

HP 5900_5920-CMW710-R2209

Release Notes

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This document describes the features, restrictions and guidelines, open problems, and workarounds for version R2209. 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 5900_5920-CMW710-R2209 Release Notes (Software Feature Changes)> and the documents listed in "[Related documentation](#)."

Version information

Version number

HP Comware Software, Version 7.1.035, Release 2209

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
5900_5920-CMW710-R2209	5900_5920-CMW710-R2208P01	2013-7-4	Release version	<p>Added features:</p> <ul style="list-style-type: none"> • Specifying an IRF member device for forwarding the traffic on the current interface • Configuring the TRILL announcing VLANs • Configuring a TRILL access port with the alone attribute • Specifying ignored VLANs on a Layer 2 aggregate interface • Configuring IS-IS generic cryptographic authentication • Managing security logs • Configuring the SSH server to use CA certificates for client authentication • Configuring the DHCP relay and DHCP server functions on management Ethernet ports • Matching the Hop-by-Hop Options headers in IPv6 packets • Enabling auto discovery of SCSI-FCP information • Configuring the default FC4 information for a node • Supporting soft zoning <p>Modified features:</p>

Version number	Last version	Release Date	Release type	Remarks
				<ul style="list-style-type: none"> Specifying the host name string Fixed bugs.
5900_5920-CM W710-R2208P01	5900_5920-CMW7 10-R2208	2013-2-25	Release version	Fixed bugs.
5900_5920-CM W710-R2208	5900_5920-CMW7 10-R2207	2013-1-28	Release version	Added features: <ul style="list-style-type: none"> Verifying the correctness and integrity of the file Enabling log file overwrite-protection IPsec IKE FIPS Fixed bugs.
5900_5920-CM W710-R2207	5900_5920-CMW7 10-E2206P02	2012-12-21	Release version	Added features: <ul style="list-style-type: none"> Enabling the session-control feature Configuring MD5 authentication for BGP Modified features: Displaying the nodes on downlink interfaces and their mapped uplink interfaces Displaying node login information Fixed bugs.
5900_5920-CM W710-E2206P02	5900_5920-CMW7 10-E2206	2012-10-12	ESS version	Fixed bugs.
5900_5920-CM W710-E2206	5900_5920-CMW7 10-R2108P03	2012-9-14	ESS version	Added and modified features.
5900_5920-CM W710-R2108P03	5900_5920-CMW7 10-R2108P02	2012-8-15	Release version	Modified a feature: Duplex and rate configuration for 40GE ports. Fixed bugs.
5900_5920-CM W710-R2108P02	5900_5920-CMW7 10-R2108P01	2012-5-29	Release version	Added a new feature: Enabling display of debugging information on the current terminal. Fixed bugs.
5900_5920-CM W710-R2108P01	5900_5920-CMW7 10-R2108	2012-4-9	Release version	Fixed bugs.
5900_5920-CM W710-R2108	First release	2012-1-20	Release version	Added a new feature: Configuring the maximum number of equal-cost routes. Modified features. Fixed bugs.
5900_5920-CM W710-E2107	Controlled release	2011-12-15	Release version	None

Hardware and software compatibility matrix

Table 2 Hardware and software compatibility matrix

Item	Specifications	
Product family	HP 5900 Series	HP 5920 Series
Hardware platform	5900AF-48XG-4QSFP+	
	5900AF-48XG-4QSFP+ TAA	5920AF-24XG
	5900AF-48G-4XG-2QSFP+	5920AF-24XG TAA
	5900AF-48XGT-4QSFP+	
Memory	2GB	
Flash	512M	256M
Boot ROM version	Version 124 or higher (Note: Perform the command display version command in any view to view the version information. Please see Note②)	
Host software	5900_5920-CMW710-R2209.ipe	
iMC version	iMC PLAT 5.2 (E0401P05)	
	iMC UAM 5.2 (E0402P05)	
	iMC TAM 5.2 (E0401)	
	iMC NTA 5.2 (E0401P03)	
iNode version	iNode PC 5.2 (E0408)	
Web version	None	
OAA version	None	

To display version information for the system software and Boot ROM of 5900/5920:

```
<Sysname> display version
HP Comware Software, Version 7.1.035, Release 2209          ----- Note②
Copyright (c) 2010-2013 Hewlett-Packard Development Company, L.P.
HP 5900AF-48XG-4QSFP+ Switch uptime is 0 weeks, 0 days, 0 hours, 13 minutes
Last reboot reason : User reboot
```

```
Boot image: flash:/5900_5920-cmw710-boot-r2209.bin
Boot image version: 7.1.035P09, Release 2209
System image: flash:/5900_5920-cmw710-system-r2209.bin
System image version: 7.1.035, Release 2209
```

```
Slot 1
HP 5900AF-48XG-4QSFP+ Switch with 2 Processors
Last reboot reason : User reboot
1024M   bytes SDRAM
4M      bytes Nor Flash Memory
512M   bytes Nand Flash Memory
Config Register points to Nand Flash
```

Hardware Version is Ver.A
CPLDA Version is 002, CPLDB Version is 002
BootRom Version is 124 ----- Note②
[SubSlot 0] 48SFP Plus+4QSFP Plus Hardware Version is Ver.A

Upgrading restrictions and guidelines

1. If you want to use the **issu** command to upgrade the software from R2207 to R2208 or later, you must first load the R2207H01 patch on R2207 and then execute the **issu** command to upgrade the software. This requirement is not available if you use the **boot-loader** command or use the BootRom menu to upgrade the software.

Hardware feature updates

R2209

None

R2208P01

Support HP 5900AF-48XGT-4QSFP+ switch.

R2208

This release supports the following switches:

- HP 5900AF-48XG-4QSFP+ TAA
- HP 5920AF-24XG TAA
- 5900AF-48G-4XG-2QSFP+

R2207

None

E2206P02

None

E2206

None

R2108P03

None

R2108P02

None

R2108P01

None

R2108

None

E2107

None

Software feature and command updates

For more information about the software feature and command update history, see HP 5900_5920-CMW710-R2209 Release Notes (Software Feature Changes).

MIB updates

Table 3 MIB updates

Item	MIB file	Module	Description
5900_5920-CMW710-R2209			
New	None	None	None
Modified	None	None	None
5900_5920-CMW710-R2208P01			
New	rfc1213.mib	RFC1213-MIB	Added sysObjectID in system Group of RFC1213-MIB.
Modified	None	None	None
5900_5920-CMW710-R2208			
New	None	None	None
Modified	None	None	None

Item	MIB file	Module	Description
5900_5920-CMW710-R2207			
New	None	None	None
Modified	None	None	None
5900_5920-CMW710-E2206P02			
New	None	None	None
Modified	None	None	None
5900_5920-CMW710-E2206			
	hh3c-ip-address.mib	HH3C-IP-ADDRESS-MIB	
	hh3c-splat-inf.mib	HH3C-LswINF-MIB	
	hh3c-splat-mam.mib	HH3C-LswMAM-MIB	
	rfc2674-qbridge.mib	Q-BRIDGE-MIB	
	hh3c-lag.mib	HH3C-LAG-MIB	
	ieee8023-lag.mib	IEEE8023-LAG-MIB	
	rfc1493-bridge.mib	BRIDGE-MIB	
	rfc2674-pbridge.mib	P-BRIDGE-MIB	
	hh3c-storm-constrain.mib	HH3C-STORM-CONSTRAIN-MIB	
	hh3c-if-ext.mib	HH3C-IF-EXT-MIB	
	hh3c-splat-mstp.mib	HH3C-LswMSTP-MIB	
	hh3c-splat-devm.mib	HH3C-LswDEVM-MIB	
	hh3c-flash-man.mib	HH3C-FLASH-MAN-MIB	
	hh3c-common-system.mib	HH3C-COMMON-SYSTEM-MIB	
	hh3c-splat-mix.mib	HH3C-LswMix-MIB	
	hh3c-lsw-dev-adm.mib	HH3C-LSW-DEV-ADM-MIB	
New	hh3c-transceiver-info.mib	HH3C-TRANSCEIVER-INFO-MIB	For detailed information, see <Comware V7 S5820V2&S5830V2 MIB Companion V1.01(E2206)>
	rfc4273-bgp4.mib	BGP4-MIB	
	hh3c-splat-vlan.mib	HH3C-LswVLAN-MIB	
	hh3c-mac-information.mib	HH3C-MAC-INFORMATION-MIB	
	hh3c-dldp2.mib	HH3C-DLDP2-MIB	
	hh3c-lpbkdt.mib	HH3C-LPBKDT-MIB	
	rfc2096-ip-forward.mib	IP-FORWARD-MIB	
	hh3c-sys-man.mib	HH3C-SYS-MAN-MIB	
	rfc4750-ospf.mib	OSPF-MIB	
	rfc4750-ospf-trap.mib	OSPF-TRAP-MIB	
	rfc4022-tcp.mib	TCP-MIB	
	rfc4113-udp.mib	UDP-MIB	
	rfc4044-fc-mgmt.mib	FC-MGMT-MIB	
	rfc4747-t11-fc-virtual-fabric.mib	T11-FC-VIRTUAL-FABRIC-MIB	
	rfc4936-t11-fc-zone-server.mib	T11-FC-ZONE-SERVER-MIB	
	hh3c-acl.mib	HH3C-ACL-MIB	
		DOT3-OAM-MIB	

Item	MIB file	Module	Description
	rfc4878-dot3-oam.mib	IEEE8021-CFM-MIB	
	ieee8021-cfm.mib	IEEE8021-CFM-V2-MIB	
	ieee8021-cfm-v2.mib	HH3C-TRAP-MIB	
	hh3c-trap.mib	HH3C-NTP-MIB	
	hh3c-ntp.mib	T11-FC-NAME-SERVER	
	rfc4438-t11-fc-name-server.mib	T11-FC-ROUTE-MIB	
	rfc4625-t11-fc-route.mib	HH3C-FCOE-MIB	
	hh3c-fcoe.mib		
		RFC1213-MIB	Added ipNetToMediaTable, atTable, interfaces Group, ipRouteTable, icmp Group in RFC1213-MIB. Added tcpConnTable in tcp Group, udpTable in udp Group of RFC1213-MIB. Modified description of ipRoutingDiscards, ipForwarding, ipDefaultTTL, ipInDelivers, ipOutRequests, ipReasmTimeout, ipReasmReqds, ipReasmOKs, ipFragOKs, ipFragCreates in ip Group of RFC1213-MIB. Modified description of tcpRtoAlgorithm, tcpRtoMin, tcpRtoMax, tcpMaxConn, tcpActiveOpens, tcpPassiveOpens, tcpAttemptFails, tcpEstabResets, tcpCurrEstab, tcpRetransSegs in tcp Group of RFC1213-MIB.
Modified	rfc1213.mib		
	rfc2233-if.mib		
	lldp-ext-med.mib		
	hh3c-splat-mam.mib		
		LLDP-EXT-MED-MIB	
		IF-MIB	Modified lldpXMedLocLocationTable in LLDP-EXT-MED-MIB.
		H3C-LswMAM-MIB	Modified description of ifDescr, ifPromiscuousMode in

Item	MIB file	Module	Description
			IF-MIB.
		Supported Notification	Modified description of hh3cdot1qTpFdbSetOperate in H3C-LswMAM-MIB.
			Deleted hh3cEntityExtMemAllocatedFailed, hh3cEntityExtECCParityAlarm, hh3cMasterPowerNormal, hh3cMasterPowerNormal, hh3cBackBoardModeSetFailure, hh3cBackBoardModeSetOK in Supported Notification.
			Modified description of hh3cBoardTemperatureLower, hh3cBoardTemperatureFromLowerToNormal, hh3cBoardTemperatureHigher, hh3cBoardTemperatureFromHigherToNormal, hh3cEntityExtCritLowerTempThresholdNotification, hh3cEntityExtTemperatureTooLow in Supported Notification.
5900_5920-CMW710-R2108P03			
New	None	None	None
Modified	None	None	None
5900_5920-CMW710-R2108P02			
New	None	None	None
Modified	rfc1213.mib	RFC1213-MIB	Modify the description of MIB node "sysObjectID" For detailed information, see <Comware V7 S5820V2&S5830V2 MIB Companion(V0.10)>

Item	MIB file	Module	Description
5900_5920-CMW710-R2108P01			
New	rfc1493-bridge.mib	BRIDGE-MIB	
	rfc2674-pbridge.mib	P-BRIDGE-MIB	
	rfc2674-qbridge.mib	Q-BRIDGE-MIB	
	hh3c-splat-inf.mib	HH3C-LswINF-MIB	
	hh3c-splat-vlan.mib	HH3C-LswVLAN-MIB	
	hh3c-sys-man.mib	HH3C-SYS-MAN-MIB	
	hh3c-ip-address.mib	HH3C-IP-ADDRESS-MIB	For detailed information, see
	hh3c-mac-information.mib	HH3C-MAC-INFORMATION-MIB	<Comware V7
	hh3c-splat-devm.mib	HH3C-LswDEVM-MIB	S5820V2&S5830V2
	hh3c-splat-mam.mib	HH3C-LswMAM-MIB	MIB
	hh3c-splat-mstp.mib	HH3C-LswMSTP-MIB	Companion(V0.10)>
	ieee8023-lag.mib	IEEE8023-LAG-MIB	
	hh3c-flash-man.mib	HH3C-FLASH-MAN-MIB	
	rfc2013-udp.mib	UDP-MIB	
rfc4022-tcp-mib.mib	TCP-MIB		
rfc2925-disman-ping.mib	DISMAN-PING-MIB		
Modified	rfc1213.mib	RFC1213-MIB	Added "Address Translation Group", "ICMP Group", " ARP MIB", " tcpConnTable", "udpTable". Modified Description for Scalar objects of tcp Group.
5900_5920-CMW710-R2108			
New	First release	First release	First release
Modified	First release	First release	First release
5900_5920-CMW710-E2107			
New	Controlled release	Controlled release	Controlled release
Modified	Controlled release	Controlled release	Controlled release

Operation changes

Operation changes in R2209

- Added support for negotiating pause capability on PHY chips.
Before modification, pause capability negotiation is not supported. No pause packets are sent to the device when congestion occurs even if flow control is enabled.
After modification, enabling flow control also enables pause capability negotiation, and disabling flow control also disables pause capability negotiation.

- Added support for examining and restoring a parity error in the following entries: L3_ENTRY_ONLY, ING_L3_NEXT_HOP, EGR_L3_NEXT_HOP, MPLS_ENTRY, VFP_POLICY_TABLE, and FP_POLICY_TABLE.

Before modification, a parity error in the specified entries affects traffic forwarding.

After modification, a parity error in the specified entries is corrected automatically and does not affect traffic forwarding.

Operation changes in R2208P01

None.

Operation changes in R2208

- Added support for inserting a 10G module into a 10GE port and configuring the port rate as 1000 Mbps after the port goes up.

Operation changes in R2207

- Changed the default state of the Telnet server from enabled to disabled.
- Changed the default state of UDP ports 514 and 1812:
 - Before modification, if the switch starts up without loading a configuration file, UDP port 514 is always enabled for sending syslogs, and UDP port 1812 is always enabled for AAA session control function.
 - After modification, if the switch starts up without loading a configuration file, UDP port 514 is enabled only when syslogs are sent, and UDP port 1812 is enabled only when AAA session control function is enabled.
- Changed the display of control characters `\r \n` for syslogs on a log host
 - Before modification, the control characters `\r \n` in syslogs are displayed as characters on a log host.
 - After modification, the control characters `\r \n` in syslogs are displayed as Enter or Space.
- Changed the identification method for the privilege attributes issued by the TACACS server for 5900_5920 devices
 - Before modification, the device identifies the attributes "role=network-admin" or "role=level-15" issued by the TACACS server as the administrator privileges.
 - After modification, the device identifies the attribute "privilege level=15" issued by the TACACS server as the administrator privileges, and also support identification of customized attributes.

Operation changes in E2206P02

None

Operation changes in E2206

- Changed the value range for max-ecmp-num.

For 22xx releases, the max-ecmp-num ranges from 1 to 32.

For 21xx releases, the max-ecmp-num can be configured only as 8, 16, or 32.

After a downgrade from 22xx to 21xx, if the 21xx release does not support the max-ecmp-num previously configured for 22xx, the max-ecmp-num is restored to the default value of 8 on the switch.

- Configuration changed for SSH users using public-key authentication
 - On 21xx releases, an SSH user using public-key authentication can log in to the switch without needing to configure a corresponding local user.
 - On 22xx releases, an SSH user using public-key authentication must have a corresponding local user configured and have right authorization assigned before the user can log in to the switch.

Operation changes in R2108P03

None

Operation changes in R2108P02

None

Operation changes in R2108P01

None

Operation changes in R2108

This release provides a more secure way to enter passwords. Two keywords **simple** and **cipher** are introduced. If the simple keyword is specified, you enter passwords in plain text. If the cipher keyword is specified, you enter passwords in cipher text. If you have configured cipher text passwords in earlier releases, you must configure them again in plain text because the release upgrade cannot recover the cipher text passwords. They are displayed in cipher text in BuildRun.

Operation changes in E2107

None

Restrictions and cautions

- PFC does not work on an IRF fabric where **burst-mode** is enabled, the traffic egress port belongs to a 5920 switch, and the traffic ingress port belongs to another switch.
- If more than 7 VSANs are configured on a 5900_5920 switch's VFC interface that connects to HP storage device, the 5900_5920 switch cannot establish a connection to HP storage.

Use one of the following methods to avoid this problem:

- Change the default VLAN on the FCoE port of HP storage to a VLAN that is permitted by the connected port on the 5900_5920 switch.

- Change the configuration on 5900_5920 switch; configure one VSAN on the VFC interface that connects to HP storage device.

Open problems and workarounds

LSV7D007532

- Symptom: The Speed and Duplex field displayed is not right.
- Condition: Enable LLDP on device and execute **display LLDP local-information** to get the LLDP information of the neighbor.
- Workaround: None.

LSV7D008033

- Symptom: CTRL+C or CTRL+K can't break the SSH connect.
- Condition: Start a SSH connect to a SSH server and type CTRL+C or CTRL+K.
- Workaround: None.

LSV7D004742

- Symptom: After an FCF switch is rebooted in an FC network with continuous traffic, the switch fails to discover neighbor nodes.
- Condition: This symptom occurs after an FCF switch is rebooted in an FC network with continuous traffic.
- Workaround: None.

List of resolved problems

Resolved problems in R2209

LSV7D002299

- Symptom: A switch discards IPv6 RADIUS packets from the RADIUS server.
- Condition: This symptom occurs when the following conditions exist:
 - IPv6 RADIUS authentication is enabled on the switch.
 - The IPv6 address of the RADIUS server is configured on the switch
 - The switch is connected to the RADIUS server.

LSV7D002322

- Symptom: Re-applying an ACL to a port fails and the port prompts "Not enough resources are available to complete the operation."
- Condition: This symptom occurs when the following conditions exist:
 - The **permit tcp source-port range** rules in the ACL have reached the maximum number.
 - Apply the ACL to a port, delete the ACL application, and then re-apply the ACL to the port.

LSV7D002698

- Symptom: A ping operation fails if an IPv4 domain name that has more than 20 characters or an IPv6 domain name that has more than 46 characters is specified in the **ping** command.
- Condition: This symptom occurs when the following conditions exist:
 - An IPv4 domain name that has more than 20 characters and an IPv6 domain name that has more than 46 characters are configured with the **ip host** command.
 - Use the **ping** command to ping the IPv4 domain name or use the **ping ipv6** command to ping the IPv6 domain name.

LSV7D000636

- Symptom: Some layer 3 multicast packets get lost during an ISSU.
- Condition: This symptom occurs when the following conditions exist:
 - Layer 3 multicasting is enabled.
 - The VLAN of the layer 3 egress interface is enabled with IGMP snooping.
 - Use the **issu** command to perform an ISSU.

LSV7D003354

- Symptom: An aggregate interface fails to receive layer-2 protocol packets such as STP, LACP, and LLDP during an ISSU.
- Condition: This symptom occurs when the following conditions exist:
 - An aggregate interface is configured and is enabled with layer-2 protocols such as STP, LACP, and LLDP.
 - Use the **issu** command to perform an ISSU.

LSV7D002862

- Symptom: An interface that is not connected with a cable might go up, and after the interface is connected with a cable, the interface fails to forward traffic.
- Condition: This symptom might occur if the interface is not connected with a cable for a long time.

LSV7D004788

- Symptom: VFC interfaces cannot go up for a long time and traffic is interrupted when plenty of VFC interfaces are configured and the aggregate interfaces bound to the VFC interfaces go down and then go up.
- Condition: This symptom occurs when more than 512 VFC interfaces are configured and the aggregate interfaces bound to the VFC interfaces go down and then go up.

LSV7D004787

- Symptom: All VSANs except VSAN 1 are deleted on an IRF fabric.
- Condition: This symptom occurs when the following operations are performed:
 - a. Set up an IRF fabric and configure VSANs excluding VSAN 1.
 - b. Delete the .mdb files of all IRF member switches and save the configuration.
 - c. Perform a master/subordinate switchover.

LSV7D004784

- Symptom: A 5900/5920 switch fails to access disk devices after the FC-MAP value is modified for all switches in an FC network.

- Condition: This symptom occurs when the **fcoe fcmmap** command is used to modify the FC-MAP value for all switches in an FC network where the disk devices can be accessed.

LSV7D001546

- Symptom: The VFC interfaces of a 5900/5920 switch cannot go up when the switch connects to a specific type of Emulex network adapter.
- Condition: This symptom occurs when a switch with the VFC interfaces correctly configured connects to an Emulex network adapter which sends Discovery Solicitations larger than 2158 bytes.

LSV7D004740

- Symptom: A P9500 disk array cannot be successfully registered with a 5900/5920 switch.
- Condition: This symptom occurs when a 5900/5920 switch is connected to a P9500 disk array in an FCoE network.

LSV7D004237

- Symptom: a 5900/5920 switch fails to connect to an Emulex OCe11100 network adapter.
- Condition: This symptom occurs when the switch connects to an Emulex OCe11100 network adapter in an FCoE network.

LSV7D004121

- Symptom: When a 5900/5920 switch connects to a Cisco Nexus 3048 switch through a dynamic aggregate link, the ports in the dynamic aggregation group on the 5900/5920 switch cannot become Selected and do not forward traffic.
- Condition: This symptom occurs when a 5900/5920 switch connects to a Cisco Nexus 3048 switch through a dynamic aggregate link.

LSV7D000786

- Symptom: The VTY window does not display log information.
- Condition: This symptom occurs if a VTY user logs in to the switch and clicks the VTY window to disable it from displaying log information.

LSV7D005705

- Symptom: The user mode processes related to a software patch cannot start up.
- Condition: This symptom occurs if you repeatedly load and unload the software patch with the **install active** and **install deactivate** commands.

LSV7D006670

- Symptom: After a server is rebooted in an FCoE network, some network adapters of the server are not successfully registered on the connected 5900/5920 switch.
- Condition: This symptom occurs if the network adapters of the server are connected to the 5900/5920 switch through an aggregate interface.

LSV7D005163

- Symptom: Some specific operations on an IRF fabric cause the console port to display information with a delay of 1 hour.
- Condition: This symptom occurs if the **display diagnostic-information** command is executed on a console and some other commands are executed on another console.

LSV7D006241

- Symptom: BFD flaps when the configured BFD sessions reach the upper limit of 32.
- Condition: This symptom occurs when the configured BFD sessions reach the upper limit of 32.

LSV7D006314

- Symptom: A switch fails to download a file through TFTP.
- Condition: This symptom occurs when the switch acts as the TFTP client and the **tftp get** command is executed to download a file from the TFTP server on a PC.

LSV7D000673

- Symptom: If an IRF fabric where the value specified by **max-ecmp-num** is not eight is rebooted, the IRF fabric might fail to be re-created, and the system prompts "The system-working-mode and max-ecmp-num configurations should be the same on devices in one IRF. Please check them on the neighbor device connected to IRF-port 2."
- Condition: This symptom might occur if an IRF fabric where the value specified by **max-ecmp-num** is not eight is rebooted.

LSV7D00837

- Symptom: The switch fails to forward TRILL multicast and broadcast packets during an ISSU.
- Condition: This symptom occurs if an ISSU is performed when TRILL is enabled.

LSV7D001858

- Symptom: When the **undo port-security enable** command is executed on non-contiguous interfaces, the switch fails to execute the command on the first non-contiguous interface and the subsequent interfaces.
- Condition: This symptom occurs if the **undo port-security enable** command is executed on non-contiguous interfaces where the **port-security** command has been configured.

LSV7D004127

- Symptom: When an SSH user logs in to the switch by using the password-publickey authentication mode, the system does not display any notification of the pending password expiration as it should do.
- Condition: This symptom occurs when the notification period is set with the **password-control alert-before-expire** command, and the SSH user logs in to the device within this period.

LSV7D004123

- Symptom: After a reboot, the settings for a BGP-VPN instance get lost.
- Condition: This symptom occurs if the following conditions exist:
 - The settings for the BGP-VPN instance are configured in a configuration file that is specified as the startup configuration file with the **startup saved-configuration** command.
 - The switch is rebooted.

LSV7D003403

- Symptom: After a master/subordinate switchover on an IRF fabric, the automatically learned secure MAC addresses get lost.
- Condition: This symptom occurs if the following conditions exist:

- The **port-security port-mode autolearn** command is configured on interfaces to automatically learn secure MAC addresses.
- The interfaces have learned secure MAC addresses.
- A master/subordinate switchover is performed on the IRF fabric.

LSV7D005236

- Symptom: The switch discards ARP requests from the same source although the number of ARP requests from the source does not reach the threshold specified with the **arp source-mac threshold** command.
- Condition: This symptom occurs if you first use the **arp source-mac threshold** command to set a threshold that is smaller than the number of ARP requests from the source within 5 seconds so the switch discards ARP requests from the source, and then you use the **arp source-mac threshold** command to set a threshold that is bigger than the number of ARP requests from the source within 5 seconds.

LSV7D004597

- Symptom: A local SSH user can use the SCP client to upload and download files when no RBAC user role is configured for this user.
- Condition: This symptom occurs when no RBAC user role is configured for the SSH local user.

LSV7D004133

- Symptom: An FTP user fails to log in to the switch.
- Condition: This symptom occurs if the following procedure is performed:
 - a. Create an FTP user when **password-control** is not enabled.
 - b. Enable **password-control**.
 - c. Use the FTP user account to log in to the switch.

LSV7D002501

- Symptom: The MANU SERIAL NUMBER field in the output of the **display device manuinfo** command displays garbled characters.
- Condition: This symptom can be seen when you execute the **display device manuinfo** command.

LSV7D002502

- Symptom: The debugging information is displayed even if the display of debug information on the current terminal is disabled.
- Condition: This symptom can be seen after the **undo terminal debugging** command is executed.

LPD047965

- Symptom: A ping operation from a PC to the connected VLAN interface of a switch has packet loss.
- Condition: This symptom occurs if the ping operation is performed when an ISSU is performed on the switch.

LSV7D003823

- Symptom: Both UP/DOWN and up/down exist in the port UP/DOWN syslog information. In this release, all of the up/down information use lowercase letters.
- Condition: This symptom can be seen when port up/down events occur.

LSV7D004004

- Symptom: The switch might reboot upon receiving packets that have the Ethernet type 0xFCFB and are smaller than 80 bytes.
- Condition: This symptom might occur when the switch receives packets that have the Ethernet type 0xFCFB and are smaller than 80 bytes.

LSV7D004743

- Symptom: During an SNMP walk on 1.3.6.1.2.1.144 MIB, the FCROUTED process reboots and the system prompts "The service FCROUTED status failed :abnormal exit!"
- Condition: This symptom occurs during an SNMP walk on 1.3.6.1.2.1.144 MIB.

LSV7D004147

- Symptom: After an ISSU on an IRF fabric, the **display arp** command and the **display arp count** command display different numbers of ARP entries.
- Condition: This symptom occurs if the IRF fabric processes ARP packets during the ISSU.

LSV7D004838

- Symptom: An SNMP walk on entPhysicalVendorType MIB returns an error value for a power module that is powered off.
- Condition: This symptom occurs when two power modules are installed on the switch and one power module is powered off.

LSV7D004854

- Symptom: During an ISSU, a ping operation to a directly connected OSPF neighbor might fail and the OSPF neighbor flaps.
- Condition: This symptom might occur when you upgrade the software from R2207 to a later version through ISSU.

LSV7D002898

- Symptom: The message "DID associated with the license does not belong to this device or card" is displayed during software upgrade.
- Condition: This symptom might occur when you upgrade software for the HP-brand switches.

LSV7D0040027

- Symptom: A remote authenticated user can switch to a high privilege level that is not authorized to the user.
- Condition: This symptom occurs if the following procedure is performed:
 - a. Configure the user level to 0 on the authentication server.
 - b. Configure remote AAA authentication by using the **super authentication-mode scheme** command for user role switching.
 - c. Switch the user level to 15 by using the **super level-15** command.

LPD062939

- Symptom: The managerid in the deassociation response that the switch sends to the CAS is incorrect, and the VMs cannot go offline.
- Condition: This symptom occurs if you modify the network policy for online VMs on the CAS.

TCD003182

- Symptom: The switch fails to use a new network policy to make VMs go online.
- Condition: This symptom occurs after you modify the network policy for VMs on the CAS.

TCD003199

- Symptom: The online VMs on a switch get offline due to expiration.
- Condition: This symptom occurs if you use a script to simulate a VM that goes online and offline on the CAS until the IMC resources are used up and IMC cannot respond to any requests.

LSV7D004808

- Symptom: If a switch where the configured VFC interfaces reach the maximum number is rebooted, the switch takes more time to complete the reboot.
- Condition: This symptom occurs if a switch where the configured VFC interfaces reach the maximum number is rebooted.

LSV7D04790

- Symptom: The network adapter cannot log in after logging out because an FCF switch cannot reply with Clear packets carrying the VN information.
- Condition: This symptom occurs when the following conditions exist:
 - The FCF switch does not have the login information of the network adapter.
 - The state of the network adapter is login. In this case, the network adapter sends keepalive packets to the switch.

LSV7D004786

- Symptom: When the switch sends Reject packets to a downstream node, the corresponding proxy node and uplink-to-downlink interface mapping are not deleted.
- Condition: This symptom occurs when the switch is operating in NPV mode and any of the following conditions exists:
 - The fdisc packet on the proxy node times out because no response is received.
 - The proxy node receives Reject packets for the fdisc packets.
 - The switch receives Reject packets from the uplink interface.

LSV7D004785

- Symptom: The **FC4-type** field of the **display fc name-service database** command is empty for the ENode.
- Condition: This symptom can be seen if a master/subordinate switchover occurs when the ENode uses FLOGI to register with the IRF fabric operating as an FC switch.

LSV7D004739

- Symptom: When two FCF switches are merged, the information is not correctly synchronized on the name server.
- Condition: This symptom occurs when two FCF switches are merged.

LSV7D004737/ LSV7D002424/ LSV7D004856/ LSV7D004001/ LSV7D004697/ LSV7D004693

- Symptom: ACLs generated to protect against a protocol packet attack cannot be deleted from the hardware after the protocol packet attack stops.
- Condition: This symptom can be seen after a protocol packet attack stops.

LSV7D002735

- Symptom: The **ip forward-broadcast** command takes effect on the master in an IRF fabric, but it does not take effect on subordinate switches.
- Condition: This symptom occurs if you do not save the configuration and reboot the IRF fabric after you configure the command.

LSV7D004124

- Symptom: The downstream RB cannot figure out the peer port through calculation.
- Condition: This symptom occurs when the following conditions exist:
 - The upstream RB sends out multicast queries and multicast requests.
 - The downstream RB sends out multicast request packets.
 - When the LSPs generated on the upstream RB (the multicast source) carry plenty of multicast receivers, the VLANs to which the port connecting to the multicast source belongs are changed, and the **Interested VLANs** field in the LSPs generated on the upstream RB does not carry the new VLANs.

LSV7D002989

- Symptom: IGMP snooping requests are discarded on a port if the source MAC of the requests is the MAC address of the MAC authenticated device.
- Condition: This symptom occurs when port security, 802.1X authentication, and MAC authentication are enabled on the port.

LSV7D003701

- Symptom: Attack protection does not process UDP attacks destined to ports 1812, 1645, and 1646, or process the TCP attacks destined to port 49.
- Condition: This symptom can be seen when the switch is attacked by UDP attack packets destined to ports 1812, 1645, and 1646, or TCP attack packets destined to port 49.

LSV7D004129

- Symptom: When **fc?** is entered at the CLI, the CLI does not display the keywords starting with **fc**.
- Condition: This symptom occurs when **fc?** is entered at the CLI on an FCoE switch operating in NPV mode.

LSV7D004599

- Symptom: A console user is logged out.
- Condition: This symptom occurs when a console user uses the super command to switch to a non-existent user role and enters a password.

LSV7D004143

- Symptom: The VRRP group state information shows a backup router that has an IP address of 0.0.0.0.
- Condition: This symptom can be seen when the following conditions exist:
 - The BOOTP client and a VRRP group are configured on a Layer 3 interface.
 - The Layer 3 interface fails to obtain an IP address, and uses the default IP address.

LSV7D003241/LSV7D003239

- Symptom: The LACP process might fail to start up, or the LACP state of a port might change.

- Condition: This symptom might occur if the LACP process is continually restarted through the process restart command or loading patches.

LSV7D003428

- Symptom: Unexpected reboot occurs occasionally.
- Condition: This symptom might occur when patches are installed and uninstalled repeatedly in kernel mode.

LSV7D008576

- Symptom: A security log administrator has the highest privilege level because it can modify the configuration file through FTP.
- Condition: This symptom can be seen after a security log administrator created using the **authorization-attribute user-role security-audit** command logs in to the switch through SFTP and then modifies the configuration file to get the privilege level.

LSV7D008455

- Symptom: The **mad enable** command cannot be executed.
- Condition: This symptom occurs if the user specified domain ID includes a space.

LSV7D007747

- Symptom: When the alarm threshold for security log file usage set by the **info-center security-logfile alarm-threshold** command is exceeded, security logs are printed so fast that the security log administrator cannot operate the switch.
- Condition: This symptom occurs when the alarm threshold for security log file usage set by the **info-center security-logfile alarm-threshold** command is exceeded and the user is a security log administrator.

LSV7D007746

- Symptom: A common user can delete log files with the **delete /unreserved** command.
- Condition: This symptom can be seen when a common user deletes log files with the **delete /unreserved** command.

LSV7D007672

- Symptom: When a user enters the correct password to log in to the switch through SSH, the switch displays "Failed password for log from x.x.x.x port x ssh".
- Condition: This symptom occurs when the following conditions exist if the user is not authorized to use SSH.

LSV7D007670

- Symptom: Using the **scp** command to transmit a file to an SCP server fails and the switch does not prompt for a username and password.
- Condition: This symptom occurs if the name of the file comprises 255 characters.

LSV7D008447

- Symptom: Even though TRILL GR is enabled, TRILL traffic is lost during a compatible ISSU on a standalone switch.
- Condition: This symptom might occur when a compatible ISSU is performed on a standalone switch.

LSV7D007995

- Symptom: Using the **sysname** command to change the system name to a string of 30 characters fails.
- Condition: This symptom occurs when the **sysname** command is used to change the system name to a string of 30 characters.

LSV7D007991

- Symptom: After the SCP client on a switch loses the connection to an SCP server, the SCP client does not stop file transfer.
- Condition: This symptom can be seen after the SCP client on a switch loses the connection to an SCP server.

LSV7D007911

- Symptom: The **Current usage** field in the output from the **display security-logfile summary** command displays an incorrect value.
- Condition: This symptom can be seen when the security log file exceeds 256 bytes.

LSV7D006937

- Symptom: The state of IRF physical ports continually flaps between up and down.
- Condition: This symptom might occur when the 10-GE ports that are split from a 40-GE interface are used for IRF connection.

LSV7D004963

- Symptom: When an incoming packet larger than 3K bytes is delivered to the CPU, some content of the packet becomes incorrect.
- Condition: This symptom can be seen when an incoming packet larger than 3K bytes is delivered to the CPU.

LSV7D008558

- Symptom: After the switch reboots due to watchdog expiration, the displayed anomaly information is incorrect.
- Condition: This symptom occurs after the switch reboots due to watchdog expiration.

LSV7D007713

- Symptom: After OSPFv3 BFD is enabled, the OSPFv3 neighbor state changes between **Full** and **Exstart** repeatedly.
- Condition: This symptom occurs if the switch receives a Type-9 LSA requesting Ref1 during OSPFv3 DD packet exchange.

LSV7D007548

- Symptom: The switch generates an insufficient resources message when an ACL rule that is not supported by the device is inserted before a supported rule.
- Condition: This symptom occurs when an ACL rule that is not supported by the device is inserted before a supported rule.

Resolved problems in R2208P01

LSV7D000674

- Symptom: After the **run switchover** command is executed on an IRF master during an ISSU from E2206P02 to R2207, the global router ID is changed, and the system prompts "Please restart OSPF if you want to make the new Router ID take effect." If you reboot the OSPF process as prompted, traffic interruption occurs.
- Condition: This symptom occurs if you reboot the OSPF process as prompted after the **run switchover** command is executed on an IRF master during an ISSU from E2206P02 to R2207.

LSV7D000772

- Symptom: After MAD detects an IRF split, it places all split IRF fabrics in Recovery state.
- Condition: This symptom might occur if the split is caused by removing the IRF connection cables of the master or shutting down IRF physical ports on the master.

LSV7D001937

- Symptom: After CPLD software upgrade reboot, the **display version** command output shows "Cryptographic module self-tests failed" in the "Last reboot reason" field.
- Condition: This symptom can be seen if you execute the **display version** command after CPLD software upgrade reboot.

LSV7D002614

- Symptom: When two 5900_5920 switches are connected through 10 GE transceivers, if one of the two fibers is plugged out, only the port at the receiving fiber side repeatedly goes up and down.
- Condition: This symptom occurs if one of the two fibers between two 5900_5920 switches connected through 10 GB transceivers is plugged out.

LSV7D000834

- Symptom: After an IRF fabric that comprises 5900_5920 switches is rebooted, the **display trill mfib transit** output shows that some TRILL multicast forwarding entries do not have port information.
- Condition: This symptom might occur after an IRF fabric that comprises 5900_5920 switches is rebooted.

LSV7D001163

- Symptom: During the reboot of an IRF subordinate switch, some processes might fail to start up, and the following information appears:

```
System is starting...
Service VLAN was skipped because it failed to start within 30 minutes.
Service LPDT was skipped because it failed to start within 30 minutes.
Service LLDP was skipped because it failed to start within 30 minutes.
Service EVB was skipped because it failed to start within 30 minutes.
User interface aux8 is available.
```

- Condition: This symptom might occur if an IRF subordinate switch is rebooted multiple times.

LSV7D001521

- Symptom: When an aggregate interface uses the default load sharing method, load sharing performed on the aggregate interface is uneven.

- Condition: This symptom occurs when the aggregate interface uses the default load sharing method.

Resolved problems in R2208

LSV7D001891

- Symptom: A switch in an IRF fabric that might abnormally reboot during an ISSU from R2207 to R2208.
- Condition: This symptom might occur during an ISSU from R2207 to R2208 on an IRF fabric.

LSV7D000579

- Symptom: The **display this** command executed on a VFC interface does not show the interface that is bound to the VFC interface.
- Condition: This symptom can be seen if the following procedure is performed:
 - a. Bind a VFC interface to a 40G interface.
 - b. Divide the 40G interface into four 10G interfaces.
 - c. Execute the **display this** command on the VFC interface.

LSV7D001664

- Symptom: If you select "3. Display all files in flash" or "4. Delete file from flash" on the BootROM menu when a file that has a name longer than 128 bytes exists, the CLI fails to respond.
- Condition: This symptom occurs if you select "3. Display all files in flash" or "4. Delete file from flash" on the BootROM menu when a file that has a name longer than 128 bytes exists.

LSV7D001941

- Symptom: Some ports in an aggregation group cannot forward traffic although the **display interface** information is right.
- Condition: This symptom might occur when the following conditions exist.
 - The IRF fabric comprises two or more 5900/5920 switches.
 - The LACP protocol is enabled on the IRF fabric.
 - An aggregation group comprises ports on the IRF member switches and all the ports are in selected state.
 - The others ports connecting to 5900/5920 turn UP and DOWN, which cause the ports in aggregation group to turn UP and DOWN by turns.

Resolved problems in R2207

LPD046453

- Symptom: Static MAC addresses configured in EVB s-channel view are not counted in MAC address statistics displayed by the **display mac-address vlan *vlan-id* count** command.
- Condition: This symptom can be seen if you execute the **display mac-address vlan *vlan-id* count** command after configuring static MAC addresses in EVB s-channel view.

LPD047760

- Symptom: After an incompatible ISSU, the service loop group configuration on a port gets lost, and the corresponding tunnel interface is down.
- Condition: This symptom can be seen after an incompatible ISSU, for example, an ISSU from E2206 to E2206P02.

LPD044554

- Symptom: BFD flapping occurs when large numbers of packets are delivered to the CPU.
- Condition: This symptom might occur when the following conditions exist:
 - The minimum interval for receiving and sending single-hop BFD control messages is small (such as 100 ms).
 - The single-hop BFD multiplier is small (such as the default multiplier 3).
 - Many BFD sessions exist.
 - Large numbers of packets are delivered to the CPU.

LPD044442

- Symptom: When multiple VTY users operate a switch, one or more VTY users might get no responses.
- Condition: This symptom might occur if multiple VTY users log in to the switch and execute the **display diagnostic-information** or **more** command.

LPD048933

- Symptom: When **burst-mode** is enabled on an IRF fabric, traffic might affect receiving and forwarding of protocol packets, resulting in VRRP and OSPF flapping.
- Condition:
- This symptom might occur if the following conditions exist:
 - The IRF fabric comprises both 5900 and 5920 switches with **burst-mode** is enabled.
 - Traffic enters the fabric from other switch in the IRF fabric at a rate higher than 100 Mbps and leaves the fabric from the 5920 switch.

LPD047664

- Symptom: The **reset packet-drop interface** command executed on a port clears all statistics on the port.
- Condition: This symptom occurs if the **reset packet-drop interface** command is executed on a port.

LPD047880

- Symptom: After an IRF master/subordinate switchover, LLDP flapping might occur.
- Condition: This symptom might occur after an IRF master/subordinate switchover.

LPD048844

- Symptom: A specific ACL cannot be assigned on a port.
- Condition: This symptom might occur when the following conditions exist:
 - The ACL comprises three rules and the second rule contains the **counting** keyword.
 - The ACL is assigned to two ports in turn.
 - The second port deletes the ACL and gets the ACL reassigned, but the second and third rules cannot be assigned.

LPD049107

- Symptom: When the **irf link-delay** is configured as 10 seconds, if the IRF cable is removed and inserted within 10 seconds, the IRF fabric splits.
- Condition: This symptom occurs if the IRF cable is removed and inserted within 10 seconds when the **irf link-delay** is configured as 10 seconds.

LPD049536

- Symptom: Packet loss occurs during an ISSU on an IRF fabric in an FCoE network.
- Condition: This symptom occurs during an ISSU from E2206P02 to this release.

LPD049647

- Symptom: After a port configured with **flow-control** goes down and up, it cannot send pause frames during congestion.
- Condition: This symptom can be seen if a port configured with **flow-control** goes down and up and congestion occurs on the port.

LPD049851

- Symptom: The 5900_5920 and A5800_5820X switches cannot operate in an IPv6 VRRP group because they use incompatible IPv6 VRRP versions.
- Condition: This symptom occurs because 5900_5920 and A5800_5820X switches use incompatible IPv6 VRRP versions.

LPD049883

- Symptom: An SNMP walk on MOR_MIB_FLASHCOPYREMOTEUSERPASSWORD returns a plaintext password.
- Condition: This symptom can be seen after an SNMP walk on MOR_MIB_FLASHCOPYREMOTEUSERPASSWORD.

LPD050020

- Symptom: After an OSPFv3 virtual link is removed and an interface is added to the OSPFv3 area, the interface cannot establish a neighbor relationship.
- Condition: This symptom can be seen if you remove an OSPFv3 virtual link with the **undo vlink-peer** command and then add an interface to the OSPFv3 area with the **ospfv3 area** command.

LPD050478

- Symptom: A multicast ingress port configured with **mld-snooping source-deny** can still forward multicast traffic.
- Condition: This symptom can be seen on a multicast ingress port configured with **mld-snooping source-deny**.

LPD050835

- Symptom: The output of the **display packet-drop** command does not show packet loss information for a 1000 Base-T port of 5900AF-48G-4XG-2QSFP+ which acts as an egress port to forward known unicast traffic.
- Condition: This symptom can be seen in the output of the **display packet-drop** command when congestion occurs on a 1000 Base-T port of 5900AF-48G-4XG-2QSFP+ which acts as an egress port to forward known unicast traffic.

LPD051899

- Symptom: A **flow-control** enabled port on a **burst-mode** enabled 5920 cannot send pause frames when congestion occurs.
- Condition: This symptom occurs if the following operations are performed:
 - a. Enable **burst-mode** globally on the 5920.
 - b. Enable **flow-control** on a port, save the configuration, and reboot the switch.After the switch reboots, the port enabled with **flow-control** cannot send pause frames when congestion occurs.

LPD052173

- Symptom: Packet loss occurs on a switch in a TRILL network, if a port of the switch is added to the TRILL network or a TRILL port where no traffic passes is shut down when TRILL traffic exists on the switch.
- Condition: This symptom can be seen on a switch in a TRILL network if a port of the switch is added to the TRILL network or a TRILL port where no traffic passes is shut down when TRILL traffic exists on the switch.

LPD051005

- Symptom: When an FCF switch formed by two concatenated switches is used to connect the server to the storage, if the VFC port connected to the storage goes down and up and then the VFC port connected to the server goes down and up, the server fails to access the storage.
- Condition: This symptom can be seen if an FCF switch formed by two concatenated switches is used to connect the server to the storage, the VFC port connected to the storage goes down and up, and then the VFC port connected to the server goes down and up.

LPD051844

- Symptom: When a switch acts as an FCF switch that connects the server to the storage, if one of the two ports connected to the server/storage goes down and up, the server fails to access the storage.
- Condition: This symptom occurs if the switch uses two links to connect the storage and server, and one link goes down and up.

LPD051865

- Symptom: If a device in an FCoE network receives from an Emulex NIC an FLOGI register packet that has a SID of 2E3131, the NIC fails to register on the device.
- Condition: This symptom occurs if a device in an FCoE network receives from an Emulex NIC an FLOGI register packet that has a SID of 2E3131

LSV7D000102

- Symptom: Deleting an aggregate interface does not delete the multicast MAC addresses configured on the aggregate interface.
- Condition: This symptom can be seen if you delete an aggregate interface where multicast MAC addresses are configured.

LSV7D000398

- Symptom: When traffic redirect is enabled for a link aggregation group, if an IRF member switch that has ports selected by the link aggregation group is rebooted, the member ports can forward traffic before they are re-selected by the link aggregation group.
- Condition: This symptom might occur when the following conditions exist:

- The IRF fabric comprises two or more 5900/5920 switches.
- The link-aggregation traffic redirect function is enabled by the **link-aggregation lacp traffic-redirect-notification enable** command on the IRF fabric.
- An aggregation group comprises ports on the IRF member switches and all the ports are in selected state.
- An IRF member switch is rebooted.

LSV7D000429

- Symptom: The CPU usage stays at 17% when TCP port 53 is attacked by using echoserver.
- Condition: This symptom can be seen when TCP port 53 is attacked by using echoserver.

LSV7D000437

- Symptom: When a master/subordinate switchover is performed on an IRF fabric that is enabled with FCoE, the user interface prints "The service FCZONE status failed : abnormal exit!"
- Condition: This symptom occurs if a master/subordinate switchover is performed on an IRF fabric that is enabled with FCoE.

LSV7D000467

- Symptom: If the **display diagnostic-information** command is executed when command accounting is enabled, the commands embedded in **display diagnostic-information** are also recorded.
- Condition: This symptom can be seen if the **display diagnostic-information** command is executed when command accounting is enabled.

LSV7D000469

- Symptom: An SNMP walk on dot1qTpFdbTable MIB cannot return static MAC entries.
- Condition: This symptom occurs during an SNMP walk on dot1qTpFdbTable MIB.

LSV7D000489

- Symptom: Command authorization for a logged-in Telnet user fails.
- Condition: This symptom can be seen if the command authorization method is set to **hwtaacs-scheme** and **local** and the service type for the user is set to **ssh** and **telnet**.

LSV7D000523

- Symptom: After an IPv6 ACL is assigned, deleting the first rule of the ACL cannot release corresponding hardware ACL resources, but adding a rule to the ACL occupies new hardware ACL resources.
- Condition: This symptom can be seen when you add or delete rules of an assigned IPv6 ACL.

ZDD05489

- Symptom: A port in an aggregation group cannot be selected, resulting in forwarding failure.
- Condition: This symptom might occur when the following procedure is performed:
 - Configure two dynamic aggregation groups A and B that each connect to a different device. The aggregation group A comprises at least two ports, and one port (port 1) repeatedly goes up and down.
 - Remove a port (port 2) from the aggregation group A and add it to the aggregation group B.
 - Add another port to the aggregation group A.
 After the above configuration, port 2 changes to unselected state and cannot forward packets.

LPD048529

- Symptom: After an aggregate interface is deleted, some static MAC addresses configured on that aggregate interface are not deleted.
- Condition: This symptom might be seen after an aggregate interface configured with many static MAC addresses is deleted

LPD048530

- Symptom: The queue scheduling commands **qos sp**, **qos wrr**, and **qos wfq** fail to be configured on 5900AF-48G-4XG-2QSFP+ and the system prompts "The operation completed unsuccessfully."
- Condition: This symptom can be seen when you execute commands **qos sp**, **qos wrr**, and **qos wfq** on 5900AF-48G-4XG-2QSFP+.

LPD048553

- Symptom: When TRILL is enabled, multicast MAC entries generated for unknown multicast traffic cannot be aged.
- Condition: This symptom can be seen when the following conditions exist:
 - A port is enabled with TRILL.
 - The **igmp-snooping drop-unknown** command is configured in the VLAN to which the port belongs.
 - Multicast MAC entries are generated for unknown multicast traffic passing the switch.

LPD049071

- Symptom: When GTS is configured, the **display qos queue-statistics interface outbound** command does not display any information in the Dropped field.
- Condition: This symptom can be seen if you use the **qos gts queue** command to configure queue-based GTS on an interface and then use the **display qos queue-statistics interface outbound** command to display the outgoing traffic statistics of each queue on the interface when the traffic exceeds the rate limit.

LPD 049094

- Symptom: If an IRF member device is powered off when a QoS policy is applied to the IRF fabric, the QoS policy cannot be applied to any member device. To apply the QoS policy, you must restart the IRF fabric or configure and apply the QoS policy again.
- Condition: This symptom might be seen if an IRF member device is powered off when a QoS policy is applied to the IRF fabric.

LPD049218

- Symptom: If an aggregate interface goes down and up, ARP packets passing through the aggregate interface might return, resulting in incorrect ARP entries.
- Condition: This symptom might occur if an aggregate interface goes down and up or an interface card where member ports of the aggregate interface reside is rebooted.

LPD049373

- Symptom: When a TPID value in SVLAN tags fails to be configured on a port because of insufficient resources, configuring a TPID value in VLAN tags on an aggregate interface succeeds. However, the TPID configuration cannot be applied to the member ports of the aggregate interface. As a result, the member ports of the aggregate interface are down because the aggregate interface configuration is different from the member port configuration.

- Condition: This symptom might be seen if you use the **qinq ethernet-type service-tag** command on two ports to configure different TPID values in SVLAN tags to reach hardware specifications, and then configure a TPID value in VLAN tags on an aggregate interface.

LPD049375

- Symptom: In TRILL multicast application, a change of VLAN settings on a port results in incorrect Interested VLANs TLV in LSPs sent by the switch.
- Condition:

LPD049717

- Symptom: If command accounting is enabled and a user passes HWTACACS authentication and logs in, the user's privilege level and NAS-Portname displayed on the ACS are 0 and port0 respectively, which are incorrect.
- Condition: This symptom can be seen if a user logs in to the switch after passing HWTACACS authentication when command accounting is enabled (by using the **command accounting** command).

LPD049773

- Symptom: After an IRF master/subordinate switchover, the global router ID is changed and the system prompts "OSPF 1 New router ID elected, please restart OSPF if you want to make the new Router ID take effect." If you reboot the OSPF process as prompted, traffic interruption occurs.
- Condition: This symptom can be seen if you reboot the OSPF process as prompted after an IRF master/subordinate switchover.

LPD049826

- Symptom: When DHCP snooping is enabled globally, users accessing through QinQ cannot obtain IP addresses from the DHCP server.
- Condition: This symptom can be seen if DHCP snooping is enabled globally and the uplink and downlink ports are enabled with QinQ.

LPD049827

- Symptom: When **command accounting** is enabled, the commands that users failed to execute because a higher privilege level is needed are also accounted.
- Condition: This symptom can be seen when **command accounting** is enabled and some users execute commands that need a higher privilege level.

LPD049972

- Symptom: If the TRILL-enabled multicast source and clients use different distribution trees, multicast entries cannot be created.
- Condition: This symptom can be seen if the TRILL-enabled multicast source and clients use different distribution trees.

LPD050084

- Symptom: If you create a zone and use the **member fcid ffcxx** command to assign a device to the zone in FCoE application, the error message "The value of FCID should range from 010000 to EFFFFFF" is displayed.
- Condition: This symptom might occur if you create a zone and use the **member fcid ffcxx** command to assign a device to the zone.

LPD050401

- Symptom: When 1:1 VLAN mapping and the maximum number of MAC addresses are configured on a port, the port learns incorrect MAC addresses, resulting in traffic interruption.
- Condition: This symptom can be seen if you configure 1:1 VLAN mapping and the maximum number of MAC addresses on a port without configuring the **qinq enable** command.

LPD051811

- Symptom: Selected ports in a link aggregation group are blocked, resulting in traffic interruption.
- Condition: This symptom might occur if the following procedure is performed:
 - a. Add multiple ports to a link aggregation group.
 - b. Deselect some ports.
 - c. Use the **link-aggregation port-priority** command to increase the priorities of the unselected ports to make them to replace the selected ports.

LPD049844

- Symptom: When a remote TACACS server is used for priority-based privilege management, users accessing through an A5800_5820X or Cisco device can obtain management privileges from the TACACS server but users accessing through a 5900_5920 cannot.
- Condition: This symptom can be seen when a remote TACACS server is used for priority-based privilege management.

LSV7D001187

- Symptom: Some operations might conduct the CLI display incomplete.
- Condition: This symptom might occur if the following procedure is performed:
 - a. Connect the IRF device with other devices through aggregated links.
 - b. The selected ports in the link aggregation group go up and down for several times.
 - c. Multiple users log into the device for operation.

LPD034688

- Symptom: When the PCIE link has strong interference, the Watchdog times out and reboots. The display version command shows "Last reboot reason:Watchdog timeout reboot".
- Condition: This symptom might be seen when the PCIE link has strong interference.

Resolved problems in E2206P02

LPD045035

- Symptom: Packet loss occurs on the 5920 switch where burst mode is enabled.
- Condition: This symptom might occur when the following conditions exist:
 - The burst mode is globally enabled.
 - The ingress and egress ports are in the range of 1 to 8, 9 to 16, or 17 to 24.
 - Congestion occurs on one or multiple ports that work at 1G rate and reside in the same range as the ingress and egress ports, and the outbound rate on other 10G ports in the same range is higher than 1G.

LPD044957

- Symptom: After login through SFTP, a user has the right to execute the **pwd** command, which is wrong.
- Condition: This symptom might occur when the following conditions exist:
 - The SFTP user logs in to the switch through password/public key authentication.
 - The network operator is authorized by RBAC.

LPD046857

- Symptom: When MAC authentication failures occurred, the **display mac-authentication interface** command does not show MAC authentication failure times in the Authentication attempts field.
- Condition: This symptom exists in the output from the **display mac-authentication interfaces** command when MAC authentication failures have occurred.

LPD046393

- Symptom: Specific FTP operations might cause the switch to reboot.
- Condition: This symptom might occur if the following procedure is performed:
 - a. FTP to a PC from an IRF fabric comprising 5900/5920 switches in ring topology.
 - b. Execute the **dir** command.
 - c. Shut down the management interface.
 - d. Perform get operations multiple times.

LPD046976

- Symptom: A level-9 user that telnets to the switch can execute the **password-control** command.
- Condition: This symptom can be seen if a level-9 user telnets to the switch.

LPD047834

- Symptom: After a system reboot, a TRILL-enabled aggregate interface is involved in STP calculation. TRILL-enabled interfaces should not participate in STP calculation.
- Condition: This symptom might occur after you configure TRILL and STP and then reboot the switch.

LPD046159

- Symptom: Executing the **display interface** command on one of the four 10G ports divided from a 40G port shows "Media type is optical fiber."
- Condition: This symptom might occur if the following procedure is performed:
 - a. Use the **using tengige** command in 40G port view to create four 10G ports.
 - b. Reboot the switch.
 - c. Insert a QSFP+ to SFP+ cable into the 40G port to make the port up.
 - d. Execute the **display interface** command on a 10G port divided from the 40G port.

LPD047784

- Symptom: Executing the **boot-loader** command to specify the startup ipe image on a subordinate switch in an IRF fabric does not take effect.
- Condition: This symptom occurs if you execute the **boot-loader** command on a subordinate switch before executing this command on the master switch.

Resolved problems in E2206

None

Resolved problems in R2108P03

LPD26673

- Symptom: The CLI of an IRF fabric is suspended when the configuration file is saved.
- Condition: This symptom might occur if the configuration file is saved on an IRF fabric that comprises multiple 5900 and 5920 switches.

LPD037817

- Symptom: A 5900/5920 switch in an IRF fabric works abnormally after a reboot during an automatic software upgrade.
- Condition: This symptom might occur if a 5900 switch in an IRF fabric reboot during an automatic software upgrade and the IRF fabric comprises both 5900 and 5920 switches.

LPD036160

- Symptom: When an anomaly occurs, the switch cannot recover by reboot itself automatically.
- Condition: This symptom occurs when an anomaly occurs on a switch.

LPD37801

- Symptom: A switch that acts as NQA server reboots.
- Condition: This symptom might occur on a switch acting as the NQA server if deleting and adding secondary IP addresses for the VLAN interface enabled with the NQA server repeatedly.

LPD039133

- Symptom: Some PCs connected to the backup switch in a VRRP group cannot learn the ARP of VRRP virtual gateway.
- Condition: This symptom might occur if the following conditions exist:
 - The VRRP master and backup switches work in load balancing mode.
 - The two switches exchange heartbeat packets through a directly connected cable.
 - Multiple PCs connected to the backup switch.

LPD35326

- Symptom: A 5920 switch in an IRF fabric has an anomaly during a reboot of the IRF fabric.
- Condition: This symptom might occur if the IRF fabric comprises both 5920 and 5900 switches and is repeatedly rebooted.

LPD37306

- Symptom: The transceiver MIB node information obtained by the MIB browser is incorrect.
- Condition: This symptom occurs when the MIB browser is used to read the transceiver related MIB node.

ZDD05295

- Symptom: The IP address of a Null interface can be assigned through SNMP but cannot be deleted through SNMP or CLI.
- Condition: This symptom occurs if the IP address of the Null interface is assigned by the MIB browser.

LPD042522

- Symptom: The service SYSMAN reboot repeatedly and such information repeatedly appears(log time and device name is different on different devices):
%Jan 1 00:06:33:905 2011 HP SCMD/5/JOBINFO: The service SYSMAN status failed : abnormal exit!
%Jan 1 00:06:33:911 2011 HP SCMD/6/JOBINFO: The service SYSMAN is stopped...
%Jan 1 00:06:33:912 2011 HP SCMD/6/JOBINFO: The service SYSMAN is starting...
%Jan 1 00:06:34:089 2011 HP SCMD/6/JOBINFO: The service SYSMAN is running...
- Condition: This symptom might occur if a bin or ipe file downloaded to flash has incorrect header information.

LPD042436

- Symptom: The certificate of a peer in a PKI domain on standby device cannot be deleted.
- Condition: This symptom occurs on an IRF fabric when deleting the certificate of a peer in a PKI domain.

LPD041110

- Symptom: A switch work abnormally if multiple VTY users log in to the switch and execute the **display diagnostic-information** command simultaneously.
- Condition: This symptom might occur if multiple VTY users log in to the switch and execute the **display diagnostic-information** command simultaneously.

Resolved problems in R2108P02

LPD34510

- Symptom: The image specified by the **boot-loader** command cannot be loaded.
- Condition: This symptom occurs if the **boot-loader** command is executed in the root directory of a subordinate device in an IRF fabric.

LPD26824

- Symptom: There is no suggestive information when the **tftp ip filename ?** command is executed.
- Condition: This symptom occurs when the **tftp ip filename ?** command is executed.

LPD26261

- Symptom: The system prompts "Permission denied" if a user deletes a file with the **root** attribute created by the system through the console port of the master device in an IRF fabric, and the delete operation fails.
- Condition: This symptom occurs if a user deletes a file with the **root** attribute created by the system through the console port of the master device in an IRF fabric.

LPD29455

- Symptom: The console port stops responding when a user logged in through the console port deletes a file with a name that has more than 31 characters in the recycle bin from the BootROM menu.
- Condition: This symptom might occur when a user logged in through the console port deletes a file with a name that has more than 31 characters in the recycle bin from the BootROM menu.

LPD30055

- Symptom: The system assigns the **vd-operator** attribute to a user created by an SSH management user that has a user level 15. The assigned attribute is incorrect because the switch does not support VD.
- Condition: This symptom occurs if an SSH management user with user level 15 creates a new user.

LPD29574

- Symptom: After a master/subordinate switchover, the previous master fails to start up.
- Condition: This symptom might occur if a master/subordinate switchover is performed when the following conditions exist on the IRF fabric:
 - The IRF fabric comprises multiple switches
 - MSTP is enabled.
 - BPDU tunnels are configured.
 - The IRF fabric is connected to another device through a cross-card aggregate link.

LPD032502

- Symptom: After a master/subordinate switchover, ports in a link aggregation group on the previous master cannot become selected ports although they have been up.
- Condition: This symptom might occur if the following conditions exist:
 - The local IRF fabric is connected to another IRF fabric through the link aggregation group (an aggregate link).
 - MSTP is enabled on the local IRF fabric.
 - On the connected IRF fabric, STP is enabled, the aggregate interface is configured as an edge port. global BPDU protection is configured.
 - A master/subordinate switchover is performed on the local IRF fabric.

ZDD05103

- Symptom: When many MAC addresses move to different ports, the system updates ARP entries for only 32 MAC addresses among those MAC addresses.
- Condition: This symptom occurs if many MAC addresses move to different ports

LPD031621

- Symptom: A memory leak occurs.
- Condition: This symptom occurs if two or more traffic behaviors are configured and then the **reset counters interface** command is executed.

LPD30059

- Symptom: A walk of the dot1dPortCapabilities MIB node through the MIB browser returns empty data.

- Condition: This symptom occurs if the MIB browser is used to walk the dot1dPortCapabilities MIB node.

LPD30063

- Symptom: The **cd** command executed in user view fails to display Flash information for subordinate switches in an IRF fabric that comprises four switches.
- Condition: This symptom might occur if repeated master/subordinate switchovers occur on the IRF fabric.

LPD32451

- Symptom: An anomaly occurs after the **display stp history** command is executed.
- Condition: This symptom might occur if the **display stp history** command executed accesses memory that has not been initialized.

LPD032399

- Symptom: The output of the **display clock** command does not show the time information according to the zone specified by the **clock summer-time** command.
- Condition: This symptom exists in the output of the **display clock** command.

LPD32152

- Symptom: The value of the dot1qTpFdbPort MIB node obtained through the MIB browser contains the data length, which should not be returned.
- Condition: This symptom occurs when the MIB browser walks the dot1qTpFdbPort MIB node.

LPD31252

- Symptom: A message "500 Unknown command" appears when the **dir** command is executed on the FTP server through a switch that acts as the FTP client.
- Condition: This symptom occurs when the **dir** command is executed on the FTP server through a switch that acts as the FTP client.

Resolved problems in R2108P01

LPD24186

- Symptom: The actual broadcast forwarding rate on a port is 1000000 pps although the broadcast suppression threshold configured for the port is 2000000, 4000000 or 8000000 pps.
- Condition: This symptom occurs if the broadcast suppression threshold on a port is configured as 2000000, 4000000 or 8000000 pps, and then the **shutdown** and **undo shutdown** commands are executed on the port.

LPD24112

- Symptom: The switch cannot forward broadcast packets with a size less than 80 bytes at line rate.
- Condition: Execute the **burst-mode enable** command and send broadcast traffic with packet size less than 80 bytes at line rate to a port.

LPD28657

- Symptom: A PC connected to a device cannot communicate for a while.
- Condition: This symptom might occur if the following conditions exist:

- The device connects to a device and the device connects to an IRF fabric through a cross-card aggregate link
- The master in the IRF fabric is rebooted.

LPD26305

- Symptom: After an IRF master/subordinate switchover, an aggregate interface stays in STP down state.
- Condition: This symptom might occur if the following conditions exist:
 - The aggregate interface is an STP edge port.
 - The **stp bpdu-protection** and **shutdown-interval 1** commands are configured.
 - A master/subordinate switchover is performed.

LPD24183

- Symptom: If an IRF subordinate switch is rebooted, its aggregation member ports change to inactive state and then to active state. After that, the switch reboots. The switch should reboot when its aggregation member ports change to inactive state.
- Condition: This symptom might occur when a subordinate switch in an IRF fabric is rebooted.

LPD35324

- Symptom: An IRF fabric fails to upgrade software from R2108 to a later version.
- Condition: This symptom occurs when an IRF fabric uses the automatic software update function to upgrade software from R2108 to a later version.

Resolved problems in R2108

LPD21989

- Symptom: Some VRRP virtual MAC addresses cannot be deleted after an IRF split.
- Condition: This symptom might occur if the following conditions exist:
 - The IRF fabric comprises four switches in ring topology.
 - VRRP and MAD are configured.
 - The two IRF ports on a subordinate switch are shut down to split the IRF fabric.

LPD21097

- Symptom: VRRP master/backup switchovers occur after a reboot.
- Condition: This symptom might occur if a device configured with more than 200 standard VRRP groups is rebooted.

LPD21873

- Symptom: Traffic forwarding fails if the queue scheduling mode is repeatedly changed on the egress port.
- Condition: This symptom might occur if the egress port forwards Layer 3 traffic received from other two ports and the queue scheduling mode is repeatedly changed on the egress port.

LPD22391

- Symptom: After receiving line-rate packets with a size larger than 1600 bytes, the network management port cannot ping the directly connected device.

- Condition: This symptom might occur after the network management port receives line-rate packets with a size larger than 1600 bytes.

LPD22364

- Symptom: An aggregate interface connected to another switch cannot go up.
- Condition: This symptom might occur if the aggregate interface on the peer switch is repeatedly created and deleted.

LPD22318

- Symptom: The output of the **display interface** command does not include the number of pause frames that were generated when congestion occurred.
- Condition: This symptom exists in the output of the **display interface** command.

LPD22583

- Symptom: A port cannot deliver incoming LACP packets to the CPU.
- Condition: This symptom might occur after the port is added to, removed from, and then re-added to a link aggregation group.

LPD19088

- Symptom: An IRF fabric splits and packet forwarding fails if PFC configuration on a port where user traffic exists is modified or removed.
- Condition: This symptom might occur if PFC configuration on a port where user traffic exists is modified or removed.

LPD20867

- Symptom: Some MAC addresses displayed by the **display mac-address** command are incorrect.
- Condition: This symptom might occur when the **display mac-address** command is used to display a specified MAC address.

LPD21711

- Symptom: After an IRF master/subordinate switchover, the network management port cannot transmit packets and the IRF fabric cannot be managed through the port.
- Condition: This symptom might occur after a master/subordinate switchover on an IRF fabric that comprises four switches in ring topology.

LPD21950

- Symptom: The time stamps for received and transmitted traffic statistics are inconsistent with the system time configured by the **clock timezone** command. This problem also exists in the saved configuration file.
- Condition: This symptom occurs if configure system time by the **clock timezone** command.

LPD22554

- Symptom: The output of the **display telnet client** or **display ssh client** command does not show the source interface configured by the **telnet client source inter vlan** or **ssh client source interface vlan** command.
- Condition: This symptom occurs if the specified source interface is removed.

LPD22445

- Symptom: The help information for the **telnet server acl ?** command shows "Error".

- Condition: This symptom occurs if a user role with Telnet only has writes right.

LPD23669

- Symptom: The **priority-flow-control enable** and **shutdown** settings on the IRF interface of the subordinate switch get lost after an IRF master/subordinate switchover.
- Condition: This symptom might occur after an IRF master/subordinate switchover.

Resolved problems in E2107

First release.

Related documentation

Documentation set

- HP 5900 Fundamentals Configuration Guide-Release2208
- HP 5900 IRF Configuration Guide-Release2208
- HP 5900 Layer 2—LAN Switching Configuration Guide-Release2208
- HP 5900 Layer 3—P Services Configuration Guide-Release2208
- HP 5900 Layer 3—IP Routing Configuration Guide-Release2208
- HP 5900 MCE Configuration Guide-Release2208
- HP 5900 ACL and QoS Configuration Guide-Release2208
- HP 5900 Security Configuration Guide-Release2208
- HP 5900 High Availability Configuration Guide-Release2208
- HP 5900 Network Management and Monitoring Configuration Guide-Release2208
- HP 5900 IP Multicast Configuration Guide-Release2208
- HP 5900 FCoE Configuration Guide-Release2208
- HP 5900 Trill Configuration Guide-Release2208
- HP 5900 EVB Configuration Guide-Release2208
- HP 5900 Fundamentals Command Reference-Release2208
- HP 5900 IRF Command Reference-Release2208
- HP 5900 Layer 2—LAN Switching Command Reference-Release2208
- HP 5900 Layer 3—IP Services Command Reference-Release2208
- HP 5900 Layer 3—IP Routing Command Reference-Release2208
- HP 5900 MCE Command Reference-Release2208
- HP 5900 ACL and QoS Command Reference-Release2208
- HP 5900 Security Command Reference-Release2208
- HP 5900 High Availability Command Reference-Release2208
- HP 5900 Network Management and Monitoring Command Reference-Release2208
- HP 5900 IP Multicast Command Reference-Release2208

- HP 5900 Network FCoE Command Reference-Release2208
- HP 5900 Network Trill Command Reference-Release2208
- HP 5900 Network EVB Command Reference-Release2208
- HP LSVM1FANSC and LSVM1FANSCB Installation Manual
- HP LSVM1FANSC & LSVM1FANSCB Fan Assemblies Installation
- HP LSVM1AC650 & LSVM1DC650 Power Modules User Manual
- HP 5920&5900 Installation Guide

Obtaining documentation

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

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

Contacting HP

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

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

Before contacting HP, collect the following information:

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

Subscription service

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

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

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

Appendix A Feature list

Hardware features

Table 4 5900/5920 series hardware features

Item	5920AF-24XG	5900AF-48XG-4QS FP+	5900AF-48G-4XG- 2QSFP+	5900AF-48XGT-4Q SFP+
	5920AF-24XG TAA	5900AF-48XG-4QS FP+ TAA		
Dimensions (H × W × D)	43.6 × 440 × 700 mm (1.72 × 17.32 × 27.56 in)	43.6 × 440 × 660 mm (1.72 × 17.32 × 25.98 in)	43.6 × 440 × 460 mm (1.72 × 17.32 × 18.11 in)	43.6 × 440 × 660 mm (1.72 × 17.32 × 25.98 in)
Weight	≤ 13.5 kg (29.76 lb)	≤ 13 kg (28.66 lb)	≤ 10 kg (22.05 lb)	≤ 13 kg (28.66 lb)
Console ports	1	1	1	1
Management Ethernet ports	1	1	1	1
USB ports	N/A	1	1	1
10/100/1000Base-T Ethernet ports	N/A	N/A	48	N/A
10GBase-T Ethernet ports	N/A	N/A	N/A	48
SFP+ ports	24	48	4	N/A
QSFP+ ports	N/A	4	2	4
Fan trays	LSVM1FANSC LSVM1FANSCB	LSWM1FANSC LSWM1FANSCB	LSWM1FANSC LSWM1FANSCB	LSWM1HFANSC LSWM1HFANSCB
Power modules	A58x0AF 650W AC Power Supply(JC680A) A58x0AF 650W DC Power Supply(JC681A)	A58x0AF 650W AC Power Supply(JC680A) A58x0AF 650W DC Power Supply(JC681A)	A58x0AF 650W AC Power Supply(JC680A) A58x0AF 650W DC Power Supply(JC681A)	A58x0AF 650W AC Power Supply(JC680A) A58x0AF 650W DC Power Supply(JC681A)

Item	5920AF-24XG	5900AF-48XG-4QS	5900AF-48G-4XG-	5900AF-48XGT-4Q
	5920AF-24XG TAA	FP+ 5900AF-48XG-4QS FP+ TAA	2QSFP+	SFP+
AC-input voltage	Rated voltage: 100 VAC to 240 VAC @ 50 or 60 Hz	Rated voltage: 100 VAC to 240 VAC @ 50 or 60 Hz	Rated voltage: 100 VAC to 240 VAC @ 50 or 60 Hz	Rated voltage: 100 VAC to 240 VAC @ 50 or 60 Hz
	Max voltage: 90 VAC to 264 VAC @ 47 to 63 Hz	Max voltage: 90 VAC to 264 VAC @ 47 to 63 Hz	Max voltage: 90 VAC to 264 VAC @ 47 to 63 Hz	Max voltage: 90 VAC to 264 VAC @ 47 to 63 Hz
DC-input voltage	Rated voltage: -40 VDC to -60 VDC			
	Max voltage: -40 VDC to -72 VDC			
Minimum power consumption	Single-AC: 334W	Single-AC: 183W	Single-AC: 98W	Single-AC: 124W
	Dual-AC: 343W	Dual-AC: 200W	Dual-AC: 115W	Dual-AC: 139W
	Single-DC: 333W	Single-DC: 182W	Single-DC: 95W	Single-DC: 121W
	Dual-DC: 339W	Dual-DC: 197W	Dual-DC: 110W	Dual-DC: 133W
Maximum power consumption	Single-AC: 357W		Single-AC: 157W	Single-AC: 446W
	Dual-AC: 366W	AC: 257 W	Dual-AC: 175W	Dual-AC: 455W
	Single-DC: 360W	DC: 250 W	Single-DC: 151W	Single-DC: 444W
	Dual-DC: 366W		Dual-DC: 169W	Dual-DC: 444W
Operating temperature	0°C to 45°C (32°F to 113°F)			
Operating humidity	10% to 90%, noncondensing	10% to 90%, noncondensing	10% to 90%, noncondensing	10% to 90%, noncondensing

Software features

Table 5 Software features of the 5900/5920 series

Feature	5920AF-24XG	5900AF-48XG-4QS	5900AF-48G-4XG-	5900AF-48XGT-4Q
	5920AF-24XG TAA	FP+ 5900AF-48XG-4QS FP+ TAA	2QSFP+	SFP+
Full duplex Wire speed L2 switching capacity	480 Gbps	1280 Gbps	336Gbps	1280Gbps

Whole system Wire speed L2 switching Packet forwarding rate	357.12	952.32	249.98	952.32
Forwarding mode	Store-forward and cut-through			
IRF	<ul style="list-style-type: none"> • Ring topology • Daisy chain topology • LACP MAD • ARP MAD • ND MAD • BFD MAD • ISSU • IRF comprised of different models 			
Link aggregation	<ul style="list-style-type: none"> • Aggregation of 10-GE ports • Static link aggregation • Dynamic link aggregation • When stacked, supports up to 128 aggregation groups, each supporting up to 16 ports • Aggregation of 10-GE ports • Aggregation of 40-GE ports • Static link aggregation • Dynamic link aggregation • When stacked, supports up to 128 aggregation groups, each supporting up to 16 ports 			
Data center	<ul style="list-style-type: none"> • PFC • DCBX • FCoE • TRILL • EVB 			
Flow control	IEEE 802.3x flow control and back pressure			
Jumbo Frame	Supports maximum frame size of 10000			
MAC address table	<ul style="list-style-type: none"> • 128K 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 			
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 • 1K static entries • Gratuitous ARP • Standard 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) • Multicast ARP
ND	<ul style="list-style-type: none"> • 8K entries • 1K static entries
VLAN virtual interface	1K
DHCP	<ul style="list-style-type: none"> • DHCP client • DHCP snooping • DHCP relay agent • DHCP server • DHCPv6 server
UDP helper	Supported
DNS	<ul style="list-style-type: none"> • Dynamic domain name resolution • Dynamic domain name resolution client • IPv4/IPv6 addresses
IPv4 routing	<ul style="list-style-type: none"> • 1K static routes • RIP (Routing Information Protocol) v1/v2; up to 2K IPv4 routes • OSPF (Open Shortest Path First) v1/v2; up to 16K IPv4 routes • BGP (Border Gateway Protocol); up to 16K IPv4 routes • IS-IS (Intermediate System-to-Intermediate System); up to 16K IPv4 routes • Configurable maximum number of equal-cost routes; up to 4K equal-cost routes • VRRP • PBR
IPv6 routing	<ul style="list-style-type: none"> • 1K static routes • RIPng: Supports up to 2K IPv6 routes • OSPF v3: Supports up to 8K IPv6 routes • ISISv6: Supports up to 8K IPv6 routes • Up to 4K ECMP routes; each ECMP route supports up to 32 next hops • Routing policy • VRRP • PBR
URPF	Reverse route check strict mode and loose mode
MCE	Supported

BFD	<ul style="list-style-type: none"> • OSPF/OSPFv3 • BGP/BGP4 • IS-IS/IS-ISv6 • PIM/IPM for IPv6 • Static route • MAD
Tunnel	<ul style="list-style-type: none"> • IPv4 over IPv4 tunnel • IPv4 over IPv6 tunnel • IPv6 over IPv4 manual tunnel • IPv6 over IPv4 6to4 tunnel • IPv6 over IPv4 ISATAP tunnel • IPv6 over IPv6 tunnel • GRE tunnel
IPv4 multicast	<ul style="list-style-type: none"> • IGMP snooping v1/v2/v3 • IGMP v1/v2/v3 • PIM-DM • PIM-SM
IPv6 multicast	<ul style="list-style-type: none"> • MLD snooping v1/v2 • MLD v1/v2 • PIM-DM/SM for IPv6
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
QoS/ACL	<ul style="list-style-type: none"> • Restriction of the rates at which a port sends and receives packets, with a granularity of 8 kbps. • Packet redirect • Committed access rate (CAR), with a granularity of traffic limit 8 kbps. • Eight output queues for each port • Flexible queue scheduling algorithms based on port and queue, including strict priority (SP), Weighted Deficit Round Robin (WDRR), Weighted Fair Queuing (WFQ), SP + WDRR, and SP + WFQ. • Remarking of 802.1p and DSCP priorities • Packet filtering at L2 (Layer 2) through L4 (Layer 4); flow classification based on source MAC address, destination MAC address, source IP (IPv4/IPv6) address, destination IP (IPv4/IPv6) address, port, protocol, and VLAN. • Time range • Weighted Random Early Detection (WRED) • Queue shaping • User profile • COPP • Explicit Congestion Notification (ECN)

Mirroring	<ul style="list-style-type: none"> • Flow mirroring • Port mirroring • Multiple mirror observing port
Remote mirroring	<ul style="list-style-type: none"> • 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 • Port security • IP-MAC-port binding • IP Source Guard • HTTPS • SSL • PKI • Boot ROM access control (password recovery)
802.1X	<ul style="list-style-type: none"> • Up to 2,048 users • Port-based and MAC address-based authentication • Trunk port authentication
Traffic Management	<ul style="list-style-type: none"> • sFlow
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

- Debugging information output
 - Ping and Tracert
 - NQA
 - Track
 - Remote maintenance through Telnet
 - 802.1ag
 - 802.3ah
 - DLDAP
 - File download and upload through USB port
-

Appendix B Upgrading software

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

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 main application code required for device operation. This includes 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:

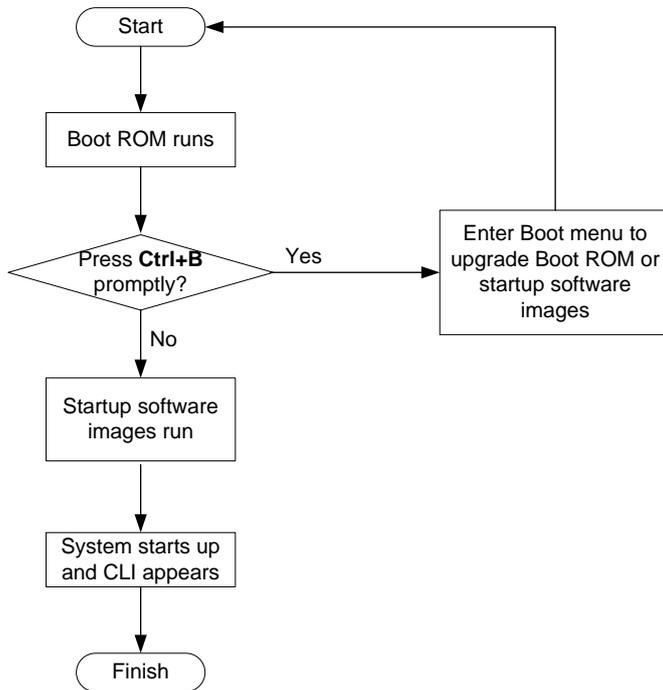
Boot ROM images are not released along with the boot images and system images. To get a version of Boot ROM image, contact the HP technical support.

In addition to these images, HP irregularly releases patch packages for you to fix bugs without rebooting the switch. A patch package does not add new features or functions.

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
	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 CLI	Patch packages	<p>The upgrade does not interrupt ongoing services.</p> <p>Make sure the patch packages match the current software images. A patch package can fix bugs only for its matching software image version.</p>
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 rather than the Boot menu.</p> <p>The Boot menu approach requires that you upgrade the member switches one by one and has larger impact on services than the CLI approach.</p>

The output in this document is for illustration only and might vary with software releases. For example, this document uses boot.bin and system.bin to represent boot and system image names, whereas the actual software image name format is chassis_software platform version_image type_release, for example, 5900_5920-cmw710-boot-e2107.bin and 5900_5920-cmw710-system-e2107.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 HP 5920 and 5900 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. Perform the **display irf** command in any view to 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      Slave  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. Perform the **dir** command in user view to identify the free storage space of each member switch.
4. Identify the free Flash space of the master switch.

```
<Sysname> dir
Directory of 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-    23129088  Nov 25 2011 09:53:48  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-    8996864  Nov 25 2011 09:53:48  boot.bin
 7      -rw-    9012224  Nov 25 2011 09:53:48  backup.bin
```

```
524288 KB total (481540 KB free)
```

5. 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-	23129088	Nov 25 2011 09:53:48	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-	8996864	Nov 25 2011 09:53:48	boot.bin
7	-rw-	9012224	Nov 25 2011 09:53:48	backup.bin

524288 KB total (481540 KB free)

- 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.
- Delete obsolete files in Flash to free space:

CAUTION:

- To avoid data loss, do not delete the current configuration file. For information about the current configuration file, perform the **display startup** command. HP recommends that you preferentially delete obsolete software images. To avoid inadvertent delete of the current software images, perform the **display boot-loader** command in any view to identify them.
 - 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 permanently delete the file from the recycle bin, first perform the **undelete** command to restore the file and then perform the **delete /unreserved file-url** command.
-

- Delete obsolete 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...
Start to delete flash:/backup.bin...Done.
```

- Delete obsolete 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...
Start to delete slot2#flash:/backup.bin...Done.
```

Downloading software to the master switch

Before you start upgrading software images or patch 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
- Copying files from a USB flash drive

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. Perform 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+K to abort
Connected to 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. Perform 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:

1. On the IRF fabric:
2. Enable FTP server.
3. Add a local FTP user account, set its password and access service type, and assign it to the user role network-admin for uploading file to the working directory of the server.

```
<Sysname> system-view
[Sysname] ftp server enable
[Sysname] local-user abc
[Sysname-luser-abc] password simple pwd
[Sysname-luser-abc] service-type ftp
[Sysname-luser-abc] authorization-attribute user-role network-admin
```

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

4. On the PC:
5. FTP to the IRF fabric (the FTP server).

```
c:\> ftp 1.1.1.1
Connected to 1.1.1.1.
220 FTP service ready.
User(1.1.1.1:(none)):abc
331 Password required for abc.
Password:
230 User logged in.
```

6. Enable the binary file transfer mode.

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

7. Upload the file (for example, **newest.ipe**) to the root directory in the Flash memory of 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, perform the **tftp** command in user view to download the file to the root directory in the Flash memory of the master switch.

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

Copying files from a USB flash drive

Every 5900 switch provides a USB port for you to copy files from a USB flash drive.

To copy a file from a USB flash drive to the Flash memory of the master switch:

1. Plug the USB flash drive in the USB port of the switch.
2. Copy the file (for example, **newest.ipe**) to the Flash memory of the switch.

```
<Sysname> cd usba:
<Sysname> copy usba:/newest.ipe newest.ipe
Copy usba:/newest.ipe to flash:/newest.ipe?[Y/N]:y
Start to copy usba:/newest.ipe to flash:/newest.ipe... Done.
```

Upgrading the software images

To upgrade the software images:

1. Specify the upgrading 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
```

```
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.
```

```
The specified file list will be used as the main startup software images at the next
reboot on slot 1.
```

2. Specify the upgrading image file used at next startup for the subordinate switch, and assign the M attribute to the boot and system images in the file. (As a result, the subordinate switch automatically copies the file to the root directory in its Flash memory.)

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

```
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.
```

```
The specified file list will be used as the main startup software images at the next
reboot on slot 2.
```

3. (Optional) If the IRF fabric size has a lot of members, enable the software auto-update function.

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

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

```
[Sysname] quit
```

Software auto-update is typically used for synchronizing the software images of the master switch to new member switches when you expand the IRF fabric. This function enables a subordinate switch to compare its main startup software image version with that of the IRF master. If the versions are different, the subordinate switch automatically downloads the current software images from the master, sets the downloaded images as the main software images at the next reboot, and automatically reboots with the new images to re-join the IRF fabric. In this upgrade process, the function avoids the failure of assign all the subordinate switch the same main software image file as the master switch causing an upgrade 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. Perform 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 upgrading 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.

Installing a patch package

To install a patch package, for example, **system-patch.bin**:

1. Activate the patch package on the master switch and the subordinate switch.

```
<Sysname> install activate patch flash:/system-patch.bin slot 1  
<Sysname> install activate patch flash:/system-patch.bin slot 2
```
2. Verify that the patch package has been activated.

```
<Sysname> display install active  
Active packages on slot 1:  
  flash:/boot.bin  
  flash:/system.bin  
  flash:/system-patch.bin  
Active packages on slot 2:  
  flash:/boot.bin  
  flash:/system.bin  
  flash:/system-patch.bin
```
3. Commit the installation so the patch package continues to take effect after a reboot.

```
<Sysname> install commit
```
4. Verify that the patch package installation has been committed.

```
<Sysname> display install committed  
Committed packages on slot 1:  
  flash:/boot.bin  
  flash:/system.bin  
  flash:/system-patch.bin  
Committed packages on slot 2:  
  flash:/boot.bin  
  flash:/system.bin  
  flash:/system-patch.bin
```

For more information about installing patch packages, see HP 5920 & 5900 Switch Series Fundamentals Configuration Guide.

Upgrading from the Boot menu

You can upgrade the Boot ROM image and software images but not patch packages 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.

The following sections describe the methods of upgrading software images:

- [Using TFTP to upgrade software images through the management Ethernet port](#)
- [Using FTP to upgrade software through the management Ethernet port](#)
- [Using XMODEM to upgrade software through the console port](#)

The following sections describe the methods of upgrading Boot ROM images:

- [Using TFTP to upgrade Boot ROM through the management Ethernet port](#)
- [Using FTP to upgrade Boot ROM through the management Ethernet port](#)
- [Using XMODEM to upgrade Boot ROM through the console port](#)

TIP:

[Upgrading through an Ethernet port is faster than through the console port.](#)

Prerequisites

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

Upgrading environment

Use a console cable to connect the console terminal, for example, a PC, to the console port on the switch. 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

TFTP/FTP download

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 that the file server and the switch can reach each other.

Storage space

Make sure that sufficient space is available for the upgrading software file. If no sufficient space is available, delete obsolete files as described in "[Managing files from the Boot menu.](#)"

Upgrading time

Make sure that the upgrade has minimal impact on the network services. During the upgrade, the switch cannot provide any services.

Accessing the Boot menu

Power on the switch (for example, an HP 5900AF-48XG-4QSFP+ Switch), and you can see the following information:

```
Starting.....
```

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

```
*****
*
*          HP 5900AF-48XG-4QSFP+ Switch BOOTROM, Version 123          *
*
*****
Copyright (c) 2010-2013 Hewlett-Packard Development Company, L.P.
```

```
Creation Date   : Jan  6 2013, 14:25:58
```

```
CPU Clock Speed : 1000MHz
```

```
Memory Size    : 2048MB
```

```
Flash Size     : 512MB
```

```
CPLD Version   : 002/002
```

```
PCB Version    : Ver.A
```

```
Mac Address    : 00E0FC005800
```

```
Press Ctrl-B to enter Extended Boot menu...1
```

Press one of the shortcut key combinations at prompt.

Table 6 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 123
*
*
*****
```

```

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 7 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 8).

Table 8 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 9](#)). For more information about password recovery capability, see *HP 5920 & 5900 Switch Series Fundamentals Configuration Guide*.

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 9 Extended Boot ROM menu options

Option	Tasks
1. Download image to flash	<p>Download a software image file to the flash.</p> <p>If password recovery capability is enabled, you can use any version of the software image file for upgrade.</p> <p>If password recovery capability is disabled, you can use only the R2208 version (or higher) for upgrade.</p>

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: <ul style="list-style-type: none"> If password recovery capability is enabled, you can specify a software image file of any version. If password recovery capability is disabled, the software image file version must be R2208 or higher. 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.
6. Enter BootRom upgrade menu	Access the Boot ROM upgrade menu. If password recovery capability is enabled, you can upgrade the Boot ROM to any version. If password recovery capability is disabled, you can upgrade the Boot ROM to only Version 123 or higher.
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 10 .

Table 10 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.

Using TFTP to upgrade software images through the management 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 11 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, 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.....
.....
.....
```


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 12 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, 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.....
```

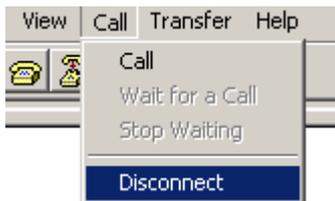

Please select your download baudrate:

- 1.* 9600
2. 19200
3. 38400
4. 57600
5. 115200
0. Return to boot menu

Enter your choice(0-5):5

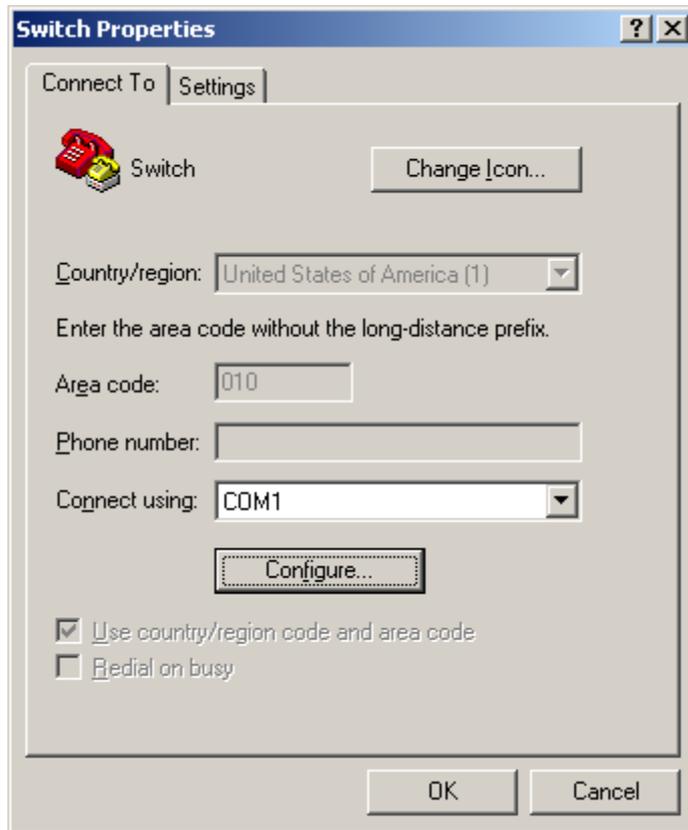
3. Select an appropriate download rate, for example, enter **5** to select 115200 bps.
Download baudrate is 115200 bps
Please change the terminal's baudrate to 115200 bps and select XMODEM protocol
Press enter key when ready
4. Set the serial port on the terminal to use the same baud rate and protocol as the console port. If you select 9600 bps as the download rate for the console port, skip this task.
5. Select **Call > Disconnect** in the HyperTerminal window to disconnect the terminal from the switch.

Figure 2 Disconnecting the terminal from the switch



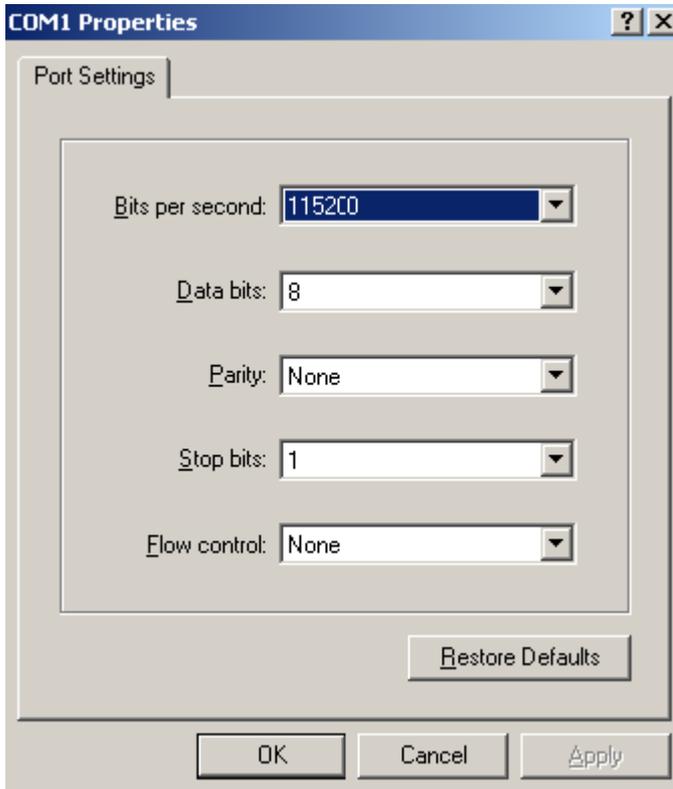
6. Select **File > Properties**, and in the **Properties** dialog box, click **Configure**.

Figure 3 Properties dialog box



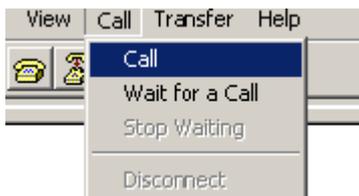
7. Select **115200** from the **Bits per second** list and click **OK**.

Figure 4 Modifying the baud rate



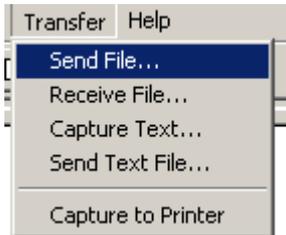
8. Select **Call** > **Call** to reestablish the connection.

Figure 5 Reestablishing the connection



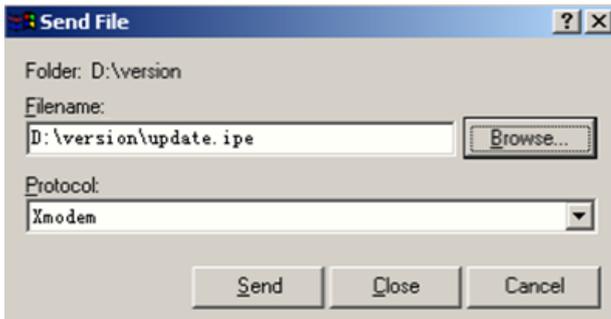
9. Press **Enter**. The following prompt appears:
Are you sure to download file to flash? Yes or No (Y/N):Y
10. Enter **Y** to start downloading the file. (To return to the Boot menu, enter **N**.)
Now please start transfer file with XMODEM protocol
If you want to exit, Press <Ctrl+X>
Loading ...CCCCCCCCCCCCCCCCCCCCCCCC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

Figure 6 Transfer menu



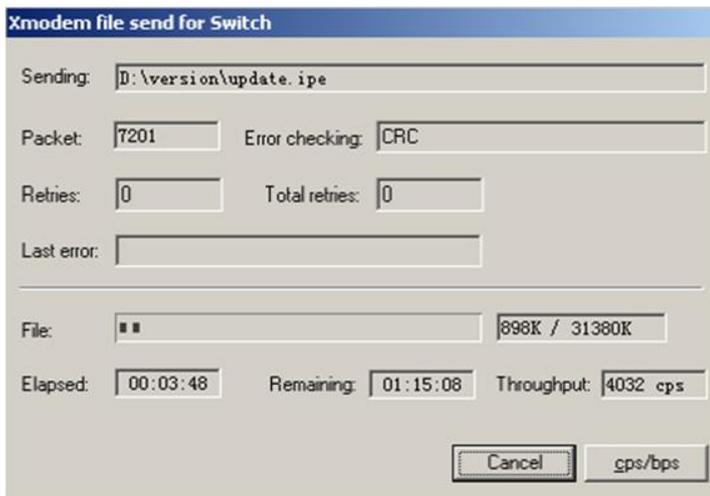
12. In the dialog box that appears, click **Browse** to select the source file, and select **Xmodem** from the **Protocol** list.

Figure 7 File transmission dialog box



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

Figure 8 File transfer progress



14. 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
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 first with the main images, and 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 just stored in Flash memory for backup and you must change its attribute to make it usable at reboot.
 - 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.
-

- 15.** If the baud rate of the HyperTerminal is not 9600 bps, restore it to 9600 bps. If the baud rate is 9600 bps, skip this step.

To access the switch through the console port after a reboot, you must perform this step, because the console port rate reverts to 9600 bps at a reboot.

- 16.** Press **Enter** to access 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):0
```

- 17.** Enter **0** to reboot the system with the new software images.

Using TFTP to upgrade Boot ROM through the management 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 13 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 management 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   :***
```

Table 14 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 management Ethernet port. To save time, use the management 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:
```

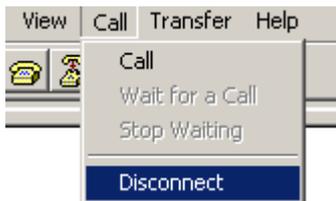
```
1.* 9600
2. 19200
```

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

Enter your choice(0-5):5

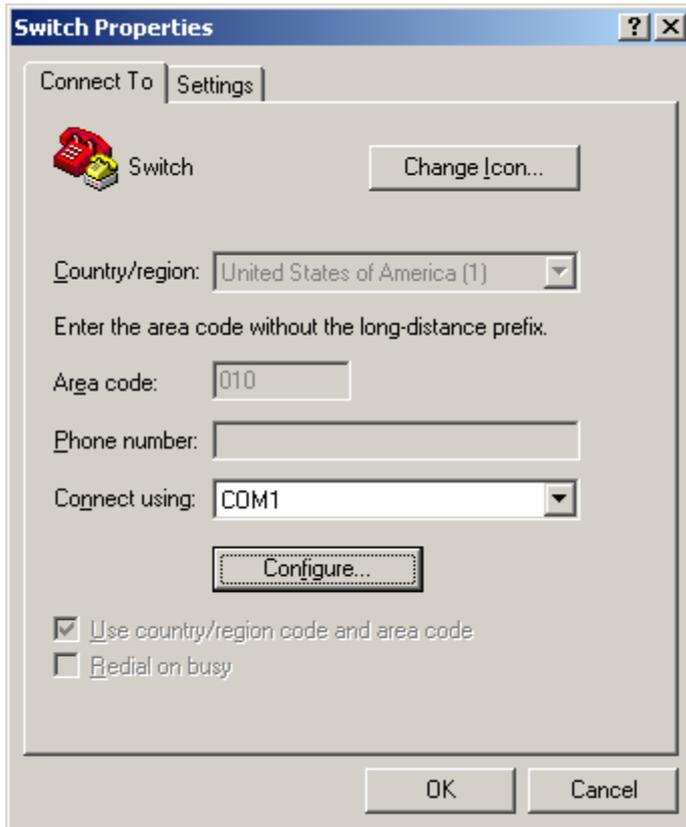
4. Select an appropriate download rate, for example, enter **5** to select 115200 bps.
Download baudrate is 115200 bps
Please change the terminal's baudrate to 115200 bps and select XMODEM protocol
Press enter key when ready
5. Set the serial port on the terminal to use the same baud rate and protocol as the console port. If you select 9600 bps as the download rate for the console port, skip this task.
6. Select **Call > Disconnect** in the HyperTerminal window to disconnect the terminal from the switch.

Figure 9 Disconnecting the terminal from the switch



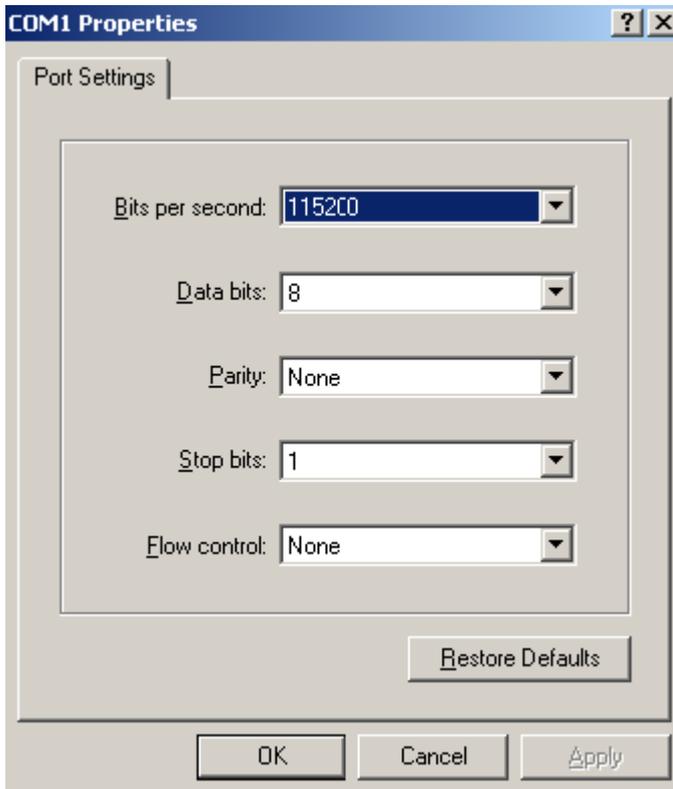
7. Select **File > Properties**, and in the **Properties** dialog box, click **Configure**.

Figure 10 Properties dialog box



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

Figure 11 Modifying the baud rate



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

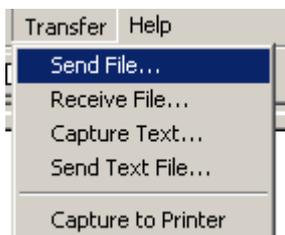
Figure 12 Reestablishing the connection



10. Press **Enter** to start downloading the file.
Now please start transfer file with XMODEM protocol
If you want to exit, Press <Ctrl+X>
Loading ...CCCCCCCCCCCCCCCCCCCCCCCC

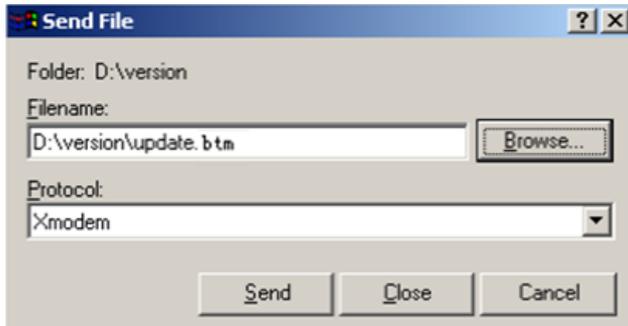
11. Select **Transfer > Send File** in the HyperTerminal window.

Figure 13 Transfer menu



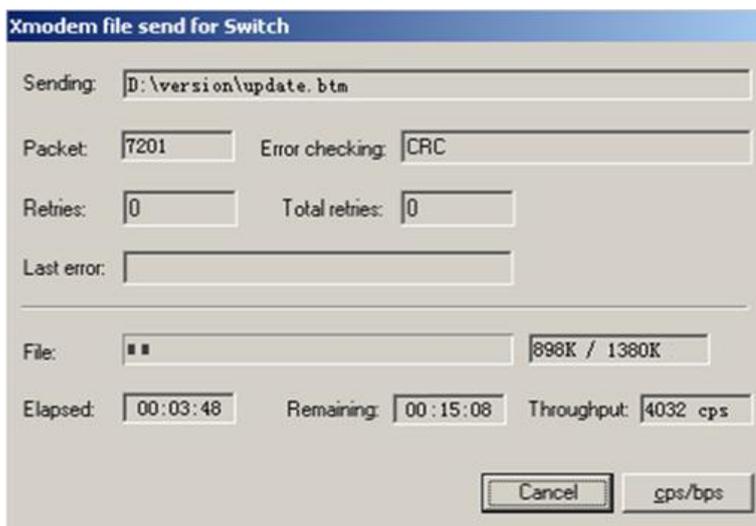
- In the dialog box that appears, click **Browse** to select the source file, and select **Xmodem** from the **Protocol** list.

Figure 14 File transmission dialog box



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

Figure 15 File transfer progress



- 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.

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

```

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

```
- If the baud rate of the HyperTerminal is not 9600 bps, restore it to 9600 bps at the prompt. If the baud rate is 9600 bps, skip this step.

```

Please change the terminal's baudrate to 9600 bps, press ENTER when ready.

```

To access the switch through the console port after a reboot, you must perform this step, because the console port rate reverts to 9600 bps at a reboot.

- Press **Enter** to access the Boot ROM update menu.
- Enter **0** in the Boot ROM update menu to return to the Boot menu.
 - Update full BootRom
 - Update extended BootRom

- 3. Update basic BootRom
- 0. Return to boot menu

Enter your choice(0-3):

- 19. 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 (*)	23129088	flash:/system.bin
3 (*)	8996864	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: 502804480 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 (*)	23129088	flash:/system.bin
3 (*)	8996864	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: 502804480 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. Enter **1** at the prompt to set the attribute of a software image. (To set the attribute of a configuration file, enter **2**.)

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

Enter your choice(0-2): 1

```
File Number      File Size(bytes)      File Name
=====
1(*)              7913472                flash:/system.bin
2(*)              8996864                flash:/boot.bin
3                 8996864                flash:/boot-update.bin
4                 23129088               flash:/system-update.bin

Free space: 461413664 bytes
(*)-with main attribute
(b)-with backup attribute
(*b)-with both main and backup attribute
```

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

Please input the file number to change: 3

4. 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/None) M
This operation may take several minutes. Please wait....
Next time, boot-update.bin will become default boot file!
```

5. At the prompt, enter **Y** to reboot the switch with the new main boot image or enter **N** to return to the Boot menu.

```
Do you want to run boot-update.bin now? Yes or No (Y/N): Y
Loading the main images...
Starting to get the image flash:/boot-update.bin.....
.....
.....
.....Done!
```

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. Verify that the storage device has sufficient space for the upgrade file.