

# HP MSR Router Series

## About the HP MSR series

### Command References(V5)

Part number: 5998-8195

Software version: CMW520-R2513

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# About the HP MSR series command references

These command references apply to the following models of the HP MSR series routers:

<b>Model</b>	
HP MSR900	<ul style="list-style-type: none"><li>• MSR900</li><li>• MSR900-W</li><li>• MSR900-W(NA)</li><li>• MSR920</li><li>• MSR920-W</li><li>• MSR920-W(NA)</li></ul>
HP MSR93X	<ul style="list-style-type: none"><li>• MSR930 (JG511A)</li><li>• MSR930 (JG511B)</li><li>• MSR930 (JG512A)</li><li>• MSR930 (JG512B)</li><li>• MSR930 (JH012A)</li><li>• MSR935 (JH012B)</li><li>• MSR930 (JG513A)</li><li>• MSR930 (JG513B)</li><li>• MSR930 (JG596A)</li><li>• MSR930 (JG665A)</li><li>• MSR931 (JG514A)</li><li>• MSR931 (JG514B)</li><li>• MSR931 (JG515A)</li><li>• MSR931 (JG515B)</li><li>• MSR931 (JG531A)</li><li>• MSR931 (JG531B)</li><li>• MSR933 (JG516A)</li><li>• MSR933 (JG516B)</li><li>• MSR933 (JG517A)</li><li>• MSR933 (JG517B)</li><li>• MSR935 (JG518A)</li><li>• MSR935 (JG518B)</li><li>• MSR935 (JG519A)</li><li>• MSR935 (JG519B)</li><li>• MSR935 (JH013A)</li><li>• MSR935 (JG520A)</li><li>• MSR935 (JG520B)</li><li>• MSR936 (JG597A)</li><li>• MSR936 (JG597B)</li></ul>

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<b>Model</b>	
HP MSR20-1X	<ul style="list-style-type: none"> <li>• MSR20-10</li> <li>• MSR20-11</li> <li>• MSR20-12</li> <li>• MSR20-12-W</li> <li>• MSR20-12-T</li> <li>• MSR20-12-T-W(NA)</li> <li>• MSR20-13</li> <li>• MSR20-13-W</li> <li>• MSR20-13-W(NA)</li> </ul>
HP MSR20	<ul style="list-style-type: none"> <li>• MSR20-20</li> <li>• MSR20-21</li> <li>• MSR20-40</li> </ul>
HP MSR30	<ul style="list-style-type: none"> <li>• MSR30-10</li> <li>• MSR30-11E</li> <li>• MSR30-11F</li> <li>• MSR30-16</li> <li>• MSR30-20</li> <li>• MSR30-40</li> <li>• MSR30-60</li> <li>• MSR30-10 DC</li> <li>• MSR30-20 DC</li> <li>• MSR30-40 DC</li> <li>• MSR30-60 DC</li> <li>• MSR30-16 PoE</li> <li>• MSR30-20 PoE</li> <li>• MSR30-40 PoE</li> <li>• MSR30-60 PoE</li> </ul>
HP MSR50	<ul style="list-style-type: none"> <li>• MSR50-40</li> <li>• MSR50-60</li> <li>• MSR50-40 DC</li> <li>• MSR50-60 DC</li> </ul>
HP MSR1000	<ul style="list-style-type: none"> <li>• MSR1003-8</li> </ul>

The HP MSR series command references describe the commands and command syntax options available for the HP MSR Series Routers.

<b>Command reference</b>	<b>Content</b>
<i>Fundamentals Command Reference</i>	<p>Covers the commands for logging in to and setting up an MSR router. This command reference includes:</p> <ul style="list-style-type: none"> <li>• CLI</li> <li>• Logging In to the Router</li> <li>• Device Management</li> <li>• Configuration File Management</li> <li>• File Management</li> </ul>

<b>Command reference</b>	<b>Content</b>
	<ul style="list-style-type: none"> <li>• FTP and TFTP</li> <li>• License Management</li> <li>• Software Upgrade</li> <li>• Automatic Configuration</li> </ul>
<i>Interface Command Reference</i>	<p>Covers the interface configuration commands. This command reference includes:</p> <ul style="list-style-type: none"> <li>• Ethernet Interface</li> <li>• WAN Interfaces</li> <li>• ATM and DSL Interface</li> <li>• POS Interface</li> <li>• CPOS Interface</li> <li>• Loopback and Null Interfaces</li> </ul>
<i>Layer 2 – LAN Switching Command Reference</i>	<p>Covers the commands for configuring Layer 2 technologies and features in a LAN switched network. This command reference includes:</p> <ul style="list-style-type: none"> <li>• MAC Address Table</li> <li>• VLAN</li> <li>• Spanning Tree</li> <li>• Ethernet Link Aggregation</li> <li>• GVRP</li> <li>• LLDP</li> <li>• Port Isolation</li> <li>• VLAN Termination</li> </ul>
<i>Layer 2 – WAN Access Command Reference</i>	<p>Covers WAN access technologies. This command reference includes:</p> <ul style="list-style-type: none"> <li>• SLIP</li> <li>• PPP(PPP, PPPoE)</li> <li>• ISDN</li> <li>• Frame Relay</li> <li>• DCC</li> <li>• Modem Management</li> <li>• ATM</li> <li>• HDLC</li> <li>• DLSw</li> <li>• L2TP</li> <li>• Bridging</li> <li>• EtoPPP and EtoFR</li> <li>• LAPB_and_X.25</li> </ul>
<i>Terminal Access Command Reference</i>	<p>Covers Terminal Access technologies. This command reference includes:</p> <ul style="list-style-type: none"> <li>• Terminal Access</li> <li>• IP Terminal Access</li> </ul>
<i>Layer 3 – IP Services Command Reference</i>	<p>Covers the commands for configuring and managing IP addressing (including static and dynamic IPv4 and IPv6 address assignment), network performance optimization, ARP, and interoperation between IPv4 and IPv6. This command reference includes:</p> <ul style="list-style-type: none"> <li>• ARP(ARP, Gratuitous ARP, Proxy ARP, ARP Snooping)</li> <li>• DHCP(DHCP Server, DHCP Relay Agent, DHCP Client, DHCP Snooping, BOOTP Client)</li> </ul>

Command reference	Content
	<ul style="list-style-type: none"> <li>• DNS(IPv4 DNS, IPv6 DNS, DDNS)</li> <li>• IP Addressing</li> <li>• Fast Forwarding</li> <li>• IP Performance Optimization</li> <li>• NAT</li> <li>• NAT-PT</li> <li>• DVPN</li> <li>• Tunneling</li> <li>• UDP Helper</li> <li>• GRE</li> <li>• IPv6 Basics</li> <li>• DHCPv6</li> <li>• IPv6 Fast Forwarding</li> <li>• IPv6 DNS</li> <li>• IP Forwarding Basics</li> </ul>
<i>Layer 3 – IP Routing Command Reference</i>	<p>Covers the commands for configuring routes for IPv4 and IPv6 networks of different sizes, route filtering, route control, and policy based routing. This command reference includes:</p> <ul style="list-style-type: none"> <li>• IP Routing Basics</li> <li>• Static Routing</li> <li>• RIP</li> <li>• OSPF</li> <li>• IS-IS</li> <li>• BGP</li> <li>• Routing Policy</li> <li>• Policy-Based Routing</li> <li>• IPv6 Static Routing</li> <li>• RIPng</li> <li>• OSPFv3</li> <li>• IPv6 IS-IS</li> <li>• IPv6 BGP</li> <li>• IPv6 Policy-Based Routing</li> </ul>
<i>IP Multicast Command Reference</i>	<p>Covers the commands for Layer 3 IPv4 multicast protocols IGMP, PIM, MBGP, and Layer 3 IPv6 multicast protocols MLD, IPv6 PIM, MSDP, and IPv6 MBGP), Layer 2 IPv4 multicast protocols (IGMP snooping), and Layer 2 IPv6 multicast protocols (MLD snooping). This command reference includes:</p> <ul style="list-style-type: none"> <li>• IGMP</li> <li>• PIM</li> <li>• Multicast Routing and Forwarding</li> <li>• IGMP Snooping</li> <li>• MSDP</li> <li>• MBGP</li> <li>• Multicast VPN</li> <li>• MLD</li> <li>• IPv6 PIM</li> <li>• IPv6 Multicast Routing and Forwarding</li> </ul>

Command reference	Content
	<ul style="list-style-type: none"> <li>• MLD Snooping</li> <li>• IPv6 MBGP</li> </ul>
<i>MPLS Command Reference</i>	<p>Covers the commands for MPLS and MPLS VPN. This command reference includes:</p> <ul style="list-style-type: none"> <li>• MPLS Basics</li> <li>• MPLS L2VPN</li> <li>• MPLS L3VPN</li> <li>• MPLS TE</li> <li>• L2VPN Access to L3VPN or IP Backbone</li> </ul>
<i>ACL and QoS Command Reference</i>	<p>Covers the commands for classifying traffic with ACLs, and allocating network resources and managing congestions with QoS technologies to improve network performance and network use efficiency. This command reference includes:</p> <ul style="list-style-type: none"> <li>• ACL</li> <li>• QoS(QoS Policy, Priority Mapping, Traffic Policing, GTS and Line Rate, Congestion Management, Congestion Avoidance, DAR)</li> <li>• FR QoS</li> <li>• MPLS QoS</li> </ul>
<i>Security Command Reference</i>	<p>Covers security feature commands. Available security features include identity authentication (AAA), access security (802.1X, MAC authentication, and portal), secure management (SSH), SSL, and attack protection (IP source guard, ARP attack protection, and URPF). This command reference includes:</p> <ul style="list-style-type: none"> <li>• AAA</li> <li>• 802.1X(802.1X, 802.1X-Based EAD Fast Deployment)</li> <li>• MAC Authentication</li> <li>• Port Security</li> <li>• IPsec</li> <li>• PKI</li> <li>• Public Key</li> <li>• RSH</li> <li>• Portal</li> <li>• Firewall</li> <li>• SSH2.0</li> <li>• SSL</li> <li>• SSL VPN</li> <li>• User Profile</li> <li>• ARP Attack Protection</li> <li>• IP Source Guard</li> <li>• Attack Detection and Protection</li> <li>• TCP Attack Protection</li> <li>• Connection Limit</li> <li>• Password Control</li> <li>• HABP</li> <li>• URPF</li> <li>• User Isolation</li> <li>• FIPS</li> </ul>

<b>Command reference</b>	<b>Content</b>
	<ul style="list-style-type: none"> <li>• Group Domain VPN</li> </ul>
<i>Voice Command Reference</i>	<p>Covers Voice features commands. This command reference includes:</p> <ul style="list-style-type: none"> <li>• Voice Entity</li> <li>• Voice Subscriber Line</li> <li>• Dial Plan</li> <li>• SIP(SIP, SIP Local Survival, SIP Trunk)</li> <li>• H.323</li> <li>• Call Services</li> <li>• Call-Watch</li> <li>• Fax over IP</li> <li>• Customizable IVR</li> <li>• VoFR</li> <li>• Voice RADIUS</li> </ul>
<i>WLAN Command Reference</i>	<p>Covers WLAN features commands. This command reference includes:</p> <ul style="list-style-type: none"> <li>• WLAN Interface</li> <li>• WLAN Service</li> <li>• WLAN RRM</li> <li>• WLAN Security</li> <li>• WLAN IDS(WLAN IDS, WLAN Frame Filtering)</li> <li>• WLAN QoS</li> </ul>
<i>High Availability Command Reference</i>	<p>Covers high availability commands for managing failure detection. Failure detection technologies focus on fault detection and isolation. This command reference includes:</p> <ul style="list-style-type: none"> <li>• BFD</li> <li>• Interface Backup</li> <li>• Track</li> <li>• VRRP</li> </ul>
<i>Network Management and Monitoring Command Reference</i>	<p>Covers the commands that help you manage and monitor your network, for example, manage system events, sample packets, assess network performance, and test network connectivity. This command reference includes:</p> <ul style="list-style-type: none"> <li>• SNMP(SNMP, MIB)</li> <li>• RMON</li> <li>• NTP</li> <li>• Cluster Management</li> <li>• CWMP</li> <li>• IP Accounting</li> <li>• NetStream</li> <li>• NQA(NQA Client, NQA Server)</li> <li>• IP Traffic Ordering</li> <li>• sFlow</li> <li>• Sampler</li> <li>• PoE</li> <li>• Mirroring(Port Mirroring, Traffic Mirroring)</li> <li>• Information Center</li> </ul>



Command reference	Content
	<ul style="list-style-type: none"> <li>• System Maintenance and Debugging</li> <li>• IPv6 NetStream</li> </ul>
<i>OAA Command Reference</i>	<p>Covers the commands for logging in to the HP open application platform (OAP) card connected to your device and resetting the operating system of the OAP card. HP OAP cards use the open service architecture design, and enable you to provide custom services. This command reference includes:</p> <ul style="list-style-type: none"> <li>• OAP Module</li> <li>• ACFP</li> <li>• ACSEI</li> </ul>
<i>IPX Configuration Guide</i>	<p>Covers IPX commands. This command reference includes:</p> <ul style="list-style-type: none"> <li>• IPX</li> </ul>

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# Support and other resources

## Contacting HP

For worldwide technical support information, see the HP support website:

<http://www.hp.com/support>

Before contacting HP, collect the following information:

- Product model names and numbers
- Technical support registration number (if applicable)
- Product serial numbers
- Error messages
- Operating system type and revision level
- Detailed questions

## Subscription service

HP recommends that you register your product at the Subscriber's Choice for Business website:

<http://www.hp.com/go/wwalerts>

After registering, you will receive email notification of product enhancements, new driver versions, firmware updates, and other product resources.

## Related information

### Documents

To find related documents, browse to the Manuals page of the HP Business Support Center website:

<http://www.hp.com/support/manuals>

- For related documentation, navigate to the Networking section, and select a networking category.
- For a complete list of acronyms and their definitions, see *HP FlexNetwork Technology Acronyms*.

### Websites

- HP.com <http://www.hp.com>
- HP Networking <http://www.hp.com/go/networking>
- HP manuals <http://www.hp.com/support/manuals>
- HP download drivers and software <http://www.hp.com/support/downloads>
- HP software depot <http://www.software.hp.com>
- HP Education <http://www.hp.com/learn>

# Conventions

This section describes the conventions used in this documentation set.





## Command conventions

Convention	Description
<b>Boldface</b>	<b>Bold</b> text represents commands and keywords that you enter literally as shown.
<i>Italic</i>	<i>Italic</i> text represents arguments that you replace with actual values.
[ ]	Square brackets enclose syntax choices (keywords or arguments) that are optional.
{ x   y   ... }	Braces enclose a set of required syntax choices separated by vertical bars, from which you select one.
[ x   y   ... ]	Square brackets enclose a set of optional syntax choices separated by vertical bars, from which you select one or none.
{ x   y   ... } *	Asterisk-marked braces enclose a set of required syntax choices separated by vertical bars, from which you select at least one.
[ x   y   ... ] *	Asterisk-marked square brackets enclose optional syntax choices separated by vertical bars, from which you select one choice, multiple choices, or none.
&<1-n>	The argument or keyword and argument combination before the ampersand (&) sign can be entered 1 to n times.
#	A line that starts with a pound (#) sign is comments.

## GUI conventions








Convention	Description
<b>Boldface</b>	Window names, button names, field names, and menu items are in bold text. For example, the <b>New User</b> window appears; click <b>OK</b> .
>	Multi-level menus are separated by angle brackets. For example, <b>File &gt; Create &gt; Folder</b> .

## Symbols

Convention	Description
 <b>WARNING</b>	An alert that calls attention to important information that if not understood or followed can result in personal injury.
 <b>CAUTION</b>	An alert that calls attention to important information that if not understood or followed can result in data loss, data corruption, or damage to hardware or software.
 <b>IMPORTANT</b>	An alert that calls attention to essential information.
<b>NOTE</b>	An alert that contains additional or supplementary information.
 <b>TIP</b>	An alert that provides helpful information.

## Network topology icons

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	Represents a generic network device, such as a router, switch, or firewall.
	Represents a routing-capable device, such as a router or Layer 3 switch.
	Represents a generic switch, such as a Layer 2 or Layer 3 switch, or a router that supports Layer 2 forwarding and other Layer 2 features.
	Represents an access controller, a unified wired-WLAN module, or the switching engine on a unified wired-WLAN switch.
	Represents an access point.
	Represents a security product, such as a firewall, a UTM, or a load-balancing or security card that is installed in a device.
	Represents a security card, such as a firewall card, a load-balancing card, or a NetStream card.

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## Port numbering in examples

The port numbers in this document are for illustration only and might be unavailable on your device.