Appendix B: CMTS Router ROM Monitor Commands

Revised: August 12, 2013, OL-15510-17

This appendix describes the ROM monitor (ROMMON) that is used by the Cisco CMTS routers. The Cisco CMTS runs the ROM monitor when it is initially powered on or reset, and the ROM monitor determines what other software, such as a Cisco IOS boot helper image or software image, should be loaded next.

Because the ROM monitor is in the permanent memory on the processor card, it is always available and can help in troubleshooting possible hardware or software problems. It contains a small set of commands that allow access to the router's internal memory and other memory devices.

This appendix contains the following major sections:

Caution The ROM monitor should be used only by trained service technicians or under the direction of a Cisco TAC engineer. Many of the commands available in the ROM monitor put the router in a diagnostic mode or in a non-functional state. Do not enter any commands in the ROM monitor unless you thoroughly understand their function and how to reverse their effects so that you can restore the router to normal operations.

Entering the ROM Monitor

When the router initially powers on or reboots, the ROM monitor initializes the processor hardware and boots the main Cisco IOS software. You can enter ROM monitor mode during the bootup sequence or while the Cisco IOS software is running by using either the BREAK signal or by using the configuration register. See the following sections for more information on each method.

Using the BREAK Signal

When the Cisco CMTS router is booting up, you can interrupt the start-up sequence and enter the ROM monitor by sending the BREAK signal. If the Cisco IOS software image is already running, you can also break into the ROM monitor by sending the BREAK signal. (Consult the documentation for your terminal software for information on how to send the BREAK signal).

For example, the following shows the BREAK signal being sent to interrupt a router that is running Cisco IOS software so as to enter ROM monitor mode.

Tip In this example, a CTRL-] is used to enter Telnet command mode, where the **send brk** command is used to send the BREAK signal. Other terminal programs might use different commands.

```
Router# show version

Cisco Internetwork Operating System Software
IOS (tm) 7200 Software (UBR7200-P-M), Version 12.2(15)BC1, RELEASE SOFTWARE
TAC Support: http://www.cisco.com/tac
Copyright (c) 1986-2003 by cisco Systems, Inc.

...

16384K bytes of Flash PCMCIA card at slot 0 (Sector size 128K).
20480K bytes of Flash PCMCIA card at slot 1 (Sector size 128K).
4096K bytes of Flash internal SIMM (Sector size 256K).
Configuration register is 0x2102

Router# ^] <-- in this example, a CTRL-] is used to enter telnet command mode

telnet> send brk

*** System received an abort due to Break Key ***
signal= 0x3, code= 0x0, context= 0x6208b290
PC = 0x606b5ab0, SP = 0x80007e00, RA = 0x606d2370
Cause Reg = 0xffffffff, Status Reg = 0x3400ff03

rommon 1 >
```

Caution When you enter ROM monitor mode, the Cisco IOS software no longer is executing, and all of the router's normal functions end. Do not enter ROM monitor mode on a Cisco CMTS that is being used for production purposes because this immediately halts all network and subscriber traffic through that Cisco CMTS until you restart the Cisco IOS software.

Tip To resume execution after interrupting the boot process or Cisco IOS software, use the **cont** command at the ROM monitor prompt. To boot another software image, use the **boot** command at the ROM monitor prompt.

Using the Configuration Register

When the router initially boots, it passes control to the ROM monitor software, which uses the value of the configuration register to determine the next step in the bootup process. You can change the value of the configuration register by using the **confreg** command in ROM monitor mode or by using the **config-reg** command in global configuration mode.

Using the Configuration Register in Global Configuration Mode

To set the configuration register when the router is running the Cisco IOS software, use the **config-reg** command in global configuration mode. Then use the **reload** command to reboot the router.

For example, the following commands set the configuration register to 0x00 so that the router boots into ROM monitor mode. The **reload** command then reboots the router.

```
Router# configure terminal
Router(config)# config-reg 0x0
Router(config)# exit
Router# reload

(router reboots)

System Bootstrap, Version 12.2(11)BC3a, RELEASE SOFTWARE (fc1)
Copyright (c) 2002 by cisco Systems, Inc.
UBR7200 platform with 524288 Kbytes of main memory

rommon 1 >
```

Tip To set the configuration register for normal operations, use the **config-reg 0x2102** command. For a complete description of the configuration register, see the description of the **confreg** command.

Using the Configuration Register in ROM Monitor Mode

To set the configuration register when the router is in ROM monitor mode, use the **confreg** command in ROM monitor mode. For example, the following commands set the configuration register to 0x2102, so that the router boots the Cisco IOS software. The **reset** command then reboots the router.

```
rommon 21 > confreg 0x2102

You must reset or power cycle for new config to take effect

rommon 22 > reset

System Bootstrap, Version 12.2(11)BC3a, RELEASE SOFTWARE (fc1)
Copyright (c) 2002 by cisco Systems, Inc.
UBR7200 platform with 524288 Kbytes of main memory

Self decompressing the image:
################################################################################
[OK]

(Software image boots...)

Router>
```

Tip To set the configuration register for normal operations, use the **confreg 0x0** command. For a complete description of the configuration register, see the description of the **confreg** command.

Command Conventions

Use the following conventions when giving commands at the ROM monitor prompt:

- Brackets [ ] denote an optional field.
- A word in italics is a variable for which you must supply a valid value.
- The default ROM monitor prompt is "rommon *x* >", where *x* is the number of the command, as used in the command history table. The ROM monitor prompt is determined by the PS1 environment variable (see the **set** command).
- Give the **help** or **?** command to display a help screen listing all of the commands that are available in ROM monitor mode. For usage information about a specific command, give the command followed by **-?** (for example, **alias -?**).
- All address and size arguments to the memory-related commands are hexadecimal values (using a "0x" prefix).
- To specify more than one command on a command line, separate the commands with the semicolon (;) delimiter.

Note You cannot include the **repeat** command as part of a command line that has multiple commands.

ROM Monitor Commands

You can use the following commands at the ROM monitor prompt on a Cisco CMTS router:

alias

To define an alias to be used at the ROM monitor prompt, use the **alias** command in ROM monitor mode.

alias [*name*=*value*]

Syntax Description

name=*value*	(Optional) Specifies the name of the alias to be defined and its corresponding command string. If the *value* parameter includes spaces, you must include the string within double quotes.

Command Default

If no arguments are given, displays the aliases that are currently defined.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

Aliasing allows you to abbreviate commands or to set up a command so that it is automatically run with certain options. The ROM monitor's **alias** function is based on the syntax used in the Korn shell on Unix systems.

Normally, only the first word at the ROM monitor prompt is checked for an alias. However, when you define an alias that contains a space as its last character, the ROM monitor also checks the next word at the ROM monitor prompt for an alias.

Note If an alias contains any spaces, the entire command must be enclosed within quotes when you define it with the **alias** command. To create an alias for multiple commands, separate the commands with a semicolon (;) delimiter.

Tip Use the **unalias** command to delete an alias.

Examples

The following example shows how to display the currently defined aliases:

```
rommon 13 > alias

r=repeat
h=history
?=help
b=boot
ls=dir
i=reset
k=stack

rommon 14 >
```

The following example defines an alias named “cpuinfo” that executes three separate CPU-related commands:

```
rommon 31 > alias cpuinfo="cpu_card_type;meminfo;context"
rommon 32 >
```

The following example shows how to define an alias **dird** that lists the file contents of the Flash Disk in the disk0 slot:

```
rommon 18 > alias dird="dir disk0:"
rommon 19 > alias

r=repeat
h=history
?=help
b=boot
ls=dir
i=reset
k=stack
dird=dir disk0:

rommon 20 >
```

Related Commands

Command	Description
sync	Writes the current values of aliases and monitor environment variables to Flash memory.
unalias	Deletes a currently-defined alias.

boot

To boot a router manually, use the **boot** command in ROM monitor mode.

boot [**-xv**]

boot [**-xv**] [*device:*][*imagename*]

boot [**-xv**] *filename* [*tftp-ip-address*]

boot [**-xv**] *tftp://server/path/filename*

Syntax Description

x	(Optional) Loads the specified image into the router's memory but does not execute it.
v	(Optional) Enables verbose mode to display debugging information as the image is loaded and executed.
device:	(Optional) Specifies that the router should boot an image on the specified device. If not specified, the router boots from the default memory device.
imagename	(Optional) Specifies the filename for the image to be booted and loaded. If not specified, the router boots the first file on the specified device. **Note** When specifying both a *device:* and *imagename*, do not put any spaces between the two arguments.
filename	Specifies the path and filename for the image that the router should download from a Trivial File Transfer Protocol (TFTP) server. **Note** You must specify the full path for the desired file, as it exists on the TFTP server.
tftp-ip-address	(Optional) Specifies the IP address for the TFTP server from which the router should download and boot the specified *filename*. If not specified, the router sends a TFTP request to the IP broadcast address of 255.255.255.255 and uses the first TFTP server that responds.
tftp://server/path/filename	Specifies the complete TFTP URL for the filename to be downloaded and run. This URL should specify the fully-qualified *server* name (or IP address), full *path* on the TFTP server, and *filename* to be downloaded.

Defaults

If specified without any options, the **boot** command loads and executes the first file on the default memory device. If a *device* is specified without a *filename*, the **boot** command loads and executes the first file on that device. If a *filename* is specified without a TFTP server IP address, the boot command advertises for a TFTP server using the IP broadcast address of 255.255.255.255 and uses the first TFTP server that responds.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.

Release	Modification
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

The **boot** command allows a network administrator to boot the router from the ROM monitor (ROMMON) prompt. The router can enter ROMMON for the following reasons:

- The administrator interrupted the boot sequence or Cisco IOS software by pressing the BREAK signal.
- The router's configuration register is set to boot into ROMMON (0x00).
- The router entered ROMMON because of a software exception or error.

The **boot** command allows the administrator to continue the boot process or to load a new software image.

Note To upgrade the router to a new Cisco IOS software image, you can use either the **boot** command in ROMMON mode or the **boot system** commands in global configuration mode.

Boot Changes in Cisco IOS Release 12.2

Cisco IOS Release 12.2 changed the behavior of the ROM monitor (ROMMON) during the bootup sequence. Previously, users could issue the break signal during the bootup sequence to break into ROMMON, and then immediately boot a new Cisco IOS image using the **boot** command.

This behavior is no longer allowed when the router is using a boot image that is based on Cisco IOS Release 12.2, because interrupting the boot process could leave the hardware and software registers in an unknown state. Instead, use the following procedure when using a router with a Cisco IOS Release 12.2 boot image:

Step 1 At the router's console prompt, send a BREAK signal to interrupt the boot process and enter ROMMON.

Step 2 Set the configure register to boot into ROMMON by giving the **confreg 0x0** command.

Step 3 Use the **reset** command to reset the NPE and to boot into ROMMON. This ensures a clean boot into ROMMON, with all registers set to a known state.

Step 4 Set the configure register to boot an IOS image by giving the **confreg 0x2102** command.

Step 5 Use the **boot** command to boot the desired Cisco IOS image.

Examples

The following example shows how to boot the router using the first file in the default device:

```
rommon 1 > boot

Self decompressing the image :
```

```
################################################################################################
[OK]

(Software image boots...)

Router>
```

The following example shows how to specify that the router should download and boot the file named "newimage.bin" in the subdirectory named "ubrimages" on the TFTP server with the IP address of 10.10.10.31:

```
rommon 45> boot tftp://10.10.10.31/ubrimages/newimage.bin

Self decompressing the image :
################################################################################################
[OK]

(Software image boots...)

Router>
```

The following example shows how to use the alternate syntax to specify that the router should download and boot the file named newimage.bin on the TFTP server with the IP address of 10.10.10.31:

```
rommon 45> boot newimage.bin 10.10.10.31

Self decompressing the image :
################################################################################################
[OK]

(Software image boots...)

Router>
```

The following example shows the new ROMMON boot procedure that is required when using a Cisco IOS Release 12.2 (or later) boot image:

```
Router-NPE#

telnet> send brk

*** System received an abort due to Break Key ***
signal= 0x3, code= 0x0, context= 0x6208b290
PC = 0x606b5ab0, SP = 0x80007e00, RA = 0x606d2370
Cause Reg = 0xffffffff, Status Reg = 0x3400ff03

rommon 2 > boot flash:newiosimage.bin
Please reset before booting

rommon 3 > confreg 0x0

You must reset or power cycle for new config to take effect

rommon 4 > reset

System Bootstrap, Version 12.2(11)BC3a, RELEASE SOFTWARE (fc1)
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UBR7200 platform with 524288 Kbytes of main memory

rommon 1 > boot flash:newiosimage.bin

Self decompressing the image :
################################################################################################
[OK]
```

```
(Software image boots...)

Router>
```

Related Commands

Command	Description
break	Sets or clears the debugger breakpoint.
cont	Continues the execution of the Cisco IOS software image that has been interrupted by a BREAK or debugger command.
reset	Reinitializes the ROM monitor and return it to a known state.
sync	Writes the current values of aliases and monitor environment variables to Flash memory.
sysreset	Displays the return information from the system image that was last booted.

break

To set or clear the debugger breakpoint, use the **break** command in ROM monitor mode.

break [**-s** *address* | **-c**]

Syntax Description

-s *address*	(Optional) Sets the breakpoint to the specified *address* in memory. The *address* must be specified in hexadecimal.
-c	(Optional) Clears the currently-defined breakpoint.

Defaults

If no arguments are given, the command displays the currently-defined breakpoint.

Command Modes

ROM monitor

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

The ROM monitor supports one breakpoint. If set, the processor runs normally, but when its program counter reaches the breakpoint address, the system breaks into ROM monitor mode. You can examine memory locations or register contents, and then continue normal program execution by using the **cont** command.

Examples

The following example shows how to set a breakpoint so that when the processor breaks into ROM monitor mode when its program counter reaches 0xbfc02708:

```
rommon 37 > break -s 0xbfc02708

breakpoint set to 0xbfc02708

rommon 38 >
```

The following example shows how to display the currently-defined breakpoint:

```
rommon 38 > break

breakpoint set to 0xbfc02708

rommon 39 >
```

The following example shows how to clear the currently-defined breakpoint:

```
rommon 39 > break -c

breakpoint is cleared

rommon 40 >
```

Related Commands

Command	Description
boot	Boots the router manually.
cont	Continues the execution of the Cisco IOS software image that has been interrupted by a BREAK or debugger breakpoint.

confreg

To change the value of the router's configuration register, use the **confreg** command in ROM monitor mode.

confreg [*value*]

Syntax Description

value	(Optional) New value for the configuration register, expressed as a 16-bit hexadecimal value. The valid range for *value* is 0x0 to 0xFFFF. If *value* is not specified, the command interactively prompts you for the individual register settings.

Command Default

0x2102 (boots the Cisco IOS software image and allows the use of the BREAK signal to enter ROMMON)

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

The configuration register determines the router's behavior when it boots. Typically, an administrator changes the configuration register so that it boots either into ROMMON mode or boots a Cisco IOS software image, but other options are also available.

If given without an argument, the **confreg** command interactively prompts you for the new values of the individual register settings, using English descriptions. You can either keep the current settings unchanged or change them as desired. The new value of the configuration register is written into the router's nonvolatile Flash memory (NVRAM) immediately, but does not take effect until you reset the router.

If you specify an argument with the **confreg** command, it must be a 16-bit hexadecimal value in the following format:

Table 0-260 Configuration Register Bit Field Descriptions

Bit	Description
15	If set, enables the router's diagnostic mode (for example, 0x8000).
14	If set, uses the network number in IP broadcasts (for example, 0x4000).

Table 0-260 Configuration Register Bit Field Descriptions (continued)

Bit	Description
13	If set, allows the router to fall back into ROMMON mode if the boot procedure fails. If not set, the router attempts each valid **boot** command (as specified by bits 3–0) for a total of 5 times each, until one of the commands is successful (for example, 0x2000).
12–11	Defines the speed, in bps, for the console port: 00 = 0x0000 = 9600 01 = 0x0800 = 4800 10 = 0x1000 = 1200 11 = 0x1800 = 2400 **Note** On the Cisco CMTS routers, the console port speed is fixed at 9600 bps and cannot be changed.
10	If set, uses an IP broadcast address that consists of all ones (for example, 0x0400).
9	If set, disables the secondary bootstrap (for example, 0x0200).
8	If set, the router enables the BREAK key, allowing users to break into ROMMON during the boot process (for example, 0x0100).
7	Unused on the Cisco CMTS routers.
6	If set, the router ignores the configuration file in its Flash memory. This is typically done when the user has forgotten the router's enable password (for example, 0x0040).
5–4	Unused on the Cisco CMTS routers.
3–0	Defines the router's boot behavior: 0x0000 = Boots to the ROMMON prompt 0x0001 = Boots the ROMMON boot helper software (first file in bootflash:) 0x0002 to 0x000F = Boots a Cisco IOS software image, based on the values of the router's boot variables. Each **boot system** command in the configuration file is tried until a valid image is booted.

For example, for normal operations the configuration register is set to 0x2102, which sets bit 13 (allows the router to fall into ROMMON mode if the boot fails), bit 8 (allows the user to break into ROMMON), and bit 1 (boots a Cisco IOS software image). Bits 11 and 12 are cleared, which sets the console port to 9600 bps.

The following are the most commonly-used configuration register values:

- 0x0 = Boot into ROMMON.
- 0x2002 = Normal boot for standard operations, but the BREAK signal cannot be used to break into ROM monitor mode.
- 0x2102 = Normal boot for standard operations, enabling the BREAK signal.
- 0x2142 = Normal boot but the router ignores the configuration file in Flash memory.

Tip The **confreg** command is identical in function to the **config-register** command that is available in global configuration mode.

Examples

The following example shows how to change the configuration register by using the English prompts. In this example, the only change is to have the router boot the Cisco IOS software image instead of entering ROMMON mode:

```
rommon 1 > confreg

    Configuration Summary
enabled are:
break/abort has effect
console baud: 9600
boot: the ROM Monitor

do you wish to change the configuration? y/n  [n]:  y
enable  "diagnostic mode"? y/n  [n]:
enable  "use net in IP bcast address"? y/n  [n]:
enable  "load rom after netboot fails"? y/n  [n]:
enable  "use all zero broadcast"? y/n  [n]:
disable "break/abort has effect"? y/n  [n]:
enable  "ignore system config info"? y/n  [n]:
change console baud rate? y/n  [n]:
change the boot characteristics? y/n  [n]:  y
enter to boot:
 0 = ROM Monitor
 1 = the boot helper image
 2-15 = boot system
    [0]:  2

    Configuration Summary
enabled are:
break/abort has effect
console baud: 9600
boot: image specified by the boot system commands
      or default to: cisco2-C10000

do you wish to change the configuration? y/n  [n]: n

     You must reset or power cycle for new config to take effect.

rommon 2 >
```

Note After changing the configuration register in interactive mode, the system displays the new values and prompts you again as to whether you want to change them. If the values are correct, answer **no** and the system returns you to the ROMMON prompt. If you made any changes, the system reminds you that you must reset or power cycle the router before the new configuration register takes effect.

The following example shows how to set the configuration register to the typical value of 0x2102, so that it boots a Cisco IOS software image:

```
rommon 7 > confreg 0x2102

     You must reset or power cycle for new config to take effect.

rommon 8 >
```

Related Commands

Command	Description
boot	Boots the router manually.

cont

To continue the execution of the Cisco IOS software image that has been interrupted by a BREAK signal or debugger breakpoint, use the **cont** command in ROM monitor mode.

cont [*address*]

Syntax Description

address	(Optional) Specifies the address in memory at which the router should continue execution. If *address* is not specified, the command continues execution at the address currently stored in the program counter (PC) register.

Caution Do not use the *address* option unless instructed to do so by Cisco TAC engineers.

Command Default

If given without any arguments, the command continues execution at the address currently stored in the processor's program counter (PC) register.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

The **cont** command typically is used when a user has interrupted the operation of the Cisco IOS software by using the BREAK signal to enter ROM monitor mode, and then wants to continue with the original Cisco IOS software image. This command can also be used to continue program execution when the user uses the BREAK signal to interrupt the Cisco IOS software boot procedure, or has used the **break** command to set a debug breakpoint.

Examples

In the following example, the **cont** command continues executing the Cisco IOS software image, after the user has interrupted the software by sending a BREAK signal:

```
Router#

telnet> send brk

*** System received an abort due to Break Key ***
signal= 0x3, code= 0x0, context= 0x6208b290
```

```
PC = 0x606b5ab0, SP = 0x80007e00, RA = 0x606d2370
Cause Reg = 0xffffffff, Status Reg = 0x3400ff03

rommon 5 > cont

Router#
```

Related Commands

Command	Description
boot	Boots the router manually.
break	Sets or clears the debugger breakpoint.
reset	Reinitializes the ROM monitor and return it to a known state.
sysreset	Displays the return information from the system image that was last booted.

context

To display the processor context at the time of the most recent fault or exception, use the **context** command in ROM monitor mode.

context

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

When the processor fault or exception occurs, the ROM monitor preserves the processor context at the time of the fault. The **context** command displays this processor context, which includes information about the kernel registers and the process mode of the booted image (if available).

Examples

The following example shows how to display the CPU context at the time of the most recent fault or exception:

```
rommon 21 > context

Kernel Level Context:
 Reg       MSW        LSW      | Reg       MSW        LSW
------  ---------- ---------- | -----   ---------- ----------
zero   : 00000000   00000000  | s0     : ffffffff   80018a90
AT     : 00000000   00000050  | s1     : 00000000   00000002
v0     : ffffffff   fffffffc  | s2     : 00000000   00000006
v1     : 00000000   02000000  | s3     : ffffffff   80007798
a0     : ffffffff   80018a90  | s4     : 00000000   00000002
a1     : 00000000   00000002  | s5     : 00000000   000000ec
a2     : ffffffff   80007798  | s6     : 00000000   00000002
a3     : 00000000   00000002  | s7     : 00000000   00000000
t0     : ffffffff   ba000004  | t8     : ffffffff   800268b0
```

```
t1     : 00000000   00000002  | t9     : 00000000   00000000
t2     : 00000000   00000000  | k0     : 00000000   3040f001
t3     : 00000000   00000020  | k1     : ffffffff   be800014
t4     : 00000000   20642e31  | gp     : 00000000   60336f00
t5     : 00000000   30306153  | sp     : ffffffff   80007728
t6     : 00000000   446e7369  | s8     : 00000000   00000002
t7     : 00000000   206b4453  | ra     : ffffffff   80010570
HI     : 00000000   00000004  | LO     : 00000000   00007a2a
EPC    : ffffffff   80010250  | ErrPC  : ffffffff   bfc00c54
Stat   : 3040f003             | Cause  : 00008000

context: process context is not valid

rommon 22 >
```

Related Commands

Command	Description
boot	Boots the router manually.
sysreset	Displays the return information from the system image that was last booted.

cpu_card_type

To display the type of processor card that is installed in the router, use the **cpu_card_type** command in ROM monitor mode.

cpu_card_type

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Examples

The following example shows that the router is using an NPE-225 processor card:

```
rommon 92 > cpu_card_type

CPU card type is NPE-225

rommon 93 >
```

Related Commands

Command	Description
boot	Boots the router manually.
sysreset	Displays the return information from the system image that was last booted.

dev

To list the known storage and memory devices for the router, use the **dev** command in ROM monitor mode.

dev

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Examples

The following example shows how to display the known file systems on a router:

```
rommon 3 > dev

Devices in device table:
        id  name
bootflash:  boot flash
    slot0:  PCMCIA slot 0
    slot1:  PCMCIA slot 1
    disk0:  PCMCIA slot 0
    disk1:  PCMCIA slot 1
    disk2:  PCMCIA slot 2
    eprom:  eprom

rommon 4 >
```

Note The disk2 device is available only on a Cisco uBR7246VXR router using the NPE-G1 processor card.

Related Commands

Command	Description
dir	Lists the files on one of the router's file systems.

dir

To list the files on one of the router's file systems, use the **dir** command in ROM monitor mode.

dir *device:*

Syntax Description

device:	Specific device to be displayed.

Command Default

No default behavior or values.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Examples

The following example shows how to list the files on the slot0: and bootflash: devices.

```
rommon 40 > dir slot0:
         File size           Checksum   File name
        65 bytes (0x41)       0xb49d       basic.cm
   2229799 bytes (0x220627)   0x469e       uBR7200-k.z

rommon 41 > dir bootflash:

         File size           Checksum   File name
   1378560 bytes (0x150900)   0x6607c732    ubr7200-kboot-mz.122.11.BC3
     16220 bytes (0x3f5c)     0x47e9a02c    bundle.cfg
        76 bytes (0x4c)       0x313b6bb0    config.cm
    189250 bytes (0x2e342)    0xe95da48e    crashinfo_20030515-212829

rommon 42 >
```

Related Commands

Command	Description
dev	Lists the known storage and memory devices for the router.

dis

To disassemble a segment of main memory, use the **dis** command in ROM monitor mode.

dis [*address*] [*num-of-bytes*]

Syntax Description

address	(Optional) Address in main memory at which the disassembly should begin.
num-of-bytes	(Optional) Number of bytes to disassemble.

Command Default

If no arguments are given, the command prompts for the *address* and *num-of-bytes* parameters.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Examples

The following example shows a typical disassembly:

```
rommon 23 > dis 0x60696358 0x20

0x60696358: 1040012b               beq v0, zero, #0x60696808
0x6069635c: 00008821               addu s1, zero, zero
0x60696360: 8e0285d0               lw v0, -31280(s0)
0x60696364: 14400006               bne v0, zero, #0x60696380
0x60696368: 00002021               addu a0, zero, zero
0x6069636c: 0c1a2d93               jal 0x6068b64c
0x60696370: 00002021               addu a0, zero, zero
0x60696374: 8e0285d0               lw v0, -31280(s0)

rommon 24 >
```

The following example shows the command's interactive mode being used to perform the same disassembly:

```
rommon 25 > dis

Enter in hex the start address [0x0]:  0x60696358
Enter in hex the test size or length in bytes [0x0]:  0x20
```

```
0x60696358: 1040012b                beq v0, zero, #0x60696808
0x6069635c: 00008821                addu s1, zero, zero
0x60696360: 8e0285d0                lw v0, -31280(s0)
0x60696364: 14400006                bne v0, zero, #0x60696380
0x60696368: 00002021                addu a0, zero, zero
0x6069636c: 0c1a2d93                jal 0x6068b64c
0x60696370: 00002021                addu a0, zero, zero
0x60696374: 8e0285d0                lw v0, -31280(s0)

rommon 26 >
```

The dis command displays an exception if you attempt to disassemble a non-existent address or if you specify an argument that the system interprets as a non-existent address. For example, the following command shows the **dis disk0:** command being given. The system interprets the **disk0:** argument as a memory address of 0xd, and because this address does not exist, displays the exception message:

```
rommon 3 > dis disk0:

Warning : address not word aligned, 0xd

*** TLB (Load/Fetch) Exception ***
Access address = 0xc
PC = 0xbfc11074, Cause Reg = 0x8, Status Reg = 0x3040d003

monitor: command "dis" aborted due to exception

rommon 4 >
```

Related Commands

Command	Description
frame	Displays an individual stack frame.
stack	Displays a stack trace.

frame

To display an individual stack frame, use the **frame** command in ROM monitor mode.

frame [*number*]

Syntax Description

number	(Optional) Number of the stack frame to be displayed. The default is 0 (the most current frame).

Command Default

Displays stack frame 0.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

The **frame** command displays a particular stack frame. Use the **stack** command to list the available stack frames and their frame numbers.

Examples

The following example shows the **frame** command being used to display the details of an individual frame displayed by the **stack** command:

```
rommon 5 > stack 6

Stack trace:
PC = 0x02004adc
Frame 00: FP = 0x02003938    RA = 0x02005f2a
Frame 01: FP = 0x02003948    RA = 0x02005df0
Frame 02: FP = 0x02003960    RA = 0x020050ee
Frame 03: FP = 0x02003994    RA = 0x02004034
Frame 04: FP = 0x02003b00    RA = 0x00012ca6
Frame 04: FP = 0x02003b34    RA = 0x020a703c

rommon 6 > frame 2
     Frame 02: FP = 0x02003960    RA = 0x020050ee
     at 0x02003968 (fp + 0x08) = 0x02004f8d
     at 0x0200396c (fp + 0x0c) = 0x0200f390
```

```
     at 0x02003970 (fp + 0x10) = 0x02006afc
     at 0x02003974 (fp + 0x14) = 0xc0a82983
     at 0x02003978 (fp + 0x18) = 0x02003a7e
     at 0x0200397c (fp + 0x1c) = 0x02002630
     at 0x02003980 (fp + 0x20) = 0x00000000
     at 0x02003984 (fp + 0x24) = 0x02000000
     at 0x02003988 (fp + 0x28) = 0x0200c4a4
     at 0x0200398c (fp + 0x2c) = 0x0200f448

rommon 7 >
```

Related Commands

Command	Description
boot	Boots the router manually.
dis	Disassembles a segment of main memory.
stack	Displays a stack trace.
sysreset	Displays the return information from the system image that was last booted.

help

To display a short list of the commands that are available at the ROM monitor prompt, use the **help** command in ROM monitor mode.

help

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

The **help** command displays a list of available ROM monitor commands, along with a brief description of each. To display additional details for a specific command, enter the command name followed by the **-?** option.

Examples

The following example shows a typical display of the **help** screen:

```
rommon 12 > help

alias               set and display aliases command
boot                boot up an external process
break               set/show/clear the breakpoint
confreg             configuration register utility
cont                continue executing a downloaded image
context             display the context of a loaded image
cpu_card_type       display CPU card type
dev                 list the device table
dir                 list files in file system
dis                 disassemble instruction stream
frame               print out a selected stack frame
help                monitor builtin command help
history             monitor command history
```

```
meminfo             main memory information
repeat              repeat a monitor command
reset               system reset
set                 show all monitor variables
show_spd            show all SPD data
stack               produce a stack trace
sync                write monitor environment to NVRAM
sysret              print out info from last system return
unalias             unset an alias
unset               unset a monitor variable

rommon 13 >
```

The following example shows how to display additional help for the **alias** command:

```
rommon 14 > alias -?

usage: alias [name=value]

rommon 15 >
```

Related Commands

Command	Description
boot	Boots the router manually.

history

To display the last 16 commands given at the ROM monitor prompt, use the **history** command in ROM monitor mode.

history

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

The ROM monitor keeps a record of the last commands given at the ROM monitor prompt (up to 16), similar to the way this is done with the Korn shell. Use the **history** command to display these commands, and the **repeat** command to repeat them one or more times.

Tip When you use an **alias**, the **history** list includes the alias and not the actual commands that were executed.

Note The **repeat** command is not added to the history list.

Examples

The following example shows how to reset the ROM monitor and return it to a known state:

```
rommon 9 > history

1   boot sysfiles/ubr10k-k8p6-mz.12211BC3
2   dev
3   dir disk0:
4   confreg
```

```
5   confreg 0x00
6   cont
7   break -c
8   break
9   history

rommon 10 >
```

Related Commands

Command	Description
alias	Defines an alias to be used at the ROM monitor prompt.
boot	Boots the router manually.
repeat	Repeats a particular ROM monitor command.

meminfo

To display information about the available range of main memory and Flash memory, use the **meminfo** command in ROM monitor mode.

meminfo

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

The **meminfo** command displays the size of available main memory, its starting address, the size of available packet memory, and the size of nonvolatile Flash memory.

Examples

The following example shows how to display information about the current memory usage:

```
rommon 9 > meminfo

Main memory size: 512 MB.
Available main memory starts at 0xa000e000, size 0x7ffc8 KB
NVRAM size: 0x80000

rommon 10 >
```

Related Commands

Command	Description
boot	Boots the router manually.
sysreset	Displays the return information from the system image that was last booted.

repeat

To repeat a particular ROM monitor command from the history list, use the **repeat** command in ROM monitor mode.

repeat [*number* [*count*] | *string* [*count*]]

Syntax Description

number	(Optional) Specifies the number, as listed in the **history** command, of the command to be repeated.
string	(Optional) Specifies a string to be compared against the commands in the history list. The most recent command that matches the *string* is repeated. If the *string* includes spaces, it must be enclosed within quotes.
count	(Optional) Specifies the number of times the command should be executed. The default is 1.

Command Default

If given without any arguments, repeats the previous command once.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command was integrated nto Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

The **repeat** command repeats one of the commands in the history list (which can contain up to 16 commands). You can specify the command to be repeated by its history number (as shown by the **history** command) or by a string that will match the command.

If you do not give any arguments with the command, it repeats the last command in the history list once.

Note The **repeat** command is not added to the history list, so you cannot repeat the **repeat** command. You also cannot include the **repeat** command on a command line that has multiple commands separated by a semicolon delimiter.

Examples

The following example shows how to use the repeat command to execute one of the commands in the history list:

```
rommon 9 > history

1   boot sysfiles/ubr10k-k8p6-mz.12211BC3
2   dev
3   dir disk0:
4   confreg
5   confreg 0x00
6   cont
7   break -c
8   break
9   history

rommon 10 > repeat 9

1   boot sysfiles/ubr10k-k8p6-mz.12211BC3
2   dev
3   dir disk0:
4   confreg
5   confreg 0x00
6   cont
7   break -c
8   break
9   history
10  history

rommon 11 >
```

Related Commands

Command	Description
boot	Boots the router manually.
history	Displays the last 16 commands given at the ROM monitor prompt.
sysreset	Displays the return information from the system image that was last booted.

reset

To reinitialize the ROM monitor and return it to a known state, use the **reset** command in ROM monitor mode.

reset [**-s**]

Syntax Description

-s	(Optional) Saves the current environment (environment variables and aliases) to nonvolatile memory before performing the reset.

Defaults

If given without any arguments, resets all environment variables and aliases to their initialized states.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command ws integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

The **reset** command returns the ROM monitor to its initial state, without requiring a complete system reboot by performing a warm reset. This is useful if you have been setting and unsetting registers and variables, and no longer know whether the system is in a stable state.

If you specify the **-s** option, the system saves the current environment variables and aliases to nonvolatile memory before resetting the ROM monitor, so as to preserve their current values.

Examples

The following example shows how to reset the ROM monitor and return it to a known state:

```
rommon 59 > reset

System Bootstrap, Version 12.0(9r)SL2, RELEASE SOFTWARE (fc1)
Copyright (c) 2000 by cisco Systems, Inc.

Reset Reason Register = RESET_REASON_RESET_REG (0x76)
C10000 platform with 524288 Kbytes of main memory

rommon 1 >
```

Related Commands

Command	Description
boot	Boots the router manually.
sysreset	Displays the return information from the system image that was last booted.

set

To display the contents of the currently-defined environment variables, use the **set** command in ROM monitor mode.

set

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

The set command displays the environment variables that are currently defined in the ROM monitor. Variables are defined at the ROM monitor prompt in a manner similar to that of the Korn shell, by specifying *variable=value*.

Tip Use the **unset** command to delete a monitor variable.

Examples

The following example shows how to display the values of the currently defined monitor variables:

```
rommon 13 > set

PS1=rommon ! >
RET_2_RTS=17:28:46 PST Tue Oct 12 1993
BSI=0
RET_2_RUTC=
?=1

rommon 14 >
```

The following example shows the PS1 variable (which defines the ROM monitor prompt) being changed, and the **set** command displaying the new value:

```
rommon 12 > PS1="Rommon-CMTS ! >"
Rommon-CMTS 13 > set

PS1=Rommon-CMTS ! >
RET_2_RTS=17:28:46 PST Tue Oct 12 1993
BSI=0
RET_2_RUTC=
?=1

Rommon-CMTS 14 >
```

Related Commands

Command	Description
sync	Writes the current values of aliases and monitor environment variables to Flash memory.
unset	Deletes the current contents of a monitor environment variable.

show_spd

To display the contents of the processor's Serial Presence Detect (SPD) device (an electrically erasable programmable read-only memory (EEPROM) device), use the **show_spd** command in ROM monitor mode.

show_spd

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

The **show_spd** command displays the contents of the processor card's SPD/EEPROM memory device. This information is typically useful only to Cisco TAC engineers.

Note The **show_spd** command displays a large volume of data. Enable the capture buffer on your terminal program so that you can preserve this data and review it later.

Examples

The following example shows how to display the SPD data (only a portion of the command's display is shown):

```
rommon 15 > show_spd

DIMM 0 SPD specifications:
byte 0 - 0x80000000
byte 1 - 0x8000000
byte 2 - 0x4000000
...
byte 125 - 0xff000000
byte 126 - 0x64000000
```

```
byte 127 - 0xad000000


DIMM 1 SPD specifications:
byte 0 - 0xff000000
byte 1 - 0xff000000
byte 2 - 0xff000000
...
byte 125 - 0xff000000
byte 126 - 0xff000000
byte 127 - 0xff000000


DIMM 2 SPD specifications:
byte 0 - 0xff000000
byte 1 - 0xff000000
byte 2 - 0xff000000
...
byte 125 - 0xff000000
byte 126 - 0xff000000
byte 127 - 0xff000000


DIMM 3 SPD specifications:
byte 0 - 0xff000000
byte 1 - 0xff000000
byte 2 - 0xff000000
...
byte 125 - 0xff000000
byte 126 - 0xff000000
byte 127 - 0xff000000

DIMM 0: Tclk cycle time = 12, Tac access from clk = 7
DIMM 0: Trp precharge = 20
DIMM 0: Trcd RAS to CAS = 20

DIMM 1: Tclk cycle time = 15, Tac access from clk = 15
DIMM 1: Tclk = 15 may NOT support CL = 2
DIMM 1: Tac = 15 may NOT support CL = 2
DIMM 1: Trp precharge = 255
DIMM 1: Trp = 255 CANNOT support SRASPrchg = 2
DIMM 1: Trcd RAS to CAS = 255
DIMM 1: Trcd = 255 CANNOT support SRAStoSCAS = 2

DIMM 2: Tclk cycle time = 15, Tac access from clk = 15
DIMM 2: Tclk = 15 may NOT support CL = 2
DIMM 2: Tac = 15 may NOT support CL = 2
DIMM 2: Trp precharge = 255
DIMM 2: Trp = 255 CANNOT support SRASPrchg = 2
DIMM 2: Trcd RAS to CAS = 255
DIMM 2: Trcd = 255 CANNOT support SRAStoSCAS = 2

DIMM 3: Tclk cycle time = 15, Tac access from clk = 15
DIMM 3: Tclk = 15 may NOT support CL = 2
DIMM 3: Tac = 15 may NOT support CL = 2
DIMM 3: Trp precharge = 255
DIMM 3: Trp = 255 CANNOT support SRASPrchg = 2
DIMM 3: Trcd RAS to CAS = 255
DIMM 3: Trcd = 255 CANNOT support SRAStoSCAS = 2

rommon 16 >
```

Related Commands

Command	Description
sync	Writes the current values of aliases and monitor environment variables to Flash memory.
unalias	Deletes a currently-defined alias.

stack

To display a stack trace, use the **stack** command in ROM monitor mode.

stack [*number*]

Syntax Description

number	(Optional) Number of stack frames to display. The default is 5 frames.

Command Default

Displays 5 stack frames

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

The **stack** command displays a stack trace of the most recently booted software image. This trace includes the value of the program counter and the selected number of frames from the kernel stack and process stack (if available) from that software image.

Tip To display details for an individual frame stack, use the **frame** command.

Examples

The following example shows how to display a stack trace with 6 frames:

```
rommon 5 > stack 6

Stack trace:
PC = 0x02004adc
Frame 00: FP = 0x02003938    RA = 0x02005f2a
Frame 01: FP = 0x02003948    RA = 0x02005df0
Frame 02: FP = 0x02003960    RA = 0x020050ee
Frame 03: FP = 0x02003994    RA = 0x02004034
Frame 04: FP = 0x02003b00    RA = 0x00012ca6
Frame 04: FP = 0x02003b34    RA = 0x020a703c

rommon 6 >
```

The following example shows how to display a stack trace with the default of 5 frames, when a process stack is available:

```
rommon 21 > stack
Kernel Level Stack Trace:
Initial SP = 0x61bb4d30, Initial PC = 0x606931b0, RA = 0x6067bca0
Frame 0 : FP= 0x61bb4d30, PC= 0x606931b0,   0 bytes
Frame 1 : FP= 0x61bb4d30, PC= 0x6067bca0,  24 bytes
Frame 2 : FP= 0x61bb4d48, PC= 0x6068db30,  48 bytes
Frame 3 : FP= 0x61bb4d78, PC= 0x6069157c,  32 bytes
Frame 4 : FP= 0x61bb4d98, PC= 0x606905e0,  88 bytes

Process Level Stack Trace:
Initial SP = 0x80007e08, Initial PC = 0x60696358, RA = 0x60699080
Frame 0 : FP= 0x80007e08, PC= 0x60696358, 192 bytes
Frame 1 : FP= 0x80007ec8, PC= 0x606939d0,  56 bytes
Frame 2 : FP= 0x80007f00, PC= 0x60008c94,  32 bytes
Frame 3 : FP= 0x80007f20, PC= 0x80008ae0,  32 bytes
Frame 4 : FP= 0x80007f40, PC= 0x80008840, 128 bytes

rommon 22 >
```

Related Commands

Command	Description
boot	Boots the router manually.
dis	Disassembles a segment of main memory.
frame	Displays an individual stack frame.
sysreset	Displays the return information from the system image that was last booted.

sync

To write the current values of aliases and monitor environment variables to Flash memory, use the **sync** command in ROM monitor mode.

sync

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

The **sync** command writes the current values of the monitor environment variables and aliases to Flash memory so that they are read on the next reset. If you do not do this, all variables and aliases are deleted upon reset and replaced with the default values.

Examples

The following example shows how to synchronize the monitor variables and aliases:

```
rommon 39 > sync

rommon 40 >
```

Related Commands

Command	Description
alias	Defines an alias to be used at the ROM monitor prompt.
boot	Boots the router manually.
set	Displays the currently-defined monitor environment variables.
sysreset	Displays the return information from the system image that was last booted.

Command	Description
unalias	Deletes a currently-defined alias.
unset	Deletes the current contents of a monitor environment variable.

sysreset

To display information about the system image that was last booted, use the **sysreset** command in ROM monitor mode.

sysreset

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

The **sysreset** command displays the information about the last system image that was booted and then terminated. This includes the reason for why the last image ended its execution, the values of the program counter and error address registers when the program ended execution, and a stack trace holding the last eight frames. Any exception information is also shown.

Examples

The following example shows a typical display from the **sysreset** command:

```
rommon 22 > sysreset

System Return Info:
count: 19,  reason: user reload
pc:0x6053059c,  error address: 0x0
Stack Trace:
FP: 0x6558b0d0, PC: 0x6053059c
FP: 0x6558b0d0, PC: 0x605163a4
FP: 0x6558b0e8, PC: 0x60535b84
FP: 0x6558b170, PC: 0x60488c50
FP: 0x6558b268, PC: 0x60474aa8
FP: 0x6558b2c8, PC: 0x6014d5d0
```

```
FP: 0x6558b2e8, PC: 0x60487928
FP: 0x6558b378, PC: 0x604fe80c

rommon 23 >
```

Related Commands

Command	Description
boot	Boots the router manually.
reset	Reinitializes the ROM monitor and return it to a known state.

unalias

To delete a currently-defined alias, use the **unalias** command in ROM monitor mode.

unalias *name* [*name2 name3 ...*]

Syntax Description

name	Specifies the alias to be deleted.
name2 name3 ...	(Optional) Specifies additional aliases to be deleted.

Command Default

No default behavior or values.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

The **unalias** command deletes one or more aliases that you have previously defined for the ROM monitor using the **alias** command.

Examples

The following example shows how to delete one alias:

```
rommon 13 > unalias dird

rommon 14 >
```

The following example shows three aliases being deleted:

```
rommon 20 > unalias alias1 alias2 alias3

rommon 21 >
```

The following example shows the error message that is displayed when you try to delete an alias that does not exist:

```
rommon 11 > unalias gobbledegook

unalias: "gobbledegook" does not exist
```

```
rommon 12>
```

Related Commands

Command	Description
alias	Defines an alias to be used at the ROM monitor prompt.
sync	Writes the current values of aliases and monitor environment variables to Flash memory.

unset

To delete the current contents of a monitor environment variable, use the **unset** command in ROM monitor mode.

unset *name* [*name2 name3 ...*]

Syntax Description

name	Specifies the variable to be cleared.
name2 name3 ...	(Optional) Specifies additional variables to be cleared.

Command Default

No default behavior or values.

Command Modes

ROM monitor (>)

Command History

Release	Modification
11.3 NA	This command was introduced on Cisco uBR7200 series routers.
12.1(5)EC	Support was added for Cisco uBR7100 series routers.
12.2(4)BC1	Support was added for the Cisco uBR10012 router. Changes were also made to the boot procedure after breaking into ROMMON to ensure that all hardware and software registers are in a known state before loading the new image.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.

Usage Guidelines

The **unset** command clears the contents of one or more monitor variables that have been defined in the ROM monitor. Variables are defined at the ROM monitor prompt in a manner similar to that of the Korn shell, by specifying *variable=value*.

Examples

The following example shows how to delete a variable named “temp-var”:

```
rommon 13 > unset temp-var

rommon 14 >
```

The following example shows how to delete two variables:

```
rommon 17 > unset temp-var my-var

rommon 18 >
```

Related Commands

Command	Description
set	Displays the currently-defined monitor environment variables.
sync	Writes the current values of aliases and monitor environment variables to Flash memory.