



# 3Com Switch 4500 Release Notes

**Software version 3.2.0**

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## Chapter 1 Introduction

### 1.1. Scope

This document contains the release notes for the Switch 4500 V3.2.0 Software. These release notes summarize operational requirements and issues for the Switch 4500 products:

- Switch 4500 26-Port (3CR17561-91)
- Switch 4500 50-Port (3CR17562-91)
- Switch 4500 PWR 26-Port (3CR17571-91)
- Switch 4500 PWR 50-Port (3CR17572-91)

Table 1 Software Release Numbers Addressed in These Release Notes

Software	Description
s3n03_02_00s56.app	Application version 3.2.0s56 weak encryption for the Switch 4500
s3n03_02_00s168.app	Application version 3.2.0s168 strong encryption for the Switch 4500
s3o01_01.btm	Boot code Version 1.01 for the Switch 4500

s3p02_01.web	Web file Version 2.01 for the Switch 4500
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## 1.2. Online Resources

Use these notes in conjunction with the following documents:

- *3Com Switch 4500 Family Getting Started Guide*, part number 10015034
- *3Com Switch 4500 Family Configuration Guide*, part number 10015033
- *3Com Switch 4500 Quick Reference Guide*, part number 10015872
- *3Com Switch 4500 Family Command Reference Guide*, part number 10015729

You can obtain the latest technical information for your Switch, including a list of known problems and solutions, from the 3Com Knowledgebase: <http://knowledgebase.3com.com>

## 1.3. Enhancements to Software

This v3.02.00 release of the Switch 4500 software now includes the following enhancements:

- NTP: Network Time Protocol
- 802.1x PEAP, EAP-TLS & EAP-TTLS Authentication
- SysLog
- Support for PuTTY v0.58 SSHv2 client

# Chapter 2 Issues Fixed in Switch 4500 V3.2.0

## 2.1. ARP / MAC Table Synchronization

In previous releases, ARP and MAC address tables could get out of synch when a downstream device was relocated logically due to the fact that there was no associated link down event. This issue has been fixed in V3.02.00 software.

# Chapter 3 Points to Note when Using the Switch 4500

## 3.1. Configuring Link Aggregations

When creating a manual aggregation between two systems the ports in the aggregation must not be physically connected together until the aggregation has been correctly configured at both ends of the link. Failure to configure the aggregation at both ends before physically connecting the ports can result in a number of serious network issues such as lost packets and network loops.

3Com recommends that you set individual ports that are to be members of an aggregated link to the same VLAN membership. This ensures communication between all VLANs at all times.

## 3.2. Access Control Lists

Although multiple rules can be added to an Access Control List (ACL), only a single ACL can be assigned to an individual port.

When trying to bind an ACL to a port you may see the following error generated:

```
Fail to bind port 26 ACL
```

This error will appear if:

- The ACL which is being bound has more rules than can be accommodated by the hardware. The number rules available depends on the port type.
- You try to bind an ACL to a port which forms part of an aggregated link, or a port that has LACP enabled.

*The Switch supports ACLs based on IP addresses and port ranges rather than VLAN IDs. To set up ACLs to restrict routing between VLANs, each VLAN should comprise a clearly defined subnet.*

*ACLs should not be used on inter-switch links as they may interfere with routing messages required for normal network operation.*

## 3.3. Gigabit Ports and Provided SFP Transceivers

Switch 4500 switches support two Gigabit front panel connections at a time. The switches have four physical Gigabit ports. These are two dual-personality combo port pairs, intended to support either a copper 1000Base-T connection or an SFP-based fiber connection on each port pair.

These are the paired ports for each model:

- Switch 4500 26 Port / Switch 4500 PWR 26 Port: 25<>27 and 26<>28
- Switch 4500 50 Port / Switch 4500 PWR 50 Port: 49<>51 and 50<>52

By default, the active enabled ports are:

- Switch 4500 26 Port / Switch 4500 PWR 26 Port: active 25 and 26; inactive 27 and 28
- Switch 4500 50 Port / Switch 4500 PWR 50 Port: active 49 and 50; inactive 51 and 52

In a combo port pair at any given time, one port is active and the other is inactive and may appear "dead." In order to switch the active port, issue the command *undo shutdown* on the inactive port, and this will turn the previously inactive port active and disable its pair. Issuing this command will cause the switch to reboot. A warning message will be displayed and when it is confirmed by the user, the switch will begin its reboot process.

In the Switch 4500 26 Port unit, there are two SFP slots and two 1000Base-T ports.

In three models – Switch 4500 50 Port, Switch 4500 PWR 26 Port and Switch 4500 PWR 50 Port – all the physical Gigabit ports are SFP slots, and two 1000Base-T SFP transceivers are shipped with these units. These SFP transceivers can be inserted in any of the four SFP slots to provide copper Gigabit connectivity. If you install these in the inactive ports, then you will need to issue the command *undo shutdown* on those ports to make them active.

Figure 1 shows installation of these SFP transceivers into the far right port pairs which are inactive by default.

**Figure 1** Inserting the SFP Transceivers



For more information on using SFP transceivers, refer to the SFP installation instructions in the Switch 4500 Getting Started Guide that is provided with this product.

**NOTE:** *The 3CSFP93-4500 is approved for use in the Switch 4500 only.*

### 3.4. Network Time Protocol (NTP)

The Switch 4500 does not support a Real Time Clock (RTC) chip, so the timer is implemented by software and NTP master mode can not be supported.

The NTP polling rate is fixed as one poll every 64 seconds. This may generate a significant amount of traffic in a large network of 4500 switches.

### 3.5. Roving Analysis Port

- When the roving analysis port feature is activated the analyzer should see a copy of all packets sent and received by the mirror port. The Switch does not currently mirror frames sent by the management CPU of the Switch itself. The analyzer port will therefore be unable to show management traffic from the unit or protocol control packets such as RIP which are being sent out of the mirror port.
- While the analyzer port is active it still operates as a normal network port, allowing traffic to be switched to and from other network ports. You must be careful to differentiate traffic seen by the analyzer which is from the mirror port and other network traffic which may be being sent through the analyzer port.
- The traffic sent out of the analyzer port follows the VLAN membership setup for the analyzer port and not the mirror port. You must manually reconfigure the VLAN membership of the analyzer port to match the mirror port or you will not see the correct tagged / untagged packets on the analyzer.

### 3.6. Secure Shell (SSH)

When creating an SSH rsa local key pair, the size of the public key size defaults to 512 rather than 1024 like other 3Com products.

## 3.7. Startup Time

The unit will take approximately 2 minutes to become fully operational. The unit is fully operational when the Self Test LED is lit solid green.

# Chapter 4 Known Issues For Switch 4500 V3.2.0

- To build a stack of switches, ports using the Combo ports 1/0/27 and 1/0/28 or ports 1/0/51 and 1/0/52 have to be enabled. This can be done using the `undo shutdown` command on these ports. When this command is executed, the first two Combo Gigabit ports (25, 26 or 49, 50) will be shut down. See section 3.3 for more information on the Gigabit ports.
- Addition or removal of a port from a Link Aggregation with spanning tree enabled causes all the Link Aggregation related MAC entries to be removed from the MAC address table and relearned. The MAC addresses will be relearned but this may result in additional flooding of traffic whilst the addresses are relearned.
- Automatic aggregation port number assignments are not preserved over a reboot. Note: No other configurations changes occur over reboot only the aggregation number changes. Use of static aggregations will avoid this problem as the static aggregation configuration is saved in the configuration file.
- When using the console port to access the boot menu the option `<CTRL B>` is available for 1 second. It is possible to hold `<CTRL B>` after reboot before the message is output to gain access to the boot menu.
- By default console messages are only visible for one Switch in a stack of switches. Use the `info-center switch-on all` command to output all the console output from all units in a stack to one of the console sessions.
- The following commands are used to return the Switch to factory default settings:
  - `<4500>reset saved-configuration` – This command will remove the user saved configuration file (enter `display startup` to see which file will be deleted)
  - `[4500]change self-unit to auto-numbering` – This command will remove any saved Switch unit number (enter `display ftm topo` to see which switches in a stack are configured with a manual unit number)
  - `[4500]undo ftm stacking-vlan` – This command will return the fabric vlan setting to `VLAN 4094` (enter `display ftm information` to see what stacking vlan is in use)
  - `[4500]rsa local-key-pair destroy` – This command will remove any local rsa keys used for SSH access.
  - `<4500>startup bootrom-access enable` – This command will re-enable access to the bootrom. From the boot menu, the following commands may be used to select the appropriate defaults:
    5. Modify `bootrom password` – Factory default is no bootrom password.

7. Skip current configuration file
    - Factory default is process configuration file.
  8. Set bootrom password recovery – Factory default is enable bootrom password recovery.
  9. Set switch startup mode – Factory default is fast startup.
    - o **<4500> undo clock timezone** – This command will return the timezone to the factory default `UTC` timezone. Enter **display clock** to see what timezone is configured.
- Enter the **terminal debugging** command from User View (`<4500>t d` for short) to display trace debug information. Enter **undo terminal debugging** command to switch off the output. Enter the **display debug** command to display the trace debug that is enabled.
  - When using the **ip router-static** or **arpstatic** CLI command to create static entries, there is no cross check made on the addresses entered for various features. For example, if one of the VLAN interfaces has a default route `0.0.0.0/0` and a gateway of `10.1.1.50`, then the VLAN interface is changed to `10.1.1.50`. No warning message is seen on the CLI when the configuration change is made.
  - The Mirror port feature does not copy packets generated by the local CPU to the monitor port. This results in fewer than expected packets being seen on the monitor port.
  - IGMP snooping does not learn unknown multicast packet addresses. As a result, any unknown multicast packet is flooded on the network. Multicast packets sent from multicast server towards the IGMP Query device will be unknown and will be flooded. Packets sent towards a client that has responded to the IGMP Query messages will be filtered. This problem results in some additional multicast traffic on the network close to the multicast server.
  - When the primary RADIUS server fails, the Switch 4500 changes over to the secondary server. If the primary server recovers, the Switch 4500 does not automatically change back to using the primary unless the secondary server fails. The **State Primary {accounting|authentication}Block** command can be used to force the Switch 4500 to use the primary (or secondary) RADIUS server. For further information, please refer to Chapter 10 (Using AAA and RADIUS commands) of the Command Reference Guide available on the CD that accompanies your Switch.
  - The `[4500-Vlan-interface1]rip version[RIPv1|RIPv2]` command enables you to configure the RIP version. However, there is no **display rip version** command to display this configuration. The **displaycurrent-configuration** command provides details of all configuration settings made, including the RIP version.
  - Static Routes are advertised back onto the source network. According to RIP Split horizon, learned routes must not be advertised out the learned interface (back to the source) with a metric other than 16 (Poison Reverse). This results in counting to infinity problems and slow convergence of the network for static routes. It is possible to configure all the static routes in the switches on the network to avoid this problem.
  - RIP Poison Reverse is not supported in this software release.
  - Manager (Level 2) and Monitor (Level 1) users can enter the **display config** command to view the local user and password information. The administrator must use password-type cipher to ensure that the lower level users cannot see the actual user name and passwords stored in the configuration file.

- The factory provided software supports 56 bit encryption. If the country of use has no restrictions on importing 168 bit encryption technology, then software that supports 56 bit and 168 bit encryption can be downloaded from the 3Com Web site at [www.3com.com](http://www.3com.com).
- The Switch 4500 can only configure spanning tree port costs in the range 1 - 2 000 000. The 802.1t standard allows for port costs in the range 1 - 200 000 000.
- The `undo stp timer max-age` command will restore the default `stp Max age` value to the default value of 2000 centiseconds.
- When using TFTP to transfer files to the flash file system, the full file and directory for the target files must be specified using the `/` character to separate directory and file. The syntax for the file name in the TFTP CLI commands is *directory/filename*. Attempts to use the syntax *directory/filename* will fail.
- Secure FTP (SFTP) can be used to transfer files from flash memory to a hard drive, however, it cannot be used to transfer files from a hard drive to flash memory.
- When using the Switch 4500 as an SFTP client and getting a file from another Switch 4500 acting as a SFTP server, the SFTP client Switch 4500 console port will not respond to commands. The Client Switch 4500 will continue to respond to pings, and traps will be sent to the console port, however, the console can not be used to input commands. The switch has to be rebooted in order to get control of the console.
- When using the bootrom software upgrade menu to update the application software and Web software, the user is offered the option of selecting `main` and `backup` as the file attribute for the application software. These are independent, create only, file attributes and can only be modified by deleting the application file or by selecting a second application file with the same attribute.
- It is possible to assign both `main` and `backup` attributes to a single application file. Either `main` or `backup` is removed by applying the attribute to a second application file by selecting
  2. Select application file to boot.
- Select the boot menu option 1. Download application file to flash to load a new Web file. This menu allows any file (other than the boot software) to be loaded onto the Switch. The boot software update is a separate boot menu item.
- To protect against the event of a corrupted configuration or application file, the configuration file, application file and Web file must be saved to an external server and restored to the Switch if this failure occurs.
- 3Com Network Director will display an error if the user tries to create an IP interface beyond the max number.

## Chapter 5 Upgrading Software

### IMPORTANT NOTES:

This chapter describes how to upgrade software on your Switch 4500 using the Command Line interface using an FTP/TFTP server.

- The contents of the executable file
- Upgrading from the Command Line Interface (CLI)

## 5.1. The Contents of the Executable File

The self-extracting executable file s3n03\_02\_00s56.exe or s3n03\_02\_00s168.exe contains the following:

- End User License
- Release Notes
- Application Software
- BootROM Software
- Web management file
- Bundled File used with 3ND upgrade wizard — e.g. s3n03\_02\_00s56NetMan.zip

Bundled files with the extension **NetMan.zip** can be used to upgrade your Switch using the 3Com Network Director Agent Update. Any attempt to upgrade individual .btm or .app files using 3Com Network Director will fail. These files should be used to upgrade your Switch as described below. Any attempt to upgrade the Switch directly with s3n03\_02\_00s56(or s168).exe or s3n03\_02\_00s56(or s168)NetMan.zip will fail.

## 5.2. Upgrading from the Command Line Interface

This section describes how to upgrade files to your stand alone Switch 4500 from the Command Line Interface (CLI) using an FTP or tftp server. Please see “Upgrading Software in a Stack using the CLI example” chapter for further assistance with stacked Switch 4500’s.

When using FTP or TFTP to do updates, the switch must have an IP address configured. If not already configured, refer to the “3Com® Switch 4500 Family Getting Started Guide”, chapter on “Setting Up for Management”.

*NOTE:* If you need an FTP or TFTP server, there are FTP/TFTP servers on the www.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 or TFTP server and the Switch 4500 (use the ping command).

Verify that the FTP or the TFTP server is set up according to the manufacturer’s instructions and that it is enabled and pointing to the correct upload/download directory. Using the file s3n03\_02\_00s56.exe or s3n03\_02\_00s168.exe, extract the files: s3n03\_02\_00s(56 or 168).app, s3o01\_01.btm and s3p02\_01.web to the FTP or TFTP server that you are using.

1. Logon the switch either thru the console port (default speed 19200, 8,1,none) or telnet. Press enter, the "Login authentication" and "Username:" prompt should appear. One of the default usernames is **admin**, the default password is a carriage return/enter key.

Before upgrading the software to your Switch 4500 from the CLI, it is important to check the contents of the flash to ensure that there is enough space to download the new files.

*The flash space needed for the new files is approximately 5.9 MB for Switch 4500. The size of flash:/ is approximately 9.5 MB.*

2. To check the contents of the flash, in the User View in the CLI, enter the following:

```
<4500>dir
```

A file list *similar* to the following is displayed:

```
Directory of unit1>flash:/
```

0	-rw-	0	Apr 08 2000 00:21:19	3comoscfg_26port.def
1	-rw-	4008894	Apr 09 2000 18:07:10	s3n03_01_00s168.app
2	-rw-	9247	Apr 02 2000 00:24:47	ssh.cfg
3	-rw-	0	Apr 02 2000 00:02:01	3comoscfg.cfg
4	-rw-	304800	Apr 09 2000 18:19:15	s3o01_00.btm
5	-rw-	1489	Apr 02 2000 20:03:43	stack.cfg
6	-rw-	641242	Apr 09 2000 18:49:57	s3p01_00.web
7	-rw-	294	Apr 02 2000 23:07:16	sting
8	-rw-	294	Apr 02 2000 23:07:43	client002

```
7239 KB total (2245 KB free)
```

3. Any additional files should be considered for deletion to allow maximum space for downloading the new files. To delete a file from the list enter:

```
delete /unreserved flash:/filename
```

**Caution:** Do not delete any configuration files that are currently in use (file suffix .cfg).

The **/unreserved** option will cause the file to be deleted from both the flash and the recycle-bin. This can take minutes depending on the size of the file being deleted. To check that deleted files have been removed from the recycle-bin enter the following:

```
reset recycle-bin flash:/
```

There will be a prompt for every file that is in the recycle-bin. Answer **Y** to remove the file from the recycle bin. If you do not want to verify the files for deletion, use the command **reset recycle-bin flash:/ /force**

Answer **y** to the prompt "Clear files in recycle-bin directly?[Y/N]:y"

This can take minutes depending on how many bytes are in the recycle bin.

If the recycle-bin is empty the following is displayed:

```
Recycle bin in this directory is empty
```

## 5.3. Backing up the File System

The following steps enable you to **backup the Switch 4500's file system**:

The flash:/ file system files can be saved to an external TFTP or FTP server or the flash:/ on the switch. If there are not enough free records available on the flash:/ or you prefer to keep a backup copy of the files around more permanently or you prefer to eliminate a single point of failure, save the files to an external TFTP or FTP server. There is not enough space on the flash:/ to keep two application files. The steps below will demonstrate using flash:/ or a TFTP server. In the examples the TFTP servers IP address is 10.0.1.100.

1. Configuration files: The configuration file can be given any name, provided it ends in the extension .cfg. 3Com recommends that each unit be given a unique configuration file name so that when the file is saved to an external TFTP or FTP server, it is clear which switch the file belongs to.

If changes are made to the switch configuration a **save** command should be done or the changes will be lost when the switch is rebooted.

In this example, the units configuration file name is ssh.cfg. The **display startup** will display what configuration file will be used the next time the Switch 4500 is rebooted. The **display boot-loader** will display the application (.app) file that will be used after a reboot. The current .app file is s3n03\_01\_00s168.app. Your current .app file maybe different, s3n03\_01\_00s56.app, s3n03\_01\_00s168p01.app or s3n03\_01\_00s56p01.app. These files must reside locally on the flash:/ file system.

Example:

```
<4500>dis startup
```

```
UNIT1:
```

```
Startup saved-configuration file:      flash:/ssh.cfg
```

```
Next startup saved-configuration file:  flash:/ssh.cfg
```

```
Bootrom-access enable state:          enabled
```

```
<4500>save ?
```

```
STRING<5-56> The name of specific file(*.cfg)
```

```
safely      Save current configuration safely
```

```
<cr>
```

```
<4500>save
```

```
The configuration will be written to the device.
```

```
Are you sure?[Y/N]y
```

```
Now saving current configuration to the device.
```

```
Saving configuration. Please wait...
```

```
.....
```

```
Configuration is saved to flash memory successfully.
```

```
Unit1 save configuration flash:/ssh.cfg successfully
```

```
<4500>
%Apr 2 01:28:42:932 2000 4500 CFM/3/CFM_LOG:- 1 -Unit1 save configuration
successfully.
<4500>dis boot-loader
Unit 1:
  The current boot app is: s3n03_01_00s168.app
  The app that will boot upon reboot is: s3n03_01_00s168.app
```

To back up the default configuration file to the switches flash:/ file system, enter:

```
copy flash:/(configuration file name) flash:/( the desired backup file name)
```

```
Example:
<4500> copy flash:/ssh.cfg flash:/sshback.cfg
Copy unit1>flash:/ssh.cfg to unit1>flash:/sshback.cfg?[Y/N]:y
...
%Copy file unit1>flash:/ssh.cfg to unit1>flash:/sshback.cfg...Done.
```

To save the active configuration file to a TFTP server in User View enter:

```
tftp (IP address of the TFTP server) put flash:/(configuration filename)
```

```
Example:
<4500> tftp 158.101.28.100 put flash:/ssh.cfg
File will be transferred in binary mode.
Copying file to remote tftp server. Please wait... /
TFTP: 9242 bytes sent in 0 second(s).

File uploaded successfully.
```

To back up the application file to a TFTP server, enter:

```
tftp (IP address of the TFTP server) put flash:/(.app filename)
```

```
Example:
<4500> tftp 158.101.28.100 put flash:/s3n03_01_00s168.app
File will be transferred in binary mode.
Copying file to remote tftp server. Please wait... |
```

```
TFTP: 4008894 bytes sent in 57 second(s).
```

```
File uploaded successfully..
```

This takes approximately 1 minute with no traffic on the switch.

2. To back up the boot ROM file to the switches flash:/ file system, enter:

```
<4500> copy flash:/s3o01_00.btm flash:/s3o01_00Back.btm
Copy unit1>flash:/s3o01_00.btm to unit1>flash:/s3o01_00back.btm?[Y/N]:y
.....
%Copy file unit1>flash:/s3o01_00.btm to unit1>flash:/s3o01_00back.btm...
Done. copy flash:/s3r01_15.btm flash:/s3r01_15boot.btm
```

To back up the boot ROM file to a TFTP server, enter:

```
tftp (IP address of the TFTP server) put flash:/(boot ROM filename)
```

## 5.4. Upgrade using TFTP

To upgrade software to your Switch 4500 using TFTP, do the following:

1. Make sure there is connectivity to the TFTP server. Try to ping the server. To download the application file, enter:

```
tftp (IP address of the TFTP server) get s3n03_02_00s(56 or 168).app
```

**s3n** indicates the Switch application filename, see table below for further details:

Switch 4500 Family Filenames

Filename Prefix / Suffix	3Com Switch 4500 Model
<b>s3n / .app</b>	Switch 4500 application software
<b>s3o / .btm</b>	Switch 4500 boot ROM software
<b>s3p / .web</b>	Switch 4500 web file used for HTTP management of the switch

2. Optional step. If the configuration on the Switch 4500 is current, you like it the way it is configured, you have your own configuration file, *this step is not required. Please skip this step.* To download the default configuration file, enter:

```
tftp (IP address of the TFTP server) get 3ComOScfg.def
```

3. To download the webfile, enter:

```
tftp (IP address of the TFTP server) get s3p02_01.web
```

4. To download the boot ROM file, enter:

```
tftp (IP address of the TFTP server) get s3o01_01.btm
```

The Boot ROM firmware may not require upgrading for every software upgrade. It won't damage anything if the procedure is done and the switch was already up to rev. To display the Boot ROM firmware version in any view enter:

```
display version
```

The following could be displayed:

```
Bootrom Version is 1.00
```

The number 100 will match the version number in the Boot ROM file if it is up to date. The bootROM file name for this version is s3o01\_01.btm, bootROM version 1.01. If the version number of the file matches the displayed version, there is no need to download the boot ROM (.btm) file. If the version displayed on your Switch 4500 is earlier, install the newer version. In this example the bootROM needs to be updated. The bootROM version installed on the switch is 1.00, the new version is 1.01 as specified in the filename.

#### 5.4.1. Command Line Interface Switch Setup

1. To set the Switch to boot from the new application code (.app file) that was downloaded, enter the following:

```
boot boot-loader flash:/ s3n03_02_00s(56 or 168).app
```

Example:

```
<4500> boot boot-loader flash:/s3n03_02_00s168.app
```

The specified file will be booted next time on unit 1!

```
<4500> dis boot-loader
```

Unit 1:

The current boot app is: s3n03\_01\_00s168.app

The app that will boot upon reboot is: s3n03\_02\_00s168.app

2. To update the new boot ROM firmware, enter:

```
boot bootrom flash:/s3o01_01.btm
```

Answer **y** to the prompt.

Example:

```
<4500> boot bootrom flash:/s3o01_01.btm
```

This will update BootRom file on unit 1. Continue? [Y/N] **y**

Upgrading BOOTROM, please wait...

Upgrade BOOTROM succeeded!

```
<4500>
```

3. If changes have been made to the switch configuration that you wish to remain, **save** the configuration before rebooting. enter:

```
4500>save
```

Example:

```
<4500>save
```

The configuration will be written to the device.

Are you sure?[Y/N]y

Now saving current configuration to the device.

Saving configuration. Please wait...

.....

Configuration is saved to flash memory successfully.

Unit1 save configuration flash:/(the name if the configuration file) successfully

```
<4500>
```

```
%Apr 2 03:57:46:947 2000 4500 CFM/3/CFM_LOG:- 1 -Unit1 save configuration successfully.
```

4. **Reboot** the switch in order for the new boot ROM and application code to be loaded. The Switch 4500 will boot from the specified application .app file and configuration file .cfg as displayed in the **display boot-loader** and **display startup** commands.

Optional: The files that you have saved in the backup phase can be deleted once you are satisfied the upgrade has been completed successfully and everything is running without any problems.

## 5.5. FTP (via a network port)

To upgrade software to your Switch 4500 using FTP, do the following:

1. Enter the following command from User View:

```
ftp (IP address of the FTP server)
```

If communication with the FTP server has been successfully, the following information is displayed:

```
Trying... Press CTRL+K to abort Connected
```

```
Connected to (IP address of the FTP server).
```

Information on your FTP server is displayed, logon with your username and password.

2. To download the application file, change the transfer mode to binary and get the .app file, enter:

```
binary
```

```
get s3n03_02_00s(56 or 168).app
```

The following information is displayed if the download has been successful:

```
200 PORT command successful.
```

```
150 File status OK ; about to open data connection
.....226 File transfer successful.
FTP: 4088928 byte(s) received in 57.643 second(s) 70.00K byte(s)/sec.
```

3. To download the boot ROM file, enter:

```
get s3o01_01.btm
```

4. To download the webfile file, enter:

```
get s3p02_01.web
```

5. If the following message is displayed when issuing a command:

```
202 Command PASV not implemented
FTP: Error Writing Local File(Screen).
```

To disable passive mode, type:

```
undo pas
```

The display will show % Passive is off. Get the files again.

6. Enter **quit** or **bye** to exit the ftp session.
7. Below is an example of transferring the files using FTP. The ftp servers IP address is 10.0.1.100.

```
<4500>ping 10.0.1.100
PING 10.0.1.100: 56 data bytes, press CTRL_C to break
  Reply from 10.0.1.100: bytes=56 Sequence=1 ttl=128 time=3 ms
  Reply from 10.0.1.100: bytes=56 Sequence=2 ttl=128 time=2 ms
  Reply from 10.0.1.100: bytes=56 Sequence=3 ttl=128 time=2 ms
  Reply from 10.0.1.100: bytes=56 Sequence=4 ttl=128 time=2 ms
  Reply from 10.0.1.100: bytes=56 Sequence=5 ttl=128 time=5 ms

--- 10.0.1.100 ping statistics ---
  5 packet(s) transmitted
  5 packet(s) received
  0.00% packet loss
  round-trip min/avg/max = 2/2/5 ms
<4500>ftp 10.0.1.100
Trying ...
Press CTRL+K to abort
Connected.
220 3Com FTP Server Version 1.1
User(none): (configured user id on the ftp server)
```

```
331 User name ok, need password
Password: (enter the password)
230 User logged in

[ftp]bin
200 Type set to I.

[ftp]get s3n03_02_00s168.app

200 PORT command successful.
150 File status OK ; about to open data connection
.....226 File transfer successful.
FTP: 4088928 byte(s) received in 57.643 second(s) 70.00K byte(s)/sec.

[ftp]get s3o01_01.btm

200 PORT command successful.
150 File status OK ; about to open data connection
.....226 File transfer successful.
FTP: 304880 byte(s) received in 11.301 second(s) 26.00K byte(s)/sec.

[ftp]get s3p02_01.web

200 PORT command successful.
150 File status OK ; about to open data connection
.....226 File transfer successful.
FTP: 642479 byte(s) received in 11.830 second(s) 54.00K byte(s)/sec.
[ftp]bye
221 Service closing control connection

<4500>
```

8. Now activate these files as described in “[Command Line Interface Switch Setup](#)” under the TFTP section.

## Chapter 6 Upgrading Software in a Stack using the CLI example

Updating stacks can also be done with 3ND using the **NetMan.zip** file. In the example below, the stack has 2 Switch 4500's. The application code running on these switches is s3n03\_02\_00s168c01.app. Yours will probably be s3n03\_01\_00s56.app, s3n03\_01\_00s168.app, s3n03\_01\_00s168p01.app or s3n03\_01\_00s56p01.app. This is done from the CLI (command line interface), the user id is admin. This can be done from the console port (19200 speed, 8,1,none) or thru a telnet session. The file transfers are done using FTP. The **bolded font** are commands entered by the user.

```
<4500_stack>dis start
UNIT1:
  Startup saved-configuration file:      flash:/ssh.cfg
  Next startup saved-configuration file: flash:/ssh.cfg
  Bootrom-access enable state:          enabled
UNIT2:
  Startup saved-configuration file:      flash:/3comdef239.cfg
  Next startup saved-configuration file:  flash:/3comdef239.cfg
  Bootrom-access enable state:          enabled
<4500_stack> dis boot
Unit 1:
  The current boot app is: s3n03_02_00s168c01.app
  The app that will boot upon reboot is: s3n03_02_00s168c01.app
Unit 2:
  The current boot app is: s3n03_02_00s168c01.app
  The app that will boot upon reboot is: s3n03_02_00s168c01.app
```

### 6.1. Checking the available space on the flash:/ file system

Before continuing, there is not enough room on the flash:/ to install the new release. 5.9 Meg is needed on all units in the stack. The files deleted below and the configuration files have already been saved to an FTP server as outlined in the section "Backing Up the File System" in the previous chapter.

To check the available records on a switch, type **dir unit(unit number)>flash:/**. The **dir** by itself defaults to unit 1. Below there is only 1.5 meg available on unit 1, 2.1 meg on unit 2. Some files will have to be deleted after you back them up to an FTP/TFTP server. The removal of files needs to be done on *all units* in the stack in order to make room for the new software using the **delete /unreserved** command. The **/unreserved** option will cause the file to be deleted from both the flash and the recycle-bin. This can take minutes depending on the size of the file being deleted.

```
This is for unit 1:
<4500_stack>dir
Directory of unit1>flash:/
```

```
0 -rw- 5195 Apr 01 2000 23:59:14 3comoscfg_26port.def
1 -rw- 4914 Apr 02 2000 00:54:41 3comoscfg.cfg
2 -rw- 4089103 Apr 02 2000 00:35:07 s3n03_02_00s168c01.app
3 -rw- 5195 Dec 18 2006 13:52:46 3comoscfg.def
4 -rw- 1482 Apr 02 2000 00:06:08 switch3.cfg
5 -rw- 641242 Dec 08 2006 10:20:13 s3p01_00.web
6 -rw- 9038 Apr 02 2000 00:10:33 ssh.cfg
7 -rw- 304880 Dec 18 2006 13:46:23 s3o02_01c01.btm
8 -rw- 642479 Dec 18 2006 13:46:44 s3p02_01c01.web
```

7239 KB total (1531 KB free)

<4500\_stack>**del /unre s3n03\_02\_00s168c01.app**

The contents cannot be restored!!! Delete unit1>flash:/s3n03\_02\_00s168c01.app?[Y/N]:y

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

.....  
%Delete file unit1>flash:/s3n03\_02\_00s168c01.app...Done.

<4500\_stack>**del /unre s3p01\_00.web**

The contents cannot be restored!!! Delete unit1>flash:/s3p01\_00.web?[Y/N]:y

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

.....  
%Delete file unit1>flash:/s3p01\_00.web...Done.

<4500\_stack>**del /unre s3o02\_01c01.btm**

The contents cannot be restored!!! Delete unit1>flash:/s3o02\_01c01.btm?[Y/N]:y

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

.....  
%Delete file unit1>flash:/s3o02\_01c01.btm...Done.

<4500\_stack>**del /unre s3p02\_01c01.web**

The contents cannot be restored!!! Delete unit1>flash:/s3p02\_01c01.web?[Y/N]:y

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

.....  
%Delete file unit1>flash:/s3p02\_01c01.web...Done.

This is for unit 2:

<4500\_stack>**dir unit2>flash:/**

Directory of unit2>flash:/

```
0 -rw- 4089103 Dec 21 2006 14:20:50 s3n03_02_00s168c01.app
1 -rw- 304880 Dec 21 2006 14:21:25 s3o02_01c01.btm
2 -rw- 642479 Dec 21 2006 14:21:46 s3p02_01c01.web
3 -rw- 1466 Dec 21 2006 14:42:44 sw5500cfg.cfg
4 -rw- 1345 Apr 01 2000 23:57:07 vrpcfg.def
5 -rw- 1345 Apr 02 2000 00:58:53 sw4500cfg.cfg
6 -rw- 9350 Apr 02 2000 00:10:34 3comdef239.cfg
7 -rw- 1689 Apr 02 2000 19:03:54 4500snmp.cfg
8 -rw- 5195 Apr 02 2000 01:14:24 3comdef.cfg
```

7239 KB total (2163 KB free)

<4500\_stack>**del /unre unit2>flash:/s3n03\_02\_00s168c01.app**

```
The contents cannot be restored!!! Delete unit2>flash:/s3n03_02_00s168c01.app?[Y/N]:y
```

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

```
%Delete file unit2>flash:/s3n03_02_00s168c01.app...Done.
```

```
<4500_stack>del /unre unit2>flash:/s3o02_01c01.btm
```

```
The contents cannot be restored!!! Delete unit2>flash:/s3o02_01c01.btm?[Y/N]:y
```

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

```
%Delete file unit2>flash:/s3o02_01c01.btm...Done.
```

```
<4500_stack>del /unre unit2>flash:/s3p02_01c01.web
```

```
The contents cannot be restored!!! Delete unit2>flash:/s3p02_01c01.web?[Y/N]:y
```

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

```
%Delete file unit2>flash:/s3p02_01c01.web...Done.
```

```
<4500_stack>dir unit2>flash:/
```

Directory of unit2>flash:/

```
 0 -rw-  1466 Dec 21 2006 14:42:44  sw5500cfg.cfg
 1 -rw-  1345 Apr 01 2000 23:57:07  vrpcfg.def
 2 -rw-  1345 Apr 02 2000 00:58:53  sw4500cfg.cfg
 3 -rw-  9350 Apr 02 2000 00:10:34  3comdef239.cfg
 4 -rw-  1689 Apr 02 2000 19:03:54  4500snmp.cfg
 5 -rw-  5195 Apr 02 2000 01:14:24  3comdef.cfg
```

7239 KB total (7083 KB free)

To check if old deleted files have been removed from the recycle-bin enter the following:

```
reset recycle-bin flash:/
```

There will be a prompt for every file that is in the recycle-bin. Answer **Y** to remove the file from the recycle bin. If you do not want to verify the files for deletion, use the command **reset recycle-bin flash:/ /force**

Answer **y** to the prompt "Clear files in recycle-bin directly?[Y/N]:y"

This can take minutes depending on how many bytes are in the recycle bin.

If the recycle-bin is empty the following is displayed:

```
Recycle bin in this directory is empty
```

## 6.2. Transferring the new files to the Switch 4500

The files for the update are going to be transferred using FTP to unit 1, then the files will be copied from unit 1's flash file system to unit 2's flash file system. All units in the stack will need to have these files copied. Verify that the FTP or the TFTP server is set up according to the manufacturer's instructions and that it is enabled and pointing to the correct upload/download directory. Using the file s3n03\_02\_00s56.exe or s3n03\_02\_00s168.exe, extract the files: s3n03\_02\_00s(56 or 168).app, s3o01\_01.btm and s3p02\_01.web to the FTP or TFTP servers' upload/download directory.

If you prefer to use tftp, refer to the section “Upgrade using TFTP”. Return back here after the files have been transferred. Then continue with the steps to copy the files from unit 1 to the other units in the stack, then finish the remaining steps in this chapter.

The FTP servers IP address in the example is 10.0.1.100. Make sure there is connectivity to the FTP server by pinging the server. Then transfer the files using FTP. The application code used is s3n03\_02\_00s168.app. Yours could be the same or s3n03\_02\_00s56.app.

```
<4500_stack>ping 10.0.1.100
PING 10.0.1.100: 56 data bytes, press CTRL_C to break
  Reply from 10.0.1.100: bytes=56 Sequence=1 ttl=127 time=8 ms
  Reply from 10.0.1.100: bytes=56 Sequence=2 ttl=127 time=5 ms
  Reply from 10.0.1.100: bytes=56 Sequence=3 ttl=127 time=5 ms
  Reply from 10.0.1.100: bytes=56 Sequence=4 ttl=127 time=5 ms
  Reply from 10.0.1.100: bytes=56 Sequence=5 ttl=127 time=5 ms

--- 10.0.1.100 ping statistics ---
  5 packet(s) transmitted
  5 packet(s) received
  0.00% packet loss
  round-trip min/avg/max = 5/5/8 ms

<4500_stack>ftp 10.0.1.100
Trying ...
Press CTRL+K to abort
Connected.
220 3Com FTP Server Version 1.1
User(none): (user id configured on the FTP server)
331 User name ok, need password
Password: (password will not echo)
230 User logged in

[ftp]bin
200 Type set to I.

[ftp]get s3n03_02_00s168.app

200 PORT command successful.
150 File status OK ; about to open data connection
..\..\226 File transfer successful.
FTP: 4088928 byte(s) received in 62.369 second(s) 65.00K byte(s)/sec.

[ftp]get s3o01_01.btm

200 PORT command successful.
150 File status OK ; about to open data connection
....226 File transfer successful.
FTP: 304880 byte(s) received in 8.279 second(s) 36.00K byte(s)/sec.

[ftp]get s3p02_01.web

200 PORT command successful.
150 File status OK ; about to open data connection
```

```
.....226 File transfer successful.  
FTP: 642479 byte(s) received in 16.225 second(s) 39.00K byte(s)/sec.
```

```
[ftp]bye
```

```
221 Service closing control connection
```

```
**Verify that the 3 files that were just transferred are on unit 1.
```

```
<4500_stack>dir
```

```
Directory of unit1>flash:/
```

```
 0 -rw-   5195    Apr 01 2000 23:59:14 3comoscfg_26port.def  
 1 -rw-   4914    Apr 02 2000 00:54:41 3comoscfg.cfg  
 2 -rw- 4088928   Apr 09 2000 23:57:19 s3n03_02_00s168.app  
 3 -rw-   5195   Dec 18 2006 13:52:46 3comoscfg.def  
 4 -rw-   1482    Apr 02 2000 00:06:08 switch3.cfg  
 5 -rw-  304880   Apr 09 2000 23:57:36 s3o01_01.btm  
 6 -rw-   9038    Apr 02 2000 00:10:33 ssh.cfg  
 7 -rw-  642479   Apr 09 2000 23:58:06 s3p02_01.web
```

```
7239 KB total (2158 KB free)
```

```
<4500_stack> dir unit2>flash:/
```

```
Directory of unit2>flash:/
```

```
 0 -rw-   1466  Dec 21 2006 14:42:44 sw5500cfg.cfg  
 1 -rw-   1345  Apr 01 2000 23:57:07 vrpcfg.def  
 2 -rw-   1345  Apr 02 2000 00:58:53 sw4500cfg.cfg  
 3 -rw-   9350  Apr 02 2000 00:10:34 3comdef239.cfg  
 4 -rw-   1689  Apr 02 2000 19:03:54 4500snmp.cfg  
 5 -rw-   5195  Apr 02 2000 01:14:24 3comdef.cfg
```

```
7239 KB total (7083 KB free)
```

```
****Copy and paste works really good here!****
```

```
<4500_stack>copy unit1>flash:/s3n03_02_00s168.app unit2>flash:/s3n03_02_00s168.app
```

```
Copy unit1>flash:/s3n03_02_00s168.app to unit2>flash:/s3n03_02_00s168.app?[Y/N]:
```

```
y
```

```
%Copy file unit1>flash:/s3n03_02_00s168.app to unit2>flash:/s3n03_02_00s168.app.
```

```
..Done.
```

```
<4500_stack>copy unit1>flash:/s3o01_01.btm unit2>flash:/s3o01_01.btm
```

```
Copy unit1>flash:/s3o01_01.btm to unit2>flash:/s3o01_01.btm?[Y/N]:y
```

```
%Copy file unit1>flash:/s3o01_01.btm to unit2>flash:/s3o01_01.btm...Done.
```

```
<4500_stack>copy unit1>flash:/s3p02_01.web unit2>flash:/s3p02_01.web
```

```
Copy unit1>flash:/s3p02_01.web to unit2>flash:/s3p02_01.web?[Y/N]:y
```

```
%Copy file unit1>flash:/s3p02_01.web to unit2>flash:/s3p02_01.web...Done.
```

```
<4500_stack>dir unit2>flash:/
```

```
Directory of unit2>flash:/
```

```
 0 -rw- 4088928   Apr 10 2000 00:01:50 s3n03_02_00s168.app
```

1	-rw-	304880	Apr 10 2000 00:04:03	s3o01_01.btm
2	-rw-	642479	Apr 10 2000 00:04:58	s3p02_01.web
3	-rw-	1466	Dec 21 2006 14:42:44	sw5500cfg.cfg
4	-rw-	1345	Apr 01 2000 23:57:07	vrpcfg.def
5	-rw-	1345	Apr 02 2000 00:58:53	sw4500cfg.cfg
6	-rw-	9350	Apr 02 2000 00:10:34	3comdef239.cfg
7	-rw-	1689	Apr 02 2000 19:03:54	4500snmp.cfg
8	-rw-	5195	Apr 02 2000 01:14:24	3comdef.cfg

7239 KB total (2163 KB free)

Reminder: All units in the stack need to have the files copied to them.

### 6.3. Updating the BootROM

The Boot ROM firmware may not require upgrading for every software upgrade. It won't damage anything if the procedure is done and the switch was already up to rev. To display the Boot ROM firmware version in any view enter:

```
display version
```

The following could be displayed:

```
Bootrom Version is 1.00
```

The number 1.00 will match the version number in the Boot ROM file if it is up to date. The bootROM file name for this version is s3o01\_01.btm, bootROM version 1.01. If the version number of the file matches the displayed version, there is no need to download the boot ROM (.btm) file. If the version displayed on your Switch 4500 is earlier, install the newer version. In this example the bootROM needs to be updated. The bootROM version installed on the switch is 1.00, the new version is 1.01 as specified in the filename. If you are not sure, update it. If updating the bootROM, all units in the stack need to be done.

This is for updating unit 1:

```
<4500_stack>boot bootrom s3o01_01.btm  
This will update BootRom file on unit 1. Continue? [Y/N] y  
Upgrading BOOTROM, please wait...  
Upgrade BOOTROM succeeded!
```

```
<4500_stack>
```

This is for updating unit2:

```
<4500_stack>boot bootrom unit2>flash:/s3o01_01.btm  
This will update BootRom file on unit 2. Continue? [Y/N] y  
Upgrading BOOTROM, please wait...  
Upgrade BOOTROM succeeded!
```

## 6.4. Configuring the switch to boot from the new application code

The Switch 4500 needs be configured to use the newly installed .app file using the **boot boot-loader** command. All units in the stack need to be configured. After this is done, the configuration can be **saved** and the stack can be **rebooted**. Give all units in the stack time to come up before accessing the switch and verifying the installation.

```
<4500_stack>boot boot-loader unit1>flash:/s3n03_02_00s168.app
The specified file will be booted next time on unit 1!
<4500_stack>
<4500_stack>boot boot-loader unit2>flash:/s3n03_02_00s168.app
The specified file will be booted next time on unit 2!

****Verify that s3n03_02_00s168.app will be loaded when the switches are rebooted****
<4500_stack>dis boot
Unit 1:
  The current boot app is: s3n03_02_00s168c01.app
  The app that will boot upon reboot is: s3n03_02_00s168.app
Unit 2:
  The current boot app is: s3n03_02_00s168c01.app
  The app that will boot upon reboot is: s3n03_02_00s168.app
<4500_stack>dis start
UNIT1:
  Startup saved-configuration file:    flash:/ssh.cfg
  Next startup saved-configuration file: flash:/ssh.cfg
  Bootrom-access enable state:        enabled
UNIT2:
  Startup saved-configuration file:    flash:/3comdef239.cfg
  Next startup saved-configuration file: flash:/3comdef239.cfg
  Bootrom-access enable state:        enabled
<4500_stack>save
The configuration will be written to the device.
Are you sure?[Y/N]y
Now saving current configuration to the device.
Saving configuration. Please wait...
.....
Configuration is saved to flash memory successfully.
Unit1 save configuration flash:/ssh.cfg successfully
Unit2 save configuration flash:/3comdef239.cfg successfully

%Apr 10 00:10:43:89 2000 4500_stack CFM/3/CFM_LOG:- 1 -Unit1 save configurati
on successfully.
<4500_stack>
<4500_stack>
%Apr 10 00:10:43:203 2000 4500_stack CFM/3/CFM_LOG:- 1 -Unit2 save configurat
ion successfully.
<4500_stack>reb
This will reboot device. Continue? [Y/N] y
#Apr 10 00:11:30:246 2000 4500_stack COMMONSY/5/REBOOT:- 1 -
Reboot Fabric by command.

<4500_stack>
```

```
%Apr 10 00:11:34:247 2000 4500_stack DEV/5/DEV_LOG:- 1 -  
Switch is rebooted.  
#Apr 10 00:11:35:478 2000 4500_stack L2INF/2/PORT LINK STATUS CHANGE:- 1 -  
Trap 1.3.6.1.6.3.1.1.5.3: portIndex is 4227825, ifAdminStatus is 1, ifOperStatu  
s is 2  
  
%Apr 10 00:11:35:671 2000 4500_stack L2INF/5/PORT LINK STATUS CHANGE:- 1 -  
GigabitEthernet1/0/26: is DOWN
```

Starting.....

```
*****  
*                                     *  
*   SuperStack 3 Switch 4500 26-Port BOOTROM, Version 1.01   *  
*                                     *  
*****
```

Copyright (c) 2004-2006 3Com Corporation and its licensors.

Creation date : Apr 19 2006, 12:50:28

CPU type : BCM4704

CPU Clock Speed : 200MHz

BUS Clock Speed : 33MHz

Memory Size : 64MB

Mac Address : 0012abadface

Press Ctrl-B to enter Boot Menu... 1 0 0

Auto-booting...

Decompress Image.....

```
.....  
.....  
.....  
.....
```

.....OK!

Starting at 0x80100000...

User interface aux0 is available.

Press ENTER to get started.

Login authentication

Username:**admin**

Password:

```
<4500_stack>
%Apr 1 23:56:14:652 2000 4500_stack SHELL/5/LOGIN:- 1 - admin(aux0) in unit1
login

****Verify the new application code V3.02.00s168 is installed and the bootROM is version
1.01. ****
<4500_stack>dis ver
3Com Corporation
SuperStack 3 Switch 4500 26-Port Software Version 3Com OS V3.02.00s168
Copyright(C) 2003-2005 3Com Corporation. All Rights Reserved.
SuperStack 3 Switch 4500 26-Port uptime is 0 week, 0 day, 0 hour, 1 minute
SuperStack 3 Switch 4500 26-Port with 1 MIPS Processor
64M bytes DRAM
8196K bytes Flash Memory
Config Register points to FLASH

CPLD Version is CPLD 003
Bootrom Version is 1.01
[Subslot 0] 24 FE + 4 GE Hardware Version is 00.00.00

<4500_stack>
<4500_stack>dis start
UNIT1:
  Startup saved-configuration file: flash:/ssh.cfg
  Next startup saved-configuration file: flash:/ssh.cfg
  Bootrom-access enable state: enabled
UNIT2:
  Startup saved-configuration file: flash:/3comdef239.cfg
  Next startup saved-configuration file: flash:/3comdef239.cfg
  Bootrom-access enable state: enabled
<4500_stack>dis boot
Unit 1:
  The current boot app is: s3n03_02_00s168.app
  The app that will boot upon reboot is: s3n03_02_00s168.app
Unit 2:
  The current boot app is: s3n03_02_00s168.app
  The app that will boot upon reboot is: s3n03_02_00s168.app
```

## Chapter 7 3Com Network Director

3Com Network Director offers IT managers of up to midsize enterprise networks a self-contained, standalone software suite with all the features necessary to monitor and control a sophisticated data or data/telephony network. While optimized for 3Com network environments, it also supports a range of non-3Com products.

To download the latest 3Com Network Director, please visit:

<http://www.3com.com/3nd/>

After installation, click *LiveUpdate* to add support for the latest 3Com products.

## Chapter 8 3Com World Wide Web Site

Access the latest networking information on the 3Com Corporation World Wide Web site by entering our URL into your Internet browser:

**[www.3com.com](http://www.3com.com)**

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