702 Requirements for Traffic Engineering Over MPLS
RFC 2858 Multiprotocol Extensions for BGP-4
RFC 3031 Multiprotocol Label Switching Architecture
RFC 3032 MPLS Label Stack Encoding
RFC 3036 LDP Specification
RFC 3107 Carrying Label Information in BGP-4
RFC 3209 RSVP-TE: Extensions to RSVP for LSP Tunnels
RFC 3479 Fault Tolerance for the Label Distribution Protocol (LDP)
RFC 3487 Graceful Restart Mechanism for LDP
RFC 4090 Fast Reroute Extensions to RSVP-TE for LSP Tunnels
RFC 4364 BGP/MPLS IP Virtual Private Networks (VPNs)
RFC 4379 Detecting Multi-Protocol Label Switched (MPLS) Data Plane Failures
RFC 4447 Pseudowire Setup and Maintenance Using LDP
RFC 4448 Encapsulation Methods for Transport of Ethernet over MPLS Networks
RFC 4664 Framework for Layer 2 Virtual Private Networks
RFC 4665 Service Requirements for Layer 2 Provider Provisioned Virtual Private Networks
RFC 4761 Virtual Private LAN Service (VPLS) Using BGP for Auto-Discovery and Signaling
RFC 4762 Virtual Private LAN Service (VPLS) Using Label Distribution Protocol (LDP) Signaling

Network management
IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
IEEE 802.1D (STP)
RFC 1155 Structure of Management Information
RFC 1157 SNMPv1
RFC 1215 SNMP Generic traps
RFC 1757 RMON 4 groups: Stats, History, Alarms and Events
RFC 1905 SNMPv2 Protocol Operations
RFC 2211 Controlled-Load Network
RFC 2272 SNMPv3 Management Protocol
RFC 2273 SNMPv3 Applications
RFC 2274 USM for SNMPv3
RFC 2571 SNMP Management Frameworks
RFC 2572 SNMPv3 Message Processing
RFC 2573 SNMPv3 Applications
RFC 2576 Coexistence between SNMP versions
RFC 2578 SMIv2
RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events)

RFC 1112 IGMP
RFC 2236 IGMPv2
RFC 2283 Multiprotocol Extensions for BGP-4
RFC 2362 PIM Sparse Mode
RFC 2934 Protocol Independent Multicast MIB for IPv4
RFC 3376 IGMPv3
RFC 3618 Multicast Source Discovery Protocol (MSDP)
RFC 4601 PIM Sparse Mode

IPv6
RFC 1350 TFTP
RFC 1981 IPv6 Path MTU Discovery
RFC 2080 RIPng for IPv6
RFC 2460 IPv6 Specification
RFC 2461 IPv6 Neighbor Discovery
RFC 2462 IPv6 Stateless Address Auto-configuration
RFC 2463 ICMPv6
RFC 2473 Generic Packet Tunneling in IPv6
RFC 2475 IPv6 DiffServ Architecture
RFC 2529 Transmission of IPv6 Packets over IPv4
RFC 2710 Multicast Listener Discovery (MLD) for IPv6
RFC 2740 OSPFv3 for IPv6
RFC 2893 Transition Mechanisms for IPv6 Hosts and Routers
RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations (Ping only)
RFC 3315 DHCPv6 (client only)
RFC 3484 Default Address Selection for IPv6
RFC 3513 IPv6 Addressing Architecture
RFC 3587 IPv6 Global Unicast Address Format
RFC 3810 Multicast Listener Discovery Version 2 (MLDv2) for IPv6
RFC 4251 SSHv6 Architecture
RFC 4252 SSHv6 Authentication
RFC 4253 SSHv6 Transport Layer
RFC 4254 SSHv6 Connection
RFC 4541 IGMP & MLD Snooping Switch
RFC 4862 IPv6 Stateless Address Auto-configuration

MIBS
IEEE8023-LAG-MIB
RFC 1213 MIB II
RFC 1229 Interface MIB Extensions
RFC 1286 Bridge MIB
RFC 1493 Bridge MIB
RFC 1573 SNMP MIB II
RFC 1643 Ethernet MIB
RFC 1657 BGP-4 MIB
RFC 3164 BSD syslog Protocol
RFC 3415 SNMPv3 View-based Access Control Model VACM)
ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
SNMPv1/v2c/v3

OSPF
RFC 1245 OSPF protocol analysis
RFC 1246 Experience with OSPF
RFC 1587 OSPF NSSA
RFC 1765 OSPF Database Overflow
RFC 1850 OSPFv2 Management Information Base (MIB), traps
RFC 2328 OSPFv2
RFC 2370 OSPF Opaque LSA Option
RFC 3101 OSPF NSSA
RFC 3623 Graceful OSPF Restart

QoS/CoS
IEEE 802.1P (CoS)
RFC 2212 Guaranteed Quality of Service
RFC 2474 DS Field in the IPv4 and IPv6 Headers
RFC 2475 DiffServ Architecture
RFC 2597 DiffServ Assured Forwarding (AF)
RFC 2598 DiffServ Expedited Forwarding (EF)
RFC 2697 A Single Rate Three Color Marker
RFC 2698 A Two Rate Three Color Marker
Bi-directional Rate Shaping

Security
IEEE 802.1X Port Based Network Access Control
RFC 1321 The MD5 Message-Digest Algorithm
RFC 2082 RIP-2 MD5 Authentication
RFC 2104 Keyed-Hashing for Message Authentication
RFC 2716 PPP EAP TLS Authentication Protocol
RFC 2865 RADIUS Authentication
RFC 2866 RADIUS Accounting
RFC 2867 RADIUS Accounting Modifications for Tunnel Protocol Support
RFC 2868 RADIUS Attributes for Tunnel Protocol Support
RFC 2869 RADIUS Extensions
RFC 3567 Intermediate System (IS) to IS Cryptographic Authentication
Access Control Lists (ACLs)
Guest VLAN for 802.1x
MAC Authentication
SSHv2 Secure Shell

RFC 1724 RIPv2 MIB
RFC 1757 Remote Network Monitoring MIB
RFC 1850 OSPFv2 MIB
RFC 2011 SNMPv2 MIB for IP
RFC 2012 SNMPv2 MIB for TCP
RFC 2013 SNMPv2 MIB for UDP
RFC 2021 RMONv2 MIB
RFC 2096 IP Forwarding Table MIB
RFC 2233 Interfaces MIB
RFC 2273 SNMP-NOTIFICATION-MIB
RFC 2452 IPV6-TCP-MIB
RFC 2454 IPV6-UDP-MIB
RFC 2465 IPv6 MIB

IKEv1

RFC 2865 - Remote Authentication Dial In User Service (RADIUS)

Accessories

HP 12500 Switch Series accessories	**Modules**	
	NEW HP FlexFabric 12500E Main Processing Unit	JG802A
	HP 12500 Type A Main Processing Unit with Comware v7 Operating System	JG497A
	HP 12500 Main Processing Unit	JC072B
	NEW HP FlexFabric 12500 16-port 40GbE QSFP+ FD Module	JG790A
	NEW HP FlexFabric 12500 48-port 1/10GbE SFP+ FD Module	JG796A
	NEW HP FlexFabric 12500 40-port 1/10GbE SFP+ FD Module	JG792A
	NEW HP FlexFabric 12500 40-port 1/10GbE SFP+ FG Module	JG794A
	HP 12500 16-port 10GbE SFP+ LEB Module	JC782A
	HP 12500 16-port 10GbE SFP+ LEC Module	JC783A
	HP 12500 32-port 10GbE SFP+ REB Module	JC064B
	HP 12500 32-port 10GbE SFP+ REC Module	JC476B
	HP 12500 8-port 10GbE SFP+ LEB Module	JC780A
	HP 12500 8-port 10GbE SFP+ LEC Module	JC781A
	HP 12500 8-port 10GbE SFP+ LEF Module	JC659A
	HP 12500 8-port 10GbE XFP LEB Module	JC073B
	HP 12500 8-port 10GbE XFP LEC Module	JC068B
	HP 12500 48-port Gig-T LEB Module	JC074B
	HP 12500 48-port Gig-T LEC Module	JC065B
	HP 12500 48-port GbE SFP LEB Module	JC075B
	HP 12500 48-port GbE SFP LEC Module	JC069B
	HP 12500 48-port GbE SFP LEF Module	JC660A
	HP 12500 Spare Power Monitor Module	JC502A
	Transceivers	
	HP X120 100M/1G SFP LC LX Transceiver	JF832A
	HP X114 100M SFP LC FX Transceiver	JF833A
	HP X124 1G SFP LC LH40 1310nm Transceiver	JD061A
	HP X120 1G SFP LC LH40 1550nm Transceiver	JD062A
	HP X125 1G SFP LC LH70 Transceiver	JD063B
	HP X125 1G SFP RJ45 T Transceiver	JD089B
	HP X120 1G SFP LC BX 10-U Transceiver	JD098B
	HP X120 1G SFP LC BX 10-D Transceiver	JD099B
	HP X120 1G SFP LC LH100 Transceiver	JD103A
	HP X170 1G SFP LC LH70 1550 Transceiver	JD109A
	HP X170 1G SFP LC LH70 1570 Transceiver	JD110A
	HP X170 1G SFP LC LH70 1590 Transceiver	JD111A
	HP X170 1G SFP LC LH70 1610 Transceiver	JD112A
	HP X170 1G SFP LC LH70 1470 Transceiver	JD113A
	HP X170 1G SFP LC LH70 1490 Transceiver	JD114A
	HP X170 1G SFP LC LH70 1510 Transceiver	JD115A
	HP X170 1G SFP LC LH70 1530 Transceiver	JD116A
	HP X120 1G SFP LC SX Transceiver	JD118B
	HP X120 1G SFP LC LX Transceiver	JD119B
	HP X130 10G XFP LC ZR Transceiver	JD107A

Accessories

HP X130 10G XFP LC LR Transceiver	JD108B
HP X130 10G XFP LC SR Transceiver	JD117B
HP X135 10G XFP LC ER Transceiver	JD121A
HP X180 10G XFP LC LH 80km 1538.98nm DWDM Transceiver	JG226A
HP X180 10G XFP LC LH 80km 1539.77nm DWDM Transceiver	JG227A
HP X180 10G XFP LC LH 80km 1540.56nm DWDM Transceiver	JG228A
HP X180 10G XFP LC LH 80km 1542.14nm DWDM Transceiver	JG229A
HP X180 10G XFP LC LH 80km 1542.94nm DWDM Transceiver	JG230A
HP X180 10G XFP LC LH 80km 1558.98nm DWDM Transceiver	JG231A
HP X180 10G XFP LC LH 80km 1559.79nm DWDM Transceiver	JG232A
HP X180 10G XFP LC LH 80km 1560.61nm DWDM Transceiver	JG233A
HP X130 10G SFP+ LC SR Transceiver	JD092B
HP X130 10G SFP+ LC LRM Transceiver	JD093B
HP X130 10G SFP+ LC LR Transceiver	JD094B
HP X130 10G SFP+ LC ER 40km Transceiver	JG234A
HP X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
HP X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
HP X240 10G SFP+ SFP+ 7m Direct Attach Copper Cable	JC784C
HP X140 40G QSFP+ MPO SR4 Transceiver	JG325B
NEW HP X140 40G QSFP+ MPO MM 850nm CSR4 300m Transceiver	JG709A
HP X140 40G QSFP+ LC LR4 SM 10km 1310nm Transceiver	JG661A
Cables	
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable	QK733A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable	QK734A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable	QK735A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable	QK736A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable	QK737A
Mounting Kit	
HP X421 Chassis Universal 4-post Rack Mounting Kit	JC665A
Appliance	
HP 12500 20Gbps VPN Firewall Module	JG371A
Memory	
NEW HP FlexFabric 4GB Compact Flash Card	JG806A
NEW HP FlexFabric 4GB DDR3 SDRAM	JG807A
HP X600 1G Compact Flash Card	JC684A
HP 2GB Registered DDR2 SDRAM Memory	JC609A
HP X610 1GB DDR2 SDRAM Memory	JC071A
HP 12504 AC Switch Chassis (JC654A)	
HP 1250x G2 Fabric Module	JC658A
HP 12500 AC Power Entry Module	JF426A
HP 12500 2000W AC Power Supply	JF429A
HP 12504 Fan Assembly	JC664A
HP 12504 DC Switch Chassis (JC655A)	
HP 1250x G2 Fabric Module	JC658A

Accessories

HP X210 10-meter JG Connector to Bare 6AWG 37800 Watt 72V DC Power Cable	JG280A
HP 12500 1800W DC Power Supply	JC651A
HP 12504 Fan Assembly	JC664A
HP 12508 AC Switch Chassis (JF431C)	
HP 12508 Fabric Module	JC067B
HP 1250x G2 Fabric Module	JC658A
HP 12508 Top and Bottom Cable Guides for AC Powered Switch	JC785A
HP 12500 Side Cable Management Guide	JC084A
HP 12500 2000W AC Power Supply	JF429A
HP 12500 AC Power Entry Module	JF426A
HP 12508 Fan Assembly	JC081A
HP 12508 Optional Air Filter	JC082A
HP 12508 DC Switch Chassis (JC652A)	
HP 12508 Fabric Module	JC067B
HP 1250x G2 Fabric Module	JC658A
HP 12508 Top and Bottom Cable Guides for DC Powered Switch	JC787A
HP 12500 Side Cable Management Guide	JC084A
HP X210 10-meter JG Connector to Bare 6AWG 37800 Watt 72V DC Power Cable	JG280A
HP 12500 1800W DC Power Supply	JC651A
HP 12508 Fan Assembly	JC081A
HP 12508 Optional Air Filter	JC082A
HP 12518 AC Switch Chassis (JF430C)	
HP 12518 G2 Fabric Module	JC657A
HP 12518 Fabric Module	JC066A
HP 12518 Top and Bottom Cable Guides for AC Powered Switch	JC786A
HP 12500 Side Cable Management Guide	JC084A
HP 12500 2000W AC Power Supply	JF429A
HP 12500 AC Power Entry Module	JF426A
HP 12518 Fan Assembly	JC080A
HP 12518 Optional Air Filter	JC083A
HP 12518 DC Switch Chassis (JC653A)	
HP 12518 G2 Fabric Module	JC657A
HP 12518 Fabric Module	JC066A
HP 12518 Top and Bottom Cable Guides for DC Powered Switch	JC788A
HP 12500 Side Cable Management Guide	JC084A
HP X210 10-meter JG Connector to Bare 6AWG 37800 Watt 72V DC Power Cable	JG280A
HP 12500 1800W DC Power Supply	JC651A
HP 12518 Fan Assembly	JC080A
HP 12518 Optional Air Filter	JC083A
HP FlexFabric 12508E AC Switch Chassis (JG782A)	
NEW HP FlexFabric 12508E Fabric Module	JG798A
NEW HP FlexFabric 12508E Optional Extended Cable Guide for AC Powered Switch	JG830A
NEW HP FlexFabric 12508E Optional Extended Cable Guide for DC Powered Switch	JG832A

Accessories

HP 12500 2000W AC Power Supply	JF429A
NEW HP FlexFabric 12500E Spare Power Monitor Module	JG804A
NEW HP FlexFabric 12500E Fan Tray Assembly	JG805A
NEW HP FlexFabric 12508E Optional Air Filter	JG808A
HP FlexFabric 12508E DC Switch Chassis (JG783A)	
NEW HP FlexFabric 12508E Fabric Module	JG798A
HP 12508 Top and Bottom Cable Guides for DC Powered Switch	JC787A
HP 12500 Side Cable Management Guide	JC084A
HP X210 10-meter JG Connector to Bare 6AWG 37800 Watt 72V DC Power Cable	JG280A
NEW HP FlexFabric 12508E Optional Extended Cable Guide for DC Powered Switch	JG832A
HP 12500 1800W DC Power Supply	JC651A
NEW HP FlexFabric 12500E Spare Power Monitor Module	JG804A
NEW HP FlexFabric 12500E Fan Tray Assembly	JG805A
NEW HP FlexFabric 12508E Optional Air Filter	JG808A
HP FlexFabric 12518E AC Switch Chassis (JG784A)	
NEW HP FlexFabric 12518E Fabric Module	JG800A
HP 12518 Top and Bottom Cable Guides for AC Powered Switch	JC786A
HP 12500 Side Cable Management Guide	JC084A
NEW HP FlexFabric 12518E Optional Extended Cable Guide for AC Powered Switch	JG831A
HP 12500 2000W AC Power Supply	JF429A
HP 12500 AC Power Entry Module	JF426A
NEW HP FlexFabric 12500E Spare Power Monitor Module	JG804A
NEW HP FlexFabric 12500E Fan Tray Assembly	JG805A
NEW HP FlexFabric 12518E Optional Air Filter	JG809A
HP FlexFabric 12518E DC Switch Chassis (JG785A)	
NEW HP FlexFabric 12518E Fabric Module	JG800A
HP 12518 Top and Bottom Cable Guides for DC Powered Switch	JC788A
HP 12500 Side Cable Management Guide	JC084A
HP X210 10-meter JG Connector to Bare 6AWG 37800 Watt 72V DC Power Cable	JG280A
NEW HP FlexFabric 12518E Optional Extended Cable Guide for DC Powered Switch	JG833A
HP 12500 1800W DC Power Supply	JC651A
NEW HP FlexFabric 12500E Spare Power Monitor Module	JG804A
NEW HP FlexFabric 12500E Fan Tray Assembly	JG805A
NEW HP FlexFabric 12518E Optional Air Filter	JG809A

Accessory Product Details

NOTE: Details are not available for all accessories. The following specifications were available at the time of publication.

Modules

HP 12500 48-port Gig-T LEB Module (JC074B)	**Ports**	48 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
	Physical characteristics	**Dimensions**	18.39(d) x 15.75(w) x 1.57(h) in. (46.7 x 40 x 4 cm)
		Weight	9.37 lb. (4.25 kg)
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP 12500 48-port Gig-T LEC Module (JC065B)	**Ports**	48 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
	Physical characteristics	**Dimensions**	18.39(d) x 15.75(w) x 1.57(h) in. (46.7 x 40 x 4 cm)
		Weight	9.79 lb. (4.44 kg)
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP 12500 48-port GbE SFP LEB Module (JC075B)	**Ports**	48 SFP 100/1000 Mbps ports	
	Physical characteristics	**Dimensions**	18.39(d) x 15.75(w) x 1.57(h) in. (46.7 x 40 x 4 cm)
		Weight	9.96 lb. (4.52 kg)
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP 12500 48-port GbE SFP LEC Module (JC069B)	**Ports**	48 SFP 100/1000 Mbps ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
	Physical characteristics	**Dimensions**	18.39(d) x 15.75(w) x 1.57(h) in. (46.7 x 40 x 4 cm)
		Weight	10.03 lb. (4.55 kg)
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Accessory Product Details

HP 12500 8-port 10GbE XFP LEB Module (JC073B)	**Ports**	8 XFP 10-GbE ports Duplex: full only	
	Physical characteristics	**Dimensions**	18.39(d) x 15.75(w) x 1.57(h) in. (46.7 x 40 x 4 cm)
		Weight	10.87 lb. (4.93 kg)
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP 12500 8-port 10GbE XFP LEC Module (JC068B)	**Ports**	8 XFP 10-GbE ports Duplex: full only	
	Physical characteristics	**Dimensions**	18.39(d) x 15.75(w) x 1.57(h) in. (46.7 x 40 x 4 cm)
		Weight	11.33 lb. (5.14 kg)
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP 12500 32-port 10GbE SFP+ LEB Module (JC064B)	**Ports**	32 SFP+ 10-GbE ports Duplex: full only	
	Physical characteristics	**Dimensions**	18.39(d) x 15.75(w) x 1.57(h) in. (46.7 x 40 x 4 cm)
		Weight	13.45 lb. (6.10 kg)
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP 32-port 10GbE SFP+ LEC Module (JC476A)	**Ports**	32 SFP+ 10-GbE ports Duplex: full only	
	Physical characteristics	**Dimensions**	18.39(d) x 15.75(w) x 1.57(h) in. (46.7 x 40 x 4 cm)
		Weight	13.89 lb. (6.30 kg)
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Transceivers

Accessory Product Details

HP X124 1G SFP LC LH40 1310nm Transceiver (JD061A) A small form-factor pluggable SFP Gigabit LH40 transceiver that provides a full duplex Gigabit solution up to 40km on a single-mode fiber.	**Ports**	1 LC 1000Base-LH port (no IEEE standard exists for 1550 nm optics)	
	Connectivity	Connector type	LC
		Wavelength	1310 nm
	Physical characteristics	Dimensions	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	Power consumption typical	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Cable type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: • 40km distance	
		Fiber type	Single Mode
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP X120 1G SFP LC LH40 1550nm Transceiver (JD062A) A small form-factor pluggable (SFP) Gigabit LH40 transceiver that provides a full-duplex Gigabit solution up to 40 km on a single mode fiber.	**Ports**	1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics)	
	Connectivity	Connector type	LC
		Wavelength	1550 nm
	Physical characteristics	Dimensions	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	Power consumption typical	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Cable type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: • 40km distance	
		Fiber type	Single Mode
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Accessory Product Details

HP X125 1G SFP LC LH70 Transceiver (JD063B) A small form-factor pluggable (SFP) Gigabit LH70 transceiver that provides a full-duplex Gigabit solution up to 70km on a single-mode fiber.	**Ports**	1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics)	
	Connectivity	**Connector type**	LC
		Wavelength	1550 nm
	Physical characteristics	**Dimensions**	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	**Power consumption typical**	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Cable type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: • 70km	
		Fiber type	Single Mode
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP X125 1G SFP RJ45 T Transceiver (JD089B) A small form factor pluggable (SFP) Gigabit 1000Base-T transceiver that provides a full duplex Gigabit solution up to 100m on a Cat-5+ cable.	**Ports**	1 RJ-45 1000BASE-T port (IEEE 802.3ab Type 1000BASE-T)	
	Connectivity	**Connector type**	RJ-45
	Physical characteristics	**Dimensions**	2.71(d) x 0.54(w) x 0.55(h) in. (6.88 x 1.37 x 1.4 cm)
		Full configuration weight	0.07 lb. (0.03 kg)
	Electrical characteristics	**Power consumption typical**	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 Ù differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T; Maximum distance: • 100m	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Accessory Product Details

HP X120 1G SFP LC BX 10-U Transceiver (JD098B) A small form-factor pluggable (SFP) Gigabit LX-BX10-U transceiver that provides a full duplex Gigabit solution up to 10km on a single mode cable.	**Ports**	1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-U); Duplex: full only	
	Connectivity	**Connector type**	LC
	Physical characteristics	**Dimensions**	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	**Power consumption typical**	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Maximum distance: • 10km	
		Fiber type	Single Mode
	Notes	TX 1310nm RX 1490nm	
	Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP X120 1G SFP LC BX 10-D Transceiver (JD099B) A small form-factor pluggable (SFP) Gigabit LX-BX10-D transceiver that provides a full duplex Gigabit solution up to 10km on a single mode cable.	**Ports**	1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-D); Duplex: full only	
	Connectivity	**Connector type**	LC
	Physical characteristics	**Dimensions**	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	**Power consumption typical**	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Maximum distance: • Up to 10km	
		Fiber type	Single Mode
	Notes	TX 1490nm RX 1310nm	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Accessory Product Details

HP X120 1G SFP LC LH100 Transceiver (JD103A) A small form factor pluggable (SFP) Gigabit LH100 transceiver that provides a full-duplex Gigabit solution up to 100km on a single mode fiber.	**Ports**	1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics)	
	Connectivity	**Connector type**	LC
		Wavelength	1550 nm
	Electrical characteristics	**Power consumption typical**	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Cable type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: • Up to 100km	
		Fiber type	Single Mode
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP X120 1G SFP LC SX Transceiver (JD118B) A small form-factor pluggable (SFP) Gigabit SX transceiver that provides a full-duplex Gigabit solution up to 550m on a Multimode fiber.	**Ports**	1 LC 1000BASE-SX port	
	Connectivity	**Connector type**	LC
		Wavelength	850 nm
	Physical characteristics	**Dimensions**	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	**Power consumption typical**	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Maximum distance: • FDDI Grade distance = 220m • OM1 = 275m • OM2 = 500m • OM3 = Not Specified by standard	
		Cable length	up to 550m
		Fiber type	Multi Mode
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Accessory Product Details

HP X120 1G SFP LC LX Transceiver (JD119B) A small form-factor pluggable (SFP) Gigabig LX transceiver that provides a full duplex Gigabit solution up to 550m on MMF or 10Km on SMF	**Ports**	1 SFP 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX)	
	Connectivity	**Connector type**	LC
		Wavelength	1300 nm
	Physical characteristics	**Dimensions**	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	**Power consumption typical**	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Cable type: Either single mode or multimode; Maximum distance: • 550m for Multimode • 10km for Singlemode	
		Fiber type	Both
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Cables

HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable (QK732A)	**Notes**	Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end. • Core Diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um • Bandwidth: 3000 MHz-km @ 850nm (Laser) • Jacket Color: Blue • Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic • Boot Color: White • Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. • Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m • Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Accessory Product Details

HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable (QK733A)	**Notes**	Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end. • Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um • Bandwidth: 3000 MHz-km @ 850nm (Laser) • Jacket Color: Blue • Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic • Boot Color: White • Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. • Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m • Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable (QK734A)	**Notes**	Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end. • Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um • Bandwidth: 3000 MHz-km @ 850nm (Laser) • Jacket Color: Blue • Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic • Boot Color: White • Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. • Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m • Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Accessory Product Details

HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable (QK735A)	**Notes**	Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end. • Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um • Bandwidth: 3000 MHz-km @ 850nm (Laser) • Jacket Color: Blue • Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic • Boot Color: White • Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. • Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m • Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable (QK736A)	**Notes**	Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end. • Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um • Bandwidth: 3000 MHz-km @ 850nm (Laser) • Jacket Color: Blue • Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic • Boot Color: White • Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. • Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m • Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Accessory Product Details

HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable (QK737A)	**Notes**	Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end. • Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um • Bandwidth: 3000 MHz-km @ 850nm (Laser) • Jacket Color: Blue • Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic • Boot Color: White • Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. • Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m • Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Cables

HP 12500 20Gbps VPN Firewall Module (JG371A)	**Ports**	2 RJ-45 auto-negotiating 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) 2 RJ-45 dual-personality ports; auto-sensing 10/100/1000BASE-T or SFP 1 RJ-45 serial console port 1 Compact Flash port	
	Physical characteristics	**Dimensions**	19.65(w) x 15.71(d) x 1.57(h) in (49.91 x 39.9 x 3.99 cm)
		Weight	7.72 lb (3.5 kg)
	Environment	**Operating temperature**	32°F to 113°F (0°C to 45°C)
		Operating relative humidity	10% to 95%, noncondensing
	Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; HTTPS; RMON1; FTP	
	Features	PerfoPerformance - 10 Gbps firewall throughput - 2 million concurrent connections - 60,000 new connections per second - Maximum 20,480 security policies - 2 Gbps 3DES/AES VPN throughput - 5,000 IPSec tunnels - 4,000 VLANs Firewall operation mode - Routing mode - Transparent mode - Hybrid mode	

AAA service
- Local authentication
- Standard RADIUS
- HWTACACS+
- RADIUS domain authentication
ASPF
- General TCP/UDP application
- FTP/SMTP/HTTP/RTSP/H323 Protocol State Detection
- SIP/MGCP/QQ/MSN Protocol State Detection
- Java/ActiveX blocking and detection
- Port mapping
- Support for the fragmented packets
Virtualization
- 256 virtual firewalls
- 4 default security zones
- Maximum 256 security zones
NAT
- NAPT
- PAT
- NAT server
- Port mapping
- Bidirectional NAT
- Static NAT
Network security
- Add blacklist by hand or automatically
- IP+MAC binding
- ARP Reverse Query
- ARP Cheat Check
- Management ports closed by default
DDOS
- DNS Query flood
- SYN flood
- Autostarts TCP Proxy when detects SYN flood
- ICMP flood
- UDP flood
- IP spoofing
- SQL injection filter
L2TP VPN
- LNS, LAC
- L2TP Multi-instance
GRE
- GRE tunneling protocol
IPSec
- AH/ESP
- ESP
- Transport/tunnel
- NAT traversal
- Strategy template
IKE
- DH
- Preshare key authentication method

- Support aggressive mode and main exchange mode
- IKE DPD, PKI/CA

Network feature
- IEEE 802.1q VLAN
- 4,000 subinterfaces
- Static and dynamic ARP
- Multicast, PIM
- IGMPv1/v2/v3

Routing
- RIP
- OSPF
- BGP
- Static route
- Policy route

High availability
- Active-active mode
- Active-passive mode
- Session synchronization for firewall

System management
- Web management support for Internet Explorer/Firefox
- Command-line interface (Console/Telnet/SSH)
- Classification Manager
- Unified management through iMC
- SNMPv1/v2c/v3

Administration
- Software upgrades
- Configuration backup and restore

Logging/Monitoring
- Syslog
- Mini RMON
- NTP
- NAT/ASPF/firewall log stream (Binary log)

IPv6 routing and multicast
- RIPng
- OSPFv3
- BGP4+
- Static route
- Policy route
- PIM-SM/DM

IPv6 security
- NAT-PT
- Manual tunnel
- IPv6 over IPv4 GRE tunnel
- 6to4 tunnel (RFC 3056)
- ISATAP tunnel
- IPv6 packet filter
- RADIUS
- NAT64

Services Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Standards and protocols

IPv6

RFC 1981 IPv6 Path MTU Discovery
RFC 2465 Management Information Base for IP Version 6: Textual Conventions and General Group(partially support, only "IPv6 Interface Statistics table")
RFC 3587 IPv6 Global Unicast Address Format
RFC 2460 IPv6 Specification
RFC 3484 Default Address Selection for IPv6
RFC 4007 IPv6 Scoped Address Architecture
RFC 3513 IPv6 Addressing Architecture
RFC 4862 IPv6 Stateless Address Auto-configuration

Security

IEEE 802.1X:Port-Based Network Access Control (2001)
RFC 2104 Keyed-Hashing for Message Authentication
RFC 2866 RADIUS Accounting
RFC 1321 The MD5 Message-Digest Algorithm
RFC 2138 RADIUS Authentication
RFC 2867 RADIUS Accounting Modifications for Tunnel
RFC 1334 PPP Authentication Protocols (PAP)
RFC 2618 RADIUS Authentication Client MIB Protocol Support
RFC 1994 PPP Challenge Handshake Authentication
RFC 2868 RADIUS Attributes for Tunnel Protocol Support
Protocol (CHAP)
RFC 2620 RADIUS Accounting Client MIB
RFC 2716 PPP EAP TLS Authentication Protocol
RFC 2869 RADIUS Extensions
RFC 2865 RADIUS Authentication draft-grant-tacacs-02 (TACACS)

VPN

RFC 1701 Generic Routing Encapsulation (GRE)
RFC 2402 IP Authentication Header
RFC 2473 Generic Packet Tunneling in IPv6 Specification
RFC 1702 Generic Routing Encapsulation over IPv4 networks.
RFC 2403 The Use of HMAC-MD5-96 within ESP and AH RFC 2529 Transmission of IPv6 over IPv4 Domains without Explicit Tunnels
RFC 1828 IP Authentication using Keyed MD5
RFC 2404 The Use of HMAC-SHA-1-96 within ESP and AH
RFC 2661 Layer Two Tunneling Protocol "L2TP"
RFC 1829 The ESP DES-CBC Transform
RFC 2405 The ESP DES-CBC Cipher Algorithm With
Explicit IV RFC 2784 Generic Routing Encapsulation (GRE)
RFC 1853 IP in IP Tunneling
RFC 2406 IP Encapsulating Security Payload (ESP) RFC 2868 RADIUS Attributes for Tunnel Protocol Support
RFC 2085 HMAC-MD5 IP Authentication with Replay Prevention
RFC 2410 The NULL Encryption Algorithm and Its UseWith IPSec
RFC 2893 Transition Mechanisms for IPv6 Hosts and Routers
RFC 2401 Security Architecture for the Internet Protocol RFC 2411 IP Security Document Roadmap RFC 3602 The AES-CBC Cipher Algorithm and Its Use with
RFC 2451 The ESP CBC-Mode Cipher Algorithms IPSec

IKEv1
RFC 2407 The Internet IP Security Domain of Interpretation for ISAKMP
RFC 2408 Internet Security Association and Key Management Protocol (ISAKMP).
RFC 3526 More Modular Exponential (MODP)
Diffie-Hellman groups for Internet Key Exchange (IKE)
RFC 2409 The Internet Key Exchange (IKE) RFC 3706 A Traffic-Based Method of Detecting Dead
RFC 2412 The OAKLEY Key Determination Protocol Internet Key Exchange (IKE) Peers

PKI
RFC 2510 Internet X.509 Public Key Infrastructure Certificate Management Protocols
RFC 3279 Algorithms and Identifiers for the Internet
X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
RFC 2511 Internet X.509 Certificate Request Message
Format RFC 3280 Internet X.509 Public Key Infrastructure
Certificate and Certificate Revocation List (CRL) Profile
draft-nourse-scep-06:
PKCS#1
PKCS#7
PKCS#10
PKCS#12

HP 12500 Type A Main Processing Unit with Comware v7 Operating System (JG497A)	**Physical characteristics**	**Dimensions**	23.2(w) x 30.7(d) x 11.2(h) in (58.93 x 77.98 x 28.45 cm)
		Weight	22.16 lb (10.05 kg)
	Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

To learn more, visit: www.hp.com/networking