Overview

Models

HP MSR900 Router	JF812A
HP MSR920 Router	JF813A
HP MSR900-W Router	JF814A
HP MSR920-W Router	JF815A
HP MSR900-W Router (NA)	JG207A
HP MSR920-W Router (NA)	JG208A

Key features

- Converged routing, switching, security, and WLAN
- Integrated 2 Fast Ethernet WAN, 4/8 LAN on board
- Unified 802.11b/g wireless LAN and 3G wireless WAN
- Embedded encryption, firewall, security features
- A unified management platform

Product overview

The HP MSR900 router series is a component of the HP FlexBranch module of the HP FlexNetwork architecture. HP MSR900 series routers deliver integrated routing, switching, security, and 802.11b/g wireless LAN in a single box for secure, reliable small branch connectivity. These routers are perfect "branch-in-a-box" appliances that deliver converged network solutions, including data, voice and video, IPv6 support, and robust Quality of Service (QoS), and help ensure that they can handle both current enterprise networking applications as well as the future connectivity and capacity demands of an HP FlexNetwork architecture. Additionally, a standards-based design provides complete interoperability in multivendor environments.

Features and benefits

Quality of Service (QoS)

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

Management

- **Industry-standard CLI with a hierarchical structure**: reduces training time and expenses, and increases productivity in multivendor installations
- **Management security**: multiple privilege levels, with password protection, restrict access to critical configuration commands; 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**: FTP allows bidirectional transfers over a TCP/IP network and is used for configuration updates; Trivial FTP is a simpler method using User Datagram Protocol (UDP)

Overview

- **Debug and sampler utility**: supports ping and traceroute for both IPv4 and IPv6
- **Network Time Protocol** (NTP): synchronizes timekeeping among distributed time servers and clients; keeps consistent timekeeping among all clock-dependent devices within the network so that the devices can provide diverse applications based on the consistent time
- **Info center**: provides a central information center for system and network information; aggregates all logs, traps, and debugging information generated by the system and maintains them in order of severity; outputs the network information to multiple channels based on user-defined rules
- **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

Connectivity

- **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 access support**: provides support for popular USB 3G modems; for a list of specific modems, please refer to your local product manager

Performance

- **Excellent forwarding performance**: provides forwarding performance up to 100 Kpps; meets current and future bandwidth-intensive application demands for enterprise businesses
- **Embedded encryption**: supports up to 100 VPN tunnels and 8 Mbps encryption throughput

Resiliency and high availability

- **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

Layer 2 switching

- **Spanning Tree Protocol**: fully supports standard IEEE 802.1D Spanning Tree Protocol, IEEE 802.1w Rapid Spanning Tree Protocol for faster convergence, and IEEE 802.1s Multiple Spanning Tree Protocol
- **Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) protocol snooping**: effectively control and manage 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
- **Port isolation**: increases security by isolating ports within a VLAN while still allowing them to communicate with other VLANs
- **VLANs**: support IEEE 802.1Q-based VLANs
- **sFlow**: allows traffic sampling

Layer 3 services

- **Address Resolution Protocol** (ARP): determines the MAC address of another IP host in the same subnet; supports static ARPs; gratuitous ARP allows detection of duplicate IP addresses; proxy ARP allows normal ARP operation between subnets or when subnets are separated by a Layer 2 network
- **Dynamic Host Configuration Protocol** (DHCP): simplifies the management of large IP networks and supports client and server; DHCP Relay enables DHCP operation across subnets

Overview

Layer 3 routing

- **Static IPv4 routing**: provides simple, manually configured IPv4 routing
- **Routing Information Protocol**: uses a distance vector algorithm with UDP packets for route determination; supports RIPv1 and RIPv2 routing; includes loop protection
- **OSPF**: Interior Gateway Protocol (IGP) uses link-state protocol for faster convergence; supports ECMP, NSSA, and MD5 authentication for increased security and graceful restart for faster failure recovery
- **Border Gateway Protocol 4** (BGP-4): Exterior Gateway Protocol (EGP) with path vector protocol uses TCP for enhanced reliability for the route discovery process, reduces bandwidth consumption by advertising only incremental updates, and supports extensive policies for increased flexibility, as well as scales to very large networks
- **Intermediate system to intermediate system** (IS-IS): Interior Gateway Protocol (IGP) using path vector protocol, which is defined by the ISO organization for IS-IS routing and extended by IETF RFC 1195 to operate in both TCP/IP and the OSI reference model (Integrated IS-IS)
- **Static IPv6 routing**: provides simple, manually configured IPv6 routing
- **Dual IP stack**: maintains separate stacks for IPv4 and IPv6 to ease transition from an IPv4-only network to an IPv6-only network design
- **Routing Information Protocol next generation** (RIPng): extends RIPv2 to support IPv6 addressing
- **OSPFv3**: provides OSPF support for IPv6
- **BGP+**: extends BGP-4 to support Multiprotocol BGP (MBGP), including support for IPv6 addressing
- **IS-IS for IPv6**: extends IS-IS to support IPv6 addressing
- **IPv6 tunneling**: is an important element for the transition from IPv4 to IPv6; allows IPv6 packets to traverse IPv4-only networks by encapsulating the IPv6 packet into a standard IPv4 packet; supports manually configured, 6to4, and Intra-Site Automatic Tunnel Addressing Protocol (ISATAP) tunnels
- **Policy routing**: allows custom filters for increased performance and security; supports ACLs, IP prefix, AS paths, community lists, and aggregate policies

Security

- **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
- **TACACS+**: is an authentication tool using TCP with encryption of the full authentication request that provides added security
- **Network login**: standard IEEE 802.1x allows authentication of multiple users per port
- **RADIUS**: eases security access administration by using a password authentication server
- **Network address translation** (NAT): supports one-to-one NAT, many-to-many NAT, and NAT control, enabling NAT-PT to support multiple connections; supports backlist in NAT/NAT-PT, a limit on the number of connections, session logs, and multi-instances
- **Secure Shell** (SSHv2): uses external servers to securely login into a remote device or securely login into MSR from a remote location; with authentication and encryption, it protects against IP spoofing and plain text password interception; increases the security of SFTP transfers
- **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
- **IPSec VPN**: supports DES, 3DES, and AES 128/192/256 encryption, and MD5 and SHA-1 authentication
- **Dynamic Virtual Private Network** (DVPN): 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, DVPN technology is more flexible and has richer features, such as NAT traversal of DVPN packets, AAA identity authentication, IPSec protection of data packets, and multiple VPN domains

Overview

Convergence

- **Internet Group Management Protocol** (IGMP): is used by IP hosts to establish and maintain multicast groups; supports IGMPv1, v2, and v3; utilizes Any-Source Multicast (ASM) or Source-Specific Multicast (SSM) to manage IPv4 multicast networks
- **Protocol Independent Multicast** (PIM): is used for IPv4 and IPv6 multicast applications; supports PIM Dense Mode (PIM-DM), Sparse Mode (PIM-SM), and Source-Specific Mode (PIM-SSM)
- **Multicast Source Discovery Protocol** (MSDP): is used for inter-domain multicast applications, allowing multiple PIM-SM domains to interoperate
- **Multicast Border Gateway Protocol** (MBGP): aallows multicast traffic to be forwarded across BGP networks and kept separate from unicast traffic

Integration

- **Embedded NetStream**: local and global server load-balancing module improves traffic distribution using powerful scheduling algorithms, including Layer 4 to 7 services; monitors the health status of servers and firewalls
- **Embedded VPN firewall**: provides enhanced stateful packet inspection and filtering; provides advanced VPN services with Triple DES (3DES) and Advanced Encryption Standard (AES) encryption at high performance and low latency, Web content filtering, and application prioritization and enhancement

Additional information

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

Warranty and support

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

Technical Specifications

HP MSR900 Router (JF812A)

Ports	2 RJ-45 autosensing 10/100 WAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
	4 RJ-45 autosensing 10/100 LAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
Physical characteristics	**Dimensions**	6.3(d) x 9.06(w) x 1.74(h) in. (16 x 23 x 4.42 cm)
	Weight	3.97 lb. (1.8 kg)
Memory and processor	**Processor**	RISC @ 266 MHz, 256 MB DDR SDRAM, 256 MB flash
Performance	**Throughput**	up to 70 Kpps (64-byte packets)
	Routing table size	10000 entries
Environment	**Operating temperature**	32ºF to 113ºF (0ºC to 45ºC)
	Operating relative humidity	5% to 90%
	Nonoperating/Storage temperature	-40ºF to 158ºF (-40ºC to 70ºC)
	Nonoperating/Storage relative humidity	5% to 90%
Electrical characteristics	**Maximum heat dissipation**	20 BTU/hr (21.1 kJ/hr)
	DC Voltage	12 V
	Maximum power rating	15 W
	Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
Safety	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; FDA 21 CFR Subchapter J	
Emissions	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+ A1:2001 + A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR22 Class B; FCC (CFR 47, Part 15) Class B	
Telecom	FCC part 68	
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB	
Services	3-year, parts only, global next-day advance exchange (UY865E) 3-year, 4-hour onsite, 13x5 coverage for hardware (UY866E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UY869E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UY872E) 3-year, 24x7 SW phone support, software updates (UY875E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR648E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UY867E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UY870E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UY873E)	

4-year, 24x7 SW phone support, software updates (UY876E)
5-year, 4-hour onsite, 13x5 coverage for hardware (UY868E)
5-year, 4-hour onsite, 24x7 coverage for hardware (UY871E)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UY874E)
5-year, 24x7 SW phone support, software updates (UY877E)
3 Yr 6 hr Call-to-Repair Onsite (UY878E)
4 Yr 6 hr Call-to-Repair Onsite (UY879E)
5 Yr 6 hr Call-to-Repair Onsite (UY880E)
1-year, 4-hour onsite, 24x7 coverage for hardware (HR649E)
1-year, 6 hour Call-To-Repair Onsite for hardware (HR652E)
1-year, 24x7 software phone support, software updates (HR651E)
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR650E)

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

HP MSR920 Router (JF813A)

Ports	2 RJ-45 autosensing 10/100 WAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
	8 RJ-45 autosensing 10/100 LAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
Physical characteristics	**Dimensions**	6.3(d) x 9.06(w) x 1.74(h) in. (16 x 23 x 4.42 cm)
	Weight	3.97 lb. (1.8 kg)
Memory and processor	**Processor**	RISC @ 333 MHz, 256 MB DDR SDRAM, 256 MB flash
Performance	**Throughput**	up to 100 Kpps (64-byte packets)
	Routing table size	10000 entries
Environment	**Operating temperature**	32ºF to 113ºF (0ºC to 45ºC)
	Operating relative humidity	5% to 90%
	Nonoperating/Storage temperature	-40ºF to 158ºF (-40ºC to 70ºC)
	Nonoperating/Storage relative humidity	5% to 90%
Electrical characteristics	**Maximum heat dissipation**	29 BTU/hr (30.6 kJ/hr)
	DC Voltage	12 V
	Maximum power rating	15 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.

Technical Specifications

Safety	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; FDA 21 CFR Subchapter J
Emissions	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+ A1:2001 + A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR22 Class B; FCC (CFR 47, Part 15) Class B
Telecom	FCC part 68
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Services	3-year, parts only, global next-day advance exchange (UY881E) 3-year, 4-hour onsite, 13x5 coverage for hardware (UY882E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UY885E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UY888E) 3-year, 24x7 SW phone support, software updates (UY891E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR653E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR654E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UY883E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UY886E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UY889E) 4-year, 24x7 SW phone support, software updates (UY892E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UY884E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UY887E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UY890E) 5-year, 24x7 SW phone support, software updates (UY893E) 3 Yr 6 hr Call-to-Repair Onsite (UY894E) 4 Yr 6 hr Call-to-Repair Onsite (UY895E) 5 Yr 6 hr Call-to-Repair Onsite (UY896E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HR657E) 1-year, 24x7 software phone support, software updates (HR656E) 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR655E) Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP MSR900-W Router (JF814A)

Ports	2 RJ-45 autosensing 10/100 WAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
	4 RJ-45 autosensing 10/100 LAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
AP characteristics	**Radios**	Single (b/g)
	Radio operation modes	Client access
	AP operation modes	Autonomous
	Wi-Fi Alliance Certification*	b/g Wi-Fi Certified

Technical Specifications

	* HP access points and access devices are Wi-Fi Certified, providing our customers with the assurance that these products have met and passed the rigorous interoperability testing preformed by the Wi-Fi Alliance Organization. See the Specifications section of this series for more information.	
Physical characteristics	**Dimensions**	6.3(d) x 9.06(w) x 1.74(h) in. (16 x 23 x 4.42 cm)
	Weight	3.97 lb. (1.8 kg)
Memory and processor	**Processor**	RISC @ 266 MHz, 256 MB DDR SDRAM, 256 MB flash
Performance	**Throughput**	up to 70 Kpps (64-byte packets)
	Routing table size	10000 entries
Environment	**Operating temperature**	32ºF to 113ºF (0ºC to 45ºC)
	Operating relative humidity	5% to 90%
	Nonoperating/Storage temperature	-40ºF to 158ºF (-40ºC to 70ºC)
	Nonoperating/Storage relative humidity	5% to 90%
Electrical characteristics	**Maximum heat dissipation**	20 BTU/hr (21.1 kJ/hr)
	DC Voltage	12 V
	Maximum power rating	15 W
	Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
Safety	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; FDA 21 CFR Subchapter J	
Emissions	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+ A1:2001 + A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR22 Class B; FCC (CFR 47, Part 15) Class B	
Telecom	FCC part 68	
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB	
Services	3-year, parts only, global next-day advance exchange (UY865E) 3-year, 4-hour onsite, 13x5 coverage for hardware (UY866E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UY869E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UY872E) 3-year, 24x7 SW phone support, software updates (UY875E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR648E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UY867E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UY870E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UY873E) 4-year, 24x7 SW phone support, software updates (UY876E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UY868E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UY871E)	

5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UY874E)
5-year, 24x7 SW phone support, software updates (UY877E)
3 Yr 6 hr Call-to-Repair Onsite (UY878E)
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5 Yr 6 hr Call-to-Repair Onsite (UY880E)
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1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR650E)

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HP MSR920-W Router (JF815A)

Ports	2 RJ-45 autosensing 10/100 WAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
	8 RJ-45 autosensing 10/100 LAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
AP characteristics	**Radios**	Single (b/g)
	Radio operation modes	Client access
	AP operation modes	Autonomous
	Wi-Fi Alliance Certification*	b/g Wi-Fi Certified
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	Weight	3.97 lb. (1.8 kg)
Memory and processor	**Processor**	RISC @ 333 MHz, 256 MB DDR SDRAM, 256 MB flash
Performance	**Throughput**	up to 100 Kpps (64-byte packets)
	Routing table size	10000 entries
Environment	**Operating temperature**	32ºF to 113ºF (0ºC to 45ºC)
	Operating relative humidity	5% to 90%
	Nonoperating/Storage temperature	-40ºF to 158ºF (-40ºC to 70ºC)
	Nonoperating/Storage relative humidity	5% to 90%
Electrical characteristics	**Maximum heat dissipation**	29 BTU/hr (30.6 kJ/hr)
	DC Voltage	12 V
	Maximum power rating	15 W

Technical Specifications

	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.
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Emissions	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+ A1:2001 + A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR22 Class B; FCC (CFR 47, Part 15) Class B	
Telecom	FCC part 68	
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB	
Services	3-year, parts only, global next-day advance exchange (UY881E) 3-year, 4-hour onsite, 13x5 coverage for hardware (UY882E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UY885E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UY888E) 3-year, 24x7 SW phone support, software updates (UY891E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR653E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR654E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UY883E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UY886E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UY889E) 4-year, 24x7 SW phone support, software updates (UY892E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UY884E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UY887E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UY890E) 5-year, 24x7 SW phone support, software updates (UY893E) 3 Yr 6 hr Call-to-Repair Onsite (UY894E) 4 Yr 6 hr Call-to-Repair Onsite (UY895E) 5 Yr 6 hr Call-to-Repair Onsite (UY896E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HR657E) 1-year, 24x7 software phone support, software updates (HR656E) 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR655E) Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP MSR900-W Router (NA) (JG207A)

Ports	2 RJ-45 autosensing 10/100 WAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
	4 RJ-45 autosensing 10/100 LAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
AP characteristics	**Radios**	Single (b/g)

Technical Specifications

	Radio operation modes	Client access
	AP operation modes	Autonomous
	Wi-Fi Alliance Certification*	b/g Wi-Fi Certified
	* HP access points and access devices are Wi-Fi Certified, providing our customers with the assurance that these products have met and passed the rigorous interoperability testing preformed by the Wi-Fi Alliance Organization. See the Specifications section of this series for more information.	
Physical characteristics	**Dimensions**	6.3(d) x 9.06(w) x 1.74(h) in. (16 x 23 x 4.42 cm)
	Weight	3.97 lb. (1.8 kg)
Memory and processor	**Processor**	RISC @ 266 MHz, 256 MB DDR SDRAM, 256 MB flash
Performance	**Throughput**	up to 70 Kpps (64-byte packets)
	Routing table size	10000 entries
Environment	**Operating temperature**	32ºF to 113ºF (0ºC to 45ºC)
	Operating relative humidity	5% to 90%
	Nonoperating/Storage temperature	-40ºF to 158ºF (-40ºC to 70ºC)
	Nonoperating/Storage relative humidity	5% to 90%
Electrical characteristics	**Maximum heat dissipation**	20 BTU/hr (21.1 kJ/hr)
	DC Voltage	12 V
	Maximum power rating	15 W
	Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
Safety	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; FDA 21 CFR Subchapter J	
Emissions	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+ A1:2001 + A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR22 Class B; FCC (CFR 47, Part 15) Class B	
Telecom	FCC part 68	
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB	
Services	3-year, parts only, global next-day advance exchange (UY865E) 3-year, 4-hour onsite, 13x5 coverage for hardware (UY866E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UY869E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UY872E) 3-year, 24x7 SW phone support, software updates (UY875E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UY867E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UY870E)	

4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UY873E)
4-year, 24x7 SW phone support, software updates (UY876E)
5-year, 4-hour onsite, 13x5 coverage for hardware (UY868E)
5-year, 4-hour onsite, 24x7 coverage for hardware (UY871E)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UY874E)
5-year, 24x7 SW phone support, software updates (UY877E)
3 Yr 6 hr Call-to-Repair Onsite (UY878E)
4 Yr 6 hr Call-to-Repair Onsite (UY879E)
5 Yr 6 hr Call-to-Repair Onsite (UY880E)

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

HP MSR920-W Router (NA) (JG208A)

Ports	2 RJ-45 autosensing 10/100 WAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
	8 RJ-45 autosensing 10/100 LAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
AP characteristics	**Radios**	Single (b/g)
	Radio operation modes	Client access
	AP operation modes	Autonomous
	Wi-Fi Alliance Certification*	b/g Wi-Fi Certified
	* HP access points and access devices are Wi-Fi Certified, providing our customers with the assurance that these products have met and passed the rigorous interoperability testing preformed by the Wi-Fi Alliance Organization. See the Specifications section of this series for more information.	
Physical characteristics	**Dimensions**	6.3(d) x 9.06(w) x 1.74(h) in. (16 x 23 x 4.42 cm)
	Weight	3.97 lb. (1.8 kg)
Memory and processor	**Processor**	RISC @ 333 MHz, 256 MB DDR SDRAM, 256 MB flash
Performance	**Throughput**	up to 100 Kpps (64-byte packets)
	Routing table size	10000 entries
Environment	**Operating temperature**	32ºF to 113ºF (0ºC to 45ºC)
	Operating relative humidity	5% to 90%
	Nonoperating/Storage temperature	-40ºF to 158ºF (-40ºC to 70ºC)
	Nonoperating/Storage relative humidity	5% to 90%
Electrical characteristics	**Maximum heat dissipation**	29 BTU/hr (30.6 kJ/hr)
	DC Voltage	12 V
	Maximum power rating	15 W

Technical Specifications

	Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
Safety	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; FDA 21 CFR Subchapter J	
Emissions	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+ A1:2001 + A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR22 Class B; FCC (CFR 47, Part 15) Class B	
Telecom	FCC part 68	
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB	
Services	3-year, parts only, global next-day advance exchange (UY881E) 3-year, 4-hour onsite, 13x5 coverage for hardware (UY882E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UY885E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UY888E) 3-year, 24x7 SW phone support, software updates (UY891E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UY883E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UY886E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UY889E) 4-year, 24x7 SW phone support, software updates (UY892E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UY884E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UY887E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UY890E) 5-year, 24x7 SW phone support, software updates (UY893E) 3 Yr 6 hr Call-to-Repair Onsite (UY894E) 4 Yr 6 hr Call-to-Repair Onsite (UY895E) 5 Yr 6 hr Call-to-Repair Onsite (UY896E) Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Standards and protocols (applies to all products in series)

BGP

RFC 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 BGP4 confederations
RFC 1997 BGP Communities Attribute
RFC 1998 PPP Gandalf FZA Compression Protocol
RFC 2385 BGP Session Protection via TCP MD5
RFC 2439 BGP Route Flap Damping
RFC 3036 LDP Specification
RFC 3046 DHCP Relay Agent Information Option
RFC 3065 Support AS confederation
RFC 3137 OSPF Stub Router Advertisement
RFC 3209 RSVP-TE Extensions to RSVP for LSP Tunnels
RFC 3210 Applicability Statement for Extensions to RSVP for LSP-Tunnels
RFC 3212 Constraint-Based LSP setup using LDP (CR-LDP)
RFC 3214 LSP Modification Using CR-LDP
RFC 3215 LDP State Machine
RFC 3268 Advanced Encryption Standard (AES) Ciphersuites for Transport Layer Security (TLS)
RFC 3277 IS-IS Transient Blackhole Avoidance

Denial of service protection
CPU DoS Protection
Rate Limiting by ACLs

Device management
RFC 1305 NTPv3
RFC 1945 Hypertext Transfer Protocol -- HTTP/1.0
RFC 2271 FrameWork
RFC 2452 MIB for TCP6
RFC 2454 MIB for UDP6

General protocols
IEEE 802.1D MAC Bridges
IEEE 802.1p Priority
IEEE 802.1Q VLANs
IEEE 802.1s Multiple Spanning Trees
IEEE 802.1w Rapid Reconfiguration of Spanning Tree
RFC 768 UDP
RFC 783 TFTP Protocol (revision 2)
RFC 791 IP
RFC 792 ICMP
RFC 793 TCP
RFC 826 ARP
RFC 854 TELNET
RFC 855 Telnet Option Specification
RFC 856 TELNET
RFC 858 Telnet Suppress Go Ahead Option
RFC 894 IP over Ethernet
RFC 925 Multi-LAN Address Resolution
RFC 950 Internet Standard Subnetting Procedure
RFC 959 File Transfer Protocol (FTP)
RFC 1006 ISO transport services on top of the TCP: Version 3
RFC 1027 Proxy ARP
RFC 1034 Domain Concepts and Facilities
RFC 1035 Domain Implementation and Specification
RFC 1042 IP Datagrams
RFC 1058 RIPv1
RFC 1071 Computing the Internet Checksum
RFC 1091 Telnet Terminal-Type Option
RFC 1122 Host Requirements
RFC 1141 Incremental updating of the Internet checksum
RFC 1142 OSI IS-IS Intra-domain Routing Protocol
RFC 1144 Compressing TCP/IP headers for low-speed serial links
RFC 1195 OSI ISIS for IP and Dual Environments
RFC 1256 ICMP Router Discovery Protocol (IRDP)
RFC 1293 Inverse Address Resolution Protocol
RFC 3279 Algorithms and Identifiers for the Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
RFC 3280 Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
RFC 3392 Support BGP capabilities advertisement
RFC 3526 More Modular Exponential (MODP) Diffie-Hellman groups for Internet Key Exchange (IKE)
RFC 3564 Requirements for Support of Differentiated Services-aware MPLS Traffic Engineering
RFC 3602 The AES-CBC Cipher Algorithm and Its Use with IPsec
RFC 3706 A Traffic-Based Method of Detecting Dead Internet Key Exchange (IKE) Peers
RFC 3784 ISIS TE support
RFC 3786 Extending the Number of IS-IS LSP Fragments Beyond the 256 Limit
RFC 3847 Restart signaling for IS-IS

IP multicast
RFC 1112 IGMP
RFC 2236 IGMPv2
RFC 2283 Multiprotocol Extensions for BGP-4
RFC 2362 PIM Sparse Mode
RFC 2934 Protocol Independent Multicast MIB for IPv4
RFC 3376 IGMPv3

IPv6
RFC 1981 IPv6 Path MTU Discovery
RFC 2080 RIPng for IPv6
RFC 2292 Advanced Sockets API for IPv6
RFC 2373 IPv6 Addressing Architecture
RFC 2460 IPv6 Specification
RFC 2461 IPv6 Neighbor Discovery
RFC 2462 IPv6 Stateless Address Auto-configuration
RFC 2463 ICMPv6
RFC 2464 Transmission of IPv6 over Ethernet Networks
RFC 2472 IP Version 6 over PPP
RFC 2473 Generic Packet Tunneling in IPv6
RFC 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 3056 Connection of IPv6 Domains via IPv4 Clouds
RFC 3513 IPv6 Addressing Architecture

Technical Specifications

RFC 1315 Management Information Base for Frame Relay DTEs
RFC 1332 The PPP Internet Protocol Control Protocol (IPCP)
RFC 1333 PPP Link Quality Monitoring
RFC 1334 PPP Authentication Protocols (PAP)
RFC 1349 Type of Service
RFC 1350 TFTP Protocol (revision 2)
RFC 1377 The PPP OSI Network Layer Control Protocol (OSINLCP)
RFC 1381 SNMP MIB Extension for X.25 LAPB
RFC 1471 The Definitions of Managed Objects for the Link Control Protocol of the Point-to-Point Protocol
RFC 1472 The Definitions of Managed Objects for the Security Protocols of the Point-to-Point Protocol
RFC 1490 Multiprotocol Interconnect over Frame Relay
RFC 1519 CIDR
RFC 1534 DHCP/BOOTP Interoperation
RFC 1542 Clarifications and Extensions for the Bootstrap Protocol
RFC 1552 The PPP Internetworking Packet Exchange Control Protocol (IPXCP)
RFC 1577 Classical IP and ARP over ATM
RFC 1613 Cisco Systems X.25 over TCP (XOT)
RFC 1624 Incremental Internet Checksum
RFC 1631 NAT
RFC 1638 PPP Bridging Control Protocol (BCP)
RFC 1661 The Point-to-Point Protocol (PPP)
RFC 1662 PPP in HDLC-like Framing
RFC 1695 Definitions of Managed Objects for ATM Management Version 8.0 using SMIv2
RFC 1701 Generic Routing Encapsulation
RFC 1702 Generic Routing Encapsulation over IPv4 networks
RFC 1721 RIP-2 Analysis
RFC 1722 RIP-2 Applicability
RFC 1723 RIP v2
RFC 1795 Data Link Switching: Switch-to-Switch Protocol AIW DLSw RIG: DLSw Closed Pages, DLSw Standard Version 1
RFC 1812 IPv4 Routing
RFC 1829 The ESP DES-CBC Transform
RFC 1877 PPP Internet Protocol Control Protocol Extensions for Name Server Addresses
RFC 1944 Benchmarking Methodology for Network Interconnect Devices
RFC 1973 PPP in Frame Relay
RFC 1974 PPP Stac LZS Compression Protocol
RFC 3596 DNS Extension for IPv6

MIBs

RFC 1213 MIB II
RFC 1229 Interface MIB Extensions
RFC 1286 Bridge MIB
RFC 1493 Bridge MIB
RFC 1573 SNMP MIB II
RFC 1724 RIPv2 MIB
RFC 1757 Remote Network Monitoring MIB
RFC 1850 OSPFv2 MIB
RFC 2011 SNMPv2 MIB for IP
RFC 2012 SNMPv2 MIB for TCP
RFC 2013 SNMPv2 MIB for UDP
RFC 2233 Interfaces MIB
RFC 2454 IPV6-UDP-MIB
RFC 2465 IPv6 MIB
RFC 2466 ICMPv6 MIB
RFC 2618 RADIUS Client MIB
RFC 2620 RADIUS Accounting MIB
RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
RFC 2737 Entity MIB (Version 2)
RFC 2863 The Interfaces Group MIB
RFC 2933 IGMP MIB
RFC 3813 MPLS LSR MIB

Network management

IEEE 802.1D (STP)
RFC 1155 Structure of Management Information
RFC 1157 SNMPv1
RFC 1905 SNMPv2 Protocol Operations
RFC 2272 SNMPv3 Management Protocol
RFC 2273 SNMPv3 Applications
RFC 2274 USM for SNMPv3
RFC 2275 VACM for SNMPv3
RFC 2575 SNMPv3 View-based Access Control Model (VACM)
RFC 3164 BSD syslog Protocol

OSPF

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

RFC 1990 The PPP Multilink Protocol (MP)
RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP)
RFC 2091 Trigger RIP
RFC 2131 DHCP
RFC 2132 DHCP Options and BOOTP Vendor Extensions
RFC 2166 APPN Implementer's Workshop Closed Pages Document DLSw v2.0 Enhancements
RFC 2205 Resource ReSerVation Protocol (RSVP) - Version 1 Functional Specification
RFC 2280 Routing Policy Specification Language (RPSL)
RFC 2284 EAP over LAN
RFC 2338 VRRP
RFC 2364 PPP Over AAL5
RFC 2374 An Aggregatable Global Unicast Address Format
RFC 2451 The ESP CBC-Mode Cipher Algorithms
RFC 2453 RIPv2
RFC 2510 Internet X.509 Public Key Infrastructure Certificate Management Protocols
RFC 2511 Internet X.509 Certificate Request Message Format
RFC 2516 A Method for Transmitting PPP Over Ethernet (PPPoE)
RFC 2644 Directed Broadcast Control
RFC 2661 L2TP
RFC 2663 NAT Terminology and Considerations
RFC 2684 Multiprotocol Encapsulation over ATM Adaptation Layer 5
RFC 2694 DNS extensions to Network Address Translators (DNS_ALG)
RFC 2702 Requirements for Traffic Engineering Over MPLS
RFC 2747 RSVP Cryptographic Authentication
RFC 2763 Dynamic Name-to-System ID mapping support
RFC 2765 Stateless IP/ICMP Translation Algorithm (SIIT)
RFC 2766 Network Address Translation - Protocol Translation (NAT-PT)
RFC 2784 Generic Routing Encapsulation (GRE)
RFC 2787 Definitions of Managed Objects for VRRP
RFC 2961 RSVP Refresh Overhead Reduction Extensions
RFC 2966 Domain-wide Prefix Distribution with Two-Level IS-IS
RFC 2973 IS-IS Mesh Groups
RFC 2993 Architectural Implications of NAT
RFC 3022 Traditional IP Network Address
IEEE 802.1P (CoS)
RFC 2474 DS Field in the IPv4 and IPv6 Headers
RFC 2475 DiffServ Architecture
RFC 2597 DiffServ Assured Forwarding (AF)
RFC 2598 DiffServ Expedited Forwarding (EF)
RFC 3168 The Addition of Explicit Congestion Notification (ECN) to IP

Security
IEEE 802.1X Port Based Network Access Control
RFC 1321 The MD5 Message-Digest Algorithm
RFC 2082 RIP-2 MD5 Authentication
RFC 2104 Keyed-Hashing for Message Authentication
RFC 2138 RADIUS Authentication
RFC 2209 RSVP-Message Processing
RFC 2246 Transport Layer Security (TLS)
RFC 2716 PPP EAP TLS Authentication Protocol
RFC 2865 RADIUS Authentication
RFC 2866 RADIUS Accounting
RFC 3567 Intermediate System (IS) to IS Cryptographic Authentication

VPN
RFC 2403 - HMAC-MD5-96
RFC 2404 - HMAC-SHA1-96
RFC 2405 - DES-CBC Cipher algorithm
RFC 2547 BGP/MPLS VPNs
RFC 2796 BGP Route Reflection - An Alternative to Full Mesh IBGP
RFC 2842 Capabilities Advertisement with BGP-4
RFC 2858 Multiprotocol Extensions for BGP-4
RFC 2918 Route Refresh Capability for BGP-4
RFC 3107 Carrying Label Information in BGP-4

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

IKEv1
RFC 2865 - Remote Authentication Dial In User

Translator (Traditional NAT)
RFC 3027 Protocol Complications with the IP Network Address Translator
RFC 3031 Multiprotocol Label Switching Architecture

Service (RADIUS)
RFC 3748 - Extensible Authentication Protocol (EAP)

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