



Cisco Catalyst Blade Switch 3020 for HP Bootloader Commands

This appendix describes the bootloader commands on the switch.

During normal bootloader operation, you are not presented with the bootloader command-line prompt. You gain access to the bootloader command line if the switch is set to manually boot, if an error occurs during power-on self test (POST) DRAM testing, or if an error occurs while loading the operating system (a corrupted Cisco IOS image). You can also access the bootloader if you have lost or forgotten the switch password.



The default switch configuration allows an end user with physical access to the switch to recover from a lost password by interrupting the boot process while the switch is powering up and then entering a new password. The password recovery disable feature allows the system administrator to protect access to the switch password by disabling part of this functionality and allowing the user to interrupt the boot process only by agreeing to set the system back to the default configuration. With password recovery disabled, the user can still interrupt the boot process and change the password, but the configuration file (config.text) and the VLAN database file (vlan.dat) are deleted. For more information, see the *Cisco Catalyst Blade Switch 3020 for HP Software Configuration Guidesoftware* configuration guide for this release.

You can access the bootloader through a switch console connection at 9600 bps.

Remove and then reinstall the switch in the blade server. Press the Mode button and wait for the *Switch*: prompt to appear. The bootloader performs low-level CPU initialization, performs POST, and loads a default operating system image into memory.

L

boot

Use the **boot** bootloader command to load and boot an executable image and to enter the command-line interface.

boot [**-post** | **-n** | **-p** | *flag*] *filesystem:/file-url* ...

Syntax Description	-post	(Optional) Run the loaded image with an extended or comprehensive power-on self-test (POST). Using this keyword causes POST to take longer to complete.
	-n	(Optional) Pause for the Cisco IOS debugger immediately after launching.
	-p	(Optional) Pause for the JTAG debugger right after loading the image.
	filesystem:	Alias for a flash file system. Use flash: for the system board flash device.
	lfile-url	(Optional) Path (directory) and name of a bootable image. Separate image names with a semicolon.
Defaults	variable. If this v can by performir	appendix to automatically boot the system by using information in the BOOT environment variable is not set, the switch attempts to load and execute the first executable image it as a recursive, depth-first search throughout the flash file system. In a depth-first search ch encountered subdirectory is completely searched before continuing the search in the y.
Command Modes	Bootloader	
Command History	Release	Modification
	12.2(25)SEF	This command was introduced.
Usage Guidelines	the system by us	the boot command without any arguments, the switch attempts to automatically boot ing the information in the BOOT environment variable, if any. If you supply an image <i>-url</i> variable, the boot command attempts to boot the specified image.
Usage Guidelines	the system by us name for the <i>file</i> When you set bo	ing the information in the BOOT environment variable, if any. If you supply an image
Usage Guidelines	the system by us name for the <i>file</i> When you set bo current bootload	ing the information in the BOOT environment variable, if any. If you supply an imag <i>-url</i> variable, the boot command attempts to boot the specified image. botloader boot command options, they are executed immediately and apply only to the

After entering this command, you are prompted to start the setup program.

switch: boot flash:/new-images/new-image.bin

This example shows how to boot the switch using the *new-image.bin* image:

Examples

Related Commands	Command	Description
	set	Sets the BOOT environment variable to boot a specific image when the
		BOOT keyword is appended to the command.

cat

Use the **cat** bootloader command to display the contents of one or more files.

cat filesystem:/file-url ...

Syntax Description	filesystem:	Alias for a flash file system. Use flash: for the system board flash device.
	lfile-url	Path (directory) and name of the files to display. Separate each filename with a space.
Command Modes	Bootloader	
Command History	Release	Modification
	12.2(25)SEF	This command was introduced.
Usage Guidelines		directory names are case sensitive. a list of files, the contents of each file appears sequentially.
Examples	This example s	hows how to display the contents of two files:
	version_suffi: version_direc cbs30x0-lanba ios_image_fil total_image_f	
Related Commands	Command	Description

Related Commands	Command	Description
	more	Displays the contents of one or more files.
	type	Displays the contents of one or more files.

сору

Use the **copy** bootloader command to copy a file from a source to a destination.

copy [-**b** *block-size*] *filesystem:/source-file-url filesystem:/destination-file-url*

Syntax Description	-b block-size	(Optional) This option is used only for internal development and testing.	
	filesystem:	Alias for a flash file system. Use flash: for the system board flash device.	
	Isource-file-url	Path (directory) and filename (source) to be copied.	
	Idestination-file-url	Path (directory) and filename of the destination.	
Defaults	The default block size is 4 KB.		
Command Modes	Bootloader		
Command History	Release	Modification	
	12.2(25)SEF	This command was introduced.	
	characters, spaces, dele Filenames are limited t slashes, quotes, semico	mited to 45 characters between the slashes (/); the name cannot contain control etes, slashes, quotes, semicolons, or colons. to 45 characters; the name cannot contain control characters, spaces, deletes, blons, or colons. e to a new directory, the directory must already exist.	
Examples	This example shows how to copy a file at the root: switch: copy flash:test1.text flash:test4.text		
	File "flash:testl.te	xt" successfully copied to "flash:test4.text"	
	You can verify that the	file was copied by entering the dir <i>filesystem</i> : bootloader command.	
Related Commands	Command	Description	

delete

Use the **delete** bootloader command to delete one or more files from the specified file system.

delete filesystem:/file-url ...

Syntax Description	filesystem:	Alias for a flash file system. Use flash: for the system board flash device.
	lfile-url	Path (directory) and filename to delete. Separate each filename with a space.
Command Modes	Bootloader	
Command History	Release	Modification
	12.2(25)SEF	This command was introduced.
Usage Guidelines		irectory names are case sensitive. apts you for confirmation before deleting each file.
Examples	This example sh	ows how to delete two files:
	Are you sure yo File "flash:te Are you sure yo	<pre>flash:test2.text flash:test5.text ou want to delete "flash:test2.text" (y/n)?y st2.text" deleted ou want to delete "flash:test5.text" (y/n)?y st2.text" deleted</pre>
	You can verify the	hat the files were deleted by entering the dir flash: bootloader command.
Related Commands	Command	Description
	сору	Copies a file from a source to a destination.

dir

Use the **dir** bootloader command to display a list of files and directories on the specified file system.

dir filesystem:/file-url ...

Syntax Description	filesystem:	Alias for a flash file system. Use flash: for the system board flash device.		
	lfile-url	(Optional) Path (directory) and directory name whose contents you want to display. Separate each directory name with a space.		
Command Modes	Bootloader			
Command History	Release	Modification		
	12.2(25)SEF	This command was introduced.		
Usage Guidelines	Directory names	are case sensitive.		
Examples	switch: dir fla			
	Directory of fl			
	3 -rwx 11 -rwx	1839 Mar 01 2002 00:48:15 config.text 1140 Mar 01 2002 04:18:48 vlan.dat		
	21 -rwx	26 Mar 01 2002 00:01:39 env_vars		
	9 drwx	768 Mar 01 2002 23:11:42 html		
	16 -rwx	1037 Mar 01 2002 00:01:11 config.text		
	14 -rwx	1099 Mar 01 2002 01:14:05 homepage.htm		
	22 -rwx	96 Mar 01 2002 00:01:39 system_env_vars		
	17 drwx	192 Mar 06 2002 23:22:03 cbs30x0-lanbase-mz.122-25.SEF2F		
	15998976 bytes total (6397440 bytes free)			
	Table A-1 describ	pes the fields in the display.		
	Table A-1 c	lir Field Descriptions		
	Field	Description		
	2	Index number of the file.		
	-rwx	File permission, which can be any or all of the following:		

•	r—readable
•	w—writable

• d—directory

٠	w—writable
•	x—executable

Field	Description	
1644045	Size of the file.	
<date></date>	Last modification date.	
env_vars	Filename.	

Table A-1 dir Field Descriptions (continued)

Related Commands

S	Command	Description
	mkdir	Creates one or more directories.
	rmdir	Removes one or more directories.

flash_init

Use the **flash_init** bootloader command to initialize the flash file system.

flash_init

Syntax Description This command has no arguments or keywords.

Defaults The flash file system is automatically initialized during normal system operation.

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Command Modes Bootloader
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Command History	Release	Modification
	12.2(25)SEF	This command was introduced.

Usage Guidelines During the normal boot process, the flash file system is automatically initialized.

Use this command to manually initialize the flash file system. For example, you use this command during the recovery procedure for a lost or forgotten password.

format

Use the **format** bootloader command to format the specified file system and destroy all data in that file system.

format filesystem:

yntax Description	filesystem:	Alias for a flash file system. Use flash: for the system board flash device.
ommand Modes	Bootloader	
ommand History	Release	Modification
	12.2(25)SEF	This command was introduced.
sage Guidelines		
A		
\wedge		

fsck

Use the **fsck** bootloader command to check the file system for consistency.

fsck [-test | -f] filesystem:

Syntax Description	-test	(Optional) Initialize the file system code and perform extra POST on flash memory. An extensive, nondestructive memory test is performed on every byte that makes up the file system.
	-f	(Optional) Initialize the file system code and perform a fast file consistency check. Cyclic redundancy checks (CRCs) in the flashfs sectors are not checked.
	filesystem:	Alias for a flash file system. Use flash: for the system board flash device.
Defaults	No file system	n check is performed.
Command Modes	Bootloader	
Command History	Release	Modification
	12.2(25)SEF	This command was introduced.
Usage Guidelines	To stop an in-progress file system consistency check, disconnect the switch power and then reconnect the power.	
Examples	This example shows how to perform an extensive file system check on flash memory: switch: fsck -test flash:	

help

Use the **help** bootloader command to display the available commands.

 help

 Syntax Description
 This command has no arguments or keywords.

 Command Modes
 Bootloader

 Command History
 Release
 Modification

 12.2(25)SEF
 This command was introduced.

 Usage Guidelines
 You can also use the question mark (?) to display a list of available bootloader commands.

memory

Use the **memory** bootloader command to display memory heap utilization information.

memory

Syntax Description This command has no arguments or keywords.

Command Modes Bootloader

 Release
 Modification

 12.2(25)SEF
 This command was introduced.

Examples

This example shows how to display memory heap utilization information:

switch: memory 0x00700000 - 0x0071cf24 (0x0001cf24 bytes) Text: Rotext: 0x0000000 - 0x0000000 (0x0000000 bytes) 0x0071cf24 - 0x00723a0c (0x00006ae8 bytes) Data: Bss: 0x0072529c - 0x00746f94 (0x00021cf8 bytes) 0x00756f98 - 0x00800000 (0x000a9068 bytes) Heap: Bottom heap utilization is 22 percent. Top heap utilization is 0 percent. Total heap utilization is 22 percent. Total bytes: 0xa9068 (692328) Bytes used: 0x26888 (157832) Bytes available: 0x827e0 (534496) Alternate heap utilization is 0 percent. Total alternate heap bytes: 0x6fd000 (7327744) Alternate heap bytes used: 0x0 (0)

Alternate heap bytes available: 0x6fd000 (7327744)

Table A-2 describes the fields in the display.

Field	Description	
Text	Beginning and ending address of the text storage area.	
Rotext	Beginning and ending address of the read-only text storage area. This part of the data segment is grouped with the Text entry.	
Data	Beginning and ending address of the data segment storage area.	
Bss	Beginning and ending address of the block started by symbol (Bss) storage area. It is initialized to zero.	

Table A-2 memory Field Descriptions

Field	Description
StackBeginning and ending address of the area in memory allocated to the so store automatic variables, return addresses, and so forth.	
Неар	Beginning and ending address of the area in memory that memory is dynamically allocated to and freed from.

Iable A-2 memory Field Descriptions (continued)	Table A-2	memory Field Descriptions (continued)
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mkdir

Use the **mkdir** bootloader command to create one or more new directories on the specified file system. **mkdir** *filesystem:/directory-url* ...

Syntax Description	filesystem:	Alias for a flash file system. Use flash: for the system board flash device.	
	Idirectory-url	Name of the directories to create. Separate each directory name with a space.	
Command Modes	Bootloader		
Command History	Release	Modification	
	12.2(25)SEF	This command was introduced.	
Usage Guidelines	Directory names are	e case sensitive.	
	Directory names are limited to 45 characters between the slashes (/); the name cannot contain control characters, spaces, deletes, slashes, quotes, semicolons, or colons.		
Examples	This example shows	s how to make a directory called Saved_Configs:	
	<pre>switch: mkdir flash:Saved_Configs Directory "flash:Saved_Configs" created</pre>		
	This example shows how to make two directories:		
	<pre>switch: mkdir flash:Saved_Configs1 flash:Test Directory "flash:Saved_Configs1" created Directory "flash:Test" created</pre>		
	You can verify that	the directory was created by entering the dir <i>filesystem</i> : bootloader command.	
Related Commands	Command	Description	

eu commanus	Commanu	Description
	dir	Displays a list of files and directories on the specified file system.
	rmdir	Removes one or more directories from the specified file system.

more

Use the **more** bootloader command to display the contents of one or more files.

more filesystem:/file-url ...

Syntax Description	filesystem:	Alias for a flash file system. Use flash: for the system board flash device.	
	lfile-url	Path (directory) and name of the files to display. Separate each filename with a space.	
Command Modes	Bootloader		
Command History	Release	Modification	
	12.2(25)SEF	This command was introduced.	
Usage Guidelines		ctory names are case sensitive.	
	If you specify a list	t of files, the contents of each file appears sequentially.	
Examples	This example show	s how to display the contents of two files:	
		sh:/new-images/info flash:env_vars	
	version_suffix: lanbase-122-25.SEF2F cbs30x0-lanbase-mz.122-25.SEF		
	image_name: cbs30x0-lanbase-mz.122-25.SEF2F		
	ios_image_file_size: 4590080 total_image_file_size: 6185984		
	<pre>image_feature: LAYER_2 SSH 3DES MIN_DRAM_MEG=128</pre>		
	<pre>image_family: CBS30X0 info_end:</pre>		
	BAUD=57600		
	MANUAL_BOOT=no		
Related Commands	Command	Description	

ommands	Command	Description
	cat	Displays the contents of one or more files.
	type	Displays the contents of one or more files.

rename

Use the **rename** bootloader command to rename a file.

rename filesystem:/source-file-url filesystem:/destination-file-url

Syntax Description	filesystem:	Alias for a flash file system. Use flash: for the system board flash device.	
	Isource-file-url	Original path (directory) and filename.	
	Idestination-file-url	New path (directory) and filename.	
Command Modes	Bootloader		
Command History	Release	Modification	
	12.2(25)SEF	This command was introduced.	
Haago Cuidalinaa	Eilenemes and directo		
Usage Guidelines	Filenames and directory names are case sensitive.		
	Directory names are limited to 45 characters between the slashes (/); the name cannot contain control characters, spaces, deletes, slashes, quotes, semicolons, or colons.		
	Filenames are limited to 45 characters; the name cannot contain control characters, spaces, deletes, slashes, quotes, semicolons, or colons.		
Examples	This example shows a file named <i>config.text</i> being renamed to <i>config1.text</i> :		
	switch: rename flash:config.text flash:config1.text		
	You can verify that th	e file was renamed by entering the dir <i>filesystem</i> : bootloader command.	
Related Commands	Command	Description	
	сору	Copies a file from a source to a destination.	

reset

Use the **reset** bootloader command to perform a hard reset on the system. A hard reset is similar to power-cycling the switch, clearing the processor, registers, and memory.

reset

Syntax Description This command has no arguments or keywords.

Command Modes Bootloader

 Release
 Modification

 12.2(25)SEF
 This command was introduced.

Examples This example shows how to reset the system: switch: reset Are you sure you want to reset the system (y/n)?y System resetting...

Related Commands	Command	Description
	boot	Loads and boots an executable image and enters the command-line interface.

rmdir

Use the **rmdir** bootloader command to remove one or more empty directories from the specified file system.

rmdir *filesystem:/directory-url* ...

Syntax Description	filesystem:	Alias for a flash file system. Use flash: for the system board flash device.
	Idirectory-url	Path (directory) and name of the empty directories to remove. Separate each directory name with a space.
Command Modes	Bootloader	
Command History	Release	Modification
	12.2(25)SEF	This command was introduced.
Usage Guidelines	Directory names are case sensitive and limited to 45 characters between the slashes (/); the name cannot contain control characters, spaces, deletes, slashes, quotes, semicolons, or colons. Before removing a directory, you must first delete all the files in the directory. The switch prompts you for confirmation before deleting each directory.	
Examples		ws how to remove a directory:
	You can verify the	at the directory was deleted by entering the dir <i>filesystem</i> : bootloader command.
Related Commands	Command	Description
	dir	Displays a list of files and directories on the specified file system.
	mkdir	Creates one or more new directories on the specified file system.

set

Use the **set** bootloader command to set or display environment variables, which can be used to control the bootloader or any other software running on the switch.

set variable value

	• 11 1	
Syntax Description	variable value	Use one of these keywords for variable and value:
		MANUAL_BOOT —Decides whether the switch automatically or manually boots.
		Valid values are 1, yes, 0, and no. If it is set to no or 0, the bootloader attempts to automatically boot the system. If it is set to anything else, you must manually boot the switch from the bootloader mode.
		BOOT <i>filesystem: lfile-url</i> —A semicolon-separated list of executable files to try to load and execute when automatically booting.
		If the BOOT environment variable is not set, the system attempts to load and execute the first executable image it can find by using a recursive, depth-first search through the flash file system. If the BOOT variable is set but the specified images cannot be loaded, the system attempts to boot the first bootable file that it can find in the flash file system.
		ENABLE_BREAK —Decides whether the automatic boot process can be interrupted by using the Break key on the console.
		Valid values are 1, yes, on, 0, no, and off. If it is set to 1, yes, or on, you can interrupt the automatic boot process by pressing the Break key on the console after the flash file system has initialized.
		HELPER <i>filesystem:Ifile-url</i> —A semicolon-separated list of loadable files to dynamically load during the bootloader initialization. Helper files extend or patch the functionality of the bootloader.
		PS1 <i>prompt</i> —A string that is used as the command-line prompt in bootloader mode.
		CONFIG_FILE flash: <i>/file-url</i> —The filename that Cisco IOS uses to read and write a nonvolatile copy of the system configuration.
		BAUD <i>rate</i> —The rate in bits per second (bps) used for the console. The Cisco IOS software inherits the baud rate setting from the bootloader and continues to use this value unless the configuration file specifies another setting. The range is from 0 to 4294967295 bps. Valid values are 50, 75, 110, 150, 300, 600, 1200, 1800, 2000, 2400, 3600, 4800, 7200, 9600, 14400, 19200, 28800, 38400, 56000, 57600, 115200, and 128000.
		The most commonly used values are 300, 1200, 2400, 9600, 19200, 57600, and 115200.
		HELPER_CONFIG_FILE <i>filesystem:/file-url</i> —The name of the configuration file to be used by the Cisco IOS helper image. If this is not set, the file specified by the CONFIG_FILE environment variable is used by all versions of Cisco IOS that are loaded, including the helper image. This variable is used only for internal development and testing.

Defaults

The environment variables have these default values: MANUAL_BOOT: No (0) BOOT: Null string ENABLE_BREAK: No (Off or 0) (the automatic boot process cannot be interrupted by pressing the Break key on the console). HELPER: No default value (helper files are not automatically loaded). PS1: switch: CONFIG_FILE: config.text BAUD: 9600 bps HELPER_CONFIG_FILE: No default value (no helper configuration file is specified). SWITCH_NUMBER: 1 SWITCH_PRIORITY: 1

Note

Environment variables that have values are stored in the flash file system in various files. The format of these files is that each line contains an environment variable name and an equal sign followed by the value of the variable. A variable has no value if it is not listed in this file; it has a value if it is listed in the file even if the value is a null string. A variable that is set to a null string (for example, "") is a variable with a value. Many environment variables are predefined and have default values.

Command Modes Bootloader

Command History Re	elease	Modification
12	2.2(25)SEF	This command was introduced.

Usage Guidelines

Environment variables are case sensitive and must be entered as documented.

Environment variables that have values are stored in flash memory outside of the flash file system.

Under normal circumstances, it is not necessary to alter the setting of the environment variables.

The MANUAL_BOOT environment variable can also be set by using the **boot manual** global configuration command.

The BOOT environment variable can also be set by using the **boot system** *filesystem: lfile-url* global configuration command.

The ENABLE_BREAK environment variable can also be set by using the **boot enable-break** global configuration command.

The HELPER environment variable can also be set by using the **boot helper** *filesystem:lfile-url* global configuration command.

The CONFIG_FILE environment variable can also be set by using the **boot config-file flash:**/*file-url* global configuration command.

The HELPER_CONFIG_FILE environment variable can also be set by using the **boot helper-config-file** *filesystem:/file-url* global configuration command.

The HELPER_CONFIG_FILE environment variable can also be set by using the **boot helper-config-file** *filesystem:/file-url* global configuration command.

The bootloader prompt string (PS1) can be up to 120 printable characters except the equal sign (=).

Examples This example shows how to change the bootloader prompt: switch: set PS1 loader: loader:

You can verify your setting by using the set bootloader command.

Related Commands	Command	Description
	unset	Resets one or more environment variables to its previous setting.

type

Use the type bootloader command to display the contents of one or more files.

type filesystem:/file-url ...

Syntax Description	filesystem:	Alias for a flash file system. Use flash: for the system board flash device.		
	lfile-url	Path (directory) and name of the files to display. Separate each filename with		
		a space.		
Command Modes	Bootloader			
Command History	Release	Modification		
	12.2(25)SEF	This command was introduced.		
Usage Guidelines	Filenames and dire	ctory names are case sensitive.		
	If you specify a list	of files, the contents of each file appears sequentially.		
Examples	This example show	s how to display the contents of two files:		
	switch: type flash:/new-images/info flash:env_vars version_suffix: lanbasem-122-25.SEF2 version_directory: -lanbase-mz.122-25.SEF2F			
	image_name: cbs30x0-lanbase-mz.122-25.SEF2F			
	ios_image_file_size: 4590080 total_image_file_size: 6185984			
	image_feature: LAYER_2 SSH 3DES MIN_DRAM_MEG=128			
	image_family: CBS0X0			
	info_end: BAUD=57600			
	MANUAL_BOOT=no			
Related Commands	Command	Description		
	cat	Displays the contents of one or more files.		

Displays the contents of one or more files.

more

unset

Use the **unset** bootloader command to reset one or more environment variables.

unset variable ...

Syntax Description	variable	Use one of these keywords for <i>variable</i> : MANUAL_BOOT—Decides whether the switch automatically or manually boots.		
		ENABLE_BREAK —Decides whether the automatic boot process can be interrupted by using the Break key on the console after the flash file system has been initialized.		
		HELPER —A semicolon-separated list of loadable files to dynamically load during the bootloader initialization. Helper files extend or patch the functionality of the bootloader.		
		PS1 —A string that is used as the command-line prompt in bootloader mode.		
		CONFIG_FILE —Resets the filename that Cisco IOS uses to read and write a nonvolatile copy of the system configuration.		
		BAUD —Resets the rate in bits per second (bps) used for the console. The Cisco IOS software inherits the baud rate setting from the bootloader and continues to use this value unless the configuration file specifies another setting.		
		HELPER_CONFIG_FILE —Resets the name of the configuration file to be used by the Cisco IOS helper image. If this is not set, the file specified by the CONFIG_FILE environment variable is used by all versions of Cisco IOS that are loaded, including the helper image. This variable is used only for internal development and testing.		
	Command Modes	Bootloader		
Command History	Release	Modification		
	12.2(25)SEF	This command was introduced.		
Usage Guidelines	Under normal circu	mstances, it is not necessary to alter the setting of the environment variables.		
-	The MANUAL_BO configuration comm	OT environment variable can also be reset by using the no boot manual global nand.		

The BOOT environment variable can also be reset by using the **no boot system** global configuration command. The ENABLE_BREAK environment variable can also be reset by using the no boot enable-break global configuration command. The HELPER environment variable can also be reset by using the no boot helper global configuration command. The CONFIG_FILE environment variable can also be reset by using the no boot config-file global configuration command. The HELPER_CONFIG_FILE environment variable can also be reset by using the no boot helper-config-file global configuration command. Examples This example shows how to reset the prompt string to its previous setting: switch: unset PS1 switch: **Related Commands** Command Description set Sets or displays environment variables.

version

Use the **version** bootloader command to display the bootloader version.

version

Syntax Description This command has no arguments or keywords.

Command Modes Bootloader

 Release
 Modification

 12.2(25)SEF
 This command was introduced.

Examples

This example shows how to display the bootloader version:

switch: version
CBS30X0 Boot Loader (CBS30X0-HBOOT-M) Version 12.2(25r)SEF1, RELEASE SOFTWARE (fc2)

Compiled Wed 10-May-06 15:05 by myl switch: