Overview

HPE FlexNetwork HSR6800 Router Series

Models

HPE FlexNetwork HSR6802 Router Chassis	JG361B
HPE FlexNetwork HSR6804 Router Chassis	JG362B
HPE FlexNetwork HSR6808 Router Chassis	JG363B

Key features

- High-performance services with up to 420 Mpps forwarding and 2 Tbps switching capacity
- Multicore, distributed processing architecture
- Comprehensive routing, switching, and security
- High-density WAN connections
- Carrier-class resiliency with HPE Intelligent Resilient Fabric (IRF) technology

Product overview

The HPE FlexNetwork HSR6800 Router Series is a portfolio of high-performance WAN services routers, ideal for large-scale data center and campus WAN networks.

Overview

These routers are built with a multi-core distributed processing architecture that scales up to 420 Mpps forwarding and up to 2 Tbps switch capacity. They deliver robust routing (MPLS, IPv4, IPv6, dynamic routing, nested QoS), security (stateful firewall, IPsec/Dynamic VPN, DoS protection, NAT), full Layer 2 switching, traffic analysis capabilities, and high-density 10 GbE (and 40/100 GbE-ready) WAN interface options, all integrated in a single powerful routing platform.

In addition, the HPE FlexNetwork HSR6800 Router Series are the first service aggregation routers in the industry to support system virtualization by taking advantage of Hewlett Packard Enterprise (HPE) innovative Intelligent Resilient Fabric (IRF) technology.

Features and benefits

Connectivity

- **Multiple WAN interfaces**
  support Fast Ethernet/Gigabit Ethernet/10GbE ports, OC3~OC48 POS/CPOS, and ATM ports
- **Flexible port selection**
  provides a combination of fiber/copper interface modules, 100/1000BASE-X auto-speed selection, and 10/100/1000BASE-T auto-speed detection plus auto duplex and MDI/MDI-X; is speed adaptable between 155 M POS/622 M POS/Gigabit Ethernet
- **Loopback**
  supports internal loopback testing for maintenance purposes and an increase in availability

Performance

- **High-performance platform**
  provides up to 420 Mpps in forwarding and up to 2 Tbps switching capacity

Resiliency and high availability

- **Hewlett Packard Enterprise (HPE) Intelligent Resilient Fabric (IRF) technology**
  HPE Intelligent Resilient Fabric (IRF) technology is HPE's innovative technology that connects multiple routers through physical IRF ports to achieve system virtualization. All routers appears as one node on the network to allow for simplified configuration, while achieving high resiliency and increased system expandability at lower cost.
- **Separate data and control planes**
  provide greater flexibility and enable continual services
- **Hot-swappable modules**
  facilitate the replacement of hardware interface modules without impacting the traffic flow through the system
- **Optional redundant power supply**
  provides uninterrupted power; allows hot-swapping of one of the two supplies when installed
- **Virtual Router Redundancy Protocol (VRRP)**
  allows groups of two routers to back each other up dynamically to create highly available routed environments
- **Graceful restart**
  features are fully supported, including graceful restart for OSPF, IS-IS, BGP, LDP, and RSVP; the network remains stable during the active-standby switchover; after the switchover, the device quickly learns the network routes by communicating with adjacent routers; forwarding remains uninterrupted during the switchover to achieve nonstop forwarding (NSF)
- **Hitless software upgrades**
  allow patches to be installed without restarting the device, increasing network uptime and simplifying maintenance
- **IP Fast Reroute Framework (FRR)**
  nodes are configured with backup ports and routes; local implementation requires no cooperation of adjacent devices, simplifying the deployment; solves the traditional convergence faults in IP forwarding; achieves restoration within 50 ms, with the restoration time independent of the number of routes and fast link switchovers without route convergence

Overview

Product architecture

- **Distributed processing**
  two kinds of engines are hardware-separated: main controller engine (routing engine) and service engines (Flexible Interface Platform [FIP] and Service Aggregation Platform [SAP]); the main controller engine is used for route computing and system management, and service engines are used for processing services; SAP Module supports Jumbo Frame (9k+ bytes)
- **HPE Apollo Processor**
  HPE in-house designed service/forwarding processor supporting powerful parallel processing, encryption and comprehensive HQoS functionalities.

Layer 3 routing

- **Static IPv4 routing**
  provides simple, manually configured IPv4 routing
- **Routing Information Protocol (RIP)**
  uses a distance vector algorithm with UDP packets for route determination; supports RIPv1 and RIPv2 routing; includes loop protection
- **Open Shortest Path First (OSPF)**
  Interior Gateway Protocol (IGP) uses link-state protocol for faster convergence; supports ECMP, NSSA, and MD5 authentication for increased security and graceful restart for faster failure recovery
- **Border Gateway Protocol 4 (BGP-4)**
  Exterior Gateway Protocol (EGP) with path vector protocol uses TCP for enhanced reliability for the route discovery process, reduces bandwidth consumption by advertising only incremental updates, and supports extensive policies for increased flexibility, as well as scales to very large networks
- **Intermediate system to intermediate system (IS-IS)**
  Interior Gateway Protocol (IGP) uses path vector protocol, which is defined by the ISO organization for IS-IS routing and extended by IETF RFC 1195 to operate in both TCP/IP and the OSI reference model (Integrated IS-IS)
- **Static IPv6 routing**
  provides simple, manually configured IPv6 routing
- **Dual IP stack**
  maintains separate stacks for IPv4 and IPv6 to ease the transition from an IPv4-only network to an IPv6-only network design
- **Routing Information Protocol next generation (RIPng)**
  extends RIPv2 to support IPv6 addressing
- **OSPFv3**
  provides OSPF support for IPv6
- **BGP+**
  extends BGP-4 to support Multiprotocol BGP (MBGP), including support for IPv6 addressing
- **IS-IS for IPv6**
  extends IS-IS to support IPv6 addressing
- **IPv6 tunneling**
  is an important element for the transition from IPv4 to IPv6; allows IPv6 packets to traverse IPv4-only networks by encapsulating the IPv6 packet into a standard IPv4 packet; supports manually configured, 6to4, and Intra-Site Automatic Tunnel Addressing Protocol (ISATAP) tunnels
- **Multiprotocol Label Switching (MPLS)**
  uses BGP to advertise routes across Label Switched Paths (LSPs), but uses simple labels to forward packets from any Layer 2 or Layer 3 protocol, which reduces complexity and increases performance; supports graceful restart for reduced failure impact; supports LSP tunneling and multilevel stacks
- **Multiprotocol Label Switching (MPLS) Layer 3 VPN**
  allows Layer 3 VPNs across a provider network; uses MP-BGP to establish private routes for increased security; supports RFC 2547bis multiple autonomous system VPNs for added flexibility
- **Multiprotocol Label Switching (MPLS) Layer 2 VPN**
  establishes simple Layer 2 point-to-point VPNs across a provider network using only MPLS Label Distribution Protocol (LDP); requires no routing and therefore decreases complexity, increases performance, and allows VPNs of non-routable

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protocols; uses no routing information for increased security; supports Circuit Cross Connect (CCC), Static Virtual Circuits (SVCs), Martini draft, and Kompella-draft technologies

- **Policy routing**
  allows custom filters for increased performance and security; supports ACLs, IP prefix, AS paths, community lists, and aggregate policies
- **Multicast VPN**
  supports Multicast Domain (MD) multicast VPN, which can be distributed on separate service cards, providing high performance and flexible configuration
- **Virtual Private LAN Service (VPLS)**
  establishes point-to-multipoint Layer 2 VPNs across a provider network
- **Bidirectional Forwarding Detection (BFD)**
  enables link connectivity monitoring and reduces network convergence time for RIP, OSPF, BGP, IS-IS, VRRP, and MPLS
- **IGMPv1, v2, and v3**
  allow individual hosts to be registered on a particular VLAN
- **PIM-SSM, PIM-DM, and PIM-SM (for IPv4 and IPv6)**
  support IP Multicast address management and inhibition of DoS attacks
- **Equal-Cost/Unequal-Cost Multipath (ECMP/UCMP)**
  enables multiple equal-cost and unequal-cost links in a routing environment to increase link redundancy and scale bandwidth
- **OSPFv3 MCE**
  Multi-VPN-Instance CE (MCE) binds different VPNs to different interfaces on one single CE; the OSPFv3 MCE feature creates and maintains separate OSPFv3 routing tables for each IPv6 VPN to isolate VPN services in the device

Layer 3 services

- **Address Resolution Protocol (ARP)**
  determines the MAC address of another IP host in the same subnet; supports static ARPs; gratuitous ARP allows detection of duplicate IP addresses; proxy ARP allows normal ARP operation between subnets or when subnets are separated by a Layer 2 network
- **User Datagram Protocol (UDP) helper**
  redirects UDP broadcasts to specific IP subnets to prevent server spoofing
- **Domain Name System (DNS)**
  provides a distributed database that translates domain names and IP addresses, which simplifies network design; supports client and server
- **Dynamic Host Configuration Protocol (DHCP)**
  simplifies the management of large IP networks

Security

- **Auto Discover VPN (ADVPN)**
  collects, maintains, and distributes dynamic public addresses through the VPN Address Management (VAM) protocol, making VPN establishment available between enterprise branches that use dynamic addresses to access the public network; compared to traditional VPN technologies, ADVPN technology is more flexible and has richer features, such as NAT traversal of ADVPN packets, AAA identity authentication, IPSec protection of data packets, and multiple VPN domains
- **Group Domain Virtual Private Network (GDVPN)**
  is a tunnel-less VPN technology that allows for native end-to-end security for a full meshed network; is suitable for an enterprise running encryption over a private Multiprotocol Label Switching (MPLS)/IP-based core network, as well as for encrypting multicast traffic
- **Stateful VPN firewall**
  provides enhanced stateful packet inspection and filtering; supports flexible security zones and virtual firewall containment; delivers advanced VPN services with Triple DES (3DES) and Advanced Encryption Standard (AES) encryption at high performance and low latency; allows for application prioritization and enhancement
- **Access control list (ACL)**
  supports powerful ACLs for both IPv4 and IPv6; ACLs are used for filtering traffic to prevent unauthorized users from

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accessing the network, or for controlling network traffic to save resources; rules can either deny or permit traffic to be forwarded; rules can be based on a Layer 2 header or a Layer 3 protocol header; rules can be set to operate on specific dates or times

- **Unicast Reverse Path Forwarding (URPF)**
  allows normal packets to be forwarded correctly, but discards the attaching packet due to lack of reverse path route or incorrect inbound interface; prevents source spoofing and distributed attacks; supports distributed UFPF
- **Secure shell (SSHv2)**
  uses external servers to securely log in to a remote device; with authentication and encryption, it protects against IP spoofing and plain-text password interception; increases the security of Secure FTP (SFTP) transfers
- **Remote Authentication Dial-In User Service (RADIUS)**
  eases switch security access administration by using a password authentication server
- **Terminal Access Controller Access-Control System (TACACS+)**
  is an authentication tool using TCP with encryption of the full authentication request, which provides additional security
- **Network address translation (NAT)**
  supports repeated multiplexing of a port and automatic 5-tuple collision detection, enabling NAPT to support unlimited connections; supports blacklist in NAT/NAPT/internal server, a limit on the number of connections, session log, and multi-instance

Quality of Service (QoS)

- **HQoS/Nested QoS**
  allows for precise and flexible traffic classification and scheduling
- **Traffic policing**
  supports Committed Access Rate (CAR) and line rate
- **Congestion management**
  supports FIFO, PQ, CQ, WFQ, CBQ, and RTPQ
- **Congestion avoidance**
  Weighted Random Early Detection (WRED)/Random Early Detection (RED)
- **Other QoS technologies**
  support traffic shaping, FR QoS, MPLS QoS, and MP QoS/LFI

Management

- **Industry-standard CLI with a hierarchical structure**
  reduces training time and expenses, and increases productivity in multivendor installations
- **SNMPv1, v2, and v3**
  provide complete support of SNMP; provide full support of industry-standard Management Information Base (MIB) plus private extensions; SNMPv3 supports increased security using encryption; provide alerts (via SNMP, logging, and/or SMTP) for system health and blocking/filtering actions
- **Management interface control**
  enables or disables each of the following interfaces depending on security preferences: console port, Telnet port, or reset button
- **Remote monitoring (RMON)**
  uses standard SNMP to monitor essential network functions; supports events, alarm, history, and statistics group plus a private alarm extension group
- **Management security**
  restricts access to critical configuration commands; offers multiple privilege levels with password protection; ACLs provide Telnet and SNMP access; local and remote syslog capabilities allow logging of all access
- **FTP, TFTP, and SFTP support**
  FTP allows bidirectional transfers over a TCP/IP network and is used for configuration updates; Trivial FTP is a simpler method using User Datagram Protocol (UDP)
- **Debug and sampler utility**
  supports ping and traceroute for both IPv4 and IPv6
- **Network Quality Analyzer (NQA)**
  analyzes network performance and service quality by sending test packets, and provides network performance and service

Overview

quality parameters such as jitter, TCP, or FTP connection delays and file transfer rates; allows a network manager to determine overall network performance and to diagnose and locate network congestion points or failures

- **Network Time Protocol (NTP)**
  synchronizes timekeeping among distributed time servers and clients; keeps timekeeping consistent among all clock-dependent devices within the network so that the devices can provide diverse applications based on the consistent time
- **Info center**
  provides a central information center for system and network information; aggregates all logs, traps, and debugging information generated by the system and maintains them in order of severity; outputs the network information to multiple channels based on user-defined rules
- **RFC3164 Syslog Support**

Multicast support

- **Internet Group Management Protocol (IGMP)**
  is used by IP hosts to establish and maintain multicast groups; supports v1, 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 Mode (PIM-SSM)
- **Multicast Source Discovery Protocol (MSDP)**
  is used for interdomain multicast applications, allowing multiple PIM-SM domains to interoperate
- **Multicast Border Gateway Protocol (MBGP)**
  allows multicast traffic to be forwarded across BGP networks separately from unicast traffic

Additional information

- **Unified Hewlett Packard Enterprise Comware operating system with modular architecture**
  provides an easy-to-enhance-and-extend feature set, which doesn't require whole-scale changes; all switching, routing, and security platforms leverage the Comware OS, a common unified modular operating system

Warranty and support

- **1-year warranty**
  see **http://www.hpe.com/networking/warrantysummary** for warranty and support information included with your product purchase.
- **Software releases**
  to find software for your product, refer to **http://www.hpe.com/networking/support**; for details on the software releases available with your product purchase, refer to **http://www.hpe.com/networking/warrantysummary**

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.

Models

HPE FlexNetwork HSR6802 Router Chassis JG361B

- 2 SAP slots or 4 HIM slots or 8 MIM slots, or a combination
- 2 MPU (for management modules) slots
- Must select min 1 MPU
- Must select min 1 Power Supply
- 5U - Height

HPE FlexNetwork HSR6804 Router Chassis JG362B

- 4 SAP slots or 8 HIM slots or 16 MIM slots, or a combination
- 2 MPU (for management modules) slots
- Must select min 1 MPU
- Must select min 1 Power Supply
- 7U - Height

HPE FlexNetwork HSR6808 Router Chassis JG363B

- 8 SAP slots or 16 HIM slots or 32 MIM slots, or a combination
- 2 MPU (for management modules) slots
- 1 switch fabric slot
- Must select min 1 MPU
- Must select min 2 Power Supply
- 20U - Height

Box Level Integration CTO Models

CTO Solution SKU

HPE FlexNetwork HSR68xx Configure-to-order Router Solution JG678A

- SSP trigger SKU

CTO Switch Chassis

HPE FlexNetwork HSR6802 Router Chassis JG361B

- 2 SAP slots or 4 HIM slots or 8 MIM slots, or a combination
- 2 MPU (for management modules) slots
- Must select min 1 MPU
- Must select min 1 Power Supply
- 5U - Height

See Configuration **NOTE:**1

HPE FlexNetwork HSR6804 Router Chassis JG362B

- 4 SAP slots or 8 HIM slots or 16 MIM slots, or a combination
- 2 MPU (for management modules) slots
- Must select min 1 MPU

See Configuration **NOTE:**1

Configuration

- Must select min 1 Power Supply
- 7U - Height

HPE FlexNetwork HSR6808 Router Chassis — JG363B
See Configuration
NOTE:1

- 8 SAP slots or 16 HIM slots or 32 MIM slots, or a combination
- 2 MPU (for management modules) slots
- 1 switch fabric slot
- Must select min 1 MPU
- Must select min 2 Power Supply
- 20U - Height

Configuration Rules:

Note 1 If the Router Chassis is to be Box Level Factory Integrated (CTO), Then the #0D1 is required on the Router Chassis and integrated to the JG678A - HP HSR68xx CTO Router Solution . (Min 1/Max 1 Switch per SSP)

Rack Level Integration CTO Models

HPE FlexNetwork HSR6802 Router Chassis — JG361B
See Configuration
NOTE:2

- 2 SAP slots or 4 HIM slots or 8 MIM slots, or a combination
- 2 MPU (for management modules) slots
- Must select min 1 MPU
- Must select min 1 Power Supply
- 5U - Height

HPE FlexNetwork HSR6804 Router Chassis — JG362B
See Configuration
NOTE:2

- 4 SAP slots or 8 HIM slots or 16 MIM slots, or a combination
- 2 MPU (for management modules) slots
- Must select min 1 MPU
- Must select min 1 Power Supply
- 7U - Height

HPE FlexNetwork HSR6808 Router Chassis — JG363B
See Configuration
NOTE:2

- 8 SAP slots or 16 HIM slots or 32 MIM slots, or a combination
- 2 MPU (for management modules) slots
- 1 switch fabric slot
- Must select min 1 MPU
- Must select min 2 Power Supply
- 20U - Height

Configuration Rules:

Note 2 If HPE CTO Router Chassis is selected to be Rack Level Integration, Then the Router Chassis needs to integrate (with #0D1) to the HPE Universal Rack.

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

Modules

Configuration

Management Module

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

HPE FlexNetwork HSR6800 RSE-X3 Router Main Processing Unit • 2 - 2GB DDR3 SDRAM Included (JG482A) • 2 CF Memory slots: (Min 0 // Max 1) • Supports up to 4095 VRF instances and 4000 multicast routes	JH075A See Configuration **NOTE:**1, 3, 5
Russian Reduced Encryption	JH075A#A59
HPE FlexNetwork HSR6800 RSE-X2 Router Main Processing Unit • 2 - 2GB DDR3 SDRAM Included (JG482A) • 2 CF Memory slots: (Min 0 // Max 1)	JG364A See Configuration **NOTE:**1, 3, 4
Russian Reduced Encryption	JG364A#A59

Configuration Rules:

Note 1 If this product is ordered for delivery to Russia, it must be ordered with the A59 option (also allowed for other countries desiring Low Encryption), then #A59 is the required option for BTO, and must be added in addition to #0D1 for CTO.

Note 3 The following Switching Fabric Engine (SFE) is supported in combination with this MPU when used in JG363B:
JG365A - HP HSR6808 SFE-X1 Swch Fbrc Engn Rtr Mod

Note 4 The following Service Modules (SAP) and Flexible Interface Platform (FIP) Modules are supported with this MPU in all Router Chassis for ComwareV5:

HPE FlexNetwork HSR6800 FIP-600 Flexible Interface Platform Router Module	JG360A
HPE FlexNetwork HSR6800 FIP-310 Flexible Interface Platform Module	JG672A
HPE FlexNetwork HSR6800 FIP-300 Flexible Interface Platform Module	JG671A
HPE FlexNetwork 6600 FIP-210 Flexible Interface Platform Module	JC167B
HPE FlexNetwork 6600 24-port GbE SFP Service Aggregation Platform Module	JC568A
HPE FlexNetwork 6600 48-port GbE SFP Service Aggregation Platform Module	JG556A
HPE FlexNetwork HSR6800 4-port 10GbE SFP+ Service Aggregation Platform Router Module	JG366A

Note 5 The following Service Modules (SAP) and Flexible Interface Platform (FIP) Modules are supported with this MPU in all Router Chassis for ComwareV7:

HPE FlexNetwork HSR6800 FIP-600 Flexible Interface Platform Router Module	JG360A
HPE FlexNetwork HSR6800 FIP-310 Flexible Interface Platform Module	JG672A
HPE FlexNetwork HSR6800 FIP-300 Flexible Interface Platform Module	JG671A
HPE FlexNetwork 6600 FIP-240 Flexible Interface Platform Module	JH137A
HPE FlexNetwork 6600 16-port GbE SFP and 12-port Combo GbE Service Aggregation Platform Module	JH138A
HPE FlexNetwork 6600 16-port GbE SFP 4-port GbE Combo and 2-port 10GbE SFP+Svc Agg Pltfrm Mod	JH139A
HPE FlexNetwork HSR6800 4-port 10GbE SFP+ Service Aggregation Platform Router Module	JG366A

Switching Fabric Engine (SFE), Flexible Interface Platform (FIP) and Service Modules (SAP)

Configuration

(JG361B Router Only) System (std 0 // max 2) User Selection (min 0 // max 2) per router

(JG362B Router Only) System (std 0 // max 4) User Selection (min 0 // max 4) per router

(JG363B Router Only) System (std 0 // max 8) User Selection (min 0 // max 8) per router

HPE FlexNetwork HSR6808 SFE X1 Switch Fabric Engine Router Module — JG365A
See Configuration
NOTE:3

HPE FlexNetwork HSR6800 FIP-600 Flexible Interface Platform Router Module — JG360A
See Configuration
NOTE:1, 4
- min=0 \ max=2 SFP 1G
- Min=0 \ Max=2 HIM Modules (Full Height Slots)
- 2 - 2GB DDR3 SDRAM Included (JG482A)

HPE FlexNetwork HSR6800 FIP-310 Flexible Interface Platform Module — JG672A
See Configuration
NOTE:1, 5, 8
- 4 GE combo min=0 \ max=4 SFP 1G
- 2x10GE (SFP+) min=0 \ max=2 SFP+ 10G
- 1 HIM/MIM slot supports both HIM and MIM Min=0 \ Max=1 HIM Modules or 1 MIM (Full Height Slot)
- 2 - 2GB DDR3 SDRAM Included (JG482A)

HPE FlexNetwork HSR6800 FIP-300 Flexible Interface Platform Module — JG671A
See Configuration
NOTE:1, 8
- 12 GE combo min=0 \ max=12 SFP 1G
- 1 HIM/MIM slot supports both HIM and MIM Min=0 \ Max=1 HIM Modules or 1 MIM (Full Height Slot)
- 2 - 2GB DDR3 SDRAM Included (JG482A)

HPE FlexNetwork 6600 FIP-240 Flexible Interface Platform Module — JH137A
See Configuration
NOTE:2, 9
- min=0 \ max=2 SFP
- 4 HIM/MIM half-height slots support both HIM and MIM
- Min=0 \ Max=4 half-height HIM or MIM Modules or Min=0 \ Max=2 full-height HIM or MIM Modules
- 1 - 2GB DDR3 SDRAM Included (JG482A) (default=2GB \ max=4GB DDR SDRAM)

HPE FlexNetwork 6600 FIP-210 Flexible Interface Platform Module — JC167B
See Configuration
NOTE:1, 6
- min=0 \ max=2 SFP 1G \\ Min=0 \ Max=2 HIM Modules or 2 MIM Modules or 1 Each (Full Height Slots)
- 2 - 1GB DDR2 SDRAM Included (JC071A)

HPE FlexNetwork 6600 48-port GbE SFP Service Aggregation Platform Module — JG556A
See Configuration
NOTE:2
- min=0 \ max=48 SFP 100M/1G
- 2 - 1GB DDR2 SDRAM Included (JC071A)

HPE FlexNetwork 6600 16-port GbE SFP and 12-port Combo GbE Service Aggregation Platform Module — JH138A
See Configuration
NOTE:2
- 16 - Gigabits Ethernet Fiber interface (SFP)
- 12 - Gigabits Ethernet Combo interface (RJ-45 and SFP)
- min=0 \ max=28 SFP
- 2 - 2GB DDR3 SDRAM Included (JG482A)

Configuration

HPE FlexNetwork 6600 24-port GbE SFP Service Aggregation Platform Module • min=0 \ max=24 SFP 100M/1G • 2 - 1GB DDR2 SDRAM Included (JC071A)	JC568A See Configuration **NOTE:**2
HPE FlexNetwork 6600 16-port GbE SFP 4-port GbE Combo and 2-port 10GbE SFP+Svc Agg Pltfrm Mod • 16 SFP GbE ports • 4 Combo GbE (SFP and RJ45) ports • min=0 \ max=20 SFP • 2 SFP+ 10GbE ports • min=0 \ max=2 SFP+ • 2 - 2GB DDR3 SDRAM Included (JG482A)	JH139A See Configuration **NOTE:**2, 5
HPE FlexNetwork HSR6800 4-port 10GbE SFP+ Service Aggregation Platform Router Module • min=0 \ max=4 SFP+ 10G • 2 - 2GB DDR3 SDRAM Included (JG482A)	JG366A See Configuration

Configuration Rules:

Note 1 The following Transceivers installs into this Service Module: (Use #0D1 if router is CTO) - if applicable

HPE X120 1G SFP LC SX Transceiver	JD118B
HPE X120 1G SFP LC LX Transceiver	JD119B
HPE X125 1G SFP LC LH40 1310nm Transceiver	JD061A
HPE X120 1G SFP LC LH40 1550nm Transceiver	JD062A
HPE X125 1G SFP LC LH70 Transceiver	JD063B
HPE X120 1G SFP LC LH100 Transceiver	JD103A
HPE X120 1G SFP LC BX 10-U Transceiver	JD098B
HPE X120 1G SFP LC BX 10-D Transceiver	JD099B

Note 2 The following Transceivers install into this Service Module: (Use #0D1 if router is CTO) - if applicable

HPE X120 1G SFP LC SX Transceiver	JD118B
HPE X120 1G SFP LC LX Transceiver	JD119B
HPE X125 1G SFP LC LH40 1310nm Transceiver	JD061A
HPE X120 1G SFP LC LH40 1550nm Transceiver	JD062A
HPE X125 1G SFP LC LH70 Transceiver	JD063B
HPE X120 1G SFP LC LH100 Transceiver	JD103A
HPE X120 1G SFP LC BX 10-U Transceiver	JD098B
HPE X120 1G SFP LC BX 10-D Transceiver	JD099B
HPE X115 100M SFP LC FX Transceiver	JD102B
HPE X110 100M SFP LC LX Transceiver	JD120B
HPE X110 100M SFP LC LH80 Transceiver	JD091A
HPE X115 100M SFP LC BX 10-U Transceiver	JD100A
HPE X115 100M SFP LC BX 10-D Transceiver	JD101A
HPE X120 1G SFP RJ45 T Transceiver	JD089B

Note 3 Only supported on the HSR6808. Max 1 per Chassis.

Note 4 The following Modules installs into this Service Module: Max = 2 (Use #0D1 if router is CTO) - if applicable

HPE FlexNetwork 6600 8GbE WAN HIM Router Module	JC164A
HPE FlexNetwork 6600 4-port OC-3/2-port OC-12 POS HIM Router Module	JC172A
HPE FlexNetwork 6600 1-port OC-48/STM-16 POS (SFP) Router Module	JC494A

Configuration

	HPE FlexNetwork 6600 2-port OC-3/1-port OC-12 POS HIM Router Module	JC173A
	HPE FlexNetwork 6600 8-port GbE SFP HIM Router Module	JC174A
	HPE FlexNetwork 6600 1-port 10GbE XFP HIM Router Module	JC168A
	HPE FlexNetwork 6600 8-port OC-3c/OC-12c POS/GbE SFP HIM Module	JG673A
	HPE FlexNetwork HSR6800 16-port GbE SFP HIM Module	JH142A
	HPE FlexNetwork HSR6800 2-port 10GbE SFP+ HIM Module	JH143A
Note 5	The following Transceivers install into this Module: (Use #0D1 if router is CTO)	
	HPE X130 10G SFP+ LC SR Transceiver	JD092B
	HPE X130 10G SFP+ LC LR Transceiver	JD094B
	HPE X130 10G SFP+ LC ER 40km Transceiver	JG234A
Note 6	The following Modules installs into this Service Module: Max = 2 (Use #0D1 if router is CTO) - if applicable	
	HPE FlexNetwork MSR 2-port Enhanced Serial MIM Module	JD540A
	HPE FlexNetwork MSR 4-port Enhanced Serial MIM Module	JD541A
	HPE FlexNetwork MSR 8-port Sync/Async Interface Enhanced Module	JD552A
	HPE FlexNetwork 6600 8-port T1 MIM Router Module	JC160A
	HPE FlexNetwork 6600 8-port Fractional T1 MIM Router Module	JC159A
	HPE FlexNetwork 6600 1-port OC-3 (E1/T1) CPOS HIM Router Module	JC161A
	HPE FlexNetwork 6600 2-port OC-3 E1/T1 CPOS HIM Router Module	JC162A
	HPE FlexNetwork 6600 8GbE WAN HIM Router Module	JC164A
	HPE FlexNetwork 6600 4-port OC-3/2-port OC-12 POS HIM Router Module	JC172A
	HPE FlexNetwork 6600 1-port OC-48/STM-16 POS (SFP) Router Module	JC494A
	HPE FlexNetwork 6600 2-port OC-3/1-port OC-12 POS HIM Router Module	JC173A
	HPE FlexNetwork 6600 8-port GbE SFP HIM Router Module	JC174A
	HPE FlexNetwork 6600 1-port 10GbE XFP HIM Router Module	JC168A
	HPE FlexNetwork HSR6800 1-port Clear Channel T3 MIM Module	JH663A
	HPE FlexNetwork MSR 8-port E1/CE1/PRI (75ohm) MIM Module	JD563A
	HPE FlexNetwork 6600 8-port OC-3c/OC-12c POS/GbE SFP HIM Module	JG673A
Note 8	The following Modules installs into this Service Module: Max = 1 (Use #0D1 if router is CTO) - if applicable	
	HPE FlexNetwork MSR 2-port Enhanced Serial MIM Module	JD540A
	HPE FlexNetwork MSR 4-port Enhanced Serial MIM Module	JD541A
	HPE FlexNetwork MSR 8-port Sync/Async Interface Enhanced Module	JD552A
	HPE FlexNetwork 6600 8-port T1 MIM Router Module	JC160A
	HPE FlexNetwork 6600 8-port Fractional T1 MIM Router Module	JC159A
	HPE FlexNetwork 6600 1-port OC-3 (E1/T1) CPOS HIM Router Module	JC161A
	HPE FlexNetwork 6600 2-port OC-3 E1/T1 CPOS HIM Router Module	JC162A
	HPE FlexNetwork 6600 8GbE WAN HIM Router Module	JC164A
	HPE FlexNetwork 6600 4-port OC-3/2-port OC-12 POS HIM Router Module	JC172A
	HPE FlexNetwork 6600 1-port OC-48/STM-16 POS (SFP) Router Module	JC494A
	HPE FlexNetwork 6600 2-port OC-3/1-port OC-12 POS HIM Router Module	JC173A
	HPE FlexNetwork 6600 8-port GbE SFP HIM Router Module	JC174A
	HPE FlexNetwork 6600 1-port 10GbE XFP HIM Router Module	JC168A
	HPE FlexNetwork HSR6800 1-port Clear Channel T3 MIM Module	JH663A
	HPE FlexNetwork MSR 8-port E1/CE1/PRI (75ohm) MIM Module	JD563A
	HPE FlexNetwork 6600 8-port OC-3c/OC-12c POS/GbE SFP HIM Module	JG673A
	HPE FlexNetwork HSR6800 16-port GbE SFP HIM Module	JH142A
	HPE FlexNetwork HSR6800 2-port 10GbE SFP+ HIM Module	JH143A

Configuration

Note 9 The following Modules installs into this Service Engine Module: Max = 2 full-height or 4 half-height (Use #0D1 if router is CTO) - if applicable

HPE FlexNetwork HSR6800 2-port 10GbE SFP+ HIM Module	JH143A
HPE FlexNetwork 6600 1-port 10GbE XFP HIM Router Module	JC168A
HPE FlexNetwork 6600 8GbE WAN HIM Router Module	JC164A
HPE FlexNetwork HSR6800 16-port GbE SFP HIM Module	JH142A
HPE FlexNetwork 6600 8-port GbE SFP HIM Router Module	JC174A
HPE FlexNetwork 6600 1-port OC-3 (E1/T1) CPOS HIM Router Module	JC161A
HPE FlexNetwork 6600 2-port OC-3 E1/T1 CPOS HIM Router Module	JC162A
HPE FlexNetwork 6600 4-port OC-3/2-port OC-12 POS HIM Router Module	JC172A
HPE FlexNetwork 6600 2-port OC-3/1-port OC-12 POS HIM Router Module	JC173A
HPE FlexNetwork 6600 8-port OC-3c/OC-12c POS/GbE SFP HIM Module	JG673A
HPE FlexNetwork 6600 1-port OC-48/STM-16 POS (SFP) Router Module	JC494A
HPE FlexNetwork MSR 2-port Enhanced Serial MIM Module	JD540A
HPE FlexNetwork MSR 4-port Enhanced Serial MIM Module	JD541A
HPE FlexNetwork MSR 8-port Sync/Async Interface Enhanced Module	JD552A
HPE FlexNetwork MSR 8-port E1/CE1/PRI (75ohm) MIM Module	JD563A
HPE FlexNetwork 6600 8-port T1 MIM Router Module	JC160A
HPE FlexNetwork 6600 8-port Fractional T1 MIM Router Module	JC159A
HPE FlexNetwork HSR6800 1-port Clear Channel T3 MIM Module	JH663A

MIM and HIM router Modules

System (std 0 // max 2 or 4) User Selection (min 0 // max 2 or 4) per Service Module (See Service Modules for Port information)

HPE FlexNetwork 6600 1-port OC-3 (E1/T1) CPOS HIM Router Module — JC161A
- (Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically)
- min=0 \ max=1 SFP

See Configuration
NOTE:1, 13

HPE FlexNetwork 6600 2-port OC-3 E1/T1 CPOS HIM Router Module — JC162A
- (Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically)
- min=0 \ max=2 SFP

See Configuration
NOTE:1, 13

HPE FlexNetwork 6600 4-port OC-3/2-port OC-12 POS HIM Router Module — JC172A
- (Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically)
- min=0 \ max=4 SFP

See Configuration
NOTE:1, 3, 6, 13

HPE FlexNetwork 6600 2-port OC-3/1-port OC-12 POS HIM Router Module — JC173A
- (Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically)
- min=0 \ max=2 SFP

See Configuration
NOTE:1, 3, 7, 13

HPE FlexNetwork 6600 1-port OC-48/STM-16 POS (SFP) Router Module — JC494A
- (Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically)
- min=0 \ max=1 SFP (Supported Transceivers from HPE are OBSO)

See Configuration
NOTE:13

HPE FlexNetwork 6600 8-port GbE SFP HIM Router Module — JC174A
- (Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically)
- min=0 \ max=8 SFP

See Configuration
NOTE:2, 13

Configuration

HPE FlexNetwork HSR6800 16-port GbE SFP HIM Module • (Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically) • min=0 \ max=16 SFP	JH142A See Configuration **NOTE:**2, 13, 14
HPE FlexNetwork 6600 1-port 10GbE XFP HIM Router Module • (Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically) • min=0 \ max=1 XFP	JC168A See Configuration **NOTE:**5, 13
HPE FlexNetwork HSR6800 2-port 10GbE SFP+ HIM Module • (Half Height Module; Takes up 1 Half Height or 1 Full Height slot) • min=0 \ max=2 SFP+	JH143A See Configuration **NOTE:**4, 14
HPE FlexNetwork MSR 2-port Enhanced Serial MIM Module • (Half Height Module; Takes up 1 Half Height or 1 Full Height slot) • min=0 \ max=2 Serial Port Cable	JD540A See Configuration **NOTE:**8
HPE FlexNetwork MSR 4-port Enhanced Serial MIM Module • (Half Height Module; Takes up 1 Half Height or 1 Full Height slot) • min=0 \ max=4 Serial Port Cable	JD541A See Configuration **NOTE:**8
HPE FlexNetwork MSR 8-port Sync/Async Interface Enhanced Module • (Half Height Module; Takes up 1 Half Height or 1 Full Height slot) • min=0 \ max=8 Serial Port Cable	JD552A See Configuration **NOTE:**8
HPE FlexNetwork 6600 8-port T1 MIM Router Module • (Half Height Module; Takes up 1 Half Height or 1 Full Height slot) • No Transceivers	JC160A See Configuration **NOTE:**11
HPE FlexNetwork 6600 8-port Fractional T1 MIM Router Module • (Half Height Module; Takes up 1 Half Height or 1 Full Height slot) • No Transceivers	JC159A See Configuration **NOTE:**11
HPE FlexNetwork 6600 8GbE WAN HIM Router Module • (Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically) • No Transceivers	JC164A See Configuration **NOTE:**13
HPE FlexNetwork 6600 8-port OC-3c/OC-12c POS/GbE SFP HIM Module • (Half Height Module; Takes up 1 Half Height or 1 Full Height slot) • min=0 \ max=8 SFP	JG673A See Configuration **NOTE:**3, 12
HPE FlexNetwork MSR 8-port E1/CE1/PRI (75ohm) MIM Module • (Half Height Module; Takes up 1 Half Height or 1 Full Height slot) • must select 1 8-port E1 Cable	JD563A See Configuration **NOTE:**9
HPE FlexNetwork HSR6800 1-port Clear Channel T3 MIM Module • (Half Height Module; Takes up 1 Half Height or 1 Full Height slot) • min=0 \ max=2 E3/T3 Cabl	JH663A See Configuration **NOTE:**10, 15

Configuration Rules:

Configuration

Note 1	The following Transceivers install into this Module: (Use #0D1 if router is CTO) - if applicable	
	HPE X115 100M SFP LC FX Transceiver	JD102B
	HPE X110 100M SFP LC LX Transceiver	JD120B
	HPE X110 100M SFP LC LH80 Transceiver	JD091A
Note 2	The following Transceivers install into this Module: (Use #0D1 if router is CTO) - if applicable	
	HPE X120 1G SFP RJ45 T Transceiver	JD089B
	HPE X120 1G SFP LC SX Transceiver	JD118B
	HPE X120 1G SFP LC LX Transceiver	JD119B
	HPE X125 1G SFP LC LH40 1310nm Transceiver	JD061A
	HPE X120 1G SFP LC LH40 1550nm Transceiver	JD062A
	HPE X125 1G SFP LC LH70 Transceiver	JD063B
	HPE X120 1G SFP LC LH100 Transceiver	JD103A
	HPE X120 1G SFP LC BX 10-U Transceiver	JD098B
	HPE X120 1G SFP LC BX 10-D Transceiver	JD099B
	HPE X115 100M SFP LC BX 10-U Transceiver	JD100A
	HPE X115 100M SFP LC BX 10-D Transceiver	JD101A
	HPE X115 100M SFP LC FX Transceiver	JD102B
	HPE X110 100M SFP LC LX Transceiver	JD120B
	HPE X110 100M SFP LC LH80 Transceiver	JD091A
Note 3	The following Transceivers install into this Module (Use #0D1 if router is CTO) - if applicable	
	HPE X120 622M SFP LC LX 15km Transceiver	JF829A
Note 4	The following Transceivers install into this Module: (Use #0D1 if router is CTO) - if applicable	
	HPE X130 10G SFP+ LC SR Transceiver	JD092B
	HPE X130 10G SFP+ LC LR Transceiver	JD094B
	HPE X130 10G SFP+ LC ER 40km Transceiver	JG234A
Note 5	The following Transceivers install into this Module: (Use #0D1 if router is CTO) - if applicable	
	HPE X135 10G XFP LC ER Transceiver	JD121A
	HPE X130 10G XFP LC LR Single Mode 10km 1310nm Transceiver	JD108B
	HPE X130 10G XFP LC SR Transceiver	JD117B
Note 6	min=0 \ max=4 SFP (JD102B,JD120B, JD091A) min=0 \ max=2 SFP (JF829A) X110 100M LC Transceiver (JD102B,JD120B and JD091A) and X120 622M LC Transceiver (JF829A) cannot be used at the same time	
Note 7	min=0 \ max=2 SFP (JD102B,JD120B, JD091A) min=0 \ max=1 SFP (JF829A) X110 100M LC Transceiver (JD102B,JD120B and JD091A) and X120 622M LC Transceiver (JF829A) cannot be used at the same time	
Note 8	The following Cables install into this Module:	
	HPE FlexNetwork X200 V.24 DTE 3m Serial Port Cable	JD519A
	HPE FlexNetwork X200 V.24 DCE 3m Serial Port Cable	JD521A
	HPE FlexNetwork X200 V.35 DTE 3m Serial Port Cable	JD523A
	HPE FlexNetwork X200 V.35 DCE 3m Serial Port Cable	JD525A
	HPE FlexNetwork X260 RS449 3m DTE Serial Port Cable	JF825A

Configuration

	HPE FlexNetwork X260 RS449 3m DCE Serial Port Cable	JF826A
	HPE FlexNetwork X260 RS530 3m DTE Serial Port Cable	JF827A
	HPE FlexNetwork X260 RS530 3m DCE Serial Port Cable	JF828A
Note 10	The following E3/T3 Cable and Connector install into this Module:	
	HPE FlexNetwork X260 T3/E3 Router Cable	JD531A
Note 12	The following Transceivers install into this Module: (Use #0D1 if router is CTO) - if applicable	
	HPE X120 1G SFP LC SX Transceiver	JD118B
	HPE X120 1G SFP LC LX Transceiver	JD119B
	HPE X125 1G SFP LC LH40 1310nm Transceiver	JD061A
	HPE X120 1G SFP LC LH40 1550nm Transceiver	JD062A
	HPE X125 1G SFP LC LH70 Transceiver	JD063B
	HPE X120 1G SFP LC LH100 Transceiver	JD103A
	HPE X120 1G SFP LC BX 10-U Transceiver	JD098B
	HPE X120 1G SFP LC BX 10-D Transceiver	JD099B
	HPE X115 100M SFP LC FX Transceiver	JD102B
	HPE X110 100M SFP LC LX Transceiver	JD120B
	HPE X110 100M SFP LC LH80 Transceiver	JD091A
	HPE X115 100M SFP LC BX 10-U Transceiver	JD100A
	HPE X115 100M SFP LC BX 10-D Transceiver	JD101A
Note 13	Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically	
Note 14	Modules JH142A, JH143A are only supported with Comware v7 MPU JH075A - HPE FlexNetwork HSR6800 RSE-X3 Router Main Processing Unit. They are NOT supported on Comware v5 MPUs JG364A - HPE FlexNetwork HSR6800 RSE-X2 Router Main Processing Unit	
Note 15	Available in Korea only	

Transceivers

SFP Transceivers

HPE X110 100M SFP LC LX Transceiver	JD120B
HPE X110 100M SFP LC LH80 Transceiver	JD091A
HPE X115 100M SFP LC BX 10-U Transceiver	JD100A
HPE X115 100M SFP LC BX 10-D Transceiver	JD101A
HPE X115 100M SFP LC FX Transceiver	JD102B
HPE X120 622M SFP LC LX 15km Transceiver	JF829A
HPE X125 1G SFP LC LH40 1310nm Transceiver	JD061A
HPE X120 1G SFP LC LH40 1550nm Transceiver	JD062A
HPE X120 1G SFP LC LH100 Transceiver	JD103A
HPE X120 1G SFP LC SX Transceiver	JD118B
HPE X120 1G SFP LC LX Transceiver	JD119B
HPE X125 1G SFP LC LH70 Transceiver	JD063B
HPE X120 1G SFP RJ45 T Transceiver	JD089B
HPE X120 1G SFP LC BX 10-U Transceiver	JD098B
HPE X120 1G SFP LC BX 10-D Transceiver	JD099B

Configuration

SFP+ Transceivers

HPE X130 10G SFP+ LC SR Transceiver	JD092B
HPE X130 10G SFP+ LC LR Transceiver	JD094B
HPE X130 10G SFP+ LC ER 40km Transceiver	JG234A

XFP Transceivers

HPE X135 10G XFP LC ER Transceiver	JD121A
HPE X130 10G XFP LC LR Single Mode 10km 1310nm Transceiver	JD108B
HPE X130 10G XFP LC SR Transceiver	JD117B

Internal Power Supplies

(JG361B and JG352B Only) - System (std 0 // max 2) User Selection (min 1 // max 2) per router

(JG363B Only) System (std 0 // max 4) User Selection (min 2 // max 4) per router

HPE FlexNetwork HSR6800 1200W DC Power Supply	JG334A See Configuration **NOTE:**1
HPE FlexNetwork HSR6800 1200W AC Power Supply • includes 1 x c19, 1800w	JG335A See Configuration **NOTE:**1, 2, 4
PDU Cable NA/MEX/TW/JP • C19 PDU Jumper Cord (NA/MEX/TW/JP)	JG335A#B2B
PDU Cable ROW • C19 PDU Jumper Cord (ROW)	JG335A#B2C
High Volt Switch to Wall Power Cord • NEMA L6-20P Cord (NA/MEX/JP/TW)	JG335A#B2E
No Power Cord • No Localized Power Cord Selected	JG335A#AC3
HPE FlexNetwork 6616 650W DC Router Power Supply	JC493A See Configuration **NOTE:**1
HPE FlexNetwork 6616 650W AC Router Power Supply • includes 1 x c13, 650w	JC492A See Configuration **NOTE:**1, 2, 4
PDU Cable NA/MEX/TW/JP • C15 PDU Jumper Cord (NA/MEX/TW/JP)	JC492A#B2B
PDU Cable ROW	JC492A#B2C

Configuration

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord JC492A#B2E

- NEMA L6-20P Cord (NA/MEX/JP/TW)

Configuration Rules:

Note 1 If more than 1 power supply is selected they, must all be the same SKU number.

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

Note 4 If #B2E is selected Then replace Localized option with #B2E for power supply. (Offered only in NA, Mexico, Taiwan and Japan)

Remarks:

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

Cables

HPE FlexNetwork X200 V.24 DTE 3m Serial Port Cable	JD519A
HPE FlexNetwork X200 V.24 DCE 3m Serial Port Cable	JD521A
HPE FlexNetwork X200 V.35 DTE 3m Serial Port Cable	JD523A
HPE FlexNetwork X200 V.35 DCE 3m Serial Port Cable	JD525A
HPE FlexNetwork X260 RS449 3m DTE Serial Port Cable	JF825A
HPE FlexNetwork X260 RS449 3m DCE Serial Port Cable	JF826A
HPE FlexNetwork X260 RS530 3m DTE Serial Port Cable	JF827A
HPE FlexNetwork X260 RS530 3m DCE Serial Port Cable	JF828A
HPE FlexNetwork X260 E1 RJ45 BNC 75-120 ohm Conversion Router Cable	JD511A
HPE FlexNetwork X260 T3/E3 Router Cable	JD531A

Remarks:

The following cable is used for RJ45 BNC Conversion
JD511A - HPE FlexNetwork X260 E1 RJ45 BNC 75-120 ohm Conversion Router Cable

Router Enclosure Options

Memory

HPE A Series 2GB DDR2 SDRAM JG205A

- upgrade option See Configuration **NOTE:**1

HPE X610 2G VLP DDR3 SDRAM Memory JG482A

Configuration

- used as spare or upgrade option. See Configuration **NOTE:**2, 3

Configuration Rules:

Note 1 This Memory is supported in the following components:

HPE FlexNetwork 6600 FIP-110 Flexible Interface Platform Module	JC166B
HPE FlexNetwork 6600 FIP-210 Flexible Interface Platform Module	JC167B
HPE FlexNetwork 6600 24-port GbE SFP Service Aggregation Platform Module	JC568A
HPE FlexNetwork 6600 48-port GbE SFP Service Aggregation Platform Module	JG556A

Note 2 This Memory is supported in the following components as a Spare Only:

HPE FlexNetwork HSR6800 FIP-600 Flexible Interface Platform Router Module	JG360A
HPE FlexNetwork HSR6800 FIP-300 Flexible Interface Platform Module	JG671A
HPE FlexNetwork HSR6800 FIP-310 Flexible Interface Platform Module	JG672A
HPE FlexNetwork HSR6800 RSE-X2 Router Main Processing Unit	JG364A
HPE FlexNetwork HSR6800 4-port 10GbE SFP+ Service Aggregation Platform Router Module	JG366A
HPE FlexNetwork HSR6800 RSE-X3 Router Main Processing Unit	JH075A
HPE FlexNetwork 6600 16-port GbE SFP and 12-port Combo GbE Service Aggregation Platform Module	JH138A
HPE FlexNetwork 6600 16-port GbE SFP 4-port GbE Combo and 2-port 10GbE SFP+Svc Agg Pltfrm Mod	JH139A

Note 3 This Memory is supported in the following components as an Upgrade Option. User Selection (min 0 // max 1) (default=2GB \ max=4GB):

HPE FlexNetwork 6600 FIP-240 Flexible Interface Platform Module	JH137A

Fan Kits

HPE FlexNetwork HSR6802 Router Spare Fan Assembly	JG367A See Configuration **NOTE:**1
HPE FlexNetwork HSR6804 Router Spare Fan Assembly	JG368A See Configuration **NOTE:**2
HPE FlexNetwork HSR6808 Router Spare Fan Assembly	JG369A See Configuration **NOTE:**3

Configuration Rules:

Note 1 This Fan is supported on the JG361B - HPE FlexNetwork HSR6802 Router Chassis only.

Note 2 This Fan is supported on the JG362B – HPE FlexNetwork HSR6804 Router Chassis only.

Note 3 This Fan is supported on the JG363B – HPE FlexNetwork HSR6808 Router Chassis only.

Compact Flash cards

Configuration

HPE X600 1G Compact Flash Card — JC684A
See Configuration
NOTE:1

Configuration Rules:

Note 1 Supported in JH075A - HPE FlexNetwork HSR6800 RSE-X3 Router Main Processing Unit,JG364A – HPE FlexNetwork HSR6800 RSE-X2 Router Main Processing Unit

Opacity Shield Kit

HPE FlexNetwork HSR6802 Router Opacity Shield Kit — JG675A
- Supported on JG361B

See Configuration
NOTE:1

HPE FlexNetwork HSR6804 Router Opacity Shield Kit — JG676A
- Supported on JG362B

See Configuration
NOTE:1

HPE FlexNetwork HSR6808 Router Opacity Shield Kit — JG677A
- Supported on JG363B

See Configuration
NOTE:2

Configuration Rules:

Note 1 If selected with a CTO Router Solution, Quantity 1 of JG585A#B01 must also be ordered.

Note 2 If selected with a CTO Router Solution, Quantity 1 of JG586A#B01 must also be ordered.

Tamper Evidence Labels

HPE 12mm x 60mm Tamper Evidence (30) Labels — JG585A
- Supported on JG361B or JG362B

See Configuration
NOTE:1

HPE 12mm x 60mm Tamper Evidence (100) Labels — JG586A
- Supported on JG363B

See Configuration
NOTE:2

Configuration Rules:

Note 1 If selected with a CTO Router Solution, Quantity 1 of JG675A#B01 or JG676A#B01 must also be ordered.

Note 2 If selected with a CTO Router Solution, Quantity 1 of JG677A#B01 must also be ordered.

Remarks:

Each JG675A or JG676A would use 1 of JG585A.

Each JG677A would use 1 of JG586A.

Configuration

Technical Specifications

HPE FlexNetwork HSR6802 Router Chassis (JG361B)

I/O ports and slots	2 SAP slots, or 4 HIM slots, or 8 MIM slots, or a combination	
Additional ports and slots	2 MPU slots	
Physical characteristics	**Dimensions**	17.17(w) x 18.9(d) x 8.66(h) in (43.6 x 48 x 22 cm) (5U height)
	Weight	50.15 lb (22.75 kg)
Mounting and enclosure	EIA-standard 19 in. rack	
Performance	**Throughput**	up to 120 Mpps
	Routing table size	4000000 entries (IPv4), 2000000 entries (IPv6)
	Forwarding table size	1000000 entries (IPv4), 1000000 entries (IPv6)
	Backplane bandwidth	1024 Gbps
Environment	**Operating temperature**	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	5% to 95%
	Altitude	up to 13,123 ft (4 km)
Electrical characteristics	**Voltage**	100 - 240 VAC, rated -48 to -60 VDC, rated (depending on power supply chosen)
	Maximum power rating	521 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	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; IEC 60950-1; FDA 21 CFR Subchapter J; EN60825-2:2004+A1:2007	
Emissions	EN 55022 Class A; CISPR 22 Class A; EN 55024; EN 301 489-1; EN 301 489-17; ICES-003 Class A; CISPR 24; EN 61000-6-1; AS/NZS CISPR 22 Class A; EN 61000-3-2; EN 61000-3-3; FCC (CFR 47, Part 15) Class A; KN22 Class A; VCCI-3 CLASS A; VCCI-4 CLASS A; ETSI EN 300 386	
Immunity	**Generic**	ETSI EN 300 386 V1.3.3; KN24
	EN	EN 55024, CISPR 24
Management	Command-line interface; Out-of-band management; SNMP manager; Telnet; RMON1; Terminal interface (serial RS-232c); Ethernet interface mib	
Services	Refer to the Hewlett Packard Enterprise website at: **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	

HPE FlexNetwork HSR6804 Router Chassis (JG362B)

I/O ports and slots	4 SAP slots, or 8 HIM slots, or 16 MIM slots, or a combination	
Additional ports and slots	2 MPU slots	
Physical characteristics	**Dimensions**	17.17(w) x 18.98(d) x 12.13(h) in (43.6 x 48.2 x 30.8 cm) (7U height)
	Weight	56.22 lb (25.5 kg)
Mounting and enclosure	EIA standard 19 in. rack	
Performance	**Throughput**	up to 240 Mpps

Technical Specifications

	Routing table size	4000000 entries (IPv4), 2000000 entries (IPv6)
	Forwarding table size	1000000 entries (IPv4), 1000000 entries (IPv6)
	Backplane bandwidth	1024 Gbps
Environment	**Operating temperature**	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	5% to 95%
	Altitude	up to 13,123 ft (4 km)
Electrical characteristics	**Voltage**	100 - 240 VAC, rated -48 to -60 VDC, rated (depending on power supply chosen)
	Maximum power rating	851 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	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; EN 60950-1/A11; FDA 21 CFR Subchapter J; GB 4943	
Emissions	EN 55022 Class A; CISPR 22 Class A; EN 55024; EN 301 489-1; EN 301 489-17; ICES-003 Class A; CISPR 24; EN 61000-6-1; AS/NZS CISPR 22 Class A; EN 61000-3-2; EN 61000-3-3; FCC (CFR 47, Part 15) Class A; KN22 Class A; VCCI-3 CLASS A; VCCI-4 CLASS A; ETSI EN 300 386	
Immunity	**Generic**	ETSI EN 300 386 V1.3.3; KN24
	EN	EN 55024, CISPR 24
Management	Command-line interface; Out-of-band management; SNMP manager; Telnet; RMON1; Terminal interface (serial RS-232c); Ethernet interface mib	
Services	Refer to the Hewlett Packard Enterprise website at: **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	

HPE FlexNetwork HSR6808 Router Chassis (JG363B)

I/O ports and slots	8 SAP slots, or 16 HIM slots, or 32 MIM slots, or a combination	
Additional ports and slots	2 MPU slots 1 switch fabric slot	
Physical characteristics	**Dimensions**	17.17(w) x 20.08(d) x 34.88(h) in (43.6 x 51.0 x 88.6 cm) (20U height)
	Weight	118.17 lb (53.6 kg)
Mounting and enclosure	EIA standard 19 in. rack	
Performance	**Throughput**	up to 420 Mpps
	Routing table size	4000000 entries (IPv4), 2000000 entries (IPv6)
	Forwarding table size	1000000 entries (IPv4), 1000000 entries (IPv6)
	Backplane bandwidth	2048 Gbps
Environment	**Operating temperature**	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	5% to 95%
	Altitude	up to 13,123 ft (4 km)
Electrical characteristics	**Voltage**	100 - 240 VAC, rated -48 to -60 VDC, rated (depending on power supply chosen)

Technical Specifications

	Maximum power rating	1816 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	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; EN 60950-1/A11; FDA 21 CFR Subchapter J; GB 4943	
Emissions	EN 55022 Class A; CISPR 22 Class A; EN 55024; EN 301 489-1; EN 301 489-17; ICES-003 Class A; CISPR 24; EN 61000-6-1; AS/NZS CISPR 22 Class A; EN 61000-3-2; EN 61000-3-3; FCC (CFR 47, Part 15) Class A; KN22 Class A; VCCI-3 CLASS A; VCCI-4 CLASS A; ETSI EN 300 386	
Immunity	**Generic**	ETSI EN 300 386 V1.3.3; KN24
	EN	EN 55024, CISPR 24
Management	Command-line interface; Out-of-band management; SNMP manager; Telnet; RMON1; Terminal interface (serial RS-232c); Ethernet interface mib	
Notes	Switch fabric is optional • When a switch fabric is used, I/O slot capacity is reduced to 7 SAP, or 14 HIM, or 28 MIM slots, or a combination.	
Services	Refer to the Hewlett Packard Enterprise website at: **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	

Standards and protocols (applies to all products in series)

BGP
RFC 1267 Border Gateway Protocol 3 (BGP-3)
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 An Application of the BGP Community Attribute in Multi-home Routing
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
CPU DoS Protection
Rate Limiting by ACLs

Device management
RFC 1155 Structure and Mgmt Information (SMIv1)
RFC 1157 SNMPv1/v2c
RFC 1305 NTPv3
RFC 1901 (Community based SNMPv2)
RFC 1901-1907 SNMPv2c, SMIv2 and Revised
RFC 3706 A Traffic-Based Method of Detecting Dead Internet Key Exchange (IKE) Peers
RFC 3768 Virtual Router Redundancy Protocol (VRRP)
RFC 3784 ISIS TE support
RFC 3786 Extending the Number of IS-IS LSP Fragments Beyond the 256 Limit
RFC 3811 Definitions of Textual Conventions (TCs) for Multiprotocol Label Switching (MPLS) Management
RFC 3812 Multiprotocol Label Switching (MPLS) Traffic Engineering (TE) Management Information Base (MIB)
RFC 3847 Restart signaling for IS-IS
RFC 4213 Basic IPv6 Transition Mechanisms

IP multicast
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 3973 PIM Dense Mode
RFC 4601 PIM Sparse Mode

IPv6
RFC 1350 TFTP

Technical Specifications

MIB-II
RFC 1902 (SNMPv2)
RFC 1908 (SNMP v1/2 Coexistence)
RFC 1945 Hypertext Transfer Protocol -- HTTP/1.0
RFC 2068 Hypertext Transfer Protocol -- HTTP/1.1
RFC 2271 FrameWork
RFC 2452 MIB for TCP6
RFC 2454 MIB for UDP6
RFC 2573 (SNMPv3 Applications)
RFC 2576 (Coexistence between SNMP V1, V2, V3)
RFC 2578-2580 SMIv2
RFC 2579 (SMIv2 Text Conventions)
RFC 2580 (SMIv2 Conformance)
RFC 2819 (RMON groups Alarm, Event, History and
Statistics only)
RFC 2819 RMON
RFC 3410 (Management Framework)
RFC 3416 (SNMP Protocol Operations v2)
RFC 3417 (SNMP Transport Mappings)
Multiple Configuration Files
Multiple Software Images
SNMP v3 and RMON RFC support
SSHv1/SSHv2 Secure Shell
TACACS/TACACS+

General protocols
IEIEEE 802.1ad Q-in-Q
IEEE 802.1ag Service Layer OAM
IEEE 802.1ah Provider Backbone Bridges
IEEE 802.1AX-2008 Link Aggregation
IEEE 802.1D MAC Bridges
IEEE 802.1p Priority
IEEE 802.1Q (GVRP)
IEEE 802.1Q VLANs
IEEE 802.1s (MSTP)
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 802.3 Type 10BASE-T
IEEE 802.3ab 1000BASE-T
IEEE 802.3ac (VLAN Tagging Extension)
IEEE 802.3ad Link Aggregation (LAG)
IEEE 802.3ad Link Aggregation Control Protocol (LACP)
IEEE 802.3ae 10-Gigabit Ethernet
IEEE 802.3ag Ethernet OAM
IEEE 802.3ah Ethernet in First Mile over Point to Point Fiber - EFMF
IEEE 802.3i 10BASE-T
RFC 1881 IPv6 Address Allocation Management
RFC 1886 DNS Extension for IPv6
RFC 1887 IPv6 Unicast Address Allocation Architecture
RFC 1981 IPv6 Path MTU Discovery
RFC 2080 RIPng for IPv6
RFC 2292 Advanced Sockets API for IPv6
RFC 2373 IPv6 Addressing Architecture
RFC 2375 IPv6 Multicast Address Assignments
RFC 2460 IPv6 Specification
RFC 2461 IPv6 Neighbor Discovery
RFC 2462 IPv6 Stateless Address Auto-configuration
RFC 2463 ICMPv6
RFC 2464 Transmission of IPv6 over Ethernet Networks
RFC 2472 IP Version 6 over PPP
RFC 2473 Generic Packet Tunneling in IPv6
RFC 2475 IPv6 DiffServ Architecture
RFC 2529 Transmission of IPv6 Packets over IPv4
RFC 2545 Use of MP-BGP-4 for IPv6
RFC 2553 Basic Socket Interface Extensions for IPv6
RFC 2710 Multicast Listener Discovery (MLD) for IPv6
RFC 2711 IPv6 Router Alert Option
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 3056 Connection of IPv6 Domains via IPv4 Clouds
RFC 3162 RADIUS and IPv6
RFC 3306 Unicast-Prefix-based IPv6 Multicast Addresses
RFC 3307 IPv6 Multicast Address Allocation
RFC 3315 DHCPv6 (client and relay)
RFC 3363 DNS support
RFC 3484 Default Address Selection for IPv6
RFC 3493 Basic Socket Interface Extensions for IPv6
RFC 3513 IPv6 Addressing Architecture
RFC 3542 Advanced Sockets API for IPv6
RFC 3587 IPv6 Global Unicast Address Format
RFC 3596 DNS Extension for IPv6
RFC 3810 MLDv2 (host joins only)
RFC 3810 MLDv2 for IPv6
RFC 3810 Multicast Listener Discovery Version 2 (MLDv2) for IPv6
RFC 4022 MIB for TCP
RFC 4113 MIB for UDP
RFC 4251 SSHv6 Architecture
RFC 4252 SSHv6 Authentication
RFC 4252 SSHv6 Transport Layer

Technical Specifications

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 855 Telnet Option Specification
RFC 856 TELNET
RFC 0857 Telnet Echo Option
RFC 858 Telnet Suppress Go Ahead Option
RFC 894 IP over Ethernet
RFC 896 Congestion Control in IP/TCP Internetworks
RFC 906 TFTP Bootstrap
RFC 925 Multi-LAN Address Resolution
RFC 950 Internet Standard Subnetting Procedure
RFC 951 BOOTP
RFC 959 File Transfer Protocol (FTP)
RFC 1006 ISO transport services on top of the TCP: Version 3
RFC 1027 Proxy ARP
RFC 1034 Domain Concepts and Facilities
RFC 1035 Domain Implementation and Specification
RFC 1042 IP Datagrams
RFC 1058 RIPv1
RFC 1071 Computing the Internet Checksum
RFC 1091 Telnet Terminal-Type Option
RFC 1093 NSFNET routing architecture
RFC 1122 Host Requirements
RFC 1141 Incremental updating of the Internet checksum
RFC 1142 OSI IS-IS Intra-domain Routing Protocol
RFC 1144 Compressing TCP/IP headers for low-speed serial links
RFC 1171 Point-to-Point Protocol for the transmission of multi-protocol datagrams over Point-to-Point links
RFC 1191 Path MTU discovery
RFC 1195 OSI ISIS for IP and Dual Environments
RFC 1213 Management Information Base for Network Management of TCP/IP-based internets
RFC 1253 (OSPF v2)
RFC 1256 ICMP Router Discovery Protocol (IRDP)
RFC 1305 NTPv3
RFC 1315 Management Information Base for Frame Relay DTEs
RFC 1321 The MD5 Message-Digest Algorithm
RFC 1332 The PPP Internet Protocol Control Protocol (IPCP)
RFC 1333 PPP Link Quality Monitoring
RFC 1334 PPP Authentication Protocols (PAP)
RFC 4253 SSHv6 Transport Layer
RFC 4254 SSHv6 Connection
RFC 4291 IP Version 6 Addressing Architecture
RFC 4293 MIB for IP
RFC 4419 Key Exchange for SSH
RFC 4443 ICMPv6
RFC 4541 IGMP & MLD Snooping Switch
RFC 4862 IPv6 Stateless Address Auto-configuration
RFC 5095 Deprecation of Type 0 Routing Headers in IPv6
RFC 5340 OSPF for IPv6
RFC 5340 OSPFv3 for IPv6
RFC 5722 Handling of Overlapping IPv6 Fragments

MIBs

IEEE 8021-PAE-MIB
IEEE 8023-LAG-MIB
RFC 1156 (TCP/IP MIB)
RFC 1212 Concise MIB Definitions
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 1650 Ethernet-Like MIB
RFC 1657 BGP-4 MIB
RFC 1724 RIPv2 MIB
RFC 1757 Remote Network Monitoring MIB
RFC 1850 OSPFv2 MIB
RFC 1907 SNMPv2 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 Interface MIB
RFC 2452 IPV6-TCP-MIB
RFC 2454 IPV6-UDP-MIB
RFC 2465 IPv6 MIB
RFC 2466 ICMPv6 MIB
RFC 2571 SNMP Framework MIB
RFC 2572 SNMP-MPD MIB
RFC 2574 SNMP USM MIB
RFC 2618 RADIUS Client MIB
RFC 2620 RADIUS Accounting Client MIB
RFC 2665 Ethernet-Like-MIB
RFC 2668 802.3 MAU MIB
RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
RFC 2688 MAU-MIB
RFC 2737 Entity MIB (Version 2)
RFC 2787 VRRP MIB
RFC 2819 RMON MIB
RFC 2863 The Interfaces Group MIB

Technical Specifications

RFC 1349 Type of Service
RFC 1350 TFTP Protocol (revision 2)
RFC 1377 The PPP OSI Network Layer Control Protocol (OSINLCP)
RFC 1381 SNMP MIB Extension for X.25 LAPB
RFC 1382 SNMP MIB Extension for the X.25 Packet Layer
RFC 1389 RIPv2 MIB Extension
RFC 1471 The Definitions of Managed Objects for the
Link Control Protocol of the Point-to-Point Protocol
RFC 1472 The Definitions of Managed Objects for the Security Protocols of the Point-to-Point Protocol
RFC 1490 Multiprotocol Interconnect over Frame Relay
RFC 1519 CIDR
RFC 1531 Dynamic Host Configuration Protocol
RFC 1533 DHCP Options and BOOTP Vendor Extensions
RFC 1534 DHCP/BOOTP Interoperation
RFC 1541 DHCP
RFC 1542 BOOTP Extensions
RFC 1542 Clarifications and Extensions for the Bootstrap Protocol
RFC 1552 The PPP Internetworking Packet Exchange Control Protocol (IPXCP)
RFC 1577 Classical IP and ARP over ATM
RFC 1631 NAT
RFC 1638 PPP Bridging Control Protocol (BCP)
RFC 1661 The Point-to-Point Protocol (PPP)
RFC 1662 PPP in HDLC-like Framing
RFC 1695 Definitions of Managed Objects for ATM Management Version 8.0 using SMIv2
RFC 1700 Assigned Numbers
RFC 1701 Generic Routing Encapsulation
RFC 1702 Generic Routing Encapsulation over IPv4 networks
RFC 1721 RIP-2 Analysis
RFC 1722 RIP-2 Applicability
RFC 1723 RIP v2
RFC 1812 IPv4 Routing
RFC 1829 The ESP DES-CBC Transform
RFC 1877 PPP Internet Protocol Control Protocol Extensions for Name Server Addresses
RFC 1944 Benchmarking Methodology for Network Interconnect Devices
RFC 1945 Hypertext Transfer Protocol -- HTTP/1.0
RFC 1973 PPP in Frame Relay
RFC 1974 PPP Stac LZS Compression Protocol
RFC 1981 Path MTU Discovery for IP version 6
RFC 1990 The PPP Multilink Protocol (MP)
RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP)
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 3813 MPLS LSR MIB
RFC 3814 MPLS FTN MIB
RFC 3815 MPLS LDP MIB
RFC 3826 AES for SNMP's USM MIB
RFC 4113 UDP MIB
RFC 4133 Entity MIB (Version 3)
RFC 4221 MPLS FTN MIB
LLDP-EXT-DOT1-MIB
LLDP-EXT-DOT3-MIB
LLDP-MIB

Network management

IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
IEEE 802.1D (STP)
RFC 1098 A Simple Network Management Protocol (SNMP)
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 1901 SNMPv2 Introduction
RFC 1902 SNMPv2 Structure
RFC 1903 SNMPv2 Textual Conventions
RFC 1904 SNMPv2 Conformance
RFC 1905 SNMPv2 Protocol Operations
RFC 1906 SNMPv2 Transport Mappings
RFC 1918 Private Internet Address Allocation
RFC 2272 SNMPv3 Management Protocol
RFC 2273 SNMPv3 Applications
RFC 2274 USM for SNMPv3
RFC 2275 VACM for SNMPv3
RFC 2570 SNMPv3 Overview
RFC 2571 SNMP Management Frameworks
RFC 2572 SNMPv3 Message Processing
RFC 2573 SNMPv3 Applications
RFC 2574 SNMPv3 User-based Security Model (USM)
RFC 2575 SNMPv3 View-based Access Control Model
(VACM)
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 2819 Remote Network Monitoring Management

Technical Specifications

RFC 2082 RIP-2 MD5 Authentication
RFC 2091 Trigger RIP
RFC 2104 HMAC: Keyed-Hashing for Message Authentication
RFC 2131 DHCP
RFC 2132 DHCP Options and BOOTP Vendor Extensions
RFC 2138 Remote Authentication Dial In User Service (RADIUS)
RFC 2205 Resource ReSerVation Protocol (RSVP) - Version 1 Functional Specification
RFC 2209 Resource ReSerVation Protocol (RSVP) -- Version 1 Message Processing Rules
RFC 2236 IGMP Snooping
RFC 2246 The TLS Protocol Version 1.0
RFC 2252 Lightweight Directory Access Protocol (v3): Attribute Syntax Definitions
RFC 2280 Routing Policy Specification Language (RPSL)
RFC 2283 MBGP
RFC 2284 EAP over LAN
RFC 2338 VRRP
RFC 2364 PPP Over AAL5
RFC 2374 An Aggregatable Global Unicast Address Format
RFC 2451 The ESP CBC-Mode Cipher Algorithms
RFC 2453 RIPv2
RFC 2510 Internet X.509 Public Key Infrastructure Certificate Management Protocols
RFC 2511 Internet X.509 Certificate Request Message Format
RFC 2516 A Method for Transmitting PPP Over Ethernet (PPPoE)
RFC 2529 Transmission of IPv6 over IPv4 Domains without Explicit Tunnels
RFC 2581 TCP Congestion Control
RFC 2616 HTTP Compatibility v1.1
RFC 2622 Routing Policy Specification Language (RPSL)
RFC 2644 Directed Broadcast Control
RFC 2661 L2TP
RFC 2663 NAT Terminology and Considerations
RFC 2684 Multiprotocol Encapsulation over ATM Adaptation Layer 5
RFC 2694 DNS extensions to Network Address Translators (DNS_ALG)
RFC 2702 Requirements for Traffic Engineering Over MPLS
RFC 2716 PPP EAP TLS Authentication Protocol
RFC 2747 RSVP Cryptographic Authentication
RFC 2763 Dynamic Name-to-System ID mapping
RFC 2765 Stateless IP/ICMP Translation Algorithm (SIIT)
RFC 2766 Network Address Translation - Protocol Translation (NAT-PT)
RFC 2767 Dual Stacks IPv4 & IPv6
Information Base
RFC 3164 BSD syslog Protocol
RFC 3176 sFlow
RFC 3411 SNMP Management Frameworks
RFC 3412 SNMPv3 Message Processing
RFC 3414 SNMPv3 User-based Security Model (USM)
RFC 3415 SNMPv3 View-based Access Control Model VACM)
ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
SNMPv1/v2
SNMPv1/v2c
SNMPv1/v2c/v3

OSPF

RFC 1246 Experience with OSPF
RFC 1253 OSPFv2 MIB
RFC 1583 OSPFv2
RFC 1587 OSPF NSSA
RFC 1745 OSPF Interactions
RFC 1765 OSPF Database Overflow
RFC 1850 OSPFv2 Management Information Base (MIB), traps
RFC 2154 OSPF w/ Digital Signatures (Password, MD-5)
RFC 2178 OSPFv2
RFC 2328 OSPFv2
RFC 2370 OSPF Opaque LSA Option
RFC 3101 OSPF NSSA
RFC 3623 Graceful OSPF Restart
RFC 5340 OSPFv3 for IPv6

QoS/CoS

IEEE 802.1p (CoS)
RFC 2474 DiffServ Precedence, including 8 queues/port
RFC 2474 DiffServ precedence, with 4 queues per port
RFC 2474 DS Field in the IPv4 and IPv6 Headers
RFC 2474 DSCP DiffServ
RFC 2474, with 4 queues per port
RFC 2475 DiffServ Architecture
RFC 2597 DiffServ Assured Forwarding (AF)
RFC 2597 DiffServ Assured Forwarding (AF)-partial support
RFC 2598 DiffServ Expedited Forwarding (EF)

Security

IEEE 802.1X Port Based Network Access Control
RFC 1321 The MD5 Message-Digest Algorithm
RFC 1334 PPP Authentication Protocols (PAP)
RFC 1492 TACACS+
RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP)
RFC 2082 RIP-2 MD5 Authentication

Technical Specifications

RFC 2784 Generic Routing Encapsulation (GRE)
RFC 2787 Definitions of Managed Objects for VRRP
RFC 2865 Remote Authentication Dial In User Service (RADIUS)
RFC 2866 RADIUS Accounting
RFC 2868 RADIUS Attributes for Tunnel Protocol Support
RFC 2869 RADIUS Extensions
RFC 2878 PPP Bridging Control Protocol (BCP)
RFC 2961 RSVP Refresh Overhead Reduction Extensions
RFC 2966 Domain-wide Prefix Distribution with Two-Level IS-IS
RFC 2973 IS-IS Mesh Groups
RFC 2976 The SIP INFO Method
RFC 3022 Traditional IP Network Address Translator (Traditional NAT)
RFC 3027 Protocol Complications with the IP Network Address Translator
RFC 3031 Multiprotocol Label Switching Architecture
RFC 3032 MPLS Label Stack Encoding
RFC 3036 LDP Specification
RFC 3046 DHCP Relay Agent Information Option
RFC 3063 MPLS Loop Prevention Mechanism
RFC 3065 Support AS confederation
RFC 3137 OSPF Stub Router Advertisement
RFC 3209 RSVP-TE Extensions to RSVP for LSP Tunnels
RFC 3210 Applicability Statement for Extensions to RSVP for LSP-Tunnels
RFC 3212 Constraint-Based LSP setup using LDP (CR-LDP)
RFC 3214 LSP Modification Using CR-LDP
RFC 3215 LDP State Machine
RFC 3246 Expedited Forwarding PHB
RFC 3268 Advanced Encryption Standard (AES) Ciphersuites for Transport Layer Security (TLS)
RFC 3277 IS-IS Transient Blackhole Avoidance
RFC 3279 Algorithms and Identifiers for the Internet
X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
RFC 3280 Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
RFC 3392 Support BGP capabilities advertisement
RFC 3410 Applicability Statements for SNMP
RFC 3416 Protocol Operations for SNMP
RFC 3417 Transport Mappings for the Simple Network
Management Protocol (SNMP)
RFC 3479 Fault Tolerance for the Label Distribution
Protocol (LDP)
RFC 2138 RADIUS Authentication
RFC 2139 RADIUS Accounting
RFC 2209 RSVP-Message Processing
RFC 2246 Transport Layer Security (TLS)
RFC 2408 Internet Security Association and Key Management Protocol (ISAKMP)
RFC 2409 The Internet Key Exchange (IKE)
RFC 2459 Internet X.509 Public Key Infrastructure Certificate and CRL Profile
RFC 2548 Microsoft Vendor-specific RADIUS Attributes
RFC 2716 PPP EAP TLS Authentication Protocol
RFC 2818 HTTP Over TLS
RFC 2865 RADIUS (client only)
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
RFC 3576 Dynamic Authorization Extensions to RADIUS
RFC 3579 RADIUS Support For Extensible Authentication Protocol (EAP)
RFC 3580 IEEE 802.1X Remote Authentication Dial In User Service (RADIUS) Usage Guidelines
Access Control Lists (ACLs)
Guest VLAN for 802.1X
MAC Authentication
Port Security
Secure Sockets Layer (SSL)
SSHv1 Secure Shell
SSHv1.5 Secure Shell
SSHv1/SSHv2 Secure Shell
SSHv2 Secure Shell

VPN

RFC 2403 - HMAC-MD5-96
RFC 2404 - HMAC-SHA1-96
RFC 2405 - DES-CBC Cipher algorithm
RFC 2407 - Domain of interpretation
RFC 2547 BGP/MPLS VPNs
RFC 2764 A Framework for IP Based Virtual Private Networks
RFC 2796 BGP Route Reflection - An Alternative to Full Mesh IBGP
RFC 2842 Capabilities Advertisement with BGP-4
RFC 2858 Multiprotocol Extensions for BGP-4
RFC 2917 A Core MPLS IP VPN Architecture
RFC 2918 Route Refresh Capability for BGP-4
RFC 3107 Carrying Label Information in BGP-4
RFC 4302 - IP Authentication Header (AH)
RFC 4303 - IP Encapsulating Security Payload

Technical Specifications

RFC 3487 Graceful Restart Mechanism for LDP
RFC 3509 OSPF ABR Behavior
RFC 3526 More Modular Exponential (MODP) Diffie-Hellman groups for Internet Key Exchange (IKE)
RFC 3564 Requirements for Support of Differentiated
Services-aware MPLS Traffic Engineering
RFC 3567 Intermediate System to Intermediate System
(IS-IS) Cryptographic Authentication
RFC 3602 The AES-CBC Cipher Algorithm and Its Use with IPsec
RFC 3619 Ethernet Automatic Protection Switching (EAPS)
RFC 3623 Graceful OSPF Restart
RFC 3704 Unicast Reverse Path Forwarding (URPF)

(ESP)
RFC 4305 - Cryptographic Algorithm Implementation Requirements for ESP and AH

IPsec
RFC 1828 IP Authentication using Keyed MD5
RFC 2401 IP Security Architecture
RFC 2402 IP Authentication Header
RFC 2406 IP Encapsulating Security Payload
RFC 2407 - Domain of interpretation
RFC 2408 - Internet Security Association and Key Management Protocol (ISAKMP)
RFC 2409 - The Internet Key Exchange
RFC 2410 - The NULL Encryption Algorithm and its use with IPsec
RFC 2411 IP Security Document Roadmap
RFC 2412 – OAKLEY
RFC 2865 - Remote Authentication Dial In User Service (RADIUS)

IKEv1
RFC 2865 - Remote Authentication Dial In User Service (RADIUS)
RFC 3748 - Extensible Authentication Protocol (EAP)

Accessories

HPE FlexNetwork HSR6800 Router Series accessories

Security Modules

HP A6600 VPN Firewall Module	JC639A

Power Supply

HPE FlexNetwork 6616 650W AC Router Power Supply	JC492A
HPE FlexNetwork 6616 650W DC Router Power Supply	JC493A
HPE FlexNetwork HSR6800 1200W DC Power Supply	JG334A
HPE FlexNetwork HSR6800 1200W AC Power Supply	JG335A

Router Modules

HPE FlexNetwork HSR6800 RSE-X3 Router Main Processing Unit	JH075A
HPE FlexNetwork HSR6800 RSE-X2 Router Main Processing Unit	JG364A
HPE FlexNetwork HSR6800 FIP-600 Flexible Interface Platform Router Module	JG360A
HPE FlexNetwork HSR6800 FIP-310 Flexible Interface Platform Module	JG672A
HPE FlexNetwork HSR6800 FIP-300 Flexible Interface Platform Module	JG671A
HPE FlexNetwork 6600 FIP-240 Flexible Interface Platform Module	JH137A
HPE FlexNetwork 6600 FIP-210 Flexible Interface Platform Module	JC167B
HPE FlexNetwork HSR6800 4-port 10GbE SFP+ Service Aggregation Platform Router Module	JG366A
HPE FlexNetwork 6600 16-port GbE SFP 4-port GbE Combo and 2-port 10GbE SFP+Svc Agg Pltfrm Mod	JH139A
HPE FlexNetwork 6600 16-port GbE SFP and 12-port Combo GbE Service Aggregation Platform Module	JH138A
HPE FlexNetwork 6600 48-port GbE SFP Service Aggregation Platform Module	JG556A
HPE FlexNetwork 6600 24-port GbE SFP Service Aggregation Platform Module	JC568A
HPE FlexNetwork HSR6800 2-port 10GbE SFP+ HIM Module	JH143A
HPE FlexNetwork 6600 8-port OC-3c/OC-12c POS/GbE SFP HIM Module	JG673A
HPE FlexNetwork 6600 1-port OC-3 (E1/T1) CPOS HIM Router Module	JC161A
HPE FlexNetwork 6600 2-port OC-3 E1/T1 CPOS HIM Router Module	JC162A
HPE FlexNetwork 6600 8GbE WAN HIM Router Module	JC164A
HPE FlexNetwork 6600 1-port 10GbE XFP HIM Router Module	JC168A
HPE FlexNetwork 6600 4-port OC-3/2-port OC-12 POS HIM Router Module	JC172A
HPE FlexNetwork 6600 2-port OC-3/1-port OC-12 POS HIM Router Module	JC173A
HPE FlexNetwork 6600 8-port GbE SFP HIM Router Module	JC174A
HPE FlexNetwork HSR6800 16-port GbE SFP HIM Module	JH142A
HPE FlexNetwork 6600 1-port OC-48/STM-16 POS (SFP) Router Module	JC494A
HPE FlexNetwork 6600 8-port Fractional T1 MIM Router Module	JC159A
HPE FlexNetwork 6600 8-port T1 MIM Router Module	JC160A
HPE FlexNetwork MSR 2-port Enhanced Serial MIM Module	JD540A
HPE FlexNetwork MSR 4-port Enhanced Serial MIM Module	JD541A
HPE FlexNetwork MSR 8-port Sync/Async Interface Enhanced Module	JD552A
HPE FlexNetwork MSR 8-port E1/CE1/PRI (75ohm) MIM Module	JD563A

Memory

HPE X600 1G Compact Flash Card	JC684A
HPE A Series 2GB DDR2 SDRAM	JG205A
HPE X610 2G VLP DDR3 SDRAM Memory	JG482A

Accessories

HPE FlexNetwork HSR6802 Router Chassis (JG361B)

HPE FlexNetwork HSR6802 Router Spare Fan Assembly	JG367A

HPE FlexNetwork HSR6804 Router Chassis (JG362B)

HPE FlexNetwork HSR6804 Router Spare Fan Assembly	JG368A

HPE FlexNetwork HSR6808 Router Chassis (JG363B)

HPE FlexNetwork HSR6808 Router Spare Fan Assembly	JG369A
HPE FlexNetwork HSR6808 SFE X1 Switch Fabric Engine Router Module	JG365A

Summary of Changes

Date	Version History	Action	Description of Change
04-Dec-2017	From Version 20 to 21	Changed	Configuration section updated
05-Jun-2017	From Version 19 to 20	Added	SKU added: JH663A
		Changed	Updates made on Features and benefits and Configuration sections
06-Feb-2017	From Version 18 to 19	Changed	Adding MSR #A59 option on Configuration section
01-Aug-2016	From Version 17 to 18	Changed	Adding #AC3 Option on Configuration section
27-May-2016	From Version 16 to 17	Changed	Document name changed to HPE FlexNetwork HSR6800 Router Series. Product description updated.
March 25, 2016	From Version 15 to 16	Changed	Overview and Features and Benefits updated
June 22, 2015	From Version 14 to 15	Changed	Throughput on Technical Specifications updated
June 12, 2015	From Version 13 to 14	Changed	Configuration menu updated
June 1, 2015	From Version 12 to 13	Added	Models added: JG361B, JG362B, JG363B Accessories added: JH075A, JH137A, JH138A, JH139A, JH142A, JH143A
		Removed	Models Removed: JG361A, JG362A, JG363A
		Changes	Overview, Technical Specifications updated
April 6, 2015	From Version 11 to 12	Added	SKU JG673A added to Accessories
		Changed	Overview and Technical Specifications and SKU descriptions were updated
September 18, 2014	From Version 10 to 11	Changed	Changes made on Product architecture, Management in the Overview section.
July 3, 2014	From Version 9 to 10	Changed	Configuration menu updated.
June 10, 2014	From Version 8 to 9	Changed	Updated the Router Enclosure Options in the Configuration Information section.
February 18, 2014	From Version 7 to 8	Changed	Updated the Configuration Information section.
February 17, 2014	From Version 6 to 7	Changed	Updated the Configuration Information section.
January 31, 2014	From Version 5 to 6	Changed	Updated the Configuration Information section.
December 9, 2013	From Version 4 to 5	Changed	Box Level Integrated CTO Models, Rack Level Integration CTO Models, Internal Power Supplies, Modules, and Transceivers were revised in Configuration.
September 11, 2013	From Version 3 to 4	Changed	Configuration was revised.
May 27, 2013	From Version 2 to 3	Changed	Updated the Configuration Information.
April 10, 2013	From Version 1 to 2	Changed	Updated the Configuration section.

Summary of Changes

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