Hewlett Packard Enterprise

HPE MSR1000_MSR2000_MSR3000_MSR4000-CMW710-R0306P12 Release Notes

Contents

List of Tables

This document describes the features, restrictions and guidelines, open problems, and workarounds for version R0306P12. Before you use this version in a live network, back up the configuration and test the version to avoid software upgrade affecting your live network.

Use this document in conjunction with HPE MSR1000_MSR2000_MSR3000_MSR4000-CMW710-R0306P12 Release Notes (Software Feature Changes) and the documents listed in "Related documents"

Version information

Version number

HPE Comware Software, Version 7.1.059, Release 0306P12

Please see the example below generated by the display version command:

```
<HPE> display version
HPE Comware Software, Version 7.1.059, Release 0306P12
Copyright (c) 2010-2016 Hewlett Packard Enterprise Development LP
HPE MSR3064 uptime is 0 weeks, 0 days, 0 hours, 2 minutes
Last reboot reason : User reboot
Boot image: cfa0:/msr3000-cmw710-boot-r0306p12.bin
Boot image version: 7.1.059P20, Release 0306P12
  Compiled Mar 16 2016 16:00:00
System image: cfa0:/msr3000-cmw710-system-r0306p12.bin
System image version: 7.1.059, Release 0306P12
  Compiled Mar 16 2016 16:00:00
Feature image(s) list:
  cfa0:/msr3000-cmw710-security-r0306p12.bin, version: 7.1.059
    Compiled Mar 16 2016 16:00:00
  cfa0:/msr3000-cmw710-voice-r0306p12.bin, version: 7.1.059
    Compiled Mar 16 2016 16:00:00
  cfa0:/msr3000-cmw710-data-r0306p12.bin, version: 7.1.059
    Compiled Mar 16 2016 16:00:00

CPU ID: 0x4
2G bytes DDR3 SDRAM Memory
8M bytes Flash Memory
PCB               Version:  2.0
CPLD              Version:  2.0
Basic    BootWare Version:  1.60
Extended BootWare Version:  1.60
[SLOT  0]AUX                      (Hardware)2.0,   (Driver)1.0,   (CPLD)2.0
[SLOT  0]GE0/0                    (Hardware)2.0,   (Driver)1.0,   (CPLD)2.0
[SLOT  0]GE0/1                    (Hardware)2.0,   (Driver)1.0,   (CPLD)2.0
[SLOT  0]GE0/2                    (Hardware)2.0,   (Driver)1.0,   (CPLD)2.0
[SLOT  0]CELLULAR0/0              (Hardware)2.0,   (Driver)1.0,   (CPLD)2.0
[SLOT  0]CELLULAR0/1              (Hardware)2.0,   (Driver)1.0,   (CPLD)2.0
[SLOT  6]HMIM-1CE3                (Hardware)2.0,   (Driver)1.0,   (CPLD)1.0
[SLOT  7]HMIM-2T1                 (Hardware)3.0,   (Driver)1.0,   (CPLD)4.0
```

```
[SLOT  9]HMIM-4T1-F                (Hardware)3.0,    (Driver)1.0,    (CPLD)3.0
```

Version history

Table 1 Version history

Version number	Last version	Release date	Release type	Remarks
CMW710-R0306P12	CMW710-R0306P11	2016-04-27	Release version	MSR1000_2000_3000_4000 series, including MSR1003-8S and MSR3012 AC • Modified feature: 1. Configuring an SSH user 2. AAA 3. Configuring a cellular interface for a 3G/4G modem 4. VXLAN 5. DHCP • Fixes bugs.
CMW710-R0306P11	CMW710-R0306P07	2016-04-13	Release version	MSR1000_2000_3000_4000 series, including MSR1003-8S and MSR3012 AC • New feature: 1. Voice VLAN • Modified feature: 1. MPLS QoS support for matching the EXP field 2. MPLS QoS support for marking the EXP field 3. Automatic configuration • Removed feature 1. Tinyproxy • Fixes bugs.
CMW710-R0306P07	CMW710-R0305P08	2016-03-16	Release version	MSR1000_2000_3000_4000 series, including MSR1003-8S and MSR3012 AC • New feature: 1. L2TP-based EAD 2. CFD configuration • Modified feature: 1. Support using dots in user profile name 2. Default size of the TCP receive and send buffer 3. Support for obtaining fan tray and power module vendor information through MIB 4. Supporting per-packet load sharing 5. Automatic configuration 6. Software image signature • Fixes bugs.

CMW710-R0305P08	CMW710-R0305P04	2016-01-10	Release version	MSR1000_2000_3000_4000 series, including MSR1003-8S and MSR3012 AC • New feature: 1. mGRE 2. Disabling transceiver module alarm • Modified feature: 1. Default user role 2. Debugging • Fixes bugs.
CMW710-R0305P04	First release	2015-12-18	Release version	Only support MSR3012 AC Router
CMW710-R0305P04	CMW710-R0305	2015-11-25	Release version	MSR1000_2000_3000_4000 series, including MSR1003-8S • New feature: 1. Public key management support for Suite B 2. PKI support for Suite B 3. IPsec support for Suite B 4. SSL support for Suite B 5. FIPS support for Suit B 6. SSH support for Suite B 7. Ignoring the first AS number of EBGP route updates for a peer or peer group • Modified feature: 1. Support for Ethernet link aggregation on Layer 3 Ethernet subinterfaces 2. Changing the maximum number of FIB table entries 3. Enabling CWMP 4. The logo of HP is changed to HPE • Fixes bugs.
CMW710-R0305	CMW710-R0304P12	2015-10-23	Release version	MSR1000_2000_3000_4000 series, including MSR1003-8S • New feature: 1. IKE • Modified feature: 1. IPsec • Fixes bugs.
CMW710-R0304P12	CMW710-R0304P04	2015-09-15	Release version	MSR1000_2000_3000_4000 series, including MSR1003-8S • New feature: 1. Including vendor information in PPP accounting requests 2. BFD for an aggregation group • Modified feature: 1. SSH username 2. IS-IS hello packet sending interval

				3. MP-group interface numbering • Fixes bugs.
CMW710-R0304P04	CMW710-R0304P02	2015-08-18	Release version	Support MSR1000_2000_3000_4000 series, including MSR1003-8S • New feature: 1. Media Stream Control (MSC) logging • Modified feature: 1. ESP encryption algorithms • Fixes bugs.
CMW710-R0304P02	CMW710-R0304	2015-07-22	Release version	Support MSR1000_2000_3000_4000 series, including MSR1003-8S • New feature: 1. IMSI/SN binding authentication 2. Specifying a band for a 4G modem 3. CFD 4. Using tunnel interfaces as OpenFlow ports 5. NETCONF support for ACL filtering 6. Specifying a backup traffic processing unit 7. WAAS 8. Support for the MKI field in SRTP or SRTCP packets 9. SIP domain name 10. E&M logging 11. Add new cards • Modified feature: 1. Setting the global link-aggregation load-sharing mode • Fixes bugs.
CMW710-R0304	CMW710-E0302P06	2015-06-29	Release version	Support MSR1000_2000_3000_4000 series, added MSR1003-8S • New feature: 1. Setting the RTC version 2. Setting the maximum size of advertisement files 3. IRF 4. Frame Relay 5. EVI 6. VPLS 7. Multicast VPN support for inter-AS option B • Modified feature: 1. 802.1X redirect URL 2. Displaying information about NTP servers from the reference source to the primary NTP server 3. Saving, rolling back, and loading the configuration 4. Displaying information about SSH

				users • Removed feature 1. Displaying fabric utilization • Fixes bugs
CMW710-E0302P06	CMW710-E0102	2015-04-13	ESS version	Support MSR1000_2000_3000_4000 series • New feature: 1. Object policies 2. IPHC 3. Support of PPPoE server for IPv6 4. QSIG tunneling over SIP-T 5. Playout delay 6. BGP L2VPN support for NSR 7. BGP support for dynamic peers 8. ARP PnP 9. Support of Syslog for DNS and support of customlog&userlog for IPv6 hosts 10. QoS soft forwarding 11. Filtering by application layer protocol status 12. ADVPN support for multicast forwarding 13. MPLS LDP support for IPv6 14. Port security 15. Customizable IVR 16. SRST 17. NEMO 18. Support of MFR and FR for L2VPN, FR QoS, and FR compression and fragmentation 19. Support for LLDP on CPOS interfaces 20. SMS-based automatic configuration 21. ARP attack protection 22. SIP support for VRF • Fixes bugs
CMW710-E0102	CMW710-E0006P02	2013-08-10	ESS version	Support MSR2000_3000_4000 series • New feature: 1. Portal authentication 2. MSDP 3. IPsec MIB and IKE MIB 4. PoE 5. CoPP software forwarding feature 6. Configuring MPLS LDP FRR 7. Enhanced routing features 8. Python 9. ATM 10. DHCP MIB

				• Fixes bugs.
CMW710-E0006P02	CMW710-E0006	2013-04-23	ESS version	Only support MSR3000_4000 series, not support MSR2000 series • Fixes bugs.
CMW710-E0006	First release	2013-01-28	ESS version	None

Hardware and software compatibility matrix

CAUTION:

To avoid an upgrade failure, use Table 3 to verify the hardware and software compatibility before performing an upgrade.

Table 2 HPE product device numbers matrix

Product code	HPE Product name
JG402A	HPE MSR4080 Router Chassis
JG403A	HPE MSR4060 Router Chassis
JG404A	HPE MSR3064 Router
JG405A	HPE MSR3044 Router
JG406A	HPE MSR3024 AC Router
JG407A	HPE MSR3024 DC Router
JG408A	HPE MSR3024 PoE Router
JG409A	HPE MSR3012 AC Router
JG410A	HPE MSR3012 DC Router
JG411A	HPE MSR2003 AC Router
JG412A	HPE MSR4000 MPU-100 Main Processing Unit
JG413A	HPE MSR4000 SPU-100 Service Processing Unit
JG414A	HPE MSR4000 SPU-200 Service Processing Unit
JG670A	HPE MSR4000 SPU-300 Service Processing Unit
JG875A	HPE MSR1002-4 AC Router
JH060A	HPE MSR1003-8S AC Router
JG861A	HPE MSR3024 TAA-compliant AC Router
JG734A	HPE MSR2004-24 AC Router
JG735A	HPE MSR2004-48 Router
JG866A	HPE MSR2003 TAA-compliant AC Router
JG869A	HPE MSR4000 TAA-compliant MPU-100 Engine
JG409B	HPE MSR3012 AC Router

Table 3 Hardware and software compatibility matrix

Item	Specifications			
Product family	MSR1000_MSR2000_MSR3000_MSR4000			
Boot ROM version	MSR1002-4_MSR1003-8S: 250 or higher MSR2003_MSR2004-24_MSR2004-48: 160 or higher MSR3012_MSR3024_MSR3044_MSR3064: 160 or higher MSR4060_MSR4080: MPU-100: 161 or higher SPU-100/200: 140 or higher			
Host software	Hardware	software	MD5 Check Sum	File size
	MSR1002-4_MSR1003-8S	MSR100X-CMW710-R0306P12.IPE	10310dafc73c73496c5498aa834a20f0	67,212,288 bytes
	MSR2003_MSR2004-24_MSR2004-48	MSR2000-CMW710-R0306P12.IPE	c2ca37897ff65ae32ad202d3710000d3	73,930,752 bytes
	MSR3012_MSR3024_MSR3044_MSR3064	MSR3000-CMW710-R0306P12.IPE	9ada82245d77c6c2578ae9e86c1d2afd	56,782,848 bytes
	MSR4060_MSR4080	MSR4000-CMW710-R0306P12.IPE	7f5555a72955507a43fb395af37908a7	118,190,080 bytes
iMC version	iMC BIMS 7.1 (E0301) iMC EAD 7.1 (E0301P03) iMC TAM 7.1 (E0302P08) iMC UAM 7.1 (E0302P08) iMC IVM 7.1 (E0301P01) iMC MVM 7.1 (E0301) iMC NTA 7.1 (E0301P04) iMC PLAT 7.1 (E0303H12) iMC QoSM 7.1 (E0301P01) iMC RAM 7.1 (E0301P04) iMC SHM 7.1 (E0301P02) iMC UBA 7.1 (E0301P04) iMC VSM 7.1 (E0301) iMC WSM 7.1 (E0303P04)			
iNode version	iNode PC 7.1 (E0307)			
Cards version	Cards Name	Software Version	CPLD or FPGA version	
	SIC-3G-HSPA	280 or higher	200 or higher	
	SIC-3G-CDMA	280 or higher	200 or higher	

Upgrading restrictions and guidelines

1. After the software is upgraded from a version earlier than E0302P06 to E0302P06 or a later version, the unit of the VRRP preemption delay is changed from seconds to centiseconds.

2. To upgrade from R0305 to R0305P04 or a later version, you must first install the R0305H01 hot patch.

Hardware feature updates

CMW710-R0306P12

None.

CMW710-R0306P07

Add new hardware:

SFP-GPON-SM-ONU

USB modem E3533

CMW710-R0305P08

Add new router:

HPE MSR3012 AC Router(JG409B)

Add new card:

1-port E1 / T1 Voice SIC Module(JH240A)

CMW710-R0305P04

The logo of HP is changed to HPE.

CMW710-R0304P02

Add new cards:

HPE MSR 4GLTE SIC Mod for CDMA/WCDMA (JG742B)

HPE MSR 4G LTE SIC Mod for ATT (JG743B)

HPE MSR 4GLTE SIC Mod for Global (JG744B)

HPE MSR HSPA+/WCDMA SIC Module (JG929A)

CMW710-R0304

Add new router:

HPE MSR1003-8S AC Router

CMW710-E0302P06

Add new hardware:

8-port E1 / CE1 / T1 / CT1 / PRI HMIM Module (JH169A)

4-port E1 / CE1 / T1 / CT1 / PRI HMIM Module (JH170A)

2-port E1 / CE1 / T1 / CT1 / PRI HMIM Module (JH171A)

8-port E1 / Fractional E1 / T1 / Fractional T1 HMIM Module (JH172A)

4-port E1 / Fractional E1 / T1 / Fractional T1 HMIM Module (JH173A)

2-port E1 / Fractional E1 / T1 / Fractional T1 HMIM Module (JH174A)

8-port 100BASE-FX/1000BASE-X / 4-port 1000BASE-T (Combo) L2/L3 HMIM Module (JH238A)

CMW710-E0102

Add new hardware:

4-port 10/100 Mbps Ethernet L2 switching module-PoE card(SIC-4FSW-POE)

1-port ADSL over POTS SIC interface module (SIC-1ADSL)

1 port E1/CE1/PRI SIC interface module(SIC-1EPRI-V3)

9-port 10/100 Mbps Ethernet L2 switching module -PoE card (DSIC-9FSW-POE)

1-port 8-wire G.SHDSL (RJ45) DSIC Module

2-port 1000BASE-X HMIM Module (HMIM-2GEF)

4-port 1000BASE-X HMIM Module (HMIM-4GEF)

8-port 1000BASE-X HMIM Module (HMIM-8GEF)

24-port Gig-T Switch HMIM Module (HMIM-24GSW)

24-port Gig-T PoE Switch HMIM Module (HMIM-24GSW-POE)

1-port OC-3 / STM-1 CPOS HMIM Module (HMM-1CPOS)

2-port OC-3 / STM-1 CPOS HMIM Module (HMIM-2CPOS)

1-port OC-3c / STM-1c ATM SFP HMIM Module (HMIM-ATMOC3)

1-port dual-pair G.SHDSL interface module (MIM-1SHL-4W)(need to config HMIM-Adapter)

SPU-300 service module

MSR3012-DC

MSR3024-DC

MSR3024-POE

300W DCPower(PSR300-12D2)

Support USB modem E303c and E3131

Software feature and command updates

For more information about the software feature and command update history, see HPE MSR1000_MSR2000_MSR3000_MSR4000-CMW710-R0306P12 Release Notes (Software Feature Changes).

MIB updates

Table 4 MIB updates

Item	MIB file	Module	Description
CMW710-R0306P12			
New	None	None	None
Modified	rfc1213.mib	RFC1213-MIB	Modified description of sysDescr and sysObjectID
CMW710-R0306P11			
New	None	None	None
Modified	rfc1213.mib	RFC1213-MIB	Modified description of sysObjectID
CMW710-R0306P07			
New	None	None	None
Modified	rfc1213.mib	RFC1213-MIB	Modified description of sysDescr and sysObjectID
CMW710-R0305P08			
New	None	None	None
Modified	hh3c-3gmodem.mib	HH3C-3GMODEM-MIB	Modified description of hh3cWirelessCardOnlineTable, hh3cWirelessCardModemMode, hh3cWirelessCardCurNetConn, hh3cWirelessCardOnlineTime, hh3cWirelessCardOnlineType, hh3cUIMInfoTable,hh3cUIMIndex, hh3cUIMStatus,hh3cUIMImsi, hh3c3GCdma1xRttBID, hh3c3GCdma1xRttSID, hh3c3GCdma1xRttNID, hh3c3GCdmaEvDoSubNetID, hh3c3GGsmMcc, hh3c3GGsmMnc, hh3cSmsSrcNumberBind, hh3cSmsTimeBind, hh3cSmsEncodeBind, hh3cSmsContentBind, hh3cSmsRxNotifSwitch and hh3cSmsRxNotification
CMW710-R0305P04			
New	None	None	None
Modified	rfc1213.mib	RFC1213-MIB	Modified description of sysDescr, sysContact, sysName and sysLocation, sysObjectID

CMW710-R0305			
New	None	None	None
Modified	rfc1213.mib	RFC1213-MIB	Modified description of sysDescr and sysObjectID
CMW710-R0304P12			
New	None	None	None
Modified	rfc2925-disman-ping.mib	DISMAN-PING-MIB	Modified description of pingCtlTable
	hh3c-nqa.mib	HH3C-NQA-MIB	Modified description of hh3cNqaCtlTable
	hh3c-mplsext.mib	HH3C-MPLSEXT-MIB	Added hh3cMplsExtVpnStatsTable
CMW710-R0304			
New	None	None	None
Modified	hh3c-transceiver-info.mib	HH3C-TRANSCEIVER-INFO-MIB	Modified description of hh3cTransceiverCurTXPower and hh3cTransceiverCurRXPower
CMW710-E0302P06			
New	hh3c-stack.mib	HH3C-STACK-MIB	Added HH3C-STACK-MIB
	rfc5060-pim-std.mib	PIM-STD-MIB	Added PIM-STD-MIB
	rfc5240-pim-bsr.mib	PIM-BSR-MIB	Added PIM-BSR-MIB
	hh3c-qinqv2.mib	HH3C-QINQV2-MIB	Added HH3C-QINQV2-MIB
	rfc3019-ipv6-mld.mibs	IPV6-MLD-MIB	Added IPV6-MLD-MIB
	hh3c-nqa.mib	HH3C-NQA-MIB	Added HH3C-NQA-MIB
	hh3c-posa.mib	HH3C-POSA-MIB	Added HH3C-POSA-MIB
	rfc1473-ppp-ip.mib	PPP-IP-NCP-MIB	Added PPP-IP-NCP-MIB
	rfc1471-ppp-lcp.mib	PPP-LCP-MIB	Added PPP-LCP-MIB
	hh3c-mp-v2.mib	HH3C-MP-V2-MIB	Added HH3C-MP-V2-MIB
	hh3c-mplsext.mib	HH3C-MPLSEXT-MIB	Added HH3C-MPLSEXT-MIB
	hh3c-mplste.mib	HH3C-MPLSTE-MIB	Added H3C-MPLSTE-MIB
	rfc6445-mpls-frr-facility-std.mib	MPLS-FRR-FACILITY-STD-MIB	Added MPLS-FRR-FACILITY-STD-MIB
	rfc6445-mpls-frr-general-std.mib	MPLS-FRR-GENERAL-STD-MIB	Added MPLS-FRR-GENERAL-STD-MIB
	rfc3812-mpls-te-std.mib	MPLS-TE-STD-MIB	Added MPLS-TE-STD-MIB
	rfc3970-te.mib	TE-MIB	Added TE-MIB
	hh3c-transceiver-info.mib	HH3C-TRANSCEIVER-INFO-MIB	Added HH3C-TRANSCEIVER-INF

			O-MIB
	rfc5519-mgmd-std.mib	MGMD-STD-MIB	Added MGMD-STD-MIB
	rfc4560-disman-traceroute.mib	DISMAN-TRACEROUTE-MIB	Added DISMAN-TRACEROUTE-MIB
	rfc2925-disman-ping.mib	DISMAN-PING-MIB	Added DISMAN-PING-MIB
	rfc5603-pw-enet-std.mib	PW-ENET-STD-MIB	Added PW-ENET-STD-MIB
	rfc5601-pw-std.mib	PW-STD-MIB	Added PW-STD-MIB
	hh3c-snmp-ext.mib	HH3C-SNMP-EXT-MIB	Added HH3C-SNMP-EXT-MIB
	hh3c-posa.mib	HH3C-POSA-MIB	Added HH3C-POSA-MIB
	hh3c-bfd-std.mib	HH3C-BFD-STD-MIB	Added HH3C-BFD-STD-MIB
	hh3c-ppp-over-sonet.mib	HH3C-PPP-OVER-SONET-MIB	Added HH3C-PPP-OVER-SONET-MIB
	rfc3815-mpls-ldp-std.mib	MPLS-LDP-STD-MIB	Added MPLS-LDP-STD-MIB
	rfc4382-mpls-l3vpn-std.mib	MPLS-L3VPN-STD-MIB	Added MPLS-L3VPN-STD-MIB
	hh3c-license.mib	HH3C-LICENSE-MIB	Added HH3C-LICENSE-MIB
	hh3c-tunnel.mib	HH3C-TUNNEL-MIB	Added HH3C-TUNNEL-MIB
	rfc5643-ospfv3.mib	OSPFV3-MIB	Added OSPFV3-MIB
	rfc2981-disman-event.mib	DISMAN-EVENT-MIB	Added DISMAN-EVENT-MIB
	hh3c-pvst.mib	HH3C-PVST-MIB	Added HH3C-PVST-MIB
	hh3c-evi.mib	HH3C-EVI-MIB	Added HH3C-EVI-MIB
	hh3c-l2vpn.mib	HH3C-L2VPN-MIB	Added HH3C-L2VPN-MIB
Modified	rfc4444-isis.mib	ISIS-MIB	Modified description of isisSysLevelMinLSPGenInt
	rfc1213.mib	RFC1213-MIB	Modified description of sysDescr and sysObjectID; Modified TAA description of sysObjectID; Modified index of ipv6InterfaceTable; Modified description of sysContact and sysLocation; Modified Access of ipAddressStorageType.
	rfc4444-isis.mib	ISIS-MIB	Modified description of isisRouterID, isisSysLevelTEEnabled, isisNextCircIndex, isisCirc3WayEnabled, isisCircExtendedCircID, isisISAdj3WayState 和 isisISAdjNbrExtendedCircID

	rfc2465-ipv6.mib	IPV6-MIB	Modified description of ipv6IfDescr
	hh3c-splat-mstp.mib	HH3C-LswMSTP-MIB	Modified description of hh3cdot1sStpForceVersion
	rfc2933-igmp-std.mib	IGMP-STD-MIB	Modified description and PDS of IGMP-STD-MIB
	rfc2863-if.mib	IF-MIB	Updated the rfc2863-if.mib from rfc2233-if.mib
	hh3c-dns.mib	HH3C-DNS-MIB	Modified description of HH3C-DNS-MIB
	hh3c-domain.mib	H3C-DOMAIN-MIB	Modified description of HH3C-DOMAIN-MIB
	hh3c-sys-man.mib	HH3C-SYS-MAN-MIB	Modified example of hh3cSysBtmLoadTable
	hh3c-config-man.mib	HH3C-CONFIG-MAN-MIB	Modified description of hh3cCfgLogTerminalUser and hh3cCfgLogCmdSrcAddress
	rfc2933-igmp-std.mib	IGMP-STD-MIB	Modified description of igmpInterfaceQueryMaxResponseTime, igmpInterfaceRobustness, igmpInterfaceLastMembQueryIntvl, mldInterfaceQueryMaxResponseDelay, mldInterfaceRobustness, mldInterfaceLastListenQueryIntvl; Modified PDS of igmpCacheAddress, igmpCacheIfIndex, igmpCacheSelf, mldCacheAddress, mldCacheIfIndex, mldCacheSelf
	rfc2925-disman-ping.mib	DISMAN-PING-MIB	Modified description of pingCtlIfIndex; Added pingProbeFailed, pingTestFailed, pingTestCompleted, hh3cNqaProbeTimeOverThreshold, hh3cNqaJitterRTTOverThreshold, hh3cNqaProbeFailure, hh3cNqaJitterPacketLoss, hh3cNqaJitterSDOverThreshold, hh3cNqaJitterDSOverThreshold, hh3cNqaICPIFOverThreshold, hh3cNqaMOSOverThreshold

	rfc4133-entity.mib	ENTITY-MIB	Modified description of entPhysicalAlias, entPhysicalAssetID
	hh3c-if-ext.mib	HH3C-IF-EXT-MIB	Modified description of HH3C-IF-EXT-MIB
	hh3c-config-man.mib	HH3C-CONFIG-MAN-MIB	Modified description of HH3C-CONFIG-MAN-MIB
	hh3c-trng2.mib	HH3C-TRNG2-MIB	Modified description of HH3C-TRNG2-MIB
	rfc2925-disman-ping.mib	DISMAN-PING-MIB	Modified description of pingCtlTable
	hh3c-ntp.mib	HH3C-NTP-MIB	Modified description of hh3cNTPSystemMIB
	hh3c-entrelation.mib	HH3C-ENTRELATION-MIB	Modified description of hh3cEntRelationTable
	hh3c-entity-ext.mib	HH3C-ENTITY-EXT-MIB	Added hh3cEntityExtCpuUsageRecoverThreshold, hh3cEntityExtMemSizeRev, hh3cEntityExtCpuUsageIn1Minute, hh3cEntityExtCpuUsageIn5Minutes, hh3cEntityExtVoltageTable; Modified description and relationship of hh3cEntityExtTemperatureThreshold, Modified description of hh3cEntityExtTemperature.
	hh3c-ssh.mib	HH3C-SSH-MIB	Added hh3cSTelnetServerEnable, hh3cSCPServerEnable
	hh3c-lsw-dev-adm.mib	HH3C-LSW-DEV-ADM-MIB	Added hh3cLswSlotMemRev, hh3cLswSlotPhyMemRev, hh3cLswSlotRunTime and hh3cLswSlotMemUsedRev
	hh3c-lsw-dev-adm.mib	HH3C-LSW-DEV-ADM-MIB	Added hh3cLswCpuTable
	hh3c-3gmodem.mib	HH3C-3GMODEM-MIB	Added hh3cLteInfoTable
	hh3c-trap.mib	HH3C-TRAP-MIB	Modified description of hh3cTrapConfigSwitch
	rfc2863-if.mib	IF-MIB	Modified description of ifOutQLen
	hh3c-ip-address.mib	HH3C-IP-ADDRESS-MIB	Added hh3cIpAddrFirstTrapTime
	fc1471-ppp-lcp.mib	PPP-LCP-MIB	Modified description of pppLinkStatusBadFCSs

	ieee8023-lag.mib	IEEE8023-LAG-MIB	Modified title of IEEE8023-LAG-MIB
	hh3c-lag.mib	HH3C-LAG-MIB	Modified title of HH3C-LAG-MIB
	hh3c-domain.mib	HH3C-DOMAIN-MIB	Modified description of hh3cDomainDefault and hh3cDomainName
	hh3c-if-ext.mib	HH3C-IF-EXT-MIB	Added hh3cIfOperStatus and hh3cIfDownTimes
	rfc5603-pw-enet-std.mib	PW-ENET-STD-MIB	Modified pwEnetTable
	rfc5602-pw-mpls-std.mib	PW-MPLS-STD-MIB	Modified the module of PW-MPLS-STD-MIB
	rfc5603-pw-enet-std.mib	PW-ENET-STD-MIB	Modified the table of PW-ENET-STD-MIB
	table hh3cPosParamTable	HH3C-PPP-OVER-SONET-MIB	Only support POS interfaces
	hh3c-acl.mib	HH3C-ACL-MIB	Modified hh3cAclNumberGroupTable, hh3cPfilterApplyTable, hh3cPfilterAclGroupRunInfoTable, hh3cPfilterStatisticSumTable and added the hh3cAclNamedGroupTable, hh3cAclIPAclNamedBscTable, hh3cAclIPAclNamedAdvTable, hh3cAclNamedMACTable, hh3cAclIntervalTable hh3cAclNamedUserTable, hh3cPfilter2ApplyTable, hh3cPfilter2, hh3cPfilter2AclGroupRunInfoTable, hh3cPfilter2AclRuleRunInfoTable, hh3cPfilter2StatisticSumTable, hh3cAclNamedGroupTable
	hh3c-stack.mib	HH3C-STACK-MIB	Modified description of hh3cStackTopology
	rfc2819-rmon.mib	RMON-MIB	Modified description of default value in RMON-MIB
	rfc4502-rmon.mib	RMON2-MIB	Modified description of default value in RMON2-MIB
	lldp-ext-dot1-v2.mib	LLDP-EXT-DOT1-V2-MIB	Removed lldpXdot1dcbxConfigETSConfigurationTable lldpXdot1dcbxConfigETSRecommendationTable lldpXdot1dcbxConfigPFCTable lldpXdot1dcbxConfigApplicat

			ionPriorityTable lldpXdot1dcbxLocETSBasicConfigurationTable lldpXdot1dcbxLocETSConPriorityAssignmentTable lldpXdot1dcbxLocETSConTrafficClassBandwidthTable lldpXdot1dcbxLocETSConTrafficSelectionAlgorithmTable lldpXdot1dcbxLocETSRecoTrafficClassBandwidthTable lldpXdot1dcbxLocETSRecoTrafficSelectionAlgorithmTable lldpXdot1dcbxLocPFCBasicTable lldpXdot1dcbxLocPFCEnableTable lldpXdot1dcbxLocApplicationPriorityAppTable lldpXdot1dcbxRemETSBasicConfigurationTable lldpXdot1dcbxRemETSConPriorityAssignmentTable lldpXdot1dcbxRemETSConTrafficClassBandwidthTable lldpXdot1dcbxRemETSConTrafficSelectionAlgorithmTable lldpXdot1dcbxRemETSRecoTrafficClassBandwidthTable lldpXdot1dcbxRemETSRecoTrafficSelectionAlgorithmTable lldpXdot1dcbxRemPFCBasicTable lldpXdot1dcbxRemPFCEnableTable lldpXdot1dcbxRemApplicationPriorityAppTable lldpXdot1dcbxAdminETSBasicConfigurationTable lldpXdot1dcbxAdminETSConPriorityAssignmentTable lldpXdot1dcbxAdminETSConTrafficClassBandwidthTable lldpXdot1dcbxAdminETSConTrafficSelectionAlgorithmTable lldpXdot1dcbxAdminETSRecoTrafficClassBandwidthTab

			le lldpXdot1dcbxAdminETSRecoTrafficSelectionAlgorithmTable lldpXdot1dcbxAdminPFCBasicTable lldpXdot1dcbxAdminPFCEnableTable lldpXdot1dcbxAdminApplicationPriorityAppTable
CMW710-E0102			
New	rfc5060-pim-std.mib	PIM-STD-MIB	Added PIM-STD-MIB
	rfc5240-pim-bsr.mib	PIM-BSR-MIB	Added PIM-BSR-MIB
	hh3c-qinqv2.mib	HH3C-QINQV2-MIB	Added HH3C-QINQV2-MIB
	rfc3019-ipv6-mld.mibs	IPV6-MLD-MIB	Added IPV6-MLD-MIB
	hh3c-lsw-dev-adm.mib	HH3C-LSW-DEV-ADM-MIB	Added hh3cLswSlotMemRev, hh3cLswSlotPhyMemRev, hh3cLswSlotRunTime and hh3cLswSlotMemUsedRev
	hh3c-nqa.mib	HH3C-NQA-MIB	Added HH3C-NQA-MIB
	hh3c-posa.mib	HH3C-POSA-MIB	Added HH3C-POSA-MIB
Modified	rfc4444-isis.mib	ISIS-MIB	Modified description of isisSysLevelMinLSPGenInt
	hh3c-entity-ext.mib	HH3C-ENTITY-EXT-MIB	Modified description and relationship of hh3cEntityExtTemperatureThreshold
	rfc1213.mib	RFC1213-MIB	Modified description of sysDescr and sysObjectID
	rfc4444-isis.mib	ISIS-MIB	Modified description of isisRouterID, isisSysLevelTEEnabled, isisNextCircIndex, isisCirc3WayEnabled, isisCircExtendedCircID, isisISAdj3WayState and isisISAdjNbrExtendedCircID
	rfc2465-ipv6.mib	IPV6-MIB	Modified description of ipv6IfDescr
	hh3c-splat-mstp.mib	HH3C-LswMSTP-MIB	Modified description of hh3cdot1sStpForceVersion
	rfc2933-igmp-std.mib	IGMP-STD-MIB	Modified description and PDS of nodes in IGMP-STD-MIB
	rfc4133-entity.mib	ENTITY-MIB	Modified description and PDS of entPhysicalAlias and entPhysicalAssetID
	hh3c-posa.mib	HH3C-POSA-MIB	Modified description of hh3cPosaFcmIdleTimeout

	rfc2863-if.mib	IF-MIB	Updated the rfc2863-if.mib from rfc2233-if.mib
CMW710-E0102			
New	hh3c-ike-monitor.mib	HH3C-IKE-MONITOR-MIB	Added HH3C-IKE-MONITOR-MIB
	hh3c-ike-monitor.mib	HH3C-IPSEC-MONITOR-V2-MIB	Added HH3C-IPSEC-MONITOR-V2-MIB
	lldp-v2.mib	LLDP-V2-MIB	Added LLDP-V2-MIB
	lldp-ext-dot1-v2.mib	LLDP-EXT-DOT1-V2-MIB	Added LLDP-EXT-DOT1-V2-MIB
	lldp-ext-dot3-v2.mib	LLDP-EXT-DOT3-V2-MIB	Added LLDP-EXT-DOT3-V2-MIB
	rfc2620-radius-acc-client.mib	RADIUS-ACC-CLIENT-MIB	Added RADIUS-ACC-CLIENT-MIB
	rfc2618-radius-auth-client.mib	RADIUS-AUTH-CLIENT-MIB	Added RADIUS-AUTH-CLIENT-MIB
	hh3c-domain.mib	HH3C-DOMAIN-MIB	Added HH3C-DOMAIN-MIB
	hh3c-domain.mib	HH3C-DOMAIN-MIB	Added HH3C-DOMAIN-MIB
	hh3c-user.mib	HH3C-USER-MIB	Added HH3C-USER-MIB
	hh3c-qos-capability.mib	HH3C-QOS-CAPABILITY-MIB	Added HH3C-QOS-CAPABILITY-MIB
	rfc3621-power-ethernet.mib	POWER-ETHERNET-MIB	Added POWER-ETHERNET-MIB
	hh3c-power-eth-ext.mib	HH3C-POWER-ETH-EXT-MIB	Added HH3C-POWER-ETH-EXT-MIB
	rfc3814-mpls-ftn-std.mib	MPLS-FTN-STD-MIB	Added MPLS-FTN-STD-MIB
	hh3c-dhcp4.mib	HH3C-DHCP4-MIB	Added HH3C-DHCP4-MIB
	hh3c-dhcp-snoop2.mib	HH3C-DHCP-SNOOP2-MIB	Added HH3C-DHCP-SNOOP2-MIB
	rfc2662-adsl-line.mib	ADSL-LINE-MIB	Added ADSL-LINE-MIB
	rfc2819-rmon.mib	RMON-MIB	Added RMON-MIB
	rfc4502-rmon.mib	RMON2-MIB	Added RMON2-MIB
	hh3c-rmon-ext2.mib	HH3C-RMON-EXT2-MIB	Added HH3C-RMON-EXT2-MIB
	rfc5132-ipmcast.mib	IPMCAST-MIB	Added IPMCAST-MIB
Modified	hh3c-common-system.mib	HH3C-COMMON-SYSTEM-MIB	Modified HH3C-COMMON-SYSTEM-MIB to V2.4
	hh3c-splat-inf.mib	HH3C-LswINF-MIB	Modified HH3C-LswINF-MIB to V3.4
	hh3c-infocenter.mib	HH3C-INFO-CENTER-MIB	Added hh3cICLogbufferContTable in

			HH3C-INFO-CENTER-MIB
	hh3c-lsw-dev-adm.mib	HH3C-LSW-DEV-ADM-MIB	Added hh3cLswSlotPktBufFree, hh3cLswSlotPktBufInit, hh3cLswSlotPktBufMin and hh3cLswSlotPktBufMiss in hh3cLswSlotTable
	rfc2465-ipv6.mib	IPV6-MIB	Added ipv6RouteNumber, ipv6DiscardedRoutes and ipv6RouteTable
	rfc2096-ip-forward.mib	IP-FORWARD-MIB	Added inetCidrRouteNumber, inetCidrRouteDiscards and inetCidrRouteTable
	hh3c-config-man.mib	HH3C-CONFIG-MAN-MIB	Modified the description of hh3cCfgRunModifiedLast
	hh3c-cbqos2.mib	HH3C-CBQOS2-MIB	Modified the description of hh3cCBQoSPolicyClassNextIndex and hh3cCBQoSPolicyClassCfgInfoTable,and deleted hh3cCBQoSRedirectCfgInfoTable and hh3cCBQoSMirrorIfCfgInfoTable
	rfc3415-snmp-vacm.mib	NMP-VIEW-BASED-ACM-MIB	Modified the description of vacmContextName
	rfc1213.mib	RFC1213-MIB	Modified the description of ipNetToMediaIfIndex
	rfc3415-snmp-vacm.mib	SNMP-VIEW-BASED-ACM-MIB	Modified the description of vacmContextName
	rfc2233-if.mib	IF-MIB	Modified the description of ifAlias
	hh3c-common-system.mib	HH3C-COMMON-SYSTEM-MIB	Modified the description of hh3cSysStatisticPeriod, hh3cSysSamplePeriod, hh3cSysTrapResendPeriod, hh3cSysTrapCollectionPeriod, hh3cSysSnmpPort, hh3cSysSnmpTrapPort, hh3cSysNetID, hh3cSysLastSampleTime.And Modified the PDS of hh3cSysNetID
	rfc1213.mib	RFC1213-MIB	Modified the description of sysDescr and sysObjectID

Operation changes

None

Restrictions and cautions

1. HPE’s FXS not supporting call transfers from an analog phone to Lync Server.

Open problems and workarounds

201603140497

- Symptom: An MSR2003 router displays the message "Watchdog timeout ==MSR2003 Reboot with CW7 e0402l10" if GRE over IPsec runs on a subinterface and MPLS L3VPN settings are configured on the GRE tunnel interface.
- Condition: This symptom might occur if GRE over IPsec runs on a subinterface and MPLS L3VPN settings are configured on the GRE tunnel interface.
- Workaround: None.

201603220579

- Symptom: An MFR subinterface cannot be pinged when certain operations are performed.
- Condition: This symptom might occur if the following operations are performed:
  a. Bind physical interfaces to an MFR interface.
  b. Create the MFR interface.
  c. Create an MFR subinterface.
- Workaround: Use the following procedure to create an MFR subinterface:
  d. Create an MFR interface.
  e. Bind physical interfaces to the MFR interface.
  f. Create an MFR subinterface.

201603240546

- Symptom: An IPsec tunnel cannot be set up after primary and secondary IP addresses are assigned to a VT interface that uses an IPsec policy.
- Condition: This symptom might occur if primary and secondary IP addresses and an IPsec policy are configured for a VT interface.
- Workaround: None.

201601190413

- Symptom: When packets exceeding the path MTU are used to ping an address through an IPv6 IPsec tunnel, the ping operation fails.
- Condition: This symptom occurs if the following conditions exist:
  - One end of the IPsec tunnel is an IRF fabric.
  - On the end, the interface that receives the ICMP error packets (packet too big) from the intermediate path is on a different device from the interface that sends packets encrypted by IPsec.
- Workaround: None.

201604070603

- Symptom: The BootWare logo for HP model routers is displayed as HPE HP.
- Condition: This symptom occurs when the HP model routers are started.
- Workaround: None.

201604220017

- Symptom: The values of the hh3cTransceiverCurTXPower and hh3cTransceiverCurRXPower MIB nodes are not updated in time when the transmitting power and receiving power of transceiver modules change.
- Condition: This symptom might occur if the transmitting power and receiving power of transceiver modules change.
- Workaround: None.

201604280185

- Symptom: Communication with a peer is interrupted when the router sends the peer frames with a maximum length of 60 bytes.
- Condition: This symptom might occur if the peer uses a non-standard protocol and drops small frames.
- Workaround: None.

201605030237

- Symptom: When IKE local extended authentication is configured on a router running a software version earlier than R0306P12, IP pool address assignment fails.
- Condition: This symptom might occur if the IKE address pool attribute is configured only for local users specified in IKE profile view.
- Workaround: Specify the IKE address pool attribute in the view of IKE local authentication users.

201604260624

- Symptom: FIB entries are not deleted when the outgoing interface in the entries goes down.
- Condition: This symptom might occur if an Ethernet interface goes down.
- Workaround: None.

List of resolved problems

Resolved problems in CMW710-R0306P12

201602290360

- Symptom: After a .cfg configuration file is used to restore the configuration of the router, OSPF sessions that are not configured with a router ID do not use the global router ID.
- Condition: This symptom might occur if a .cfg configuration file is used to restore the configuration of the router.

201604010161

- Symptom: MAC address entries age out on a voice VLAN-enabled Layer 2 interface when the interface has been forwarding traffic to and from the corresponding MAC addresses.
- Condition: This symptom might occur if voice VLAN is enabled on a Layer 2 interface.

201604130088

- Symptom: On an MSR4000 router, interfaces remain in discarding state after spanning tree is globally enabled.
- Condition: This symptom might occur if spanning tree is globally enabled on an MSR4000 router.

201604090420

- Symptom: The QoS policy configuration issued by IMC contains incorrect parameters for the CAR action of a traffic behavior.
- Condition: None.

201603050111

- Symptom: After voice VLAN is enabled, and the router is rebooted, the priority of voice VLAN packets is incorrect.
- Condition: This symptom might occur if voice VLAN is enabled, and the router is rebooted.

201512310070

- Symptom: CVE-2015-3194
- Condition: Certificate verify crash with missing PSS parameter.
- Symptom: CVE-2015-3195
- Condition: X509_ATTRIBUTE memory leak.
- Symptom: CVE-2015-3196
- Condition: Race condition handling PSK identify hint.
- Symptom: CVE-2015-1794
- Condition: Anon DH ServerKeyExchange with 0 p parameter.

201603160152

- Symptom: Aggressive IKE negotiation fails for specific Android phones, for example, phones running Android 5.1.1.
- Condition: This symptom might occur if the router authenticates specific Android phones.

201511160131

- Symptom: POS terminal listening fails if the listening port or the adjacent ports are used by other applications.
- Condition: This symptom might occur if the POS terminal listening port or the adjacent ports are used by other applications.

201604060109

- Symptom: The 4G MIB is inaccessible.
- Condition: None.

201604230042

- Symptom: IMC SNMP cannot automatically discover LNS IP addresses.
- Condition: None.

201603140262

- Symptom: A GRE tunnel goes down unexpectedly.
- Condition: This symptom might occur if the router and its peer send keepalive packets to each other, but the router does not receive any keepalive acknowledgment packet from the peer.

Resolved problems in CMW710-R0306P11

201602290064

- Symptom: After the pre-shared key is modified, IKE negotiation fails, and the router displays the "2th byte of the structure ISAKMP Identification Payload must be 0" message.

- Condition: This symptom might occur if the old pre-shared key is not deleted when the new key is set.

201602170270

- Symptom: On a CDMA-1xRTT/CDMA-EVDO network, 3G VPDN access fails if the mode of the SIC-4G-LTE module is switched to 3G.
- Condition: This symptom might occur if the mode of the SIC-4G-LTE module is switched to 3G.

201601260255

- Symptom: After the router reboots, BFD sessions cannot be set up on subinterfaces that are in an aggregation group.
- Condition: This symptom might occur if the router reboots.

201603150157

- Symptom: IMC obtains incorrect packet statistics for Layer 2 interfaces on an MSR2004-24 router.
- Condition: This symptom might occur if IMC reads the packet statistics on Layer 2 interfaces of an MSR2004-24 router.

201602260225

- Symptom: An interface on an SIC-4/9FSW module cannot send broadcast traffic in its VLAN after certain operations are performed.
- Condition: This symptom might occur if the following operations are performed:
  a. Enable STP globally, and form a loop on an interface of an SIC-4/9FSW module.
  b. Remove the blocked interface from its VLAN.
  c. Disable STP globally, and assign the interface to its original VLAN.

201602260270

- Symptom: The router does not display the command execution result after AT commands are manually executed.
- Condition: None.

201603110385

- Symptom: The router does not send a trap message after a warm or cold reboot.
- Condition: This symptom might occur if a warm or cold reboot is performed.

201603240091

- Symptom: Dialup fails if a 4G module is operating in 3G mode.
- Condition: This symptom might occur if the following operations are performed:
  a. Install a 4G SIM card in a 4G module.
  b. Set the mode of the 4G module to 3G, and reboot the module.

201603100323

- Symptom: When a portal preauthentication domain and MAC-based quick portal authentication are used together, authorization attributes in the preauthentication domain do not take effect on preauthentication users.
- Condition: This symptom might occur if a portal preauthentication domain and MAC-based quick portal authentication are used together, and MAC-based quick portal authentication is triggered when preauthentication users access the network.

201601210332

- Symptom: After a subcard is removed and the router is rebooted, the interface indexes for the subcard change in the MIB.
- Condition: This symptom might occur if a subcard is removed and the router is rebooted.

201601180511

- Symptom: When OpenFlow is enabled, application layer processing is slow and packet loss occurs.
- Condition: This symptom might occur if OpenFlow is enabled.

201603290254

- Symptom: The router reboots unexpectedly if it has 4 GB of memory.
- Condition: This symptom might occur if the router has 4 GB of memory.

201602290118

- Symptom: The route filtering settings of RIP processes running in VPNs are lost after the running configuration is saved and the router is rebooted.
- Condition: This symptom might occur if one of the following operations is performed:
  - Upgrade the software and reboot the router.
  - Use a .cfg configuration file when rebooting the router.

201602260072

- Symptom: An L2TP LAC does not have uplink traffic statistics for users.
- Condition: None.

201602200075

- Symptom: PPPoE clients fail to come online when the router acts as the PPPoE server if the DNS server IP address is an IPCP configuration option in IPCP negotiation.
- Condition: This symptom might occur if the DNS server IP address is an IPCP configuration option in IPCP negotiation.

201602010352

- Symptom: When network congestion occurs, high-priority packets are dropped on a CBQ-enabled MP link.
- Condition: This symptom might occur if CBQ is configured for an MP link, and network congestion occurs.

201602150740

- Symptom: 4G dialup fails if an APN profile specifies the username and password.
- Condition: This symptom might occur if an APN profile specifies the username and password for 4G dialup.

201604060109

- Symptom: No information can be obtained from the 4G MIB.
- Condition: None.

201604070435

- Symptom: An HMIM module might drop packets or stop forwarding traffic.
- Condition: None.

201604130088

- Symptom: When STP is globally enabled on a distributed router, the state of Layer 2 interfaces becomes discarding.
- Condition: None.

Resolved problems in CMW710-R0306P07

201601190330

- Symptom: The VPM light of the RT-SPU-100 module fails the equipment test.
- Condition: None.

201601200375

- Symptom: The GPS track curve reported by the router is inaccurate.
- Condition: This symptom occurs when the 4G modem just starts to work.

201601220079

- Symptom: Repeated satellite information is displayed when you view the 4G modem information.
- Condition: None.

201512300275

- Symptom: TACACS accounting configured at the CLI does not take effect.
- Condition: This symptom occurs if the **super** command is used to obtain another user role.

201511270766

- Symptom: The status of a Layer 2 aggregate interface is incorrect.
- Condition: This symptom occurs if master/subordinate switchover is repeatedly performed for the router.

201601080547

- Symptom: The configuration of an Ethernet subinterface is lost after it is assigned to an aggregation group.
- Condition: This symptom occurs if the router reboots after the software is upgraded or the router is started by using a .cfg configuration file.

201601120609

- Symptom: The user profile name cannot contain periods (.).
- Condition: None.

201601130385

- Symptom: The router reboots unexpectedly.
- Condition: This symptom occurs if LDP receives abnormal TCP PDUs with the length field value 0 in the header.

201601120436

- Symptom: The CPU usage reaches 100% in the core where the LDP active process resides.
- Condition: This symptom occurs if the following conditions exist:
  - LDP NSR is configured. After the session comes up, active/standby switchover has occurred.
  - The number of messages that the session sends by using TCP is incorrectly counted.

201511260615

- Symptom: The router reboots unexpectedly.
- Condition: This symptom occurs if IPsec SAs and IKE SAs are repeatedly set up and deleted.

201511050564

- Symptom: The router reboots unexpectedly.
- Condition: This symptom occurs if IPsec protects OSPFv3 routes, and active/standby switchover is performed for the router.

201411190490

- Symptom: An ADVPN tunnel fails to be established.
- Condition: This symptom occurs if the ADVPN tunnel interface is bound to a VPN instance.

201510300470

- Symptom: The operating mode configuration for an SIC-1VE1T1 module does not take effect.
- Condition: This symptom occurs if the following operations are performed:
  a. Configure the module to operate in T1 mode, and save the configuration.
  b. Switch the operating mode to E1.
- Reboot the router without saving the configuration.

201601270151

- Symptom: The cable impedance of a CE1/PRI interface on an SIC-1VE1T1 module is set to 120 ohm, but the command output shows that the interface's cable impedance is 75 ohm.
- Condition: This symptom might occur if the cable impedance of a CE1/PRI interface on an SIC-1VE1T1 module is set to 120 ohm.

201602030487

- Symptom: A Layer 3 subinterface on an SIC-4/9FSW(P) module cannot forward traffic if the VLAN numbered with the subinterface number is not created.
- Condition: This symptom might occur if a Layer 3 subinterface is created on an SIC-4/9FSW(P) module and the VLAN numbered with the subinterface number is not created.

201512110251

- Symptom: The router does not have packet statistics for an aggregate interface that uses subinterfaces as members.
- Condition: None.

201601240052

- Symptom: MFR subinterfaces cannot be created.
- Condition: None.

201512250041

- Symptom: Modification of the service type for users in an ISP domain takes effect, but the router still displays the old configuration.
- Condition: This symptom might occur if the service type for users in an ISP domain is modified.

201601280133

- Symptom: The expired license of the router is reactivated, but some features are still unavailable after the router automatically loads the image file.
- Condition: This symptom might occur if the expired license is reactivated.

201602240243

- Symptom: The router might reboot unexpectedly after running for 497 days.
- Condition: None.

201602010060

- Symptom: RIP route filtering settings on the router are lost after the running configuration is saved and the router is rebooted.
- Condition: This symptom might occur if one of the following operations is performed:
  - Upgrade the software and reboot the router.
  - Use a .cfg configuration file when rebooting the router.

201603090066

- Symptom: An ADVPN tunnel cannot be set up if a loopback interface provides the tunnel source address and the physical tunnel outgoing interface is a NAT-enabled PPPoE dialer interface.
- Condition: This symptom might occur if a loopback interface provides the tunnel source address and the physical tunnel outgoing interface is a NAT-enabled PPPoE dialer interface.

201603090064

- Symptom: The DVPN service is interrupted during IPsec SA renegotiation.
- Condition: This symptom might occur if the IPsec SA expires and IPsec SA renegotiation is performed.

201603020540

- Symptom: The memory usage keeps rising if no ACL is specified for an IPsec policy template.
- Condition: This symptom might occur if no ACL is specified for an IPsec policy template.

201601120419

- Symptom: An NMS returns an error when it reads the 3G modem table from the MIB of the router.
- Condition: This symptom might occur if two SIC-3G cards are installed on the router.

201601160235

- Symptom: The router as a PPPoE server has duplicate PPPoE client information.
- Condition: None.

201601180617

- Symptom: The global DHCP address pool usage is incorrect.
- Condition: None.

201601260049

- Symptom: The router reboots unexpectedly when it receives GRE packets with the DF bit set.
- Condition: This symptom might occur if the router receives GRE packets with the DF bit set.

201601190036

- Symptom: The secondary IP addresses of a Virtual-Template interface are unavailable.
- Condition: None.

201601210335

- Symptom: The PPP IP segment match feature does not take effect if the **user-basic-service-ip-type** { **ipv4** | **ipv6** | **ipv6-pd** } command is not configured.

- Condition: This symptom might occur if the **user-basic-service-ip-type** { **ipv4** | **ipv6** | **ipv6-pd** } command is not configured.

201602010492

- Symptom: A VLAN interface cannot forward IPv6 traffic if a Layer 2 aggregate interface performs forwarding for the VLAN interface.
- Condition: This symptom might occur if a Layer 2 aggregate interface performs forwarding for a VLAN interface.

201601210099

- Symptom: When the FTP, SSH, Telnet, DNS, HTTP, or HTTPS service is enabled, 31 irrelevant TCP ports are also opened.
- Condition: This symptom might occur if the FTP, SSH, Telnet, DNS, HTTP, or HTTPS service is enabled.

201601120047

- Symptom: When execution of the description command in interface view fails because the specified description contains unsupported special characters, no prompt is displayed for the failure.
- Condition: This symptom might occur if the description command specifies a description that contains unsupported special characters.

201601260439

- Symptom: Memory leaks and the device reboots unexpectedly.
- Condition: This symptom probably occurs if GRE tunnels/ADVPN tunnels are established over PPPoE and traffic are forwarded through these tunnels.

Resolved problems in CMW710-R0305P08

201512030136

- Symptom: A nested QoS policy cannot classify traffic correctly.
- Condition: This symptom occurs if QoS pre-classify is enabled for IPsec, and a nested QoS policy is configured to classify the encrypted traffic by using DSCP values.

201508060073

- Symptom: GTS cannot well process bursty traffic, and traffic is not sent evenly. When a small burst size is configured, the traffic cannot reach the expected rate.
- Condition: This symptom occurs if GTS is configured on an interface to shape traffic.

201512090619

- Symptom: The system displays an invalid version notification when the software of a distributed router or an IRF fabric is upgraded from R0305P04.
- Condition: This symptom occurs if one of the following conditions exists:
  - On the distributed router, the slot number of the active MPU is higher than the slot number of the standby MPU, and the software image is stored on the active MPU.
  - On the IRF fabric, the chassis number of the master IRF member router is higher than the chassis numbers of the subordinate IRF member routers, and the software image is stored on the master IRF member router.

201511200241

- Symptom: HMIM-8GEE interface cards might stop sending packets.

- Condition: This symptom might occur if interfaces on the HMIM-8GEE interface cards receive MPLS frames greater than 3072 bytes.

201509250085

- Symptom: Operating modes do not take effect on interfaces on DSIC-1SHDSL-8W interface cards.
- Condition: This symptom might occur if the DSIC-1SHDSL-8W interface cards are installed in the router together with other interface cards.

201512210405

- Symptom: After a static MAC address entry is configured on the MSR2004, MAC address table synchronization fails and the static MAC address entry cannot be deleted from switching chips.
- Condition: This symptom might occur if the MAC address in the static MAC address entry is the source MAC address of traffic.

201511050149

- Symptom: Memory leak occurs.
- Condition: This symptom occurs if the **display debugging** command is repeatedly executed.

201512230491

- Symptom: A serial interface goes down and then comes up.
- Condition: This symptom occurs if the following operations have been performed:
  a. The operating mode of the serial interface is changed from synchronous to asynchronous.
  b. A master/subordinate switchover occurs.

201511140166

- Symptom: The system fails to display or clear statistics for FCM interfaces.
- Condition: This symptom occurs if you do not specify an FCM interface when executing the **display fcm statistics** or **reset fcm statistics** command.

201512030136

- Symptom: No traffic matches a child QoS policy.
- Condition: This symptom occurs if the child QoS policy is nested in a parent QoS policy.

201508060073

- Symptom: The download speed is slow when a QoS GTS action is configured.
- Condition: This symptom occurs if you set a small CBS value for the QoS GTS action.

201511060514

- Symptom: QoS queuing configuration cannot be modified on an interface on the MSR4000 after a master/subordinate switchover.
- Condition: None.

201512110364

- Symptom: The L2VE interface and L3VE interface display up state twice after a master/subordinate switchover.
- Condition: None.

201512010186

- Symptom: CVE-2015-7704
- Condition: Denial of Service by Spoofed Kiss-of-Death.

- Symptom: CVE-2015-7705
- Condition: Denial of Service by Priming the Pump.
- Symptom: CVE-2015-7855
- Condition: Denial of Service Long Control Packet Message.
- Symptom: CVE-2015-7871
- Condition: NAK to the Future: NTP Symmetric Association Authentication Bypass Vulnerability.

201507140251

- Symptom: VRRPv3 does not support packet authentication. However, no error is displayed when packet authentication is configured for VRRPv3.
- Condition: None.

201505270318

- Symptom: No prompt is displayed when the router finishes downloading a file as an FTP client.
- Condition: This symptom occurs if the downloaded file is greater than 2147483647 bytes.

201512300140

- Symptom: NTP time synchronization fails between the router and a Cisco device with a time accuracy of 2^{32}.
- Condition: This symptom occurs if NTP time synchronization occurs between the device and a Cisco device with a time accuracy of 2^{32}.

201507210022

- Symptom: IPsec RRI cannot be implemented based on negotiated traffic flow in the IPsec VPN.
- Condition: None.

201511260648

- Symptom: Traffic cannot be forwarded through ADVPN tunnels.
- Condition: This symptom occurs if ADVPN tunnels are established over an IPv6 network.

201511300165

- Symptom: The results of tests that FIPS performs for 3DES and AES-wrap are unexpected.
- Condition: None.

201507020257

- Symptom: The DF bit setting in IPsec packets does not take effect.
- Condition: This symptom occurs if the DF bit of IPsec packers is set on the source interface bound to an IPsec policy.

201512091595

- Symptom: IKEv2 uses protocol number 5000 instead of 4500.
- Condition: This symptom occurs if IKEv2 NAT traversal is configured.

201510080297

- Symptom: The router fails to perform PPTP dial-up.
- Condition: This symptom might occur if the router accesses the PPTP server through the NAT server.

201512100696

- Symptom: The OpenFlow controller fails to discover the router during topology discovery.

- Condition: This symptom occurs if the OpenFlow controller uses BDDP to perform topology discovery.

201509160400

- Symptom: A user line cannot be configured by using the **line** *number* command.
- Condition: This symptom occurs if you use the **line** *number* command to configure the user line.

201509180141

- Symptom: In CWMP, a CPE fails to establish a connection to a server.
- Condition: This symptom occurs if the CWMP connection interface belongs to a VPN instance.

201511040399

- Symptom: The expected bandwidth configuration on a VLAN interface is lost.
- Condition: This symptom occurs after two master/subordinate switchovers.

201512010078

- Symptom: The **boot-loader file** command fails to specify a startup image file.
- Condition: This symptom occurs if the startup image file resides on the standby MPU.

201510300441

- Symptom: Unexpected page break occurs during faxing or fax negotiation fails.
- Condition: This symptom occurs if multiple voice calls are established during faxing.

201512110328

- Symptom: MAC address entries age out when they are configured not to age.
- Condition: None.

201510160271

- Symptom: The dual-stack PPPoE server that mainly provides IPv6 services exhausts IPv6 addresses in the DHCPv6 address pool. PPPoE users who have no IPv6 addresses assigned can log in.
- Condition: This symptom occurs if two master/subordinate switchovers occur after IPv6 address exhaustion.

201510220524

- Symptom: A logged-in PPPoE user cannot receive traffic.
- Condition: This symptom occurs if the following conditions exist:
  - Two routers form an IRF fabric.
  - The PPPoE user logs in through an IRF port.
  - The master device reboots.

201510130373

- Symptom: A SIP call cannot be established.
- Condition: This symptom occurs if the router receives an INVITE request without SDP information.

201507200041

- Symptom: The VE1 PRI Layer 3 test fails.
- Condition: This symptom occurs if the device receives a SETUP message in which the value of the cap. field is video.

201510160206

- Symptom: The dual-stack PPPoE server that mainly provides IPv6 services has available IPv6 addresses in the DHCPv6 address pool. PPPoE users who have no IPv4 addresses assigned cannot log in.
- Condition: None.

201509220301

- Symptom: The Cellular process reboots unexpectedly.
- Condition: This symptom occurs if the **profile main** command is executed on a cellular interface on the MSR4000.

201510230327

- Symptom: If a PPPoE user logs in and then logs out, the CIR specified in the user profile for the user does not take effect.
- Condition: This symptom occurs if the following conditions exist:
  - Two routers form an IRF fabric.
  - The PPPoE user logs in through an IRF port.
  - The master device reboots.

201508100249

- Symptom: No information is displayed after the **display voice sip call command** is executed on the MSR4000.
- Condition: None.

201512180019

- Symptom: The AC of an MPLS L2VPN cannot receive packets from a CE.
- Condition: This symptom occurs if a Layer 3 aggregate subinterface is used as the AC of the MPLS L2VPN.

201511250428

- Symptom: Settings of the **answer-time**, **idle-time**, and **trade-time** parameters cannot be deployed to interface cards related to POS terminal access.
- Condition: This symptom occurs if you set the **answer-time**, **idle-time**, and **trade-time** parameters in system view.

201512010169

- Symptom: An error occurs on an IRF physical interface after the router reboots and some operations are performed on the router.
- Condition: This symptom occurs if two GigabitEthernet interfaces are used as IRF physical interfaces and one of the IRF physical interfaces goes down.

201512030468

- Symptom: Packet filtering does not take effect on an Ethernet interface operating in bridge mode.
- Condition: This symptom occurs if packet filtering is enabled on the Ethernet interface operating in bridge mode.

201511210055

- Symptom: Interfaces on the HMIM-8GSW or HMIM-24GSW interface card receive a large number of ARP requests. Then, a packet statistics error occurs and the switching modules cannot operate correctly.

- Condition: This symptom occurs if ARP snooping is enabled on interfaces on the HMIM-8GSW or HMIM-24GSW interface card.

201512180334

- Symptom: The MSR2004-24 or MSR2004-48 router reboots unexpectedly.
- Condition: This symptom occurs if the parameter of an SDK function on the switching chip of the router is null.

201511120124

- Symptom: Packets are sent out of order.
- Condition: This symptom occurs if packets are sent in per-flow mode.

201511270774

- Symptom: A silent call is established after the called party goes off-hook.
- Condition: This symptom occurs if the router uses the SIC-1VE1 or SIC-1VT1 voice card to initiate calls.

201512140104

- Symptom: The **mac-address max-mac-count** command does not take effect, and no error message that the router does not support this command is displayed.
- Condition: This symptom occurs if the **mac-address max-mac-count** command is executed on a Layer 2 aggregate interface.

201511300156

- Symptom: The static IPv6 address binding feature does not take effect on an interface of the HMIM-8GSW interface card.
- Condition: This symptom occurs if the static IPv6 address binding feature is configured on the interface of the HMIM-8GSW card.

201512100157

- Symptom: Transceiver modules on the HMIM-8GSW interface card might fail the equipment test.
- Condition: This symptom occurs if the equipment test is performed on the HMIM-8GSW interface card.

201511170229

- Symptom: When a POS terminal hangs up, the FCM interface stays in up state and the FCM card becomes unavailable.
- Condition: This symptom occurs if the router uses the FCM card for POS dial-up access and a large number of POS terminals repeatedly dial up.

201511250418

- Symptom: The 3G chip MC8705 fails to update the firmware.
- Condition: This symptom occurs if an MSR2004/4000 router is used to update the firmware of the 3G chip MC8705.

201510190389

- Symptom: An L2TP tunnel cannot be established because the router performs strict check on packets with hidden AVPs.
- Condition: This symptom occurs if the router acts as the L2TP LNS and receives packets with hidden AVPs sent by the LAC.

201510290199

- Symptom: An L2TP user with a matching full username fails L2TP authentication. An L2TP tunnel cannot be established.
- Condition: This symptom occurs if the router acts as the L2TP LNS and is configured with the **ppp user attach-format imsi-sn split** command.

201510290176

- Symptom: An L2TP user whose authentication information does not contain an at sign (@) fails L2TP authentication. An L2TP tunnel cannot be established.
- Condition: This symptom occurs if the router acts as the L2TP LNS and is configured with the **ppp user accept-format imsi-sn split** @ command.

201508190420

- Symptom: Memory loss occurs after a voice interface card on the router reboots.
- Condition: This symptom occurs if the CPU usage of the router reaches 100%.

201510160215

- Symptom: The router acts as the PPPoE server and uses DHCPv6 to assign IPv6 addresses to hosts. No IPv6 addresses are displayed for PPPoE users in the **display ppp access-user** command output.
- Condition: This symptom occurs if a master/subordinate switchover occurs after PPPoE users log in.

201511250195

- Symptom: The MAC address entry for a VRRP group still exists on the router after the VRRP group is deleted.
- Condition: This symptom occurs if you assign an IP address to the VRRP group and then delete the VRRP group.

201506180269

- Symptom: The router stops sending packets when a POS terminal accesses the router.
- Condition: This symptom might occur if the number of concurrent connections reaches 30 on the AM interface multiple times and configuration of the AM interface changes.

201511170159

- Symptom: IPsec does not support SM4 algorithms.
- Condition: None.

Resolved problems in CMW710-R0305P04

201510300500

- Symptom: Packets are out of order if flow-based forwarding is enabled.
- Condition: This symptom might occur if flow-based forwarding is enabled.

201510220351

- Symptom: The IMSIs of some China Telecom 3G SIM cards cannot be correctly identified.
- Condition: This symptom might occur if the Vodafone IMSIs are stored as the 3GPP IMSIs of the SIM cards.

201509300412

- Symptom: The peer drops the ARP packets sent by the router if the ARP packets carry 802.1Q VLAN tags with the CFI bit set to 1.
- Condition: This symptom might occur if the ARP packets carry 802.1Q VLAN tags with the CFI bit set to 1.

201509240177

- Symptom: The router reboots unexpectedly if an HMIM-CNDE module is removed by using the **remove** command during the IPsec packet forwarding process.
- Condition: This symptom might occur if an HMIM-CNDE module is removed by using the **remove** command during the IPsec packet forwarding process.

201510260569

- Symptom: If port isolation is configured on both a Layer 2 aggregate interface and its member ports, the configuration fails on the aggregate interface or its member ports. Removal of the port isolation configuration also fails.
- Condition: This symptom might occur if port isolation is configured on a Layer 2 aggregate interface and its member ports.

201509240346

- Symptom: Channel configuration on radio interfaces is lost after a reboot.
- Condition: None.

201509300064

- Symptom: The traffic statistics for 3G/4G serial and Eth-channel interfaces are 0 in the MIB.
- Condition: None.

201510300208

- Symptom: The router cannot communicate with the peer if the router acts as the LNS to set up an L2TP tunnel to the peer by using a SIC-4FSW module.
- Condition: This symptom might occur if the router acts as the LNS to set up an L2TP tunnel to the peer by using a SIC-4FSW module.

201511110304

- Symptom: The router reboots unexpectedly if VLAN interfaces are created or deleted during the traffic forwarding process.
- Condition: This symptom might occur if VLAN interfaces are created or deleted during the traffic forwarding process.

201508290046

- Symptom: The CPU usage of the router rises if the router acts as a Telnet server and Telnet login to the router is aborted abnormally.
- Condition: This symptom might occur if the router acts as a Telnet server and Telnet login to the router is aborted abnormally.

201509290092

- Symptom: Telnet login with remote TACACS/RADIUS authentication fails.
- Condition: This symptom might occur if Telnet login with remote TACACS/RADIUS authentication is performed.

201505130349

- Symptom: Static NAT444 traffic does not trigger NAT444 user logging.

- Condition: None.

201507070217

- Symptom: ACL mismatches occur if a connection limit policy is applied to DS-Lite tunnels.
- Condition: This symptom might occur if a connection limit policy is applied to DS-Lite tunnels.

201510200471

- Symptom: The routing, multicast, authentication, and voice modules stop working, and incorrect information is displayed for the TRAP, NetStream, and DHCP modules.
- Condition: This symptom might occur if the router has been running for more than seven months (214 days).

201508260173

- Symptom: The time range status is incorrect if NTP is used.
- Condition: This symptom might occur if NTP is used.

201510140128

- Symptom: DDNS dynamic domain name update fails if the DDNS password contains forward slashes (/).
- Condition: This symptom might occur if the DDNS password contains forward slashes (/).

201509160563

- Symptom: The router reboots unexpectedly if the router acts as a PPPoE server and PPPoE users repeatedly come online and go offline.
- Condition: This symptom might occur if the router acts as a PPPoE server and PPPoE users repeatedly come online and go offline.

201401100267

- Symptom: PPP IPCP negotiation fails when a PPPoE client initiates a connection request to the router, and the VA interface goes up and comes down constantly.
- Condition: This symptom might occur if NAT is performed for the PPPoE client, and IP address negotiation is enabled on the dialer interface.

201509170256

- Symptom: Information about the last login is not displayed for a user that passes authentication.
- Condition: None.

201507160359

- Symptom: CVE-2014-8176
- Condition: If a DTLS peer receives application data between the ChangeCipherSpec and Finished messages. May result in a segmentation fault or potentially, memory corruption.
- Symptom:CVE-2015-1788
- Condition: When processing an ECParameters structure OpenSSL enters an infinite loop. This can be used to perform denial of service against any system which processes public keys, certificate requests or certificates.
- Symptom: CVE-2015-1789
- Condition: X509_cmp_time does not properly check the length of the ASN1_TIME string and/or accepts an arbitrary number of fractional seconds in the time string. An attacker can use this to craft malformed certificates and CRLs of various sizes and potentially cause a segmentation fault, resulting in a DoS on applications that verify certificates or CRLs.
- Symptom: CVE-2015-1790

- Condition: The PKCS#7 parsing code does not handle missing inner EncryptedContent correctly. An attacker can craft malformed PKCS#7 blobs with missing content and trigger a NULL pointer dereference on parsing.
- Symptom: CVE-2015-1791
- Condition: If a NewSessionTicket is received by a multi-threaded client when attempting to reuse a previous ticket then a race condition can occur potentially leading to a double free of the ticket data.
- Symptom: CVE-2015-1792
- Condition: When verifying a signedData message the CMS code can enter an infinite loop. This can be used to perform denial of service against any system which verifies signedData messages using the CMS code.

201510130373

- Symptom: SIP calls cannot be placed if the router receives INVITE requests with no SDP information.
- Condition: This symptom might occur if the router receives INVITE requests with no SDP information.

201507200041

- Symptom: The router sends a SIP response message that contains an incorrect call release cause code if the router receives an INVITE request with SDP information that contains the video capability.
- Condition: This symptom might occur if the router receives an INVITE request with SDP information that contains the video capability.

201508100249

- Symptom: The **display voice sip call** command outputs nothing if an MSR4000 router is a single-chassis IRF fabric and uses the chassis number 2.
- Condition: This symptom might occur if an MSR4000 router is a single-chassis IRF fabric and uses the chassis number 2.

201508190420

- Symptom: Memory leaks occur if the voice card is rebooted at the CLI when the CPU usage is 100%.
- Condition: This symptom might occur if the voice card is rebooted at the CLI when the CPU usage is 100%.

201510270033

- Symptom: Upgrading the standby MPU of the MSR4000 router fails.
- Condition: This symptom might occur if the active MPU only has an .ipe startup image file, and the **boot-loader** command specifies the .ipe file for upgrading the standby MPU.

Resolved problems in CMW710-R0305

201509070388

- Symptom: A fiber port cannot come up if a 100-Mbps optical transceiver module is installed in the port and the **speed 100** command is executed on the port.
- Condition: This symptom might occur if a 100-Mbps optical transceiver module is installed in the port and the **speed 100** command is executed on the port.

201504130290

- Symptom: Fax transmission fails if fax pass-through by using the G.711alaw or G711ulaw codec is used for DIS signal transmission.
- Condition: This symptom might occur if fax pass-through by using the G.711alaw or G711ulaw codec is used for DIS signal transmission.

201509240046

- Symptom: Some interfaces on the HMIM-8E1T1-F module cannot come up if the module is produced on 11 August 2015 or after that date.
- Condition: This symptom might occur if the HMIM-8E1T1-F module is produced on 11 August 2015 or after that date.

201508040165

- Symptom: Some transactions of POS terminals fail if TCP FIN packets contain transaction data.
- Condition: This symptom might occur if TCP FIN packets contain transaction data.

201507150251

- Symptom: Layer 3 aggregate interfaces cannot be created by using IMC.
- Condition: This symptom might occur if IMC is used to create Layer 3 aggregate interfaces.

201508290021

- Symptom: The CPU usage is high if the TCP maximum segment size is set to 1400 bytes.
- Condition: This symptom might occur if the following operations have been performed:
  a. Use the **tcp mss** command to set the TCP maximum segment size to 1400 bytes.
  b. Save the configuration and reboot the router.

201508250213

- Symptom: The delay in the result of the NQA ICMP jitter operation is much larger than the delay in the ping operation result.
- Condition: This symptom might occur if the NQA ICMP jitter operation is performed.

201509140123

- Symptom: The router cannot communicate with a Cisco device through the HDLC link between them.
- Condition: This symptom might occur if the **ip address slarp interval 1** command is executed on the Cisco device.

201508270343

- Symptom: Tracert returns the destination IP address as the first hop if it is used on an L2TP over IPsec tunnel.
- Condition: This symptom might occur if tracert is used on an L2TP over IPsec tunnel.

201510130060

- Symptom: The signature algorithm does not support HMAC-SHA256 when a certificate request is made in non-FIPS mode.
- Condition: This symptom might occur if the certificate request is made in non-FIPS mode.

201510200471

- Symptom: The OSPF LSAs on the router do not age out. As a result, peers cannot learn routes from the router.

- Condition: This symptom might occur if OSPF is enabled on the router, and the router has been operating for more than 210 days.

201507140154

- Symptom: The router can be successfully logged in to by using a public key through SSH1, but RSA fails to encrypt the public key.
- Condition: This symptom might occur if a public key and SSH are used to log in to the router.

201508280355

- Symptom: The HDLC process does not respond if the **display interface serial** command is executed when the router receives ADDR_REQ packets.
- Condition: This symptom might occur if the **display interface serial** command is executed when the router receives ADDR_REQ packets.

201509220038

- Symptom: The router fails TACACS authentication for an incorrect password or invalid shared key if the TACACS server uses ACS V5.6 or later versions.
- Condition: This symptom might occur if the TACACS server uses ACS V5.6 or later versions.

Resolved problems in CMW710-R0304P12

201507250134

- Symptom: The router can be successfully logged in to by using an incorrect password.
- Condition: This symptom might occur if remote TACACS authentication and NETCONF are used to log in to the router.

201508030326

- Symptom: An interface goes down and the router reboots unexpectedly if PPPoE sessions are established on a large number of subinterfaces on the interface.
- Condition: This symptom might occur if PPPoE sessions are established on a large number of subinterfaces on the interface.

201508030334

- Symptom: The secondary RADIUS authentication/authorization server cannot be reconfigured if it has been deleted.
- Condition: This symptom might occur if the secondary RADIUS authentication/authorization server is deleted and then reconfigured.

201506190329

- Symptom: An interface on an HMIM-8GSWF module cannot communicate with the directly connected peer.
- Condition: This symptom might occur if the port security mode of the interface is set to autoLearn, and the HMIM module is rebooted.

201507300171

- Symptom: The router reboots unexpectedly if the RADIUS server sends a DM request to log off a user by session ID.
- Condition: This symptom might occur if the RADIUS server sends a DM request to log off a user by session ID.

201505200410

- Symptom: Matching packets are not assigned to the RTP queue.

- Condition: This symptom might occur if the UDP port number of the packets is an odd number before byte order reversing.

201508030336

- Symptom: The router reboots unexpectedly if the IPsec tunnels on the router have been forwarding traffic for a long period of time.
- Condition: This symptom might occur if the IPsec tunnels on the router have been forwarding traffic for a long period of time.

201507270023

- Symptom: The router chooses a dynamic address pool over a static address pool when the router processes DHCP INFORM packets sent by a client that uses an IP address in the static address pool.
- Condition: This symptom might occur if the dynamic address pool contains all IP addresses of the static address pool.

201508120238

- Symptom: When the router acts as a DHCP server, DHCP clients obtain IP addresses after a long delay.
- Condition: This symptom might occur if the DHCP clients have errors and are moved from another network.

201508030441

- Symptom: Routes configured by using the **ppp ip-pool route** command are lost after an IRF master/subordinate switchover.
- Condition: This symptom might occur if an IRF master/subordinate switchover occurs.

201507160240

- Symptom: IMC cannot display the rules of ACLs.
- Condition: None.

201508130129

- Symptom: The router does not prompt for LDP session reset after the LSR ID is modified, and then MPLS has status or forwarding errors.
- Condition: This symptom might occur if the **mpls lsr-id** command is used to modify the LSR ID.

201508110265

- Symptom: The FTP user is logged off after FTP finishes transferring files to the storage medium of the standby MPU.
- Condition: This symptom might occur if FTP is used to transfer large files to the storage medium of the standby MPU.

201508110026

- Symptom: The router reboots unexpectedly if the IPsec over L2TP tunnels on the router have been forwarding traffic for a long period of time.
- Condition: This symptom might occur if the IPsec over L2TP tunnels on the router have been forwarding traffic for a long period of time.

201504210203

- Symptom: A centralized IRF member router halts during reboot after its operating mode is changed from IRF to standalone.
- Condition: This symptom might occur if the following operations have been performed on the router:

a. Save the configuration.
b. Shut down the IRF physical interfaces.
c. Change the operation mode from IRF to standalone after the IRF fabric splits.

201507090504

- Symptom: When a PoE profile is configured, the router warns that the maximum PI power specified by using the **poe max-power** command is invalid even if the value is in the valid power range.
- Condition: None.

201508120439

- Symptom: The router reboots unexpectedly if the router is deleted from IMC.
- Condition: This symptom might occur if the following conditions exist:
  - The router connects to IMC through a tunnel and passes portal authentication.
  - The router is deleted from IMC after portal authentication.

201508050381

- Symptom: MAC address check on a DHCP relay agent does not take effect after DHCP is disabled.
- Condition: This symptom might occur if DHCP is disabled.

201507130082

- Symptom: The router reboots unexpectedly if the HMIM-2/4/8GE module is repeatedly rebooted when the module receives traffic.
- Condition: This symptom might occur if the HMIM-2/4/8GE module is repeatedly rebooted when the module receives traffic.

201508180093

- Symptom: Two terminals in the same 3G or 4G network cannot communicate with each other.
- Condition: This symptom might occur if the terminals are assigned the same network segment but different subnet masks.

201508240276

- Symptom: The router does not display the legal banner before authentication when an SSH user logs in to the router.
- Condition: None.

201508240106

- Symptom: Some interfaces on the HMIM-2/4/8E1T1-F module cannot come up.
- Condition: None.

201507300132

- Symptom: Though the fixed Ethernet interfaces of the MSR2004 router are up, they cannot receive packets.
- Condition: This symptom occurs after the MSR2004 router has been operating for a certain period of time.

201507240120

- Symptom: Very rarely, the fixed GE0/1 or GE0/2 of MSR2004 router can't UP, and the interface can't receive and send the packets (this occurs in a very small percentage of BCM5221 chips).
- Condition: None.

201508060025

- Symptom: The settings of MP-group interfaces are incompatible after an MSR router is upgraded to E0302P06 or a later version.
- Condition: This symptom occurs if an MSR router is upgraded to E0302P06 or a later version.

201507080421

- Symptom: The display qos policy interface command outputs incorrect statistics.
- Condition: This symptom might occur if MPLS forwarding, PPP IP header compression, and QoS CBQ are enabled on PPP interfaces of the router.

201506050279

- Symptom: A POS transaction fails if it has multiple interaction messages.
- Condition: This symptom might occur if the following conditions exist:
  - POS terminal access is enabled on the router.
  - The background process of POS transactions requires that the messages of a transaction must have the same source TPDU.

201506030302

- Symptom: Memory leakage occurs when the router is sending NetStream data packets.
- Condition: This symptom might occur if NetStream is enabled on the router.

201507200403

- Symptom: In the RADIUS packets that the router sends, '\000' is incorrectly added to the NAS-ID attribute.
- Condition: This symptom might occur if RADIUS authentication is configured on the router.

Resolved problems in CMW710-R0304P04

201501200401

- Symptom: RBAC cannot control access to the content filtering feature.
- Condition: None.

201503020376

- Symptom: Packets are dropped after a BGP GR process is completed.
- Condition: This symptom occurs if both BFD and GR are enabled for BGP.

201507170124

- Symptom: The MPLS ILM entry is not updated after the traffic processing unit is changed for an outgoing interface.
- Condition: This symptom occurs if the traffic processing unit is changed for an outgoing interface.

201504190023

- Symptom: The BGP process on the PE is stuck.
- Condition: This symptom occurs if the following conditions exist:
  - There is a large number of routes and many types of traffic.
  - The PE runs for a long time.

201507020251

- Symptom: A PW is re-created after the L2VPN process is re-optimized by using the **placement reoptimize** command.
- Condition: This symptom occurs if split horizon is enabled for the PW.

201506300136

- Symptom: An interface on the SIC-4GSW card cannot ping the directly connected interface on the same subnet after the interface is changed to a Layer 3 interface.
- Condition: This symptom occurs if the following operations are performed:
  a. Enable port security globally.
  b. Configure port security on the interface operating as a Layer 2 interface.
  c. Change the interface to a Layer 3 interface.

201505290258

- Symptom: Subinterfaces cannot be created or deleted when there are more than 4000 subinterfaces on the router.
- Condition: This symptom might occur if the following operations are performed:
  a. Perform an active/standby switchover.
  b. Restart the standby MPU.
  c. Change a main interface between Layer 2 mode and Layer 3 mode.
  d. Bring up and shut down the main interface.

201507170043

- Symptom: A router in an MPLS network reboots unexpectedly.
- Condition: This symptom occurs if the public interface of the router goes down and comes up repeatedly.

201507030323

- Symptom: Memory leaks.
- Condition: This symptom occurs if NETCONF is used to download files for the FileSystem node.

201506190348

- Symptom: The xmlcfgd process crashes.
- Condition: This symptom occurs if the xmlcfgd process is accessed through XML when there is no Envelope namespace.

201506190151

- Symptom: The router does not preferentially use static address allocation when receiving a DHCP-INFORM message from a client.
- Condition: This symptom occurs if the following conditions exist:
  - The client is bound to an IP address in a DHCP address pool.
  - Another DHCP address pool includes the IP address bound to the client.

201506100354

- Symptom: The router configured with WAAS sends a receiving buffer size different from the set value to the peer device.
- Condition: This symptom occurs if the receiving buffer size is modified.

201507020391

- Symptom: The TTL of a static blacklist entry is different from the actual aging time.
- Condition: This symptom occurs if the static blacklist entry is added after a master/subordinate switchover in an IRF fabric.

201505150461

- Symptom: An interface cannot forward packets when it is up.
- Condition: This symptom occurs if a large number of portal users come online and go offline through the interface.

201506100261

- Symptom: ARP reply packets are forwarded through the trusted interface even if there is a match in the MAC address table.
- Condition: This symptom occurs when ARP restricted forwarding is enabled.

201506120046

- Symptom: The ToS bits in the outer IP header are not set to the same as the ToS bits in the inner header after IP packets are encapsulated with MPLS L3VPN or GRE.
- Condition: This symptom occurs if IP packets are encapsulated with MPLS L3VPN or GRE.

201506230020

- Symptom: A POS interface cannot forward packets that are greater than 2048 bytes.
- Condition: None.

201504270304

- Symptom: Only up to 256 ports can be specified in one **nat server** command.
- Condition: None.

201503110416

- Symptom: Assertion information is displayed and accounting stops when a user comes online.
- Condition: This symptom occurs if the **accounting quota-out redirect-url** command is configured.

201411190412

- Symptom: The tunnel source cannot return Packet Too Big messages for packets tunneled through an IPv6 over IPv4 tunnel.
- Condition: This symptom occurs when fragmentation check is enabled for packets to be tunneled.

201503090076

- Symptom: IPv4 addresses must be configured on the AFTR of a DS-Lite tunnel.
- Condition: This symptom occurs when the AFTR of a DS-Lite tunnel is configured.

201507070230

- Symptom: The router establishes calls slowly when using R2 signaling.
- Condition: This symptom occurs if R2 signaling is used.

201505200402

- Symptom: Too much log information is displayed after RTP packets are interrupted.
- Condition: This symptom occurs if the network link fails after a call is established.

201505290049

- Symptom: The hh3cTransceiver node does not return new information for a different transceiver module type.
- Condition: This symptom occurs if the following operations are performed:
  a. Replace a transceiver module.
  b. Walk the hh3cTransceiver node by using a MIB browser.

201506250411

- Symptom: CVE-2015-3143
- Condition: cURL and libcurl 7.10.6 through 7.41.0 does not properly re-use NTLM connections, which allows remote attackers to connect as other users via an unauthenticated request.
- Symptom: CVE-2015-3148
- Condition: cURL and libcurl 7.10.6 through 7.41.0 does not properly re-use authenticated Negotiate connections, which allows remote attackers to connect as other users via a request.

201411190504

- Symptom: The number of packets in the ADVPN session statistics is a negative value.
- Condition: This symptom occurs if the router forwards traffic for a long time.

201504140088

- Symptoms: CVE-2015-0209
- Condition: A malformed EC private key file consumed via the d2i_ECPrivateKey function could cause a use after free condition. This could lead to a DoS attack or memory corruption for applications that receive EC private keys from untrusted sources.
- Symptoms: CVE-2015-0286
- Condition: DoS vulnerability in certificate verification operation. Any application which performs certificate verification is vulnerable including OpenSSL clients and servers which enable client authentication.
- Symptoms: CVE-2015-0287
- Condition: Reusing a structure in ASN.1 parsing may allow an attacker to cause memory corruption via an invalid write. Applications that parse structures containing CHOICE or ANY DEFINED BY components may be affected.
- Symptoms:CVE-2015-0288
- Condition: The function X509_to_X509_REQ will crash with a NULL pointer dereference if the certificate key is invalid.
- Symptoms: CVE-2015-0289
- Condition: The PKCS#7 parsing code does not handle missing outer ContentInfo correctly. An attacker can craft malformed ASN.1-encoded PKCS#7 blobs with missing content and trigger a NULL pointer dereference on parsing.
- Symptoms: CVE-2015-0292
- Condition: A vulnerability existed in previous versions of OpenSSL related to the processing of base64 encoded data.
- Symptoms: CVE-2015-0293
- Condition: A malicious client can trigger an OPENSSL_assert in servers that both support SSLv2 and enable export cipher suites by sending a specially crafted SSLv2 CLIENT-MASTER-KEY message.

201505250363

- Symptom: Services are interrupted for about 50 minutes after the router runs for a long time with traffic load.
- Condition: This symptom might occur if the DH-Group2 algorithm is used in an IPsec VPN environment.

201507200433

- Symptom: An interface on an MSR2004 router is up, but does not receive packets.
- Condition: This symptom occurs if the following conditions exist:
  - The router runs for a long time with traffic load.
  - The interface is configured with multiple features.

201506240472

- Symptom: Of multiple EVI tunnels, only one tunnel can forward traffic.
- Condition: This symptom occurs if the following conditions exist:
  - The EVI tunnels have the same source IP address and the same destination IP address.
  - Each EVI tunnel is used for a different VLAN.

201506030356

- Symptom: The feature images are not selected from the storage medium where the current boot and system images reside.
- Condition: This symptom occurs if the router has multiple storage media.

201506230200

- Symptom: The WAAS optimization effect is bad in per-flow load sharing mode.
- Condition: None.

201507070433

- Symptom: The peer port is up when the local fiber port is down.
- Condition: This symptom occurs after the fiber port is changed from Layer 2 mode to Layer 3 mode.

201506250378

- Symptom: An MSR3024 or MSR3044 router cannot forward 65-byte packets at wire speed when fast forwarding is enabled.
- Condition: This symptom occurs if fast forwarding is enabled.

201506020161

- Symptom: BGP neighbors flap after the IRF fabric is restarted.
- Condition: This symptom occurs if a large number of BGP neighbors are established dynamically.

201507270061

- Symptom: An aggregate interface with two or more member ports cannot ping the directly connected interface.
- Condition: This symptom occurs after the aggregate interface is changed between Layer 2 mode and Layer 3 mode more than 20 times.

201507090496

- Symptom: The ARP packets of one VLAN interface are sent out of a member port of another VLAN interface.

- Condition: This symptom occurs if more than two VLANs exist and their VLAN interfaces are assigned IP addresses.

201504230195

- Symptom: On an IRF fabric, assertion information is displayed and subordinate routers reboot when the IPv4 device is pinged from the IPv6 side.
- Condition: This symptom occurs if the traffic processing unit for the AFT traffic of a VLAN interface is not on the same forwarding card as the member interfaces of the VLAN interface.

201506090049

- Symptom: The FCM card behaves unexpectedly.
- Condition: This symptom occurs if FCM subinterfaces are deleted through MIB.

201507070310

- Symptom: The link layer protocol of a DTE interface goes down.
- Condition: This symptom occurs if the clock selection mode is set to autonegotiation for the DTE interface.

201507010073

- Symptom: The router reboots repeatedly after traffic statistics are cleared.
- Condition: This symptom occurs if the following operations are performed:
  a. Perform an active/standby switchover for HDLC interfaces that forward Layer 3 IP traffic.
  b. Configure NetStream.
  c. Enable the application statistics feature by using the **application statistics enable** command.

201411030517

- Symptom: Web redirection fails for a PPPoE user.
- Condition: This symptom occurs if Web redirection parameters are assigned through RADIUS.

201503110069

- Symptom: The VLAN ID sent to the RADIUS server is incorrect.
- Condition: This symptom occurs if a QinQ PPPoE user comes online.

201503090276

- Symptom: Users of a domain cannot be displayed or forcibly logged out.
- Condition: This symptom occurs if the users come online without domain information.

201503110472

- Symptom: Redirection fails after a PPPoE client issues a redirection attribute.
- Condition: This symptom occurs if a PPPoE client issues a redirection attribute.

201503110566

- Symptom: The redirection attribute issued through a COA message does not take effect.
- Condition: This symptom occurs if the redirection attribute is issued through a COA message.

201507150201

- Symptom: Assertion information appears when the pppoesd process is restarted on the L2TP LNS.
- Condition: This symptom occurs if a user comes online in NAS-initiated tunneling mode.

201505190435

- Symptom: Some BGP peers go down and come up after the router is rebooted.
- Condition: This symptom might occur if the following conditions exist:
  - The router is in an IRF fabric or is a distributed router in standalone mode.
  - The router has a large number of BGP peers.

201507200270

- Symptom: An MSR1000 router reboots repeatedly.
- Condition: This symptom occurs if the following operations are performed:
  a. Install a SIC-4SAE card into the router.
  b. Send bidirectional traffic between the router and its peer device.

Resolved problems in CMW710-R0304P02

201505200131

- Symptom: Voice services are interrupted during long calls.
- Condition: This symptom might occur if E&M non-signaling mode and PCM pass-through are enabled.

201506290040

- Symptom: On a single-MPU router, the fan speed does not increase when the CPU temperature keeps rising.
- Condition: This symptom might occur if the router starts in high-temperature environments.

201505250288

- Symptom: NQA TCP operations fail after the router runs for a period of time.
- Condition: This symptom might occur if one of following conditions exists:
  - The interval between NQA probes is shorter than 10 milliseconds.
  - NQA operations are frequently performed over a long period of time.

201504230250

- Symptom: The router displays garbled bandwidth usage-based load-sharing information for an aggregate interface.
- Condition: This symptom might occur if bandwidth usage-based load-sharing is enabled on the aggregate interface.

201505250277

- Symptom: OpenFlow cannot correctly send ARP packets to the SDN controller.
- Condition: This symptom might occur if the following operations have been performed:
  a. Save the running configuration and reboot the router.
  b. Restore OpenFlow configuration by using an .mdb binary file.

201505150431

- Symptom: 802.1X authentication fails.
- Condition: This symptom might occur if the server issues VLAN IDs, but the length of the Tunnel-Private-Group-id attribute is not 6 bytes in RADIUS packets sent by the server.

201504230250

- Symptom: Traffic forwarding is interrupted on the router.
- Condition: This symptom might occur if portal users repeatedly come online and go offline over a long period of time when the router is forwarding traffic.

201506120253

- Symptom: When the **display qos policy interface** command is executed for a VT interface configured with QoS policies, nothing is displayed or the console halts.
- Condition: This symptom might occur if QoS policies are configured on the VT interface, and more than 2000 online PPPoE users exist on the interface.

201505140232

- Symptom: An SD or CF card on the router is not accessible.
- Condition: This symptom might occur if the SD or CF card stores more than 15000 files.

201505180304

- Symptom: An IRF member router halts after a reboot if it is switched from the IRF mode to the standalone mode.
- Condition: This symptom might occur if the following operations have been performed on the router:
  a. Save the running configuration.
  b. Shut down the IRF physical interfaces.
  c. Switch the router to the standalone mode after the IRF fabric splits, and then reboot the router.

201505250207

- Symptom: SIP source interface bindings do not take effect after the router reboots.
- Condition: This symptom might occur if the following operations have been performed:
  a. Configure SIP source interface bindings.
  b. Save the running configuration and reboot the router.

201506230030

- Symptom: When one of the E1 links on the router goes down, fast forwarding entries update slowly, and forwarding services are affected.
- Condition: This symptom might occur if the following conditions exist:
  - Multiple equal-cost E1 links are configured on the router.
  - PPP IP header compression is enabled on the serial interfaces for the E1 links.
  - The router is forwarding multiple data flows.

201506080129(CVE-2015-5434)

- Symptoms: When an interface without MPLS enabled receives MPLS-labeled packets, the interface incorrectly forwards the MPLS-labeled packets to the next LSR by LFIB entry.
- Condition: This symptom occurs when the interface does not have MPLS enabled and the interface receives MPLS-labeled packet that match the FIB entries.

Resolved problems in CMW710-R0304

201504210231

- Symptom: CVE-2015-1799

- Condition: Authentication doesn't protect symmetric associations against DoS attacks.

201504230275

- Symptom: A router replies with a re-INVITE message with the Referred-By header field after receiving a REFER request without the Referred-By header field from a Lync server.
- Condition: This symptom occurs when a Lync server sends a REFER request without the Referred-By header field to the router.

201504230289

- Symptom: A called phone rings once before going on-hook.
- Condition: This symptom occurs if the following conditions exist:
  - The calling router and called router use different codecs.
  - The called router connects to the called phone through a VE interface.

201505110326

- Symptom: NATed packets fail to be forwarded after the original route becomes unavailable.
- Condition: This symptom might occur if the interface used as the backup outgoing interface is not configured with NAT.

201505150401

- Symptom: A router configured with IPsec fails to be authenticated by a Comware-V5-based peer device.
- Condition: This symptom might occur if the router is configured with an IKE-based IPsec policy and the PFS feature is enabled for the IPsec policy.

Resolved problems in CMW710-E0302P06

201411280347

- Symptom: When the MTU of a physical interface is configured greater than 1500 bytes, the interface still uses 1492 as the MTU.
- Condition: This symptom occurs when the MTU of the physical interface bound to PPPoE is not 1500.
- Workaround: For TPC application, modify the TCP MSS on the dialer or VT interface to avoid improper packet fragmentation.

201502020298

- Symptom: On an IRF fabric formed by MSR4000 routers and configured with multichassis Layer 3 aggregation, after a master/subordinate switchover, all users that log in through Selected interfaces on the rebooted router are logged out.
- Condition: This symptom occurs when the IRF fabric formed by MSR4000 routers acts as the PPPoE server and the multichassis Layer 3 aggregate interface is used to respond to PPPoE login request.
- Workaround: None.

201502100609

- Symptom: In an FR L2VPN with one end as an FR network and the other end as an Ethernet link, CEs cannot communicate.
- Condition: This symptom occurs when one end of the FR L2VPN is an FR network and the other end is an Ethernet link.
- Workaround: None.

201501290181

- Symptom: When a L2VPN cross-connect is bound to a Layer 3 aggregate interface, receiving LACPDUs times out, and the aggregation group member ports flap frequently.
- Condition: This symptom occurs when the L2VPN cross-connect is bound to a Layer 3 aggregate interface.
- Workaround: None.

201501080118

- Symptom: The VAM process reboots repeatedly.
- Condition: This symptom occurs when the hub device also acts as the VAM server.
- Workaround: Use a separate device as the VAM server.

201411140486

- Symptom: Ping packets are lost on an eight-wire G.SHDSL.BIS EFM interface of the MSR router after the interface is shut down and then brought up.
- Condition: This symptom might occur if the EFM interface is connected to a Cisco device.

201502150313

- Symptom: Packet loss occurs on an interface that is configured with both policy nesting and CBQ.
- Condition: This symptom might occur if the interface has been forwarding traffic at near wire rate for a long time.

201502030476

- Symptom: The MSR router forwards some packets out of their incoming interface after an active/standby link switchover.
- Condition: This symptom might occur if the active/standby link switchover occurs when the router is forwarding a large amount of traffic.

201502270045

- Symptom: The serial communication protocol goes down and LCP packets are lost on a serial interface when it is processing bidirectional traffic during the T1 delay test.
- Condition: This symptom might occur if the qos qmtoken 1 command is executed on the interface.

201503090250

- Symptom: The MSR router does not update the media channel after it receives a re-INVITE message with only the c field updated.
- Condition: This symptom might occur if the MSR router receives a re-INVITE message with only the c field updated.

201503160098

- Symptom: CAR does not support the bandwidth percentage method.
- Condition: This symptom might occur if CAR is configured by using the bandwidth percentage method.

Resolved problems in CMW710-E0102

RTV7D000933

- Symptom: The fragments can’t be filtered by ACL.

- Condition: The fragments can’t be filtered by ACL when using fragment in the rule.

RTV7D000932

- Symptom: The statuses of the router in the VRRP group are both Master when using MD5 authentication mode.
- Condition: Using MD5 authentication mode.

Resolved problems in CMW710-E0006P02

CM13040119

- Symptom: The devices testing failed for manufacture.
- Condition: Test for manufacturing devices.

Support and other resources

Accessing Hewlett Packard Enterprise Support

- For live assistance, go to the Contact Hewlett Packard Enterprise Worldwide website:

  www.hpe.com/assistance
- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:

  www.hpe.com/support/hpesc

Information to collect:

- Technical support registration number (if applicable).
- Product name, model or version, and serial number.
- Operating system name and version.
- Firmware version.
- Error messages.
- Product-specific reports and logs.
- Add-on products or components.
- Third-party products or components.

Documents

To find related documents, see the Hewlett Packard Enterprise Support Center website at http://www.hpe.com/support/hpesc.

- Enter your product name or number and click **Go**. If necessary, select your product from the resulting list.
- For a complete list of acronyms and their definitions, see HPE FlexNetwork technology acronyms.

Related documents

The following documents provide related information:

- HPE FlexNetwork MSR2000 Routers Installation Guide

- HPE FlexNetwork MSR3000 Routers Installation Guide
- HPE FlexNetwork MSR4000 Routers Installation Guide
- HPE FlexNetwork MSR2000 Routers Quick Start
- HPE FlexNetwork MSR3000 Routers Quick Start
- HPE FlexNetwork MSR4000 Routers Quick Start
- HPE FlexNetwork MSR Router Series Interface Module Guide
- HPE FlexNetwork MSR2000/3000/4000 Routers Compliance and Safety Manual
- About the HPE FlexNetwork MSR Router Series Command References(V7)
- HPE FlexNetwork MSR Router Series ACL and QoS Command Reference(V7)
- HPE FlexNetwork MSR Router Series EVI Command Reference(V7)
- HPE FlexNetwork MSR Router Series Fundamentals Command Reference(V7)
- HPE FlexNetwork MSR Router Series High Availability Command Reference(V7)
- HPE FlexNetwork MSR Router Series Interface Command Reference(V7)
- HPE FlexNetwork MSR Router Series IP Multicast Command Reference(V7)
- HPE FlexNetwork MSR Router Series Layer 2 - LAN Switching Command Reference(V7)
- HPE FlexNetwork MSR Router Series Layer 2 - WAN Access Command Reference(V7)
- HPE FlexNetwork MSR Router Series Layer 3 - IP Routing Command Reference(V7)
- HPE FlexNetwork MSR Router Series Layer 3 - IP Services Command Reference(V7)
- HPE FlexNetwork MSR Router Series MPLS Command Reference(V7)
- HPE FlexNetwork MSR Router Series NEMO Command Reference(V7)
- HPE FlexNetwork MSR Router Series Network Management and Monitoring Command Reference(V7)
- HPE FlexNetwork MSR Router Series OAA Command Reference(V7)
- HPE FlexNetwork MSR Router Series OpenFlow Command Reference(V7)
- HPE FlexNetwork MSR Router Series Probe Command Reference(V7)
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- HPE FlexNetwork MSR Router Series Layer 3 - IP Services Configuration Guide(V7)
- HPE FlexNetwork MSR Router Series MPLS Configuration Guide(V7)
- HPE FlexNetwork MSR Router Series NEMO Configuration Guide(V7)

- HPE FlexNetwork MSR Router Series Network Management and Monitoring Configuration Guide(V7)
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- HPE FlexNetwork MSR Router Series OpenFlow Configuration Guide(V7)
- HPE FlexNetwork MSR Router Series Probe Configuration Guide(V7)
- HPE FlexNetwork MSR Router Series Security Configuration Guide(V7)
- HPE FlexNetwork MSR Router Series Virtual Technologies Configuration Guide(V7)
- HPE FlexNetwork MSR Router Series Voice Configuration Guide(V7)
- HPE FlexNetwork MSR Router Series WLAN Configuration Guide(V7)

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Appendix A Feature list

Hardware features

Table 5 MSR1000 specifications

Item	MSR1002-4	MSR1003-8S
Console/AUX port	1	1
USB port	1	1
Gigabit Ethernet port	5	10
SFP port	1	N/A
Asynchronous/synchronous serial interface	1	N/A
Memory	512 MB DDR3	1 GB DDR3
Flash	256 MB	256 MB
SIC/DSIC slot	2 SIC slot (1 DSIC slot)	3 SIC slots (1 DSIC slot)
Dimensions (H × W × D) (excluding rubber feet and mounting brackets)	44.2 × 360 × 300 mm (1.74 × 14.17 × 11.81 in)	44.2 × 360 × 300 mm (1.74 × 14.17 × 11.81 in)
AC power supply	Rated voltage range: 90 VAC to 264 VAC @ 50 Hz/60 Hz	Rated voltage range: 90 VAC to 264 VAC @ 50 Hz/60 Hz
Rated power for AC power supply	30 W	30 W
Operating temperature	0°C to 45°C (32°F to 113°F)	0°C to 45°C (32°F to 113°F)
Relative humidity (noncondensing)	5% to 90%	5% to 90%

Table 6 MSR2000/MSR2000 TAA specifications

Item	MSR2003/MSR2003TAA	MSR2004-24	MSR2004-48
Console/AUX port	1	1	1
USB console port	1	-	-
USB port	1	1	1
GE WAN port	2		
GE LAN port	-	3	3
SFP port	-	1	-
Memory	1GB DDR3	1GB DDR3	1GB DDR3
Flash/CF	256MB Flash	256MB CF	256MB CF
SIC/DSIC slot	3 SIC slots (Slots 1 and 2 can be used for a DSIC interface module by removing the slot divider.)	4 SIC slots	4 SIC slots

Dimensions (H × W × D) (excluding rubber feet and mounting brackets)	360mm×305.3mm×44.2 mm	440mm×363.5mm×44.2	440mm×403.5mm×44.2
AC power supply	Rated voltage range: 100 VAC to 240 VAC @ 50 Hz/60 Hz		
DC power supply	-	-	Rated voltage range: -48V d.c.～-60V d.c
Maximum power for AC/DC power supply	54W	54W	150W
Operating temperature	0 ～ 45℃		
Relative humidity (noncondensing)	5% to 90%		

Table 7 MSR3000/MSR3000 TAA specifications

Item	MSR3012	MSR3024/MSR3024 TAA	MSR3044	MSR3064
CON/AUX ports	1			
USB console ports	1			
USB ports	2			
Gigabit Ethernet ports	3			
SIC/DSIC slots	2 SIC slots		4 SIC slots/2 DSIC slots	
HMIM slots	1	2	4	6
VPM slots	1	1	2	2
Memory	DDR3 1 GB/2 GB	DDR3 • 2 GB (default) • 4 GB (maximum)	DDR3 • 2 GB (default) • 4 GB (maximum)	
CF card memory (inside)	256 MB (default)			
CF card memory (outside)	-		4 GB (maximum)	
CF card slot	0		1	
Dimensions (H × W × D) (excluding rubber feet and mounting brackets)	44.2 × 440 × 484.3 mm	44.2 × 440 × 484.3 mm	88.1 × 440 × 480 mm	130.5 × 440 × 480 mm
AC power supply	Rated voltage range: 100 VAC to 240 VAC @ 50 Hz/60 Hz			
DC power supply	Rated voltage range: –48 VDC to –60 VDC			
Maximum power for AC/DC power supply	125 W	125 W	300 W	300 W
Maximum power for PoE power supply	-	275 W	750 W	750 W
Maximum power for each PoE port	15.4 W			

RPS power supply	800 W	-
Power pluggable and buckup	-	Dule power
Operating temperature	0°C to 45°C (32°F to 113°F)	
Relative humidity (noncondensing)	5% to 90%	

Table 8 MSR4000 specifications

Item	**MSR4060**	**MSR4080**
MPU slot	2	
SPU slot	1	
HMIM slot	6	8
Dimensions (H × W × D), excluding rubber feet and mounting brackets	175.1 × 440 × 480 mm	219.5 × 440 × 480 mm
Power pluggable and buckup	N+1	N+1
Operating temperature	0°C to 45°C (32°F to 113°F)	
Operating humidity (noncondensing)	5% to 90%	

Table 9 MSR4000/MSR4000 TAA MPU Specification

Item	Specification
Console port	1
AUX port	1
GE management port	1
USB console port	1
USB port	1
Memory	• 2 GB DDR3 (default) • 4 GB DDR3 (maximum)
CF card	• 512 MB (default) • 4 GB (maximum)
CF card slot	1
Flash	8 MB

Table 10 MSR4000 SPU Specification

Item	**SPU-100**	**SPU-200&SPU-300**
USB port	2	
VPM slot	2	

Combo	4	
SFP+ port	0	1
Applicable router model	MSR4060/MSR4080	
Applicable MPU	MPU-100	

Table 11 MSR2004-24 AC power module specifications

Item	Specification
Rated input voltage range	100 VAC to 240 VAC @ 50 Hz or 60 Hz
Rated power	150 W

Table 12 MSR2004-48 DC power module specifications

Item	Specification
Rated input voltage range	–48 VDC to –60 VDC
Rated power	150 W

Table 13 MSR3044/MSR3064/MSR4060/MSR4080 AC power module specifications

Item	Specification
Model	PSR300-12A1
Rated input voltage range	100 VAC to 240 VAC @ 50 Hz or 60 Hz
Max power	300 W

Table 14 MSR3044/MSR3064/MSR4060/MSR4080 DC power module specifications

Item	Specification
Model	PSR300-12D2
Rated input voltage range	–48 VDC to –60 VDC
Max power	300 W

Table 15 MSR3044/MSR3064/MSR4060/MSR4080 PoE power module specifications

Item	Specification
Model	PSR750-A
Rated input voltage range	100 VAC to 240 VAC @ 50 Hz or 60 Hz
Max power	750 W

Table 16 MSR series routes Module List

Module	Description
SIC	Ethernet interface modules: • 4-port 10/100 Mbps Ethernet L2 switching module (RJ45) (SIC-4FSW)

	• 1-port 10/100 Mbps Ethernet electrical SIC interface module (RJ45) (SIC-1FEA) • 1-port 100 Mbps Ethernet electrical SIC interface module-SIC-1FEF • 4-port 10/100 Mbps Ethernet L2 switching module-PoE card(SIC-4FSW-POE) • 1-port 10/100/1000BASE-T(RJ45) and 100BASE-FX/1000BASE-X(SFP,Combo)Ethernet SIC module(RT-SIC-1GEC-V2(JG738A)) • 4-port 10/100/1000BASE-T Ethernet L2 switching electrical SIC interface module(RT-SIC-4GSW(JG739A)) • 4-port 10/100/1000BASE-T Ethernet L2 switching electrical SIC interface module-PoE(RT-SIC-4GSWP(JG740A)) WAN interface modules: • 1-port enhanced synchronous/asynchronous serial SIC interface module (SIC-1SAE) • 1-port fractional E1 SIC interface module (SIC-1E1-F-V3) • 1-port E1/CE1/PRI SIC interface module (SIC-1EPRI) • 1-port analog modem SIC interface module (SIC-1AM) • 8-port asynchronous serial interface card (SIC-8AS) • 16-port asynchronous serial interface card (SIC-16AS) • 1-port ISDN BRI S/T interface card (SIC-1BS) • 2-port fractional E1 interface module (SIC-2E1-F) • 3G access module (RT-SIC-3G-HSPA) • CDMA 2000 1x RTT/1x EV-DO Rev.0/1x EV-DO Rev.A 3G access module (RT-SIC-3G-CDMA) • 1-port ADSL over POTS SIC interface module (SIC-1ADSL) • 1 port E1/CE1/PRI SIC interface module(SIC-1EPRI-V3) • 4G LTE Verizon SIC module(RT-SIC-4G-LTE-V(JG742A)) • 4G LTE AT&T SIC module(SIC-4G-LTE-A(JG743A)) • 4G LTE Global SIC module(RT-SIC-4G-LTE-G(JG744A)) • 2-port enhanced synchronous/asynchronous serial SIC interface module(RT-SIC-2SAE(JG736A)) • 4-port enhanced synchronous/asynchronous serial SIC interface module(RT-SIC-4SAE(JG737A)) • HPE MSR 4GLTE SIC Mod for CDMA/WCDMA (JG742B) • HPE MSR 4G LTE SIC Mod for ATT (JG743B) • HPE MSR 4GLTE SIC Mod for Global (JG744B) • HPE MSR HSPA+/WCDMA SIC Module (JG929A) Voice interface modules: • 1-port voice module subscriber circuit SIC interface module (SIC-1FXS) • 2-port voice module subscriber circuit SIC interface module (SIC-2FXS) • 1-port voice module FXO SIC interface module (SIC-1FXO) • 2-port voice module FXO SIC interface module (SIC-2FXO) • 1-channel E1 voice SIC interface module (SIC-1VE1) • 1-channel T1 voice SIC interface module (SIC-1VT1) • 1-port ISDN BRI S/T voice interface card (SIC-1BSV) • 2-port ISDN BRI S/T voice interface card (SIC-2BSV) • 2-port voice subscriber circuit & 1-port voice AT0 analog trunk interface card-SIC-2FXS1FXO • 1-port E1 / T1 Voice SIC Module(JH240A)
DSIC	• 9-port 10/100 Mbps Ethernet L2 switching module (RJ45) (DSIC-9FSW) • 4-port voice subscriber circuit & 1-port voice AT0 analog trunk interface card (DSIC-4FXS1FXO) • 9-port 10/100 Mbps Ethernet L2 switching module -PoE card (DSIC-9FSW-POE) • 1-port 8-wire G.SHDSL (RJ45) DSIC Module

HMIM	Ethernet interface modules: • 2-port 10M/100/1000M Ethernet electrical HMIM interface module (RJ45) (HMIM-2GEE) • 4-port 10M/100/1000M Ethernet electrical HMIM interface module (RJ45) (HMIM-4GEE) • 8-port 10M/100/1000M Ethernet electrical HMIM interface module (RJ45) (HMIM-8GEE) • 2-port 1000BASE-X HMIM Module (HMIM-2GEF) • 4-port 1000BASE-X HMIM Module (HMIM-4GEF) • 8-port 1000BASE-X HMIM Module (HMIM-8GEF) • 24-port Gig-T Switch HMIM Module (HMIM-24GSW) • 24-port Gig-T PoE Switch HMIM Module (HMIM-24GSW-POE) • 8-port 10/100/1000BASE-T(RJ45)+2-port100BASE-FX/1000BASE-X(SFP,Combo) Ethernet L2 switching HMIM module(RT-HMIM-8GSW(JG741A)) • 8-port 100BASE-FX/1000BASE-X / 4-port 1000BASE-T (Combo) L2/L3 HMIM Module (JH238A) WAN interface modules: • 2 port CE1/PRI interface module (HMIM-2E1) • 4 port CE1/PRI interface module (HMIM-4E1) • 8 port CE1/PRI interface module (HMIM-8E1) • 4-port fractional E1 interface module (HMIM-4E1-F) • 8-port fractional E1 interface module (HMIM-8E1-F) • 2 port CT1/PRI interface module (HMIM-2T1) • 8 port CT1/PRI interface module (HMIM-8T1) • 4-port fractional T1 interface module HMIM-4T1-F) • 8-port fractional T1 interface module HMIM-8T1-F) • 1-port T3/CT3 compatible interface module (HMIM-1CT3) • 1-port T3/CT3 compatible interface module (HMIM-1CE3) • 2 channel enhanced synchronous/asynchronous interface module (HMIM-2SAE) • 4 channel enhanced synchronous/asynchronous interface module (HMIM-4SAE) • 8 channel enhanced synchronous/asynchronous interface module (HMIM-8SAE) • 8 port asynchronous serial interface panel (RJ45) (HMIM-8ASE) • 16 port asynchronous serial interface panel (RJ45) (HMIM-16ASE) • 1-port OC-3 / STM-1 CPOS HMIM Module (HMM-1CPOS) • 2-port OC-3 / STM-1 CPOS HMIM Module (HMIM-2CPOS) • 1-port OC-3c / STM-1c ATM SFP HMIM Module (HMIM-ATMOC3) • 8-port E1 / CE1 / T1 / CT1 / PRI HMIM Module (JH169A) • 4-port E1 / CE1 / T1 / CT1 / PRI HMIM Module (JH170A) • 2-port E1 / CE1 / T1 / CT1 / PRI HMIM Module (JH171A) • 8-port E1 / Fractional E1 / T1 / Fractional T1 HMIM Module (JH172A) • 4-port E1 / Fractional E1 / T1 / Fractional T1 HMIM Module (JH173A) • 2-port E1 / Fractional E1 / T1 / Fractional T1 HMIM Module (JH174A) Voice interface modules: • 16-port voice module subscriber circuit interface board(HMIM-16FXS) • 1 channel E1 voice HMIM interface module (HMIM-1VE1) • 2 channel E1 voice HMIM interface module (HMIM-2VE1) • 1 channel T1 voice HMIM interface module (HMIM-1VT1) • 2 channel T1 voice HMIM interface module (HMIM-2VT1) • 4-port voice module subscriber circuit interface board (HMIM-4FXS) • 4-port voice module FXO interface module (HMIM-4FXO) • 4 channel voice processing board E&M trunk interface module (HMIM-4EM)

VPM	• 128-channel voice processing module (RT-VPM2-128) • 256-channel voice processing module (RT-VPM2-256) • 512-channel voice processing module (RT-VPM2-512)
HMIM Adapter	• 0.5U MIM to HMIM adapter (HMIM Adapter) • 1U MIM to HMIM adapter (HMIM Adapter-H)
MIM(need to config the HMIM-Adapter)	Ethernet interface modules: • 1-port 10M100M Ethernet electrical MIM interface module (RJ45) (MIM-1FE) • 2-port 10M/100M Ethernet electrical MIM interface module (RJ45) (MIM-2FE) • 4-port 10M/100M Ethernet electrical MIM interface module (RJ45) (MIM-4FE) • 1-port 1000M Ethernet electrical MIM interface module (RJ45) (MIM-1GBE) • 2-port 1000M Ethernet electrical MIM interface module (RJ45) (MIM-2GBE) • 1-port 1000M Ethernet electrical MIM interface module (RJ45) (MIM-1GEF) • 2-port 1000M Ethernet electrical MIM interface module (RJ45) (MIM-2GEF) WAN interface modules: • 2 channel enhanced synchronous/asynchronous interface module (MIM-2SAE) • 4 channel enhanced synchronous/asynchronous interface module (MIM-4SAE) • 8 channel enhanced synchronous/asynchronous interface module (MIM-8SAE) • 8 port asynchronous serial interface panel (RJ45) (MIM-8ASE) • 16 port asynchronous serial interface panel (RJ45) (MIM-16ASE) • 1 port CE1/PRI interface module (MIM-1E1) • 2 port CE1/PRI interface module (MIM-2E1) • 4 port CE1/PRI interface module (MIM-4E1) • 8 port E1 interface module (75ohm) (MIM-8E1 (75)) • 1-port fractional E1 interface module (MIM-1E1-F) • 2-port fractional E1 interface module (MIM-2E1-F) • 4-port fractional E1 interface module (MIM-4E1-F) • 8 port E1 interface module (75ohm) (MIM-8E1 (75)-F) • 2 port CT1/PRI interface module (MIM-2T1) • 8 port T1 interface module (MIM-8T1) • 2-port fractional T1 interface module MIM-2T1-F) • 4-port fractional T1 interface module MIM-4T1-F) • 8-port fractional T1 interface module MIM-8T1-F) • 1-port T3/CT3 compatible interface module (MIM-1CT3-V2) • 1-port T3/CT3 compatible interface module (MIM-1CE3-V2) • 1-port SDH/SONET interface module (MIM-1POS-V2) • 1-port dual-pair G.SHDSL interface module (MIM-1SHL-4W) • HPE MSR OAP MIM Module with VMware vSphere (JG532A) Voice interface modules: • 1 channel E1 voice MIM interface module (MIM-1VE1) • 1 channel T1 voice MIM interface module (MIM-1VT1) • 2 channel E1 voice MIM interface module (MIM-2VE1) • 2 channel T1 voice MIM interface module (MIM-2VT1) • 4-port voice module subscriber circuit interface board (MIM-4FXS) • 2-port voice module FXO interface module (MIM-2FXO) • 4-port voice module FXO interface module (MIM-4FXO) • 8-port voice module FXS-FXO interface module (MIM-8FXS-8FXO) • 4 channel voice processing board E&M trunk interface module (MIM-4EM) • 4-port ISDN BRI S/T voice interface card (MIM-4BSV)

	• 16-port voice module subscriber circuit interface board (MIM-16FXS)

Table 17 Sierra Modem Module and Host/card compatibility matrix

HPE description	Product code	Module name
HPE MSR 4G LTE SIC Mod for Verizon	JG742A	Sierra-MC7750
HPE MSR 4G LTE SIC Mod for ATT	JG743A	Sierra-MC7700
HPE MSR 4G LTE SIC Mod for Global	JG744A	Sierra-MC7710

△ **CAUTION:**

The support and restriction of modules on HPE FlexNetwork MSR Routers Interface Configuration Guide(V7), Appendix Purchase Guide.

Software features

Table 18 MSR Series routers software features

Category	Features
LAN protocol:	ARP (proxy ARP, free ARP, authorization ARP) Ethernet_II Ethernet_SNAP VLAN (PORT-BASED VLAN/MAC-BASED VLAN/VLAN-BASED PORT ISOLATE/ VOICE VLAN) 802.3x LACP(802.3ad) 802.1p 802.1Q 802.1x QinQ RSTP(802.1w) MSTP(802.1s) GVRP PORT MUTILCAST suppression EVI
WAN protocols:	PPP PPPoE Client DCC, Dialer Watch ISDN Modem 3G Modem FR
IP services	Fast forwarding (unicast/multicast) TCP UDP IP Option

	IP unnumber Policy routing (unicast/multicast)
Non-IP services:	Netstream
IP application	Ping and Trace DHCP Server DHCP Client DNS client DNS Static NQA IP Accounting NTP Telnet TFTP Client FTP Client FTP Server
IP route	Static routing management Dynamic routing protocols: • RIP • OSPF • BGP • IS-IS Multicast routing protocols: • IGMP • PIM-DM • PIM-SM • MBGP • MSDP Routing policy
MPLS	LDP LSPM MPLS TE MPLS FW MPLS/BGP VPN VPLS
IPv6	IPv6 basic functions IPv6 ND IPv6 PMTU IPv6 FIB IPv6 ACL IPv6 transition technologies NAT-PT IPv6 tunneling 6PE, 6VPE IPv6 routing IPv6 static routing management Multicast routing protocols: • MLD

	• PIM-DM • PIM-SM • PIM-SSM
AAA	Local authentication Radius HWTacacs LDAP
Firewall	ASPF ACL FILTER
Security	Port security IPSec PORTAL L2TP NAT/NAPT PKI RSA SSH V1.5/2.0 URPF GRE
Reliability	VRRP Backup center BFD IRF
L2 QoS	LR Flow-base QOS Policy Port-Based Mirroring Packet Remarking Priority Mapping Port Trust Mode Port Priority Flow Filter FlowControl ACL
Traffic supervision	CAR (Committed Access Rate) LR (Line Rate)
Congestion management	FIFO, PQ, CQ, WFQ, CBQ, RTPQ
Congestion avoidance	WRED/RED
Traffic shaping	GTS (Generic Traffic Shaping)
Other QOS technologies	MPLS QOS cRTP/IPHC Sub-interface QOS
Voice Interfaces	FXS

	FXO E&M E1VI/T1VI BSV
Voice Signaling	R2 DSS1
SIP	SIP SIP Operation
Codec	G.711A law G.711U law G.723R53 G.723R63 G.729a G.729R8 G.729bR8
Media Process	RTP
Network management	SNMP V1/V2c/V3 MIB SYSLOG RMON NETCONF
Local management	Command line management License management File system management Auto-configure Dual Image
User access management	Console interface login AUX interface login TTY interface login Telnet (VTY) login SSH login FTP login XMODEM

Appendix B Upgrading software

This section describes how to upgrade system software while the router is operating normally or when the router cannot correctly start up.

Software types

The following software types are available:

- **Boot ROM image**—A .bin file that comprises a basic section and an extended section. The basic section is the minimum code that bootstraps the system. The extended section enables hardware initialization and provides system management menus. You can use these menus to load application software and the startup configuration file or manage files when the device cannot correctly start up.
- **Comware image**—Includes the following image subcategories:
  - **Boot image**—A .bin file that contains the Linux operating system kernel. It provides process management, memory management, file system management, and the emergency shell.
  - **System image**—A .bin file that contains the minimum feature modules required for device operation and some basic features, including device management, interface management, configuration management, and routing. To have advanced features, you must purchase feature packages.
  - **Feature package**—Includes a set of advanced software features. Users purchase feature packages as needed.
  - **Patch packages**—Irregularly released packages for fixing bugs without rebooting the device. A patch package does not add new features or functions.

  Comware software images that have been loaded are called "current software images." Comware images specified to load at the next startup are called "startup software images."

Boot ROM image, boot image, and system image are required for the system to work. These images might be released separately or as a whole in one .ipe package file. If an .ipe file is used, the system automatically decompresses the file, loads the .bin boot and system images and sets them as startup software images.

Upgrade methods

You can upgrade system software by using one of the following methods:

Upgrade method	Remarks
Centralized devices upgrading from the CLI	You must reboot the router to complete the upgrade. This method can interrupt ongoing network services.
Distributed devices upgrading from the CLI	You must reboot the router to complete the upgrade. This method can interrupt ongoing network services.
Distributed devices ISSU	This method upgrades the router with the least amount of downtime.
Managing files from the BootWare menu	Use this method when the router cannot correctly start up.

Preparing for the upgrade

Before you upgrade system software, complete the following tasks:

- Set up the upgrade environment as shown in Table 20.
- Configure routes to make sure that the router and the file server can reach each other.
- Run a TFTP or FTP server on the file server.
- Log in to the CLI of the router through the console port.
- Copy the upgrade file to the file server and correctly set the working directory on the TFTP or FTP server.
- Make sure the upgrade has minimal impact on the network services. During the upgrade, the router cannot provide any services.

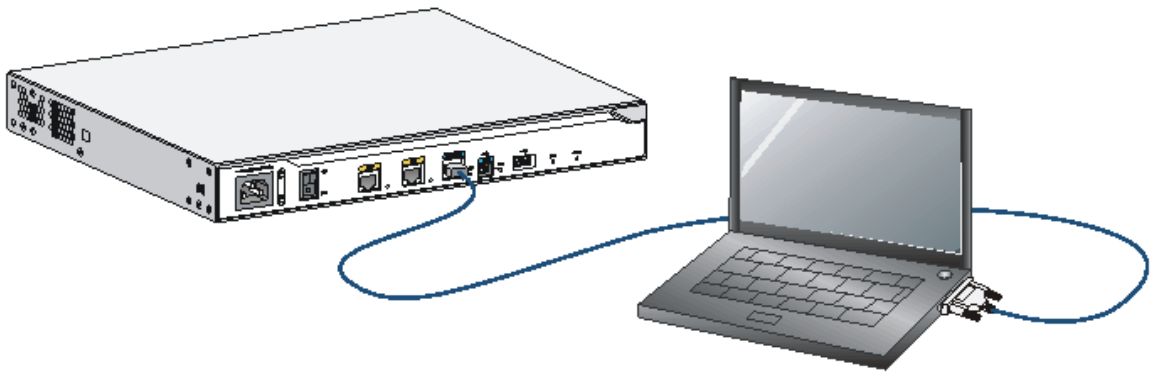
IMPORTANT:

In the BootWare menu, if you choose to download files over Ethernet, the Ethernet port must be GE0 on an MSR2003, MSR2004-24, MSR2004-48, MSR3012, MSR3024, MSR3044, and MSR3064 router, and must be M-GE0 on an MSR4060 and MSR4080 router.

Table 19 Storage media

Model	Storage medium	Path	Router Types
MSR2003	Flash	flash:/	Centralized devices
MSR2004-24	Flash	flash:/	Centralized devices
MSR2004-48	Flash	flash:/	Centralized devices
MSR3012	CF card	cfa0:/	Centralized devices
MSR3024	CF card	cfa0:/	Centralized devices
MSR3044	CF card	cfa0:/	Centralized devices
MSR3064	CF card	cfa0:/	Centralized devices
MSR4060	CF card	cfa0:/	Centralized devices
MSR4080	CF card	cfa0:/	Distributed devices

Figure 1 Set up the upgrade environment



Centralized devices upgrading from the CLI

You can use the TFTP or FTP commands on the router to access the TFTP or FTP server to back up or download files.

Saving the running configuration and verifying the storage space

1. Save the running configuration

```
<HPE>save
The current configuration will be written to the device. Are you sure? [Y/N]:y
Please input the file name(*.cfg)[flash:/startup.cfg]
(To leave the existing filename unchanged, press the enter key):
Validating file. Please wait...
Configuration is saved to device successfully.
<HPE>
```

2. Identify the system software image and configuration file names and verify that the flash has sufficient space for the new system software image.

```
<HPE>dir
Directory of flash:
   0 drw-           - Aug 15 2012 12:03:13   diagfile
   1 -rw-          84 Aug 15 2012 12:17:59   ifindex.dat
   2 drw-           - Aug 15 2012 12:03:14   license
   3 drw-           - Aug 15 2012 12:03:13   logfile
   4 -rw-    11418624 Dec 15 2011 09:00:00   msr2000-cmw710-boot-a0005.bin
   5 -rw-     1006592 Dec 15 2011 09:00:00   msr2000-cmw710-data-a0005.bin
   6 -rw-       10240 Dec 15 2011 09:00:00   msr2000-cmw710-security-a0005.bin
   7 -rw-    24067072 Dec 15 2011 09:00:00   msr2000-cmw710-system-a0005.bin
   8 -rw-     1180672 Dec 15 2011 09:00:00   msr2000-cmw710-voice-a0005.bin
   9 drw-           - Aug 15 2012 12:03:13   seclog
  10 -rw-        1632 Aug 15 2012 12:18:00   startup.cfg
  11 -rw-       25992 Aug 15 2012 12:18:00   startup.mdb

262144 KB total (223992 KB free)

<HPE>
```

Downloading the image file to the router

Using TFTP

Download the system software image file, for example, msr2000.ipe to the flash on the router.

```
<HPE>tftp 192.168.1.100 get msr2000.ipe
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100 35.9M  100 35.9M    0     0   559k      0  0:01:05  0:01:05 --:--:--  546k

<HPE>
```

Using FTP

1. From FTP client view, download the system software image file (for example, msr2000.ipe) to the CF card on the router.

```
ftp> get msr2000.ipe
msr2000.ipe already exists. Overwrite it? [Y/N]:y
227 Entering passive mode (192,168,1,100,5,20)
125 Using existing data connection
226 Closing data connection; File transfer successful.
37691392 bytes received in 17.7 seconds (2.03 Mbyte/s)

[ftp]
```

2. Return to user view.

```
[ftp]quit
221 Service closing control connection

<HPE>
```

Specifying the startup image file

1. Specify the msr2000.ipe file as the main image file at the next reboot.

```
<HPE>boot-loader file flash:/msr2000.ipe main
Images in IPE:
  msr2000-cmw710-boot-a0005.bin
  msr2000-cmw710-system-a0005.bin
  msr2000-cmw710-security-a0005.bin
  msr2000-cmw710-voice-a0005.bin
  msr2000-cmw710-data-a0005.bin
This command will set the main startup software images. Continue? [Y/N]:y
Add images to the device.
Successfully copied flash:/msr2000-cmw710-boot-a0005.bin to
flash:/msr2000-cmw710-boot-a0005.bin.

Successfully copied flash:/msr2000-cmw710-system-a0005.bin to
flash:/msr2000-cmw710-system-a0005.bin.

Successfully copied flash:/msr2000-cmw710-security-a0005.bin to
flash:/msr2000-cmw710-security-a0005.bin.

Successfully copied flash:/msr2000-cmw710-voice-a0005.bin to
flash:/msr2000-cmw710-voice-a0005.bin.

Successfully copied flash:/msr2000-cmw710-data-a0005.bin to
flash:/msr2000-cmw710-data-a0005.bin.

The images that have passed all examinations will be used as the main startup software
images at the next reboot on the device.

<HPE>
```

2. Verify that the file has been loaded.

```
<HPE> display boot-loader
Software images on the device:
Current software images:
  flash:/msr2000-cmw710-boot-a0004.bin
  flash:/msr2000-cmw710-system-a0004.bin
  flash:/msr2000-cmw710-security-a0004.bin
  flash:/msr2000-cmw710-voice-a0004.bin
  flash:/msr2000-cmw710-data-a0004.bin
Main startup software images:
  flash:/msr2000-cmw710-boot-a0005.bin
  flash:/msr2000-cmw710-system-a0005.bin
  flash:/msr2000-cmw710-security-a0005.bin
  flash:/msr2000-cmw710-voice-a0005.bin
  flash:/msr2000-cmw710-data-a0005.bin
Backup startup software images:
  None
<HPE>
```

Rebooting and completing the upgrade

1. Reboot the router.

```
<HPE>reboot
Start to check configuration with next startup configuration file, please
wait.........DONE!
This command will reboot the device. Continue? [Y/N]:y
Now rebooting, please wait...
<HPE>
System is starting...
```

2. After the reboot is complete, verify that the system software image is correct.

```
<HPE> display version
HPE Comware Software, Version 7.1.042, Release 000702
Copyright (c) 2010-2013 Hewlett-Packard Development Company, L.P.
HPE MSR2003 uptime is 0 weeks, 0 days, 13 hours, 23 minutes                    Last
reboot reason : User reboot
Boot image: flash:/msr2000-cmw710-boot-a0005.bin
Boot image version: 7.1.040, Alpha 0005
System image: flash:/msr2000-cmw710-system-a0005.bin
System image version: 7.1.040, Alpha 0005

CPU ID: 0x1
1G bytes DDR3 SDRAM Memory
2M bytes Flash Memory
PCB               Version:  3.0
CPLD              Version:  1.0
Basic    BootWare Version:  1.04
Extended BootWare Version:  1.04
[SLOT  0]AUX                      (Hardware)3.0    (Driver)1.0,    (Cpld)1.0
[SLOT  0]GE0/0                    (Hardware)3.0    (Driver)1.0,    (Cpld)1.0
[SLOT  0]GE0/1                    (Hardware)3.0    (Driver)1.0,    (Cpld)1.0
```

```
[SLOT  0]CELLULAR0/0                (Hardware)3.0    (Driver)1.0,    (Cpld)1.0

<HPE>
```

Distributed devices upgrading from the CLI

You can use the TFTP or FTP commands on the router to access the TFTP or FTP server to back up or download files.

Display the slot number of the active MPU

Perform the **display device** command in any view to display the slot number of the active MPU. By default, the standby MPU will automatically synchronize the image files from active MPU.

```
<HPE>display device
 Slot No.      Board Type                Status        Primary        SubSlots
 --------------------------------------------------------------------------------
 0             MPU-100                   Normal        Master           0
 1             MPU-100                   Normal        Standby          0
 2             SPU-100                   Normal        N/A              10
<HPE>
```

Save the current configuration and verify the storge space

1. Perform the **save** command in any view to save the current configuration.

```
<HPE>save
The current configuration will be written to the device. Are you sure? [Y/N]:y
Please input the file name(*.cfg)[cfa0:/startup.cfg]
(To leave the existing filename unchanged, press the enter key):
Validating file. Please wait...
Configuration is saved to device successfully.
<HPE>
```

2. Perform the **dir** command in user view to identify the system software image and configuration file names and verify that the CF card has sufficient space for the new system software image.

```
<HPE>dir
Directory of cfa0:
   0 drw-           - Jan 07 2013 14:02:12   diagfile
   1 -rw-         307 Jan 22 2013 17:02:02   ifindex.dat
   2 drw-           - Jan 07 2013 14:02:12   license
   3 drw-           - Jan 22 2013 13:42:00   logfile
   4 -rw-    21412864 Jan 22 2013 16:49:00   MSR4000-cmw710-boot-r0005p01.bin
   5 -rw-     1123328 Jan 22 2013 16:50:30   MSR4000-cmw710-data-r0005p01.bin
   6 -rw-       11264 Jan 22 2013 16:50:26   MSR4000-cmw710-security-r0005p01.bin
   7 -rw-    45056000 Jan 22 2013 16:49:34   MSR4000-cmw710-system-r0005p01.bin
   8 -rw-     2746368 Jan 22 2013 16:50:26   MSR4000-cmw710-voice-r0005p01.bin
   9 drw-           - Jan 07 2013 14:02:12   seclog
  10 -rw-        2166 Jan 22 2013 17:02:02   startup.cfg
  11 -rw-       34425 Jan 22 2013 17:02:02   startup.mdb

507492 KB total (438688 KB free)
```

```
<HPE>
```

Download the image file to the router

Using TFTP

Perform the **tftp get** command in user view to download the system software image file, for example, msr4000.ipe to the CF card on the router.

```
<HPE>tftp 192.168.1.100 get msr4000.ipe
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
 45 67.0M   45 30.4M    0     0   792k      0  0:01:26  0:00:39  0:00:47  844k
100 67.0M  100 67.0M    0     0   772k      0  0:01:28  0:01:28 --:--:--  745k
<HPE>
```

Using FTP

1. Perform the **get** command in FTP client view to download the system software image file msr4000.ipe to the CF card on the router.

```
ftp> get msr4000.ipe
msr4000.ipe already exists. Overwrite it? [Y/N]:y
227 Entering passive mode (192,168,1,100,5,20)
125 Using existing data connection
226 Closing data connection; File transfer successful.
37691392 bytes received in 17.7 seconds (2.03 Mbyte/s)
[ftp]
```

2. Perform the **quit** command in FTP client view to return to user view.

```
[ftp]quit
221 Service closing control connection
 <HPE>
```

Copy the image file to CF card root directory of the standby MPU

```
<HPE> copy msr4000.ipe slot1#cfa0:/
Copy cfa0:/msr4000.ipe to slot1#cfa0:/msr4000.ipe?[Y/N]:y
Copying file cfa0:/msr4000.ipe to slot1#cfa0:/ msr4000.ipe...Done.
```

Specifying the startup image file

1. Perform the **boot-loader** command in user view to d specify the msr4000.ipe file as the main image file for the active MPU on slot 0 at the next reboot.

```
<HPE>boot-loader file flash:/msr4000.ipe slot 0 main
Images in IPE:
  msr4000-cmw710-boot-a0005.bin
  msr4000-cmw710-system-a0005.bin
  msr4000-cmw710-security-a0005.bin
  msr4000-cmw710-voice-a0005.bin
  msr4000-cmw710-data-a0005.bin
This command will set the main startup software images. Continue? [Y/N]:y
Add images to the device.
```

```
Successfully copied flash:/msr4000-cmw710-boot-a0005.bin to
cfa0:/msr4000-cmw710-boot-a0005.bin.
Successfully copied flash:/msr4000-cmw710-system-a0005.bin to
cfa0:/msr4000-cmw710-system-a0005.bin.
Successfully copied flash:/msr4000-cmw710-security-a0005.bin to
cfa0:/msr4000-cmw710-security-a0005.bin.
Successfully copied flash:/msr4000-cmw710-voice-a0005.bin to
cfa0:/msr4000-cmw710-voice-a0005.bin.
Successfully copied flash:/msr4000-cmw710-data-a0005.bin to
cfa0:/msr4000-cmw710-data-a0005.bin.
The images that have passed all examinations will be used as the main startup software
images at the next reboot on the device.
<HPE>
```

2. Perform the **boot-loader** command in user view to d specify the msr4000.ipe file as the main image file for the standby MPU on slot 1 at the next reboot.

```
<HPE>boot-loader file flash:/msr4000.ipe slot 0 main
Images in IPE:
  msr4000-cmw710-boot-a0005.bin
  msr4000-cmw710-system-a0005.bin
  msr4000-cmw710-security-a0005.bin
  msr4000-cmw710-voice-a0005.bin
  msr4000-cmw710-data-a0005.bin
This command will set the main startup software images. Continue? [Y/N]:y
Add images to the device.
Successfully copied flash:/msr4000-cmw710-boot-a0005.bin to
cfa0:/msr4000-cmw710-boot-a0005.bin.
Successfully copied flash:/msr4000-cmw710-system-a0005.bin to
cfa0:/msr4000-cmw710-system-a0005.bin.
Successfully copied flash:/msr4000-cmw710-security-a0005.bin to
cfa0:/msr4000-cmw710-security-a0005.bin.
Successfully copied flash:/msr4000-cmw710-voice-a0005.bin to
cfa0:/msr4000-cmw710-voice-a0005.bin.
Successfully copied flash:/msr4000-cmw710-data-a0005.bin to
cfa0:/msr4000-cmw710-data-a0005.bin.
The images that have passed all examinations will be used as the main startup software
images at the next reboot on the device.
<HPE>
```

3. Perform the **display boot-loader** command in user view to verify that the file has been loaded.

```
<HPE> display boot-loader
Software images on slot 0:
Current software images:
  cfa0:/MSR4000-cmw710-boot-a0004.bin
  cfa0:/MSR4000-cmw710-system-a0004.bin
  cfa0:/MSR4000-cmw710-security-a0004.bin
  cfa0:/MSR4000-cmw710-voice-a0004.bin
  cfa0:/MSR4000-cmw710-data-a0004.bin
Main startup software images:
  cfa0:/MSR4000-cmw710-boot-a0005.bin
  cfa0:/MSR4000-cmw710-system-a0005.bin
  cfa0:/MSR4000-cmw710-security-a0005.bin
```

```
  cfa0:/MSR4000-cmw710-voice-a0005.bin
  cfa0:/MSR4000-cmw710-data-a0005.bin
Backup startup software images:
  None
Software images on slot 1:
Current software images:
  cfa0:/MSR4000-cmw710-boot-r0005p01.bin
  cfa0:/MSR4000-cmw710-system-r0005p01.bin
  cfa0:/MSR4000-cmw710-security-r0005p01.bin
  cfa0:/MSR4000-cmw710-voice-r0005p01.bin
  cfa0:/MSR4000-cmw710-data-r0005p01.bin
Main startup software images:
  cfa0:/MSR4000-cmw710-boot-r0005p01.bin
  cfa0:/MSR4000-cmw710-system-r0005p01.bin
  cfa0:/MSR4000-cmw710-security-r0005p01.bin
  cfa0:/MSR4000-cmw710-voice-r0005p01.bin
  cfa0:/MSR4000-cmw710-data-r0005p01.bin
Backup startup software images:
  None
```

Reboot and completing the upgrade

1. Perform the **reboot** command in user view to reboot the router.

```
<HPE>reboot
Start to check configuration with next startup configuration file, please
wait.........DONE!
This command will reboot the device. Continue? [Y/N]:y
Now rebooting, please wait...
<HPE>
System is starting..
```

2. After the reboot is complete, perform the **display version** command to verify that the system software image is correct.

```
<HPE> display version
HPE Comware Software, Version 7.1.042, Release 000702
Copyright (c) 2010-2013 Hewlett-Packard Development Company, L.P.
HPE MSR4060 uptime is 0 weeks, 0 days, 11 hours, 49 minutes
Last reboot reason : Power on
Boot image: cfa0:/MSR4000-cmw710-boot-a0005.bin
Boot image version: 7.1.040, Alpha 0005
System image: cfa0:/MSR4000-cmw710-system-a0005.bin
System image version: 7.1.040, Alpha 0005
Feature image(s) list:
  cfa0:/MSR4000-cmw710-security-a0005.bin, version: 7.1.040
  cfa0:/MSR4000-cmw710-voice-a0005.bin, version: 7.1.040
  cfa0:/MSR4000-cmw710-data-a0005.bin, version: 7.1.040

Slot 0: MPU-100 uptime is 0 week, 0 day, 1 hour, 20 minutes
Last reboot reason : Power on
CPU ID: 0x3
```

```
2G bytes DDR3 SDRAM Memory
8M bytes Flash Memory
PCB               Version:  2.0
CPLD              Version:  1.0
Basic    BootWare Version:  1.04
Extended BootWare Version:  1.04
[SUBSLOT  0]CON                   (Hardware)2.0    (Driver)1.0,   (Cpld)1.0
[SUBSLOT  0]AUX                   (Hardware)2.0    (Driver)1.0,   (Cpld)1.0
[SUBSLOT  0]MGE0                  (Hardware)2.0    (Driver)1.0,   (Cpld)1.0

Slot 1: MPU-100 uptime is 0 week, 0 day, 1 hour, 8 minutes
Last reboot reason : User reboot
CPU ID: 0x3
2G bytes DDR3 SDRAM Memory
8M bytes Flash Memory
PCB               Version:  2.0
CPLD              Version:  1.0
Basic    BootWare Version:  1.05
Extended BootWare Version:  1.05
[SUBSLOT  0]CON                   (Hardware)2.0    (Driver)1.0,   (Cpld)1.0
[SUBSLOT  0]AUX                   (Hardware)2.0    (Driver)1.0,   (Cpld)1.0
[SUBSLOT  0]MGE0                  (Hardware)2.0    (Driver)1.0,   (Cpld)1.0

Slot 2: SPU-100 uptime is 0 week, 0 day, 1 hour, 19 minutes
Last reboot reason : Power on
CPU ID: 0x5
2G bytes DDR3 SDRAM Memory
8M bytes Flash Memory
PCB               Version:  2.0
CPLD              Version:  1.0
Basic    BootWare Version:  1.02
Extended BootWare Version:  1.02
[SUBSLOT  0]GE2/0/0               (Hardware)2.0    (Driver)1.0,   (Cpld)1.0
[SUBSLOT  0]GE2/0/1               (Hardware)2.0    (Driver)1.0,   (Cpld)1.0
[SUBSLOT  0]GE2/0/2               (Hardware)2.0    (Driver)1.0,   (Cpld)1.0
[SUBSLOT  0]GE2/0/3               (Hardware)2.0    (Driver)1.0,   (Cpld)1.0
[SUBSLOT  0]CELLULAR2/0/0         (Hardware)2.0    (Driver)1.0,   (Cpld)1.0
[SUBSLOT  0]CELLULAR2/0/1         (Hardware)2.0    (Driver)1.0,   (Cpld)1.0
[SUBSLOT  1]HMIM-4SAE             (Hardware)3.0    (Driver)1.0,   (Cpld)4.0
```

Distributed devices ISSU

The In-Service Software Upgrade (ISSU) function enables software upgrade with the least amount of downtime.

To implement ISSU of a distributed device, use these guidelines:

- Make sure the device has two MPUs.
- Upgrade the standby MPU is upgraded first to form a new forwarding plane and a new control plane.

- Upgrade the active MPU after the standby MPU operates correctly. The standby MPU will synchronize data and configuration from the active MPU and take over the forwarding and control functions.

Disabling the standby MPU auto-update function

When you upgrade the active MPU of a dual-MPU distributed device, the standby MPU auto-update function automatically upgrades the standby MPU by default. To use ISSU, you must disable the function.

To disable the standby MPU auto-update function:

1. View the roles of the MPUs.

```
<HPE>display device
 Slot No.      Board Type                Status        Primary        SubSlots
 ------------------------------------------------------------------------------
 0             MPU-100                   Normal        Master           0
 1             MPU-100                   Normal        Standby          0
 2             SPU-100                   Normal        N/A              10
<HPE>
```

The output shows that the MPU in slot 0 is the active MPU.

2. Disable the standby MPU auto-update function.

```
<HPE>system-view
[Sysname]version check ignore
[Sysname]undo version auto-update enable
```

Saving the running configuration and verifying the storage space

1. Save the running configuration.

```
<HPE>save
The current configuration will be written to the device. Are you sure? [Y/N]:y
Please input the file name(*.cfg)[cfa0:/startup.cfg]
(To leave the existing filename unchanged, press the enter key):
Validating file. Please wait...
Configuration is saved to device successfully.
<HPE>
```

2. Check the storage space.

```
<HPE>dir
Directory of cfa0:
   0 drw-           - Jan 07 2014 14:02:12   diagfile
   1 -rw-         307 Jan 22 2014 17:02:02   ifindex.dat
   2 drw-           - Jan 07 2014 14:02:12   license
   3 drw-           - Jan 22 2014 13:42:00   logfile
   4 -rw-    20050944 Jan 10 2014 09:06:48   msr4000-cmw710-boot-e010204.bin
   5 -rw-     2001920 Jan 10 2014 09:08:28   msr4000-cmw710-data-e010204.bin
   6 -rw-       11264 Jan 10 2014 09:08:18   msr4000-cmw710-security-e010204.bin
   7 -rw-    61538304 Jan 10 2014 09:07:36   msr4000-cmw710-system-e010204.bin
   8 -rw-     3232768 Jan 10 2014 09:08:22   msr4000-cmw710-voice-e010204.bin
   9 drw-           - Jan 07 2014 14:02:12   seclog
```

```
   10 -rw-       2166 Jan 22 2014 17:02:02   startup.cfg
   11 -rw-      34425 Jan 22 2014 17:02:02   startup.mdb

507492 KB total (438688 KB free)

<HPE>
```

The output shows the CF card has 438688 KB of free storage space. If the CF card of your device is not sufficient for the upgrade image, delete unused files.

Downloading the upgrade image file to the router

Using TFTP

Download the upgrade image file (for example, msr4000.ipe) to the CF card on the router.

```
<HPE>tftp 192.168.1.100 get msr4000.ipe
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
 45 67.0M   45 30.4M    0     0   792k      0  0:01:26  0:00:39  0:00:47  844k
100 67.0M  100 67.0M    0     0   772k      0  0:01:28  0:01:28 --:--:--  745k
<HPE>
```

Using FTP

1. From FTP client view, download the upgrade image file (for example, msr4000.ipe) to the CF card on the router.

```
ftp> get msr4000.ipe
msr4000.ipe already exists. Overwrite it? [Y/N]:y
227 Entering passive mode (192,168,1,100,5,20)
125 Using existing data connection
226 Closing data connection; File transfer successful.
37691392 bytes received in 17.7 seconds (2.03 Mbyte/s)
[ftp]
```

2. Return to user view.

```
[ftp]quit
221 Service closing control connection
<HPE>
```

Copying the image file to the root directory of the CF card on the standby MPU

```
<HPE> copy msr4000.ipe slot1#cfa0:/
Copy cfa0:/msr4000.ipe to slot1#cfa0:/msr4000.ipe?[Y/N]:y
Copying file cfa0:/msr4000.ipe to slot1#cfa0:/ msr4000.ipe...Done.
```

Upgrading the standby MPU

1. Specify the msr4000.ipe file as the main startup image file for the standby MPU.

```
<HPE>boot-loader file msr4000.ipe slot 1 main
Verifying the IPE file and the images......Done.
HPE MSR4060 images in IPE:
  msr4000-cmw710-boot-e010305.bin
  msr4000-cmw710-system-e010305.bin
  msr4000-cmw710-security-e010305.bin
```

```
  msr4000-cmw710-voice-e010305.bin
  msr4000-cmw710-data-e010305.bin
This command will set the main startup software images. Continue? [Y/N]:y
Add images to slot 1.
Decompressing file msr4000-cmw710-boot-e010305.bin to
slot1#cfa0:/msr4000-cmw710-boo
t-e010305.bin..............Done.
Decompressing file msr4000-cmw710-system-e010305.bin to
slot1#cfa0:/msr4000-cmw710-s
ystem-e010305.bin.........................................Done.
Decompressing file msr4000-cmw710-security-e010305.bin to
slot1#cfa0:/msr4000-cmw710
-security-e010305.bin...Done.
Decompressing file msr4000-cmw710-voice-e010305.bin to
slot1#cfa0:/msr4000-cmw710-vo
ice-e010305.bin....Done.
Decompressing file msr4000-cmw710-data-e010305.bin to
slot1#cfa0:/msr4000-cmw710-dat
a-e010305.bin...Done.
The images that have passed all examinations will be used as the main startup so
ftware images at the next reboot on slot 1.
```

2. Reboot the standby MPU.

```
<HPE>reboot slot 1
This command will reboot the specified slot, Continue? [Y/N]:y
Now rebooting, please wait...
```

3. After the standby MPU starts up, verify the startup image files.

```
<HPE>display boot-loader
Software images on slot 0:
Current software images:
  cfa0:/msr4000-cmw710-boot-e010204.bin
  cfa0:/msr4000-cmw710-system-e010204.bin
  cfa0:/msr4000-cmw710-security-e010204.bin
  cfa0:/msr4000-cmw710-voice-e010204.bin
  cfa0:/msr4000-cmw710-data-e010204.bin
Main startup software images:
  cfa0:/msr4000-cmw710-boot-e010204.bin
  cfa0:/msr4000-cmw710-system-e010204.bin
  cfa0:/msr4000-cmw710-security-e010204.bin
  cfa0:/msr4000-cmw710-voice-e010204.bin
  cfa0:/msr4000-cmw710-data-e010204.bin
Backup startup software images:
  cfa0:/msr4000-cmw710-boot-e010203.bin
  cfa0:/msr4000-cmw710-system-e010203.bin
  cfa0:/msr4000-cmw710-security-e010203.bin
  cfa0:/msr4000-cmw710-voice-e010203.bin
  cfa0:/msr4000-cmw710-data-e010203.bin
Software images on slot 1:
Current software images:
  cfa0:/msr4000-cmw710-boot-e010305.bin
```

```
  cfa0:/msr4000-cmw710-system-e010305.bin
  cfa0:/msr4000-cmw710-security-e010305.bin
  cfa0:/msr4000-cmw710-voice-e010305.bin
  cfa0:/msr4000-cmw710-data-e010305.bin
Main startup software images:
  cfa0:/msr4000-cmw710-boot-e010305.bin
  cfa0:/msr4000-cmw710-system-e010305.bin
  cfa0:/msr4000-cmw710-security-e010305.bin
  cfa0:/msr4000-cmw710-voice-e010305.bin
  cfa0:/msr4000-cmw710-data-e010305.bin
Backup startup software images:
  cfa0:/msr4000-cmw710-boot-e010203.bin
  cfa0:/msr4000-cmw710-system-e010203.bin
  cfa0:/msr4000-cmw710-security-e010203.bin
  cfa0:/msr4000-cmw710-voice-e010203.bin
  cfa0:/msr4000-cmw710-data-e010203.bin
```

The output shows that the standby MPU is running the new images.

Upgrading the active MPU

1. Specify the msr4000.ipe file as the main startup image file for the active MPU.

```
<HPE>boot-loader file msr4000.ipe slot 0 main
Verifying the IPE file and the images......Done.
HPE MSR4060 images in IPE:
  msr4000-cmw710-boot-e010305.bin
  msr4000-cmw710-system-e010305.bin
  msr4000-cmw710-security-e010305.bin
  msr4000-cmw710-voice-e010305.bin
  msr4000-cmw710-data-e010305.bin
This command will set the main startup software images. Continue? [Y/N]:y
Add images to slot 0.
Decompressing file msr4000-cmw710-boot-e010305.bin to
cfa0:/msr4000-cmw710-boot-e010
305.bin..............Done.
Decompressing file msr4000-cmw710-system-e010305.bin to
cfa0:/msr4000-cmw710-system-
e010305.bin.........................................Done.
Decompressing file msr4000-cmw710-security-e010305.bin to
cfa0:/msr4000-cmw710-secur
ity-e010305.bin...Done.
Decompressing file msr4000-cmw710-voice-e010305.bin to
cfa0:/msr4000-cmw710-voice-e0
10305.bin....Done.
Decompressing file msr4000-cmw710-data-e010305.bin to
cfa0:/msr4000-cmw710-data-e010
305.bin...Done.
The images that have passed all examinations will be used as the main startup so
ftware images at the next reboot on slot 0.
```

2. Reboot the active MPU.

```
<HPE>reboot slot 0
This command will reboot the specified slot, Continue? [Y/N]:y
Now rebooting, please wait...
```

The standby MPU takes over the forwarding and controlling functions before the active MPU reboots.

3. After the active MPU starts up, verify the startup image files.

```
<HPE>display boot-loader
Software images on slot 0:
Current software images:
  cfa0:/msr4000-cmw710-boot-e010305.bin
  cfa0:/msr4000-cmw710-system-e010305.bin
  cfa0:/msr4000-cmw710-security-e010305.bin
  cfa0:/msr4000-cmw710-voice-e010305.bin
  cfa0:/msr4000-cmw710-data-e010305.bin
Main startup software images:
  cfa0:/msr4000-cmw710-boot-e010305.bin
  cfa0:/msr4000-cmw710-system-e010305.bin
  cfa0:/msr4000-cmw710-security-e010305.bin
  cfa0:/msr4000-cmw710-voice-e010305.bin
  cfa0:/msr4000-cmw710-data-e010305.bin
Backup startup software images:
  cfa0:/msr4000-cmw710-boot-e010203.bin
  cfa0:/msr4000-cmw710-system-e010203.bin
  cfa0:/msr4000-cmw710-security-e010203.bin
  cfa0:/msr4000-cmw710-voice-e010203.bin
  cfa0:/msr4000-cmw710-data-e010203.bin
Software images on slot 1:
Current software images:
  cfa0:/msr4000-cmw710-boot-e010305.bin
  cfa0:/msr4000-cmw710-system-e010305.bin
  cfa0:/msr4000-cmw710-security-e010305.bin
  cfa0:/msr4000-cmw710-voice-e010305.bin
  cfa0:/msr4000-cmw710-data-e010305.bin
Main startup software images:
  cfa0:/msr4000-cmw710-boot-e010305.bin
  cfa0:/msr4000-cmw710-system-e010305.bin
  cfa0:/msr4000-cmw710-security-e010305.bin
  cfa0:/msr4000-cmw710-voice-e010305.bin
  cfa0:/msr4000-cmw710-data-e010305.bin
Backup startup software images:
  cfa0:/msr4000-cmw710-boot-e010203.bin
  cfa0:/msr4000-cmw710-system-e010203.bin
  cfa0:/msr4000-cmw710-security-e010203.bin
  cfa0:/msr4000-cmw710-voice-e010203.bin
  cfa0:/msr4000-cmw710-data-e010203.bin
```

4. Perform the **display boot-loader** command in user view to verify that the file has been loaded.

```
<HPE> display boot-loader
Software images on slot 0:
```

```
Current software images:
  cfa0:/MSR4000-cmw710-boot-r0005p01.bin
  cfa0:/MSR4000-cmw710-system-r0005p01.bin
  cfa0:/MSR4000-cmw710-security-r0005p01.bin
  cfa0:/MSR4000-cmw710-voice-r0005p01.bin
  cfa0:/MSR4000-cmw710-data-r0005p01.bin
Main startup software images:
  cfa0:/MSR4000-cmw710-boot-a0005.bin
  cfa0:/MSR4000-cmw710-system-a0005.bin
  cfa0:/MSR4000-cmw710-security-a0005.bin
  cfa0:/MSR4000-cmw710-voice-a0005.bin
  cfa0:/MSR4000-cmw710-data-a0005.bin
Backup startup software images:
  None
Software images on slot 1:
Current software images:
  cfa0:/MSR4000-cmw710-boot-r0005p01.bin
  cfa0:/MSR4000-cmw710-system-r0005p01.bin
  cfa0:/MSR4000-cmw710-security-r0005p01.bin
  cfa0:/MSR4000-cmw710-voice-r0005p01.bin
  cfa0:/MSR4000-cmw710-data-r0005p01.bin
Main startup software images:
  cfa0:/MSR4000-cmw710-boot-r0005p01.bin
  cfa0:/MSR4000-cmw710-system-r0005p01.bin
  cfa0:/MSR4000-cmw710-security-r0005p01.bin
  cfa0:/MSR4000-cmw710-voice-r0005p01.bin
  cfa0:/MSR4000-cmw710-data-r0005p01.bin
Backup startup software images:
  None
```

Upgrading from the BootWare menu

You can use the following methods to upgrade software from the BootWare menu:

- Using TFTP/FTP to upgrade software through an Ethernet port
- Using XMODEM to upgrade software through the console port

Accessing the BootWare menu

1. Power on the router (for example, an HPE MSR 2003 router), and you can see the following information:

```
System is starting...
Press Ctrl+D to access BASIC-BOOTWARE MENU...
Booting Normal Extended BootWare
The Extended BootWare is self-decompressing....Done.

******************************************************************************
*                                                                            *
*                  HPE MSR2003 BootWare, Version 1.20                        *
```

```
*                                                                              *
********************************************************************************
Copyright (c) 2010-2013 Hewlett-Packard Development Company, L.P.

Compiled Date       : Jun 22 2013
CPU ID              : 0x1
Memory Type         : DDR3 SDRAM
Memory Size         : 1024MB
Flash Size          : 2MB
Nand Flash size     : 256MB
CPLD Version        : 2.0
PCB Version         : 3.0


BootWare Validating...
Press Ctrl+B to access EXTENDED-BOOTWARE MENU...
```

2. Press **Ctrl** + **B** to access the BootWare menu.

```
Password recovery capability is enabled.
Note: The current operating device is flash
Enter < Storage Device Operation > to select device.

==========================<EXTEND-BOOTWARE MENU>==========================
|<1> Boot System                                                         |
|<2> Enter Serial SubMenu                                                |
|<3> Enter Ethernet SubMenu                                              |
|<4> File Control                                                        |
|<5> Restore to Factory Default Configuration                                |
|<6> Skip Current System Configuration                                   |
|<7> BootWare Operation Menu                                             |
|<8> Skip authentication for console login                               |
|<9> Storage Device Operation                                            |
|<0> Reboot                                                              |
==========================================================================
Ctrl+Z: Access EXTENDED ASSISTANT MENU
Ctrl+F: Format File System
Enter your choice(0-9):
```

Table 20 BootWare menu options

Item	Description
<1> Boot System	Boot the system software image.
<2> Enter Serial SubMenu	Access the Serial submenu (see Table 23) for upgrading system software through the console port or changing the serial port settings.
<3> Enter Ethernet SubMenu	Access the Ethernet submenu (see Table 21) for upgrading system software through an Ethernet port or changing Ethernet settings.
<4> File Control	Access the File Control submenu (see Table 24) to retrieve and manage the files stored on the router.

<5> Restore to Factory Default Configuration	Delete the next-startup configuration files and load the factory-default configuration.
<6> Skip Current System Configuration	Start the router with the factory default configuration. This is a one-time operation and does not take effect at the next reboot. You use this option when you forget the console login password.
<7> BootWare Operation Menu	Access the BootWare Operation menu for backing up, restoring, or upgrading BootWare. When you upgrade the system software image, BootWare is automatically upgraded. HPE does not recommend upgrading BootWare separately. This document does not cover using the BootWare Operation menu.
<8> Skip authentication for console login	Clear all the authentication schemes on the console port.
<9> Storage Device Operation	Access the Storage Device Operation menu to manage storage devices. Using this option is beyond this chapter.
<0> Reboot	Restart the router.

Using TFTP/FTP to upgrade software through an Ethernet port

1. Enter **3** in the BootWare menu to access the Ethernet submenu.

```
================================<File CONTROL>================================
 |Note:the operating device is flash                                         |
 |<1> Download Image Program To SDRAM And Run                                |
 |<2> Update Main Image File                                                 |
 |<3> Update Backup Image File                                               |
 |<4> Download Files(*.*)                                                    |
 |<5> Modify Ethernet Parameter                                              |
|<0> Exit To Main Menu                                                      |
==============================================================================
Enter your choice(0-4):
```

Table 21 Ethernet submenu options

Item	Description
<1> Download Application Program To SDRAM And Run	Download a system software image to the SDRAM and run the image.
<2> Update Main Image File	Upgrade the main system software image.
<3> Update Backup Image File	Upgrade the backup system software image.
<4> Download Files(*.*)	Download a system software image to the Flash or CF card.
<5> Modify Ethernet Parameter	Modify network settings.
<0> Exit To Main Menu	Return to the BootWare menu.

2. Enter **5** to configure the network settings.

```
=========================<ETHERNET PARAMETER SET>=========================
|Note:       '.' = Clear field.                                           |
|            '-' = Go to previous field.                                  |
```

```
|          Ctrl+D = Quit.                                                      |
==============================================================================
Protocol (FTP or TFTP) :ftp
Load File Name         :msr2000.ipe
                       :
Target File Name       :msr2000.ipe
                       :
Server IP Address      :192.168.1.1
Local IP Address       :192.168.1.100
Subnet Mask            :255.255.255.0
Gateway IP Address     :0.0.0.0
FTP User Name          :user001
FTP User Password      :********
```

Table 22 Network parameter fields and shortcut keys

Field	Description
'.' = Clear field	Press a dot (.) and then Enter to clear the setting for a field.
'-' = Go to previous field	Press a hyphen (-) and then Enter to return to the previous field.
Ctrl+D = Quit	Press Ctrl + D to exit the Ethernet Parameter Set menu.
Protocol (FTP or TFTP)	Set the file transfer protocol to FTP or TFTP.
Load File Name	Set the name of the file to be downloaded.
Target File Name	Set a file name for saving the file on the router. By default, the target file name is the same as the source file name.
Server IP Address	Set the IP address of the FTP or TFTP server. If a mask must be set, use a colon (:) to separate the mask length from the IP address. For example, 192.168.80.10:24.
Local IP Address	Set the IP address of the router.
Subnet Mask	Subnet Mask of the local IP address.
Gateway IP Address	Set a gateway IP address if the router is on a different network than the server.
FTP User Name	Set the username for accessing the FTP server. This username must be the same as configured on the FTP server. This field is not available for TFTP.
FTP User Password	Set the password for accessing the FTP server. This password must be the same as configured on the FTP server. This field is not available for TFTP.

3. Select an option in the Ethernet submenu to upgrade a system software image. For example, enter **2** to upgrade the main system software image.

```
Loading.....................................................................
.............................................................................
.............................................................................
.....................................Done.
37691392 bytes downloaded!
The file is exist,will you overwrite it? [Y/N]Y
Image file msr2000-cmw710-boot-a0005.bin is self-decompressing...
Saving file flash:/msr2000-cmw710-boot-a0005.bin ............................
......Done.
```

```
Image file msr2000-cmw710-system-a0005.bin is self-decompressing...
Saving file flash:/msr2000-cmw710-system-a0005.bin ......................
.....................................Done.
Image file msr2000-cmw710-security-a0005.bin is self-decompressing...
Saving file flash:/msr2000-cmw710-security-a0005.bin Done.
Image file msr2000-cmw710-voice-a0005.bin is self-decompressing...
Saving file flash:/msr2000-cmw710-voice-a0005.bin ......Done.
Image file msr2000-cmw710-data-a0005.bin is self-decompressing...
Saving file flash:/msr2000-cmw710-data-a0005.bin ..Done.

==========================<Enter Ethernet SubMenu>==========================
|Note:the operating device is flash                                        |
|<1> Download Image Program To SDRAM And Run                               |
|<2> Update Main Image File                                                |
|<3> Update Backup Image File                                              |
|<4> Download Files(*.*)                                                    |
|<5> Modify Ethernet Parameter                                             |
|<0> Exit To Main Menu                                                     |
|<Ensure The Parameter Be Modified Before Downloading!>                    |
============================================================================
Enter your choice(0-4):
```

4. Enter **0** to return to the BootWare menu

```
============================<EXTEND-BOOTWARE MENU>============================
|<1> Boot System                                                           |
|<2> Enter Serial SubMenu                                                  |
|<3> Enter Ethernet SubMenu                                                |
|<4> File Control                                                          |
|<5> Modify BootWare Password                                              |
|<6> Skip Current System Configuration                                     |
|<7> BootWare Operation Menu                                               |
|<8> Skip authentication for console login                                 |
|<9> Storage Device Operation                                              |
|<0> Reboot                                                                |
============================================================================
Enter your choice(0-9):
```

5. **1** to boot the system.

```
Loading the main image files...
Loading file flash:/msr2000-cmw710-system-a0005.bin.......................
Done.
Loading file flash:/msr2000-cmw710-boot-a0005.bin.............Done.

Image file flash:/msr2000-cmw710-boot-a0005.bin is self-decompressing.........
.....Done.
System image is starting...
Line aux0 is available.



Press ENTER to get started.
```

Using XMODEM to upgrade software through the console port

1. Enter **2** in the BootWare menu to access the Serial submenu.

```
============================<Enter Serial SubMenu>============================
|Note:the operating device is flash                                         |
|<1> Download Image Program To SDRAM And Run                                |
|<2> Update Main Image File                                                 |
|<3> Update Backup Image File                                               |
|<4> Download Files(*.*)                                                    |
|<5> Modify Serial Interface Parameter                                      |
|<0> Exit To Main Menu                                                      |
==============================================================================
Enter your choice(0-4):
```

Table 23 Serial submenu options

Item	Description
<1> Download Application Program To SDRAM And Run	Download an application to SDRAM through the serial port and run the program.
<2> Update Main Image File	Upgrade the main system software image.
<3> Update Backup Image File	Upgrade the backup system software image.
<4>Download Files(*.*)	Download a system software image to the Flash or CF card.
<5> Modify Serial Interface Parameter	Modify serial port parameters
<0> Exit To Main Menu	Return to the BootWare menu.

2. Select an appropriate baud rate for the console port. For example, enter **5** to select 115200 bps.

```
==============================<BAUDRATE SET>==============================
|Note:'*'indicates the current baudrate                                   |
|     Change The HyperTerminal's Baudrate Accordingly                     |
|-------------------------<Baudrate Available>-------------------------|
|<1> 9600(Default)*                                                       |
|<2> 19200                                                                |
|<3> 38400                                                                |
|<4> 57600                                                                |
|<5> 115200                                                               |
|<0> Exit                                                                 |
==========================================================================
Enter your choice(0-5):
```

The following messages appear:

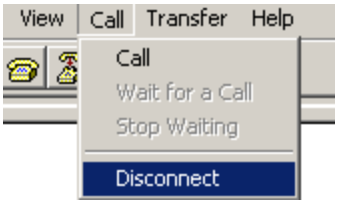
```
Baudrate has been changed to 115200 bps.
Please change the terminal's baudrate to 115200 bps, press ENTER when ready.
```

NOTE:

Typically the size of a .bin file is over 10 MB. Even at 115200 bps, the download takes about 30 minutes.

3. Select **Call** > **Disconnect** in the HyperTerminal window to disconnect the terminal from the router.

Figure 2 Disconnect the terminal connection

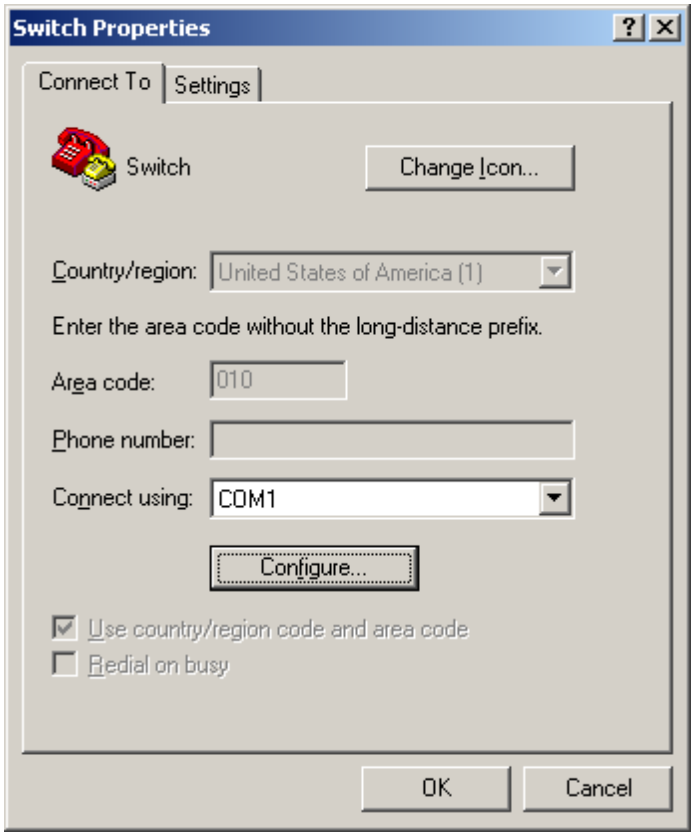


NOTE:

If the baud rate of the console port is 9600 bps, jump to step 9.

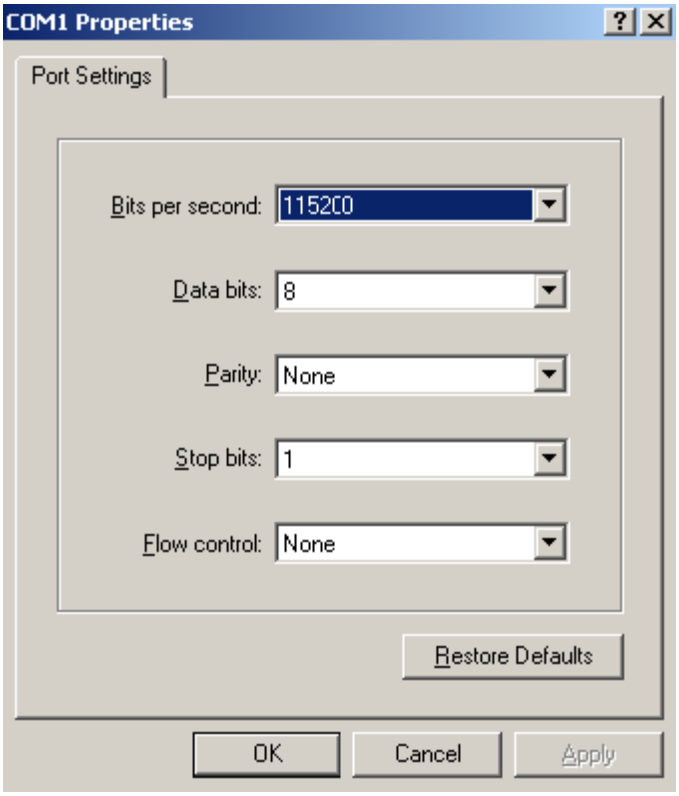
4. Select **File** > **Properties**, and in the **Properties** dialog box, click **Configure**.

Figure 3 Properties dialog box



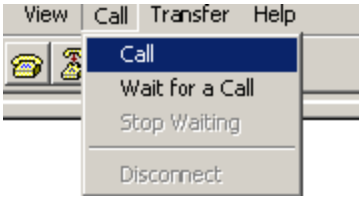
5. Select **115200** from the **Bits per second** list and click **OK**.

Figure 4 Modify the baud rate



6. Select **Call** > **Call** to reestablish the connection.

Figure 5 Reestablish the connection



7. Press **Enter**.

The following menu appears:

```
The current baudrate is 115200 bps

================================<BAUDRATE SET>================================
|Note:'*'indicates the current baudrate                                       |
|     Change The HyperTerminal's Baudrate Accordingly                         |
|---------------------------<Baudrate Available>---------------------------|
|<1> 9600(Default)                                                            |
|<2> 19200                                                                    |
|<3> 38400                                                                    |
|<4> 57600                                                                    |
|<5> 115200*                                                                  |
|<0> Exit                                                                     |
==============================================================================
Enter your choice(0-5):
```

8. Enter **0** to return to the Serial submenu.

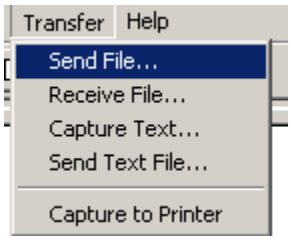
```
============================<Enter Serial SubMenu>============================
|Note:the operating device is flash                                         |
|<1> Download Image Program To SDRAM And Run                                |
|<2> Update Main Image File                                                 |
|<3> Update Backup Image File                                               |
|<4> Download Files(*.*)                                                    |
|<5> Modify Serial Interface Parameter                                      |
|<0> Exit To Main Menu                                                      |
==============================================================================
Enter your choice(0-4):
```

9. Select an option from options **2** to **3** to upgrade a system software image. For example, enter **2** to upgrade the main system software image.

```
Please Start To Transfer File, Press <Ctrl+C> To Exit.
Waiting ...CCCCC
```

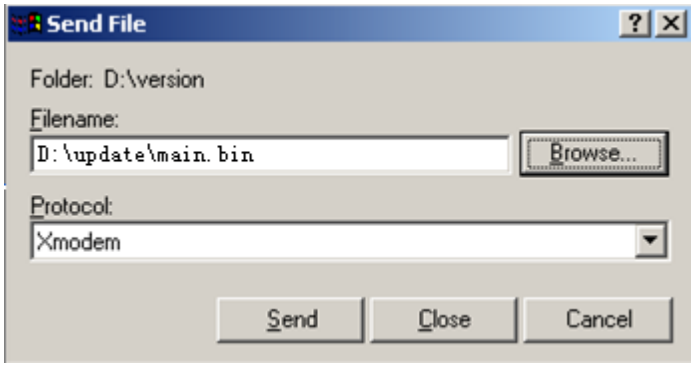
10. Select **Transfer** > **Send File** in the HyperTerminal window.

Figure 6 Transfer menu



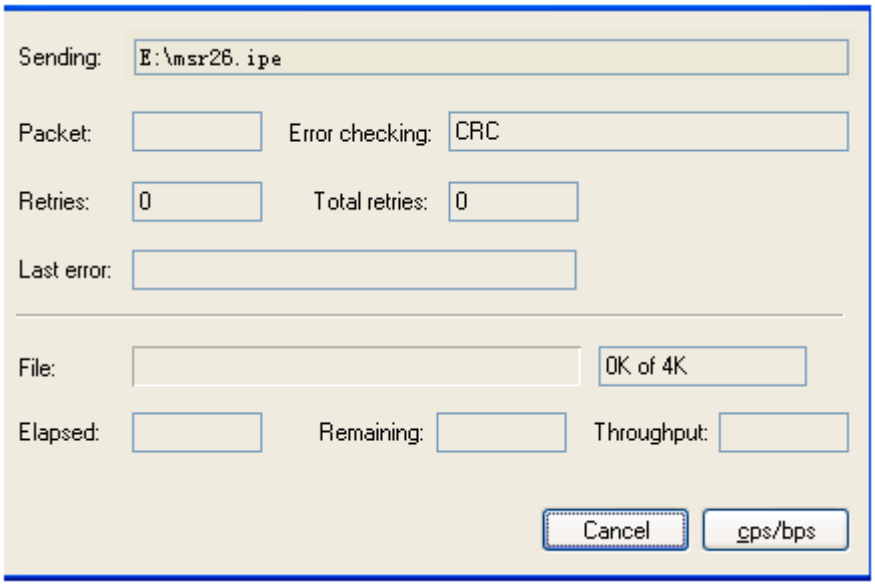
11. In the dialog box that appears, click **Browse** to select the source file, and select **Xmodem** from the **Protocol** list.

Figure 7 File transmission dialog box



12. Click **Send**. The following dialog box appears:

Figure 8 File transfer progress



13. When the Serial submenu appears after the file transfer is complete, enter **0** at the prompt to return to the BootWare menu.

```
Download successfully!
37691392 bytes downloaded!
Input the File Name:main.bin
Updating File flash:/main.bin.............................................
.................................................Done!

============================<Enter Serial SubMenu>============================
|Note:the operating device is flash                                        |
|<1> Download Image Program To SDRAM And Run                               |
|<2> Update Main Image File                                                |
|<3> Update Backup Image File                                              |
|<4> Download Files(*.*)                                                   |
|<5> Modify Serial Interface Parameter                                     |
|<0> Exit To Main Menu                                                     |
==============================================================================
Enter your choice(0-4):
```

14. Enter **1** in the BootWare menu to boot the system.
15. If you are using a download rate other than 9600 bps, change the baud rate of the terminal to 9600 bps. If the baud rate has been set to 9600 bps, skip this step.

Managing files from the BootWare menu

To change the type of a system software image, retrieve files, or delete files, enter **4** in the BootWare menu.

The File Control submenu appears:

```
==============================<File CONTROL>==============================
|Note:the operating device is cfa0                                       |
|<1> Display All File(s)                                                 |
```

```
|<2> Set Image File type                                          |
|<3> Set Bin File type                                                |
|<4> Set Configuration File type                                      |
|<5> Delete File                                                      |
|<6> Copy File                                                        |
|<0> Exit To Main Menu                                                |
======================================================================
Enter your choice(0-6):
```

Table 24 File Control submenu options

Item	Description
<1> Display All File	Display all files.
<2> Set Image File type	Change the type of a system software image (.ipe).
<3> Set Bin File type	Change the type of a system software image (.bin).
<4> Set Configuration File type	Change the type of a configuration file.
<5> Delete File	Delete files.
<6> Copy File	Copy File
<0> Exit To Main Menu	Return to the BootWare menu.

Displaying all files

To display all files, enter **1** in the File Control submenu:

```
Display all file(s) in flash:
 'M' = MAIN      'B' = BACKUP      'N/A' = NOT ASSIGNED
==========================================================================
|NO. Size(B)    Time                 Type   Name                          |
|1   37691392  Aug/16/2012 07:09:16 N/A    flash:/msr2000.ipe              |
|2   25992     Aug/15/2012 12:18:00 N/A    flash:/startup.mdb              |
|3   1632      Aug/15/2012 12:18:00 M      flash:/startup.cfg              |
|4   84        Aug/15/2012 12:17:59 N/A    flash:/ifindex.dat              |
|5   11029     Aug/15/2012 13:31:16 N/A    flash:/logfile/logfile1.log     |
|6   17        Aug/16/2012 07:47:24 N/A    flash:/.pathfile                |
|7   1006592   Aug/16/2012 07:44:16 M    flash:/msr2000-cmw710-data-a0005.bin|
|8   815       Aug/15/2012 12:03:14 N/A    flash:/license/DeviceID.did     |
|9   1180672   Aug/16/2012 07:44:15 M    flash:/msr2000-cmw710-voice-a0005. bin|
|10  10240     Aug/16/2012 07:44:15 M    flash:/msr2000-cmw710-security-a0005.bin|
|11  24067072  Aug/16/2012 07:44:10 M      flash:/msr2000-cmw710-system-a0005.bin|
|12  11418624  Aug/16/2012 07:44:05 M      flash:/msr2000-cmw710-boot-a0005.bin|
==========================================================================
```

Changing the type of a system software image

System software image file attributes include main (M), and backup (B). You can store only one main image, and one backup image on the router. A system software image can have any combination of the M, and B attributes. If the file attribute you are assigning has been assigned to an image, the assignment removes the attribute from that image. The image is marked as N/A if it has only that attribute.

To change the type of a system software image:

1. Enter **2** in the File Control submenu.

```
'M' = MAIN      'B' = BACKUP      'N/A' = NOT ASSIGNED
================================================================================
|NO. Size(B)   Time                 Type   Name                               |
|1   37691392  Aug/16/2012 07:09:16 N/A    flash:/msr2000.ipe                  |
|0   Exit                                                                     |
================================================================================
Enter file No:1
```

2. Enter the number of the file you are working with, and press **Enter**.

```
Modify the file attribute:
============================================================================
|<1> +Main                                                                  |
|<2> +Backup                                                                |
|<0> Exit                                                                   |
============================================================================
Enter your choice(0-2):
```

3. Enter a number in the range of 1 to 4 to add or delete a file attribute for the file.

```
Set the file attribute success!
```

Deleting files

When storage space is insufficient, you can delete obsolete files to free up storage space.

To delete files:

1. Enter **5** in the File Control submenu.

```
Deleting the file in cfa0:
 'M' = MAIN      'B' = BACKUP      'N/A' = NOT ASSIGNED
Deleting the file in flash:
 'M' = MAIN      'B' = BACKUP      'N/A' = NOT ASSIGNED
================================================================================
|NO. Size(B)   Time                 Type   Name                               |
|1   37691392  Aug/16/2012 07:09:16 N/A    flash:/msr2000.ipe                  |
|2   25992     Aug/15/2012 12:18:00 N/A    flash:/startup.mdb                 |
|3   1632      Aug/15/2012 12:18:00 M      flash:/startup.cfg                 |
|4   84        Aug/15/2012 12:17:59 N/A    flash:/ifindex.dat                 |
|5   11029     Aug/15/2012 13:31:16 N/A    flash:/logfile/logfile1.log        |
|6   17        Aug/16/2012 07:47:24 N/A    flash:/.pathfile                   |
|7   1006592   Aug/16/2012 07:44:16 M      flash:/msr2000-cmw710-data-a0005.bin|
|8   815       Aug/15/2012 12:03:14 N/A    flash:/license/DeviceID.did        |
|9   1180672   Aug/16/2012 07:44:15 M      flash:/msr2000-cmw710-voice-a0005. bin|
|10  10240    Aug/16/2012 07:44:15 M     flash:/msr2000-cmw710-security-a0005.bin|
|11  24067072  Aug/16/2012 07:44:10 M      flash:/msr2000-cmw710-system-a0005.bin|
|12  11418624  Aug/16/2012 07:44:05 M      flash:/msr2000-cmw710-boot-a0005.bin|
0   Exit
Enter file No.:
```

2. Enter the number of the file to delete.
3. When the following prompt appears, enter **Y**.

```
The file you selected is flash:/msr2000-cmw710-security-a0005.bin,Delete it?
```

```
[Y/N]Y
Deleting...Done.
```

Handling software upgrade failures

If a software upgrade fails, the system runs the old software version. To handle a software failure:

1. Check the physical ports for a loose or incorrect connection.
2. If you are using the console port for file transfer, check the HyperTerminal settings (including the baud rate and data bits) for any wrong setting.
3. Check the file transfer settings:
   - If XMODEM is used, you must set the same baud rate for the terminal as for the console port.
   - If TFTP is used, you must enter the same server IP addresses, file name, and working directory as set on the TFTP server.
   - If FTP is used, you must enter the same FTP server IP address, source file name, working directory, and FTP username and password as set on the FTP server.
4. Check the FTP or TFTP server for any incorrect setting.
5. Check that the storage device has sufficient space for the upgrade file.
6. If the message “Something is wrong with the file” appears, check the file for file corruption.

Appendix C Handling console login password loss

Disabling password recovery capability

Password recovery capability controls console user access to the device configuration and SDRAM from BootWare menus.

If password recovery capability is enabled, a console user can access the device configuration without authentication to configure new passwords.

If password recovery capability is disabled, console users must restore the factory-default configuration before they can configure new passwords. Restoring the factory-default configuration deletes the next-startup configuration files.

To enhance system security, disable password recovery capability.

Table 25 summarizes options whose availability varies with the password recovery capability setting.

Table 25 BootWare options and password recovery capability compatibility matrix

BootWare menu option	Password recovery enabled	Password recovery disabled	Tasks that can be performed
Download Image Program To SDRAM And Run	Yes	No	Load and run Comware software images in SDRAM.
Skip Authentication for Console Login	Yes	No	Enable console login without authentication.
Skip Current System Configuration	Yes	No	Load the factory-default configuration without deleting the next-startup configuration files.

Restore to Factory Default Configuration	No	Yes	Delete the next-startup configuration files and load the factory-default configuration.

To disable password recovery capability:

Step	Command	Remarks
1. Enter system view.	**system-view**	N/A
2. Disable password recovery capability.	**undo password-recovery enable**	By default, password recovery capability is enabled.

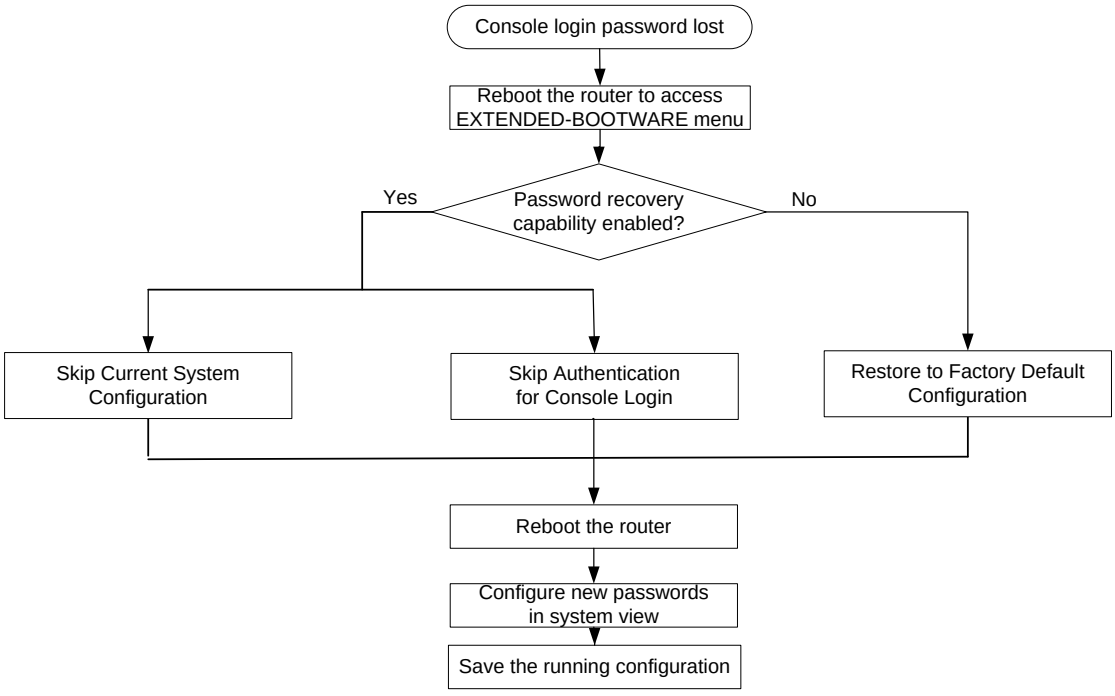
When password recovery capability is disabled, you cannot downgrade the device software to a version that does not support the capability through the BootWare menus. You can do so at the CLI, but the BootWare menu password configured becomes effective again.

Handling console login password loss

CAUTION:
Handling console login password loss causes service outage.

The method for handling console login password loss depends on the password recovery capability setting (see Figure 9).

Figure 9 Handling console login password loss



Examining the password recovery capability setting

1. Reboot the router.

```
System is starting...
```

```
Press Ctrl+D to access BASIC-BOOTWARE MENU...
Press Ctrl+T to start heavy memory test
Booting Normal Extended BootWare........
The Extended BootWare is self-decompressing....Done.

******************************************************************************
*                                                                            *
*                  HPE MSR3000 BootWare, Version 1.20                        *
*                                                                            *
******************************************************************************
Copyright (c) 2010-2013 Hewlett-Packard Development Company, L.P.

Compiled Date       : May 13 2013
CPU ID              : 0x2
Memory Type         : DDR3 SDRAM
Memory Size         : 2048MB
BootWare Size       : 1024KB
Flash Size          : 8MB
cfa0 Size           : 247MB
CPLD Version        : 2.0
PCB Version         : 2.0


BootWare Validating...
Press Ctrl+B to access EXTENDED-BOOTWARE MENU...
```

2. Press **Ctrl + B** within three seconds after the "Press Ctrl+B to access EXTENDED-BOOTWARE MENU..." prompt message appears.
3. Read the password recovery capability setting information displayed before the EXTEND-BOOTWARE menu.

```
Password recovery capability is enabled.
Note: The current operating device is cfa0
Enter < Storage Device Operation > to select device.

==========================<EXTEND-BOOTWARE MENU>==========================
|<1> Boot System                                                         |
|<2> Enter Serial SubMenu                                                |
|<3> Enter Ethernet SubMenu                                              |
|<4> File Control                                                        |
|<5> Restore to Factory Default Configuration                            |
|<6> Skip Current System Configuration                                   |
|<7> BootWare Operation Menu                                             |
|<8> Skip Authentication for Console Login                               |
|<9> Storage Device Operation                                            |
|<0> Reboot                                                              |
==========================================================================
Ctrl+Z: Access EXTEND ASSISTANT MENU
Ctrl+F: Format File System
Enter your choice(0-9):
```

Using the Skip Current System Configuration option

1. Reboot the router to access the EXTEND-BOOTWARE menu, and then enter **6**.

```
The current mode is password recovery.
Note: The current operating device is cfa0
Enter < Storage Device Operation > to select device.

==========================<EXTEND-BOOTWARE MENU>==========================
|<1> Boot System                                                        |
|<2> Enter Serial SubMenu                                               |
|<3> Enter Ethernet SubMenu                                             |
|<4> File Control                                                       |
|<5> Restore to Factory Default Configuration                           |
|<6> Skip Current System Configuration                                  |
|<7> BootWare Operation Menu                                            |
|<8> Skip Authentication for Console Login                              |
|<9> Storage Device Operation                                           |
|<0> Reboot                                                             |
================================================================================
Ctrl+Z: Access EXTEND ASSISTANT MENU
Ctrl+F: Format File System
Enter your choice(0-9): 6
```

   After the configuration skipping flag is set successfully, the following message appears:

```
Flag Set Success.
```

2. When the EXTEND-BOOTWARE menu appears again, enter **1** to reboot the router.

   The router starts up with the factory-default configuration without deleting the next-startup configuration files.

3. To use the configuration in a next-startup configuration file, load the file in system view.

```
<HPE> system-view
[HPE] configuration replace file cfa0:/startup.cfg
Current configuration will be lost, save current configuration? [Y/N]:n
Info: Now replacing the current configuration. Please wait...
Info: Succeeded in replacing current configuration with the file startup.cfg.
```

4. Configure a new console login authentication mode and a new console login password.

   In the following example, the console login authentication mode is password and the authentication password is 123456. For security purposes, the password is always saved in ciphertext, whether you specify the **simple** or **cipher** keyword for the **set authentication password** command.

```
<HPE> system-view
[HPE] line aux 0
[HPE-line-aux0] authentication-mode password
[HPE-line-aux0] set authentication password simple 123456
```

   Use the **line aux 0** command on an MSR2000 or MSR 3000 routers. The console port and the AUX port are the same physical port.

   Use the **line console 0** command on an MSR4000 routers. An MSR4000 router has a separate console port.

5. To make the settings take effect after a reboot, save the running configuration to the next-startup configuration file.

```
[HPE-line-aux0] save
```

Using the Skip Authentication for Console Login option

1. Reboot the router to access the EXTEND-BOOTWARE menu, and then enter **8**.

```
The current mode is password recovery.
Note: The current operating device is cfa0
Enter < Storage Device Operation > to select device.

==========================<EXTEND-BOOTWARE MENU>==========================
|<1> Boot System                                                        |
|<2> Enter Serial SubMenu                                               |
|<3> Enter Ethernet SubMenu                                             |
|<4> File Control                                                       |
|<5> Restore to Factory Default Configuration                           |
|<6> Skip Current System Configuration                                  |
|<7> BootWare Operation Menu                                            |
|<8> Skip Authentication for Console Login                              |
|<9> Storage Device Operation                                           |
|<0> Reboot                                                             |
==========================================================================
Ctrl+Z: Access EXTEND ASSISTANT MENU
Ctrl+F: Format File System
Enter your choice(0-9): 8
```

   The router deletes the console login authentication configuration commands from the main next-startup configuration file. After the operation is completed, the following message appears:

```
Clear Image Password Success!
```

2. When the EXTEND-BOOTWARE menu appears again, enter **1** to reboot the router.

   The router starts up with the main next-startup configuration file.

3. Configure a console login authentication mode and a new console login password. See "Configure a new console login authentication mode and a new console login password.Configure a new console login authentication mode and a new console login password."

4. To make the setting take effect after a reboot, save the running configuration to the next-startup configuration file.

```
[HPE-line-aux0] save
```

Using the Restore to Factory Default Configuration option

CAUTION:

Using the Restore to Factory Default Configuration option deletes both the main and backup next-configuration files.

1. Reboot the router to access the EXTEND-BOOTWARE menu, and enter **5**.

```
The current mode is no password recovery.
Note: The current operating device is cfa0
Enter < Storage Device Operation > to select device.
```

```
==========================<EXTEND-BOOTWARE MENU>==========================
|<1> Boot System                                                         |
|<2> Enter Serial SubMenu                                                |
|<3> Enter Ethernet SubMenu                                              |
|<4> File Control                                                        |
|<5> Restore to Factory Default Configuration                            |
|<6> Skip Current System Configuration                                   |
|<7> BootWare Operation Menu                                             |
|<8> Skip Authentication for Console Login                               |
|<9> Storage Device Operation                                            |
|<0> Reboot                                                              |
==========================================================================
Ctrl+Z: Access EXTEND ASSISTANT MENU
Ctrl+F: Format File System
Enter your choice(0-9): 5
```

2. At the prompt for confirmation, enter **Y**.

   The router deletes its main and backup next-startup configuration files and restores the factory-default configuration.

   ```
   The current mode is no password recovery. The configuration files will be
   deleted, and the system will start up with factory defaults, Are you sure to
    continue?[Y/N]Y
   Setting...Done.
   ```

3. When the EXTEND-BOOTWARE menu appears again, enter **1** to reboot the router.

   The router starts up with the factory-default configuration.

4. Configure a new console login authentication mode and a new console login password. See "Configure a new console login authentication mode and a new console login password.Configure a new console login authentication mode and a new console login password.".

5. To make the settings take effect after a reboot, save the running configuration to the next-startup configuration file.

   ```
   [HPE] save
   ```