

HPE 5510HI-CMW710-R1111P01

Release Notes

© Copyright 2015 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HPE products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein. The information in this document is subject to change without notice.



Contents

Version information	1
Version number	1
Version history	1
Hardware and software compatibility matrix	1
Upgrading restrictions and guidelines	3
Hardware feature updates	3
5510HI-CMW710-R1111P01	3
Software feature and command updates	3
MIB Updates	3
Operation Changes	3
Operation changes in R1111P01	3
Restrictions and cautions	4
Open problems and workarounds	4
List of resolved problems	4
Resolved problems in R1111P01	4
Related documentation	5
Documentation set	5
Obtaining Documentation	5
Appendix A Feature list	6
Hardware features	6
Software features	9
Appendix B Upgrading software	12
System software file types	13
System startup process	13
Upgrade methods	14
Upgrading from the CLI	15
Preparing for the upgrade	15
Downloading software images to the master switch	17
Upgrading the software images	19
Upgrading from the Boot menu	20
Prerequisites	20
Accessing the Boot menu	22
Accessing the basic Boot menu	23
Accessing the extended Boot menu	24
Upgrading Comware images from the Boot menu	25
Upgrading Boot ROM from the Boot menu	35
Managing files from the Boot menu	42
Handling software upgrade failures	45

List of Tables

Table 1 Version history	1
Table 2 Hardware and software compatibility matrix.....	1
Table 3 MIB updates	3
Table 4 Technical specifications for non-PoE switch models.....	6
Table 5 Technical specifications for PoE switch models.....	7
Table 6 Software features of the 5510HI series.....	9
Table 7 Minimum free storage space requirements.....	21
Table 8 Shortcut keys	22
Table 9 Basic Boot ROM menu options.....	23
Table 10 BASIC ASSISTANT menu options	24
Table 11 Extended Boot ROM menu options.....	24
Table 12 EXTENDED ASSISTANT menu options	25
Table 13 TFTP parameter description	26
Table 14 FTP parameter description.....	28
Table 15 TFTP parameter description	35
Table 16 FTP parameter description.....	37

This document describes the features, restrictions and guidelines, open problems, and workarounds for version 5510HI-CMW710-R1111P01. 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.

Version information

Version number

HPE Comware Software, Version 7.1.045, Release 1111P01

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
5510HI-CMW710-R1111P01	First release	2015-03-31	Release version	First release

Hardware and software compatibility matrix

Table 2 Hardware and software compatibility matrix

Item	Specifications
Product family	5510HI Series
Hardware platform	HPE 5510 24G 4SFP+ HI 1-slot Switch JH145A
	HPE 5510 48G 4SFP+ HI 1-slot Switch JH146A
	HPE 5510 24G PoE+ 4SFP+ HI 1-slot Switch JH147A
	HPE 5510 48G PoE+ 4SFP+ HI 1-slot Switch JH148A
	HPE 5510 24G SFP 4SFP+ HI 1-slot Switch JH149A
Minimum memory requirements	2 GB
Minimum Flash requirements	512 M
Boot ROM version	Version 111 or higher (Note: Use the display version command in any view to view the version information. Please see Note②)
Host software	5510HI-CMW710-R1111P01.ipe

Item	Specifications
iMC version	iMC PLAT 7.1 (E0303P10) iMC BIMS 7.1 (E0301) iMC EAD 7.1 (E0301P03) iMC TAM 7.1 (E0302P08) iMC UAM 7.1 (E0302P08) iMC NTA 7.1 (E0301P04) iMC QoS 7.1 (E0301P01) iMC SDNM 7.1 (E0302) iMC SHM 7.1 (E0301P02) iMC RAM 7.1 (E0301P04)
iNode version	iNode PC 7.1 (E0307)
Web version	None
Remarks	None

Display the system software and Boot ROM versions of 5510HI:

<HPE>display version

HPE Comware Software, Version 7.1.045, Release 1111P01

----- Note①

Copyright (c) 2010-2015 Hewlett Packard Enterprise Development LP

HPE 5510 24G PoE+ 4SFP+ HI 1-slot Switch JH147A uptime is 0 weeks, 0 days, 0 hours, 6 minutes

Last reboot reason : User reboot

Boot image: flash:/5510hi-cmw710-boot-r1111p01.bin

Boot image version: 7.1.045, Release 1111P01

Compiled May 13 2015 15:54:04

System image: flash:/5510hi-cmw710-system-r1111p01.bin

System image version: 7.1.045, Release 1111P01

Compiled May 13 2015 15:54:04

Slot 1:

Uptime is 0 weeks,0 days,0 hours,6 minutes

HPE 5510 24G PoE+ 4SFP+ HI 1-slot Switch JH147A with 2 Processors

BOARD TYPE: 5510 24G PoE+ 4SFP+ HI 1-slot Switch

DRAM: 1984M bytes

FLASH: 512M bytes

PCB 1 Version: VER.A

Bootrom Version: 111

----- Note②

CPLD 1 Version: 003

Release Version: HPE 5510 24G PoE+ 4SFP+ HI 1-slot Switch JH147A-1111P01

Patch Version : None

Reboot Cause : UserReboot

[SubSlot 0] 24GE+4SFP Plus

<HPE>

Upgrading restrictions and guidelines

None

Hardware feature updates

5510HI-CMW710-R1111P01

First release

Software feature and command updates

First release

MIB Updates

Table 3 MIB updates

Item	MIB file	Module	Description
5510HI-CMW710-R1111P01			
New	First release	First release	First release
Modified	First release	First release	First release

Operation Changes

Operation changes in R1111P01

First release

Restrictions and cautions

HPE X130 10G SFP+ LC LRM transceiver modules (JD093B) can work only in the SFP+ ports of an HPE 5130/5510 10GbE SFP+ 2-port module (JH157A). Do not install the transceiver module in an SFP+ port on the front panel.

Open problems and workarounds

201409040524

- Symptom: The MAC addresses of online MAC authentication users cannot move between ports on the switch.
- Condition: This symptom occurs if the following conditions exist:
 - Port security is enabled, and the port security mode is set to **mac-authentication**.
 - An AAA server is used to issue authorization VLANs.
- Workaround: None.

201410280493

- Symptom: Subordinate switches in an IRF fabric might reboot unexpectedly.
- Condition: This symptom occurs if the following operations are performed on the IRF fabric:
 - a. Load the devkit package.
 - b. Execute the **process restart name bfd all** command repeatedly.
- Workaround: None.

List of resolved problems

Resolved problems in R1111P01

First release

Related documentation

Documentation set

- HPE 5510 HI Switch Series Installation Guide
- HPE PSR720-56A Power Supply User Guide
- HPE PSR1110-56A Power Supply User Guide
- HPE PSR150-A & PSR150-D Power Supplies User Guide
- HPE LSWM2SP2PM Interface Card (JH157A) User Guide
- HPE LSWM2XGT2PM Interface Card (JH156A) User Guide
- HPE LSWM2QP2P Interface Card (JH155A) User Guide
- HPE 5510 HI Switch Series Configuration Guides-Release 1111P01
- HPE 5510 HI Switch Series Command References-Release 1111P01

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 Technical specifications for non-PoE switch models

Item	HPE 5510 24G SFP 4SFP+ HI 1-slot Switch JH149A	HPE 5510 24G 4SFP+ HI 1-slot Switch JH145A	HPE 5510 48G 4SFP+ HI 1-slot Switch JH146A
Dimensions (H × W × D)	43.6 × 440 × 360 mm (1.72 × 17.32 × 14.17 in)	43.6 × 440 × 360 mm (1.72 × 17.32 × 14.17 in)	43.6 × 440 × 360 mm (1.72 × 17.32 × 14.17 in)
Weight	≤ 5 kg (11.02 lb)	≤ 5 kg (11.02 lb)	≤ 5 kg (11.02 lb)
Console ports	<ul style="list-style-type: none">• 1 × USB mini console port• 1 × serial console port Only the USB mini console port is available when you connect both ports.		
USB ports	1	1	1
Management Ethernet ports	1	1	1
SFP+ ports	4	4	4
SFP ports	24 (The rightmost eight SFP ports and their corresponding 10/100/1000Base-T autosensing Ethernet ports form combo interfaces.)	N/A	N/A
10/100/1000Base-T autosensing Ethernet ports	8 (Each and its corresponding SFP port form a combo interface.)	24	48
Expansion interface card slots	1, on the rear panel	1, on the rear panel	1, on the rear panel
Power module slots	2, on the rear panel	2, on the rear panel	2, on the rear panel
Fan tray slots	2, on the rear panel	2, on the rear panel	2, on the rear panel
Input voltage	<ul style="list-style-type: none">• AC-input<ul style="list-style-type: none">◦ Rated voltage range: 100 VAC to 240 VAC @ 50 Hz or 60 Hz◦ Max voltage range: 90 VAC to 264 VAC @ 47 Hz to 63 Hz• DC-input<ul style="list-style-type: none">◦ Rated voltage range: -48 VDC to -60 VDC◦ Max voltage range: -36 VDC to -72 VDC		
NOTE: You can use the site -48 VDC power source.			

Item	HPE 5510 24G SFP 4SFP+ HI 1-slot Switch JH149A	HPE 5510 24G 4SFP+ HI 1-slot Switch JH145A	HPE 5510 48G 4SFP+ HI 1-slot Switch JH146A
Minimum power consumption	<ul style="list-style-type: none"> Single AC input: 48 W Dual AC inputs: 53 W Single DC input: 70 W Dual DC inputs: 60 W 	<ul style="list-style-type: none"> Single AC input: 55 W Dual AC inputs: 57 W Single DC input: 49 W Dual DC inputs: 51 W 	<ul style="list-style-type: none"> Single AC input: 70 W Dual AC inputs: 70 W Single DC input: 59 W Dual DC inputs: 59 W
Maximum power consumption	<ul style="list-style-type: none"> Single AC input: 120 W Dual AC inputs: 123 W Single DC input: 146 W Dual DC inputs: 133 W 	<ul style="list-style-type: none"> Single AC input: 107 W Dual AC inputs: 108 W Single DC input: 111 W Dual DC inputs: 115 W 	<ul style="list-style-type: none"> Single AC input: 123 W Dual AC inputs: 123 W Single DC input: 127 W Dual DC inputs: 130 W
Chassis leakage current compliance	UL60950-1, EN60950-1, IEC60950-1, GB4943		
Melting current of power module fuse	<ul style="list-style-type: none"> AC-input: 5 A, 250V DC-input: 8 A, 250V 		
Operating temperature	0°C to 45°C (32°F to 113°F)		
Relative humidity	5% to 95%, noncondensing		
Fire resistance compliance	UL60950-1, EN60950-1, IEC60950-1, GB4943		

Table 5 Technical specifications for PoE switch models

Item	HPE 5510 24G PoE+ 4SFP+ HI 1-slot Switch JH147A	HPE 5510 48G PoE+ 4SFP+ HI 1-slot Switch JH148A
Dimensions (H × W × D)	43.6 × 440 × 460 mm (1.72 × 17.32 × 18.11 in)	43.6 × 440 × 460 mm (1.72 × 17.32 × 18.11 in)
Weight	≤ 10 kg (22.05 lb)	≤ 10 kg (22.05 lb)
Console ports	<ul style="list-style-type: none"> 1 × USB mini console port 1 × serial console port Only the USB mini console port is available when you connect both ports.	
USB ports	1	1
Management Ethernet ports	1	1
SFP+ ports	4	4
10/100/1000Base-T autosensing Ethernet ports	24	48

Item	HPE 5510 24G PoE+ 4SFP+ HI 1-slot Switch JH147A	HPE 5510 48G PoE+ 4SFP+ HI 1-slot Switch JH148A
Expansion interface card slots	1, on the rear panel	1, on the rear panel
Power module slots	2, on the rear panel	2, on the rear panel
Fan tray slots	2, on the rear panel	2, on the rear panel
Input voltage	<ul style="list-style-type: none"> PSR720-56A AC-input <ul style="list-style-type: none"> Rated voltage range: 100 VAC to 240 VAC @ 50 Hz or 60 Hz Max voltage range: 90 VAC to 264 VAC @ 47 Hz to 63 Hz PSR1110-56A AC-input <ul style="list-style-type: none"> Rated voltage range: 115 VAC to 240 VAC @ 50 Hz or 60 Hz Max voltage range: 102.5 VAC to 264 VAC @ 47 Hz to 63 Hz 	
PoE power capacity	Depends on the power module configurations. For more information, see the following table.	
Minimum power consumption	67 W	75 W
Maximum power consumption (including PoE power consumption)	1000 W	1800 W
Chassis leakage current compliance	UL60950-1, EN60950-1, IEC60950-1, GB4943	
Melting current of power module fuse	15 A, 250V	
Operating temperature	0°C to 45°C (32°F to 113°F)	
Relative humidity	5% to 95%, noncondensing	
Fire resistance compliance	UL60950-1, EN60950-1, IEC60950-1, GB4943	

The following table describes PoE power capacity:

Power module configuration	HPE 5510 24G PoE+ 4SFP+ HI 1-slot Switch JH147A		HPE 5510 48G PoE+ 4SFP+ HI 1-slot Switch JH148A	
	Total PoE power capacity	Max PoE power capacity per port	Total PoE power capacity	Max PoE power capacity per port
Two PSR1110-56A	740 W	30 W	1440 W	30 W
One PSR1110-56A and one PSR720-56A	740 W	30 W	1440 W	30 W
Two PSR720-56A	740 W	30 W	1200 W	30 W
One PSR1110-56A	740 W	30 W	810 W	30 W
One PSR720-56A	450 W	30 W	450 W	30 W

Software features

Table 6 Software features of the 5510HI series

Feature	HPE 5510 24G 4SFP+ HI 1-slot Switch JH145A	HPE 5510 48G 4SFP+ HI 1-slot Switch JH146A
	HPE 5510 24G PoE+ 4SFP+ HI 1-slot Switch JH147A	HPE 5510 48G PoE+ 4SFP+ HI 1-slot Switch JH148A
	HPE 5510 24G SFP 4SFP+ HI 1-slot Switch JH149A	
Full duplex Wire speed L2 switching capacity	128Gbps	176Gbps
Whole system Wire speed L2 switching Packet forwarding rate	95.2Mpps	130.95Mpps
IRF	<ul style="list-style-type: none"> • Ring topology • Daisy chain topology • LACP MAD • ARP MAD • ND MAD • BFD MAD 	
Link aggregation	<ul style="list-style-type: none"> • Aggregation of GE ports • Aggregation of 10-GE ports • Aggregation of 40-GE ports • Static link aggregation • Dynamic link aggregation • Inter-device aggregation • A maximum of 128 inter-device aggregation groups • A maximum of 8 ports for each aggregation group 	
Flow control	<ul style="list-style-type: none"> • IEEE 802.3x flow control • Back pressure 	
Jumbo Frame	<ul style="list-style-type: none"> • Supports maximum frame size of 10000 	
MAC address table	<ul style="list-style-type: none"> • 32K MAC addresses • 1K static MAC addresses • Blackhole MAC addresses • MAC address learning limit on a port 	
VLAN	<ul style="list-style-type: none"> • Port-based VLANs (4094 VLANs) • QinQ and selective QinQ • Voice VLAN • protocol-vlan • MAC vlan 	

Feature	HPE 5510 24G 4SFP+ HI 1-slot Switch JH145A HPE 5510 24G PoE+ 4SFP+ HI 1-slot Switch JH147A HPE 5510 24G SFP 4SFP+ HI 1-slot Switch JH149A		HPE 5510 48G 4SFP+ HI 1-slot Switch JH146A HPE 5510 48G PoE+ 4SFP+ HI 1-slot Switch JH148A
VLAN mapping	<ul style="list-style-type: none"> One-to-one VLAN mapping Many-to-one VLAN mapping Two-to-two VLAN mapping 		
ARP	<ul style="list-style-type: none"> 16K entries 2K 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) Multiport ARP 		
ND	<ul style="list-style-type: none"> 8K entries 2K static entries ND Snooping 		
VLAN virtual interface	1K		
DHCP	<ul style="list-style-type: none"> DHCP client DHCP snooping DHCP relay agent DHCP server DHCP Option82 DHCPv6 server DHCPv6 relay agent DHCPv6 snooping 		
UDP helper	<ul style="list-style-type: none"> UDP helper 		
DNS	<ul style="list-style-type: none"> Static DNS Dynamic DNS IPv4 and IPv6 DNS 		
unicast route	<ul style="list-style-type: none"> IPv4/IPv6 static routes RIP/RIPng OSPF/OSPFv3 BGP/BGP4+ ISIS/ISISv6 Routing policies Policy-based routing 		
BFD	<ul style="list-style-type: none"> Static route MAD 		

Feature	HPE 5510 24G 4SFP+ HI 1-slot Switch JH145A	HPE 5510 48G 4SFP+ HI 1-slot Switch JH146A
	HPE 5510 24G PoE+ 4SFP+ HI 1-slot Switch JH147A	HPE 5510 48G PoE+ 4SFP+ HI 1-slot Switch JH148A
	HPE 5510 24G SFP 4SFP+ HI 1-slot Switch JH149A	
Multicast	<ul style="list-style-type: none"> • IGMP snooping • MLD snooping • IPv4 and IPv6 multicast VLAN • PIM SM • PIM DM • MSDP • IPv4 and IPv6 PIM snooping 	
Broadcast/multicast /unicast storm control	<ul style="list-style-type: none"> • Storm control based on port rate percentage • PPS-based storm control • Bps-based storm control 	
MSTP	<ul style="list-style-type: none"> • STP/RSTP/MSTP protocol • STP Root Guard • BPDU Guard 	
SmartLink	<ul style="list-style-type: none"> • 32 	
QoS/ACL	<ul style="list-style-type: none"> • 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/WDRR/WFQ queue scheduling algorithms • Port-based rate limiting • Flow-based redirection • Time range 	
Mirroring	<ul style="list-style-type: none"> • Stream mirroring • Port mirroring • Multiple mirror observing port • Port remote mirroring (RSPAN) 	
Security	<ul style="list-style-type: none"> • Hierarchical management and password protection of users • AAA authentication • RADIUS authentication • HWTACACS • SSH 2.0 • Port isolation • 802.1X • Port security • MAC-address-based authentication • IP Source Guard • HTTPS • PKI • EAD 	

Feature	HPE 5510 24G 4SFP+ HI 1-slot Switch JH145A	HPE 5510 48G 4SFP+ HI 1-slot Switch JH146A
	HPE 5510 24G PoE+ 4SFP+ HI 1-slot Switch JH147A	HPE 5510 48G PoE+ 4SFP+ HI 1-slot Switch JH148A
	HPE 5510 24G SFP 4SFP+ HI 1-slot Switch JH149A	
802.1X	<ul style="list-style-type: none"> • Up to 2,048 users • Port-based and MAC address-based authentication • Guest VLAN • Trunk port authentication • Dynamic 802.1X-based QoS/ACL/VLAN assignment 	
Open Flow	<ul style="list-style-type: none"> • 16 Instance • MAC-IP 	
Loading and upgrading	<ul style="list-style-type: none"> • Loading and upgrading through XModem protocol • Loading and upgrading through FTP • Loading and upgrading through the trivial file transfer protocol (TFTP) 	
Management	<ul style="list-style-type: none"> • 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 	
Maintenance	<ul style="list-style-type: none"> • Debugging information output • Ping and Tracert • NQA • Track • Remote maintenance through Telnet • 802.1ag • 802.3ah • DLDP • Virtual Cable Test 	

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**.

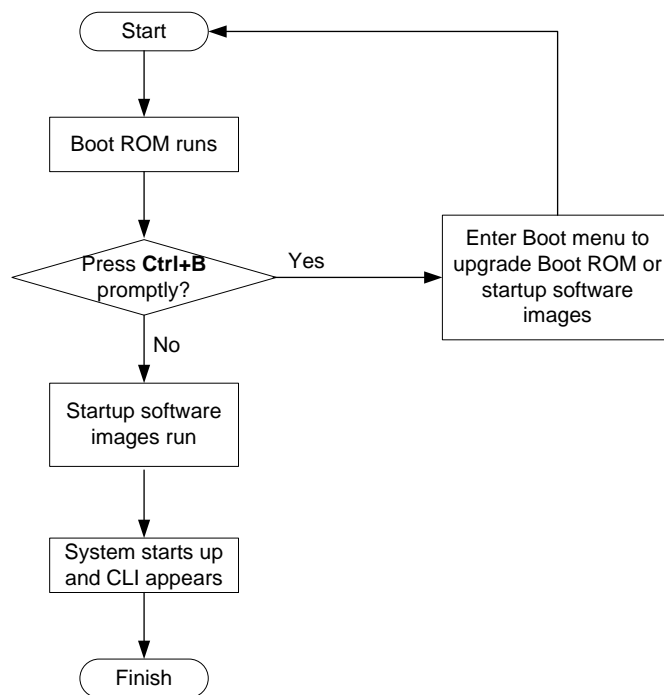
NOTE:

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	<ul style="list-style-type: none"> • Boot ROM image • Software images 	<ul style="list-style-type: none"> • You must reboot the switch to complete the upgrade. • This method can interrupt ongoing network services.
Upgrading from the Boot menu	<ul style="list-style-type: none"> • Boot ROM image • Software images 	<p>Use this method when the switch cannot correctly start up.</p> <p>CAUTION:</p> <p>Upgrading an IRF fabric from the CLI instead of the Boot menu.</p> <p>The Boot menu method increases the service downtime, because it requires that you upgrade the member switches one by one.</p>

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, `5510HI-CMW710-BOOT-R1111P01.bin` and `5510HI-CMW710-SYSTEM-R1111P01.bin`.

Upgrading from the CLI

This section uses a two-member IRF fabric as an example to describe how to upgrade software from the CLI. If you have more than two subordinate switches, repeat the steps for the subordinate switch to upgrade their software. If you are upgrading a standalone switch, ignore the steps for upgrading the subordinate switch. For more information about setting up and configuring an IRF fabric, see the installation guide and IRF configuration guide for the HPE 5510HI switch series.

Preparing for the upgrade

Before you upgrade software, complete the following tasks:

1. Log in to the IRF fabric through Telnet or the console port. (Details not shown.)
2. Identify the number of IRF members, each member switch's role, and IRF member ID.

```
<Sysname> display irf
MemberID  Role    Priority  CPU-Mac          Description
-----
*+1      Master  5         0023-8927-afdc   ---
2        Standby 1         0023-8927-af43   ---
-----
* indicates the device is the master.
+ indicates the device through which the user logs in.
```

```
The Bridge MAC of the IRF is: 0023-8927-afdb
Auto upgrade           : no
Mac persistent         : 6 min
Domain ID              : 0
```

3. Verify that each IRF member switch has sufficient storage space for the upgrade images.

! IMPORTANT:

Each IRF member switch must have free storage space that is at least two times the size of the upgrade image file.

Identify the free flash space of the master switch.

```
<Sysname> dir
Directory of flash:
 0      -rw-      41424  Aug 23 2013 02:23:44  startup.mdb
 1      -rw-       3792  Aug 23 2013 02:23:44  startup.cfg
 2      -rw-    53555200  Aug 23 2013 09:53:48  system.bin
 3      drw-        -   Aug 23 2013 00:00:07  seclog
 4      drw-        -   Aug 23 2013 00:00:07  diagfile
```

```

5      drw-          -   Aug 23 2013 00:00:07      logfile
6      -rw-      9959424   Aug 23 2013 09:53:48      boot.bin
7      -rw-      9012224   Aug 23 2013 09:53:48      backup.bin

```

```
524288 KB total (453416 KB free)
```

Identify the free flash space of each subordinate switch, for example, switch 2.

```
<Sysname> dir slot2#flash:/
```

```
Directory of slot2#flash:/
```

```

0      -rw-      41424   Jan 01 2011 02:23:44      startup.mdb
1      -rw-      3792    Jan 01 2011 02:23:44      startup.cfg
2      -rw-     93871104   Aug 23 2013 16:00:08      system.bin
3      drw-          -   Jan 01 2011 00:00:07      seclog
4      drw-          -   Jan 01 2011 00:00:07      diagfile
5      drw-          -   Jan 02 2011 00:00:07      logfile
6      -rw-     13611008   Aug 23 2013 15:59:00      boot.bin
7      -rw-      9012224   Nov 25 2011 09:53:48      backup.bin

```

```
524288 KB total (453416 KB free)
```

4. Compare the free flash space of each member switch with the size of the software file to load. If the space is sufficient, start the upgrade process. If not, go to the next step.
5. Delete unused files in the flash memory to free space:

CAUTION:

- To avoid data loss, do not delete the current configuration file. For information about the current configuration file, use the **display startup** command.
- The **delete /unreserved file-url** command deletes a file permanently and the action cannot be undone.
- The **delete file-url** command moves a file to the recycle bin and the file still occupies storage space. To free the storage space, first execute the **undelete** command to restore the file, and then execute the **delete /unreserved file-url** command.

Delete unused files from the flash memory of the master switch.

```
<Sysname> delete /unreserved flash:/backup.bin
```

```
The file cannot be restored. Delete flash:/backup.bin?[Y/N]:y
```

```
Deleting the file permanently will take a long time. Please wait...
```

```
Deleting file flash:/backup.bin...Done.
```

Delete unused files from the flash memory of the subordinate switch.

```
<Sysname> delete /unreserved slot2#flash:/backup.bin
```

```
The file cannot be restored. Delete slot2#flash:/backup.bin?[Y/N]:y
```

```
Deleting the file permanently will take a long time. Please wait...
```

```
Deleting file slot2#flash:/backup.bin...Done.
```

Downloading software images to the master switch

Before you start upgrading software images packages, make sure you have downloaded the upgrading software files to the root directory in flash memory. This section describes downloading an .ipe software file as an example.

The following are ways to download, upload, or copy files to the master switch:

- [FTP download from a server](#)
- [FTP upload from a client](#)
- [TFTP download from a server](#)

Prerequisites

If FTP or TFTP is used, the IRF fabric and the PC working as the FTP/TFTP server or FTP client can reach each other.

Prepare the FTP server or TFTP server program yourself for the PC. The switch series does not come with these software programs.

FTP download from a server

You can use the switch as an FTP client to download files from an FTP server.

To download a file from an FTP server, for example, the server at 10.10.110.1:

1. Run an FTP server program on the server, configure an FTP username and password, specify the working directory and copy the file, for example, **newest.ipe**, to the directory.
2. Execute the **ftp** command in user view on the IRF fabric to access the FTP server.

```
<Sysname> ftp 10.10.110.1
```

```
Trying 10.10.110.1...
```

```
Press CTRL+C to abort
```

```
Connected to 10.10.110.1(10.10.110.1).
```

```
220 FTP service ready.
```

```
User (10.10.110.1:(none)):username
```

```
331 Password required for username.
```

```
Password:
```

```
230 User logged in.
```

3. Enable the binary transfer mode.

```
ftp> binary
```

```
200 Type set to I.
```

4. Execute the **get** command in FTP client view to download the file from the FTP server.

```
ftp> get newest.ipe
```

```
227 Entering Passive Mode (10,10,110,1,17,97).
```

```
125 BINARY mode data connection already open, transfer starting for /newest.ipe
```

```
226 Transfer complete.
```

```
32133120 bytes received in 35 seconds (896.0 kbyte/s)
```

```
ftp> bye
```

```
221 Server closing.
```

FTP upload from a client

You can use the IRF fabric as an FTP server and upload files from a client to the IRF fabric.

To FTP upload a file from a client:

On the IRF fabric:

1. Enable FTP server.

```
<Sysname> system-view
[Sysname] ftp server enable
```

2. Configure a local FTP user account:

Create the user account.

```
[Sysname] local-user abc
```

Set its password and specify the FTP service.

```
[Sysname-luser-manage-abc] password simple pwd
```

```
[Sysname-luser-manage-abc] service-type ftp
```

Assign the **network-admin** user role to the user account for uploading file to the working directory of the server.

```
[Sysname-luser-manage-abc] authorization-attribute user-role network-admin
```

```
[Sysname-luser-manage-abc] quit
```

```
[Sysname] quit
```

On the PC:

3. Log in to the IRF fabric (the FTP server) in FTP mode.

```
c:\> ftp 10.10.110.1
Connected to 10.10.110.1.
220 FTP service ready.
User(10.10.110.1:(none)):abc
331 Password required for abc.
Password:
230 User logged in.
```

4. Enable the binary file transfer mode.

```
ftp> binary
200 TYPE is now 8-bit binary.
```

5. Upload the file (for example, **newest.ipe**) to the root directory of the flash memory on the master switch.

```
ftp> put newest.ipe
200 PORT command successful
150 Connecting to port 10002
226 File successfully transferred
ftp: 32133120 bytes sent in 64.58 secs (497.60 Kbytes/sec).
```

TFTP download from a server

To download a file from a TFTP server, for example, the server at 10.10.110.1:

1. Run a TFTP server program on the server, specify the working directory, and copy the file, for example, **newest.ipe**, to the directory.

2. On the IRF fabric, execute the **tftp** command in user view to download the file to the root directory of the flash memory on the master switch.

```
<Sysname> tftp 10.10.110.1 get newest.ipe
```

```
Press CTRL+C to abort.
```

% Total	% Received	% Xferd	Average Speed		Time	Time	Time	Current
			Dload	Upload	Total	Spent	Left	Speed
100 30.6M	0 30.6M	0 0	143k	0	--:--:--	0:03:38	--:--:--	142k

Upgrading the software images

To upgrade the software images:

1. Specify the upgrade image file (**newest.ipe** in this example) used at the next startup for the master switch, and assign the M attribute to the boot and system images in the file.

```
<Sysname> boot-loader file flash:/newest.ipe slot 1 main
```

```
Verifying image file.....Done.
```

```
Images in IPE:
```

```
boot.bin
```

```
system.bin
```

```
This command will set the main startup software images. Continue? [Y/N]:y
```

```
Add images to target slot.
```

```
Decompressing file boot.bin to flash:/boot.bin.....Done.
```

```
Decompressing file system.bin to flash:/system.bin.....Done.
```

```
The images that have passed all examinations will be used as the main startup software images at the next reboot on slot 1.
```

2. Specify the upgrade image file as the main startup image file for each subordinate switch. This example uses IRF member 2. (The subordinate switches will automatically copy the file to the root directory of their flash memories.)

```
<Sysname> boot-loader file flash:/newest.ipe slot 2 main
```

```
Verifying image file.....Done.
```

```
Images in IPE:
```

```
boot.bin
```

```
system.bin
```

```
This command will set the main startup software images. Continue? [Y/N]:y
```

```
Add images to target slot.
```

```
Decompressing file boot.bin to flash:/boot.bin.....Done.
```

```
Decompressing file system.bin to flash:/system.bin.....Done.
```

```
The images that have passed all examinations will be used as the main startup software images at the next reboot on slot 2.
```

3. Enable the software auto-update function.

```
<Sysname> system-view
```

```
[Sysname] irf auto-update enable
```

```
[Sysname] quit
```

This function checks the software versions of member switches for inconsistency with the master switch. If a subordinate switch is using a different software version than the master, the function

propagates the current software images of the master to the subordinate as main startup images. The function prevents software version inconsistency from causing the IRF setup failure.

4. Save the current configuration in any view to prevent data loss.

```
<Sysname> 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):
flash:/startup.cfg exists, overwrite? [Y/N]:y
Validating file. Please wait.....
Saved the current configuration to mainboard device successfully.
Slot 2:
Save next configuration file successfully.
```

5. Reboot the IRF fabric to complete the upgrade.

```
<Sysname> 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...

The system automatically loads the .bin boot and system images in the .ipe file and sets them as the startup software images.
```

6. Execute the **display version** command in any view to verify that the current main software images have been updated (details not shown).

NOTE:

The system automatically checks the compatibility of the Boot ROM image and the boot and system images during the reboot. If you are prompted that the Boot ROM image in the upgrade image file is different than the current Boot ROM image, upgrade both the basic and extended sections of the Boot ROM image for compatibility. If you choose to not upgrade the Boot ROM image, the system will ask for an upgrade at the next reboot performed by powering on the switch or rebooting from the CLI (promptly or as scheduled). If you fail to make any choice in the required time, the system upgrades the entire Boot ROM 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**—9,600
 - **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

```
*****
*
*          HPE 5510-24G-4SFP+ HI BOOTROM, Version 111          *
*
*****
Copyright (c) 2010-2015 Hewlett-Packard Development Company, L.P.
```

```
Creation Date       : Feb  3 2015, 19:43:00
CPU Clock Speed     : 1000MHz
Memory Size         : 2048MB
Flash Size          : 512MB
CPLD Version        : 001
PCB Version         : Ver.A
Mac Address         : 70f96dfacbdb
```

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 111
*
*****
```

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 *HPE 5510HI 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.

Option	Tasks
2. Select image to boot	<ul style="list-style-type: none"> 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	<p>Delete the current next-startup configuration files and restore the factory-default configuration.</p> <p>This option is available only if password recovery capability is disabled.</p>
6. Enter BootRom upgrade menu	Access the Boot ROM upgrade menu.
7. Skip current system configuration	<p>Start the switch without loading any configuration file.</p> <p>This is a one-time operation and takes effect only for the first system boot or reboot after you choose this option.</p> <p>This option is available only if password recovery capability is enabled.</p>
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	<p>Skip the authentication for console login.</p> <p>This is a one-time operation and takes effect only for the first system boot or reboot after you choose this option.</p> <p>This option is available only if password recovery capability is enabled.</p>
Ctrl+R: Download image to SDRAM and run	<p>Download a system software image and start the switch with the image.</p> <p>This option is available only if password recovery capability is enabled.</p>
Ctrl+Z: Access EXTENDED ASSISTANT MENU	<p>Access the EXTENDED ASSISTANT MENU.</p> <p>For options in the menu, see Table 12.</p>

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).
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 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.

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:
```

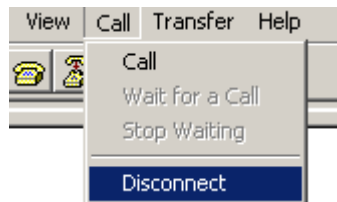
```
1.* 9600
2. 19200
```


3. 38400
4. 57600
5. 115200
0. Return to boot menu

Enter your choice(0-5):5

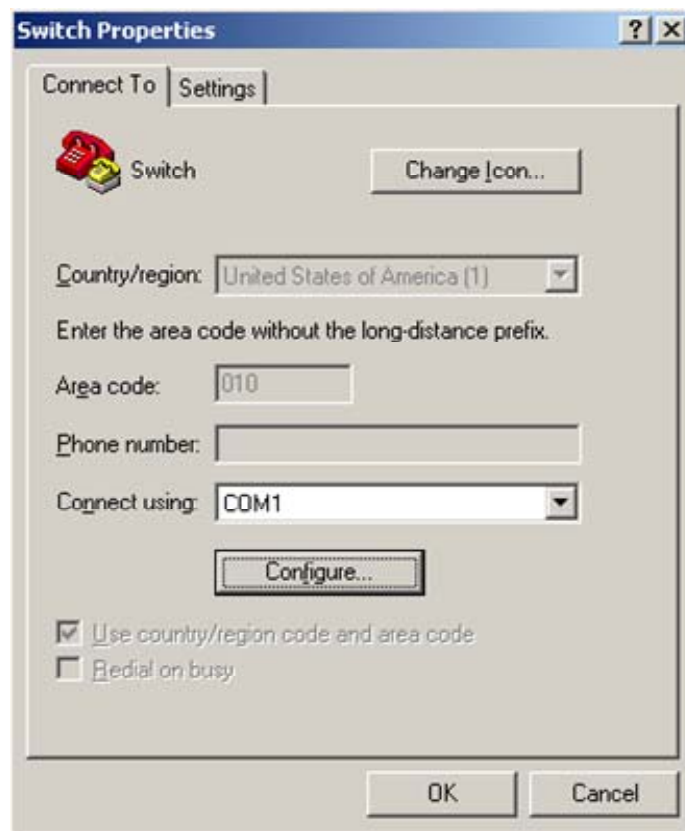
3. Select an appropriate download rate, for example, enter **5** to select 115200 bps.
Download baudrate is 115200 bps
Please change the terminal's baudrate to 115200 bps and select XMODEM protocol
Press enter key when ready
4. Set the serial port on the terminal to use the same baud rate and protocol as the console port. If you select 9600 bps 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



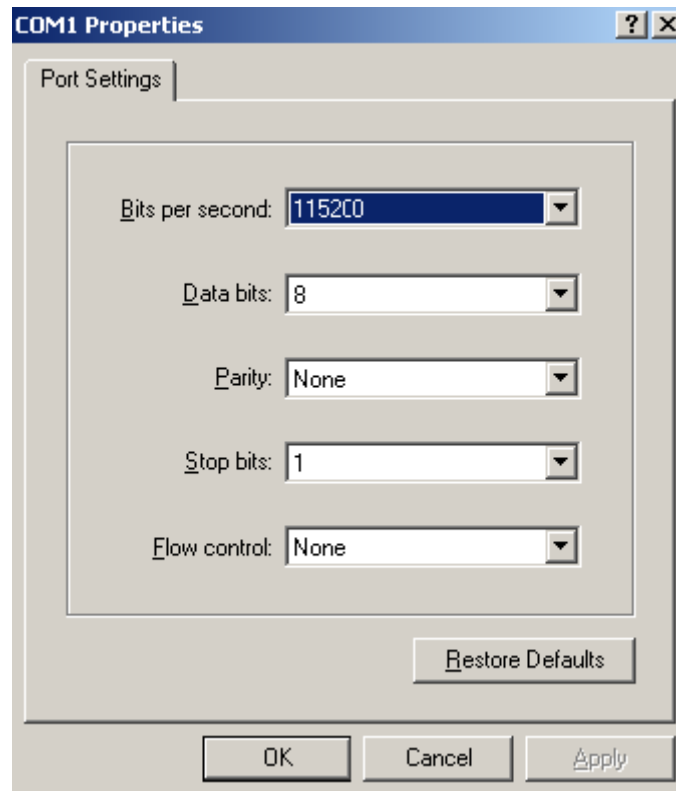
- b. Select **File > Properties**, and in the **Properties** dialog box, click **Configure**.

Figure 3 Properties dialog box



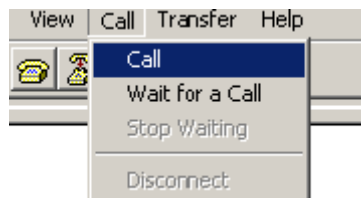
- c. Select **115200** from the **Bits per second** list and click **OK**.

Figure 4 Modifying the baud rate



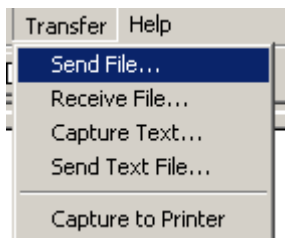
- d. Select **Call** > **Call** to reestablish the connection.

Figure 5 Reestablishing the connection



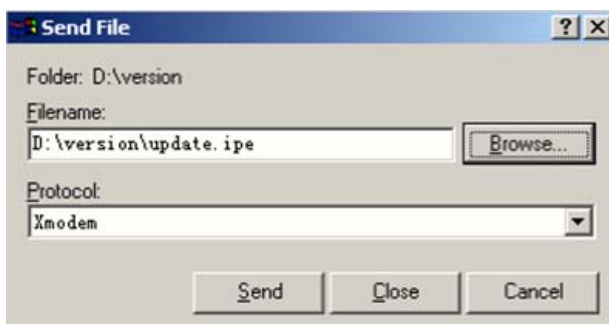
5. Press **Enter**. The following prompt appears:
Are you sure to download file to flash? Yes or No (Y/N):Y
6. Enter **Y** to start downloading the file. (To return to the Boot menu, enter **N**.)
Now please start transfer file with XMODEM protocol
If you want to exit, Press <Ctrl+X>
Loading ...CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
7. Select **Transfer** > **Send File** in the HyperTerminal window.

Figure 6 Transfer menu



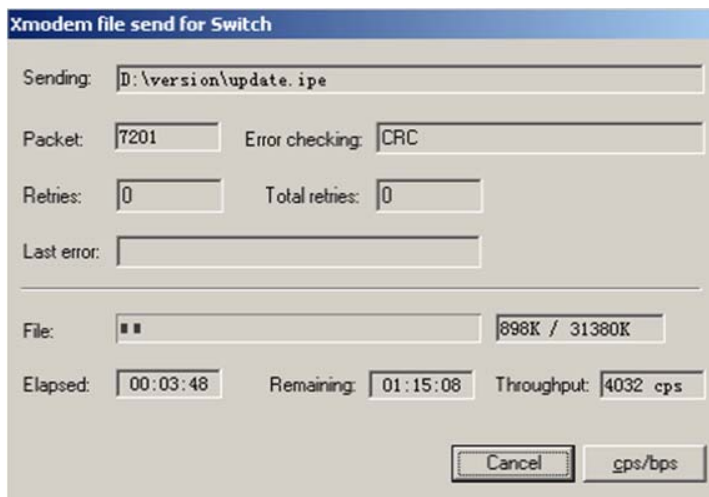
8. In the dialog box that appears, click **Browse** to select the source file, and select **Xmodem** from the **Protocol** list.

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 9600 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 are 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 9600 bps, restore it to 9600 bps as described in step 5.a. If the baud rate is 9600 bps, skip this step.
-

NOTE:

The console port rate reverts to 9600 bps 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.

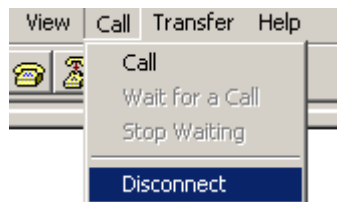
Download baudrate is 115200 bps

Please change the terminal's baudrate to 115200 bps and select XMODEM protocol

Press enter key when ready

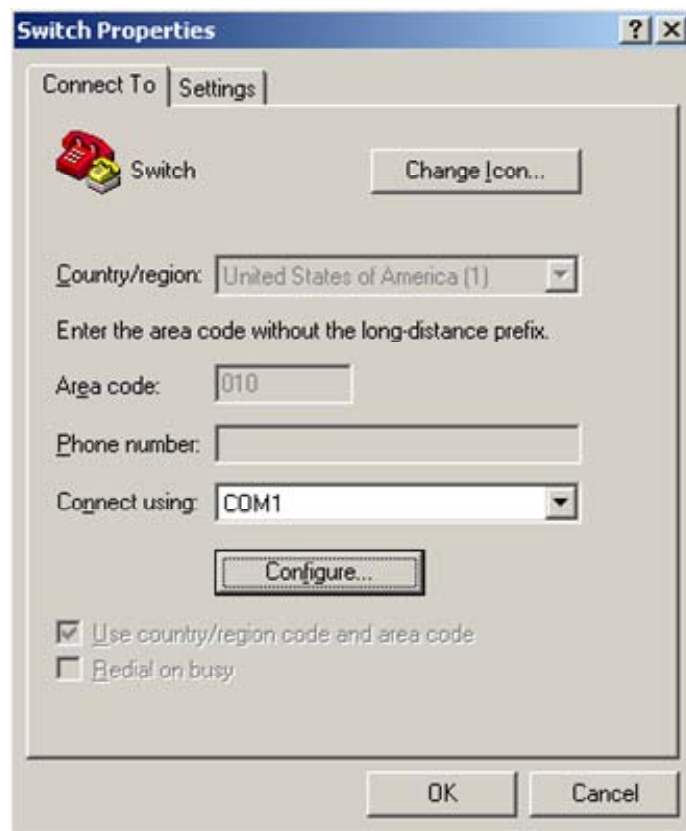
5. Set the serial port on the terminal to use the same baud rate and protocol as the console port. If you select 9600 bps as the download rate for the console port, skip this task.
 - a. Select **Call** > **Disconnect** in the HyperTerminal window to disconnect the terminal from the switch.

Figure 9 Disconnecting the terminal from the switch



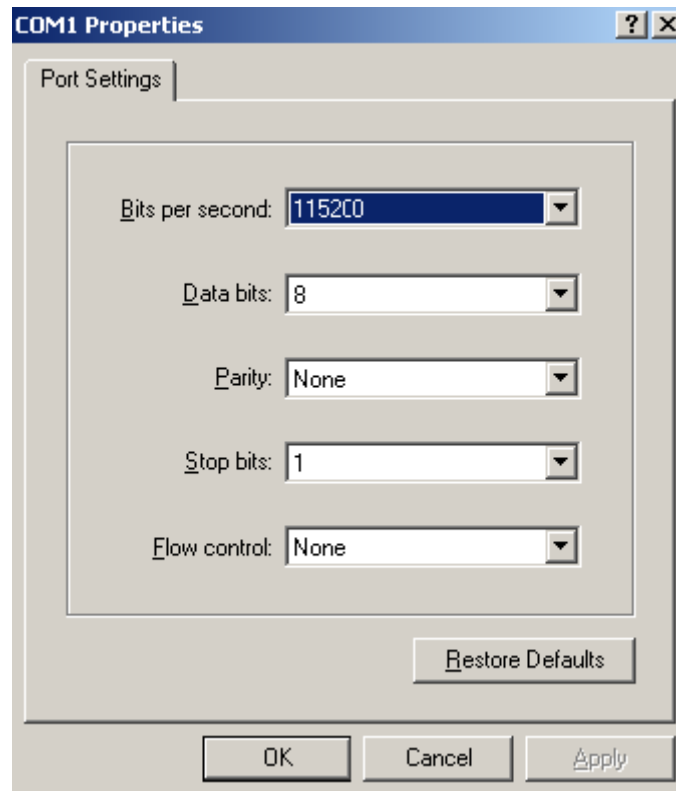
- b. Select **File** > **Properties**, and in the **Properties** dialog box, click **Configure**.

Figure 10 Properties dialog box



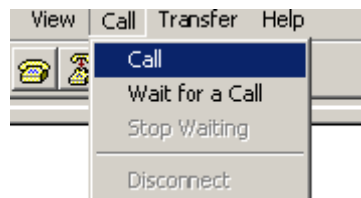
- c. Select **115200** from the **Bits per second** list and click **OK**.

Figure 11 Modifying the baud rate



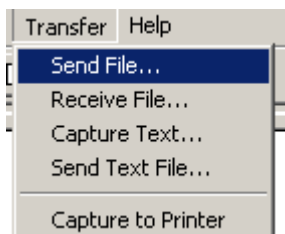
- d. Select **Call** > **Call** to reestablish the connection.

Figure 12 Reestablishing the connection



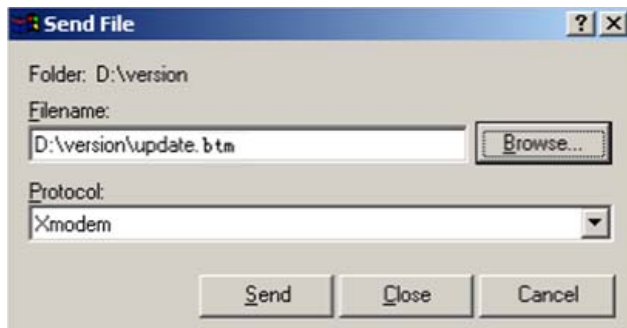
- 6. Press **Enter** to start downloading the file.
Now please start transfer file with XMODEM protocol
If you want to exit, Press <Ctrl+X>
Loading ...CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
- 7. Select **Transfer** > **Send File** in the HyperTerminal window.

Figure 13 Transfer menu



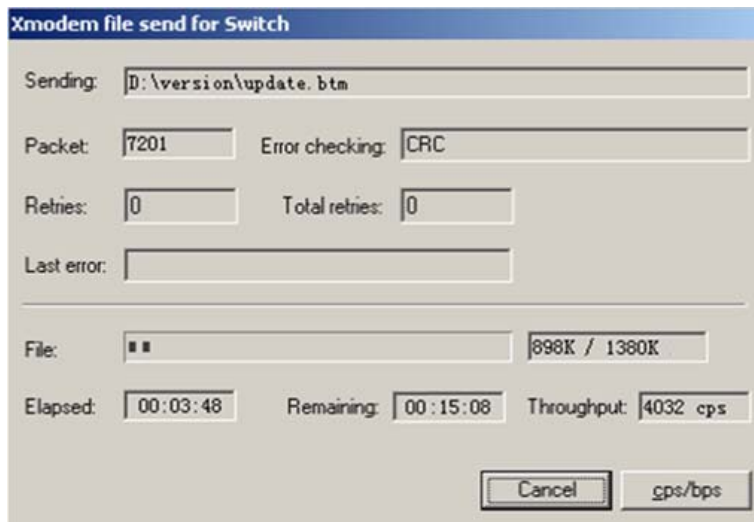
8. In the dialog box that appears, click **Browse** to select the source file, and select **Xmodem** from the **Protocol** list.

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 ...CCCCCCCCCCCCCCCC ...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 9600 bps, restore it to 9600 bps at the prompt, as described in step 4.a. If the baud rate is 9600 bps, skip this step.
Please change the terminal's baudrate to 9600 bps, press ENTER when ready.

NOTE:

The console port rate reverts to 9600 bps 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.