Switch 4200G V3.02.01 Release Notes

Keywords: version information, version updating, unresolved problems and avoidance measures, list of solved problems

Abstract: *version information, updating, unresolved Problems and Avoidance Measures, List of Solved Problems.*

Acronyms:

Abbreviations	Full spelling
ARP	Address Resolution Protocol
BPDU	Bridge Protocol Data Unit
ACL	Access Control List
CLI	Command line interface
DHCP	Dynamic Host Configuration Protocol
DLDP	Device Link Detection Protocol
DNS	Domain Name Server
DSCP	DiffServ Codepoint
FTP	File Transfer Protocol
GARP	Generic Attribute Registration Protocol
GVRP	GARP VLAN Registration Protocol
HGMP	Huawei Group Management Protocol
HTTP	Hypertext Transfer Protocol
IGMP	Internet Group Management Protocol
IGMP Snooping	Internet Group Management Protocol Snooping
IGSP	Internet Group Management Protocol Snooping
IP	Internet Protocol
LACP	Link Aggregation control protocol
MAC	Media Access Control
MIB	Management Information Base
MSTP	Multiple Spanning Tree Protocol
NDP	Neighbor Discovery Protocol
NTP	Net Time Protocol
PPS	Packet Per Second

Abbreviations	Full spelling
QOS	Quality of Service
RADIUS	Remote Authentication Dial-In User Service
RMON	Remote Monitoring
RSTP	Rapid Spanning Tree Protocol
RSA	RSA encryption technique
SDWRR	Shaped Deficit Weighted Round Robin
SNMP	Simple Network Management Protocol
SP	Strict Priority
SSH	Secure Shell
STP	Spanning Tree Protocol
TCP	Transfer Control Protocol
TFTP	Trivial File Transfer Protocol
UDP	User Datagram Protocol
VLAN	Virtual Local Area Network
VLAN-VPN	VLAN-Virtual Private Network
VCT	Virtual Cable Test
3ND	3Com Network Director

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Version Information

Version Number

Version Information: 3Com OS V3.02.01s56

3Com OS V3.02.01s168

Note: This version number can be displayed by command **display version** under any view. Please see **Note**①.

Version History

Table 1 Version history

Version number	Last version	Release Date	Remarks
V3.02.01s56 V3.02.01s168	V3.02.00s56 V3.02.00s168	2008-12-04	None
V3.02.00s56 V3.02.00s168	V3.01.00s56p02 V3.01.00s168p02	2007-11-20	None
V3.01.00s56p02 V3.01.00s168p02	V3.01.00s56p01 V3.01.00s168p01	2007-10-15	None
V3.01.00s56p01 V3.01.00s168p01	V3.01.00s56 V3.01.00s168	2007-08-28	None
V3.01.00s56 V3.01.00s168	First release	2006-07-03	None

Hardware and Software Compatibility Matrix

Table 2 Compatibility matrix

Item	Specifications
Product family	4200G series
Hardware platform	4200G 12-Port 4200G 24-Port 4200G 48-Port 4200G PWR 24-Port
Minimum memory requirements	64MB
Minimum Flash requirements	16 MB

Item	Specifications
Boot ROM version	Version 2.01 (Note: This version number can be displayed by command **display version** under any view. Please see **Note**②)
Host software	s3t03_02_01s56.app (3,820,749 Bytes) s3t03_02_01s168.app (3,822,154 Bytes)
DM version	3Com DM V4.0 SP06 R0002
Web version	s3v02_01.web
Remarks	s3t03_02_01s56.app is different from s3t03_02_01s168.app, The former one uses 56-bit encryption for SSH and the later one uses 168-bit.

Sample: To see the version number of the software and bootrom of the 4200G series Ethernet switches:

```
<4200G>display version
3Com Corporation
Switch 4200G 24-Port Software Version 3Com OS V3.02.01s56  ------note
Copyright(c) 2004-2008 3Com Corporation and its licensors, All rights reserved.
Switch 4200G 24-Port uptime is 0 week, 0 day, 0 hour, 15 minutes

Switch 4200G 24-Port with 1 MIPS Processor
64M   bytes DRAM
16M    bytes Flash Memory
Config Register points to FLASH

Hardware Version is REV.B
CPLD Version is 002
Bootrom Version is 2.01    ------ note
[SubSlot 0] 24 GE ( 4 COMBO ) Hardware Version is REV.B
```

Restrictions and Cautions

When different traffic actions are defined in the same ACL rule, conflicts may occur. The conflicts occur when:

1. The action 'deny' conflicts with all the rest actions and the action 'traffic-statistic' except.
2. The action of inbound 'traffic-limit' conflicts with the action 'traffic-priority'.

Packets of some protocols, such as BPDU, IGMP, DLDP and GVRP, can not be mirrored remotely.

A static link aggregation group or manually created link aggregation group consumes

system resources even if it contains no port.

Only the following port configuration can be synchronized between link-aggregation member ports.

[undo] garp timer hold

[undo] garp timer join

[undo] garp timer leave

[undo] gvrp

[undo] gvrp registration

traffic-limit

traffic-priority

traffic-redirect

traffic-remark-vlanid

traffic-shape

traffic-statistic

priority-trust

packet-filter

qos-profile

port link-type { trunk | hybrid }

[undo] port trunk permit vlan { xxxx | all }

port trunk pvid vlan xxxx

port access vlan xxxx

port hybrid vlan xxxx { tagged | untagged }

port hybrid pvid vlan xxxx

port hybrid protocol-vlan vlan xxxx x

vlan-vpn enable

vlan-vpn uplink enable

priority

stp port priority

stp cost

stp enable/disable

stp edged-port

stp point-to-point

stp mcheck

stp transmit-limit

stp config-digest-snooping

stp no-agreement-check

stp root-protection

stp loop-protection

stp compliance

undo ndp enable

undo ntdp enalbe

The CPU utilization will reach very high when more than 2 SSH users log in.

Feature List

Hardware Features

Table 3 Hardware features

Item	Switch 4200G 12-Port	Switch 4200G 24-Port	Switch 4200G 48-Port	Switch 4200G PWR 24-Port
Dimensions (height × width × depth)	43.6 × 300 × 440 mm (1.72 × 11.8 × 17.3 in.)			43.6 × 420 × 440 mm
Weight	≤ 4 kg (8.8 lb)	≤ 4.2 kg (9.2 lb)	≤ 5 kg (11 lb)	≤ 6.9 kg (11 lb)
Management port	One Console port			
Service ports	12 10/100/1000 Mbps electric ports 4 Gigabit SFP Combo ports One 10-Gbps slots (for XFP interface cards /XENPAK optical modules)	24 10/100/1000 Mbps electric ports 4 Gigabit SFP Combo ports Two 10-Gbps slots (for XFP interface cards /XENPAK optical modules)	48 10/100/1000 Mbps electric ports 4 Gigabit SFP Combo ports Two 10-Gbps slots (for XFP interface cards /XENPAK optical modules)	24 10/100/1000 Mbps electric ports 4 Gigabit SFP Combo ports Two 10-Gbps slots (for XFP interface cards /XENPAK optical modules)

Item	Switch 4200G 12-Port	Switch 4200G 24-Port	Switch 4200G 48-Port	Switch 4200G PWR 24-Port
Input voltage	4200G series support AC power inputs Rated voltage range: 100 VAC to 240 VAC, 50 Hz or 60 Hz Max voltage range: 90 VAC to 264 VAC, 47 Hz or 63 Hz DC input (for 4200G PWR 24-Por): Voltage range: -52 VDC to -55 VDC			
Input current	1.5A	1.5A	1.5A	AC input: 8A DC input:20A
Power consumption (full load)	40W	68 W	116 W	AC input: 500 W DC input:435 W
Operating temperature	0°C to 45°C (32°F to 113°F)			
Relative humidity (non-condensing)	10% to 90%			

Software Features

Table 4 Software features

Category	Features
STP/RSTP/MSTP	Support IEEE 802.1s Support STP/RSTP/MSTP Support intra-domain maximum-weight spanning trees (up to 16 spanning tree instances supported) Support STP root guard Support BPDU guard
Port auto-sensing	Support speed and duplex auto-negotiation
Jumbo frame	The maximum frame size supported is 9,216 bytes
Flow control	Support back-pressure based flow control Support 802.3x (full duplex)
Link aggregation	Support up to 6 aggregation groups, each supporting eight GE or two 10GE ports Support dynamic link aggregation through Link Aggregation Control Protocol (LACP) Support manual link aggregation Support static link aggregation
VLAN	Support IEEE 802.1Q standard

Category	Features
	Support GVRP Support port-based VLANs, maximum number of 256 VLANs Support GVRP Support disabling MAC address learning in VLANs Support selective QinQ
Broadcast storm suppression	Support port-based broadcast storm suppression on both ratio and PPS basis
Loop detection	The tests provide means to online detect port faults, the internal loop test is used to diagnose the physical channels between switch chips and PHY chips; the external loop test is used to diagnose the physical channels between PHY chips and network interfaces with the help of self-loop header. The two tests used together can distinguish whether a fault is a switch fault or a link fault
Mirroring	Support port mirroring Support multi-source port mirroring Support remote port mirroring
MAC address table	Address learning Support IEEE 802.1D Support multicast MAC address Support black hole MAC address Table size: Up to 8K MAC addresses including 1K static mac addresses
802.1x	The main purpose of the IEEE 802.1x protocol is to implement authentication for wireless LAN users. But its application in LANs defined by IEEE 802 LAN standards provides a method of authentication for LAN users
Centralized MAC address authentication	Centralized MAC address authentication is a port and Mac address based authentication method to control the network access authority of users. Centralized MAC address authentication does not the users to install any client software. The switch enables authentication on a user once it detects a new MAC address of the user
Voice VLAN	The voice VLAN feature is able to add ports into voice VLANs by identifying the source MAC addresses of packets. It automatically assigns priority rules, ensures that voice traffic takes appropriate priority so as to ensure the voice quality. This feature supports two application modes: manual and automatic
Security features	Support hierarchical management and password protection of users Support AAA authentication Support RADIUS authentication Support SSH 2.0 Support port isolation Support port security

Category	Features
Network Protocols	Support TCP/IP protocol stack Support ARP (address resolution protocol) Support gratuitous ARP
IGSP (IGMP SNOOPING)	IGMP Snooping (Internet group management protocol snooping) is a multicast control mechanism operating on Layer 2 Ethernet switches, which is used to manage and control multicast groups Up to 128 multicast groups in the entire system
Multicast VLAN	Based on the current multicast-on-demand mode, when users in different VLANs request the service, a multicast flow is duplicated in each VLAN This mode causes waste of a great deal of bandwidth. To save the bandwidth and enhance security, we provide the multicast VLAN feature. With this feature, you can add switch ports to a multicast VLAN and enable IGMP Snooping to allow users in different VLANs to share the same multicast VLAN. As multicast VLAN is isolated from user VLANs, this guarantees both security and enough bandwidth. The multicast VLAN feature ensures continuous transmission of multicast information flow to users.
Dropping Known Multicast Packets	Generally, if the multicast address of a multicast data packet received is not registered on the local switch, the packet will be broadcasted within the VLAN. However, with the drop-unknown-multicast feature enabled, the switch will drop any multicast packet with an unregistered multicast address, and thus saves the bandwidth and enhances the process efficiency of the system.
DHCP client	On a contemporary large-sized and complex network, some computers are mobile and the available IP addresses are far from adequate comparing with the fast-growing number of computers. To address the issue, the dynamic host configuration protocol (DHCP) was introduced. DHCP works in the client/server model, where the DHCP client requests the DHCP server for configuration information dynamically, and upon the receipt of the request the DHCP server returns the configuration information (IP address for example) based on the adopted policy
DHCP relay	The earlier DHCP protocol only applies to the circumstances that DHCP clients and DHCP servers are in the same subnet and cannot operate across network segments. Therefore, to implement dynamic host address assignment, each subnet should be deployed with a DHCP server. This is obviously uneconomical DHCP Relay is introduced to resolve this problem. Through a DHCP relay, DHCP clients in a LAN can communicate with a DHCP server in another subnet to obtain valid IP addresses. In this way, DHCP clients in multiple networks can share one DHCP server. This saves costs and helps to implement centralized management
Static routing	8 vlan interface 32 routing table entry 256 arp entry
UDP-Helper	The major function of UDP Helper is to relay-forward UDP broadcast packets, that is, it can convert UDP broadcast packets into unicast packets and send to the designated server, as a relay
NTP	Clock synchronization among devices becomes increasing important along with increasing complex network topologies. The network time protocol (NTP) is a TCP/IP protocol that releases accurate time on the

Category	Features
	entire network
QoS	Support port-based/flow-based rate limiting, with the minimum granularity of 1 kbps Support IEEE 802.1p/DSCP priority Each port supports eight queues Support SP/SDWRR/SP+SDWRR queue scheduling Support traffic classify Support traffic statistics Support port trust mode Support traffic shaping for ports and queues
Password recovery	Password recovery technique is adopted for the recovery of Boot ROM and APP passwords
Diagnostics and alarm output	When a switch operates, hardware/software problems may occur; quickly recording and reporting problems is important for troubleshooting the problems
Fast startup	Both fast and normal start settings are supported In fast start mode, the switch can start up within 60 seconds. This greatly increases the startup speed in comparison with previous switches When starting in fast mode, the switch skips the POST (power-on self-test) and runs the APP application directly When starting in normal mode, the switch performs the whole POST You can set the start mode to fast or normal by using the Boot ROM menu
Software update	Software load and update through the XMODEM protocol Software load and update through FTP (file transfer protocol) and TFTP (trivial file transfer protocol) Supporting FTP/TFTP client, FTP server
System configuration and management	Support configuration through CLI Support remote configuration through Telnet Support configuration through Console port Support Simple Network Management Protocol (SNMP) Support Remote Monitoring (RMON) alarm, event and history recording Support Web NMS Support system log Support hierarchical alarms Support Huawei Group Management Protocol (HGMP) V2 Support remote dialing through modem Support fan alarms
Maintenance	Filter, output, and statistics of alarm/debug information

Category	Features
	Diagnostic tools: Ping, Trace, and so on Remote maintenance by Telnet and other ways

Version Updates

Feature Updates

Table 5 Feature updates

Version Number	Item	Description
V3.02.01	Changed Hardware Features	New Features:None. Deleted Features: None
	Changed Software Features	New Features: Support auto VLAN Support auto Power-Down Support storm constrain Support LLDP Support VLAN VPN(Tunnel) Support bpdu drop Support DHCP snooping Support DHCP snooping option82 Support DHCP Security Support DHCP option60 Support PKI Support protocol vlan Support DLDP Support Triple authentication Support ip check Support linkdelay Support mac based and vlan based mirroring Support priority mapping Support qosprofile Support flow redirect Support remark vlan id Support cluster stacking

Version Number	Item	Description
		Support web authentication Support selective qinq Support arp anti-attack Support arp&dhcp rate limit Support arp max-learning-num Support arp detection Support user service by self Support enable/disable mac learning on vlan Support 802.1x handshake secure Support mstp pathcost legacy Support ipv6 acl Support udp-helper ttl control Support dhcp default gateway Deleted Features: None Modified Features: Support 16k mac-address Support 1024 multicast Support 4094 vlan Deleted Features: None Modified Features: None
V3.02.00	Changed Hardware Features	New Features: New deliverable. Deleted Features: None
	Changed Software Features	New Features: 1. RSA keyname transform 2. DNS Client 3. syslog enhancement 4. Tcp/udp port number is closed by default 5. Schedule reboot feature 6. Configurable flow interval 7. Port auto negotiation mode configuration 8. Port-based up/down trap&log info control 9. 1000M port support 100M optical module 10. SmartLink 11. SNMP v3 support AES encryption 12. Banner for ftp/http

Version Number	Item	Description
		13. SSH2.0 support DSA 14. SSH 2.0 communicate with other client 15. Disable/enable temperature-protection (only PoE devices) 16. Show the copyright information when telnet login 17. legal banner 18. undo the default information of banner 19. 802.1x re-authentication 20. 802.1x controllable handshake 21. Voice vlan(include CDP) 22. DOMAIN MIB support AAA separation 23. information center support UTC time 24. MAC authentication enhancement function 25. hwping 26. burst mode 27. EAD fast deploy 28. support modify EAD NAS-PORT ID 29. Port security AND/OR mode 30. high memory record function 31. VLAN ACL 32. support process radius access challenge packet trough telnet authentication 33. HWTACACS 34. PoE(only PoE devices) 35. support EAD resolve scheme Deleted Features: None Modified Features: None
V3.01.00p02	Changed Hardware Features	New Features: Burst-mode function. Deleted Features: None
	Changed Software Features	New Features: None Deleted Features: None Modified Features: None
V3.01.00	Changed Hardware Features	New Features: First release Deleted Features: None
	Changed Software	New Features: First release

Version Number	Item	Description
	Features	Deleted Features: None Modified Features: None

Command Line Updates

Table 6 Command line updates

Version Number	Item	Description
V3.02.01	New Commands	Please refer to the command manuals
	Deleted Commands	Please refer to the command manuals
	Modified Commands	Please refer to the command manuals
V3.02.00	New Commands	Please refer to the command manuals
	Deleted Commands	Please refer to the command manuals
	Modified Commands	Please refer to the command manuals
V3.01.00p02	New Commands	Command1 Syntax: **burst-mode enable** **undo burst-mode enable** View: System view Parameter: none Description: Use the **burst-mode enable command** to enable the burst function. Use the **undo burst-mode enable** command to disable the burst function. By default, the burst function is disabled. Example: [4200G] burst-mode enable
	Deleted Commands	None
	Modified Commands	None
V3.01.00	New Commands	First release
	Deleted Commands	First release
	Modified	First release

Version Number	Item	Description
	Commands	

MIB Updates

Table 7 MIB updates

Version Number	Item	MIB file	Module	Description
V3.02.01	New	h3c-radius.mib	H3C-RADIUS	Support accounting-on MIB
	Modified	IEEE8021-PAE-MIB	dot1xPaePortInitialize	This node did not function in the past. After modified, its function becomes: Setting this attribute to TRUE causes the port cuts all its 802.1x users, The attribute value reverts to FALSE once cutting operations is completed. Setting this attribute to FALSE has no effect. This attribute always returns FALSE when it is read.

Configuration Changes

Configuration Changes in V3.02.01

1) Modification about dot1x timer tx-period command

Before Modification:

The range of 802.1x multicast request packet transfer period set by **dot1x timer tx-period** command is 10-120 seconds. Based on the rule that port will enter guest VLAN when 1 such packet get no response, the shortest time for entering guest VLAN is about 10 seconds.

After Modification:

The range of 802.1x multicast request packet transfer period set by **dot1x timer tx-period** command is 1-120 seconds. Based on the rule that port will enter guest VLAN when 1 such packet get no response, the shortest time for entering guest VLAN is about 1 seconds.

Configuration Changes in V3.02.00

None.

Open Problems and Workarounds

LSOD06489

- First Found-in Version: V3.02.00
- Description: The switch receives broadcast UDP packets, and configure udp-helper server on the input interface, the address of the server is broadcast. The packets can't be forward.
- Avoidance: None

List of Resolved Problems

Resolved Problems in V3.02.01

LSOD08147

- First Found-in Version: V3.02.00
- Condition: Configure password information
- Description: The password can be finding in logbuffer, this is a hidden danger.

LSOD08283

- First Found-in Version: V3.02.00
- Condition: Configure an NTP server (e.g. 1.1.1.2) for the device, without specifying a source interface or source address. The device will select a source address automatically (e.g. 1.1.1.1) to communicate with the specified server. After a while, the device will synchronize its time to the NTP server. If the topology or the routing table changes, the device cannot communicate with the NTP server through the selected source address
- Description: When the topology or the routing table changes, the device still uses the old source address (e.g. 1.1.1.1) as the source address of NTP requests. Therefore, NTP responses from the NTP server cannot be delivered correctly to the device, and the device fails to synchronize its time to the NTP server.

LSOD08206

- First Found-in Version: V3.02.00
- Condition: Configure the ACL rule of deny IP destination
- Description: The ARP including that IP destination is dropped.

LSOD08070

- First Found-in Version: V3.02.00
- Condition: Configure "dot1x authentication-method eap" on system-view. Configure "port-security port-mode mac-and-userlogin-secure" or "port-security port-mode mac-and-userlogin-secure-ext" on the port. Connect PC to that port. PC will fail in MAC authentication, but succeed in 802.1x authentication
- Description: PC can access the network. The correct behavior is PC can access the network only if both authentications succeed

LSOD08123

- First Found-in Version: V3.02.00
- Condition: Device receives the packet whose MAC is VLAN interface's MAC and whose IP is not VLAN interface's IP.
- Description: That kind of packet forwarded by software in switch.

LSOD08049

- First Found-in Version: V3.02.00
- Condition: Device receives the packet whose destination MAC is broadcast address and whose destination IP is unicast IP (destination MAC is FF:FF:FF:FF:FF:FF; destination IP is not the address of the VLAN interface).
- Description: Switch can't send redirect packet according to this kind of packet.

LSOD07871

pc1---SWA====SWB---pc2

- First Found-in Version: V3.02.00
- Condition: Above is the network, two switches are connected by a link-aggregation, and only two member ports is linkup. Then pc1 ping pc2 and pc2 ping pc1, plug in and out one port in turn and leave another port linkup
- Description: Other link-down ports learn the mac-address of pc1 or pc2, and the communication is break for a long time.

LSOD06981

- First Found-in Version: V3.02.00
- Condition: Receive LACP protocol packet that not conform to the Protocol stipulated (124 bytes)
- Description: LACP protocol Packets are discarded because packets' length check failed, and so bring on aggregate fail.

LSOD07200

- First Found-in Version: V3.02.00
- Condition: Do the 802.1x authentication with NEC 1XGate client and the user is online. Reboot the device.
- Description: After reboot, the client do authentication again immediately. The device doesn't response and set the client' MAC to 'unauthenticated user '.

LSOD07145

- First Found-in Version: V3.02.00
- Condition: Administrative user do RADIUS authentication. The server simultaneously assign 2 types of attribute for administrative privilege, (Vendorid=43, Type=1) and (Vendorid=2011, Type=29).
- Description: RADIUS authentication fails.

LSOD07143

- First Found-in Version: V3.02.00

- Condition: Port A connecting to an end station is running STP and is not a STP edged-port, link status of this port changes from down to up.
- Description: STP status of port A in MSTI will change from discarding to forwarding directly, not passing learning state.

LSOD06680/LSOD07269

- First Found-in Version: V3.02.00
- Condition: There is a default configuration file 'config.def ' on device. But not specify the startup saved-configuration.
- Description: Device does not use the autoconfig function to reboot, but use the 'config.def ' file to reboot.

ZDD01517

- First Found-in Version: V3.02.00
- Condition: Use the network management tool of the AT&T Company to backup the configuration on device.
- Description: Memory will leak 512K bytes every time.

LSOD06906

- First Found-in Version: V3.02.00
- Condition: Configure 8 global ACLs rule. After deleting a global ACL rule, configure global ACL rule until ACL resources lack.
- Description: The item 'Remaining number' showed by command display acl remain entry is '-16'

TCD00877

- First Found-in Version: V3.02.00
- Condition: Configure 802.1x authentication on the device.
- Description: When the authentication-method is EAP, then the authentication can not be successful, however, if the authentication-method is PAP or CHAP, it can be successful.

Resolved Problems in V3.02.00

None

Resolved Problems in V3.01.00p02

LSOD06047

- First Found-in Version: V3.01.00p01
- Condition: The switch runs IGMP-Snooping, and there have multiple multicast groups exist.
- Description: Some ports been added to the multicast groups, and there have no hosts receive multicast traffic connected to these ports. It will lead to traffic congestion.

Resolved Problems in V3.01.00p01

LSOD04710

- First Found-in Version: V3.01.00

- Condition: The device needs to download the configuration file, whose name contains the unit number of the device.
- Description: It can not download the configuration file successfully.

LSOD04835

- First Found-in Version: V3.01.00
- Condition: Set the forwarding state of the port for Jumbo frame into “disable” on the web page.
- Description: Then check the forwarding state for Jumbo frame on the detailed web page and find that the state is not “disable” but “enable”.

LSOD05192

- First Found-in Version: V3.01.00
- Condition: Backup the current configuration file through EMS (Enterprise Management Suite), then restore the configuration file by uploading the file with FTP.
- Description: The backup configuration file can be uploading into the device successfully. However, it can not set the starting flag for the file.

Resolved Problems in V3.01.00

First release

Related Documentation

For the most up-to-date version of documentation:

1) Go to http://www.3Com.com/downloads
2) Select Documentation for Type of File and select Product Category.

Software Upgrading

Traditionally, the loading of switch software is accomplished through the serial port. This approach is slow, inconvenient, and cannot be used for remote real-time loading. To resolve these problems, the TFTP and FTP modules are introduced into the switch. With these modules, the software and files can be loaded through Ethernet port conveniently.

This chapter introduces how to load BootROM and host software into a switch locally and how to do this remotely.

Introduction to Loading Modes

You can load the software locally by using:

- XModem via console port
- TFTP via Ethernet port
- FTP via Ethernet port

You can load the software remotely by using:

- FTP

- TFTP

Note

The BootROM software version should match the host software version when you load the BootROM and host software.

Local Software Loading

If your terminal is directly connected to the switch, you can load BootROM and host software locally.

Before loading the software, make sure that your terminal is correctly connected to the switch to insure successful software loading.

Note

The loading process of the BootROM software is the same as that of the host software, except that during the BootROM loading process, you should enter the different digit after entering the Boot Menu and the system gives somewhat different prompts. The following text mainly describes the BootROM loading process.

Boot Menu

```
Starting......


          ************************************************************
          *                                                          *
          *         Switch 4200G 24-Port BOOTROM, Version 2.00       *
          *                                                          *
          ************************************************************

          Copyright (c) 2004-2006 3Com Corporation and its licensors.
          Creation date   : Nov 20 2007, 17:02:48
          CPU type        : BCM5836
          CPU Clock Speed : 200MHz
          BUS Clock Speed : 33MHz
          Memory Size     : 64MB
```

```
                Mac Address     : 0016e01f7a40


    Press Ctrl-B to enter Boot Menu... 5
```

Press <Ctrl + B>. The system displays:

```
    Password :
```

Note

To enter the Boot Menu, you should press <Ctrl+B> within five seconds after the information “Press Ctrl-B to enter Boot Menu...” appears. Otherwise, the system starts to decompress the program; and if you want to enter the Boot Menu at this time, you will have to restart the switch.

Input the correct BootROM password (by default, no password is set on the switch). The system enters the Boot Menu:

```
        BOOT  MENU

    1. Download application file to flash
    2. Select application file to boot
    3. Display all files in flash
    4. Delete file from flash
    5. Modify bootrom password
    6. Enter bootrom upgrade menu
    7. Skip current configuration file
    8. Set bootrom password recovery
    9. Set switch startup mode
    0. Reboot

    Enter your choice(0-9):
```

Loading Software Using XModem Through Console Port

Introduction to XModem

XModem is a file transfer protocol that is widely used due to its simplicity and good performance. XModem transfers files via console port. It supports two types of data packets (128 bytes and 1 KB), two check methods (checksum and CRC), and error packet retransmission mechanism (generally the maximum number of retransmission attempts is ten).

The XModem transmission procedure is completed by the cooperation of a receiving program and a sending program. The receiving program sends a negotiation packet to negotiate a packet check method. After the negotiation, the sending program starts to transmit data packets. When receiving a complete packet, the receiving program checks the packet using the agreed method. If the check succeeds, the receiving program sends an acknowledgement packet and the sending program proceeds to send another packet; otherwise, the receiving program sends a negative acknowledgement packet and the sending program retransmits the packet.

Loading BootROM software

Step 1: At the prompt "Enter your choice(0-9):" select 6 in the Boot Menu and then press <Enter> to enter the BootROM update menu shown below:

```
Bootrom update menu:
1. Set TFTP protocol parameter
2. Set FTP protocol parameter
3. Set XMODEM protocol parameter
0. Return to boot menu
Enter your choice(0-3):
```

Step 2: Enter 3 in the above menu to load the BootROM software using XModem. The system displays the following download baud rate setting menu:

```
Please select your download baudrate:
1.* 9600
2. 19200
3. 38400
4. 57600
5. 115200
0. Return
Enter your choice (0-5):
```

Step 3: Choose an appropriate download baud rate. For example, if you enter 5, the 115200 bps rate is chosen, and the system displays the following information:

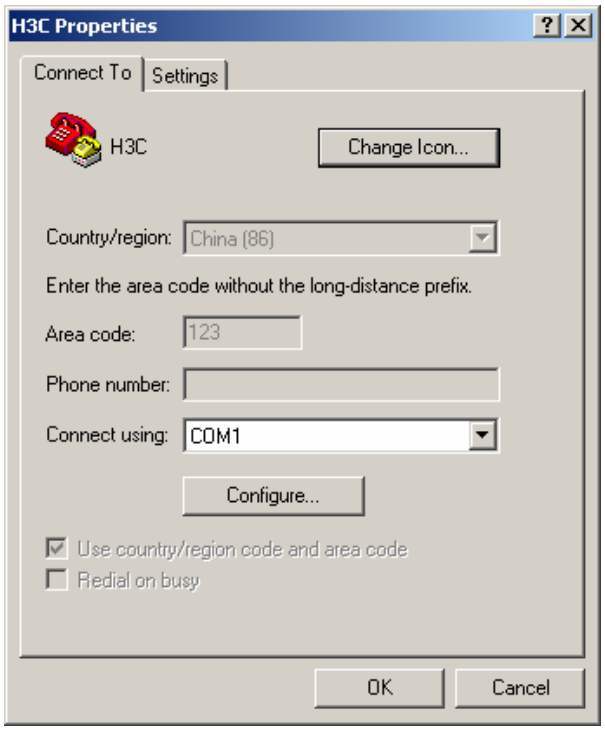
```
Download baudrate is 115200 bps
Please change the terminal's baudrate to 115200 bps and select XMODEM protocol
Press enter key when ready
```

Now, press <Enter>.

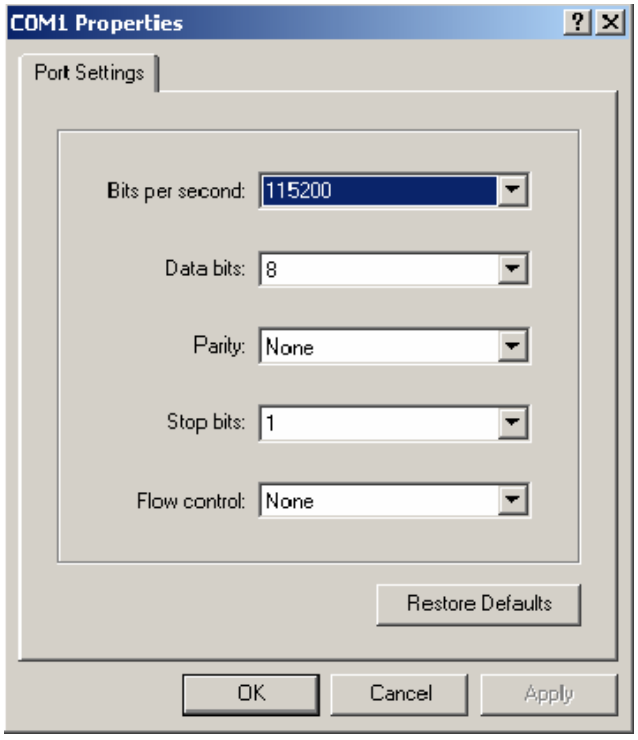
Note

If you have chosen 9600 bps, you do not need to modify the HyperTerminal's baud rate, and therefore you can skip Step 4 and 5 below and proceed to Step 6 directly. In this case, the system will not display the above information.

Step 4: Choose [File/Properties] in HyperTerminal, click <Configuration> in the popup dialog box, select the baud rate of 115200 bps in the appeared console port configuration dialog box.

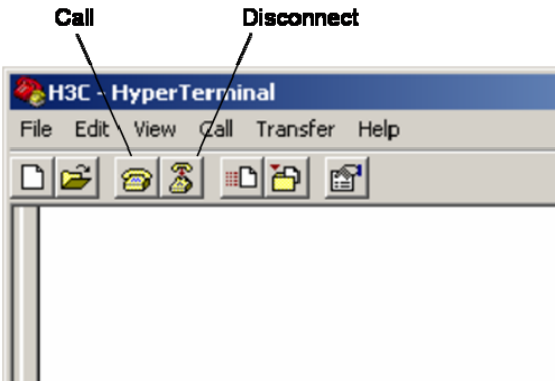


Properties dialog box



Console port configuration dialog box

Step 5: After setting the baud rate, you need to disconnect and the reconnect HyperTerminal so that the baud rate setting takes effect. Click the <Disconnect> button to disconnect the HyperTerminal from the switch and then click the <Call> button to reconnect the HyperTerminal to the switch.



Call and disconnect buttons

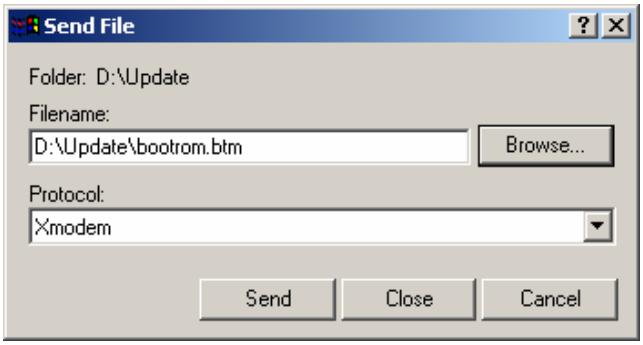
Note

The new baud rate takes effect only after you disconnect and reconnect the terminal emulation program.

Step 6: Press <Enter> to start downloading the program. The system displays the following information:

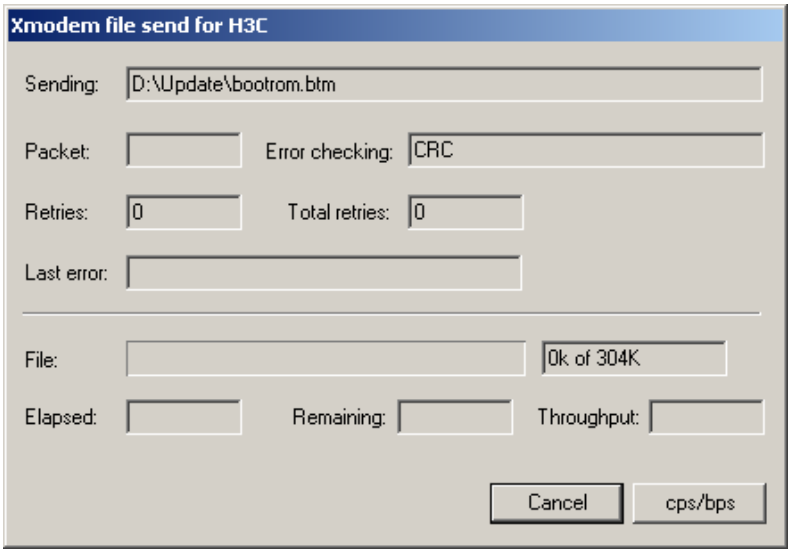
```
Now please start transfer file with XMODEM protocol.
If you want to exit, Press <Ctrl+X>.
Loading ...CCCCCCCCCC
```

Step 7: Choose [Transfer/Send File] in the HyperTerminal's window, and in the following popup dialog box click <Browse>, select the software you need to download, and set the protocol to XModem.



Send file dialog box

Step 8: Click <Send>. The system displays the following page.



Send file page

Step 9: After the download completes, the system displays the following information:

```
Loading ...CCCCCCCCCC done!
```

Note

You do not need to reset the HyperTerminal's baud rate and can skip the last step if you have chosen 9600 bps. In this case, the system display the prompt "BootROM is updating now.....done!" instead of the prompt "Your baudrate should be set to 9600 bps again! Press enter key when ready".

Step 10: Reset HyperTerminal's baud rate to 9600 bps (refer to Step 4 and 5). Then, press any key as prompted. The system will display the following information when it completes the loading.

```
Bootrom updating.................................done!
```

Loading host software

Step 1: Select 1 in Boot Menu. The system displays the following information:

```
1. Set TFTP protocol parameter
2. Set FTP protocol parameter
3. Set XMODEM protocol parameter
0. Return to boot menu
Enter your choice(0-3):3
```

To load the host software through XModem, select 3.

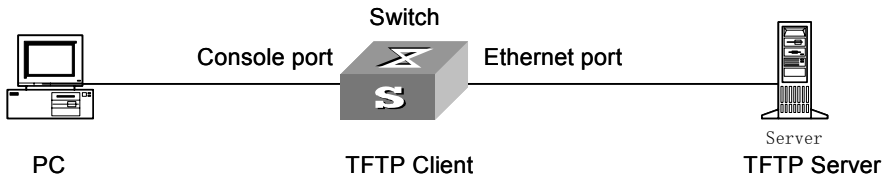
The subsequent steps are the same as those for loading the BootROM software, except that the system gives the prompt for host software loading instead of BootROM loading.

Loading Software Using TFTP through Ethernet Port

Introduction to TFTP

Trivial File Transfer Protocol (TFTP), a protocol in TCP/IP protocol suite, is used for trivial file transfer between client and server. It uses UDP to provide unreliable data stream transfer service.

Loading BootROM software



Local loading using TFTP

Step 1: As shown in 0, connect the switch through an Ethernet port to the TFTP server, and connect the switch through the console port to the configuration PC.

Note

You can use one PC as both configuration device and TFTP server.

Step 2: Run the TFTP server program on the TFTP server, and specify the path of the program to be loaded.

Caution

TFTP server program is not provided with the H3C Series Switches.

Step 3: Run the terminal emulation program on the configuration PC. Start the switch. Then enter the Boot Menu. At the prompt "Enter your choice(0-9):" select 6 in the Boot Menu and then press <Enter> to enter the BootROM update menu shown below:

```
Bootrom update menu:
1. Set TFTP protocol parameter
2. Set FTP protocol parameter
3. Set XMODEM protocol parameter
0. Return to boot menu
Enter your choice(0-3):
```

Step 4: Select 1 to download the BootROM software using TFTP. Then set the following TFTP-related parameters as required:

```
Load File name          :Bootrom.btm
Switch IP address       :1.1.1.2
Server IP address       :1.1.1.1
```

Step 5: Press <Enter>. The system displays the following information:

```
Are you sure to update your bootrom?Yes or No(Y/N)
```

Step 6: Enter Y to start file downloading or N to return to the Bootrom update menu. If you enter Y, the system begins to download and update the BootROM software. Upon completion, the system displays the following information:

```
Loading.....................................done
Bootrom updating.........done!
```

Loading host software

Step 1: Select 1 in Boot Menu. The system displays the following information:

```
1. Set TFTP protocol parameter
2. Set FTP protocol parameter
3. Set XMODEM protocol parameter
0. Return to boot menu
Enter your choice(0-3):1
```

To load the host software through XModem, select 1.

The subsequent steps are the same as those for loading the BootROM software, except that the system gives the prompt for host software loading instead of BootROM loading.

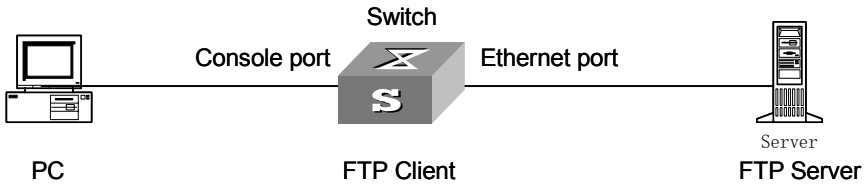
Loading Software Using FTP through Ethernet Port

Introduction to FTP

File Transfer Protocol (FTP) is an application-layer protocol in the TCP/IP protocol suite. It is used for transferring files between server and client, and is widely used in IP networks.

You can use FTP to load software onto the switch through an Ethernet port. In this case, the switch can act as an FTP server or an FTP client. In the following example, the switch acts as an FTP client.

Loading BootROM software



Local loading using FTP

Step 1: As shown in 0, connect the switch through an Ethernet port to the TFTP server, and connect the switch through the console port to the configuration PC.

Note

You can use one PC as both configuration device and FTP server.

Step 2: Run the FTP server program on the FTP server, configure an FTP user name and password, and specify the path of the program to be downloaded.

Step 3: Run the terminal emulation program on the configuration PC. Start the switch. Then enter the Boot Menu.

At the prompt "Enter your choice(0-9):" select 6 in the Boot Menu, and then press <Enter> to enter the BootROM update menu shown below:

Bootrom update menu:

```
1. Set TFTP protocol parameter
2. Set FTP protocol parameter
3. Set XMODEM protocol parameter
0. Return to boot menu
Enter your choice(0-3):
```

Step 4: Enter 2 in the above menu to download the BootROM software using FTP. Then set the following FTP-related parameters as required:

```
Load File name          :Bootrom.btm
Switch IP address       :10.1.1.2
Server IP address       : 1.1.1.1
FTP User Name           :4200
FTP User Password       :abc
```

Step 5: Press <Enter>. The system displays the following information:

```
Are you sure to update your bootrom?Yes or No(Y/N)
```

Step 6: Enter Y to start file downloading or N to return to the Bootrom update menu. If you enter Y, the system begins to download and update the program. Upon completion, the system displays the following information:

```
Loading.....................................done
Bootrom updating.........done!
```

Loading host software

Step 1: Select 1 in Boot Menu. The system displays the following information:

```
1. Set TFTP protocol parameter
```

```
2. Set FTP protocol parameter
3. Set XMODEM protocol parameter
0. Return to boot menu
Enter your choice(0-3):2
```

To load the host software through FTP, select 2.

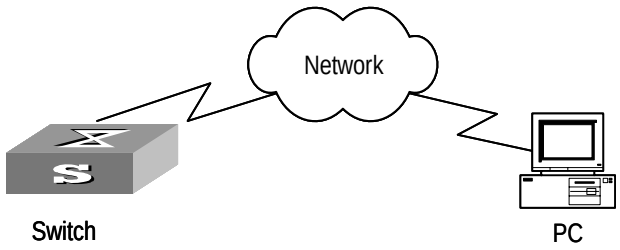
The subsequent steps are the same as those for loading the BootROM software, except that the system gives the prompt for host software loading instead of BootROM loading.

Remote Software Loading

If your terminal is indirectly connected to the switch through Internet, you can telnet to the switch, and use FTP or TFTP to load BootROM and host software remotely.

Remote Loading Using FTP

As shown in 0, a PC is used as both configuration device and FTP server. You can telnet to the switch, and then execute the FTP commands to download the host program 4200G.app and the BootROM program Bootrom.btm from the remote FTP server (with IP address 1.1.1.1) to the switch.



Remote loading using FTP

Step 1: Download the software to the switch using FTP commands.

```
<H3C> ftp 1.1.1.1
Trying ...
Press CTRL+K to abort
Connected.
220 WFTPD 2.0 service (by Texas Imperial Software) ready for new user
User(none):abc
331 Give me your password, please
Password:
230 Logged in successfully
[ftp] get 4200G.app
[ftp] get Bootrom.btm
[ftp] bye
```

Step 2: Update the BootROM program on the switch.

```
<H3C> boot bootrom 4200G.app
please wait ...
```

```
Bootrom is updated!
```

Step 3: Update the host software on the switch.

```
<H3C> boot boot-loader 4200G.app
<H3C> display boot-loader
Unit 1:
   The current boot app is: 4200G.app
   The main boot app is:    4200G.app
   The backup boot app is:
```

Step 4: Restart the switch.

```
<H3C> reboot
```

Note

Before restarting the switch, make sure other configurations are all saved to avoid the loss of configuration information.

After the steps above, the BootROM and host software loading is completed.

Pay attention to the following points:

- Host software loading takes effect only after you restart the switch with the **reboot** command.
- If the space of the flash memory is not enough, you can delete the useless files in the flash memory before software downloading.
- Power interruption is not allowed during software loading.

Remote Loading Using TFTP

The remote loading by using TFTP is similar to the remote loading by using FTP. The only difference is that it is TFTP that you use when loading software to the switch. In this case, the switch can only be used as a TFTP client.