HP 1950-CMW710-R3109P05 Release Notes

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This document describes the features, restrictions and guidelines, open problems, and workarounds for version 1950-CMW710-R3109P05. 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 HP 1950-CMW710-R3109P05 Release Notes (Software Feature Changes) and the documents listed in "Related documentation."

Version information

Version number

HP Comware Software, Version 7.1.045, Release 3109P05

Note: You can see the version number with the command **display version** in any view. Please see Note①.

Version history

Table 1 Version history

Version number	Last version	Release Date	Release type	Remarks
1950-CMW710-R3109P05	R3109P01	2015-6-16	Release version	• Fixes bugs
1950-CMW710-R3109P01	R3108P02	2015-4-2	Release version	• New features: ○ RADIUS voice VLAN attribute for 802.1X and MAC authentication ○ 802.1X online user handshake reply • Fixes bugs
1950-CMW710-R3108P02	ESS 3107	2015-1-12	Release version	• Fixes bugs
1950-CMW710-E3107	First release	2014-10-30	ESS version	First release

Hardware and software compatibility matrix

Table 2 Hardware and software compatibility matrix

Item	Specifications
Product family	1950 Switch Series

Item	Specifications
Hardware platform	HP 1950-24G-2SFP+-2XGT Switch JG960A HP 1950-48G-2SFP+-2XGT Switch JG961A HP 1950-24G-2SFP+-2XGT-PoE+ Switch JG962A HP 1950-48G-2SFP+-2XGT-PoE+ Switch JG963A
Minimum memory requirements	1 GB
Minimum Flash requirements	512 M
Boot ROM version	Version 124 or higher (Note: Use the **display version** command in any view to view the version information. Please see Note②)
Host software	1950-CMW710-R3109P05.ipe
iMC version	iMC PLAT 7.1 (E0303P10) iMC EAD 7.1 (E0301P03) iMC UAM 7.1 (E0302P08) iMC QoSM 7.1 (E0301P01)
iNode version	iNode PC 7.1 (E0307)
Web version	None
Remarks	None

Display the system software and Boot ROM versions of 1950:

```
<HP>summary
Select menu option:             Summary
IP Method:                      Manual
IP address:                     100.1.1.12
Subnet mask:                    255.255.255.0
Default gateway:

IPv6 Method:
IPv6 link-local address:
IPv6 subnet mask length:
IPv6 global address:
IPv6 subnet mask length:
IPv6 default gateway:

Software images on slot 1:
Current software images:
  flash:/1950-cmw710-boot-r3109p05.bin
  flash:/1950-cmw710-system-r3109p05.bin
Main startup software images:
  flash:/1950-cmw710-boot-r3109p05.bin
  flash:/1950-cmw710-system-r3109p05.bin
Backup startup software images:
  None

HP Comware Platform Software
```

```
HP Comware Software, Version 7.1.045, Release 3109P05        ------ Note①
Copyright (c) 2010-2015 Hewlett-Packard Development Company, L.P.
HP 1950-48G-2SFP+-2XGT uptime is 0 weeks, 0 days, 0 hours, 3 minutes


Slot 1:
Uptime is 0 weeks,0 days,0 hours,3 minutes
HP 1950-48G-2SFP+-2XGT JG961A with 1 Processor
BOARD TYPE:         1950-48G-2SFP+-2XGT
DRAM:               1024M bytes
FLASH:              512M bytes
PCB 1 Version:      VER.B
Bootrom Version:    124                                       ------ Note②
CPLD 1 Version:     001
Release Version:    HP 1950-48G-2SFP+-2XGT JG961A-3109P05
Patch Version  :    None
Reboot Cause   :    ColdReboot
[SubSlot 0] 48GE+2SFP-Plus+2XGT
```

Upgrading restrictions and guidelines

None.

Hardware feature updates

1950-CMW710-R3109P05

None.

1950-CMW710-R3109P01

None.

1950-CMW710-R3108P02

None.

1950-CMW710-E3107

First release.

Software feature and command updates

For more information about the software feature and command update history, see HP 1950-CMW710-R3109P05 Release Notes (Software Feature Changes).

MIB Updates

Table 3 MIB updates

Item	MIB file	Module	Description
1950-CMW710-R3109P05			
New	None	None	None
Modified	None	None	None
1950-CMW710-R3109P01			
New	None	None	None
Modified	rfc1213-mib.docx	IP-MIB	ipForwarding (1.3.6.1.2.1.4.1) Only support read operation ipDefaultTTL (1.3.6.1.2.1.4.2) Only support read operation
1950-CMW710-R3108P02			
New	None	None	None
Modified	None	None	None
1950-CMW710-E3107			
New	First release	First release	First release
Modified	First release	First release	First release

Operation Changes

Operation changes in R3109P05

None.

Operation changes in R3109P01

None.

Operation changes in R3108P02

1. Change to the forwarding for packets with the destination MAC address 0180-c200-000e by default.

   Before modification, packets with the destination MAC address 0180-c200-000e are transparently forwarded by default.

   After modification, packets with the destination MAC address 0180-c200-000e are not transparently forwarded by default.
2. Deletes the autoconfiguration feature.

Operation changes in E3107

First release.

Restrictions and cautions

None.

Open problems and workarounds

None.

List of resolved problems

Resolved problems in R3109P05

201505150457

- Symptom: A PoE switch cannot supply power over PoE to IP phones of some vendors.
- Condition: This symptom occurs when you connect the IP phones to the switch and supply power over PoE.

201506130010

- Symptom: A port is brought up and can forward packets when the MDIX mode negotiation fails.
- Condition: This symptom occurs if the following operations have been performed:
  - Use a straight-through cable to connect the port and its peer port.
  - Configure the same MDI (or MDIX) mode at both ends of the cable.

201504020079

- Symptom: The Web interface is stuck at the **Please wait...** window when you upgrade system software in the Web interface.
- Condition: This symptom occurs after you select the upgrade file and click **Apply** in the Web interface.

201502110444

- Symptom: The switch reconnects to the SDN controller immediately after an unexpected disconnection from the controller.
- Condition: This symptom might occur if an active/standby MPU switchover occurs when the controller is issuing a large number of flow table entries to the switch.

201506100226

- Symptom: The port connected to an IP phone is removed from the voice VLAN after both the LLDP aging timer and the voice VLAN aging timer expire.
- Condition: This symptom might occur if the switch establishes a neighbor relationship with the IP phone and advertises voice VLAN information to the IP phone through LLDP.

201504210120

- Symptom: The PSE status setting of an IRF fabric is missing after a subordinate switch is rebooted.
- Condition: This symptom might occur if the following conditions exist:
  - The IRF fabric contains multiple members.

- The **poe enable pse** command is configured on the IRF fabric.
- The subordinate switch is a PoE switch.

201505110287

- Symptom: A user passes MAC authentication, but the authentication server fails to assign the authorization VLAN to the user.
- Condition: This symptom occurs if the VLAN attribute issued by the authentication server in the Access-Accept packet ends with **\0x00**.

Resolved problems in R3109P01

201501290379

- Symptom: 802.1X users fail to log in.
- Condition: This symptom occurs if the authorization VLANs assigned by the authentication server use a format incompatible with the switch.

201412150089

- Symptom: Portal users log out unexpectedly.
- Condition: This symptom occurs if the following conditions exist:
  - DHCP and portal roaming are enabled.
  - The portal users roam between APs by using mobile devices.

201503020204

- Symptom: A PoE switch cannot supply power correctly.
- Condition: This symptom occurs if the PoE module receives incorrect instructions.

201501210272

- Symptom: CVE-2014-3569
- Condition: The ssl23_get_client_hello function in s23_srvr.c in OpenSSL 0.9.8zc, 1.0.0o, and 1.0.1j does not properly handle attempts to use unsupported protocols, which allows remote attackers to cause a denial of service (NULL pointer dereference and daemon crash) via an unexpected handshake, as demonstrated by an SSLv3 handshake to a no-ssl3 application with certain error handling.

201501210272

- Symptom: CVE-2014-3571
- Condition: A carefully crafted DTLS message can cause a segmentation fault in OpenSSL due to a NULL pointer dereference. This could lead to a Denial Of Service attack.

201501210272

- Symptom: CVE-2015-0206

- Condition: A memory leak can occur in the dtls1_buffer_record function under certain conditions. In particular this could occur if an attacker sent repeated DTLS records with the same sequence number but for the next epoch. The memory leak could be exploited by an attacker in a Denial of Service attack through memory exhaustion.

201501210272

- Symptom: CVE-2015-0205
- Condition: An OpenSSL server will accept a DH certificate for client authentication without the certificate verify message. This effectively allows a client to authenticate without the use of a private key. This only affects servers which trust a client certificate authority which issues certificates containing DH keys.

201501210272

- Symptom: CVE-2014-3570
- Condition: Bignum squaring (BN_sqr) may produce incorrect results on some platforms, including x86_64. This bug occurs at random with a very low probability, and is not known to be exploitable in any way.

201501210272

- Symptom: CVE-2015-0204
- Condition: An OpenSSL client will accept the use of an RSA temporary key in a non-export RSA key exchange ciphersuite. A server could present a weak temporary key and downgrade the security of the session.

201501210272

- Symptom: CVE-2014-3572
- Condition: An OpenSSL client will accept a handshake using an ephemeral ECDH ciphersuite using an ECDSA certificate if the server key exchange message is omitted. This effectively removes forward secrecy from the ciphersuite.

201501210272

- Symptom: CVE-2014-8275
- Condition: By modifying the contents of the signature algorithm or the encoding of the signature, it is possible to change the certificate's fingerprint. Only custom applications that rely on the uniqueness of the fingerprint may be affected.

Resolved problems in R3108P02

201411140514

- Symptom: The IRF member ID configuration might fail to take effect.
- Condition: This symptom can be seen when you modify the IRF member ID of a switch.

201412120040

- Symptom: CVE-2014-3567
- Condition: When an OpenSSL SSL/TLS/DTLS server receives a session ticket the integrity of that ticket is first verified. In the event of a session ticket integrity check failing, OpenSSL will fail to free memory causing a memory leak. By sending a large number of invalid session tickets an attacker could exploit this issue in a Denial of Service attack.

201412120040

- Symptom: SSL 3.0 Fallback protection
- Condition: OpenSSL has added support for TLS_FALLBACK_SCSV to allow applications to block the ability for a MITM attacker to force a protocol downgrade. Some client applications (such as browsers) will reconnect using a downgraded protocol to work around interoperability bugs in older servers. This could be exploited by an active man-in-the-middle to downgrade connections to SSL 3.0 even if both sides of the connection support higher protocols. SSL 3.0 contains a number of weaknesses including POODLE (CVE-2014-3566).

201501070257

- Symptom: An HP switch cannot use CDP-compatible LLDP to exchange information with a Cisco device.
- Condition: This symptom occurs when the following conditions exist:
  - The HP switch is directly connected to a Cisco device.
  - The HP switch is enabled with LLDP.
  - The Cisco device is enabled with CDP.

201407160505

- Symptom: The message showing that "Transceiver type and port configuration mismatched!" appears.
- Condition: This symptom occurs when a 1000-Mbps transceiver module is installed and removed repeatedly.

Resolved problems in E3107

First release

Related documentation

Documentation set

- HP 1950 Switch Series Getting Started Guide

- HP 1950 Switch Series User Guide-Release 31XX

Obtaining Documentation

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

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

Appendix A Feature list

Hardware features

Table 4 1950 series hardware features for non-PoE switch models

Item	HP 1950-24G-2SFP+-2XGT Switch	HP 1950-48G-2SFP+-2XGT Switch
Dimensions (H × W × D)	43.6 × 440 × 160 mm (1.72 × 17.32 × 6.30 in)	43.6 × 440 × 270 mm (1.72 × 17.32 × 10.63 in)
Weight	≤ 3 kg (6.61 lb)	≤ 5 kg (11.02 lb)
Console ports	1	1
10/100/1000Base-T Ethernet ports	24	48
1/10G Base-T Ethernet ports	2	2
SFP+ ports	2	2
Power supply slots	N/A	N/A

Input voltage	• Rated voltage: 100 VAC to 240 VAC @ 50 or 60 Hz
	• Max voltage: 90 VAC to 264 VAC @ 47 to 63 Hz
		• AC power source
		  ○ Rated voltage: 100 VAC to 240 VAC @ 50 or 60 Hz
		  ○ Max voltage: 90 VAC to 264 VAC @ 47 to 63 Hz

Minimum power consumption	20 W	• AC: 36 W
Maximum power consumption	34 W	• AC: 46 W
Chassis leakage current compliance	• UL60950-1 • EN60950-1 • IEC60950-1 • GB4943.1	
Melting current of power supply fuse	AC-input: 2 A/250 V	AC-input: 3.15 A/250 V
Operating temperature	0°C to 45°C (32°F to 113°F)	
Operating humidity	5% to 95%, noncondensing	

Item	HP 1950-24G-2SFP+-2XGT Switch	HP 1950-48G-2SFP+-2XGT Switch
Fire resistance compliance	• UL60950-1 • EN60950-1 • IEC60950-1 • GB4943.1	

Table 5 1950 series hardware features for PoE switch models

Item	HP 1950-24G-2SFP+-2XGT-PoE+ Switch	HP 1950-48G-2SFP+-2XGT-PoE+ Switch
Dimensions (H × W × D)	43.6 × 440 × 360 mm (1.72 × 17.32 × 14.17 in)	43.6 × 440 × 420 mm (1.72 × 17.32 × 16.53 in)
Weight	≤ 6 kg (13.23 lb)	≤ 7 kg (15.43 lb)
Console ports	1	1
10/100/1000Base-T Ethernet ports	24	48
1/10G Base-T Ethernet ports	2	2
SFP+ ports	2	2

Input voltage	• AC power source
	  ○ Rated voltage: 100 VAC to 240 VAC @ 50 or 60 Hz
	  ○ Max voltage: 90 VAC to 264 VAC @ 47 to 63 Hz
	• DC power source: HP A-RPS1600
	  ○ Rated voltage: –54 VDC to –57 VDC
	  ○ Max voltage: –44 VDC to –60 VDC for single DC input and –54 VDC to –57 VDC for AC+DC dual inputs	

Maximum PoE per port	30 W	30 W
Total PoE	• AC: 370 W • DC: 740 W	• AC: 370 W • DC: 800 W
Minimum power consumption	• AC: 31 W • DC: 20 W	• AC: 43 W • DC: 30 W
Maximum power consumption (including PoE consumption)	• AC: 425 W (including 370 W PoE consumption) • DC: 770 W (including 740 W PoE consumption)	• AC: 470 W (including 370 W PoE consumption) • DC: 910 W (including 800 W PoE consumption)
Chassis leakage current compliance	• UL60950-1 • EN60950-1 • IEC60950-1 • GB4943.1	
Melting current of power supply fuse	• AC-input: 10 A/250 V • DC-input: 25 A/250 V	• AC-input: 10 A/250 V • DC-input: 25 A/250 V

Item	HP 1950-24G-2SFP+-2XGT-PoE+ Switch	HP 1950-48G-2SFP+-2XGT-PoE+ Switch
Operating temperature	0°C to 45°C (32°F to 113°F)	
Operating humidity	5% to 95%, noncondensing	
Fire resistance compliance	• UL60950-1 • EN60950-1 • IEC60950-1 • GB4943.1	

Software features

Table 6 Software features of the 1950 series

Feature	HP 1950-24G-2SFP+-2XGT Switch	HP 1950-48G-2SFP+-2XGT Switch	HP 1950-24G-2SFP+-2XGT-PoE+ Switch	HP 1950-48G-2SFP+-2XGT-PoE+ Switch
Full duplex Wire speed L2 switching capacity	128 Gbps	176 Gbps	128 Gbps	176 Gbps
Whole system Wire speed L2 switching Packet forwarding rate	95.232 Mpps	130.952 Mpps	95.232 Mpps	130.952 Mpps
Forwarding mode	Store-forward			
IRF	• Ring topology • Daisy chain topology • IRF comprised of different models			
Link aggregation	• Aggregation of 10-GE ports • Aggregation of GE ports • Static link aggregation • Dynamic link aggregation • Inter-device aggregation • A maximum of 14 aggregation groups on a device • A maximum of 128 inter-device aggregation groups • A maximum of 8 ports for each aggregation group			
Flow control	• IEEE 802.3x flow control • Back pressure			
Jumbo Frame	• Supports maximum frame size of 9000			

Feature	HP 1950-24G-2SFP+-2XGT Switch	HP 1950-48G-2SFP+-2XGT Switch	HP 1950-24G-2SFP+-2XGT-PoE+ Switch	HP 1950-48G-2SFP+-2XGT-PoE+ Switch
MAC address table	• 16K MAC addresses • 1K static MAC addresses • Blackhole MAC addresses • MAC address learning limit on a port			
VLAN	• Port-based VLANs (4094 VLANs)			
ARP	• 1K entries • 512 static entries • Gratuitous ARP • Common proxy ARP and local proxy ARP • ARP source suppression • ARP black hole • ARP detection (based on DHCP snooping entries/802.1X security entries/static IP-to-MAC bindings)			
ND	• 512 entries • 256 static entries			
VLAN virtual interface	8			
DHCP	• DHCP client • DHCP snooping • DHCP relay agent • DHCP server			
DNS	• Static DNS • Dynamic DNS • IPv4 and IPv6 DNS			
IPv4 unicast route	• 512 static routes • Policy-based routing			
IPv6 unicast route	• 256 static routes			
Multicast	• IGMP snooping • MLD snooping			
Broadcast/multicast/unicast storm control	• Storm control based on port rate percentage • PPS-based storm control • Bps-based storm control			
MSTP	• STP/RSTP/MSTP protocol • STP Root Guard • BPDU Guard			

Feature	HP 1950-24G-2SFP+-2XGT Switch	HP 1950-48G-2SFP+-2XGT Switch	HP 1950-24G-2SFP+-2XGT-PoE+ Switch	HP 1950-48G-2SFP+-2XGT-PoE+ Switch
QoS/ACL	• Remarking of 802.1p and DSCP priorities • Packet filtering at L2 (Layer 2) through L4 (Layer 4) • Eight output queues for each port • SP/WRR/SP+WRR queue scheduling algorithms • Port-based rate limiting • Flow-based redirection • Time range			
Mirroring	• Stream mirroring • Port mirroring • Multiple mirror observing port			
Remote mirroring	• Port remote mirroring (RSPAN)			
Security	• Hierarchical management and password protection of users • AAA authentication • RADIUS authentication • SSH 2.0 • Port isolation • 802.1X • Port security • MAC-address-based authentication • IP Source Guard • HTTPS • PKI • EAD			
802.1X	• Up to 2,048 users • Port-based and MAC address-based authentication • Trunk port authentication • Dynamic 802.1X-based QoS/ACL/VLAN assignment			
Loading and upgrading	• Loading and upgrading through XModem protocol • Loading and upgrading through FTP • Loading and upgrading through the trivial file transfer protocol (TFTP)			
Management	• Configuration at the command line interface • Remote configuration through Telnet • Configuration through Console port • Simple network management protocol (SNMP) • IMC NMS • System log • Hierarchical alarms • NTP • Power supply alarm function • Fan and temperature alarms			

Feature	HP 1950-24G-2SFP+-2XGT Switch	HP 1950-48G-2SFP+-2XGT Switch	HP 1950-24G-2SFP+-2XGT-PoE+ Switch	HP 1950-48G-2SFP+-2XGT-PoE+ Switch
Maintenance	• Ping and Tracert • Remote maintenance through Telnet			

Appendix B Upgrading software

This chapter describes types of software used on the switch and how to upgrade software while the switch is operating normally or when the switch cannot correctly start up.

System software file types

Software required for starting up the switch includes:

- **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 software and the startup configuration file or manage files when the switch cannot correctly start up.
- **Software images**—Includes boot images and system images.
  - **Boot image**—A .bin file that contains the 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 modules required for device operation and some basic features, including device management, interface management, configuration management, and routing management.

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

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 in the file and sets them as startup software images. Typically, the Boot ROM and software images for this switch series are released in an .ipe file named **main.ipe**.

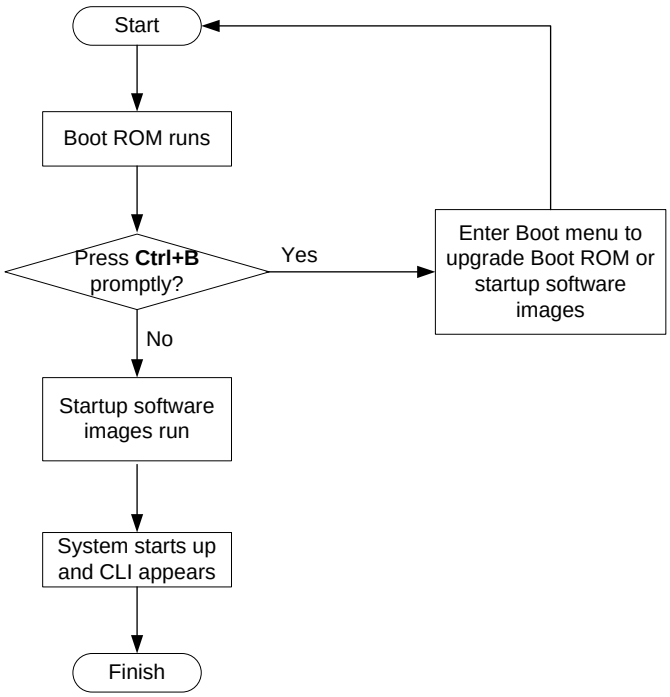
NOTE:

Boot ROM images are not released along with the boot images and system images. To get a version of Boot ROM image, contact the HP technical support.

System startup process

Upon power-on, the Boot ROM image runs to initialize hardware and then the software images run to start up the entire system, as shown in Figure 1.

Figure 1 System startup process



Upgrade methods

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

Upgrading method	Software types	Remarks
Upgrading from the CLI	• Boot ROM image • Software images	• You must reboot the switch to complete the upgrade. • This method can interrupt ongoing network services.

Upgrading method	Software types	Remarks
Upgrading from the Boot menu	• Boot ROM image • Software images	Use this method when the switch cannot correctly start up. CAUTION: Upgrading an IRF fabric from the CLI instead of the Boot menu. The Boot menu method increases the service downtime, because it requires that you upgrade the member switches one by one.

The output in this document is for illustration only and might vary with software releases. This document uses boot.bin and system.bin to represent boot and system image names. The actual software image name format is *chassis-model_Comware-version_image-type_release*, for example, 1950-CMW710-BOOT-R3109P05.bin and 1950-CMW710-SYSTEM-R3109P05.bin.

Upgrading from the CLI

Loading Software Using TFTP

You can remotely download Boot ROM and system software images from a TFTP server at the CLI as follows.

Step 1: Configure an IP address for the switch

```
<HP>ipsetup ip-address 100.1.1.12 24
```

Step 2: Download the system software image file from the TFTP server.

```
<HP>upgrade 100.1.1.10 runtime file 1950.ipe
The file flash:/1950.ipe already exists.Overwrite?[Y/N]y
Verifying server file...
Downloading file 1950.ipe from remote TFTP server, please wait...
...Done.
Verifying the file flash:/1950.ipe on slot 1......Done.
HP 1950-48G-2SFP+-2XGT images in IPE:
  1950-cmw710-boot-r3109p05.bin
  1950-cmw710-system-r3109p05.bin
This command will set the main startup software images. Continue? [Y/N]:y
Add images to slot 1.
File flash:/1950-cmw710-boot-r3109p05.bin already exists on slot 1.
File flash:/1950-cmw710-system-r3109p05.bin already exists on slot 1.
Overwrite the existing files? [Y/N]:y
Decompressing file 1950-cmw710-boot-r3109p05.bin to flash:/1950-cmw710-boot-r3109p05.b
in.........Done.
```

```
Decompressing file 1950-cmw710-system-r3109p05.bin to
flash:/1950-cmw710-system-r3109p05.bin.............................................
.........Done.
Verifying the file flash:/1950-cmw710-boot-r3109p05.bin on slot 1...Done.
Verifying the file flash:/1950-cmw710-system-r3109p05.bin on slot 1.....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.
Decompression completed.
Do you want to delete flash:/1950.ipe now? [Y/N]:y
```

Step 3: Download and load the Boot ROM file.

```
<HP>upgrade 100.1.1.10 bootrom 1950-cmw710-boot-r3109p05.bin
Verifying server file...
Downloading file 1950-cmw710-boot-r3109p05.bin from remote TFTP server, please
 wait.....................................................................Done.
This command will upgrade the Boot ROM file on the specified board(s), Continue?
 [Y/N]:y
Now upgrading the Boot ROM of slot 1, please wait...
.......Done.
```

Step 4: Reboot the device to validate the new system software.

```
<HP> reboot
```

Note that if flash memory is insufficient, load the Boot ROM image first and delete useless files to free up Flash memory before you load the system software image.

Upgrading from the Boot menu

In this approach, you must access the Boot menu of each member switch to upgrade their software one by one. If you are upgrading software images for an IRF fabric, using the CLI is a better choice.

TIP:

Upgrading through the Ethernet port is faster than through the console port.

Prerequisites

Make sure the prerequisites are met before you start upgrading software from the Boot menu.

Setting up the upgrade environment

1. Use a console cable to connect the console terminal (for example, a PC) to the console port on the switch.
2. Connect the Ethernet port on the switch to the file server.

NOTE:

The file server and the configuration terminal can be co-located.

3. Run a terminal emulator program on the console terminal and set the following terminal settings:
   - **Bits per second**—38,400
   - **Data bits**—8
   - **Parity**—None
   - **Stop bits**—1
   - **Flow control**—None
   - **Emulation**—VT100

Preparing for the TFTP or FTP transfer

To use TFTP or FTP:

- Run a TFTP or FTP server program on the file server or the console terminal.
- Copy the upgrade file to the file server.
- Correctly set the working directory on the TFTP or FTP server.
- Make sure the file server and the switch can reach each other.

Verifying that sufficient storage space is available

IMPORTANT:

For the switch to start up correctly, do not delete the main startup software images when you free storage space before upgrading Boot ROM. On the Boot menu, the main startup software images are marked with an asterisk (*).

When you upgrade software, make sure each member switch has sufficient free storage space for the upgrade file, as shown in Table 7.

Table 7 Minimum free storage space requirements

Upgraded images	Minimum free storage space requirements
Comware images	Two times the size of the Comware upgrade package file.
Boot ROM	Same size as the Boot ROM upgrade image file.

If no sufficient space is available, delete unused files as described in "Managing files from the Boot menu."

Scheduling the upgrade time

During the upgrade, the switch cannot provide any services. You must make sure the upgrade has a minimal impact on the network services.

Accessing the Boot menu

```
Starting......
Press Ctrl+D to access BASIC BOOT MENU

********************************************************************************
*                                                                              *
*               HP 1950-24G-2SFP+-2XGT Switch BOOTROM, Version 120             *
*                                                                              *
********************************************************************************
Copyright (c) 2010-2014 Hewlett-Packard Development Company, L.P.

Creation Date       : Dec  2 2014, 14:00:56
CPU Clock Speed     : 400MHz
Memory Size         : 1024MB
Flash Size          : 512MB
CPLD Version        : 001
PCB Version         : Ver.B
Mac Address         : 00e0fc035100

Press Ctrl+B to access EXTENDED BOOT MENU...0
```

Press one of the shortcut key combinations at prompt.

Table 8 Shortcut keys

Shortcut keys	Prompt message	Function	Remarks
Ctrl+B	Press Ctrl+B to enter Extended Boot menu...	Accesses the extended Boot menu.	Press the keys within 1 second (in fast startup mode) or 5 seconds (in full startup mode) after the message appears. You can upgrade and manage system software and Boot ROM from this menu.
Ctrl+D	Press Ctrl+D to access BASIC BOOT MENU	Accesses the basic Boot menu.	Press the keys within 1 seconds after the message appears. You can upgrade Boot ROM or access the extended Boot ROM segment from this menu.

Accessing the basic Boot menu

If the extended Boot ROM segment has corrupted, you can repair or upgrade it from the basic Boot menu.

Press **Ctrl+D** within 1 seconds after the "Press Ctrl+D to access BASIC BOOT MENU" prompt message appears. If you fail to do this within the time limit, the system starts to run the extended Boot ROM segment.

```
*****************************************************************************
*                                                                           *
*                          BASIC BOOTROM, Version 120                       *
*                                                                           *
*****************************************************************************

   BASIC BOOT MENU

1. Update full BootRom
2. Update extended BootRom
3. Update basic BootRom
4. Boot extended BootRom
0. Reboot
Ctrl+U: Access BASIC ASSISTANT MENU

Enter your choice(0-4):
```

Table 9 Basic Boot ROM menu options

Option	Task
1. Update full BootRom	Update the entire Boot ROM, including the basic segment and the extended segment. To do so, you must use XMODEM and the console port. For more information, see Using XMODEM to upgrade Boot ROM through the console port.
2. Update extended BootRom	Update the extended Boot ROM segment. To do so, you must use XMODEM and the console port. For more information, see Using XMODEM to upgrade Boot ROM through the console port.
3. Update basic BootRom	Update the basic Boot ROM segment. To do so, you must use XMODEM and the console port. For more information, see Using XMODEM to upgrade Boot ROM through the console port.
4. Boot extended BootRom	Access the extended Boot ROM segment. For more information, see Accessing the extended Boot menu.
0. Reboot	Reboot the switch.
Ctrl+U: Access BASIC ASSISTANT MENU	Press **Ctrl + U** to access the BASIC ASSISTANT menu (see Table 10).

Table 10 BASIC ASSISTANT menu options

Option	Task
1. RAM Test	Perform a RAM self-test.
0. Return to boot menu	Return to the basic Boot menu.

Accessing the extended Boot menu

Press **Ctrl+B** within 1 second (in fast startup mode) or 5 seconds (in full startup mode) after the "Press Ctrl-B to enter Extended Boot menu..." prompt message appears. If you fail to do this, the system starts decompressing the system software.

Alternatively, you can enter **4** in the basic Boot menu to access the extended Boot menu.

The "Password recovery capability is enabled." or "Password recovery capability is disabled." message appears, followed by the extended Boot menu. Availability of some menu options depends on the state of password recovery capability (see Table 11). For more information about password recovery capability, see *Fundamentals Configuration Guide* in *HP 1950 Switch Series Configuration Guides*.

```
Password recovery capability is enabled.

   EXTENDED BOOT MENU

1. Download image to flash
2. Select image to boot
3. Display all files in flash
4. Delete file from flash
5. Restore to factory default configuration
6. Enter BootRom upgrade menu
7. Skip current system configuration
8. Set switch startup mode
0. Reboot
Ctrl+Z: Access EXTENDED ASSISTANT MENU
Ctrl+F: Format file system
Ctrl+P: Change authentication for console login
Ctrl+R: Download image to SDRAM and run

Enter your choice(0-8):
```

Table 11 Extended Boot ROM menu options

Option	Tasks
1. Download image to flash	Download a software image file to the flash.
2. Select image to boot	• Specify the main and backup software image file for the next startup. • Specify the main and backup configuration files for the next startup. This task can be performed only if password recovery capability is enabled.
3. Display all files in flash	Display files on the flash.
4. Delete file from flash	Delete files to free storage space.
5. Restore to factory default configuration	Delete the current next-startup configuration files and restore the factory-default configuration. This option is available only if password recovery capability is disabled.

Option	Tasks
6. Enter BootRom upgrade menu	Access the Boot ROM upgrade menu.
7. Skip current system configuration	Start the switch without loading any configuration file. This is a one-time operation and takes effect only for the first system boot or reboot after you choose this option. This option is available only if password recovery capability is enabled.
8. Set switch startup mode	Set the startup mode to fast startup mode or full startup mode.
0. Reboot	Reboot the switch.
Ctrl+F: Format file system	Format the current storage medium.
Ctrl+P: Change authentication for console login	Skip the authentication for console login. This is a one-time operation and takes effect only for the first system boot or reboot after you choose this option. This option is available only if password recovery capability is enabled.
Ctrl+R: Download image to SDRAM and run	Download a system software image and start the switch with the image. This option is available only if password recovery capability is enabled.
Ctrl+Z: Access EXTENDED ASSISTANT MENU	Access the EXTENDED ASSISTANT MENU. For options in the menu, see Table 12.

Table 12 EXTENDED ASSISTANT menu options

Option	Task
1. Display Memory	Display data in the memory.
2. Search Memory	Search the memory for a specific data segment.
0. Return to boot menu	Return to the extended Boot ROM menu.

Upgrading Comware images from the Boot menu

You can use the following methods to upgrade Comware images:

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

Using TFTP to upgrade software images through the Ethernet port

1. Enter **1** in the Boot menu to access the file transfer protocol submenu.

```
1. Set TFTP protocol parameters
2. Set FTP protocol parameters
3. Set XMODEM protocol parameters
0. Return to boot menu

Enter your choice(0-3):
```

2. Enter **1** to set the TFTP parameters.

```
Load File Name      :update.ipe
Server IP Address   :192.168.0.3
Local IP Address    :192.168.0.2
Subnet Mask         :255.255.255.0
Gateway IP Address  :0.0.0.0
```

Table 13 TFTP parameter description

Item	Description
Load File Name	Name of the file to download (for example, **update.ipe**).
Server IP Address	IP address of the TFTP server (for example, 192.168.0.3).
Local IP Address	IP address of the switch (for example, 192.168.0.2).
Subnet Mask	Subnet mask of the switch (for example, 255.255.255.0).
Gateway IP Address	IP address of the gateway (in this example, no gateway is required because the server and the switch are on the same subnet).

NOTE:

- To use the default setting for a field, press **Enter** without entering any value.
- If the switch and the server are on different subnets, you must specify a gateway address for the switch.

3. Enter all required parameters, and enter **Y** to confirm the settings. The following prompt appears:

```
Are you sure to download file to flash? Yes or No (Y/N):Y
```

4. Enter **Y** to start downloading the image file. To return to the Boot menu without downloading the upgrade file, enter **N**.

```
Loading.....................................................................
.............................................................................
.............................................................................
.............................................................Done!
```

5. Enter the **M** (main), **B** (backup), or **N** (none) attribute for the images. In this example, assign the main attribute to the images.

```
Please input the file attribute (Main/Backup/None) M
Image file boot.bin is self-decompressing...
Free space: 534980608 bytes
Writing flash...............................................................
.............................................................................
.............................................................Done!
Image file system.bin is self-decompressing...
Free space: 525981696 bytes
Writing flash...............................................................
.............................................................................
.............................................................................
.............................................................................
.............................................................................
.............................................................................
.............................................................Done!
```

NOTE:

- The switch always attempts to boot with the main images first. If the attempt fails, for example, because the main images are not available, the switch tries to boot with the backup images. An image with the none attribute is only stored in flash memory for backup. To use it at reboot, you must change its attribute to main or backup.
- If an image with the same attribute as the image you are loading is already in the flash memory, the attribute of the old image changes to none after the new image becomes valid.

6. Enter **0** in the Boot menu to reboot the switch with the new software images.

```
EXTENDED BOOT MENU

1. Download image to flash
2. Select image to boot
3. Display all files in flash
4. Delete file from flash
5. Restore to factory default configuration
6. Enter BootRom upgrade menu
7. Skip current system configuration
8. Set switch startup mode
0. Reboot
Ctrl+Z: Access EXTENDED ASSISTANT MENU
Ctrl+F: Format file system
Ctrl+P: Change authentication for console login
Ctrl+R: Download image to SDRAM and run

Enter your choice(0-8): 0
```

Using FTP to upgrade software images through the Ethernet port

1. Enter **1** in the Boot menu to access the file transfer protocol submenu.

```
1. Set TFTP protocol parameters
2. Set FTP protocol parameters
3. Set XMODEM protocol parameters
0. Return to boot menu

Enter your choice(0-3):
```

2. Enter **2** to set the FTP parameters.

```
Load File Name      :update.ipe
Server IP Address   :192.168.0.3
Local IP Address    :192.168.0.2
Subnet Mask         :255.255.255.0
Gateway IP Address  :0.0.0.0
FTP User Name       :switch
FTP User Password   :***
```

Table 14 FTP parameter description

Item	Description
Load File Name	Name of the file to download (for example, **update.ipe**).

Item	Description
Server IP Address	IP address of the FTP server (for example, 192.168.0.3).
Local IP Address	IP address of the switch (for example, 192.168.0.2).
Subnet Mask	Subnet mask of the switch (for example, 255.255.255.0).
Gateway IP Address	IP address of the gateway (in this example, no gateway is required because the server and the switch are on the same subnet).
FTP User Name	Username for accessing the FTP server, which must be the same as configured on the FTP server.
FTP User Password	Password for accessing the FTP server, which must be the same as configured on the FTP server.

NOTE:

- To use the default setting for a field, press **Enter** without entering any value.
- If the switch and the server are on different subnets, you must specify a gateway address for the switch.

3. Enter all required parameters, and enter **Y** to confirm the settings. The following prompt appears:

```
Are you sure to download file to flash? Yes or No (Y/N):Y
```

4. Enter **Y** to start downloading the image file. To return to the Boot menu without downloading the upgrade file, enter **N**.

```
Loading.......................................................................
.............................................................................
.............................................................................
.............................................................Done!
```

5. Enter the **M** (main), **B** (backup), or **N** (none) attribute for the images. In this example, assign the main attribute to the images.

```
Please input the file attribute (Main/Backup/None) M
Image file boot.bin is self-decompressing...
Free space: 534980608 bytes
Writing flash.................................................................
.............................................................................
.............................................................Done!
Image file system.bin is self-decompressing...
Free space: 525981696 bytes
Writing flash.................................................................
.............................................................................
.............................................................................
.............................................................................
.............................................................................
.............................................................................
.................................................................Done!

   EXTENDED BOOT MENU

1. Download image to flash
```

```
2. Select image to boot
3. Display all files in flash
4. Delete file from flash
5. Restore to factory default configuration
6. Enter BootRom upgrade menu
7. Skip current system configuration
8. Set switch startup mode
0. Reboot
Ctrl+Z: Access EXTENDED ASSISTANT MENU
Ctrl+F: Format file system
Ctrl+P: Change authentication for console login
Ctrl+R: Download image to SDRAM and run

Enter your choice(0-8):0
```

NOTE:

- The switch always attempts to boot with the main images first. If the attempt fails, for example, because the main images not available, the switch tries to boot with the backup images. An image with the none attribute is only stored in flash memory for backup. To use it at reboot, you must change its attribute to main or backup.
- If an image with the same attribute as the image you are loading is already in the flash memory, the attribute of the old image changes to none after the new image becomes valid.

6. Enter **0** in the Boot menu to reboot the switch with the new software images.

Using XMODEM to upgrade software through the console port

XMODEM download through the console port is slower than TFTP or FTP download through the Ethernet port. To save time, use the Ethernet port as long as possible.

1. Enter **1** in the Boot menu to access the file transfer protocol submenu.

```
1. Set TFTP protocol parameters
2. Set FTP protocol parameters
3. Set XMODEM protocol parameters
0. Return to boot menu

Enter your choice(0-3):
```

2. Enter **3** to set the XMODEM download baud rate.

```
Please select your download baudrate:
1.  9600
2.  19200
3.* 38400
4.  57600
5.  115200
0.  Return to boot menu

Enter your choice(0-5):5
```

3. Select an appropriate download rate, for example, enter **5** to select 115200 bps.

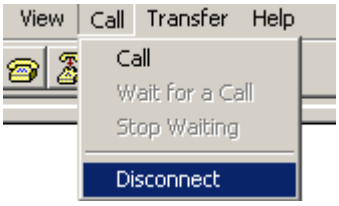
```
Download baudrate is 115200 bps
```

```
Please change the terminal's baudrate to 115200 bps and select XMODEM protocol
Press enter key when ready
```

4. Set the serial port on the terminal to use the same baud rate and protocol as the console port. If you select 38400bps as the download rate for the console port, skip this task.

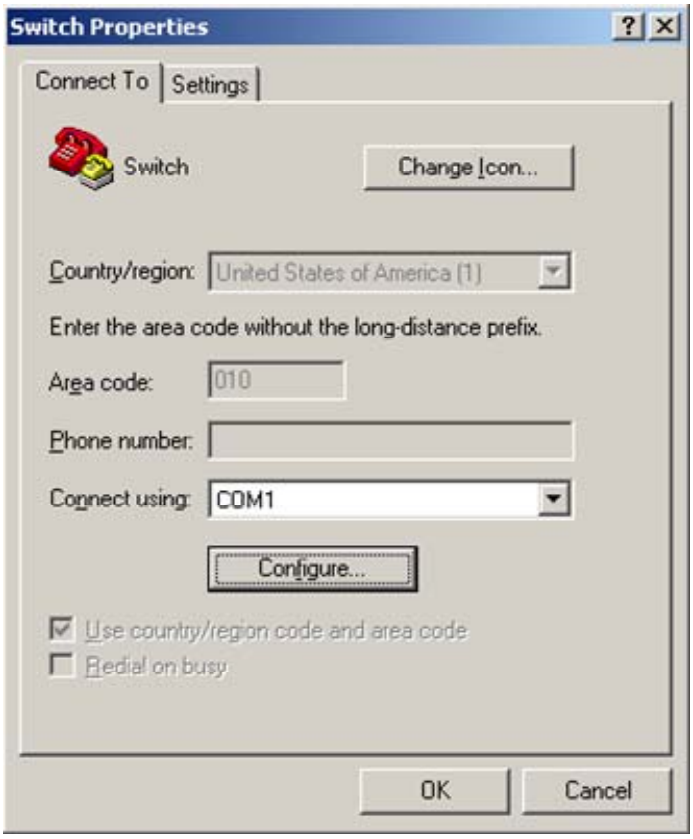
   a. Select **Call** > **Disconnect** in the HyperTerminal window to disconnect the terminal from the switch.

Figure 2 Disconnecting the terminal from the switch



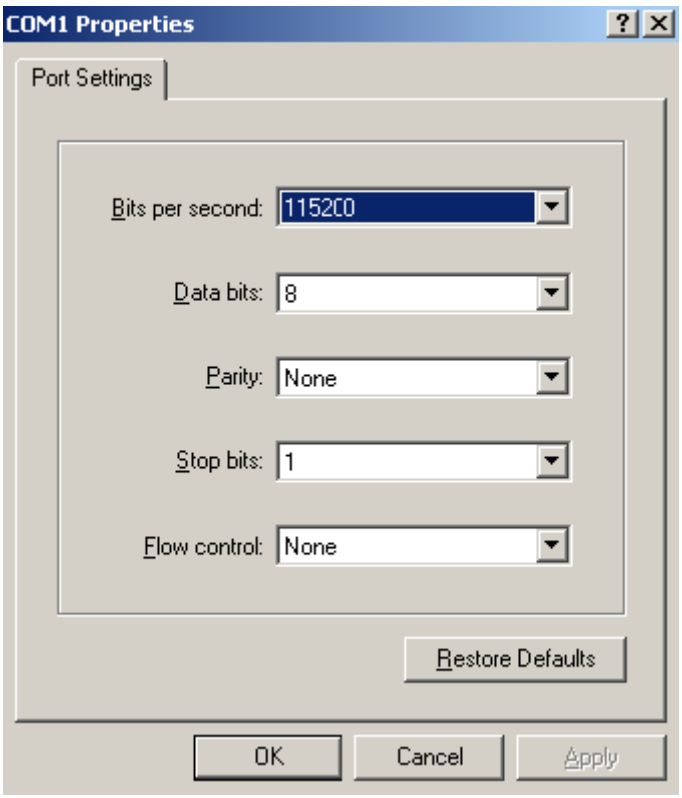
   b. Select **File** > **Properties**, and in the **Properties** dialog box, click **Configure**.

Figure 3 Properties dialog box



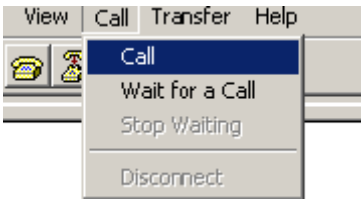
   c. Select **115200** from the **Bits per second** list and click **OK**.

Figure 4 Modifying the baud rate



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

Figure 5 Reestablishing the connection



5. Press **Enter**. The following prompt appears:

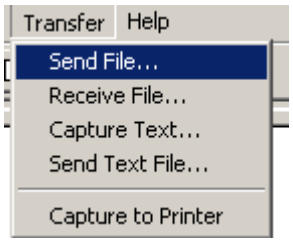
```
Are you sure to download file to flash? Yes or No (Y/N):Y
```

6. Enter **Y** to start downloading the file. (To return to the Boot menu, enter **N**.)

```
Now please start transfer file with XMODEM protocol
If you want to exit, Press <Ctrl+X>
Loading ...CCCCCCCCCCCCCCCCCCCCCCCCC
```

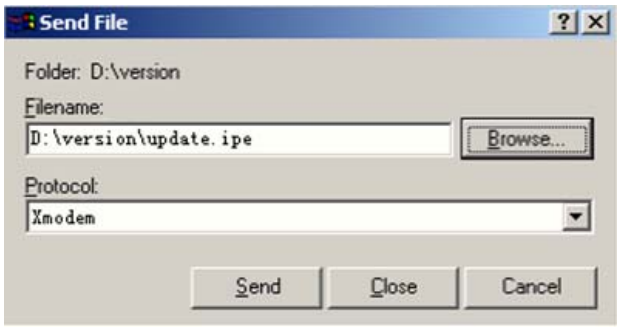
7. Select **Transfer** > **Send File** in the HyperTerminal window.

Figure 6 Transfer menu



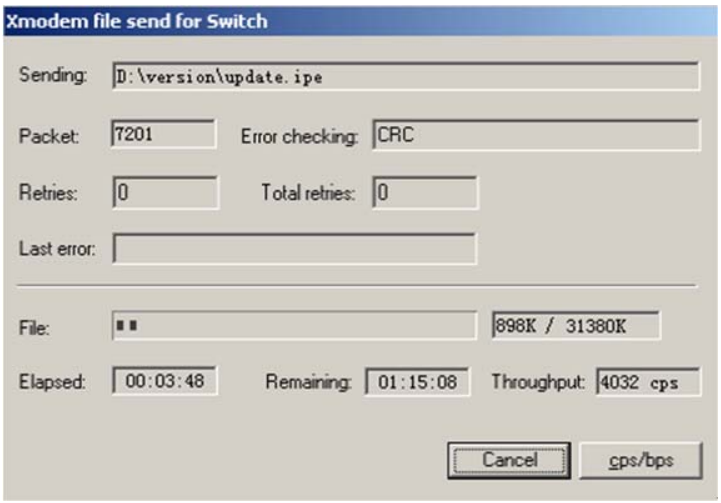
8. In the dialog box that appears, click **Browse** to select the source file, and select **Xmodem** from the **Protocol** list.

Figure 7 File transmission dialog box



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

Figure 8 File transfer progress



10. Enter the **M** (main), **B** (backup), or **N** (none) attribute for the images. In this example, assign the main attribute to the images.

```
Please input the file attribute (Main/Backup/None) m
The boot.bin image is self-decompressing...
```

At the **Load File name** prompt, enter a name for the boot image to be saved to flash memory.

```
Load File name  : default_file boot-update.bin       (At the prompt,
```

```
Free space: 470519808 bytes
Writing flash.....................................................................
.............Done!
The system-update.bin image is self-decompressing...
```

At the **Load File name** prompt, enter a name for the system image to be saved to flash memory.

```
Load File name  : default_file system-update.bin
Free space: 461522944 bytes
Writing flash.....................................................................
.............Done!
Your baudrate should be set to 38400 bps again!
Press enter key when ready
```

NOTE:

- The switch always attempts to boot with the main images first. If the attempt fails, for example, because the main images not available, the switch tries to boot with the backup images. An image with the none attribute is only stored in the flash memory for backup. To use it at reboot, you must change its attribute to main or backup.
- If an image with the same attribute as the image you are loading is already in flash memory, the attribute of the old image changes to none after the new image becomes valid.

11. If the baud rate of the HyperTerminal is not 38400bps, restore it to 38400bps as described in step 5.a. If the baud rate is 38400bps, skip this step.

    NOTE:

    The console port rate reverts to 38400bps at a reboot. If you have changed the baud rate, you must perform this step so you can access the switch through the console port after a reboot.

```
   EXTENDED BOOT MENU

1. Download image to flash
2. Select image to boot
3. Display all files in flash
4. Delete file from flash
5. Restore to factory default configuration
6. Enter BootRom upgrade menu
7. Skip current system configuration
8. Set switch startup mode
0. Reboot
Ctrl+Z: Access EXTENDED ASSISTANT MENU
Ctrl+F: Format file system
Ctrl+P: Change authentication for console login
Ctrl+R: Download image to SDRAM and run

Enter your choice(0-8): 0
```

12. Enter **0** in the Boot menu to reboot the system with the new software images.

Upgrading Boot ROM from the Boot menu

You can use the following methods to upgrade the Boot ROM image:

- Using TFTP to upgrade Boot ROM through the Ethernet port
- Using FTP to upgrade Boot ROM through the Ethernet port
- Using XMODEM to upgrade Boot ROM through the console port

Using TFTP to upgrade Boot ROM through the Ethernet port

1. Enter **6** in the Boot menu to access the Boot ROM update menu.

```
1. Update full BootRom
2. Update extended BootRom
3. Update basic BootRom
0. Return to boot menu

Enter your choice(0-3):
```

2. Enter **1** in the Boot ROM update menu to upgrade the full Boot ROM.

   The file transfer protocol submenu appears:

```
1. Set TFTP protocol parameters
2. Set FTP protocol parameters
3. Set XMODEM protocol parameters
0. Return to boot menu

Enter your choice(0-3):
```

3. Enter **1** to set the TFTP parameters.

```
Load File Name      :update.btm
Server IP Address   :192.168.0.3
Local IP Address    :192.168.0.2
Subnet Mask         :255.255.255.0
Gateway IP Address  :0.0.0.0
```

Table 15 TFTP parameter description

Item	Description
Load File Name	Name of the file to download (for example, **update.btm**).
Server IP Address	IP address of the TFTP server (for example, 192.168.0.3).
Local IP Address	IP address of the switch (for example, 192.168.0.2).
Subnet Mask	Subnet mask of the switch (for example, 255.255.255.0).
Gateway IP Address	IP address of the gateway (in this example, no gateway is required because the server and the switch are on the same subnet).

NOTE:

- To use the default setting for a field, press **Enter** without entering any value.
- If the switch and the server are on different subnets, you must specify a gateway address for the

switch.

4. Enter all required parameters and press **Enter** to start downloading the file.

```
Loading.................................................Done!
```

5. Enter **Y** at the prompt to upgrade the basic Boot ROM section.

```
Will you Update Basic BootRom? (Y/N):Y
Updating Basic BootRom...........Done.
```

6. Enter **Y** at the prompt to upgrade the extended Boot ROM section.

```
Updating extended BootRom? (Y/N):Y
Updating extended BootRom........Done.
```

7. Enter **0** in the Boot ROM update menu to return to the Boot menu.

```
1. Update full BootRom
2. Update extended BootRom
3. Update basic BootRom
0. Return to boot menu

Enter your choice(0-3):
```

8. Enter **0** in the Boot menu to reboot the switch with the new Boot ROM image.

Using FTP to upgrade Boot ROM through the Ethernet port

1. Enter **6** in the Boot menu to access the Boot ROM update menu.

```
1. Update full BootRom
2. Update extended BootRom
3. Update basic BootRom
0. Return to boot menu

Enter your choice(0-3):
```

2. Enter **1** in the Boot ROM update menu to upgrade the full Boot ROM.

   The file transfer protocol submenu appears:

```
1. Set TFTP protocol parameters
2. Set FTP protocol parameters
3. Set XMODEM protocol parameters
0. Return to boot menu

Enter your choice(0-3):
```

3. Enter **2** to set the FTP parameters.

```
Load File Name     :update.btm
Server IP Address  :192.168.0.3
Local IP Address   :192.168.0.2
Subnet Mask        :255.255.255.0
Gateway IP Address :0.0.0.0
FTP User Name      :switch
FTP User Password  :123
```

Table 16 FTP parameter description

Item	Description
Load File Name	Name of the file to download (for example, **update.btm**).
Server IP Address	IP address of the FTP server (for example, 192.168.0.3).
Local IP Address	IP address of the switch (for example, 192.168.0.2).
Subnet Mask	Subnet mask of the switch (for example, 255.255.255.0).
Gateway IP Address	IP address of the gateway (in this example, no gateway is required because the server and the switch are on the same subnet).
FTP User Name	Username for accessing the FTP server, which must be the same as configured on the FTP server.
FTP User Password	Password for accessing the FTP server, which must be the same as configured on the FTP server.

NOTE:

- To use the default setting for a field, press **Enter** without entering any value.
- If the switch and the server are on different subnets, you must specify a gateway address for the switch.

4. Enter all required parameters and press **Enter** to start downloading the file.

```
Loading.....................................................Done!
```

5. Enter **Y** at the prompt to upgrade the basic Boot ROM section.

```
Will you Update Basic BootRom? (Y/N):Y
Updating Basic BootRom...........Done.
```

6. Enter **Y** at the prompt to upgrade the extended Boot ROM section.

```
Updating extended BootRom? (Y/N):Y
Updating extended BootRom.........Done.
```

7. Enter **0** in the Boot ROM update menu to return to the Boot menu.

```
1. Update full BootRom
2. Update extended BootRom
3. Update basic BootRom
0. Return to boot menu

Enter your choice(0-3):
```

8. Enter **0** in the Boot menu to reboot the switch with the new Boot ROM image.

Using XMODEM to upgrade Boot ROM through the console port

XMODEM download through the console port is slower than TFTP or FTP download through the Ethernet port. To save time, use the Ethernet port as long as possible.

1. Enter **6** in the Boot menu to access the Boot ROM update menu.

```
1. Update full BootRom
2. Update extended BootRom
3. Update basic BootRom
0. Return to boot menu
```

```
Enter your choice(0-3):
```

2. Enter **1** in the Boot ROM update menu to upgrade the full Boot ROM.

   The file transfer protocol submenu appears:

```
1. Set TFTP protocol parameters
2. Set FTP protocol parameters
3. Set XMODEM protocol parameters
0. Return to boot menu

Enter your choice(0-3):
```

3. Enter **3** to set the XMODEM download baud rate.

```
Please select your download baudrate:
1.  9600
2.  19200
3.* 38400
4.  57600
5.  115200
0.  Return to boot menu

Enter your choice(0-5):5
```

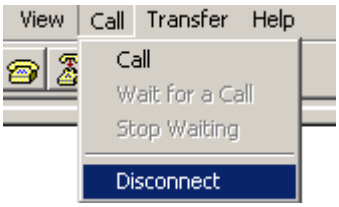
4. Select an appropriate download rate, for example, enter **5** to select 115200 bps.

```
Download baudrate is 115200 bps
Please change the terminal's baudrate to 115200 bps and select XMODEM protocol
Press enter key when ready
```

5. Set the serial port on the terminal to use the same baud rate and protocol as the console port. If you select 38400bps as the download rate for the console port, skip this task.

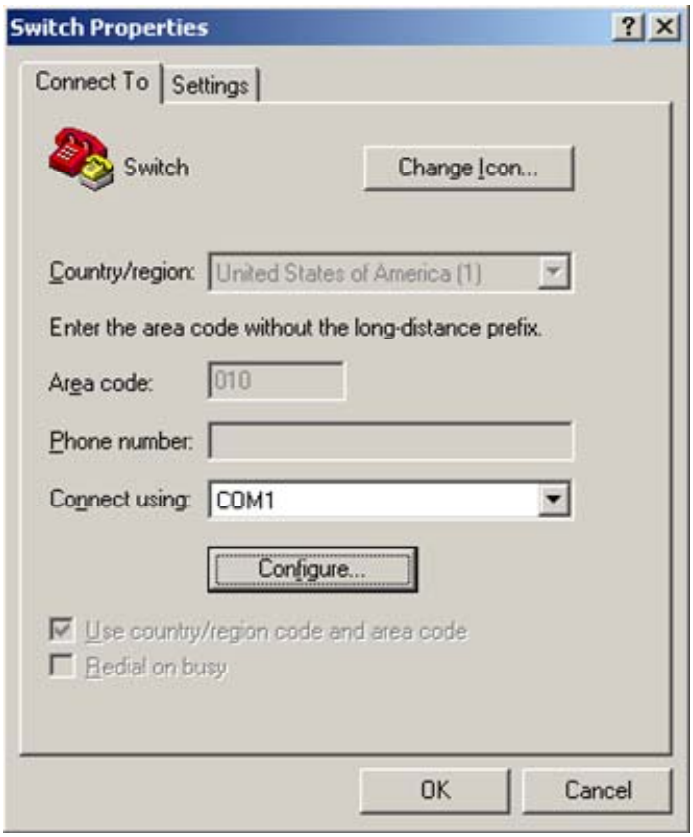
   a. Select **Call** > **Disconnect** in the HyperTerminal window to disconnect the terminal from the switch.

Figure 9 Disconnecting the terminal from the switch



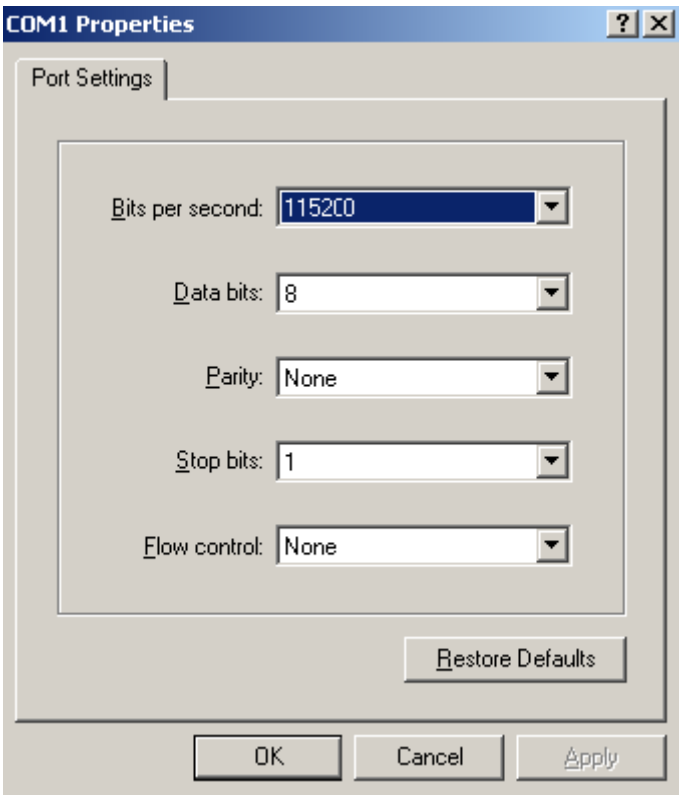
   b. Select **File** > **Properties**, and in the **Properties** dialog box, click **Configure**.

Figure 10 Properties dialog box



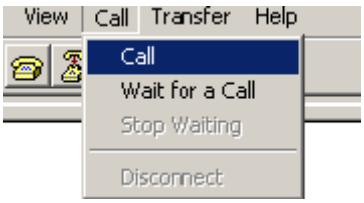
c. Select **115200** from the **Bits per second** list and click **OK**.

Figure 11 Modifying the baud rate



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

Figure 12 Reestablishing the connection

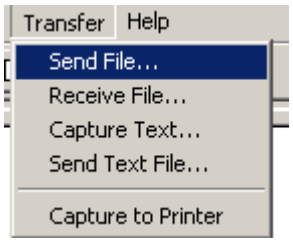


6. Press **Enter** to start downloading the file.

```
Now please start transfer file with XMODEM protocol
If you want to exit, Press <Ctrl+X>
Loading ...CCCCCCCCCCCCCCCCCCCCCCCCC
```

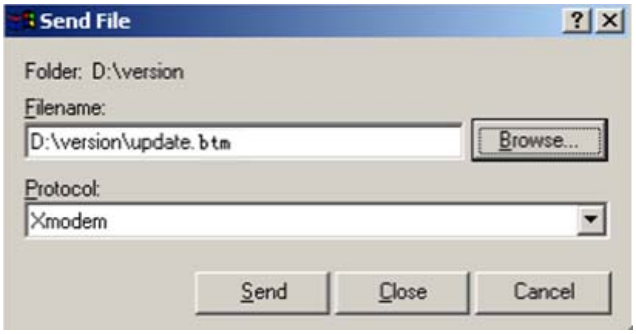
7. Select **Transfer** > **Send File** in the HyperTerminal window.

Figure 13 Transfer menu



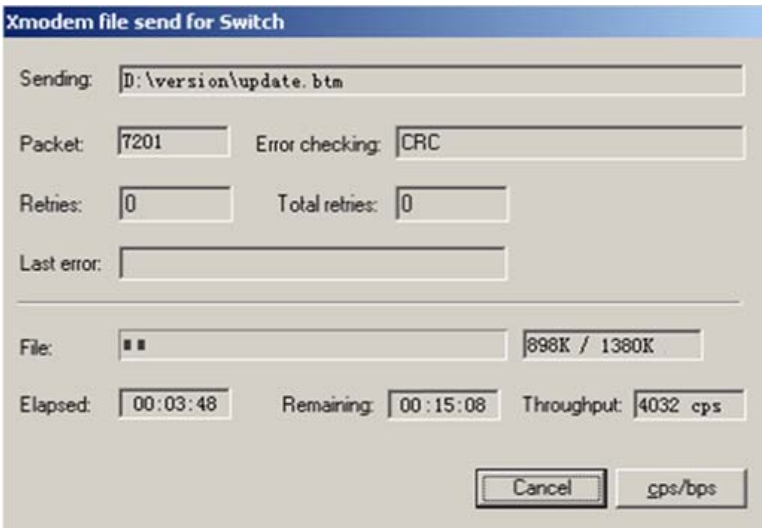
8. In the dialog box that appears, click **Browse** to select the source file, and select **Xmodem** from the **Protocol** list.

Figure 14 File transmission dialog box



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

Figure 15 File transfer progress



10. Enter **Y** at the prompt to upgrade the basic Boot ROM section.

```
Loading ...CCCCCCCCCCCCC  ...Done!
Will you Update Basic BootRom? (Y/N):Y
Updating Basic BootRom..........Done.
```

11. Enter **Y** at the prompt to upgrade the extended Boot ROM section.

```
Updating extended BootRom? (Y/N):Y
Updating extended BootRom........Done.
```

12. If the baud rate of the HyperTerminal is not 38400bps, restore it to 38400bps at the prompt, as described in step 4.a. If the baud rate is 38400bps, skip this step.

```
Please change the terminal's baudrate to 38400 bps, press ENTER when ready.
```

NOTE:

The console port rate reverts to 38400bps at a reboot. If you have changed the baud rate, you must perform this step so you can access the switch through the console port after a reboot.

13. Press **Enter** to access the Boot ROM update menu.
14. Enter **0** in the Boot ROM update menu to return to the Boot menu.

```
1. Update full BootRom
2. Update extended BootRom
3. Update basic BootRom
0. Return to boot menu

Enter your choice(0-3):
```

15. Enter **0** in the Boot menu to reboot the switch with the new Boot ROM image.

Managing files from the Boot menu

From the Boot menu, you can display files in flash memory to check for obsolete files, incorrect files, or space insufficiency, delete files to release storage space, or change the attributes of software images.

Displaying all files

Enter **3** in the Boot menu to display all files in flash memory and identify the free space size.

```
   EXTENDED BOOT MENU

1. Download image to flash
2. Select image to boot
3. Display all files in flash
4. Delete file from flash
5. Restore to factory default configuration
6. Enter BootRom upgrade menu
7. Skip current system configuration
8. Set switch startup mode
0. Reboot
Ctrl+Z: Access EXTENDED ASSISTANT MENU
Ctrl+F: Format file system
Ctrl+P: Change authentication for console login
Ctrl+R: Download image to SDRAM and run

Enter your choice(0-8): 3
```

The following is a sample output:

```
Display all file(s) in flash:

File Number     File Size(bytes)     File Name
================================================================================
1               8177                 flash:/testbackup.cfg
2(*)            53555200             flash:/system.bin
3(*)            9959424              flash:/boot.bin
4               3678                 flash:/startup.cfg_backup
5               30033                flash:/default.mdb
6               42424                flash:/startup.mdb
7               18                   flash:/.pathfile
```

```
8               232311                flash:/logfile/logfile.log
9               5981                  flash:/startup.cfg_back
10(*)           6098                  flash:/startup.cfg
11              20                    flash:/.snmpboots
Free space: 464298848 bytes
The current image is boot.bin
(*)-with main attribute
(b)-with backup attribute
(*b)-with both main and backup attribute
```

Deleting files

If storage space is insufficient, delete obsolete files to free up storage space.

To delete files:

1. Enter **4** in the Boot menu:

```
Deleting the file in flash:

File Number     File Size(bytes)      File Name
================================================================================
1               8177                  flash:/testbackup.cfg
2(*)            53555200              flash:/system.bin
3(*)            9959424               flash:/boot.bin
4               3678                  flash:/startup.cfg_backup
5               30033                 flash:/default.mdb
6               42424                 flash:/startup.mdb
7               18                    flash:/.pathfile
8               232311                flash:/logfile/logfile.log
9               5981                  flash:/startup.cfg_back
10(*)           6098                  flash:/startup.cfg
11              20                    flash:/.snmpboots
Free space: 464298848 bytes
The current image is boot.bin
(*)-with main attribute
(b)-with backup attribute
(*b)-with both main and backup attribute
```

2. Enter the number of the file to delete. For example, enter **1** to select the file **testbackup.cfg**.

```
Please input the file number to change: 1
```

3. Enter **Y** at the confirmation prompt.

```
The file you selected is testbackup.cfg,Delete it? (Y/N):Y
Deleting.................................Done!
```

Changing the attribute of software images

Software image attributes include main (M), backup (B), and none (N). System software and boot software can each have multiple none-attribute images but only one main image and one backup image on the switch. You can assign both the M and B attributes to one image. If the M or B attribute you are assigning has been assigned to another image, the assignment removes the attribute from that image. If the removed attribute is the sole attribute of the image, its attribute changes to N.

For example, the system image **system.bin** has the M attribute and the system image **system-update.bin** has the B attribute. After you assign the M attribute to **system-update.bin**, the attribute of **system-update.bin** changes to M+B and the attribute of **system.bin** changes to N.

To change the attribute of a system or boot image:

1. Enter **2** in the Boot menu.

```
   EXTENDED BOOT MENU

1. Download image to flash
2. Select image to boot
3. Display all files in flash
4. Delete file from flash
5. Restore to factory default configuration
6. Enter BootRom upgrade menu
7. Skip current system configuration
8. Set switch startup mode
0. Reboot
Ctrl+Z: Access EXTENDED ASSISTANT MENU
Ctrl+F: Format file system
Ctrl+P: Change authentication for console login
Ctrl+R: Download image to SDRAM and run

Enter your choice(0-8): 2
```

2. **1** or **2** at the prompt to set the attribute of a software image. (The following output is based on the option **2**. To set the attribute of a configuration file, enter **3**.)

```
1. Set image file
2. Set bin file
3. Set configuration file
0. Return to boot menu

Enter your choice(0-3): 2

File Number    File Size(bytes)     File Name
================================================================================

1(*)              53555200              flash:/system.bin
2(*)              9959424               flash:/boot.bin
3                 13105152              flash:/boot-update.bin
4                 91273216              flash:/system-update.bin
Free space: 417177920 bytes
(*)-with main attribute
(b)-with backup attribute
(*b)-with both main and backup attribute
Note:Select .bin files. One but only one boot image and system image must be included.
```

3. Enter the number of the file you are working with. For example, enter 3 to select the boot image **boot-update.bin**. and enter **4** to select the system image **system-update.bin**.

```
Enter file No.(Allows multiple selection):3
Enter another file No.(0-Finish choice):4
```

4. Enter **0** to finish the selection.

```
Enter another file No.(0-Finish choice):0
You have selected:
flash:/boot-update.bin
flash:/system-update.bin
```

5. Enter **M** or **B** to change its attribute to main or backup. If you change its attribute to M, the attribute of **boot.bin** changes to none.

```
Please input the file attribute (Main/Backup) M
This operation may take several minutes. Please wait....
Next time, boot-update.bin will become default boot file!
Next time, system-update.bin will become default boot file!
Set the file attribute success!
```

Handling software upgrade failures

If a software upgrade fails, the system runs the old software version.

To handle a software upgrade failure:

1. Verify that the software release is compatible with the switch model and the correct file is used.
2. Verify that the software release and the Boot ROM release are compatible. For software and Boot ROM compatibility, see the hardware and software compatibility matrix in the correct release notes.
3. Check the physical ports for a loose or incorrect connection.
4. 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.
5. 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.
6. Check the FTP or TFTP server for any incorrect setting.
7. Check that the storage device has sufficient space for the upgrade file.