3Com Switch 8800 Release Notes

Software version 3.01.22
Part Number: 10015325 Rev. AA
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Contents

Chapter 1 Introduction

1.1. Scope

These release notes summarize operational requirements and issues for the following Switch 8800 software releases:

Table 1 Software Release Numbers Addressed in These Release Notes

Software	Description
Basic & Advanced Code V3.01.22	The latest version of the Switch 8800 software.
Boot Code V118	The latest boot code running on the Switch Fabric.
Boot Code V107	The latest boot code running on the I/O Modules.

1.2. Online Resources

Visit the 3Com web site for the latest documentation and software updates:

http://www.3Com.com

- Obtain a copy of the Switch 8800 Installation Guide, Command Reference Guide, or Configuration Guide.
- Obtain current software updates (maintenance releases) and associated release notes for the Switch 8800 and other 3Com products.

1.3. Enhancements to Software

1.3.1. Enhancements in Release V3.01.22

The V3.01.22 release of the Switch 8800 software does NOT include any new features. However, it does include bug fixes/minor enhancements as listed in Section 2.1

1.3.2. Enhancements in Release V3.01.21

The V3.01.21 release of the Switch 8800 software included the following enhancements:

- Multicast Source Discovery Protocol (MSDP) Support
- TACACS+ Support
- Port Mirroring across modules
- Support for new I/O Modules
- POE Support
- LACP Support
- Link Aggregation across Modules
- VLAN Based ACL Support
- VLAN VPN Support

- Super VLAN Support
- Isolate User VLAN Support
- VLAN 1 Minimization
- Equal Cost Multi Path (ECMP) Support
- MAC Based Authentication Support
- Voice VLAN Support
- Guest VLAN Support
- Password Control
- DHCP Server Support
- Jumbo Frames Support
- Secure Shell (SSHv2) Support
- Secure FTP (SFTP) Support
- Multi Protocol BGP (MBGP) Support
- MPLS (Multi Protocol Label Switching) Support
- Label Distribution Protocol (LDP) Support
- BGP/MPLS L3VPN Support

1.4. System Requirements

Each Switch 8800 system has these minimum system requirements:

System	Fabric	Power Supply	Fan Tray
Switch 8800 14-Slot Starter Kit (3C17500)	1	1	2
Switch 8800 10-Slot Starter Kit (3C17501)	1	1	1
Switch 8800 7-Slot Starter Kit (3C17502)	1	1	1

1.5. Support for New Modules

Note: In order for PoE to be supported in the Switch 8800, the PoE Power Entry Module (3C17510) must be installed in the chassis and *the PoE* Power Rack (3C17509) connected. PoE is supported on two modules (3C17528) and (3C17532) but need an upgrade kit (3C17529) per module to enable support of PoE on these modules.

1.5.1. New Modules in Release V3.01.22

Release V3.01.22 does NOT include support for any new modules

1.5.2. New Modules in Release V3.01.21

Release V3.01.21 added support for the following modules.

3Com Part #	Module Description
3C17525	3Com SW8800 1-port 10GBASE-X (XENPAK) MX Advanced Module
3C17527	3Com SW8800 2-port 10GBASE-X (XFP) MX Advanced Module
3C17526	3Com SW8800 4-port 10GBASE-X (XFP) Module
3C17528	3Com SW8800 48-port 10/100/1000BASE-T (RJ45) Module
3C17530	3Com SW8800 24-port 1000BASE-X MX Advanced (SFP) Module
3C17531	3Com SW8800 24-port 10/100/1000BASE-T MX Advanced (RJ-45) Module
3C17532	3Com SW8800 48-port 10/100/1000BASE-T (RJ45) Access Module
3C17518	3Com SW8800 1G Switch Fabric Memory UPG Kit
3C17509	3Com SW8800 PoE Power Rack
3C16884	3Com SW7750/SW8800 PoE Power Supply
3C17529	3Com Switch 8800 PoE Option (PoE DIMM Module)
3C17510	3Com SW8800 PoE Entry Module

Chapter 2 Issues Fixed

This section describes issues fixed in Switch 8800 V3.01.22 features in the following areas:

2.1. Issues Fixed in V3.01.22

2.1.1. CLI

Miscellaneous spelling/grammatical errors.

2.1.2. Login Banners

Large login banners could not be saved. V3.01.22 supports a login banner up to 2000 characters

2.1.3. Multicast Arp

Multicast static arps could not be configured across blades in previous releases. In version 3.01.22, the user can configure multicast static arps across blades to support Network Load Balancing. See commands below.

[SW8800] undo arp check enable

[SW8800] arp static 111.111.111.10 0100-5e7f-6f0a 4090 multi-port GigabitEthernet0/1/15

[SW8800] arp static 111.111.111.10 0100-5e7f-6f0a 4090 multi-port GigabitEthernet3/1/22

[SW8800] arp static 111.111.111.10 0100-5e7f-6f0a 4090 multi-port GigabitEthernet10/1/23

NOTE: Multicast arps can not be configured on aggregated ports.

2.1.4. Multicast MAC

Multicast MAC addresses could not be configured in previous releases. The ability to configure multicast MACs has been implemented in release V3.01.22. The feature functions across blades as well as within blades. See commands below.

[SW8800] mac-address multicast 0100-5e7f-dec8 interface GigabitEthernet3/1/2 vlan 3

[SW8800] mac-address multicast 0100-5e7f-dec8 interface GigabitEthernet3/1/4 vlan 3

[SW8800] mac-address multicast 0100-5e7f-dec8 interface GigabitEthernet3/1/6 vlan 3

NOTE: Multicast MACs can not be configured on aggregated ports.

2.1.5. MSTP

SW8800 did not support 802.1s standard mode in previous releases. It now supports both legacy mode and 802.1s standard mode, as well as an auto detection mode. This allows the SW8800 to inter-operate with devices using older MSTP implementations as well as the standard implementation.

<SW8800>system

System View: return to User View with Ctrl+Z.

[SW8800]interface gig2/1/1

[SW8800-GigabitEthernet2/1/1]stp compliance ?

auto Compliance mode controlled by finite state machine

dot1s IEEE 802.1s standard

legacy Legacy standard

2.1.6. Proxy Arp

Proxy arp has been fixed in v3.01.22.

2.1.7. QoS

Certain QoS remarking commands were implemented inconsistently between the MX (3C17525, 3C17527, 3C17530, 3C17531) and the EX (all others) type blades. On an EX blade, a given command resulted in remarking of the 802.1p field and the DSCP field. On an MX blade, the same command resulted in remarking of only the DSCP field. Operation of the two blade types is now consistent. This command now remarks both fields on either type of blade. See the QoS known issues section for more details on current operation.

2.1.8. SNMP

In release version V3.01.21, the last 2 bytes (6877) had been dropped from the SNMP Engine ID. In versions of the Switch 8800 software previous to 3.01.21, the default SNMP Engine ID was made up of the iana number (8000002b) plus the system's MAC address plus 6877**.** In version 3.01.22, the last 2 bytes have been added back to the SNMP Engine ID.

2.1.9. SFTP

SFTP user login occupied one VTY user interface but was not listed from "display users" command. The STFP user is now listed under display users.

Could not transfer a file to the SW8800 flash via SFTP. When **WinSCP** software was used as a SFTP client, it could not open the sub-directory under the Switch 8800 flash. The files on the Switch 8800 flash were shown with the wrong file size and date. For example, the file size was indicated as "0" and the date was given as "12/30/1899 12:00:00:00AM". This problem was fixed in V3.01.22, however, several problems remain and are listed in the known issues section under SFTP.

2.1.10. SSH

The SSH server on the SW8800 now supports SSH Tectia Client (v5.0).

2.2. Issues fixed in V3.01.21

This section describes issues fixed in Switch 8800 V3.01.21 features in the following areas:

2.2.1. 802.1x

802.1x requires DHCP server on the network to function properly.

2.2.2. ARP

Switch 8800 is not creating ARP entries when it receives a gratuitous ARP.

Switch 8800 loses static ARP when IP interface is modified to the same subnet.

2.2.3. Command Line Interface (CLI)

User may get warning message "SW8800/14-2B/2005 DIAGCLI/5/LOG_WARN: [RCVP]:"

The interface counter format has been changed to be consistent with other 3Com Modular LAN Products.

Traps must be enabled by default when creating target-host (trap destination). This issue has been fixed.

2.2.4. IGMP Query

Packets dropped when igmp-snooping is not enabled on a VLAN

2.2.5. Jumbo Frames

Switch 8800 did not support Jumbo Frame size up to 9216

When Jumbo Frames is disabled, MAX Size Tagged Packets are dropped. These are packet sizes between 1518 and 1522.

2.2.6. System Management

In some situations, flash corruption could be experienced on Master Fabric. This fix requires a boot code upgrade.

2.2.7. SNMP

SNMPv2c was not supported in the Basic Version Software.

2.2.8. Multicast Protocol

Share tree entry did not get created in PIM routing table when system receives PIM join.

2.2.9. QoS

CoS-local-precedence-map did not show correct information.

2.2.10. STP

Two new STP commands were not in CLI.

Chapter 3 Known issues for Switch 8800 V3.01.22

These Release Notes offer updates on Switch 8800 V3.01.22 features in the following areas:

Link Aggregation	RADIUS	Multicast Protocol
ARP	System Management	QoS
LACP	Spanning Tree	Documentation
Super VLAN	Isolate User VLAN	Boot Code
VLAN	Boot Loader	CoS
Dual Image	DHCP Relay	ACL
Jumbo Frames	SFTP	SNMP
Flow Templates	MBGP	MPLS
Super User Password	802.1x	Hardware
ECMP		

3.1. Multicast Protocol

In some cases, multicast traffic is not supported on ports with overlapped VLANs. As a result, some clients will not be able to receive multicast traffic. 3Com recommends that you implement either fully bridged multicast network or a fully routed multicast network across the link.

In the case of multicast MSDP trans-domain networking, the static RP (Rendezvous Point) mode should be configured. Otherwise, RP dynamic switchover will make MSDP unable to send the SA (Source Active) messages across the domains.

If the equivalent routes exist on the upstream and downstream switches, the ASSERT mechanism is not supported, in which case the PIM SM is recommended. Otherwise, many copies of multicast packets will impact the downstream switch upon configuration of PIM DM.

The multicast IP flows in address ranges such as X.0.0.X, X.128.0.X, X.0.1.1 and X.128.1.1 are sent to the CPU for processing as protocol packets. These multicast IP addresses cannot be used as multicast addresses. Otherwise, the entries of these multicast addresses cannot be established normally, which will cause multicast forward failure.

In the case of large traffic, the duplication capability of the Trunk port is only 35 copies. If multicast packets need to be copied to over 35 VLANs from the port, the multicast VLAN is recommended, or packet loss may occur during packet forwarding.

In the PIM DM mode, it is suggested that the number of the multicast flows in the same group and from different sources be no greater than 64. Otherwise, problems will occur when there is no receiver end in the downstream. Some outgoing interfaces in the upstream do not prune, etc.

3.2. System Management

When FTP or TFTP is used to upgrade the Switch 8800 from the boot menu, the file will retain the original filename. The system image filename should not be renamed when the boot menu is used. This issue does not occur when upgrading the device using the CLI.

The Switch 8800 Flash is no longer able to store more than 1 image due to the size of the software. A work-around is available for this. The compact flash card supports many images and can be used to store backup images and files. It is also possible to boot from compact flash.

3.3. High Availability

Under some circumstances, a user may experience a short but noticeable network convergence delay when a Switch 8800 fabric switchover occurs. A one-second switchover can be achieved when STP is disabled and RIP routing protocol is enabled.

3.4. Broadcast Storm Control

Broadcast Storm Control (BSC) is not supported on 10-gigabit ports for the Switch 8800.

3.5. STP

A port with STP disabled will still forward received BPDUs. To prevent flooding of received BPDU's, use the STP no-flooding command.

3.6. Documentation

Please check the *Switch 8800 Documentation Addendum* for revisions and changes to the Switch 8800 User's Guide and the Switch 8800 Getting Started Guide.

3.7. Boot Code

Boot code upgrade on slave switch fabric fails if boot code doesn't exist in local flash. Copy the boot code manually to both switch fabrics.

3.8. CoS

For Switch 8800 CoS, there are prioritization issues with lower default port priorities. For untagged packets, if the ingress port user priority corresponds to a lower traffic class than the egress port user priority, the packets will be prioritized according to the egress port priority. This does not affect tagged packets. Untagged packets are classified according to the following algorithm. Traffic class (TC) equals the maximum of the TC associated with the Source Address and the TC associated with the Destination Address.

When the Switch 8800 routes traffic over a tagged link, all packets that are not previously marked with a CoS value will have a default value of 3 (Best Effort) applied to them. This only applies to routed traffic. Layer 2 switched-traffic is not manipulated by the Switch 8800.

3.9. Link Aggregation

A disconnected port is still displayed as a selected member of a Link Aggregation group.

3.10. QoS

To ensure accurate traffic policing, CBS and EBS should be at least as large the MTU of the traffic being filtered. 3Com recommends that the CBS and EBS be 2 times the size of the largest packet expected.

"traffic-redirect inbound <ip-group/link-group> <ACL number> interface" is not fully implemented in this release; Switch 8800 can't redirect the packets from one interface to another.

The Traffic priority remarking commands listed below remark the 802.1p field as well as the DSCP field. The desired operation is to only remark the DSCP field

```
acl number 3000
rule 0 permit ip source 10.10.10.1 0
rule 1 permit ip destination 10.10.10.2 0
#

interface GigabitEthernet8/1/3
port access vlan 700
traffic-priority inbound ip-group 3000 rule 0 system-index 1 remark-policed-service
dscp 46
traffic-priority inbound ip-group 3000 rule 1 system-index 2 remark-policed-service
dscp 46
```

In MPLS L3VPN networking, the IP packets, which come from the Egress PE (Provider Edge) (i.e. the packets with the MPLS tag header removed), cannot map the DSCP value of the IP packet according to EXP. Instead, they adopt the DSCP value of the original IP packet. It is suggested that the DSCP value of the IP packet be guaranteed by the initiator.

In MPLS L3VPN networking, for the non-TCP and non-UDP IP packets, the EXP value can be set according to the mapping table from DSCP to EXP on the Ingress PE. However, for the TCP and UDP packets, the EXP value only can be directly mapped according to the three low bits of DSCP, instead of according to the three high bits of DSCP.

On the same port, traffic shaping and WRR (Weighted Round Robin) cannot be enabled simultaneously, or the WRR queue dispatching mode will not function.

The 100Base port can only dispatch 5 queues at one time. If it is required to send packets from over 5 queues, please use the WRR mode. Otherwise, dispatching over 5 queues may result in the situation where the queues with low priorities cannot be dispatched and therefore the packets in them cannot be sent.

The 3C17532 board and 3C17526 board do not support the WRR mode, so do not enable the WRR mode on either the 3C17532 or 3C17526 board. Instead, the SP (Strict-Priority) mode should be used.

3.11. Super VLAN

The Super VLAN feature implementation on the Switch 8800 does not allow Layer 3 communication between sub-VLANs by default. This does NOT impact communication from the sub-VLANs out to the network. It only impacts communication between one sub-VLAN and another. To enable Layer 3 communication between sub-VLANs, proxy ARP should be enabled on the sub-VLANs.

Try to reduce the number of SubVLANs attached to a SuperVLAN. The more SubVLANs that are attached to a SuperVLAN, the worse its ARP learning capability will be. In the case of a full configuration with 64 SubVLANs, the ARP learning capability will be degraded (2 per second, along with queue overflow).

3.12. Protocol VLAN

Upper level Protocol VLAN commands are missing / not working. It is recommended that you use the lower level commands as detailed below.

IP based protocol VLANs - proto ip <cr> is missing – user should use the command

```
[SW8800] proto mode ethernetii etype 0800
```

Appletalk based protocol VLANs –

```
[SW8800] proto at <cr> does not cover all encapsulations of Appletalk
```

Users should use the following commands instead

```
[SW8800] proto mode ethernetii etype 809B
[SW8800] proto mode snap etype 809B
```

if ip ARP is desired – should use the command

```
[SW8800] proto mode ethernetii etype 0806
```

if Appletalk ARP is desired – should use the command

```
[SW8800] proto mode ethernetii etype 80F3
[SW8800] proto mode snap etype 80F3
```

3.13. DHCP Relay

There were major changes to the DHCP relay commands between release 3.01.02 and 3.01.21. No user action is required during software upgrade as existing configurations will be automatically upgraded. No significant changes were made between release 3.01.21 and 3.01.22.

Please refer to the new configuration and command reference manuals for info on setting up this feature. Please refer to the new documentation while setting up this feature.

3.14. RADIUS

The Radius feature has undergone changes between the initial release of the Switch 8800 and release 3.01.21. No significant changes were made between 3.01.21 and 3.01.22. Users should ensure that the following actions are taken when setting up Radius.

Under domain system - scheme radius scheme now needs to be set. In other code versions, this was set by default.

If an accounting server is not present – user should set accounting to optional. Otherwise log-in will fail when the accounting server is not found.

A super password should be set. When logging in thru RADIUS, the super command may be required to access the full set of system commands.

3.15. ARP

New commands were introduced starting in release 3.01.21 that control the following

Size of the ARP table.

ARP entries are reserved for Aggregated Links.

ARP entries available on the fabric/chassis.

ARP entries available for single ports.

The ARP table does not show Aging time.

See the *Switch 8800 Documentation Addendum* for further information.

A Switch 8800 with all MX blades (e.g., 3C17531) can learn 8K ARP entries per blade and up to 64K ARP entries per chassis. 7 aggregated link groups are supported. With ARP max-agg at default, it is possible to learn 8K entries on the first 4 link aggregations. However, the last 3 link aggregations will only learn 1K each. Setting ARP max-agg to 8K allows a more even distribution of ARP entries, but across the chassis only about 32K entries will be learned.

3.16. LACP

Starting in release 3.01.21, aggregation indices were reserved for various purposes. Please note that the first LACP index is 193.

Aggregation Indices 1 thru 31 are reserved for manual and static aggregations.

Aggregation Indices 32 thru 64 are reserved.

Aggregation Indices 65 thru 192 are reserved for future aggregation types.

Aggregation Indices 193 and above are available for LACP.

This section refers to index numbers only. It does NOT indicate how many aggregation groups are supported now or what the plan is for future support.

3.17. Isolate User VLAN

The isolate user VLAN feature is not included in the *Switch 8800 Configuration Guide* or the *Switch 8800 Command Reference Guide*.

This feature is used, generally in conjunction with VLAN based access lists, to isolate servers on the same LAN segment from one another. This prevents an unauthorized user from gaining control of one server and using it to attack other devices in your network. Please see the *Switch 8800 Documentation Addendum* for further information on this feature.

3.18. Boot Loader

When using the boot boot-loader primary <*codeversion*> command without a path (e.g. cf:/ or flash:/), the default is not always flash.

Caution should be taken when specifying a code version. Use the full path name if in doubt. Use the “display boot” command to verify that the correct agent code has been specified.

3.19. ACL

The default application order for the ACL rules is configuration order. This means that the rules are applied in the order entered. This can be changed to auto order by using the command ACL number xx match-order auto. In auto order, rules with a smaller range will dominate. For example: For example: a deny rule for a host will dominate over a permit rule for a LAN segment and traffic from that host will be disallowed.

User ACLs are no longer supported in the software as of release 3.01.21. Basic, Advanced or link ACLs should be used instead.

3.20. Jumbo Frames

The minimum jumbo frame size supported is 1552.

The 2 port 10 Gigabit Module (3C17512) supports Jumbo Frame sizes of 1518, 1536, 1552, 9022, 9192 and 10240. Setting the jumbo frame size to a value other than these supported values will automatically set the value to the next higher jumbo frame size. For example, setting the jumbo frame to 9216 will set the jumbo frame size to 10240 for the port.

3.21. SFTP

The Switch 8800 V3.01.22 supports one SFTP connection only.

When a file is copied from SW8800 flash to a local drive, the file date is not changed so the local and flash files have the same date. When a file is copied from local to flash, the file date follows the SW8800 clock time (via CLI command "dir") and it shows different time - three hours behind the time from WinSCP. For example, the SW8800 clock time is 14:55:00 UTC Fri 2006/06/02. When a file is copied from local to the SW8800 flash via WinSCP (running on Windows XP with time zone of Eastern time), the file date is 14:55:00 on the SW8800, but on WinSCP, the original file date is 6/2/2006 11:55:00 AM.

Can't rename file name on Flash if the file size is very large. When a file over 1.5M in size is renamed on the SW8800 flash, it returns "Error renaming file 'xxx' to 'yyy'. Error decoding SFTP packet (9,4,9)"

Can't edit a file on Flash, if the file size is very large. It causes the SSH connection to drop and requests that the user re-login. If the passphase to login again is entered, SW8800 "display users" shows two SFTP connections, although there is only one SFTP connection at this moment.
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3.22. SNMP

For the SNMP variable h3cSysImage, the software does not return any rows.

For the SNMP variable h3cFlhPartSpaceFree, the value is returned in bytes.

For the SNMP variables h3cFlhOpTable and h3cFlhPartitionTable, the V3.01.22 software does not include entries for master, slave fabric and their compact flash cards for agent update.

3.23. Flow Templates

User Defined Flow Templates have been changed as of Switch 8800 V3.01.21 software. In previous versions of this software, Flow Templates were global in nature. In V3.01.21 and above, they are now slot specific. Previous Flow Templates will become invalid in V3.01.21/V3.01.22 and will need to be re-entered to follow this new format.

3.24. MBGP

You cannot use local preference to choose a path.

When MBGP select routes, it will not select the route of the highest local preference.

3.25. MPLS

3Com recommends that you do not use more than the default number of VRFs. The CLI has options for 512 and 1024 VRFs as well as the default of 256. Only 256 VRFs (virtual routing and forwarding instances) are supported. More than 256 VRFs may result in network stability problems.

To determine the state of an ldp adjacency, the command display *MPLS ldp session* should be used rather than the command display *MPLS ldp peer*.

The MPLS packet cannot be matched by the source MAC. For example, define the sub-rule of *rule 0 permit mpls ingress H-H-H 0000-0000-0000 egress any*, and then configure the redirection rule on the public network side port, in which case the redirection rule does not work.

LDP does not distribute the information about forwarding equivalence classes (FEC) with 32 bit masks on their vlan-interfaces. If you want to use LSPs for this type of FEC, you must configure the corresponding static LSP manually.

3.26. Super User Password

The **ls.pwd** file is where the super user password is stored. This file is created automatically when the super user password is configured. Do not delete this file, otherwise the super user password will be lost. Please remember to backup this file in addition to the configuration file. Once this file is deleted, there is no way to retrieve the existing super user password. If this should happen, you must create a new password for the super user.

3.27. 802.1x

When Microsoft Windows 2000 IAS server is enabled with DNS server/client services and the Preferred DNS server address is configured on the NIC card, 802.1x Authentication may fail the first authentication from 802.1x client side and request authentication twice. 3Com suggest that you remove the DNS server address on the NIC card or use the loopback IP address (127.0.0.1)

When a large number of users conduct 802.1X authentication, it is suggested that the handshake time be prolonged to 180 seconds. Otherwise, as the number of users passing the authentication grows, some of the online users will be forced to go offline due to handshake failure. When the number of users exceeds 1,000, only a few users remain online.

3.28. Hardware

On the 3C17532 board, you cannot perform egress port mirroring as destination port on an Access or Hybrid untagged port; Otherwise, the mirrored packets may be incorrectly tagged. As a result, some network adapters cannot identify the packets.

The heat dissipation is not satisfactory if a 3C17526 board is inserted in slot 0 of a 14-Slot chassis. If it is necessary to use a 3C17526 board, please do not inserted in the slot 0 of the 14-Slot chassis. Otherwise, the four 10GE port cooling fins will be overheated, with the temperature exceeding the normal work range (0~70°C).

3.29. ECMP

Load sharing can be implemented on only 2~6 equivalent routes. It is suggested that no more than 6 equivalent routes be used, or load sharing will be degraded.

Load sharing can be implemented through aggregations of only 2~4 links. No more than 4 links should be used for aggregations, or load sharing through the link aggregation will not achieve a satisfactory result

Chapter 4 Upgrading Software

IMPORTANT NOTES:

Always save the configuration file before upgrading software images. At the present time only 1 image will fit onto the Switch Fabric Flash memory. For a backup image, you will need to utilize the Compact Flash.

To upgrade the software application image of a 7- 10, or 14-slot Switch 8800, use the applicable procedures in sections below for upgrading through FTP, Boot Menu, Xmodem, or TFTP. FTP and tftp are much quicker than using the boot menu procedure or Xmodem. Xmodem has a much slower download speed because the serial port is used. In addition, updating a unit with dual fabrics is more difficult when using the boot menu/Xmoden.

Unless indicated otherwise, the examples use the slot numbering for a 7-slot chassis. Slots 0 and 1 on a 7-slot contain the master and slave fabrics respectively. These slots correspond to slots 4 and 5 on a 10-slot chassis and to slots 6 and 7 on a 14-slot chassis. The examples also assume that the master fabric is in the lower numbered slot – which is usually but not always the case.

When setting the boot-loader – always use the full path name flash:/, slot1#flash, cf:/, slot1#cf:/ and confirm that the file has been set correctly using the display boot command.

The fabric flash is not large enough for a primary and backup image. The primary image should be stored on the fabric flash(es). The backup file should be stored on the compact flash(es)

If a compact flash is used – ensure that it is recognized when the **dir cf:/** or the **dir slot1#cf:/** commands are issued. If not recognized – it may not be formatted correctly for use with the 8800. If necessary, use the **format cf**: command with caution.

Before you upgrade the software image, there are several things to remember:

- After you install the redundant fabric module, you must wait for several minutes [at least 6 minutes] until a CLI message indicates that the slave is ready, then save the configuration. You may also use the command **display switchover state** to verify the synchronization state. Fabrics are synchronized when the message real time and routine backup is displayed. For example:

```
Fabrics are NOT synchronized:
<SW8800>dis switchover state
HA FSM State(master): Waiting batch backup request from
slave.

Fabrics are synchronized:
<SW8800>dis sw st
HA FSM State(master): Realtime and routine backup to slave.
```

- When upgrading thru the boot menu, use the management port on the master fabric to download an application code. For tftp/ftp, you can use the management port or a VLAN interface.

- You must set the boot-loader file to the V3.01.22 file after you download it.
- After you upgrade both fabrics and upgrade the BootROM code (section 4.6) and save the configuration, then you must reboot the switch.
- You can check free space on the Switch 8800 with the **dir** command, in user view. Example: For a 7 slot chassis – master fabric in slot 0 - The commands **dir**, **dir cf**:/, **dir slot1#flash:/** and **dir slot1:cf:/** are required to check free space on the master fabric, master compact flash, slave fabric and slave compact flash, respectively.
- You may need to delete files and clear the recycle bin (using the **delete *file*** and **reset recycle-bin** commands) to make room for a new application image file. These commands (**delete <slot1#flash:/file**> or **delete <slot1#cf:/file>**and **reset recycle slot1#flash:/** or **reset recycle slot1#cf:/**) need to be executed for both the master and the slave Fabric modules. **Reset recycle bin** can take minutes depending on how many bytes are in the recycle bin.
- Another way to delete the file permanently is by issuing the **delete /unreserved filename** command. This can take minutes depending on how many bytes are in the recycle bin.
- The procedures below do not require it, but it may be useful in some cases to download directly to compact flash (cf). To do this – use the destination option. For example: instead of using **tftp 10.10.110.1 get 88h03_01_22rc02.app** – you can use **tftp 10.10.110.1 get 88h03_01_22rc02.app cf:/88h03_01_22rc02.app**
- 3Com strongly recommends that you upgrade to the latest boot code. Upgrade should occur at the point indicated in the following procedures.

4.1. General Upgrade Procedure

NOTE: The following examples use the file name for the basic version of the new code, 88h03_01_22rc02.app. The file name for the basic version of the previously released software is 88h03_01_21rc16.app. The procedure for the extended code (88h03_01_22s168rec02.app) is similar. If you are upgrading from 88h03_01_02rcxx.app, additional info is provided at the end of the section This older version of code does NOT support a backup image. So the user must upgrade to a more recent code version prior to setting the backup image.

To upgrade the Switch 8800:

1. Move the existing application code from the flash to the compact flash to ensure that a valid image exists on the 8800. [This step is optional. It is recommended that you always maintain a valid APP file on flash/compact flash. However, it is not required. Just do NOT reboot without a valid APP file and the boot-loader set to point to that file]

   Use the following command

   <SW8800> copy 88h03_01_21rc16.app cf:/88h03_01_21rc16.app

   <SW8800> copy slot1#flash:/88h03_01_21rc16.app slot1#cf:/88h03_01_21rc16.app

2. Ensure sufficient space on the master and slave fabric flash(es) to hold the new application code (.app file). See dir commands described above. Delete files as necessary – see commands described above. Code size is as follows: Basic Code

88h03_01_22rc02.app (11,926,611 bytes) and Extended Code 88h03_01_22s168rec02.app(11,926,584 bytes). If the old application code is on the flash, it will need to be deleted to make space available for the new application code.

3. Download the new code to the master fabric in Slot0 in a 7-slot chassis, Slot4 in a 10-slot chassis, and Slot6 in a 14-slot chassis using one of the procedures outlined in Section 4.2 (Upgrading Application Software Using FTP) or 4.3 (Upgrading Application Software using BOOT menu) or 4.4 (Upgradin Application Software Using Xmodem, takes even longer) or 4.5 (Upgrading Application Software Using TFTP). *Do not issue the reboot command.*
4. Copy the new code from the primary fabric to the backup fabric:
   - Slot0 to Slot1 in a 7-slot chassis
   - Slot4 to Slot5 in a 10-slot chassis
   - Slot 6 to Slot7 in 14-slot chassis

   Use the following command:
   <SW8800> copy 88h03_01_22rc02.app slot1#flash:/88h03_01_22rc02.app

   It can take several minutes to copy the code from the master to the slave. The CLI will not respond during this operation.
5. Use the following commands to set a primary and backup app file.

```
These are the primary files the switch fabrics will load upon boot

<SW8800> boot boot-loader pri flash:/88h03_01_22rc02 app slot 0
<SW8800> boot boot-loader pri slot1#flash:/88h03_01_22rc02 app slot 1

These are the backup files the switch fabrics will load if there is a
problem with the primary files.

<SW8800> boot boot-loader backup cf:/88h03_01_21rc16 app slot 0
<SW8800> boot boot-loader backup slot1#cf:/88h03_01_21rc16 app slot 1
```

6. Use the display boot command to ensure that the boot loader has been set correctly.
7. If NOT already running the latest boot code - upgrade the BootROM - see section 4.6.
8. Save the configuration, then issue the **reboot** command and enter **Y** at the reboot prompt so the system reboots
9. User can verify which code is running by using the **display version** or the **_display version** command.

IF YOU ARE UPGRADING FROM V3.01.02

1. V3.01.02 does NOT support a backup image – so the boot-loader commands are somewhat different.
   a. Perform steps 1 thru 4 above – except that you are upgrading from 3.01.02 rather than 3.01.21.
   b. After downloading the new code, change the boot-loader on the master to boot the new code using the following command and specify the appropriate slot for your chassis.
      <SW8800> boot boot-loader flash:/88h03_01_22rc02.app slot 0

c. After downloading the new code, change the boot-loader on the slave to boot the new code using the following command and specify the appropriate slot for your chassis.
<SW8800> boot boot-loader slot1#flash:/88h03_01_22rc02.app slot1

d. Upgrade the boot rom using section 4.6

e. You can use the display boot-loader command to verify that the new code will run the next time the chassis is booted.

f. Save the configuration, then issue the **reboot** command and enter **Y** at the reboot prompt so the system reboots

g. User can verify which code is running by using the **display version** or the **_display version** command

2. After upgrading to the new code, a backup image can be set.

a. Set a primary and backup file as shown in Step 5 above.

b. Use the display boot command to ensure that the boot loader has been set correctly

c. Save the configuration, then issue the **reboot** command and enter **Y** at the reboot prompt so the system reboots

d. User can verify which code is running by using the **display version** or the **_display version** command.

NOTE: In the following examples, the IP address of the local computer which is acting as the FTP or TFTP server is 10.10.110.1 and the image is 88h03_01_22rc02.app. Actual IP addresses and filenames will depend on your system and software versions.

These examples assume that the Switch 8800 is set up with an IP address on the Ethernet port on the fabric. To set up the Ethernet port on the fabric with an IP address, use the following command in super-user mode:

[SW8800] interface m_ethernet *fabricslot*#/0/0

then:

[SW8800] ip address 10.10.110.2 255.255.255.0

4.2. Upgrading Application Software using FTP

NOTE: There are FTP/TFTP servers on the 3Com.com website. Search for "tftp server". They are located in "3Com Software Library – Utilities for 32 bit Windows"

Before you upgrade:

- Verify that there is a connection between the FTP server and the Switch 8800 (use the **ping** command).
- Verify that the FTP server is setup according to the manufacturer's instructions and that it is enabled and pointing to the correct upload/download directory.

Use the following procedure to upgrade software using FTP:

1. Log in to the system with super-user privileges.
2. From the Switch 8800 command line, FTP the file from the FTP server to the system.
3. Copy the application file from the primary fabric to the backup fabric.
4. Set the boot parameters to specify the file to boot the system from.
5. Upgrade the BootROM code by using the upgrade procedures in section 4.5.
6. Reboot the system.

The following example illustrates this procedure:

NOTES:

1. The general upgrade procedure (Section 4.1) contains more details related to copying files, etc.
2. The following example illustrates this procedure using the basic application code filename 88h03_01_22rc02.app. If installing the advanced application code, the filename will be 88h03_01_22s168rec02.app.

```
<SW8800>su
 Password:
Now user privilege is 3 level, and just commands which level is
equal to or less than this level can be used.
Privilege note: 0-VISIT, 1-MONITOR, 2-SYSTEM, 3-MANAGE
<SW8800> ftp 10.10.110.1
Trying ...
Press CTRL+K to abort
Connected.
220 3Com 3CDaemon FTP Server Version 2.0
User(none):anonymous
331 User name ok, need password
Password:  xxxxxxx
230 User logged in

[ftp]bin
200 Type set to I.

[ftp]get 88h03_01_22rc02.app
200 PORT command successful.
150 File status OK ; about to open data connection
226 Closing data connection; File transfer successful.
FTP: 11926611 byte(s) received in 42.552 second(s) 280.00 Kbyte(s)/sec.
```

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

############################################################
See the general procedure for more details on copying files,
Making space on flash, etc. (Files must be on BOTH fabrics)
############################################################

<SW8800> copy flash:/88h03_01_22rc02.app slot1#flash:/88h03_01_22rc02.app
Copy flash:/88h03_01_22rc02.app to slot1#flash:/88h03_01_22rc02.app?[Y/N]:y
100% complete

############################################################
IF CURRENTLY RUNNING THE 3.01.02 Code
- Assumes 7 slot chassis – fabrics in slot 0 and 1
############################################################
<SW8800>  boot boot-loader flash:/88h03_01_22rc02 app slot 0
The specified file will be booted next time!
<SW8800>  boot boot-loader slot1#flash:/88h03_01_22rc02 app slot 1
The specified file will be booted next time!

############################################################
IF CURRENTLY RUNNING THE 3.01.21 Code
-   Assumes 7 slot chassis – fabrics in slot 0 and 1
-   After the switch is rebooted with the new application code running, then
    the boot-loader for the backup image can be configured.
############################################################
<SW8800>  boot boot-loader pri flash:/88h03_01_22rc02 app slot 0
The specified file will be booted next time!
<SW8800>  boot boot-loader pri slot1#flash:/88h03_01_22rc02 app slot 1
The specified file will be booted next time!

<SW8800>  boot boot-loader backup cf:/88h03_01_21rc16 app slot 0
The specified file will be booted next time!
<SW8800>  boot boot-loader backup slot1#cf:/88h03_01_21rc16 app slot 1
The specified file will be booted next time!

############################################################
UPGRADE THE BOOTROM AT THIS POINT – GO TO SECTION 4.6
############################################################
<SW8800>  save
The configuration will be written to the device.
Are you sure? [Y/N] y
Now saving current configuration to the device.
Saving configuration flash:/sw8800.cfg Please wait…
…..
Configuration is saved to flash memory successfully.
<SW8800>  reboot
 This will reboot Switch. Continue? [Y/N] y
```

For more detailed descriptions of the set up and procedures for upgrading software, see the remaining sections in this chapter.

4.3. Upgrading Application Software Using the BOOT Menu

This section illustrates an upgrade of the Switch 8800 through the BOOT menu using TFTP. You can also use FTP by entering information for FTP in Step 6.

To perform this procedure, you must have a network connection to the Ethernet port on the Switch 8800 fabric module.

After powering on the Switch 8800, the BootROM program runs automatically. The terminal displays the following information:

NOTE: If already at Boot code 118 – will see the following banner

```
            ************************************************
            *                                              *
            *        Switch 8800 Bootrom, Version 118      *
            *                                              *
            ************************************************

      Copyright(C) 2000-2005 by 3Com Corporation
      Creation date: Oct 14 2005, 16:00:02
```

Otherwise – will see the boot code version 113 prompt

```
Starting...



            ************************************************
            *                                              *
            *        Switch 8800 Bootrom, Version 113      *
            *                                              *
            ************************************************

      Copyright(C) 2000-2004 by 3COM Corporation, Inc.
      Creation date: Jul  5 2004, 10:43:58

      CPU type        : MPC755
      CPU L2 Cache    : 1024KB
      CPU Clock Speed : 400MHz
      BUS Clock Speed : 100MHz
      Memory Size     : 512MB


Flash file system init....done

Board self testing.........................
The board is steady
SlotNo of this board is 6
The MCX is existent
BootRom main system CRC check is OK
82559 register testing is OK
EPLD1 testing is OK
EPLD2 testing is OK
16c2552 register testing is OK
Please check LEDs.....................LED testing finished
The switch's Mac address is 0020.9c69.b512

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

Press Ctrl+B. The system displays:

```
Initialize flash file system. Please wait!
Password :
```

NOTE: To access the BOOT Menu, press Ctrl+B during the 5 seconds that "Press Ctrl-B to enter Boot Menu..." displays. Within 5 seconds, the system begins program decompression. At this time if you want to access the BOOT Menu, you must reboot the switch.

1. Enter the BootROM password. After entering the correct password (no password is set for the switch by default), the system will access the BOOT Menu:

⚠ ***Caution:*** While using the switch, keep in mind the modified BOOTROM password.

```
MAIN MENU

    1. Boot with default mode
    2. Boot from Flash
    3. Boot from CF card
    4. Enter serial submenu
    5. Enter ethernet submenu
    6. Modify Flash description area
    7. Modify bootrom password
    0. Reboot

Enter your choice(0-7):6
```

2. Option 1 boots from the default mode (flash or compact flash). Select option 6 to set the default mode.
3. The following menu appears.

```
Please input '0' or '1' ('0':Boot from Flash, '1':Boot from CF card)
BootDev = 0
FlashFileName = 88h03_01_22rc02.app

The following will also appear. It is not important to set these at this
time
CF card FileName = <filename>
Change backup boot information? Yes or No(Y/N) N
```

4. The Main Menu displays.

```
MAIN MENU

    1. Boot with default mode
    2. Boot from Flash
    3. Boot from CF card
    4. Enter serial submenu
    5. Enter ethernet submenu
    6. Modify Flash description area
    7. Modify bootrom password
    0. Reboot

Enter your choice(0-7): 5
```

5. Enter option 5. The Ethernet Submenu displays

IF UPGRADING WITH THE PREVIOUS BOOT CODE (113) – YOU WILL SEE THE FOLLOWING MENU

```
          ETHERNET SUBMENU

    1. Download file to SDRAM through ethernet interface and boot
    2. Download file to Flash through ethernet interface
    3. Modify ethernet interface boot parameter
    0. Return to main menu
Enter your choice(0-3): 3
```

IF UPGRADING WITH THE CURRENT BOOT CODE (118) – YOU WILL SEE THE FOLLOWING MENU

```
          ETHERNET SUBMENU

    1. Download file to SDRAM through ethernet interface and boot
    2. Download file to Flash through ethernet interface
    3. Download file to CF card through ethernet interface
    4. Modify ethernet interface boot parameter
    0. Return to main menu

Be sure to select 4 to modify boot parameter before downloading!
Enter your choice(0-4):
```

6. Select option 3 (or option 4 if already on the current boot code) to modify the boot parameter in flash before downloading. The following information displays. Note that for the *flags* entry, you must enter **0x80** if you want to download using TFTP, or **0x0** if you want to download using FTP.

Note: Two protocols for download, tftp & ftp.

```
      You can modify the flags following the menu.
      tftp--0x80, ftp--0x0.

'.' = clear field;  '-' = go to previous field;  ^D = quit

boot device          : fei0
processor number     : 0
host name            : 8512
file name            : 88h03_01_22rc02.app
inet on ethernet (e) : 10.10.110.2
inet on backplane (b):
host inet (h)        : 10.10.110.1 /*Fabric Ethernet Port IP address
gateway inet (g)     : 10.10.110.1 /*FTP/tftp servers IP address
user (u)             : anonymous /*User id on the FTP/tftp server
ftp password (pw) (blank = use rsh): anonymous
flags (f)            : 0x80 /*Set to use tftp, 0x0 for ftp
target name (tn)     :
startup script (s)   :
other (o)            :


Write flash...done!
```

7. The Ethernet submenu displays.

```
ETHERNET SUBMENU (BOOT CODE 113 Version)

    1. Download file to SDRAM through ethernet interface and boot
    2. Download file to Flash through ethernet interface
    3. Modify ethernet interface boot parameter
    0. Return to main menu

Enter your choice(0-3): 2
```

8. Enter option 2 to download to flash. The following information displays:

```
Attached TCP/IP interface to fei0.
Attaching network interface lo0... done.

boot device          : fei
unit number          : 0
processor number     : 0
host name            : 8512
file name            : 88h03_01_22rc02.app
inet on ethernet (e) : 10.10.110.2
host inet (h)        : 10.10.110.1
gateway inet (g)     : 10.10.110.1
user (u)             : anonymous
ftp password (pw)    : anonymous
flags (f)            : 0x80

Prepare for loading.................................OK
Loading.............done
Free flash Space : 2510848 bytes
load success
```

9. The Ethernet submenu displays.

```
ETHERNET SUBMENU (BOOT CODE 113 VERSION)

    1. Download file to SDRAM through ethernet interface and boot
    2. Download file to Flash through ethernet interface
    3. Modify ethernet interface boot parameter
    0. Return to main menu

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

10. Enter option 0 to return to the Main Menu.
11. The Main Menu displays.

```
MAIN MENU

    1. Boot with default mode
    2. Boot from Flash
    3. Boot from CF card
    4. Enter serial submenu
    5. Enter ethernet submenu
    6. Modify Flash description area
    7. Modify bootrom password
    0. Reboot

Enter your choice(0-7): 0
```

The system will reboot from the memory that you configured in Step 3

4.4. Upgrading Application Software Using Xmodem

The Xmodem protocol transmits files through serial ports and supports both 128-byte and 1K-byte packets. Xmodem also supports two types of check; normal checksum and CRC. When there is a packet error, retransmission is supported, normally 10 times.

The Xmodem protocol completes transmission by receiving and sending programs. The receiving program first sends the negotiating characters to negotiate the check means. After passing the negotiation, the sending program begins to send the packet. The receiving program checks the packet according to the negotiated means after receiving a complete packet. The acknowledgement characters are sent after passing the check and then the sending program continues to send the next packet. If the check fails, negative characters are sent and the sending program sends the packet again.

NOTE: The default console port connection is 9600 Baud, 8 Data Bits, Parity none, 1 Stop bit and Xon/Xoff flow control.

To perform this procedure, you must have a serial connection to the console port on the Switch 8800 fabric module.

After powering on the Switch 8800, the BootROM program runs automatically. The terminal displays the following information:

NOTE: If already at Bootrom code 118 – will see the following banner

```
            ************************************************
            *                                              *
            *        Switch 8800 Bootrom, Version 118      *
            *                                              *
            ************************************************

      Copyright(C) 2000-2005 by 3Com Corporation
      Creation date: Oct 14 2005, 16:00:02
```

Otherwise – will see the bootrom code version 113 prompt

```
Starting...



            ************************************************
            *                                              *
            *        Switch 8800 Bootrom, Version 113      *
            *                                              *
            ************************************************

      Copyright(C) 2000-2004 by 3COM Corporation, Inc.
      Creation date: Jul  5 2004, 10:43:58

      CPU type        : MPC755
      CPU L2 Cache    : 1024KB
      CPU Clock Speed : 400MHz
      BUS Clock Speed : 100MHz
      Memory Size     : 512MB


Flash file system init....done

Board self testing.........................
```

```
The board is steady
SlotNo of this board is 6
The MCX is existent
BootRom main system CRC check is OK
82559 register testing is OK
EPLD1 testing is OK
EPLD2 testing is OK
16c2552 register testing is OK
Please check LEDs.....................LED testing finished
The switch's Mac address is 0020.9c69.b512

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

Press Ctrl+B. The system displays:

```
Initialize flash file system. Please wait!
Password :
```

NOTE: To access the BOOT Menu, press Ctrl+B during the 5 seconds that "Press Ctrl-B to enter Boot Menu..." displays. Within 5 seconds, the system begins program decompression. At this time if you want to access the BOOT Menu, you must reboot the switch.

Enter the BootROM password. After entering the correct password (no password is set for the switch by default), the system will access the BOOT Menu:

⚠ ***Caution:*** While using the switch, keep in mind the modified BOOTROM password.

1. Enter 4 in the Main Menu and press *Enter*. The Serial Submenu displays:

```
MAIN MENU

    1. Boot with default mode
    2. Boot from Flash
    3. Boot from CF card
    4. Enter serial submenu
    5. Enter ethernet submenu
    6. Modify Flash description area
    7. Modify bootrom password
    0. Reboot
Enter your choice(0-7): 4
```

IF UPGRADING WITH THE PREVIOUS BOOT CODE (113) - YOU WILL SEE THE FOLLOWING MENU

```
      SERIAL SUBMENU

    1. Download file to SDRAM through serial interface and boot
    2. Download file to Flash through serial interface
    3. Modify serial interface boot parameter
    0. Return to main menu

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

IF UPGRADING WITH THE CURRENT BOOT CODE (118) – YOU WILL SEE THE FOLLOWING SERIAL SUBMENU

```
    1. Download file to SDRAM through serial interface and boot
    2. Download file to Flash through serial interface
    3. Download file to CF card through serial interface
    4. Modify serial interface boot parameter
    0. Return to main menu

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

2. Choose option 3 (or 4 as appropriate) to change the serial interface parameters. The following options display:

```
1: 9600(default)
2: 19200
3: 38400
4: 57600
5: 115200

please select an appropriate baudrate:
Enter your choice(1-5): 5
BaudRate is 115200 bps. Please change the terminal's speed to 115200 bps
```

3. Change the baud rate set at the configuration terminal, so that the baud rate is consistent with the selected download baud rate of the software.
4. After the baud rate setting at the configuration terminal is completed, disconnect the terminal and reconnect it. Return to the Serial Submenu and select Option 2:

```
          SERIAL SUBMENU

    1. Download file to SDRAM through serial interface and boot
    2. Download file to Flash through serial interface
    3. Modify serial interface boot parameter
    0. Return to main menu

Enter your choice(0-3): 2

Please Select File .
XMODEM downloading ...CCC
```

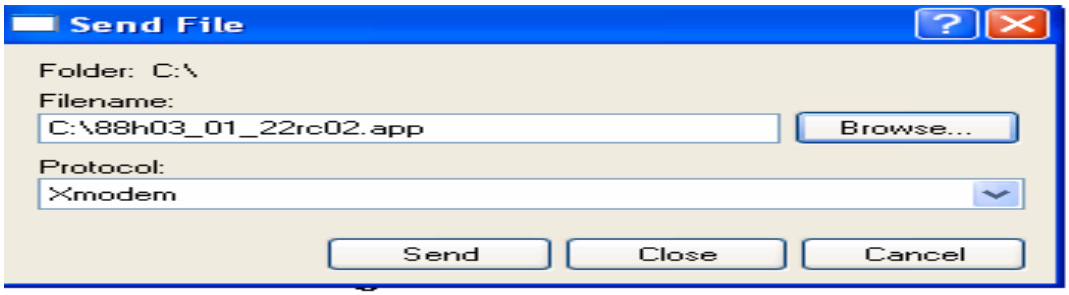
5. Press Enter to start downloading. The terminal displays the following information:

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

NOTE: After the terminal baud rate is modified, you must disconnect and then re-connect the terminal emulator, to enable the new setting.

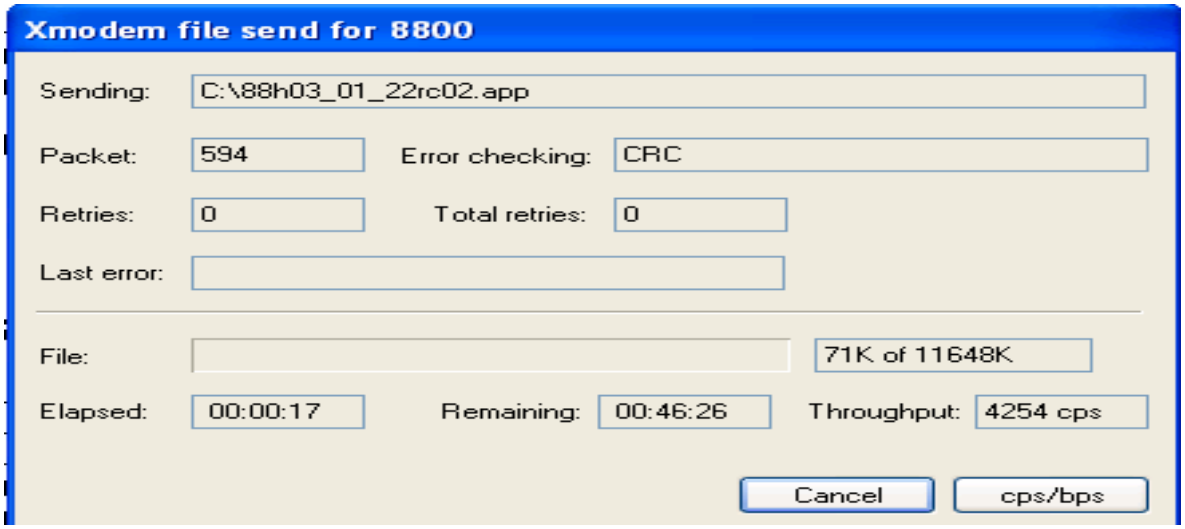
1. Select [Transfer\Send File] from the terminal window.
2. Click Browse in the Send file dialog box, shown in Figure 1 and select the application you want to download.
3. Change the protocol name for the download to Xmodem.

Figure 1 Send File dialog box



4. Click Send. The dialog box shown in Figure 2 displays.

Figure 2 Xmodem file send dialog box



After the download is complete, the system interface is shown as follows:

```
XMODEM downloading ...CC   download successfully!
Flash file system init....done
Free flash Space : XXXXXXXX bytes
Writing
Flash.....................................................................
.........................................................................
.........................................................................
.........................................................................
.........................................................................
.........................................................................
.........................................................................
.........................................................................
.........................................................................
.........................................................................
.....................................Done
```

5. From the serial submenu select 0 to return to the main boot menu

6. Use option 6, as necessary to select boot from flash and the newly downloaded file.
7. From the Boot Menu, select option 2 to boot the newly downloaded file from flash.
8. Default baud rate on reboot will be 9600.

4.5. Upgrading Application Software Using TFTP

TFTP (Trivial File Transfer Protocol) is a simple file transfer protocol that is used without complex interaction between clients and servers.

The client initiates a TFTP transmission. To download files, the client sends a read request packet to the TFTP server, receives the packet from the server, and sends the acknowledgement to the server. To upload files, the client sends a write request packet to the TFTP server, sends the data packet to the server, and receives the acknowledgement from the server.

Switch 8800 provides the functions of the TFTP client.

NOTE: A TFTP Server program is shipped on the CDROM with the Switch 8800. There are also FTP/TFTP servers on the 3Com.com website. Search for "tftp server". The servers are located in "3Com Software Library-Utilities for 32 bit Windows".

Before you upgrade:

- Verify that there is a connection between the TFTP server and the Switch 8800 (use the **ping** command.)
- Verify that the TFTP server is set up according to the manufacturer's instructions and that it is enabled and pointing to the correct directory.

To upgrade using TFTP:

1. Verify that you are logged in with super-user privileges.
2. From the Switch 8800 command line (in user view), TFTP the image file from the TFTP server to the Switch 8800 using the following command:
   tftp <TFTP Server IP Address> get <Source File/image>< Dest File-Optional>
3. Set the boot parameters to specify the file to boot the system from, using the following command:
   boot boot-loader <pri/backup> filename
4. Copy the application code from the primary fabric to the backup fabric.
5. Upgrade the BootROM - see section 4.5
6. Reboot the system

The following example illustrates this procedure using the basic application code filename: 88h03_01_22rc02.app. If installing advanced application code, the filename will be 88h03_01_22s168rec02.app.

NOTE: The general upgrade procedure (Section 4.1) contains more details on copying files, etc.

```
<SW8800>tftp 10.10.110.1 get 88h03_01_22rc02.app
  Transfer file in binary mode.
```

```
  Now begin to download file from remote tftp server, please wait... /
  TFTP:  11926611 bytes received in 263 second(s).
  File downloaded successfully.

<SW8800>copy flash:/88h03_01_22rc02.app slot1#flash:/88h03_01_22rc02.app
Copy flash:/88h03_01_22rc02.app to slot1#flash:/88h03_01_22rc02.app[Y/N]:y
100%  complete
Copy file flash:/88h03_01_22rc02.app to slot1#flash:/88h03_01_22rc02.app..Done
```

Assumes 7 slot chassis – fabrics in slot 0 and 1
After upgrading to 3.01.22 – can then set backup app file

```
############################################################
IF CURRENTLY RUNNING THE 3.01.02 Code
############################################################
<SW8800>  boot boot-loader flash:/88h03_01_22rc02 app slot 0
The specified file will be booted next time!
<SW8800>  boot boot-loader slot1#flash:/88h03_01_22rc02 app slot 1
The specified file will be booted next time!
```

Assumes 7 slot chassis – fabrics in slot 0 and 1
Sets backup file to the current version 3.01.02

```
############################################################
IF CURRENTLY RUNNING THE 3.01.21 Code
############################################################
<SW8800>  boot boot-loader pri flash:/88h03_01_22rc02 app slot 0
The specified file will be booted next time!
<SW8800>  boot boot-loader pri slot1#flash:/88h03_01_22rc02 app slot 1
The specified file will be booted next time!


<SW8800>  boot boot-loader backup cf:/88h03_01_21rc16 app slot 0
The specified file will be booted next time!
<SW8800>  boot boot-loader backup slot1#cf:/88h03_01_21rc16 app slot 1
The specified file will be booted next time!

############################################################
UPGRADE BOOTROM AT THIS POINT – GO TO SECTION 4.6
############################################################
<SW8800> save
The configuration will be written to the device
Are you sure?[Y/N] y
Now saving current configuration to the device
Saving configuration flash:/sw8800/cfg Please wait …
….
Configuration is saved to flash memory successfully.
<SW8800>reboot
 This command will reboot the system. Continue? [Y/N] y
```

4.6. Upgrading BootROM Code

3Com recommends that you upgrade the BootROM code in parallel with the operational code.

The latest BootROM versions in this release are V118 for switch fabric and V107 for I/O modules (Other than the MX blades listed below). Both 8800_fabric-v1118.app and 8800_module-v1107.app are included with this software release.

> NOTE: The MX blades (3C17525, 3C17527, 3C17530, 3C17531) are shipping with V106 boot code. That is the current version. Upgrade is not required.

File 8800_fabric-v1118.app is used to update the fabric bootROM. File 8800_module-v1107.app is used to update all the I/O modules.

Use the following procedure to upgrade boot code on each switch fabric and I/O module. The slot number for the switch fabric depends on the chassis. Please download 8800_fabric-v1118.app to both master and slave switch fabrics.

1. Save the configuration by uploading it to a temporary server.

   Use one of the download procedures in these Release Notes.

2. Download the latest boot code, 8800_fabric-v1118.app and 8800_module-v1107.app, to the master fabric.

   Use one of the download procedures in these Release Notes.

3. Copy both 8800_fabric-v1118.app and 8800_module-v1107.app from master fabric to the backup fabric.

   Use one of the download procedures in these Release Notes.

4. Use the **boot bootrom** command to write the boot code file into the BootROM of the slots you specify in the command:

   ```
   <SW8800> boot bootrom 8800_xxxxxxxxxxxx.APP slot 0 2 3 4
   ```

Below is an example of the above procedure using an FTP server and a 7-slot SW88XX:

<SW8800>**ftp (ip address of the FTP server)**
Trying ...
Press CTRL+K to abort
Connected.
220 3Com FTP Server Version 1.1
User(none): (**Userid)**
331 User name ok, need password
Password: **(password)**
230 User logged in

[ftp]**ls**
200 PORT command successful.
150 File status OK ; about to open data connection
.
..
88h03_01_21rc16.app

88h03_01_21s168rec16.app
8800_module-v1107.app
8800_fabric-v1118.app
226 Closing data connection
FTP: 92 byte(s) received in 0.141 second(s) 652.00byte(s)/sec.

[ftp]**put sw8800.cfg**
200 PORT command successful.
150 Opening BINARY mode data connection for sw8800.cfg.
226 File transfer successful
FTP: 3552 byte(s) sent in 0.312 second(s) 11.00Kbyte(s)/sec.

[ftp]**bin**
200 Type set to I.

[ftp]**get 8800_module-v1107.app**
200 PORT command successful.
150 File status OK ; about to open data connection
\ File transfer successful.
FTP: 524392 byte(s) received in 32.608 second(s) 16.00K byte(s)/sec.

[ftp]**get 8800_fabric-v1118.app**
200 PORT command successful.
150 File status OK ; about to open data connection
/ File transfer successful.
FTP: 267648 byte(s) received in 23.008 second(s) 11.00K byte(s)/sec.

[ftp]**bye**
221 Service closing control connection

<SW8800>**copy flash:/8800_module-v1107.app slot1#flash:/8800_module-v1107.app**
Copy flash:/8800_module-v1107.app to slot1#flash:/8800_module-v1107.app?[Y/N]:**y**
100% complete
Copy file flash:/8800_module-v1107.app to slot1#flash:/8800_module-v1107.app...Done.
<SW8800> **copy flash:/8800_fabric-v1118.app slot1#flash:/8800_fabric-v1118.app**
Copy flash:/8800_fabric-v1118.app to slot1#flash:/ 8800_fabric-v1118.app?[Y/N]:**y**
100% complete
Copy file flash:/8800_fabric-v1118.app to slot7#flash:/8800_fabric-v1118.app...Done.

<SW8800>**boot bootrom 8800_fabric-v1118.app slot 0 1**
This will update BootRom file on board 0 1 . Continue? [Y/N] **y**
Board 6 upgrading BOOTROM, please wait...
Upgrade board 0 BOOTROM succeeded!
Board 7 upgrading BOOTROM, please wait...
Upgrade board 1 BOOTROM succeeded!

<SW8800>**boot bootrom 8800_module-v1107.app slot 2 3**
This will update BootRom file on board 2 3 . Continue? [Y/N] **y**
Board 2 upgrading BOOTROM, please wait...
Upgrade board 0 BOOTROM succeeded!
Board 3 upgrading BOOTROM, please wait...
Upgrade board 1 BOOTROM succeeded!