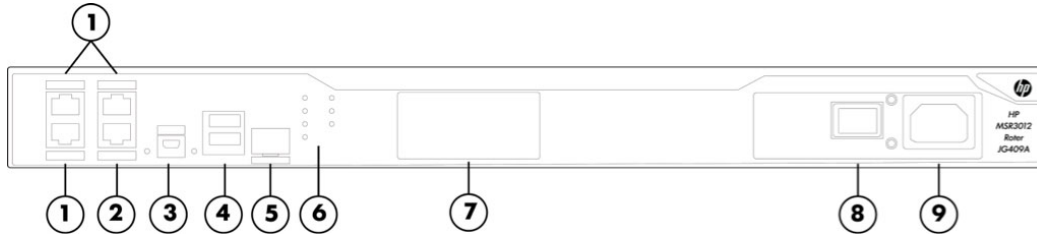


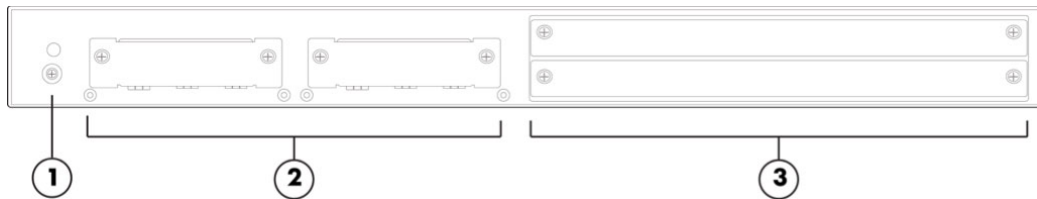
### Overview

#### HPE FlexNetwork MSR3000 Router Series



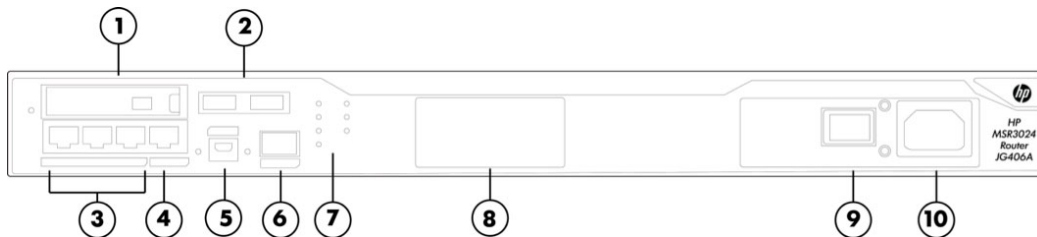
**HPE FlexNetwork MSR3012 AC Router - Front**

- |  |                              |
|--|------------------------------|
| 1. RJ-45 1000BASE-T ports (IEEE 802.3ab Type 1000BASE-T) | 6. System Activity LEDs      |
| 2. Console port/AUX port (CON/AUX)                       | 7. RPS receptacle cover      |
| 3. USB console port(CON)                                 | 8. Power Switch              |
| 4. USB 2.0 Port for 3G modem and USB disk                | 9. AC-input power receptacle |
| 5. Fixed COMBO 1000M RJ45/SFP                            |                              |



**HPE FlexNetwork MSR3012 AC Router - Rear**

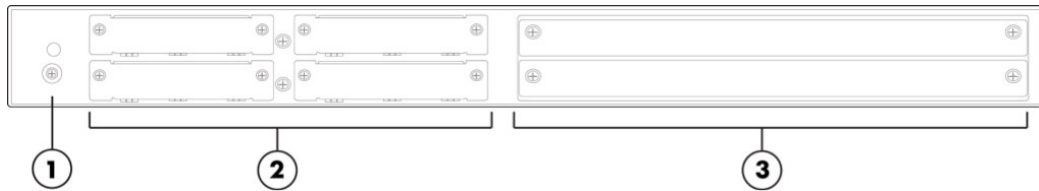
- |                       |                      |
|-----------------------|----------------------|
| 1. Grounding Terminal | 3. HMIM module slots |
| 2. SIC slots          |                      |



**HPE FlexNetwork MSR3024 AC Router - Front**

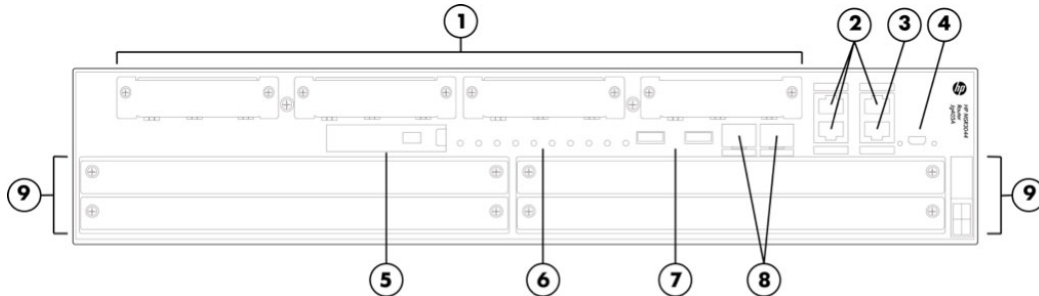
- |  |                               |
|--|-------------------------------|
| 1. CF Card Slot  | 6. Fixed COMBO 1000M RJ45/SFP |
| 2. USB 2.0 Port for 3G modem and USB disk                | 7. System Activity LEDs       |
| 3. RJ-45 1000BASE-T ports (IEEE 802.3ab Type 1000BASE-T) | 8. RPS receptacle cover       |
| 4. Console port/AUX port (CON/AUX)                       | 9. Power Switch               |
| 5. USB console port (CON)                                | 10. AC-input power receptacle |

Overview



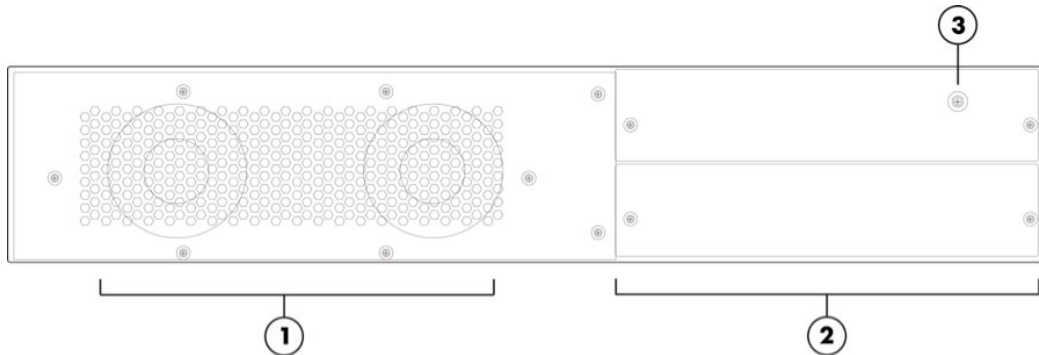
**HPE FlexNetwork MSR3024 AC Router- Rear**

- 1. Grounding terminal
- 2. SIC module slots / 2 - DSIC module slots
- 3. HMIM module slots



**HPE FlexNetwork MSR3044 Router- Front**

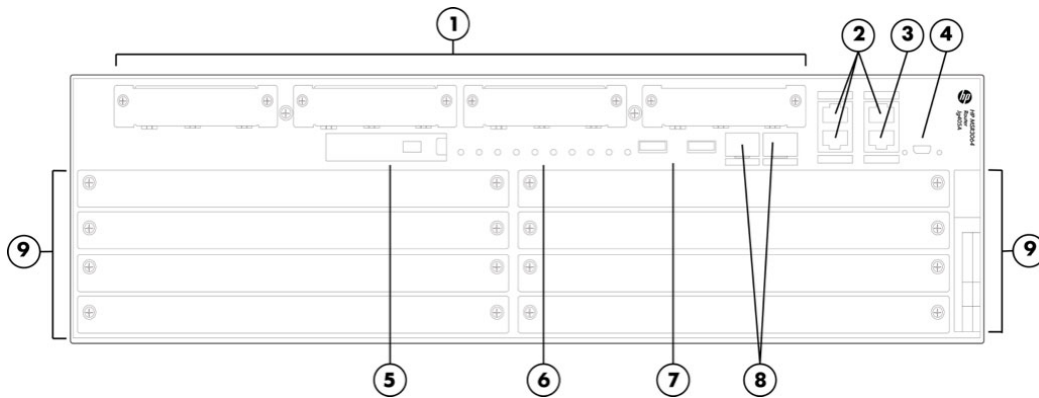
- 1. 4 - SIC module slots / 2 - DSIC module slots
- 2. 3 Fixed 10M/100M/1000M RJ45 ports
- 3. Console port/AUX port (CON/AUX)
- 4. USB console port (CON)
- 5. CF Card Slot
- 6. System Activity LEDs
- 7. 2 USB 2.0 Port for 3G modem and USB disk
- 8. 2 Fixed COMBO 1000M RJ45/SFP ports min=0 \ max=2 SFP Transceivers
- 9. HMIM module slots (4 - Half Height Slots) / 0 - DHMIM module slot (Double Width Full Height Slot)



**HPE FlexNetwork MSR3044 Router- Rear**

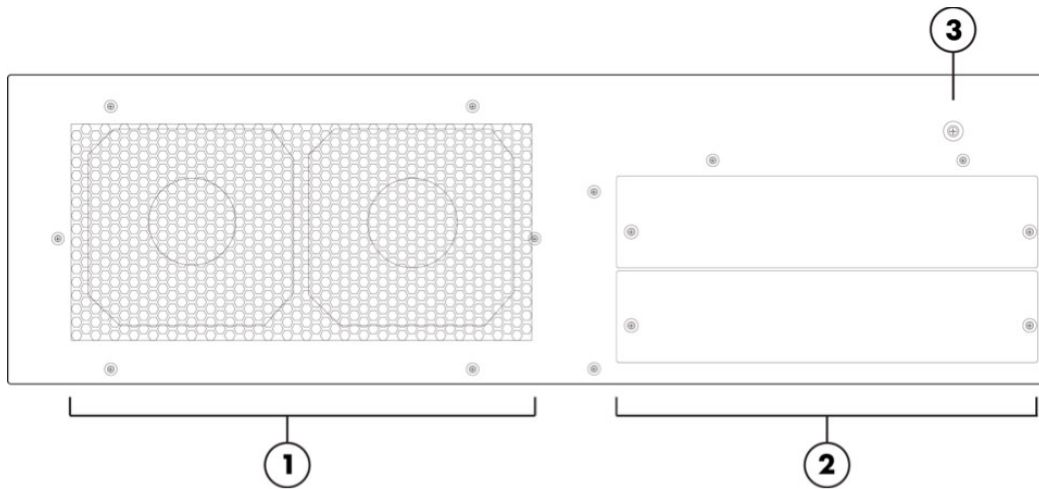
- 1. Fans
- 2. Power Supplies
- 3. Ground

Overview



**HPE FlexNetwork MSR3064 Router - Front**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. SIC module slots / 2 - DSIC module slots</li> <li>2. Fixed 10M/100M/1000M RJ45 ports</li> <li>3. Console port/AUX port (CON/AUX)</li> <li>4. USB console port (CON)</li> <li>5. CF Card Slot</li> </ol> | <ol style="list-style-type: none"> <li>6. System Activity LEDs</li> <li>7. 2 USB 2.0 Port for 3G modem and USB disk</li> <li>8. 2 Fixed COMBO 1000M RJ45/SFP ports min=0 \ max=2 SFP Transceivers</li> <li>9. 6 - HMIM module slots (4 Half Height + 2 Full Height Slots) / 1 - DHMIM module slot (Double Width Full Height Slot)</li> </ol> |
|---|--|



**HPE FlexNetwork MSR3064 Router - Rear**

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. Fans</li> <li>2. Power supply slots</li> </ol> | <ol style="list-style-type: none"> <li>3. Grounding Terminal</li> </ol> |
|--|---|

**Models**

HPE MSR3012 AC Router	JG409B
HPE FlexNetwork MSR3012 AC Router	JG409A
HPE FlexNetwork MSR3012 DC Router	JG410A
HPE FlexNetwork MSR3024 AC Router	JG406A
HPE FlexNetwork MSR3024 DC Router	JG407A
HPE FlexNetwork MSR3024 PoE Router	JG408A
HPE FlexNetwork MSR3044 Router	JG405A
HPE FlexNetwork MSR3064 Router	JG404A

**Key features**

- Up to 5 Mpps forwarding performance; support for multiple concurrent services

## Overview

- Open Application Platform for HPE AllianceOne applications
- Embedded security features with hardware-based encryption, stateful firewall, NAT, and VPNs
- No additional licensing complexity; no cost for advanced features
- Zero-touch solution, with single pane-of-glass management

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## Product overview

The HPE FlexNetwork MSR3000 Router Series, the next generation of router from Hewlett Packard Enterprise (HPE), is a component of the HPE FlexBranch solution, which is a part of the comprehensive HPE FlexNetwork architecture. These routers feature a modular design that delivers unmatched application services for medium- to large-sized branch offices. This gives your IT personnel the benefit of reduced complexity, and simplified configuration, deployment, and management.

The MSR3000 routers use the latest multicore CPUs, offer Gigabit switching, provide an enhanced PCI bus, and ship with the latest version of HPE Comware software to help ensure high performance with concurrent services. The MSR3000 series provides a full-featured, resilient routing platform, including IPv6 and MPLS, with up to 5 Mpps forwarding capacity and 3.3 Gbps of IPsec VPN encrypted throughput. These routers also support HPE Open Application Platform (OAP) modules to deliver integrated industry-leading HPE AllianceOne partner applications such as virtualization, unified communications and collaboration (UC&C), and application optimization capabilities.

The MSR3000 series provides an agile, flexible network infrastructure that enables you to quickly adapt to changing business requirements while delivering integrated concurrent services on a single, easy-to-manage platform.

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## Features and benefits

### Performance

- **Excellent forwarding performance**  
excellent full service performance (NAT + QoS + ACL Performance by Platform, IMIX Traffic), 1Gbps for MSR3012/3024, 1.5Gbps for MSR3044, 2Gbps for MSR3064.
- **Powerful security capacity**  
The MSR3000 series is available with standard or high encryption, an embedded hardware encryption accelerator to improve encryption performance; IPsec encryption throughput can be up to 3.3 Gb/s with a maximum of 4,000 IPsec VPN tunnels, support up to 2000 VRF instances.

### Product architecture

- **SDN/OpenFlow**  
OpenFlow is the communications interface defined between the control and forwarding layers of a SDN (Software-Defined Networking) architecture. OpenFlow separates the data forwarding and routing decision functions. It keeps the flow-based forwarding function and employs a separate controller to make routing decisions. OpenFlow matches packets against one or more flow tables. MSR support OpenFlow 1.3.1
- **Ideal multiservice platform**  
provides WAN router, Ethernet switch, 3G/4G WAN, stateful firewall, VPN, and SIP/voice gateway on MSRs
- **Advanced hardware architecture**  
provides multicore processors, gigabit switching, and PCIe bus; external RPS or dual internal power supplies, and internal and external CF cards are offered; new high-performance MIM modules (HMIM) supported
- **New operation system**  
ships with new Comware v7 operating system delivering the latest in virtualization and routing
- **Open Application Platform architecture**  
provides unmatched application and services flexibility, with the potential to deliver the functionality of multiple devices, creating capital and operational expense savings and lasting investment protection
- **Field-programmable gate array (FPGA)**  
improves the bandwidth of I/O module slots from 100 Mb/s to 1000 Mb/s, and improves uplink performance from 1 Gb/s to 10 Gb/s

## Overview

- **Multi Gigabit Fabric (MGF)**  
eases utilization of the main processor by transmitting Layer 2 packets directly via the MGF

## Connectivity

- **Ethernet Virtual Interconnect (EVI)**  
EVI is a MAC-in-IP technology that provides Layer 2 connectivity between distant Layer 2 network sites across an IP routed network. It is used for connecting geographically dispersed sites of a virtualized large-scale data center that requires Layer 2 adjacency.
- **VXLAN (Virtual eXtensible LAN)**  
VXLAN (Virtual eXtensible LAN, scalable virtual local area network) is an IP-based network, using the "MAC in UDP" package of Layer VPN technology. VXLAN can be based on an existing ISP or enterprise IP networks for decentralized physical site provides Layer 2 communication, and can provide service isolation for different tenants.
- **Virtual Private LAN Service (VPLS)**  
Virtual Private LAN Service (VPLS) delivers a point-to-multipoint L2VPN service over an MPLS or IP backbone. The backbone is transparent to the customer sites, which can communicate with each other as if they were on the same LAN. The following protocols support on MSRs, RFC4447, RFC4761 and RFC4762, BFD detection in VPLS, Support hierarchical HOPE (H-VPLS), MAC address recovery in H-VPLS to speed up convergence.
- **NEMO (Network Mobility)**  
Network mobility (NEMO) enables a node to retain the same IP address and maintain application connectivity when the node travels across networks. It allows location-independent routing of IP datagrams on the Internet.
- **High-density port connectivity**  
provides up to 10 interface module slots and up to three on-board Gigabit Ethernet ports, 8 or 24 ports GE supported on one HMIM module.
- **Multiple WAN interfaces**  
provides traditional links with E1, T1, G.SHDSL, and ISDN links; high-density Ethernet access with WAN Gigabit Ethernet and LAN 4- and 9-port Fast/Giga Ethernet, POE/POE+; mobility access with 3G (WCDMA/HSPA)/4G LTE SIC modules and 3G/4G USB modems, and high-speed T3 and 155 Mb/s OC3 access options
- **Packet storm protection**  
protects against broadcast, multicast, or unicast storms with user-defined thresholds
- **Loopback**  
supports internal loopback testing for maintenance purposes and an increase in availability; loopback detection protects against incorrect cabling or network configurations and can be enabled on a per-port or per-VLAN basis for added flexibility
- **3G/4G LTE access support**  
provides 3G/4G LTE wireless access for primary or backup connectivity via a 3G/4G LTE SIC module certified on various cellular networks; optional carrier 3G/4G LTE USB modems are available
- **USB interface**  
uses USB memory disk to download and upload configuration/OS image files; supports an external USB 3G/4G modem for a 3G/4G WAN uplink
- **Flexible port selection**  
provides a combination of fiber and copper interface modules, 100/1000BASE-X support, and 10/100/1000BASE-T auto-speed detection plus auto duplex and MDI/MDI-X

## Layer 2 switching

- **Spanning Tree Protocol (STP)**  
supports standard IEEE 802.1D STP, IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) for faster convergence, and IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
- **Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) protocol snooping**  
controls and manages the flooding of multicast packets in a Layer 2 network
- **Port mirroring**  
duplicates port traffic (ingress and egress) to a local or remote monitoring port
- **VLANs**  
supports up to 4,094 VLANs or IEEE 802.1Q-based VLANs

## Overview

- **sFlow**  
allows traffic sampling
- **Define port as switched or routed**  
supports command switch to easily change switched ports to routed (maximum of four Fast Ethernet ports)

## 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)**  
delivers faster convergence; uses this link-state routing Interior Gateway Protocol (IGP), which supports ECMP, NSSA, and MD5 authentication for increased security and graceful restart for faster failure recovery
- **Border Gateway Protocol 4 (BGP-4)**  
delivers an implementation of the Exterior Gateway Protocol (EGP) utilizing path vectors; uses TCP for enhanced reliability for the route discovery process; reduces bandwidth consumption by advertising only incremental updates; supports extensive policies for increased flexibility; scales to very large networks
- **Intermediate system to intermediate system (IS-IS)**  
uses a path vector Interior Gateway Protocol (IGP), 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**  
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; is an important element for the transition from IPv4 to IPv6
- **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 Multiprotocol BGP (MP-BGP) to establish private routes for increased security; supports RFC 2547bis multiple autonomous system VPNs for added flexibility; supports IPv6 MPLS VPN
- **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 protocols; uses no routing information for increased security; supports Circuit Cross Connect (CCC), Static Virtual Circuits (SVCs), Martini draft, and Kompella-draft technologies

## Overview

- **Routing policy**  
allows custom filters for increased performance and security; supports ACLs, IP prefix, AS paths, community lists, and aggregate policies

## Layer 3 services

- **WAN Optimization**  
MSR performs optimization using TFO and a combination of DRE, Lempel-Ziv (LZ) compression to provide the bandwidth optimization for file service and web applications. The policy engine module determines which traffic can be optimized and which optimization action should be taken. A pair of WAN optimization equipment can discover each other automatically and complete the negotiation to establish a TCP optimization session.}
- **NAT-PT**  
Network Address Translation – Protocol Translation (NAT-PT) enables communication between IPv4 and IPv6 nodes by translating between IPv4 and IPv6 packets. It performs IP address translation, and according to different protocols, performs semantic translation for packets. This technology is only suitable for communication between a pure IPv4 node and a pure IPv6 node.
- **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
- **Dynamic Host Configuration Protocol (DHCP)**  
simplifies the management of large IP networks and supports client and server; DHCP Relay enables DHCP operation across subnets

## Quality of Service (QoS)

- **Traffic policing**  
supports Committed Access Rate (CAR) and line rate
- **Congestion management**  
supports FIFO, PQ, CQ, WFQ, CBQ, and RTPQ
- **Weighted random early detection (WRED)/random early detection (RED)**  
delivers congestion avoidance capabilities through the use of queue management algorithms
- **Hierarchical quality of service (HQoS)/Nested QoS**  
manages traffic uniformly, and hierarchically schedules traffic by user, network service, and application; provides more granular traffic control and quality assurance services than traditional QoS
- **Other QoS technologies**  
supports traffic shaping, MPLS QoS, MP QoS/LFI, and Control Plane Policing (CoPP).

## Security

- **IPS**  
Built-in Intrusion Prevention System (IPS) detects and protects the branch office from security threats. Optional HPE integration filters for client-side, branch protection from exploits and vulnerabilities
- **Enhanced stateful firewall**  
Application layer protocol inspection, Transport layer protocol inspection, ICMP error message check, and TCP SYN check. Support more L4 and L7 protocols like TCP, UDP, UDP-Lite, ICMPv4/ICMPv6, SCTP, DCCP, RAWIP, HTTP, FTP, SMTP, DNS, SIP, H.323, SCCP.
- **Zone based firewall**  
Zone-Based Policy Firewall changes the firewall configuration from the older interface-based model to a more flexible, more easily understood zone-based model. Interfaces are assigned to zones, and inspection policy is applied to traffic moving between the zones. Inter-zone policies offer considerable flexibility and granularity, so different inspection policies can be applied to multiple host groups connected to the same router interface.

## Overview

- **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
- **IPSec VPN**  
supports DES, 3DES, and AES 128/192/256 encryption, and MD5 and SHA-1 authentication
- **Access control list (ACL)**  
supports powerful ACLs for both IPv4 and IPv6; ACLs are used for filtering traffic to prevent unauthorized users from 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
- **Terminal Access Controller Access-Control System (TACACS+)**  
delivers an authentication tool using TCP with encryption of the full authentication request, providing additional security
- **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
- **Network login**  
allows authentication of multiple users per port
- **RADIUS**  
eases security access administration by using a user/password authentication server
- **Network address translation (NAT)**  
supports one-to-one NAT, many-to-many NAT, and NAT control, enabling NAT to support multiple connections; supports blacklist in NAT, a limit on the number of connections, session logs, and multi-instances
- **Secure Shell (SSHv2)**  
uses external servers to securely log in into a remote device; with authentication and encryption, it protects against IP spoofing and plain text password interception; increases the security of SFTP transfers

## Convergence

- **Internet Group Management Protocol (IGMP)**  
utilizes Any-Source Multicast (ASM) or Source-Specific Multicast (SSM) to manage IPv4 multicast networks; supports IGMPv1, v2, and v3
- **Protocol Independent Multicast (PIM)**  
defines modes of Internet IPv4 and IPv6 multicasting to allow one-to-many and many-to-many transmission of information; supports PIM Dense Mode (DM), Sparse Mode (SM), and Source-Specific Multicast(SSM)
- **Multicast Source Discovery Protocol (MSDP)**  
allows multiple PIM-SM domains to interoperate; is used for inter-domain multicast applications
- **Multicast Border Gateway Protocol (MBGP)**  
allows multicast traffic to be forwarded across BGP networks and kept separate from unicast traffic

## Integration

- **Embedded NetStream**  
improves traffic distribution using powerful scheduling algorithms, including Layer 4 to 7 services; monitors the health status of servers and firewalls
- **Embedded VPN and firewall**  
provides enhanced stateful packet inspection and filtering; delivers advanced VPN services with Triple DES (3DES) and Advanced Encryption Standard (AES) encryption at high performance and low latency, URL filtering, and application prioritization and enhancement
- **SIP trunking**  
delivers multiple concurrent calls on one link; the carrier authenticates only the link, rather than carrying each SIP call on the link



## Overview

### Resiliency and high availability

- **Intelligent Resilient Fabric (IRF)**  
Intelligent Resilient Fabric (IRF), allows the customer build an IRF stack, namely a logical device, by interconnecting multiple devices through stack ports. The customer can manage all the devices in the IRF stack by managing the logical device, which is cost-effective like a box-type device, and scalable and highly reliable like a chassis-type distributed device.
- **Backup Center**  
acts as a part of the management and backup function to provide backup for device interfaces; delivers reliability by switching traffic over to a backup interface when the primary one fails
- **Virtual Router Redundancy Protocol (VRRP)**  
allows groups of two routers to dynamically back each other up to create highly available routed environments; supports VRRP load balancing
- **Embedded Automation Architecture (EAA)**  
monitors the internal event and status of system hardware and software, identifying potential problems as early as possible; collects field information and attempts to automatically repair the issues; based on the user configuration, onsite information will be sent to technical support
- **Bidirectional Forwarding Detection (BFD)**  
detects quickly the failures of the bidirectional forwarding paths between two devices for upper-layer protocols such as routing protocols and MPLS

### Management

- **HPE Intelligent Management Center (IMC)**  
integrates fault management, element configuration, and network monitoring from a central vantage point; built-in support for third-party devices enables network administrators to centrally manage all network elements with a variety of automated tasks, including discovery, categorization, baseline configurations, and software images; the software also provides configuration comparison tools, version tracking, change alerts, and more
- **Industry-standard CLI with a hierarchical structure**  
reduces training time and expenses, and increases productivity in multivendor installations
- **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
- **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
- **Remote monitoring (RMON)**  
uses standard SNMP to monitor essential network functions; supports events, alarm, history, and statistics group plus a private alarm extension group
- **FTP, TFTP, and SFTP support**  
offers different mechanisms for configuration updates; FTP allows bidirectional transfers over a TCP/IP network; trivial FTP (TFTP) is a simpler method using User Datagram Protocol (UDP); Secure File Transfer Protocol (SFTP) runs over an SSH tunnel to provide additional security
- **Debug and sampler utility**  
supports ping and trace route for both IPv4 and IPv6
- **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
- **Information center**  
provides a central repository 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
- **Management interface control**  
provides management access through modem port and terminal interface; provides access through terminal interface, telnet, or SSH

## Overview

- **Network Quality Analyzer (NQA)**  
analyzes network performance and service quality by sending test packets, and provides network performance and service quality parameters such as jitter, TCP, or FTP connection delays; allows network manager to determine overall network performance and diagnose and locate network congestion points or failures
- **Role-based security**  
delivers role-based access control (RBAC); supports 16 user levels (0~15)
- **Standards-based authentication support for LDAP**  
integrates seamlessly into existing authentication services

## Investment protection

- **Re-use of existing SIC and MIM modules**  
supports existing SIC and MIM modules, transceivers, and cables for investment protection

## Ease of deployment

- **Zero-touch deployment**  
supports both USB disk auto deployment and 3G SMS auto deployment

## Additional information

- **OPEX savings**  
simplifies and streamlines deployment, management, and training through the use of a common operating system, thereby cutting costs as well as reducing the risk of human errors associated with having to manage multiple operating systems across different platforms and network layers
- **Faster time to market**  
allows new and custom features to be brought rapidly to market through engineering efficiencies, delivering better initial and ongoing stability
- **Green initiative support**  
provides support for RoHS and WEEE regulations

## 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.**

### Router Chassis

#### HPE FlexNetwork MSR3064 Router

- 1 Fixed 10M/100M/1000M RJ45 ports
- 2 COMBO 1000M RJ45/SFP ports min=0 \ max=2 SFP Transceivers
- 4 - SIC module slots / 2 - DSIC module slots
- 6 - HMIM module slots (4 Half Height + 2 Full Height Slots) / 1 - DHMIM module slot (Double Width Full Height Slot)
- 2 - VPM slots
- 2 USB 2.0 Port for 3G modem and USB disk
- 1 CON/AUX port and 1 USB console port
- 2GB DDR3 SDRAM Included (4GB Max, by replacing existing single 2GB SDRAM)
- 1 - CF Card Slot
- Must select min 1 Power Supply (min=1 \ max=2)
- 3U - Height

JG404A  
See Configuration  
**NOTE:3, 4, 5, 6**

#### HPE FlexNetwork MSR3044 Router

- 1 Fixed 10M/100M/1000M RJ45 ports
- 2 COMBO 1000M RJ45/SFP ports min=0 \ max=2 SFP Transceivers
- 4 - SIC module slots / 2 - DSIC module slots
- 4 - HMIM module slots (4 - Half Height Slots) / 0 - DHMIM module slot (Double Width Full Height Slot)
- 2 - VPM slots
- 2 USB 2.0 Port for 3G modem and USB disk
- 1 CON/AUX port and 1 USB console port
- 2GB DDR3 SDRAM Included (4GB Max, by replacing existing single 2GB SDRAM)
- 1 - CF Card Slot
- Must select min 1 Power Supply (min=1 \ max=2)
- 2U - Height

JG405A  
See Configuration  
**NOTE:3, 4, 5, 6, 8**

#### Russian Reduced Encryption

JG405A#A59

#### HPE FlexNetwork MSR3024 AC Router

- 2 Fixed 10M/100M/1000M RJ45 ports
- 1 COMBO 1000M RJ45/SFP port min=0 \ max=1 SFP Transceiver
- 4 - SIC module slots / 2 - DSIC module slots
- 2 - HMIM module slots (2 - Half Height Slots) / 0 - DHMIM module slot (Double Width Full Height Slot)
- 2 - VPM slots
- 2 USB 2.0 Port for 3G modem and USB disk
- 1 CON/AUX port and 1 USB console port
- 2GB DDR3 SDRAM Included (4GB Max, by replacing existing single 2GB SDRAM)
- 1 - CF Card Slot
- AC Power Supply included (+RPS Optional)

JG406A  
See Configuration  
**NOTE:1, 2, 3, 4, 5, 6, 8**

## Configuration

<ul style="list-style-type: none"> <li>1U - Height</li> </ul>	
PDU CABLE NA/MEX/TW/JP	JG406A#B2B
<ul style="list-style-type: none"> <li>C15 PDU Jumper Cord (NA/MEX/TW/JP)</li> </ul>	
PDU CABLE ROW	JG406A#B2C
<ul style="list-style-type: none"> <li>C15 PDU Jumper Cord (ROW)</li> </ul>	
High Volt Switch to Wall Power Cord	JG406A#B2E
<ul style="list-style-type: none"> <li>NEMA L6-20P Cord (NA/MEX/JP/TW)</li> </ul>	
No Power Cord	JG406A#AC3
<ul style="list-style-type: none"> <li>No Localized Power Cord Selected</li> </ul>	
Russian Reduced Encryption	JG406A#A59
HPE FlexNetwork MSR3024 DC Router	JG407A
<ul style="list-style-type: none"> <li>2 Fixed 10M/100M/1000M RJ45 ports</li> <li>1 COMBO 1000M RJ45/SFP port min=0 \ max=1 SFP Transceiver</li> <li>4 - SIC module slots / 2 - DSIC module slots</li> <li>2 - HMIM module slots (2 - Half Height Slots) / 0 - DHMIM module slot (Double Width Full Height Slot)</li> <li>1 - VPM slots</li> <li>2 USB 2.0 Port for 3G modem and USB disk</li> <li>1 CON/AUX port and 1 USB console port</li> <li>2GB DDR3 SDRAM Included (4GB Max, by replacing existing single 2GB SDRAM)</li> <li>1 - CF Card Slot</li> <li>DC Power Supply included (+RPS Optional)</li> <li>1U - Height</li> </ul>	See Configuration <b>NOTE: 3, 4, 5, 6, 9, 10</b>
HPE FlexNetwork MSR3024 PoE Router	JG408A
<ul style="list-style-type: none"> <li>2 Fixed 10M/100M/1000M RJ45 ports</li> <li>1 COMBO 1000M RJ45/SFP port min=0 \ max=1 SFP Transceiver</li> <li>4 - SIC module slots / 2 - DSIC module slots</li> <li>2 - HMIM module slots (2 - Half Height Slots) / 0 - DHMIM module slot (Double Width Full Height Slot)</li> <li>1 - VPM slots</li> <li>2 USB 2.0 Port for 3G modem and USB disk</li> <li>1 CON/AUX port and 1 USB console port</li> <li>2GB DDR3 SDRAM Included (4GB Max, by replacing existing single 2GB SDRAM)</li> <li>1 - CF Card Slot</li> <li>AC Power Supply included (+RPS Optional)</li> <li>1U - Height</li> </ul>	See Configuration <b>NOTE: 1, 2, 3, 4, 5, 6, 10</b>

## Configuration

PDU CABLE NA/MEX/TW/JP	JG408A#B2B
<ul style="list-style-type: none"> <li>C15 PDU Jumper Cord (NA/MEX/TW/JP)</li> </ul>	
PDU Cable ROW	JG408A#B2C
<ul style="list-style-type: none"> <li>C15 PDU Jumper Cord (ROW)</li> </ul>	
High Volt Switch to Wall Power Cord	JG408A#B2E
<ul style="list-style-type: none"> <li>NEMA L6-20P Cord (NA/MEX/JP/TW)</li> </ul>	
No Power Cord	JG408A#AC3
<ul style="list-style-type: none"> <li>No Localized Power Cord Selected</li> </ul>	
HPE MSR3012 AC Router	JG409B
<ul style="list-style-type: none"> <li>2 Fixed 10M/100M/1000M RJ45 ports</li> <li>1 COMBO 1000M RJ45/SFP port min=0 \ max=1 SFP Transceiver</li> <li>2 - SIC module slots / 0 - DSIC module slots</li> <li>1 - HMIM module slot (1 - Full Height Slot) / 0 - DHMIM module slot (Double Width Full Height Slot)</li> <li>1 - VPM slot</li> <li>2 USB 2.0 Port for 3G modem and USB disk</li> <li>1 CON/AUX port and 1 USB console port</li> <li>2GB DDR3 SDRAM Included (default=2GB \ max=2GB DDR SDRAM)</li> <li>AC Power Supply included</li> <li>1U - Height</li> </ul>	See Configuration <b>NOTE: 1, 2, 3, 6, 8</b>
PDU Cable NA/MEX/TW/JP	JG409B#B2B
<ul style="list-style-type: none"> <li>C15 PDU Jumper Cord (NA/MEX/TW/JP)</li> </ul>	
PDU Cable ROW	JG409B#B2C
<ul style="list-style-type: none"> <li>C15 PDU Jumper Cord (ROW)</li> </ul>	
High Volt Switch to Wall Power Cord	JG409B#B2E
<ul style="list-style-type: none"> <li>NEMA L6-20P Cord (NA/MEX/JP/TW)</li> </ul>	
Russian Reduced Encryption	JG409B#A59

### Configuration Rules:

**Note 1**                    1 - AC Power Supply included

**Note 2**                    Localization required on orders without #B2B, #B2C or #B2E. (See Localization Menu)

**Note 3**                    The following Transceivers install into this Switch:

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

## Configuration

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 RJ45 T Transceiver	JD089B
HPE X115 100M SFP LC FX Transceiver	JD102B
HPE X110 100M SFP LC LX Transceiver	JD120B
HPE X120 1G SFP LC BX 10-U Transceiver	JD098B
HPE X120 1G SFP LC BX 10-D Transceiver	JD099B

**Note 4**      **The following DDR SDRAM install into this Switch:**  
 HPE FlexNetwork X610 4GB DDR3 SDRAM UDIMM Memory      JG530A

**Note 5**      **The following CF Card install into this Switch:**  
 HPE X600 1G Compact Flash Card      JC684A

**Note 6**      **The following VPM Modules install into this Router:**  
 HPE FlexNetwork MSR G2 128-channel Voice Processing Module      JG417A

**Note 8**      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 9**      1 - DC Power Supply included

**Note 10**      **The following HMIM Module is NOT compatible with this Router:**  
 HPE FlexNetwork MSR 1-port Clear Channel T3 HMIM Module      JH449A

**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)"

## Box Level Integration CTO Models

### CTO Solution Sku

HPE MSR Configure to order Router Solution	JG500A
• SSP trigger sku	

### Router Chassis

HPE FlexNetwork MSR3064 Router	JG404A
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## Configuration

- 1 Fixed 10M/100M/1000M RJ45 ports
- 2 COMBO 1000M RJ45/SFP ports min=0 \ max=2 SFP Transceivers
- 4 - SIC module slots / 2 - DSIC module slots
- 6 - HMIM module slots (4 Half Height + 2 Full Height Slots) / 1 - DHMIM module slot (Double Width Full Height Slot)
- 2 - VPM slots
- 2 USB 2.0 Port for 3G modem and USB disk
- 1 CON/AUX port and 1 USB console port
- 2GB DDR3 SDRAM Included (4GB Max, by replacing existing single 2GB SDRAM)
- 1 - CF Card Slot
- Must select min 1 Power Supply (min=1 \ max=2)
- 3U - Height

See Configuration  
**NOTE:3, 4, 5, 6, 8,**  
**10**

### HPE FlexNetwork MSR3044 Router

- 1 Fixed 10M/100M/1000M RJ45 ports
- 2 COMBO 1000M RJ45/SFP ports min=0 \ max=2 SFP Transceivers
- 4 - SIC module slots / 2 - DSIC module slots
- 4 - HMIM module slots (4 - Half Height Slots) / 0 - DHMIM module slot (Double Width Full Height Slot)
- 2 - VPM slots
- 2 USB 2.0 Port for 3G modem and USB disk
- 1 CON/AUX port and 1 USB console port
- 2GB DDR3 SDRAM Included (4GB Max, by replacing existing single 2GB SDRAM)
- 1 - CF Card Slot
- Must select min 1 Power Supply (min=1 \ max=2)
- 2U - Height

JG405A  
 See Configuration  
**NOTE:3, 4, 5, 6, 8,**  
**10, 12**

### Russian Reduced Encryption

JG405A#A59

### HPE FlexNetwork MSR3024 AC Router

- 2 Fixed 10M/100M/1000M RJ45 ports
- 1 COMBO 1000M RJ45/SFP port min=0 \ max=1 SFP Transceiver
- 4 - SIC module slots / 2 - DSIC module slots
- 2 - HMIM module slots (2 - Half Height Slots) / 0 - DHMIM module slot (Double Width Full Height Slot)
- 2 - VPM slots
- 2 USB 2.0 Port for 3G modem and USB disk
- 1 CON/AUX port and 1 USB console port
- 2GB DDR3 SDRAM Included (4GB Max, by replacing existing single 2GB SDRAM)
- 1 - CF Card Slot
- AC Power Supply included (+RPS Optional)
- 1U - Height

JG406A  
 See Configuration  
**NOTE:1, 2, 3, 4, 5,**  
**6, 7, 8, 10, 12**

### PDU CABLE NA/MEX/TW/JP

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

JG406A#B2B

### PDU CABLE ROW

- C15 PDU Jumper Cord (ROW)

JG406A#B2C

## Configuration

High Volt Switch to Wall Power Cord	JG406A#B2E
<ul style="list-style-type: none"> <li>NEMA L6-20P Cord (NA/MEX/JP/TW)</li> </ul>	
No Power Cord	JG406A#AC3
<ul style="list-style-type: none"> <li>No Localized Power Cord Selected</li> </ul>	
Russian Reduced Encryption	JG406A#A59
HPE FlexNetwork MSR3024 DC Router	JG407A
<ul style="list-style-type: none"> <li>2 Fixed 10M/100M/1000M RJ45 ports</li> <li>1 COMBO 1000M RJ45/SFP port min=0 \ max=1 SFP Transceiver</li> <li>4 - SIC module slots / 2 - DSIC module slots</li> <li>2 - HMIM module slots (2 - Half Height Slots) / 0 - DHMIM module slot (Double Width Full Height Slot)</li> <li>1 - VPM slots</li> <li>2 USB 2.0 Port for 3G modem and USB disk</li> <li>1 CON/AUX port and 1 USB console port</li> <li>2GB DDR3 SDRAM Included (4GB Max, by replacing existing single 2GB SDRAM)</li> <li>1 - CF Card Slot</li> <li>DC Power Supply included (+RPS Optional)</li> <li>1U - Height</li> </ul>	See Configuration <b>NOTE: 3, 4, 5, 6, 8, 10, 11, 13</b>
HPE FlexNetwork MSR3024 PoE Router	JG408A
<ul style="list-style-type: none"> <li>2 Fixed 10M/100M/1000M RJ45 ports</li> <li>1 COMBO 1000M RJ45/SFP port min=0 \ max=1 SFP Transceiver</li> <li>4 - SIC module slots / 2 - DSIC module slots</li> <li>2 - HMIM module slots (2 - Half Height Slots) / 0 - DHMIM module slot (Double Width Full Height Slot)</li> <li>1 - VPM slots</li> <li>2 USB 2.0 Port for 3G modem and USB disk</li> <li>1 CON/AUX port and 1 USB console port</li> <li>2GB DDR3 SDRAM Included (4GB Max, by replacing existing single 2GB SDRAM)</li> <li>1 - CF Card Slot</li> <li>AC Power Supply included (+RPS Optional)</li> <li>1U - Height</li> </ul>	See Configuration <b>NOTE: 1, 2, 3, 4, 5, 6, 7, 8, 10, 13</b>
PDU CABLE NA/MEX/TW/JP	JG408A#B2B
<ul style="list-style-type: none"> <li>C15 PDU Jumper Cord (NA/MEX/TW/JP)</li> </ul>	
PDU CABLE ROW	JG408A#B2C
<ul style="list-style-type: none"> <li>C15 PDU Jumper Cord (ROW)</li> </ul>	
High Volt Switch to Wall Power Cord	JG408A#B2E



## Configuration

<ul style="list-style-type: none"> <li>NEMA L6-20P Cord (NA/MEX/JP/TW)</li> </ul>	
No Power Cord	JG408A#AC3
<ul style="list-style-type: none"> <li>No Localized Power Cord Selected</li> </ul>	
HPE MSR3012 AC Router	JG409B
<ul style="list-style-type: none"> <li>2 Fixed 10M/100M/1000M RJ45 ports</li> <li>1 COMBO 1000M RJ45/SFP port min=0 \ max=1 SFP Transceiver</li> <li>2 - SIC module slots / 0 - DSIC module slots</li> <li>1 - HMIM module slot (1 - Full Height Slot) / 0 - DHMIM module slot (Double Width Full Height Slot)</li> <li>1 - VPM slot</li> <li>2 USB 2.0 Port for 3G modem and USB disk</li> <li>1 CON/AUX port and 1 USB console port</li> <li>2GB DDR3 SDRAM Included (default=2GB \ max=2GB DDR SDRAM)</li> <li>AC Power Supply included</li> <li>1U - Height</li> </ul>	See Configuration <b>NOTE: 1, 2, 3, 6, 7, 8, 10, 12</b>
PDU Cable NA/MEX/TW/JP	JG409B#B2B
<ul style="list-style-type: none"> <li>C15 PDU Jumper Cord (NA/MEX/TW/JP)</li> </ul>	
PDU Cable ROW	JG409B#B2C
<ul style="list-style-type: none"> <li>C15 PDU Jumper Cord (ROW)</li> </ul>	
High Volt Switch to Wall Power Cord	JG409B#B2E
<ul style="list-style-type: none"> <li>NEMA L6-20P Cord (NA/MEX/JP/TW)</li> </ul>	
Russian Reduced Encryption	JG409B#A59

### Configuration Rules:

- Note 1**                    1 - AC Power Supply included
- Note 2**                    Localization required on orders without #B2B, #B2C or #B2E. (See Localization Menu)

**Note 3**                    The following Transceivers install into this Switch:

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 RJ45 T Transceiver	JD089B
HPE X115 100M SFP LC FX Transceiver	JD102B
HPE X110 100M SFP LC LX Transceiver	JD120B
HPE X120 1G SFP LC BX 10-U Transceiver	JD098B
HPE X120 1G SFP LC BX 10-D Transceiver	JD099B

## Configuration

Note 4	The following DDR SDRAM install into this Switch: HPE FlexNetwork X610 4GB DDR3 SDRAM UDIMM Memory	JG530A
Note 5	The following CF Card install into this Switch: HPE X600 1G Compact Flash Card	JC684A
Note 6	The following VPM Modules install into this Switch: HPE FlexNetwork MSR G2 128-channel Voice Processing Module	JG417A
Note 7	If #B2E is selected Then replace Localized option with #B2E for power supply and with #B2E for router. (Offered only in NA, Mexico, Taiwan, and Japan)	
Note 8	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 JG500A - HPE MSR CTO Enablement. (Min 1/Max 1 Router per SSP)	
Note 10	If this Switch is selected, Then a Minimum of 1 factory integrated accessory must be ordered and integrated to CTO chassis. See Menu below, option must have a #0D1 to be integrated to the CTO Chassis.	
Note 11	1 - DC Power Supply included	
Note 12	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 13	The following HMIM Module is NOT compatible with this Router: HPE FlexNetwork MSR 1-port Clear Channel T3 HMIM Module	JH449A
Remarks:	<p>"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)"</p> <p>Clic UNB - If an option is ordered with #0D1/#B01, then the switch must have #0D1 option.</p>	

## Rack Level Integration CTO Models

### Router Chassis

HPE FlexNetwork MSR3064 Router	JG404A See Configuration <b>NOTE:3, 4, 5, 6</b>
<ul style="list-style-type: none"> <li>• 1 Fixed 10M/100M/1000M RJ45 ports</li> <li>• 2 COMBO 1000M RJ45/SFP ports min=0 \ max=2 SFP Transceivers</li> <li>• 4 - SIC module slots / 2 - DSIC module slots</li> </ul>	

## Configuration

- 6 - HMIM module slots (4 Half Height + 2 Full Height Slots) / 1 - DHMIM module slot (Double Width Full Height Slot)
- 2 - VPM slots
- 2 USB 2.0 Port for 3G modem and USB disk
- 1 CON/AUX port and 1 USB console port
- 2GB DDR3 SDRAM Included (4GB Max, by replacing existing single 2GB SDRAM)
- 1 - CF Card Slot
- Must select min 1 Power Supply (min=1 \ max=2)
- 3U - Height

### HPE FlexNetwork MSR3044 Router

- 1 Fixed 10M/100M/1000M RJ45 ports
- 2 COMBO 1000M RJ45/SFP ports min=0 \ max=2 SFP Transceivers
- 4 - SIC module slots / 2 - DSIC module slots
- 4 - HMIM module slots (4 - Half Height Slots) / 0 - DHMIM module slot (Double Width Full Height Slot)
- 2 - VPM slots
- 2 USB 2.0 Port for 3G modem and USB disk
- 1 CON/AUX port and 1 USB console port
- 2GB DDR3 SDRAM Included (4GB Max, by replacing existing single 2GB SDRAM)
- 1 - CF Card Slot
- Must select min 1 Power Supply (min=1 \ max=2)
- 2U - Height

JG405A

See Configuration

**NOTE:3, 4, 5, 6, 7**

### Russian Reduced Encryption

JG405A#A59

### HPE FlexNetwork MSR3024 AC Router

- 2 Fixed 10M/100M/1000M RJ45 ports
- 1 COMBO 1000M RJ45/SFP port min=0 \ max=1 SFP Transceiver
- 4 - SIC module slots / 2 - DSIC module slots
- 2 - HMIM module slots (2 - Half Height Slots) / 0 - DHMIM module slot (Double Width Full Height Slot)
- 2 - VPM slots
- 2 USB 2.0 Port for 3G modem and USB disk
- 1 CON/AUX port and 1 USB console port
- 2GB DDR3 SDRAM Included (4GB Max, by replacing existing single 2GB SDRAM)
- 1 - CF Card Slot
- AC Power Supply included (+RPS Optional)
- 1U - Height

JG406A

See Configuration

**NOTE:1, 2, 3, 4, 5, 6, 7**

### PDU CABLE NA/MEX/TW/JP

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

JG406A#B2B

### PDU CABLE ROW

- C15 PDU Jumper Cord (ROW)

JG406A#B2C

### No Power Cord

JG406A#AC3

## Configuration

- No Localized Power Cord Selected

Russian Reduced Encryption

JG406A#A59

HPE FlexNetwork MSR3024 DC Router

- 2 Fixed 10M/100M/1000M RJ45 ports
- 1 COMBO 1000M RJ45/SFP port min=0 \ max=1 SFP Transceiver
- 4 - SIC module slots / 2 - DSIC module slots
- 2 - HMIM module slots (2 - Half Height Slots) / 0 - DHMIM module slot (Double Width Full Height Slot)
- 1 - VPM slots
- 2 USB 2.0 Port for 3G modem and USB disk
- 1 CON/AUX port and 1 USB console port
- 2GB DDR3 SDRAM Included (4GB Max, by replacing existing single 2GB SDRAM)
- 1 - CF Card Slot
- DC Power Supply included (+RPS Optional)
- 1U - Height

JG407A  
See Configuration  
**NOTE:3, 4, 5, 6, 10, 11**

HPE FlexNetwork MSR3024 PoE Router

- 2 Fixed 10M/100M/1000M RJ45 ports
- 1 COMBO 1000M RJ45/SFP port min=0 \ max=1 SFP Transceiver
- 4 - SIC module slots / 2 - DSIC module slots
- 2 - HMIM module slots (2 - Half Height Slots) / 0 - DHMIM module slot (Double Width Full Height Slot)
- 1 - VPM slots
- 2 USB 2.0 Port for 3G modem and USB disk
- 1 CON/AUX port and 1 USB console port
- 2GB DDR3 SDRAM Included (4GB Max, by replacing existing single 2GB SDRAM)
- 1 - CF Card Slot
- AC Power Supply included (+RPS Optional)
- 1U - Height

JG408A  
See Configuration  
**NOTE:1, 2, 3, 4, 5, 6, 11**

PDU CABLE NA/MEX/TW/JP

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

JG408A#B2B

HPE FlexNetwork MSR3024 PoE Router

- C15 PDU Jumper Cord (ROW)

JG408A#B2C

No Power Cord

- No Localized Power Cord Selected

JG408A#AC3

HPE MSR3012 AC Router

- 2 Fixed 10M/100M/1000M RJ45 ports
- 1 COMBO 1000M RJ45/SFP port min=0 \ max=1 SFP Transceiver
- 2 - SIC module slots / 0 - DSIC module slots

JG409B  
See Configuration  
**NOTE: 1, 2, 3, 6, 7**

## Configuration

- 1 - HMIM module slot (1 - Full Height Slot) / 0 - DHMIM module slot (Double Width Full Height Slot)
- 1 - VPM slot
- 2 USB 2.0 Port for 3G modem and USB disk
- 1 CON/AUX port and 1 USB console port
- 2GB DDR3 SDRAM Included (default=2GB \ max=2GB DDR SDRAM)
- AC Power Supply included
- 1U - Height

PDU Cable NA/MEX/TW/JP JG409B#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW JG409B#B2C

- C15 PDU Jumper Cord (ROW)

Russian Reduced Encryption JG409B#A59

### Configuration Rules:

**Note 1** 1 - AC Power Supply included

**Note 2** "Localization (Wall Power Cord) required on orders without #B2B, #B2C (PDU Power Cord). (See Localization Menu)  
REMARK: When Switches/Routers are Factory Racked, Then #B2B, or #B2C should be the Defaulted Power Cable option on the Switches/Routers."

**Note 3** **The following Transceivers install into this Router:**

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 RJ45 T Transceiver	JD089B
HPE X115 100M SFP LC FX Transceiver	JD102B
HPE X110 100M SFP LC LX Transceiver	JD120B
HPE X120 1G SFP LC BX 10-U Transceiver	JD098B
HPE X120 1G SFP LC BX 10-D Transceiver	JD099B

**Note 4** **The following DDR SDRAM install into this Router:**

HPE FlexNetwork X610 4GB DDR3 SDRAM UDIMM Memory	JG530A
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**Note 5** **The following CF Card install into this Router:**

HPE X600 1G Compact Flash Card	JC684A
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**Note 6** **The following VPM Modules install into this Router:**

HPE FlexNetwork MSR G2 128-channel Voice Processing Module	JG417A
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## Configuration

- Note 7** 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 10** 1 - DC Power Supply included
- Note 11** The following HMIM Module is NOT compatible with this Router:  
HPE FlexNetwork MSR 1-port Clear Channel T3 HMIM Module JH449A
- 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)"
- Clic UNB - If an option is ordered with #0D1/#B01, then the switch must have #0D1 option.

## Power Supplies

- (JG404A and JG405A only) System (std 0// max 1 or max 2) User Selection (min 1 // max 1 or max 2) MSR3064/3044 Router
- |   |   |
|---|---|
| HPE FlexNetwork X351 300W 48-60VDC to 12VDC Power Supply  | JG528A<br>See Configuration<br><b>NOTE:3, 6</b>       |
| HPE FlexNetwork X351 300W 100-240VDC to 12VDC Power Supply  | JG527A<br>See Configuration<br><b>NOTE:1, 2, 3, 6</b> |
| PDU CABLE NA/MEX/TW/JP <ul style="list-style-type: none"> <li>• C15 PDU Jumper Cord (NA/MEX/TW/JP)</li> </ul>           | JG527A#B2B  |
| PDU CABLE ROW <ul style="list-style-type: none"> <li>• C15 PDU Jumper Cord (ROW)</li> </ul>                             | JG527A#B2C  |
| High Volt Switch to Wall Power Cord <ul style="list-style-type: none"> <li>• NEMA L6-20P Cord (NA/MEX/JP/TW)</li> </ul> | JG527A#B2E  |

### Configuration Rules:

- Note 1** Localization required on orders without #B2B, #B2C or #B2E options.
- Note 2** If #B2E is selected Then replace Localized option with #B2E for power supply and with #B2E for router. (Offered only in NA, Mexico, Taiwan, and Japan)
- Note 3** Maximum of 2 of this Power Supply for MSR3064 - JG404A and MSR3044 - JG405A.

## Configuration

min=0 \ max=2

**Note 6** Power Supplies cannot be mixed in the same Router enclosure

### 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)

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

## SIC Modules

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

HPE FlexNetwork MSR 4-port 10/100 SIC Module	JD573B See Configuration <b>NOTE:1, 4</b>
HPE FlexNetwork MSR 2-port FXO SIC Module	JD558A See Configuration <b>NOTE:2, 4</b>
HPE FlexNetwork MSR 4-port FXS/1-port FXO DSIC Module	JG189A See Configuration <b>NOTE:1, 3</b>
HPE MSR 1-port E1/T1 Voice SIC Module <ul style="list-style-type: none"> <li>• min=0 \ max=1 E1 or T1 Cable</li> </ul>	JH240A See Configuration <b>NOTE: 16, 19, 20, 21</b>
HPE FlexNetwork MSR 1-port T1 Voice SIC Module <ul style="list-style-type: none"> <li>• Must select 1 Voice Processing Module min=0 \ max=1 T1 Cable</li> </ul>	JD576A See Configuration <b>NOTE:2, 4, 9, 13</b>
HPE FlexNetwork MSR 2 FXS +1 FXO Voice Interface SIC Module	JD632A See Configuration <b>NOTE:2, 4</b>
HPE FlexNetwork MSR 1-port Fractional E1 SIC Module <ul style="list-style-type: none"> <li>• min=0 \ max=1 E1 or 2E1 Cable</li> </ul>	JD634B See Configuration <b>NOTE:2, 4, 7, 10</b>

## Configuration

HPE FlexNetwork MSR 1-port Fractional SIC Module	JD538A See Configuration <b>NOTE:2, 4, 9</b>
HPE FlexNetwork MSR 2-port Fractional E1 SIC Module <ul style="list-style-type: none"><li>min=0 \ max=1 2E1 Cable</li></ul>	JF842A See Configuration <b>NOTE:2, 4, 10</b>
HPE FlexNetwork MSR 1-port Enhanced Serial SIC Module <ul style="list-style-type: none"><li>min=0 \ max=1 Serial Port Cable</li></ul>	JD557A See Configuration <b>NOTE:2, 4, 11</b>
HPE FlexNetwork MSR 1-port ISDN S/T SIC Module	JD571A See Configuration <b>NOTE:2, 4</b>
HPE FlexNetwork 8-port Asynchronous Serial Interface SIC Router Module <ul style="list-style-type: none"><li>Must select 1 8AS Communication Cable</li></ul>	JF281A See Configuration <b>NOTE:2, 4, 12</b>
HPE FlexNetwork MSR 16-port Async Serial SIC Module	JG186A See Configuration <b>NOTE:2, 4, 14</b>
HPE MSR HSPA+/WCDMA SIC Module	JG929A See Configuration <b>NOTE:1, 4</b>
HPE FlexNetwork MSR 1-port 8-wire G.SHDSL (RJ45) DSIC Module	JG191A See Configuration <b>NOTE:1, 3</b>
HPE FlexNetwork MSR 1-port E1/CE1/PRI SIC Module <ul style="list-style-type: none"><li>min=0 \ max=1 E1 Cable</li></ul>	JG604A See Configuration <b>NOTE:2, 4, 7</b>
HPE Flex Network MSR 4G LTE SIC Module for LTE 700/1700/2100 MHz CDMA UMTS/HSPA+/HSPA/EDGE/GPRS/GSM	JG742B See Configuration <b>NOTE:1, 4, 15</b>
HPE MSR 4G LTE SIC Module for Global/LTE 800/900/1800/2100/2600MHz UMTS/HSPA+/HSPA/EDGE/GRPS/GSM	JG744B See Configuration <b>NOTE:1, 4, 15</b>
HPE FlexNetwork MSR 2-port Enhanced Sync/Async Serial SIC Module <ul style="list-style-type: none"><li>min=0 \ max=2 Serial Port Cable</li></ul>	JG736A See Configuration <b>NOTE:2, 4, 11</b>



## Configuration

HPE FlexNetwork MSR 4-port Enhanced Sync/Async Serial SIC Module	JG737A
<ul style="list-style-type: none"> <li>min=0 \ max=4 Serial Port Cable</li> </ul>	See Configuration <b>NOTE: 2, 4, 11</b>
HPE FlexNetwork MSR 1-port GbE Combo SIC Module	JG738A
<ul style="list-style-type: none"> <li>min=0 \ max=1 SFP Transceiver</li> </ul>	See Configuration <b>NOTE:1, 4, 6</b>
HPE FlexNetwork MSR 4-port Gig-T Switch SIC Module	JG739A
	See Configuration <b>NOTE:1, 4</b>

### Configuration Rules:

<b>Note 1</b>	These Modules can install directly to the Routers (JG404A, JG405A, JG861A, JG406A, JG407A, JG408A) min=0\ max=2 per enclosure (only supported in Slots 2 and 4)	
<b>Note 2</b>	These Modules can install directly to the Routers (JG404A, JG405A, JG861A, JG406A, JG407A, JG408A) min=0\ max=4 per enclosure	
<b>Note 3</b>	These Modules cannot install directly to the Routers (JG409B,)	
<b>Note 4</b>	These Modules can install directly to the Routers (JG409B) min=0\ max=2 per enclosure	
<b>Note 5</b>	The following Transceivers install into this Module: HPE X115 100M SFP LC FX Transceiver HPE X110 100M SFP LC LX Transceiver	JD102B JD120B
<b>Note 6</b>	The following Transceivers install into this Module: HPE X120 1G SFP LC SX Transceiver HPE X120 1G SFP LC LX Transceiver HPE X125 1G SFP LC LH40 1310nm Transceiver HPE X120 1G SFP LC LH40 1550nm Transceiver HPE X125 1G SFP LC LH70 Transceiver HPE X120 1G SFP LC LH100 Transceiver HPE X120 1G SFP LC BX 10-U Transceiver HPE X120 1G SFP LC BX 10-D Transceiver HPE X120 1G SFP LC LH100 Transceiver HPE X120 1G SFP RJ45 T Transceiver	JD118B JD119B JD061A JD062A JD063B JD103A JD098B JD099B JD103A JD089B
<b>Note 7</b>	The following E1 Cables install into this Module: HPE FlexNetwork X260 E1 (2) BNC 75 ohm 3m Router Cable HPE FlexNetwork X260 E1 BNC 20m Router Cable	JD175A JD514A
<b>Note 8</b>	The following E1 Cables install into this Module: HPE FlexNetwork X260 E1 RJ45 3m Router Cable	JD509A

## Configuration

Note 9	<p>The following T1 Cables install into this Module:  <b>JD518A-HP X260 T1 Router Cable</b>  HPE FlexNetwork X260 T1 Router Cable</p>	JD518A
Note 10	<p>The following 2E1 Cables install into this Module:  HPE FlexNetwork X260 2E1 BNC 3m Router Cable</p>	JD643A
Note 11	<p>The following Cables install into this Module:  HPE FlexNetwork X260 RS449 3m DCE Serial Port Cable  HPE FlexNetwork X260 RS449 3m DTE Serial Port Cable  HPE FlexNetwork X200 V.24 DTE 3m Serial Port Cable  HPE FlexNetwork X200 V.35 DTE 3m Serial Port Cable  HPE FlexNetwork X260 RS530 3m DTE Serial Port Cable  HPE FlexNetwork X200 V.35 DCE 3m Serial Port Cable  HPE FlexNetwork X260 RS530 3m DCE Serial Port Cable  HPE FlexNetwork X200 V.24 DCE 3m Serial Port Cable  HP X200 X.21 DTE 3m Serial Port Cable</p>	<p>JF826A  JF825A  JD519A  JD523A  JF827A  JD525A  JF828A  JD521A  JD527A</p>
Note 12	<p>The following Cables install into this Module:  HPE FlexNetwork X260 SIC 8AS RJ45 0.28m Router Cable</p>	JD642A
Note 13	<p>The following Modules install into Routers and work with this Module:  HPE FlexNetwork MSR G2 128-channel Voice Processing Module</p>	JG417A
Note 14	<p>If this module is selected Then 4 - JG263A HP X260 mini D-28/4-RJ45 0.3m Rtr Cable are required to be on the same order.</p>	
Note 15	<p>The following Antenna Cables install into this Module:  HPE MSR 3G RF 2.8m Antenna Cable  HPE MSR 3G RF 6m Antenna Cable  HPE MSR 3G RF 15m Antenna Cable</p>	<p>JG522A  JG666A  JG667A</p>
Note 16	<p>The following E1/T1 Cables install into this Module:  HPE FlexNetwork X260 E1 RJ45 to 2xBNC 75ohm 3m Router Cable  HPE FlexNetwork X260 E1 RJ45 120 ohm 2m Router Cable  HPE FlexNetwork X260 E1 RJ45 120 ohm 15m Router Cable  HPE FlexNetwork X260 E1 RJ45 120 ohm 30m Router Cable  HPE FlexNetwork X260 T1 Router Cable</p>	<p>JH294A  JC156A  JC151A  JC152A  JD518A</p>
Note 19	<p>These Modules can install directly to the Routers (JG404A, JG405A, JG406A)  min=0\ max=4 per enclosure</p>	
Note 20	<p>These Modules can install directly to the Routers (JG409B)  min=0\ max=2 per enclosure</p>	
Note 21	<p>This module cannot be ordered Factory Integrated(#0d1)with the following Routers:  HPE FlexNetwork MSR3024 DC Router  HPE FlexNetwork MSR3024 PoE Router</p>	<p>JG407A  JG408A</p>

## Configuration

HPE FlexNetwork MSR3024 TAA-compliant AC Router

JG861A

## HMIM Modules

System (std 0 // max 6 or 4 or 2 or 1) User Selection (min 0 // max 6 or 4 or 2 or 1) per Router Chassis (See Modules for Port information)

HPE FlexNetwork MSR 1-port E1 Voice HMIM Module

- (Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically)  
min=0 \ max=1 E1 Cable

JG429A

See Configuration  
**NOTE:** 1, 3, 5, 11,  
13, 14

HPE FlexNetwork MSR 1-port T1 Voice HMIM Module

- (Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically)  
min=0 \ max=1 E1 Cable

JG430A

See Configuration  
**NOTE:** 1, 3, 10, 11,  
13, 14

HPE FlexNetwork MSR 2-port E1 Voice HMIM Module

- (Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically)  
min=0 \ max=1 E1 Cable

JG431A

See Configuration  
**NOTE:** 1, 3, 5, 11,  
13, 14

HPE FlexNetwork MSR 1-port Clear Channel T3 HMIM Module

- (Half Height Module; Takes up 1 Half Height or 1 Full Height slot)  
min=0 \ max=2 E3/T3 Cable

JH449A

See Configuration  
**NOTE:** 2, 4, 6, 13,  
21, 22

HPE FlexNetwork MSR 1-port OC-3c/STM 1c POS HMIM Module

- (Half Height Module; Takes up 1 Half Height or 1 Full Height slot)  
min=0 \ max=1 SFP Transceiver

JG438A

See Configuration  
**NOTE:** 2, 4, 7, 12,  
13

HPE FlexNetwork MSR 4-port Enhanced Sync/Async Serial HMIM Module

- (Half Height Module; Takes up 1 Half Height or 1 Full Height slot)  
min=0 \ max=4 Serial Port Cable

JG442A

See Configuration  
**NOTE:** 2, 4, 8, 12,  
13

HPE FlexNetwork MSR 8-port Enhanced Sync/Async Serial HMIM Module

- (Half Height Module; Takes up 1 Half Height or 1 Full Height slot)  
min=0 \ max=8 Serial Port Cable

JG443A

See Configuration  
**NOTE:** 2, 4, 8, 12,  
13

HPE FlexNetwork MSR 4-port FXS HMIM Module

- (Half Height Module; Takes up 1 Half Height or 1 Full Height slot)

JG446A

See Configuration  
**NOTE:** 2, 4, 12, 13

HPE FlexNetwork MSR 4-port FXO HMIM Module

- (Half Height Module; Takes up 1 Half Height or 1 Full Height slot)

JG447A

See Configuration  
**NOTE:** 2, 4, 12, 13

## Configuration

HPE FlexNetwork MSR 4-port E and M HMIM Module <ul style="list-style-type: none"><li>(Half Height Module; Takes up 1 Half Height or 1 Full Height slot)</li></ul>	JG448A See Configuration <b>NOTE:2, 4, 12, 13</b>
HP MSR 2-port E1 / CE1 / PRI HMIM Module <ul style="list-style-type: none"><li>(Half Height Module; Takes up 1 Half Height or 1 Full Height slot) min=0 \ max=2 E1 Cable</li></ul>	JG450A See Configuration <b>NOTE:2, 4, 5, 12, 13</b>
HP MSR 4-port E1 / CE1 / PRI HMIM Module <ul style="list-style-type: none"><li>(Half Height Module; Takes up 1 Half Height or 1 Full Height slot) min=0 \ max=4 E1 Cable</li></ul>	JG451A See Configuration <b>NOTE:2, 4, 5, 12, 13</b>
HP MSR 8-port E1 / CE1 / PRI (75ohm) HMIM Module <ul style="list-style-type: none"><li>(Half Height Module; Takes up 1 Half Height or 1 Full Height slot) min=0 \ max=1 8E1 Cable</li></ul>	JG452A See Configuration <b>NOTE:2, 4, 9, 12, 13</b>
HP MSR 4-port E1 / Fractional E1 HMIM Module <ul style="list-style-type: none"><li>(Half Height Module; Takes up 1 Half Height or 1 Full Height slot) min=0 \ max=4 E1 Cable</li></ul>	JG453A See Configuration <b>NOTE:2, 4, 5, 12, 13</b>
HP MSR 2-port T1 / CT1 / PRI HMIM Module <ul style="list-style-type: none"><li>(Half Height Module; Takes up 1 Half Height or 1 Full Height slot)</li></ul>	JG456A See Configuration <b>NOTE:2, 4, 12, 13</b>
HP MSR 4-port T1 / Fractional T1 HMIM Module <ul style="list-style-type: none"><li>(Half Height Module; Takes up 1 Half Height or 1 Full Height slot)</li></ul>	JG457A See Configuration <b>NOTE:2, 4, 12, 13</b>
HPE FlexNetwork MSR 2-port Gig-T HMIM Module <ul style="list-style-type: none"><li>(Half Height Module; Takes up 1 Half Height or 1 Full Height slot)</li></ul>	JG420A See Configuration <b>NOTE:2, 4, 12, 13</b>
HPE FlexNetwork MSR 4-port Gig-T HMIM Module <ul style="list-style-type: none"><li>(Half Height Module; Takes up 1 Half Height or 1 Full Height slot)</li></ul>	JG421A See Configuration <b>NOTE:2, 4, 12, 13</b>
HPE FlexNetwork MSR 8-port Gig-T HMIM Module <ul style="list-style-type: none"><li>(Half Height Module; Takes up 1 Half Height or 1 Full Height slot)</li></ul>	JG422A See Configuration <b>NOTE:2, 4, 12, 13</b>
HPE FlexNetwork MSR 2-port 1000BASE-X HMIM Module <ul style="list-style-type: none"><li>(Half Height Module; Takes up 1 Half Height or 1 Full Height slot)</li><li>min=0 \ max=2 SFP Modules</li></ul>	JG423A See Configuration <b>NOTE: 2, 4, 12, 13, 17</b>

## Configuration

HPE FlexNetwork MSR 4-port 1000BASE-X HMIM Module	JG424A See Configuration <b>NOTE:</b> 2, 4, 12, 13, 17
HPE FlexNetwork MSR 8-port 1000BASE-X HMIM Module <ul style="list-style-type: none"> <li>(Half Height Module; Takes up 1 Half Height or 1 Full Height slot)</li> <li>min=0 \ max=8 SFP Modules</li> </ul>	JG425A See Configuration <b>NOTE:</b> 2, 4, 12, 13, 17
HPE FlexNetwork MSR 24-port Gig-T Switch HMIM Module <ul style="list-style-type: none"> <li>(Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically)</li> </ul>	JG426A See Configuration <b>NOTE:</b> 1, 3, 11, 13, 14
HPE FlexNetwork MSR 1-port OC-3/STM-1 CPOS HMIM Module <ul style="list-style-type: none"> <li>(Half Height Module; Takes up 1 Half Height or 1 Full Height slot)</li> <li>min=0 \ max=1 SFP Transceiver</li> </ul>	JG428A See Configuration <b>NOTE:</b> 2, 4, 7, 12, 13
HPE FlexNetwork MSR 2-port T1 Voice HMIM Module <ul style="list-style-type: none"> <li>(Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically)</li> <li>min=0 \ max=2 T1 Cable</li> </ul>	JG432A See Configuration <b>NOTE:</b> 1, 3, 10, 11, 13
HPE FlexNetwork MSR 16-port FXS HMIM Module <ul style="list-style-type: none"> <li>(Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically)</li> </ul>	JG434A See Configuration <b>NOTE:</b> 1, 3, 11, 13
HPE FlexNetwork MSR 8-port 10/100/1000BASE-T/2-port 1000BASE-X (Combo) Switch HMIM Module <ul style="list-style-type: none"> <li>(Half Height Module; Takes up 1 Half Height or 1 Full Height slot)</li> <li>min=0 \ max=2 SFP Transceivers</li> </ul>	JG741A See Configuration <b>NOTE:</b> 4, 7, 12, 13, 17, 18
HPE FlexNetwork MSR 16-port Enhanced Async Serial HMIM Module <ul style="list-style-type: none"> <li>(Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically)</li> </ul>	JG445A See Configuration <b>NOTE:</b> 1, 3, 11, 13
HPE FlexNetwork MSR 8-port E1/CE1/T1/CT1/PRI HMIM Module <ul style="list-style-type: none"> <li>(Half Height Module; Takes up 1 Half Height or 1 Full Height slot)</li> <li>min=0 \ max=8 E1/T1 Cable</li> </ul>	JH169A See Configuration <b>NOTE:</b> 2, 4, 10, 12, 13, 19, 20
HPE FlexNetwork MSR 8-port E1/Fractional E1/T1/Fractional T1 HMIM Module <ul style="list-style-type: none"> <li>(Half Height Module; Takes up 1 Half Height or 1 Full Height slot)</li> <li>min=0 \ max=8 E1/T1 Cable</li> </ul>	JH172A See Configuration <b>NOTE:</b> 2, 4, 10, 12, 13, 19, 20
HPE FlexNetwork MSR 8-port 100BASE-FX/1000BASE-X/4-port 1000BASE-T (Combo) L2/L3 HMIM Module	JH238A

## Configuration

- (Half Height Module; Takes up 1 Half Height or 1 Full Height slot)
- min=0 \ max=8 SFP Modules

See Configuration  
**NOTE:** 2, 4, 7, 12,  
 13, 17

### HPE FlexNetwork MSR 1U HMIM Adapter Module

- (Half Height Module; Takes up 1 Half Height or 1 Full Height slot)

JG416A  
 See Configuration  
**NOTE:**2, 4, 12, 13,  
 15

### HPE FlexNetwork MSR 0.5U HMIM Adapter Module

- (Half Height Module; Takes up 1 Half Height or 1 Full Height slot)

JG415A  
 See Configuration  
**NOTE:**2, 4, 12, 13,  
 16

### Configuration Rules:

- Note 1**                    These Modules can install directly to the Router Chassis (JG404A)  
 min=0\ max=4 per enclosure (Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically)
- Note 2**                    These Modules can install directly to the Router Chassis (JG404A)  
 min=0\ max=6 per enclosure
- Note 3**                    These Modules can install directly to the Router Chassis (JG405A)  
 min=0\ max=2 per enclosure (Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically)
- Note 4**                    These Modules can install directly to the Router Chassis (JG405A)  
 min=0\ max=4 per enclosure
- Note 5**                    The following Cables install into this Module:  
 HPE FlexNetwork X260 E1 (2) BNC 75 ohm 3m Router Cable                    JD175A  
 HPE FlexNetwork X260 E1 BNC 20m Router Cable                                JD514A  
 HPE FlexNetwork X260 E1 RJ45 3m Router Cable                                 JD509A
- Note 6**                    The following E3/T3 Cable and Connector install into this Module:  
 HPE FlexNetwork X260 T3/E3 Router Cable                                         JD531A
- Note 7**                    The following Transceivers install into this Module:  
 HPE X115 100M SFP LC FX Transceiver    JD102B  
 HPE X110 100M SFP LC LX Transceiver    JD120B
- Note 8**                    The following Cables install into this Module:  
 HPE FlexNetwork X260 RS449 3m DCE Serial Port Cable                            JF826A  
 HPE FlexNetwork X260 RS449 3m DTE Serial Port Cable                            JF825A  
 HPE FlexNetwork X200 V.24 DTE 3m Serial Port Cable                                JD519A  
 HPE FlexNetwork X200 V.35 DTE 3m Serial Port Cable                                JD523A  
 HPE FlexNetwork X260 RS530 3m DTE Serial Port Cable                            JF827A  
 HPE FlexNetwork X200 V.35 DCE 3m Serial Port Cable                                JD525A  
 HPE FlexNetwork X260 RS530 3m DCE Serial Port Cable                            JF828A

## Configuration

HPE FlexNetwork X200 V.24 DCE 3m Serial Port Cable	JD521A
HP X200 X.21 DTE 3m Serial Port Cable	JD527A

**Note 10**      The following T1 Cables install into this Module:  
 HPE FlexNetwork X260 T1 Router Cable      JD518A

**Note 11**      These Modules can install directly to the Router Chassis (JG406A, JG407A, JG408A and JG861A) min=0\ max=1 per enclosure (Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically)

**Note 12**      These Modules can install directly to the Router Chassis (JG406A, JG407A, JG408A and JG861A) min=0\ max=2 per enclosure

**Note 13**      These Modules can install directly to the Router Chassis (JG409B) min=0\ max=1 per enclosure

**Note 14**      Full Height Module; Takes up 1 - Full Height slot or 2 - Half Height slots, vertically

**Note 15**      Remark for Watson: Adapter Modules allow customers with existing MIM Modules to adapt them to HMIM slots of HPE MSR 3000 Series Router.

1U HMIM Adapter Modules can adapt the following MIM Modules:

HP A-MSR 1-port E1 Voice MIM Module	JD565B
HP A-MSR 2-port E1 Voice MIM Module	JD567B
HP A-MSR 1-port T1 Voice MIM Module	JD566B
HP A-MSR 2-port T1 Voice MIM Module	JD568B
HP 16-port FXS Voice Interface MIM Module	JF822A
HP MSR 16-port Async Serial Interface MIM Module	JF841A
HPE FlexNetwork MSR Open Application Platform (OAP) with VMware vSphere MIM Module	JG532A

**Note 16**      Remark for Watson: Adapter Modules allow customers with existing MIM Modules to adapt them to HMIM slots of HPE MSR 3000 Series Router.

0.5U HMIM Adapter Modules can adapt following MIM Modules:

HP MSR 8-port Async Serial Interface MIM Module	JF840A
HP MSR 1-port FT3/CT3 MIM Module	JD628A
HP MSR 1-port FE3/CE3 MIM Module	JD630A
HP MSR 1-port OC-3c/STM-1c POS MIM Module	JG193A
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
HP MSR 4-port FXS MIM Module	JD553A
HP MSR 4-port FXO MIM Module	JD542A
HP MSR 4-port Voice E and M MIM Module	JD539A
HP A-MSR 2-port E1/CE1/PRI MIM Module	JD544B
HP A-MSR 4-port E1/CE1/PRI MIM Module	JD550B
HPE FlexNetwork MSR 8-port E1/CE1/PRI (75ohm) MIM Module	JD563A
HP MSR 4-port E1/Fractional E1 MIM Module	JF257B
HPE MSR 8-port Fractional E1 MIM Module	JF255A
HP MSR 2-port Fractional T1/Channelize T1 PRI MIM Module	JD549A
HP MSR 4-port T1/Fractional T1 MIM Module	JF254B

## Configuration

HPE FlexNetwork 6600 8-port T1 MIM Router Module	JC160A
HPE FlexNetwork 6600 8-port Fractional T1 MIM Router Module	JC159A
HP MSR 2-port 10/100 MIM Module	JD613A
HP MSR 4-port 10/100BASE-TX Module	JD551A
HP MSR 2-port Gig-T MIM Module	JD548A
HP MSR 2-port FXO MIM Module	JD543A
HP 4-port ISDN BRI S/T Voice Interface MIM Module	JF837A
HP MSR 1-port OC-3 ATM MIM Module	JD624A

**Note 17** The following Transceivers install into this Module:

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 BX 10-U Transceiver	JD098B
HPE X120 1G SFP LC BX 10-D Transceiver	JD099B
HPE X120 1G SFP LC LH100 Transceiver	JD103A

**Note 18** These Modules can install directly to the Router Chassis (HP MSR3064)  
min=0\ max=5 per enclosure (Not supported in Slot 7)

**Note 19** The following E1 Cables install into this Module:

HPE FlexNetwork X260 E1 RJ45 to 2xBNC 75ohm 3m Router Cable	JH294A
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**Note 20** The following E1 Cables install into this Module:

HPE FlexNetwork X260 E1 RJ45 120 ohm 30m Router Cable	JC152A
HPE FlexNetwork X260 E1 RJ45 120 ohm 15m Router Cable	JC151A
HPE FlexNetwork X260 E1 RJ45 120 ohm 2m Router Cable	JC156A

**Note 21** Available in Korea only

**Note 22** These Modules can install directly to the Router Chassis (JG406A)  
min=0\ max=2 per enclosure

## MIM Modules

HPE FlexNetwork MSR Open Application Platform (OAP) with VMware vSphere MIM Module	JG532A See Configuration <b>NOTE:1, 2</b>
HPE FlexNetwork MSR Medium Survivable Branch Communication MIM Module Powered by Microsoft Lync	JG588A See Configuration <b>NOTE:1, 2</b>

### Configuration Rules:

**Note 1** This Module installs into JG416A.  
JG404A min=0\ max=4 per enclosure



## Configuration

JG405A min=0\ max=2 per enclosure  
 JG406A, JG407A, JG408A, JG409B and JG861A min=0\ max=1 per enclosure

**Note 2** A Minimum of 2 Power Supplies are required when more than 2 Modules are selected.

## VPM Modules

HPE FlexNetwork MSR G2 128-channel Voice Processing Module

JG417A  
 See Configuration  
**NOTE:1, 2**

### Configuration Rules:

**Note 1** These Modules can install directly to the Router  
 JG404A, JG405A, JG406A min=0\ max=2 per enclosure  
 JG406A, JG407A, JG408A, JG409B, JG861A min=0\ max=1 per enclosure

**Note 2** VPM JG417A required if SIC-1VE1/SIC-1VT1 (JD576A) are ordered

## Transceivers

System (std 0 // max 2 or 1) User Selection (min 0 // max 2 or 1) per MSR3000 Router

HPE X120 1G SFP LC SX Transceiver

JD118B  
 See Configuration  
**NOTE:1, 2**

HPE X120 1G SFP LC LX Transceiver

JD119B  
 See Configuration  
**NOTE:1, 2**

HPE X125 1G SFP LC LH40 1310nm Transceiver

JD061A  
 See Configuration  
**NOTE:1, 2**

HPE X120 1G SFP LC LH40 1550nm Transceiver

JD062A  
 See Configuration  
**NOTE:1, 2**

HPE X125 1G SFP LC LH70 Transceiver

JD063B  
 See Configuration  
**NOTE:1, 2**

HPE X115 100M SFP LC FX Transceiver

JD102B  
 See Configuration  
**NOTE:1, 2**

HPE X110 100M SFP LC LX Transceiver

JD120B

## Configuration

	See Configuration <b>NOTE:1, 2</b>
HPE X120 1G SFP LC LH100 Transceiver	JD103A See Configuration <b>NOTE:1, 2</b>
HPE X120 1G SFP LC BX 10-U Transceiver	JD098B See Configuration <b>NOTE:1, 2</b>
HPE X120 1G SFP LC BX 10-D Transceiver	JD099B See Configuration <b>NOTE:1, 2</b>
HPE X120 1G SFP RJ45 T Transceiver	JD089B

### Configuration Rules:

**Note 1**                    These Transceivers can install directly to JG404A and JG405A  
min=0\ max=2 per enclosure

**Note 2**                    These Transceivers can install directly to JG406A, JG407A, JG408A, JG861A and JG409B  
min=0\ max=1 per enclosure

## Cables

HPE FlexNetwork X260 Mini D-28 to 4-RJ45 0.3m Router Cable	JG263A
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 3m Router Cable	JD509A
HPE FlexNetwork X260 E1 (2) BNC 75 ohm 3m Router Cable	JD175A

## Configuration

HPE FlexNetwork X260 E1 BNC 20m Router Cable	JD514A
HPE FlexNetwork X260 E1 RJ45 BNC 75-120 ohm Conversion Router Cable	JD511A
HPE FlexNetwork X260 2E1 BNC 3m Router Cable	JD643A
HPE FlexNetwork X260 T1 Router Cable	JD518A
HPE FlexNetwork X260 T3/E3 Router Cable	JD531A
HPE FlexNetwork X260 SIC 8AS RJ45 0.28m Router Cable	JD642A
HPE FlexNetwork X260 E1 RJ45 to 2xBNC 75ohm 3m Router Cable	JH294A
HPE FlexNetwork X260 E1 RJ45 120 ohm 30m Router Cable	JC152A
HPE FlexNetwork X260 E1 RJ45 120 ohm 15m Router Cable	JC151A
HPE FlexNetwork X260 E1 RJ45 120 ohm 2m Router Cable	JC156A

### Configuration Rules:

<b>Remarks:</b>	<b>The following cable is used for RJ45 BNC Conversion:</b>	
	HPE FlexNetwork X260 E1 RJ45 BNC 75-120 ohm Conversion Router Cable	JD511A

## Router Enclosure Options

### Antenna Cables

System (std 0 // max 2) User Selection (min 0 // max 2) per SIC Module (JG742B)

HPE MSR 3G RF 2.8m Antenna Cable	JG522A
HPE MSR 3G RF 6m Antenna Cable	JG666A
HPE MSR 3G RF 15m Antenna Cable	JG667A

### SDRAM

User Selection (min 0 // max 1) (default=2GB \ max=4GB) per JG404A, JG405A, JG861A, JG406A, JG407A, JG408A (4GB Max, by replacing existing single 2GB SDRAM)

HPE FlexNetwork X610 4GB DDR3 SDRAM UDIMM Memory	JG530A
<ul style="list-style-type: none"> <li>(Must remove existing 2GB UDIMM to install the 4GB UDIMM)</li> </ul>	

### Compact Flash Card

## Configuration

System (std 0 // max 1 External CF Card) per JG404A, JG405A, JG861A, JG406A, JG407A, JG408A

HPE X600 1G Compact Flash Card JC684A

### External Redundant Power Supplies

JG406A, JG407A, JG408A, JG861A and JG409B only - System (std 0 // max 1) User Selection (min 0 // max 1)

HPE RPS 800 Redundant Power Supply JD183A  
 • Height = 1U See Configuration  
NOTE:1, 2, 3

### Configuration Rules:

**Note 1** These power supplies are supported on the following routers only:

HPE FlexNetwork MSR3024 AC Router	JG406A
HPE FlexNetwork MSR3024 DC Router	JG407A
HPE FlexNetwork MSR3024 PoE Router	JG408A
HPE MSR3012 AC Router	JG409B
HPE FlexNetwork MSR3024 TAA-compliant AC Router	JG861A

**Note 2** Localization required. (See Localization Menu for list.)

**Note 3** JD637A - HPE X290 MSR30 1m RPS Cable is required if power supply is selected.

### Power Cables

System (std 0 // max 1) User Selection (min 0 // max 1) per JD183A

HPE FlexNetwork X290 MSR30 1m RPS Cable JD637A

### Opacity Shield Kit

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

HPE FlexNetwork MSR3012/MSR3024 Opacity Shield Kit JG599A  
**NOTE:** Supported on the HPE MSR3012/MSR3024 Routers (JG406A, JG407A, JG408A, JG409B and JG861A). See Configuration  
NOTE:1

HPE FlexNetwork MSR3044 Opacity Shield Kit JG600A  
**NOTE:** Supported on the HPE MSR3044 Routers (JG405A). See Configuration  
NOTE:1

HPE FlexNetwork MSR3064 Opacity Shield Kit JG601A

## Configuration

### NOTE:

Supported on the HPE MSR3064 Routers (JG404A).

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

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

HPE 12mm x 60mm Tamper Evidence (30) Labels

### NOTE:

Supported on the HPE MSR3012/MSR3024/MSR3044 Routers (JG406A, JG407A, JG408A, JG409B, JG861A, and JG405A).

JG585A

See Configuration

### NOTE:1

HPE 12mm x 60mm Tamper Evidence (100) Labels

### NOTE:

Supported on the HP MSR3064 Routers (JG404A).

JG586A

See Configuration

### NOTE:2

### Configuration Rules:

Note 1 If selected with a CTO Router Solution, Quantity 1 of JG599A#B01 or JG600A#B01 must also be ordered.

Note 2 If selected with a CTO Router Solution, Quantity 1 of JG601A#B01 must also be ordered.

Remarks: Each JG599A or JG600A would use 1 of JG585A.  
Each JG601A would use 1 of JG586A.

## Technical Specifications

### HPE FlexNetwork MSR3012 AC Router (JG409A)

### HPE MSR3012 AC Router (JG409B)

<b>I/O ports and slots</b>	1 HMIM slot 2 SIC slots 3 RJ-45 1000BASE-T ports (IEEE 802.3ab Type 1000BASE-T) 1 SFP fixed Gigabit Ethernet SFP port
<b>Additional ports and slots</b>	1 VPM slot
<b>AP characteristics</b>	<b>Radios (via optional modules)</b> 3G, 4G LTE
<b>Physical characteristics</b>	<b>Dimensions</b> 17.32(w) x 18.9(d) x 1.74(h) in (44 x 48 x 4.42 cm) (1U height) <b>Weight</b> 15.76 lb (7.15 kg)
<b>Memory and processor</b>	RISC, 4 cores @ 1 GHz, 256 MB flash capacity, 1 GB DDR3 SDRAM
<b>Mounting and enclosure</b>	Desktop or can be mounted in a EIA standard 19-inch telco rack when used with the rack-mount kit in the package.
<b>Performance</b>	<b>Throughput</b> up to 2.6 Mpps (64-byte packets) <b>Routing table size</b> 200000 entries (IPv4), 200000 entries (IPv6) <b>Forwarding table size</b> 200000 entries (IPv4), 200000 entries (IPv6)
<b>Environment</b>	<b>Operating temperature</b> 32°F to 113°F (0°C to 45°C) <b>Operating relative humidity</b> 5% to 90%, noncondensing <b>Nonoperating/Storage temperature</b> -40°F to 158°F (-40°C to 70°C) <b>Nonoperating/Storage relative humidity</b> 5% to 90%, noncondensing <b>Altitude</b> up to 16,404 ft (5 km)
<b>Electrical characteristics</b>	<b>Frequency</b> 50/60 Hz <b>Maximum heat dissipation</b> 127 BTU/hr (133.98 kJ/hr) <b>Voltage</b> 100 - 240 VAC, rated <b>Maximum power rating</b> 100 W <b>Notes</b> Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
<b>Reliability</b>	<b>MTBF (years)</b> 52.56
<b>Safety</b>	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1; FDA 21 CFR Subchapter J; AS/NZS 60950-1; GB 4943.1
<b>Emissions</b>	EN 61000-4-11:2004; ANSI C63.4-2009; AS/NZS CISPR 22:2009; CISPR 22 Ed2.0 2008-09; EN 55022:2010; EN 61000-3-3:2008; GB 9254-2008; IEC 61000-3-2 Ed3.0 (2009-02); IEC 61000-3-3 Ed2.0 (2008-06); VCCI V-4/2012.04; CISPR 24 Ed2.0 2010-08; EN 55024:2010; EN 61000-3-2:2006+A1:2009+A2:2009; EN 61000-4-2:2009; EN 61000-4-29:2000; EN 61000-4-3:2006; EN 61000-4-4:2012; EN 61000-4-5:2006; EN 61000-4-6:2009; EN 61000-4-8:2010; ETSI EN 300 386 V1.6.1(2012-09); FCC 47 CFR Part 15 (latest current version); ICES-003 Issue 5; IEC 61000-4-11 Ed2.0 (2004-03); IEC 61000-4-2 Ed2.0 (2008-12); IEC 61000-4-29 Ed1.0 (2000-08); IEC 61000-4-3 Ed3.2 (2010-04); IEC 61000-4-4 Ed3.0 (2012-04); IEC 61000-4-5 Ed2.0 (2005-11); IEC 61000-4-6 Ed3.0 (2008-10); IEC 61000-4-8 Ed2.0 (2009-09); VCCI V-3/2013.04
<b>Telecom</b>	FCC part 68; CS-03

## Technical Specifications

<b>Management</b>	IMC - Intelligent Management Center; command-line interface; limited command-line interface; configuration menu; out-of-band management (RJ-45 Ethernet); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; modem interface; out-of-band management (serial RS-232C or Micro USB); IEEE 802.3 Ethernet MIB
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office

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### HPE FlexNetwork MSR3012 DC Router (JG410A)

<b>I/O ports and slots</b>	1 HMIM slot 2 SIC slots 3 RJ-45 1000BASE-T ports (IEEE 802.3ab Type 1000BASE-T) 1 SFP fixed Gigabit Ethernet SFP port	
<b>Additional ports and slots</b>	1 VPM slot	
<b>AP characteristics</b>	<b>Radios (via optional modules)</b>	3G, 4G LTE
<b>Physical characteristics</b>	<b>Dimensions</b>	17.32(w) x 18.9(d) x 1.74(h) in (44 x 48 x 4.42 cm) (1U height)
	<b>Weight</b>	14.68 lb (6.66 kg)
<b>Memory and processor</b>	RISC, 4 cores @ 1 GHz, 256 MB flash capacity, 1 GB DDR3 SDRAM	
<b>Mounting and enclosure</b>	Desktop or can be mounted in a EIA standard 19-inch telco rack when used with the rack-mount kit in the package.	
<b>Performance</b>	<b>Throughput</b>	up to 2.6 Mpps (64-byte packets)
	<b>Routing table size</b>	200000 entries (IPv4), 200000 entries (IPv6)
	<b>Forwarding table size</b>	200000 entries (IPv4), 200000 entries (IPv6)
<b>Environment</b>	<b>Operating temperature</b>	32°F to 113°F (0°C to 45°C)
	<b>Operating relative humidity</b>	5% to 90%, noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	5% to 90%, noncondensing
<b>Electrical characteristics</b>	<b>Altitude</b>	up to 16,404 ft (5 km)
	<b>Maximum heat dissipation</b>	127 BTU/hr (133.98 kJ/hr)
	<b>Voltage</b>	-36 to -75 VDC, rated
	<b>Maximum power rating</b>	100 W
	<b>Notes</b>	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
<b>Reliability</b>	<b>MTBF (years)</b>	52.56
<b>Safety</b>	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1; FDA 21 CFR Subchapter J; AS/NZS 60950-1; GB 4943.1	
<b>Emissions</b>	EN 61000-4-11:2004; ANSI C63.4-2009; AS/NZS CISPR 22:2009; CISPR 22 Ed2.0 2008-09; EN 55022:2010; EN 61000-3-3:2008; GB 9254-2008; IEC 61000-3-2 Ed3.0 (2009-02); IEC 61000-3-3 Ed2.0 (2008-06); VCCI V-4/2012.04; CISPR 24 Ed2.0 2010-08; EN 55024:2010; EN 61000-3-2:2006+A1:2009+A2:2009; EN 61000-4-2:2009; EN 61000-4-29:2000; EN 61000-4-3:2006; EN	

## Technical Specifications

61000-4-4:2012; EN 61000-4-5:2006; EN 61000-4-6:2009; EN 61000-4-8:2010; ETSI EN 300 386 V1.6.1(2012-09); FCC 47 CFR Part 15 (latest current version); ICES-003 Issue 5; IEC 61000-4-11 Ed2.0 (2004-03); IEC 61000-4-2 Ed2.0 (2008-12); IEC 61000-4-29 Ed1.0 (2000-08); IEC 61000-4-3 Ed3.2 (2010-04); IEC 61000-4-4 Ed3.0 (2012-04); IEC 61000-4-5 Ed2.0 (2005-11); IEC 61000-4-6 Ed3.0 (2008-10); IEC 61000-4-8 Ed2.0 (2009-09); VCCI V-3/2013.04

**Telecom**

FCC part 68; CS-03

**Management**

IMC - Intelligent Management Center; command-line interface; limited command-line interface; configuration menu; out-of-band management (RJ-45 Ethernet); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; modem interface; out-of-band management (serial RS-232C or Micro USB); IEEE 802.3 Ethernet 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

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### HPE FlexNetwork MSR3024 AC Router (JG406A)

**I/O ports and slots**

2 HMIM slots  
 4 SIC slots or 2 DSIC slots  
 3 RJ-45 1000BASE-T ports (IEEE 802.3ab Type 1000BASE-T)  
 1 SFP fixed Gigabit Ethernet SFP port

**Additional ports and slots**

1 VPM slot

**AP characteristics**

**Radios (via optional modules)** 3G, 4G LTE

**Physical characteristics**

**Dimensions** 17.32(w) x 18.9(d) x 1.74(h) in (44 x 48 x 4.42 cm) (1U height)  
**Weight** 17.42 lb (7.9 kg)

**Memory and processor**

RISC, 4 cores @ 1 GHz, 256 MB flash capacity, 2 GB DDR3 SDRAM

**Mounting and enclosure**

Desktop or can be mounted in a EIA standard 19-inch telco rack when used with the rack-mount kit in the package.

**Performance**

**Throughput** up to 2.6 Mpps (64-byte packets)  
**Routing table size** 500000 entries (IPv4), 500000 entries (IPv6)  
**Forwarding table size** 500000 entries (IPv4), 500000 entries (IPv6)

**Environment**

**Operating temperature** 32°F to 113°F (0°C to 45°C)  
**Operating relative humidity** 5% to 90%, noncondensing  
**Nonoperating/Storage temperature** -40°F to 158°F (-40°C to 70°C)  
**Nonoperating/Storage relative humidity** 5% to 90%, noncondensing

**Electrical characteristics**

**Altitude** up to 16,404 ft (5 km)  
**Frequency** 50/60 Hz  
**Maximum heat dissipation** 168 BTU/hr (177.24 kJ/hr)  
**Voltage** 100 - 240 VAC, rated  
**Maximum power rating** 125 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.

**Reliability**

**MTBF (years)** 49.61



## Technical Specifications

<b>Safety</b>	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1; FDA 21 CFR Subchapter J; AS/NZS 60950-1; GB 4943.1
<b>Emissions</b>	EN 61000-4-11:2004; ANSI C63.4-2009; AS/NZS CISPR 22:2009; CISPR 22 Ed2.0 2008-09; EN 55022:2010; EN 61000-3-3:2008; GB 9254-2008; IEC 61000-3-2 Ed3.0 (2009-02); IEC 61000-3-3 Ed2.0 (2008-06); VCCI V-4/2012.04; CISPR 24 Ed2.0 2010-08; EN 55024:2010; EN 61000-3-2:2006+A1:2009+A2:2009; EN 61000-4-2:2009; EN 61000-4-29:2000; EN 61000-4-3:2006; EN 61000-4-4:2012; EN 61000-4-5:2006; EN 61000-4-6:2009; EN 61000-4-8:2010; ETSI EN 300 386 V1.6.1(2012-09); FCC 47 CFR Part 15 (latest current version); ICES-003 Issue 5; IEC 61000-4-11 Ed2.0 (2004-03); IEC 61000-4-2 Ed2.0 (2008-12); IEC 61000-4-29 Ed1.0 (2000-08); IEC 61000-4-3 Ed3.2 (2010-04); IEC 61000-4-4 Ed3.0 (2012-04); IEC 61000-4-5 Ed2.0 (2005-11); IEC 61000-4-6 Ed3.0 (2008-10); IEC 61000-4-8 Ed2.0 (2009-09); VCCI V-3/2013.04
<b>Telecom</b>	FCC part 68; CS-03
<b>Management</b>	IMC - Intelligent Management Center; command-line interface; limited command-line interface; configuration menu; out-of-band management (RJ-45 Ethernet); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; modem interface; out-of-band management (serial RS-232C or Micro USB); IEEE 802.3 Ethernet MIB
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office

### HPE FlexNetwork MSR3024 DC Router (JG407A)

<b>I/O ports and slots</b>	2 HMIM slots 4 SIC slots, or 2 DSIC slots, or a combination 3 RJ-45 1000BASE-T ports (IEEE 802.3ab Type 1000BASE-T) 1 SFP fixed Gigabit Ethernet SFP port	
<b>Additional ports and slots</b>	1 VPM slot	
<b>AP characteristics</b>	<b>Radios (via optional modules)</b>	3G, 4G LTE
<b>Physical characteristics</b>	<b>Dimensions</b>	17.32(w) x 18.9(d) x 1.74(h) in (44 x 48 x 4.42 cm) (1U height)
	<b>Weight</b>	16.14 lb (7.32 kg)
<b>Memory and processor</b>	RISC, 4 cores @ 1 GHz, 256 MB flash capacity, 2 GB DDR3 SDRAM	
<b>Mounting and enclosure</b>	Desktop or can be mounted in a EIA standard 19-inch telco rack when used with the rack-mount kit in the package.	
<b>Performance</b>	<b>Throughput</b>	up to 2.6 Mpps (64-byte packets)
	<b>Routing table size</b>	500000 entries (IPv4), 500000 entries (IPv6)
	<b>Forwarding table size</b>	500000 entries (IPv4), 500000 entries (IPv6)
<b>Environment</b>	<b>Operating temperature</b>	32°F to 113°F (0°C to 45°C)
	<b>Operating relative humidity</b>	5% to 90%, noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	5% to 90%, noncondensing
<b>Electrical characteristics</b>	<b>Altitude</b>	up to 16,404 ft (5 km)
	<b>Maximum heat dissipation</b>	168 BTU/hr (177.24 kJ/hr)
	<b>Voltage</b>	-36 to -75 VDC, rated
	<b>Maximum power rating</b>	125 W
	<b>Notes</b>	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the

## Technical Specifications

infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.

<b>Reliability</b>	<b>MTBF (years)</b>	49.61
<b>Safety</b>	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1; FDA 21 CFR Subchapter J; AS/NZS 60950-1; GB 4943.1	
<b>Emissions</b>	EN 61000-4-11:2004;ANSI C63.4-2009; AS/NZS CISPR 22:2009; CISPR 22 Ed2.0 2008-09; EN 55022:2010; EN 61000-3-3:2008; GB 9254-2008; IEC 61000-3-2 Ed3.0 (2009-02); IEC 61000-3-3 Ed2.0 (2008-06); VCCI V-4/2012.04; CISPR 24 Ed2.0 2010-08; EN 55024:2010; EN 61000-3-2:2006+A1:2009+A2:2009; EN 61000-4-2:2009; EN 61000-4-29:2000; EN 61000-4-3:2006; EN 61000-4-4:2012; EN 61000-4-5:2006; EN 61000-4-6:2009; EN 61000-4-8:2010; ETSI EN 300 386 V1.6.1(2012-09); FCC 47 CFR Part 15 (latest current version); ICES-003 Issue 5; IEC 61000-4-11 Ed2.0 (2004-03); IEC 61000-4-2 Ed2.0 (2008-12); IEC 61000-4-29 Ed1.0 (2000-08); IEC 61000-4-3 Ed3.2 (2010-04); IEC 61000-4-4 Ed3.0 (2012-04); IEC 61000-4-5 Ed2.0 (2005-11); IEC 61000-4-6 Ed3.0 (2008-10); IEC 61000-4-8 Ed2.0 (2009-09); VCCI V-3/2013.04	
<b>Telecom</b>	FCC part 68; CS-03	
<b>Management</b>	IMC - Intelligent Management Center; command-line interface; limited command-line interface; configuration menu; out-of-band management (RJ-45 Ethernet); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; modem interface; out-of-band management (serial RS-232C or Micro USB); IEEE 802.3 Ethernet MIB	
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office	

### HPE FlexNetwork MSR3024 PoE Router (JG408A)

<b>I/O ports and slots</b>	2 HMIM slots 4 SIC slots, or 2 DSIC slots, or a combination 3 RJ-45 1000BASE-T ports (IEEE 802.3ab Type 1000BASE-T) 1 SFP fixed Gigabit Ethernet SFP port	
<b>Additional ports and slots</b>	1 VPM slot	
<b>AP characteristics</b>	<b>Radios (via optional modules)</b>	3G, 4G LTE
<b>Physical characteristics</b>	<b>Dimensions</b>	17.32(w) x 18.9(d) x 1.74(h) in (44 x 48 x 4.42 cm) (1U height)
	<b>Weight</b>	17.57 lb (7.97 kg)
<b>Memory and processor</b>	RISC, 4 cores @ 1 GHz, 256 MB flash capacity, 2 GB DDR3 SDRAM	
<b>Mounting</b>	Desktop or can be mounted in a EIA standard 19-inch telco rack when used with the rack-mount kit in the package.	
<b>Performance</b>	<b>Throughput</b>	up to 2.6 Mpps (64-byte packets)
	<b>Routing table size</b>	500000 entries (IPv4), 500000 entries (IPv6)
	<b>Forwarding table size</b>	500000 entries (IPv4), 500000 entries (IPv6)
<b>Environment</b>	<b>Operating temperature</b>	32°F to 113°F (0°C to 45°C)
	<b>Operating relative humidity</b>	5% to 90%, noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	5% to 90%, noncondensing
	<b>Altitude</b>	up to 16,404 ft (5 km)
<b>Electrical characteristics</b>	<b>Frequency</b>	50/60 Hz
	<b>Maximum heat dissipation</b>	168 BTU/hr (177.24 kJ/hr)

## Technical Specifications

	<b>Voltage</b>	100 - 240 VAC, rated
	<b>Maximum power rating</b>	125 W
	<b>PoE power</b>	275 W PoE+
	<b>Notes</b>	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. PoE Power is the power supplied by the internal power supply, it is dependent on the type and quantity of power supplies and may be supplemented with the use of an External Power Supply (EPS).
<b>Reliability</b>	<b>MTBF (years)</b>	49.61
<b>Safety</b>		UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1; FDA 21 CFR Subchapter J; AS/NZS 60950-1; GB 4943.1
<b>Emissions</b>		EN 61000-4-11:2004;ANSI C63.4-2009; AS/NZS CISPR 22:2009; CISPR 22 Ed2.0 2008-09; EN 55022:2010; EN 61000-3-3:2008; GB 9254-2008; IEC 61000-3-2 Ed3.0 (2009-02); IEC 61000-3-3 Ed2.0 (2008-06); VCCI V-4/2012.04; CISPR 24 Ed2.0 2010-08; EN 55024:2010; EN 61000-3-2:2006+A1:2009+A2:2009; EN 61000-4-2:2009; EN 61000-4-29:2000; EN 61000-4-3:2006; EN 61000-4-4:2012; EN 61000-4-5:2006; EN 61000-4-6:2009; EN 61000-4-8:2010; ETSI EN 300 386 V1.6.1(2012-09); FCC 47 CFR Part 15 (latest current version); ICES-003 Issue 5; IEC 61000-4-11 Ed2.0 (2004-03); IEC 61000-4-2 Ed2.0 (2008-12); IEC 61000-4-29 Ed1.0 (2000-08); IEC 61000-4-3 Ed3.2 (2010-04); IEC 61000-4-4 Ed3.0 (2012-04); IEC 61000-4-5 Ed2.0 (2005-11); IEC 61000-4-6 Ed3.0 (2008-10); IEC 61000-4-8 Ed2.0 (2009-09); VCCI V-3/2013.04
<b>Telecom</b>		FCC part 68; CS-03
<b>Management</b>		IMC - Intelligent Management Center; command-line interface; limited command-line interface; configuration menu; out-of-band management (RJ-45 Ethernet); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; modem interface; out-of-band management (serial RS-232C or Micro USB); IEEE 802.3 Ethernet MIB
<b>Services</b>		Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office

### HPE FlexNetwork MSR3044 Router (JG405A)

<b>I/O ports and slots</b>		4 HMIM slots 4 SIC slots, or 2 DSIC slots, or a combination 3 RJ-45 1000BASE-T ports (IEEE 802.3ab Type 1000BASE-T) 2 SFP fixed Gigabit Ethernet SFP ports
<b>Additional ports and slots</b>		2 VPM slots 2 Power Supply slots
<b>AP characteristics</b>	<b>Radios (via optional modules)</b>	3G, 4G LTE
<b>Physical characteristics</b>	<b>Dimensions</b>	17.32(w) x 18.9(d) x 3.47(h) in (44 x 48 x 8.81 cm) (2U height)
	<b>Weight</b>	27.45 lb (12.45 kg)
<b>Memory and processor</b>		RISC, 4 cores @ 1 GHz, 256 MB flash capacity, 2 GB DDR3 SDRAM
<b>Mounting and enclosure</b>		Desktop or can be mounted in a EIA standard 19-inch telco rack when used with the rack-mount kit in the package.
<b>Performance</b>	<b>Throughput</b>	up to 3.5 Mpps (64-byte packets)
	<b>Routing table size</b>	500000 entries (IPv4), 500000 entries (IPv6)
	<b>Forwarding table size</b>	500000 entries (IPv4), 500000 entries (IPv6)
<b>Environment</b>	<b>Operating temperature</b>	32°F to 113°F (0°C to 45°C)

## Technical Specifications

	<b>Operating relative humidity</b>	5% to 90%, noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	5% to 90%, noncondensing
	<b>Altitude</b>	up to 16,404 ft (5 km)
<b>Electrical characteristics</b>	<b>Frequency</b>	50/60 Hz
	<b>Maximum heat dissipation</b>	172 BTU/hr (181.46 kJ/hr)
	<b>Voltage</b>	100 - 240 VAC, rated -36 to -75 VDC, rated (depending on power supply chosen)
	<b>Maximum power rating</b>	300 W
	<b>PoE power</b>	450 W PoE+
	<b>Notes</b>	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. PoE Power is the power supplied by the internal power supply, it is dependent on the type and quantity of power supplies and may be supplemented with the use of an External Power Supply (EPS). No default power supply is included in the chassis; a minimum of one/maximum of four power supplies should be ordered.
	<b>Reliability</b>	<b>MTBF (years)</b>
<b>Safety</b>	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1; FDA 21 CFR Subchapter J; AS/NZS 60950-1; GB 4943.1	
<b>Emissions</b>	EN 61000-4-11:2004; ANSI C63.4-2009; AS/NZS CISPR 22:2009; CISPR 22 Ed2.0 2008-09; EN 55022:2010; EN 61000-3-3:2008; GB 9254-2008; IEC 61000-3-2 Ed3.0 (2009-02); IEC 61000-3-3 Ed2.0 (2008-06); VCCI V-4/2012.04; CISPR 24 Ed2.0 2010-08; EN 55024:2010; EN 61000-3-2:2006+A1:2009+A2:2009; EN 61000-4-2:2009; EN 61000-4-29:2000; EN 61000-4-3:2006; EN 61000-4-4:2012; EN 61000-4-5:2006; EN 61000-4-6:2009; EN 61000-4-8:2010; ETSI EN 300 386 V1.6.1(2012-09); FCC 47 CFR Part 15 (latest current version); ICES-003 Issue 5; IEC 61000-4-11 Ed2.0 (2004-03); IEC 61000-4-2 Ed2.0 (2008-12); IEC 61000-4-29 Ed1.0 (2000-08); IEC 61000-4-3 Ed3.2 (2010-04); IEC 61000-4-4 Ed3.0 (2012-04); IEC 61000-4-5 Ed2.0 (2005-11); IEC 61000-4-6 Ed3.0 (2008-10); IEC 61000-4-8 Ed2.0 (2009-09); VCCI V-3/2013.04	
<b>Telecom</b>	FCC part 68; CS-03	
<b>Management</b>	IMC - Intelligent Management Center; command-line interface; limited command-line interface; configuration menu; out-of-band management (RJ-45 Ethernet); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; modem interface; out-of-band management (serial RS-232C or Micro USB); IEEE 802.3 Ethernet MIB	
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office	

### HPE FlexNetwork MSR3064 Router (JG404A)

<b>I/O ports and slots</b>	6 HMIM slots 4 SIC slots or 2 DSIC slots 3 RJ-45 1000BASE-T ports (IEEE 802.3ab Type 1000BASE-T) 2 SFP fixed Gigabit Ethernet SFP ports
<b>Additional ports and slots</b>	2 VPM slots 2 Power Supply slots

## Technical Specifications

<b>AP characteristics</b>	<b>Radios (via optional modules)</b>	3G, 4G LTE
<b>Physical characteristics</b>	<b>Dimensions</b>	17.32(w) x 18.9(d) x 5.31(h) in (44 x 48 x 13.5 cm) (3U height)
	<b>Weight</b>	36.49 lb (16.55 kg)
<b>Memory and processor</b>	RISC, 6 cores @ 1.3 GHz, 256 MB flash capacity, 2 GB DDR3 SDRAM	
<b>Mounting and enclosure</b>	Desktop or can be mounted in a EIA standard 19-inch telco rack when used with the rack-mount kit in the package.	
<b>Performance</b>	<b>Throughput</b>	up to 5 Mpps (64-byte packets)
	<b>Routing table size</b>	500000 entries (IPv4), 500000 entries (IPv6)
	<b>Forwarding table size</b>	500000 entries (IPv4), 500000 entries (IPv6)
<b>Environment</b>	<b>Operating temperature</b>	32°F to 113°F (0°C to 45°C)
	<b>Operating relative humidity</b>	5% to 90%, noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	5% to 90%, noncondensing
	<b>Altitude</b>	up to 16,404 ft (5 km)
<b>Electrical characteristics</b>	<b>Frequency</b>	50/60 Hz
	<b>Maximum heat dissipation</b>	218 BTU/hr (229.99 kJ/hr)
	<b>Voltage</b>	100 - 240 VAC, rated -36 to -75 VDC, rated (depending on power supply chosen)
	<b>Maximum power rating</b>	300 W
	<b>PoE power</b>	450 W PoE+
	<b>Notes</b>	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. PoE Power is the power supplied by the internal power supply, it is dependent on the type and quantity of power supplies and may be supplemented with the use of a External Power Supply (EPS). No default power supply is included in the chassis; a minimum of one/maximum of four power supplies should be ordered.
	<b>Reliability</b>	<b>MTBF (years)</b>
<b>Safety</b>	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1; FDA 21 CFR Subchapter J; AS/NZS 60950-1; GB 4943.1	
<b>Emissions</b>	EN 61000-4-11:2004;ANSI C63.4-2009; AS/NZS CISPR 22:2009; CISPR 22 Ed2.0 2008-09; EN 55022:2010; EN 61000-3-3:2008; GB 9254-2008; IEC 61000-3-2 Ed3.0 (2009-02); IEC 61000-3-3 Ed2.0 (2008-06); VCCI V-4/2012.04; CISPR 24 Ed2.0 2010-08; EN 55024:2010; EN 61000-3-2:2006+A1:2009+A2:2009; EN 61000-4-2:2009; EN 61000-4-29:2000; EN 61000-4-3:2006; EN 61000-4-4:2012; EN 61000-4-5:2006; EN 61000-4-6:2009; EN 61000-4-8:2010; ETSI EN 300 386 V1.6.1(2012-09); FCC 47 CFR Part 15 (latest current version); ICES-003 Issue 5; IEC 61000-4-11 Ed2.0 (2004-03); IEC 61000-4-2 Ed2.0 (2008-12); IEC 61000-4-29 Ed1.0 (2000-08); IEC 61000-4-3 Ed3.2 (2010-04); IEC 61000-4-4 Ed3.0 (2012-04); IEC 61000-4-5 Ed2.0 (2005-11); IEC 61000-4-6 Ed3.0 (2008-10); IEC 61000-4-8 Ed2.0 (2009-09); VCCI V-3/2013.04	
<b>Telecom Management</b>	FCC part 68; CS-03 IMC - Intelligent Management Center; command-line interface; limited command-line interface; configuration menu; out-of-band management (RJ-45 Ethernet); SNMP Manager; Telnet; RMON1; FTP;	

## Technical Specifications

in-line and out-of-band; modem interface; out-of-band management (serial RS-232C or Micro USB); IEEE 802.3 Ethernet 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

### Standards and protocols BGP

(applies to all products in series)

RFC 1163 Border Gateway Protocol (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 1965 BGP-4 confederations  
 RFC 1997 BGP Communities Attribute  
 RFC 2439 BGP Route Flap Damping  
 RFC 2547 BGP/MPLS VPNs  
 RFC 2796 BGP Route Reflection  
 RFC 2842 Capability Advertisement with BGP-4  
 RFC 2858 BGP-4 Multi-Protocol Extensions  
 RFC 2918 Route Refresh Capability  
 RFC 3065 Autonomous System Confederations for GP  
 RFC 3107 Support BGP carry Label for MPLS  
 RFC 3392 Capabilities Advertisement with BGP-4  
 RFC 4271 A Border Gateway Protocol 4 (BGP-4)  
 RFC 4273 Definitions of Managed Objects for BGP-4  
 RFC 4274 BGP-4 Protocol Analysis  
 RFC 4275 BGP-4 MIB Implementation Survey  
 RFC 4276 BGP-4 Implementation Report  
 RFC 4277 Experience with the BGP-4 Protocol  
 RFC 4360 BGP Extended Communities Attribute  
 RFC 4456 BGP Route Reflection: An Alternative to Full Mesh Internal BGP (IBGP)  
 RFC 4724 Graceful Restart Mechanism for BGP  
 RFC 4760 Multiprotocol Extensions for BGP-4  
 RFC1998 An Application of the BGP Community Attribute in Multi-home Routing

### 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 1591 DNS (client)  
 RFC 1902 (SNMPv2)  
 RFC 1908 (SNMP v1/2 Coexistence)  
 RFC 1945 Hypertext Transfer Protocol -- HTTP/1.0

RFC 2327 SDP: Session Description Protocol  
 RFC 2338 VRRP  
 RFC 2344 Reverse Tunneling for Mobile IP  
 RFC 2358 Definitions of Managed Objects for the Ethernet-like Interface Types  
 RFC 2364 PPP Over AAL5  
 RFC 2365 Administratively Scoped IP Multicast  
 RFC 2373 IP Version 6 Addressing Architecture  
 RFC 2374 An IPv6 Aggregatable Global Unicast Address Format  
 RFC 2375 IPv6 Multicast Address Assignments  
 RFC 2385 Protection of BGP Sessions via the TCP MD5 Signature Option  
 RFC 2427 Multiprotocol Interconnect over Frame Relay  
 RFC 2428 FTP Extensions for IPv6 and NATs  
 RFC 2433 Microsoft PPP CHAP (Challenge Handshake Authentication Protocol) Extensions  
 RFC 2451 The ESP CBC-Mode Cipher Algorithms  
 RFC 2452 IP Version 6 Management Information Base for the Transmission Control Protocol  
 RFC 2453 RIPv2  
 RFC 2454 IP Version 6 Management Information Base for the User Datagram Protocol  
 RFC 2461 Neighbor Discovery for IP Version 6 (IPv6)  
 RFC 2462 IPv6 Stateless Address Autoconfiguration  
 RFC 2570 Introduction to Version 3 of the Internet-standard Network Management Framework  
 RFC 2581 TCP Congestion Control  
 RFC 2597 Assured Forwarding PHB Group  
 RFC 2598 An Expedited Forwarding PHB  
 RFC 2615 PPP over SONET/SDH (Synchronous Optical Network/Synchronous Digital Hierarchy)  
 RFC 2616 HTTP Compatibility v1.1  
 RFC 2617 HTTP Authentication: Basic and Digest Access Authentication  
 RFC 2618 RADIUS Authentication Client MIB  
 RFC 2620 RADIUS Accounting Client MIB  
 RFC 2644 Changing the Default for Directed Broadcasts in Routers  
 RFC 2661 L2TP  
 RFC 2663 NAT Terminology and Considerations  
 RFC 2665 Definitions of Managed Objects for the Ethernet-like Interface Types  
 RFC 2668 Definitions of Managed Objects for IEEE 802.3 Medium Attachment Units (MAUs)  
 RFC 2675 IPv6 Jumbograms  
 RFC 2684 Multiprotocol Encapsulation over ATM

## Technical Specifications

RFC 2271 Framework	Adaptation Layer 5
RFC 2573 (SNMPv3 Applications)	RFC 2685 Virtual Private Networks Identifier
RFC 2576 (Coexistence between SNMP V1, V2, V3)	RFC 2686 The Multi-Class Extension to Multi-Link PPP
RFC 2578-2580 SMIv2	RFC 2694 DNS extensions to Network Address Translators (DNS_ALG)
RFC 2579 (SMIv2 Text Conventions)	RFC 2698 A Two Rate Three Color Marker
RFC 2580 (SMIv2 Conformance)	RFC 2702 Requirements for Traffic Engineering Over MPLS
RFC 3416 (SNMP Protocol Operations v2)	RFC 2711 IPv6 Router Alert Option
RFC 3417 (SNMP Transport Mappings)	RFC 2716 PPP EAP TLS Authentication Protocol
<b>General Protocols</b>	RFC 2747 RSVP Cryptographic Authentication
RFC 2385 BGP Session Protection via TCP MD5	RFC 2763 Dynamic Name-to-System ID mapping
RFC 1027 Proxy ARP	RFC 2784 Generic Routing Encapsulation (GRE)
RFC 1034 Domain names - concepts and facilities	RFC 2787 Definitions of Managed Objects for the Virtual Router Redundancy Protocol
RFC 1035 Domain names - implementation and specification	RFC 2827 Network Ingress Filtering: Defeating Denial of Service Attacks Which Employ IP Source Address Spoofing
RFC 1048 BOOTP (Bootstrap Protocol) vendor information extensions	RFC 2833 RTP Payload for DTMF Digits, Telephony Tones and Telephony Signals
RFC 1054 Host extensions for IP multicasting	RFC 2865 Remote Authentication Dial In User Service (RADIUS)
RFC 1058 RIPv1	RFC 2866 RADIUS Accounting
RFC 1059 Network Time Protocol (version 1) specification and implementation	RFC 2868 RADIUS Attributes for Tunnel Protocol Support
RFC 1060 Assigned numbers	RFC 2869 RADIUS Extensions
RFC 1063 IP MTU (Maximum Transmission Unit) discovery options	RFC 2884 Performance Evaluation of Explicit Congestion Notification (ECN) in IP Networks.
RFC 1071 Computing the Internet Checksum	RFC 2894 Router Renumbering for IPv6
RFC 1072 TCP extensions for long-delay paths	RFC 2917 A Core MPLS IP VPN Architecture
RFC 1079 Telnet terminal speed option	RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations
RFC 1084 BOOTP (Bootstrap Protocol) vendor information extensions	RFC 2961 RSVP Refresh Overhead Reduction Extensions
RFC 1091 Telnet Terminal-Type Option	RFC 2963 A Rate Adaptive Shaper for Differentiated Services
RFC 1093 NSFNET routing architecture	RFC 2965 HTTP State Management Mechanism
RFC 1101 DNS encoding of network names and other types	RFC 2966 Domain-wide Prefix Distribution with Two-Level IS-IS
RFC 1119 Network Time Protocol (version 2) specification and implementation	RFC 2973 IS-IS Mesh Groups
RFC 1122 Requirements for Internet Hosts - Communication Layers	RFC 2976 The SIP INFO Method
RFC 1141 Incremental updating of the Internet checksum	RFC 2993 Architectural Implications of NAT
RFC 1142 OSI IS-IS Intra-domain Routing Protocol	RFC 3011 The IPv4 Subnet Selection Option for DHCP
RFC 1164 Application of the Border Gateway Protocol in the Internet	RFC 3022 Traditional IP Network Address Translator (Traditional NAT)
RFC 1166 Internet address used by Internet Protocol (IP)	RFC 3024 Reverse Tunneling for Mobile IP, revised
RFC 1171 Point-to-Point Protocol for the transmission of multi-protocol datagrams over Point-to-Point links	RFC 3025 Mobile IP Vendor/Organization-Specific Extensions
RFC 1172 Point-to-Point Protocol (PPP) initial configuration options	RFC 3027 Protocol Complications with the IP Network Address Translator
RFC 1185 TCP Extension for High-Speed Paths	RFC 3031 Multiprotocol Label Switching Architecture
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)	

## Technical Specifications

RFC 1265 BGP Protocol Analysis  
RFC 1266 Experience with the BGP Protocol  
RFC 1268 Application of the Border Gateway Protocol in the Internet  
RFC 1271 Remote Network Monitoring Management Information Base  
RFC 1284 Definitions of Managed Objects for the Ethernetlike Interface Types  
RFC 1286 Definitions of Managed Objects for Bridges  
RFC 1294 Multiprotocol Interconnect over Frame Relay  
RFC 1305 NTPv3 (IPv4 only)  
RFC 1321 The MD5 Message-Digest Algorithm  
RFC 1323 TCP Extensions for High Performance  
RFC 1331 The Point-to-Point Protocol (PPP) for the Transmission of Multi-protocol Datagrams over Point-to-Point Links  
RFC 1332 The PPP Internet Protocol Control Protocol (IPCP)  
RFC 1333 PPP Link Quality Monitoring  
RFC 1334 PPP Authentication Protocols  
RFC 1349 Type of Service  
RFC 1350 TFTP Protocol (revision 2)  
RFC 1364 BGP OSPF Interaction  
RFC 1370 Applicability Statement for OSPF  
RFC 1377 The PPP OSI Network Layer Control Protocol (OSINLCP)  
RFC 1393 Traceroute Using an IP Option  
RFC 1395 BOOTP (Bootstrap Protocol) Vendor Information Extensions  
RFC 1398 Definitions of Managed Objects for the Ethernet-Like Interface Types  
RFC 1403 BGP OSPF Interaction  
RFC 1444 Conformance Statements for version 2 of the Simple Network Management Protocol (SNMPv2)  
RFC 1449 Transport Mappings for version 2 of the Simple Network Management Protocol (SNMPv2)  
RFC 1471 The Definitions of Managed Objects for the Link Control Protocol of the Point-to-Point Protocol  
RFC 1473 The Definitions of Managed Objects for the IP Network Control Protocol of the Point-to-Point Protocol  
RFC 1483 Multiprotocol Encapsulation over ATM Adaptation Layer 5  
RFC 1490 Multiprotocol Interconnect over Frame Relay  
RFC 1497 BOOTP (Bootstrap Protocol) Vendor Information Extensions  
RFC 1519 CIDR  
RFC 1531 Dynamic Host Configuration Protocol  
RFC 1532 Clarifications and Extensions for the Bootstrap Protocol  
RFC 1533 DHCP Options and BOOTP Vendor

### IP multicast

RFC 1112 IGMP  
RFC 2362 PIM Sparse Mode  
RFC 2710 Multicast Listener Discovery (MLD) for IPv6  
RFC 2934 Protocol Independent Multicast MIB for IPv4  
RFC 3376 IGMPv3  
RFC 3376 IGMPv3 (host joins only)  
RFC 5059 Bootstrap Router (BSR) Mechanism for Protocol Independent Multicast (PIM)

### IPv6

RFC 2080 RIPng for IPv6  
RFC 2460 IPv6 Specification  
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 2740 OSPFv3 for IPv6  
RFC 2893 Transition Mechanisms for IPv6 Hosts and Routers  
RFC 3056 Connection of IPv6 Domains via IPv4 Clouds  
RFC 3162 RADIUS and IPv6  
RFC 3315 DHCPv6 (client and relay)  
RFC 5340 OSPF for IPv6

### MIBs

RFC 1213 MIB II  
RFC 1493 Bridge MIB  
RFC 1724 RIPv2 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 2096 IP Forwarding Table MIB  
RFC 2233 Interfaces MIB  
RFC 2273 SNMP-NOTIFICATION-MIB  
RFC 2571 SNMP Framework MIB  
RFC 2572 SNMP-MPD MIB  
RFC 2573 SNMP-Notification MIB  
RFC 2574 SNMP USM MIB  
RFC 2674 802.1p and IEEE 802.1Q Bridge MIB  
RFC 2737 Entity MIB (Version 2)  
RFC 2863 The Interfaces Group MIB  
RFC 3813 MPLS LSR MIB

### Network management

IEEE 802.1D (STP)  
RFC 1098 Simple Network Management Protocol (SNMP)  
RFC 1158 Management Information Base for



## Technical Specifications

Extensions	network management of TCP/IP-based internets:
RFC 1534 Interoperation Between DHCP and BOOTP	MIB-II
RFC 1541 Dynamic Host Configuration Protocol	RFC 1212 Concise MIB definitions
RFC 1542 BOOTP Extensions	RFC 1215 Convention for defining traps for use with the SNMP
RFC 1542 Clarifications and Extensions for the Bootstrap Protocol	RFC 1389 RIPv2 MIB Extension
RFC 1548 The Point-to-Point Protocol (PPP)	RFC 1448 Protocol Operations for version 2 of the Simple Network Management Protocol (SNMPv2)
RFC 1549 PPP in HDLC Framing	RFC 1450 Management Information Base (MIB) for version 2 of the Simple Network Management Protocol (SNMPv2)
RFC 1570 PPP LCP (Point-to-Point Protocol Link Control Protocol) Extensions	RFC 1902 Structure of Management Information for Version 2 of the Simple Network Management Protocol (SNMPv2)
RFC 1577 Classical IP and ARP over ATM	RFC 1903 SNMPv2 Textual Conventions
RFC 1597 Address Allocation for Private Internets	RFC 1904 SNMPv2 Conformance
RFC 1618 PPP over ISDN	RFC 1905 SNMPv2 Protocol Operations
RFC 1619 PPP over SONET/SDH (Synchronous Optical Network/Synchronous Digital Hierarchy)	RFC 1906 SNMPv2 Transport Mappings
RFC 1624 Incremental Internet Checksum	RFC 1908 Coexistence between Version 1 and Version 2 of the Internet-standard Network Management Framework
RFC 1631 NAT	RFC 1918 Private Internet Address Allocation
RFC 1650 Definitions of Managed Objects for the Ethernet-like Interface Types using SMIv2	RFC 2037 Entity MIB using SMIv2
RFC 1661 The Point-to-Point Protocol (PPP)	RFC 2261 An Architecture for Describing SNMP Management Frameworks
RFC 1662 PPP in HDLC-like Framing	RFC 2262 Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
RFC 1700 Assigned Numbers	RFC 2263 SNMPv3 Applications
RFC 1701 Generic Routing Encapsulation	RFC 2264 User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
RFC 1702 Generic Routing Encapsulation over IPv4 networks	RFC 2265 View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
RFC 1717 The PPP Multilink Protocol (MP)	RFC 2272 SNMPv3 Management Protocol
RFC 1721 RIP-2 Analysis	RFC 2273 SNMPv3 Applications
RFC 1722 RIP-2 Applicability	RFC 2274 USM for SNMPv3
RFC 1723 RIP v2	RFC 2275 VACM for SNMPv3
RFC 1724 RIP Version 2 MIB Extension	RFC 2575 SNMPv3 View-based Access Control Model (VACM)
RFC 1757 Remote Network Monitoring Management Information Base	RFC 3164 BSD syslog Protocol
RFC 1777 Lightweight Directory Access Protocol	RFC 3411 An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
RFC 1812 IPv4 Routing	RFC 3412 Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
RFC 1825 Security Architecture for the Internet Protocol	RFC 3413 Simple Network Management Protocol (SNMP) Applications
RFC 1826 IP Authentication Header	RFC 3414 SNMPv3 User-based Security Model (USM)
RFC 1827 IP Encapsulating Security Payload (ESP)	RFC 3415 View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
RFC 1829 The ESP DES-CBC Transform	RFC 3418 Management Information Base (MIB)
RFC 1877 PPP Internet Protocol Control Protocol Extensions for Name Server Addresses	
RFC 1884 IP Version 6 Addressing Architecture	
RFC 1885 Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification	
RFC 1886 DNS Extensions to support IP version 6	
RFC 1889 RTP (Real-Time Protocol): A Transport Protocol for Real-Time Applications. Audio-Video Transport Working Group	
RFC 1933 Transition Mechanisms for IPv6 Hosts and Routers	
RFC 1945 Hypertext Transfer Protocol -- HTTP/1.0	
RFC 1962 The PPP Compression Control Protocol	

## Technical Specifications

(CCP)	for the Simple Network Management Protocol (SNMP)
RFC 1966 BGP Route Reflection An alternative to full mesh IBGP	
RFC 1970 Neighbor Discovery for IP Version 6 (IPv6)	<b>OSPF</b>
RFC 1971 IPv6 Stateless Address Autoconfiguration	RFC 1245 OSPF protocol analysis
RFC 1972 A Method for the Transmission of IPv6 Packets over Ethernet Networks	RFC 1246 Experience with OSPF
RFC 1981 Path MTU Discovery for IP version 6	RFC 1583 OSPFv2
RFC 1982 Serial Number Arithmetic	RFC 1587 OSPF NSSA
RFC 1989 PPP Link Quality Monitoring	RFC 1765 OSPF Database Overflow
RFC 1990 The PPP Multilink Protocol (MP)	RFC 1850 OSPFv2 Management Information Base (MIB), traps
RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP)	RFC 2328 OSPFv2
RFC 2001 TCP Slow Start, Congestion Avoidance, Fast Retransmit, and Fast Recovery Algorithms	RFC 2370 OSPF Opaque LSA Option
RFC 2002 IP Mobility Support	RFC 3101 OSPF NSSA
RFC 2003 IP Encapsulation within IP	<b>QoS/CoS</b>
RFC 2011 SNMPv2 Management Information Base for the Internet Protocol using SMIv2	IEEE 802.1p (CoS)
RFC 2012 SNMPv2 Management Information Base for the Transmission Control Protocol using SMIv2	RFC 2474 DS Field in the IPv4 and IPv6 Headers
RFC 2013 SNMPv2 Management Information Base for the User Datagram Protocol using SMIv2	RFC 2475 DiffServ Architecture
RFC 2018 TCP Selective Acknowledgement Options	RFC 2597 DiffServ Assured Forwarding (AF)
RFC 2021 Remote Network Monitoring Management Information Base Version 2 using SMIv2	RFC 2598 DiffServ Expedited Forwarding (EF)
RFC 2073 An IPv6 Provider-Based Unicast Address Format	RFC 2697 A Single Rate Three Color Marker
RFC 2082 RIP-2 MD5 Authentication	RFC 3168 The Addition of Explicit Congestion Notification (ECN) to IP
RFC 2091 Triggered Extensions to RIP to Support Demand Circuits	RFC 3247 Supplemental Information for the New Definition of the EF PHB (Expedited Forwarding Per-Hop Behavior)
RFC 2104 HMAC: Keyed-Hashing for Message Authentication	RFC 3260 New Terminology and Clarifications for DiffServ
RFC 2131 DHCP	<b>Security</b>
RFC 2132 DHCP Options and BOOTP Vendor Extensions	IEEE 802.1X Port Based Network Access Control
RFC 2136 Dynamic Updates in the Domain Name System (DNS UPDATE)	RFC 2082 RIP-2 MD5 Authentication
RFC 2138 Remote Authentication Dial In User Service (RADIUS)	RFC 2104 Keyed-Hashing for Message Authentication
RFC 2205 Resource ReSerVation Protocol (RSVP) -- Version 1 Functional Specification	RFC 2138 RADIUS Authentication
RFC 2209 Resource ReSerVation Protocol (RSVP) -- Version 1 Message Processing Rules	RFC 2139 RADIUS Accounting
RFC 2210 Use of RSVP (Resource Reservation Protocol) in Integrated Services	RFC 2408 Internet Security Association and Key Management Protocol (ISAKMP)
RFC 2225 Classical IP and ARP over ATM	RFC 2409 The Internet Key Exchange (IKE)
RFC 2236 IGMP Snooping	RFC 2412 The OAKLEY Key Determination Protocol
RFC 2246 The TLS Protocol Version 1.0	RFC 2459 Internet X.509 Public Key Infrastructure Certificate and CRL Profile
RFC 2251 Lightweight Directory Access Protocol (v3)	RFC 2818 HTTP Over TLS
RFC 2252 Lightweight Directory Access Protocol	RFC 2865 RADIUS Authentication
	RFC 2866 RADIUS Accounting
	RFC 3579 RADIUS Support For Extensible Authentication Protocol (EAP)
	RFC 3580 IEEE 802.1X Remote Authentication Dial In User Service (RADIUS) Usage Guidelines
	VPN
	RFC 1828 IP Authentication using Keyed MD5
	RFC 1853 IP in IP Tunneling

## Technical Specifications

(v3): Attribute Syntax Definitions	RFC 2401 Security Architecture for the Internet Protocol
RFC 2283 MBGP	RFC 2402 IP Authentication Header
RFC 2292 Advanced Sockets API for IPv6	RFC 2403 The Use of HMAC-MD5-96 within ESP and AH
RFC 2309 Recommendations on queue management and congestion avoidance in the Internet	RFC 2404 The Use of HMAC-SHA-1-96 within ESP and AH
RFC 2463 Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification	RFC 2405 The ESP DES-CBC Cipher Algorithm With Explicit IV
RFC 2464 Transmission of IPv6 Packets over Ethernet Networks	RFC 2406 IP Encapsulating Security Payload (ESP)
RFC 2465 Management Information Base for IP Version 6: Textual Conventions and General Group	RFC 2407 The Internet IP Security Domain of Interpretation for ISAKMP
RFC 2466 Management Information Base for IP Version 6: ICMPv6 Group	RFC 2410 The NULL Encryption Algorithm and Its Use With IPsec
RFC 2472 IP Version 6 over PPP	RFC 2411 IP Security Document Roadmap
RFC 2474 Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers	RFC 3948 - UDP Encapsulation of IPsec ESP Packets
RFC 2507 IP Header Compression	RFC 4301 - Security Architecture for the Internet Protocol
RFC 2508 Compressing IP/UDP/RTP Headers for Low-Speed Serial Links	RFC 4302 - IP Authentication Header (AH)
RFC 2509 IP Header Compression over PPP	RFC 4303 - IP Encapsulating Security Payload (ESP)
RFC 2510 Internet X.509 Public Key Infrastructure Certificate Management Protocols	RFC 4305 - Cryptographic Algorithm Implementation Requirements for ESP and AH
RFC 2516 A Method for Transmitting PPP Over Ethernet (PPPoE)	
RFC 2519 A Framework for Inter-Domain Route Aggregation	
RFC 2529 Transmission of IPv6 over IPv4 Domains without Explicit Tunnels	
RFC 2543 SIP: Session Initiation Protocol	
RFC 2548 (MS-RAS-Vendor only)	
RFC 2553 Basic Socket Interface Extensions for IPv6	

## Accessories

### HPE FlexNetwork MSR3000 Router Series accessories

#### Transceivers

HPE X115 100M SFP LC FX Transceiver	JD102B
HPE X110 100M SFP LC LX Transceiver	JD120B
HPE X110 100M SFP LC LH40 Transceiver	JD090A
HPE X110 100M SFP LC LH80 Transceiver	JD091A
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 X120 1G SFP RJ45 T Transceiver	JD089B

#### 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 Auxiliary Router Cable	JD508A
HPE FlexNetwork X260 E1 RJ45 3m Router Cable	JD509A
HPE FlexNetwork X260 E1 RJ45 20m Router Cable	JD517A
HPE FlexNetwork X260 E1 (2) BNC 75 ohm 3m Router Cable	JD175A
HPE FlexNetwork X260 E1 BNC 20m Router Cable	JD514A
HPE FlexNetwork X260 E1 RJ45 BNC 75-120 ohm Conversion Router Cable	JD511A
HPE FlexNetwork X260 2E1 BNC 3m Router Cable	JD643A
HPE FlexNetwork X260 8E1 BNC 75 ohm 3m Router Cable	JD512A
HPE FlexNetwork X260 T1 Router Cable	JD518A
HPE FlexNetwork X260 SIC 8AS RJ45 0.28m Router Cable	JD642A
HPE FlexNetwork X260 Mini D-28 to 4-RJ45 0.3m Router Cable	JG263A
HPE FlexNetwork X260 T3/E3 Router Cable	JD531A
HPE FlexNetwork X260 E1 RJ45 to 2xBNC 75ohm 3m Router Cable	JH294A

#### Power Supply

HPE FlexNetwork X351 300W 100-240VDC to 12VDC Power Supply	JG527A
HPE FlexNetwork X351 300W 48-60VDC to 12VDC Power Supply	JG528A
HPE RPS 800 Redundant Power Supply	JD183A

#### License

HPE IPS Activation for MSR3000 E-LTU	JH224AAE
HPE DV Essential IPS Filter Service for MSR3000 1yr E-LTU	JH228AAE

## Accessories

### Router Modules

HPE FlexNetwork MSR 1-port E1/CE1/PRI SIC Module	JG604A
HPE FlexNetwork MSR 9-port 10/100 DSIC Module	JD574B
HPE FlexNetwork MSR 4-port 10/100 SIC Module	JD573B
HPE FlexNetwork MSR 4-port Gig-T Switch SIC Module	JG739A
HPE FlexNetwork MSR 4-port Gig-T PoE Switch SIC Module	JG740A
HPE FlexNetwork MSR 1-port GbE Combo SIC Module	JG738A
HPE FlexNetwork MSR 2-port FXO SIC Module	JD558A
HPE FlexNetwork MSR 2-port FXS SIC Module	JD560A
HPE FlexNetwork MSR 2 FXS +1 FXO Voice Interface SIC Module	JD632A
HPE FlexNetwork MSR 4-port FXS/1-port FXO DSIC Module	JG189A
HPE FlexNetwork MSR 1-port Fractional E1 SIC Module	JD634B
HPE FlexNetwork MSR 2-port Fractional E1 SIC Module	JF842A
HPE FlexNetwork MSR 1-port Fractional SIC Module	JD538A
HPE FlexNetwork MSR 1-port Enhanced Serial SIC Module	JD557A
HPE FlexNetwork MSR 2-port Enhanced Sync/Async Serial SIC Module	JG736A
HPE FlexNetwork MSR 4-port Enhanced Sync/Async Serial SIC Module	JG737A
HPE FlexNetwork MSR 1-port ISDN S/T SIC Module	JD571A
HPE FlexNetwork 8-port Asynchronous Serial Interface SIC Router Module	JF281A
HPE FlexNetwork MSR 16-port Async Serial SIC Module	JG186A
HPE FlexNetwork MSR 1-port 8-wire G.SHDSL (RJ45) DSIC Module	JG191A
HPE Flex Network MSR 4G LTE SIC Module for LTE 700/1700/2100 MHz CDMA UMTS/HSPA+/HSPA/EDGE/GPRS/GSM	JG742B
HP MSR 4G LTE SIC Module for ATT/LTE 700/1700/2100 MHz and UMTS/HSPA+/HSPA/EDGE/GRPS/GSM	JG743A
HPE FlexNetwork MSR 1U HMIM Adapter Module	JG416A
HPE FlexNetwork MSR 0.5U HMIM Adapter Module	JG415A
HPE FlexNetwork MSR 1-port E1 Voice HMIM Module	JG429A
HPE FlexNetwork MSR 1-port T1 Voice HMIM Module	JG430A
HPE FlexNetwork MSR 2-port E1 Voice HMIM Module	JG431A
HPE FlexNetwork MSR 2-port T1 Voice HMIM Module	JG432A
HPE FlexNetwork MSR 4-port FXS HMIM Module	JG446A
HPE FlexNetwork MSR 4-port FXO HMIM Module	JG447A
HPE FlexNetwork MSR 4-port E and M HMIM Module	JG448A
HPE FlexNetwork MSR 16-port FXS HMIM Module	JG434A
HPE FlexNetwork MSR 4-port Enhanced Sync/Async Serial HMIM Module	JG442A
HPE FlexNetwork MSR 8-port Enhanced Sync/Async Serial HMIM Module	JG443A
HPE FlexNetwork MSR 1-port Clear Channel T3 HMIM Module	JH449A
HPE FlexNetwork MSR 1-port OC-3c/STM 1c POS HMIM Module	JG438A
HPE FlexNetwork MSR 2-port Gig-T HMIM Module	JG420A
HPE FlexNetwork MSR 4-port Gig-T HMIM Module	JG421A
HPE FlexNetwork MSR 8-port Gig-T HMIM Module	JG422A
HPE FlexNetwork MSR 2-port 1000BASE-X HMIM Module	JG423A
HPE FlexNetwork MSR 4-port 1000BASE-X HMIM Module	JG424A
HPE FlexNetwork MSR 8-port 1000BASE-X HMIM Module	JG425A
HPE FlexNetwork MSR 24-port Gig-T Switch HMIM Module	JG426A
HPE FlexNetwork MSR 24-port Gig-T PoE Switch HMIM Module	JG427A
HPE FlexNetwork MSR 8-port 10/100/1000BASE-T/2-port 1000BASE-X (Combo) Switch HMIM Module	JG741A
HPE FlexNetwork MSR 1-port OC-3/STM-1 CPOS HMIM Module	JG428A
HPE FlexNetwork MSR Open Application Platform (OAP) with VMware vSphere MIM Module	JG532A
HPE FlexNetwork MSR 8-port 100BASE-FX/1000BASE-X/4-port 1000BASE-T (Combo) L2/L3 HMIM Module	JH238A

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**Accessories**

HPE FlexNetwork MSR 16-port Enhanced Async Serial HMIM Module	JG445A
HPE FlexNetwork MSR 8-port E1/CE1/T1/CT1/PRI HMIM Module	JH169A
HPE FlexNetwork MSR 8-port E1/Fractional E1/T1/Fractional T1 HMIM Module	JH172A
HPE MSR 4G LTE SIC Module for Global/LTE 800/900/1800/2100/2600MHz UMTS/HSPA+/HSPA/EDGE/GRPS/GSM	JG744B
HPE MSR HSPA+/WCDMA SIC Module	JG929A
HPE MSR 1-port E1/T1 Voice SIC Module	JH240A

**Power cords and Adapters**

HPE FlexNetwork X290 MSR30 1m RPS Cable	JD637A
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**Memory**

HPE X600 1G Compact Flash Card	JC684A
HPE FlexNetwork X610 4GB DDR3 SDRAM UDIMM Memory	JG530A

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## Summary of Changes

Date	Version History	Action	Description of Change:
07-May-2018	Version 27	Changed	Configuration section updated
04-Dec-2017	Version 26	Changed	Minor edit on Features and benefits
05-Jun-2017	Version 25	Changed	Configuration section updated
07-Apr-2017	Version 24	Changed	Updates made on Features and benefits and Accessories
03-Apr-2017	Version 23	Added	SKU added: JH449A
06-Feb-2017	Version 22	Changed	Adding MSR #A59 option on Configuration section
05-Sep-2016	Version 21	Added	SKU added: JG742B
01-Aug-2016	Version 20	Changed	Adding #AC3 Option on Configuration section
06-June-2016	Version 19	Changed	Document name changed to HPE FlexNetwork MSR3000 Router Series. Product description updated.
29-Apr-2016	Version 18	Changed	SKU descriptions updated, changes made on Technical Specifications
31-Mar-2016	Version 17	Added	Models added: JG409B SKUs added: JH240A, JH224AAE, JH228AAE
		Changed	Features and benefits updated
01-Dec-2015	Version 16	Changed	Overview and Technical Specifications updated
28-Aug-2015	Version 15	Changed	Configuration section updated
17-Aug-2015	Version 14	Added	SKUs added: JG445A, JH169A, JH172A, JH238A, JH294A, JG929A
		Changed	Updated Features and benefits, Configuration, Technical Specifications and Accessories
24-Feb-2015	Version 13	Added	Adding new rule 10 to Box Level CTO section
06-Oct-2014	Version 12	Removed	Removed SKU JD572A
		Changed	Configuration section updated
18-Aug-2014	Version 11	Added	Added 9 new accessories: JG428A, JG432A, JG434A, JG741A, JG736A, JG737A, JG738A, JG739A, JG740A
		Changed	Content Edits
10-June-2014	Version 10	Added	3 new models: JG407A, JG408A, JG410A; 13 new accessories: JG604A, JG420A, JG421A, JG422A, JG423A, JG424A, JG425A, JG426A, JG427A, JG742A, JG743A, JG744A, JG528A
10-Feb-2014	Version 9	Changed	Key features was revised.
31-Jan-2014	Version 8	Added	GRE tunnels was added to Technical Specifications.
17-Dec-2013	Version 7	Changed	Overview image callout for HP MSR3012 AC Router-Front was revised.
09-Dec-2013	Version 6	Changed	Power Supplies, Modules, and Cables were revised.
22-Nov-2013	Version 5	Changed	Router Chassis, CTO Router Chassis, Power Supplies, Modules, and Cables were revised.
14-Oct-2013	Version 4	Added	Overview images were added.
30-Sep-2013	Version 3	Changed	Minor edits were made throughout Configuration.
27-Sep-2013	Version 2	Added	Configuration was added.
19-Aug-2013	Version 1	Created	Document creation

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## Summary of Changes



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c04123140 - 14641 - Worldwide - V27 - 7-May-2018