



PXM45 Backup Boot Procedures

When a PXM45 card starts up, it first loads the boot software on the card. If the PXM45 cannot load the runtime firmware, the card continues to run the boot software in what is called *backup boot* mode. The backup boot prompt is as follows:

```
pxm45bkup>
```

Some switch procedures, such as PXM45 card initialization and boot software upgrades, must be performed in backup boot mode. This appendix describes the following procedures:

- [Changing to PXM45 Backup Boot Mode](#)
- [Browsing the File System in Backup Boot Mode](#)
- [Locating Software Updates](#)
- [Transferring Software Files to and from the Switch](#)
- [Clearing the Switch Configuration](#)
- [Initializing the PXM45 Hard Disk](#)

Changing to PXM45 Backup Boot Mode

You must enter PXM45 backup boot mode to perform certain configuration procedures such as burning boot software. The following procedure describes how to switch to backup boot mode.

- Step 1** If you have not done so already, establish a CLI session with the PXM45 card using the CP port on the UI-S3 back card and a user name with CISCO_GP privileges.



Note A CP port session is required because you will be resetting the node and entering commands in “Backup Boot mode,” which is not accessible through other connection methods.

- Step 2** At the switch prompt, enter the **sh** command to switch to the PXM45 shell mode.

```
mgx8850a.7.PXM.s > sh
```

The switch will display the following shell mode prompt:

```
pxm45>
```

Step 3 At the shell prompt, enter the `sysBackupBoot` command:

```
pxm45> sysBackupBoot
```



Note This command and all commands that you enter in shell mode are case sensitive.

The PXM45 card reboots after you enter this command.



Tips

If you are accessing the CP port through a terminal server, rebooting the PXM45 may disrupt your connection. Random characters may appear on the display or the display may appear to “hang.” If this happens, use your terminal software command to reset the terminal connection. After a successful reset, switch status messages should start appearing on the display.

When the reboot is complete, the following PXM45 Backup Boot banner appears:

```
PPPPPPPPPP XXX      XXX  M      M      4444  55555555
PP      PP  XX      XX  MM      MM      44 44  55
PP      pp  XX      XX  MMM      MMM      44 44  55 555
PP      pp  XX      XX  MMMM     MMMM     44 44  5555  55
PP      PP      XXXX      MM MMMMM MM  44  44  55  55
PPPPPPPPPP      XX  XX      MM  MMM  MM  444444444444      55
PP      XX      XX      MM      MM      44  55  55
PP      XX      XX      MM      MM      44  55  55
PPPP      XXX      XXX  MMMM     MMMM     4444  5555
                                           PXM45 BACKUP BOOT
```

To avoid reset from the Active card, use `sysPxmRemove()`
`pxm45bkup>Use sysFWLoad()` for FW download from active PXM.

Step 4 When the PXM45 Backup Boot banner appears, press return to display the backup boot prompt:

```
pxm45bkup>
```

When the backup boot prompt appears, you are in backup boot mode.



Caution

Some backup boot mode commands, such as debug commands, can consume switch resources and reduce switch performance. Cisco Systems, Inc., recommends that you only execute backup boot commands described in the product documentation. Experimenting with some commands can degrade switch performance or interrupt switch operation completely.

Step 5 If the PXM45 you restarted is the standby card for an active PXM45 card in the same switch, enter the **sysPxmRemove** command to prevent the active card from restarting the card you on which you are working.



Tips

To display a list of commands available in backup boot mode, enter the **help** command.

Browsing the File System in Backup Boot Mode

The PXM45 hard disk stores log files, configuration files, and boot and runtime software. The switch operating system supports a set of UNIX-like commands that you can use to locate log files or manage software updates. Many of the commands are the same commands that operate at the switch prompt, however, in backup boot mode you must enclose the file path in quotation marks. [Table B-1](#) lists commands that you can use to browse the file system.



Note

File and directory names in the switch file system are case sensitive.

Table B-1 File System Commands at Backup Boot Prompt

Command	Description
cd	Change directories. Syntax: cd "<path>" Example: cd "C:FW"
copy	Copies a file from one location to another. Syntax: copy "<source file name>", "<destination file name>" Example: copy "C:FW/pxm45_002.001.000.000_bt.fw", "C:FW/test"
remove	Deletes a file. Syntax: remove "<file name>" Example: remove "test"
ll	List directory contents using long format, which includes the name, size, modification date, and modification time for each file. This command also displays the total disk space and free disk space. Syntax: ll ["<path>"] Example: ll "C:FW" Note: When you first start a session in backup boot mode, the present working directory is a directory on a remote server as specified by the runtime software bootchange command. If you enter the ll command and the remote server is unavailable or does not exist, the switch appears to hang as the switch attempts to access the remote server. To avoid this, select a directory on the C: drive with the cd command first or specify a path with the ll command. To reboot the PXM45 card when it is searching for a remote server, press Control-X .
ls	List directory contents using the short format, which displays filenames, total disk space, and free disk space. Syntax: ls ["<path>"] Example: ls

Table B-1 File System Commands at Backup Boot Prompt (continued)

Command	Description
pwd	Display the present working directory. When you first start a session in backup boot mode, the present working directory is a directory on a remote server as specified by the runtime software bootchange command. To change to a directory on the C: drive, use the cd command. Syntax: pwd Example: pwd
rename	Renames a file. Syntax: rename "<old file name>", "<new file name>" Example: rename "test", "deleteme"
whoami	Lists the login name for the current session. Since there is no user log-in procedure for backup boot mode, the username reported by the whoami command is the username configured by the runtime software bootchange command for remote server access. Syntax: whoami Example: whoami

Locating Software Updates

For information on locating software updates, refer to the *Release Notes for Cisco MGX 8850 Software Version 2.1.60* or the *Release Notes for Cisco MGX 8950 Software Version 2.1.60*.

Transferring Software Files to and from the Switch

This section describes how to copy software files between the switch and another computer when the switch is in backup boot mode. In most cases, you will use this procedure because the switch cannot completely load the runtime software and ends start up in either backup boot mode or shell mode.



Note

When the switch displays the switch prompt (which includes the switch name), copy files to the switch using the procedure described in [“Copying Software Files to the Switch”](#) in [Appendix A](#), [“Downloading and Installing Software Upgrades.”](#)

MGX 8850 MGX 8950 switches provide a File Transfer Protocol (FTP) service to support file transfers between the switch and other computers. If you have FTP client software and network connectivity to both the switch and the server where the software files are stored, you can FTP files directly from the server to the switch. You can also use this FTP service to recover log files, boot and runtime files, or saved configuration files before replacing the hard disk.

To transfer files with the FTP service, use the following procedure.

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- Step 1** If you are copying software files to the switch, refer to the *Release Notes for Cisco MGX 8850 Software Version 2.1.60* or the *Release Notes for Cisco MGX 8950 Software Version 2.1.60* to locate a server from which you can download the files.
- Step 2** Using a workstation with FTP client software, establish connections to the server where the files are stored and to the switch.
- The procedure you use for transferring the files depends on the FTP client software you are using. When initiating the FTP connection, remember the following:
- Select the switch by entering its IP address.
 - When prompted for a username and password, the username for backup boot mode access is *cisco* and the password is supplied with your switch.
- Step 3** For all transfers to or from the switch, select binary mode for the file transfer. The files are located in the following directories:
- PXM45 and AXSM files are in the directory C:FW.
 - RPM-PR files are in the directory E:RPM.
 - Log files are in the directory C:LOG.
 - Configuration files are in the directory C:CNF.
- Step 4** To verify that files have been transferred to the switch, use the directory commands listed in [“Browsing the File System in Backup Boot Mode,”](#) which appears earlier in this appendix.
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Clearing the Switch Configuration

To clear the entire switch configuration, use the **sysClrallcnf** command. This command clears all the provisioning data and most of the general switch configuration parameters, such as the switch name and SNMP configuration.

Initializing the PXM45 Hard Disk

If the switch troubleshooting process indicates that the PXM45 hard disk is not operating correctly, you can try to correct the problem by re initializing the hard disk as described in the following procedure.

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- Step 1** Establish a backup boot session on the PXM45 that connects to the affected hard disk as described in [“Changing to PXM45 Backup Boot Mode,”](#) which appears earlier in this chapter.

- Step 2** Start a disk format by entering the **diskFormat** command as shown in the following example:

```
pxm45bkup>diskFormat "C:"  
IDE: format in progress. This takes a while .....
```

When the format is complete, a message similar to the following appears:

```
Disk format complete. Reboot the system .....
```

```
"C:" formatted.  
value = 0 = 0x0
```

- Step 3** Enter the **reboot** command to restart the card.

- Step 4** When the *stop auto-boot* prompt appears, press return to enter backup boot mode. The following example shows the prompt and the message that appears when a newly formatted hard disk is detected.

```
Press Return key to stop auto-boot...2

To avoid reset from the Active card, use sysPxmRemove()
Use sysFWLoad() for FW download from active PXM.
*****
*   Disk does not have valid configuration.   *
*   Please run sysDiskCfgCreate(), and then reboot. *
*****
pxm45bkup>
```

- Step 5** If the PXM45 you restarted is the standby card for an active PXM45 card in the same switch, enter the **sysPxmRemove** command to prevent the active card from restarting the card you on which you are working.
- Step 6** Enter the **sysDiskCfgCreate** command to set up the PXM45 hard disk.
- Step 7** If this is a standalone PXM45 card, copy the runtime and boot software files to the switch as described in “[Transferring Software Files to and from the Switch](#),” which appears earlier in this appendix.
- Step 8** Enter the **reboot** command to restart the card.
- Step 9** If this is a standalone PXM45 card, set up the switch as if it were a new switch as described in “[Configuration Quickstart](#)” in [Chapter 2, “Configuring General Switch Features.”](#)
- Step 10** If this is a standby PXM45 card, the active PXM45 card will update the newly-formatted hard disk with the active configuration. When the update is complete, the card will enter standby mode and the switch prompts you for a user name and password. Enter the user name and password to log in. After login, the switch prompt should include the letter s, indicating the card is operating in standby mode. For example:

```
pop20one.8.PXM.s >
```



Note The switch prompt might initially display the letter i for initialization. Press **Return** to display an updated switch prompt or enter the **dspecds** command several times until the switch prompt or the **dspecds** command display shows the card is operating in standby mode. The card must complete initialization before entering standby mode.
