

ROMmon Recovery for the Cisco 2500, 3000, AS5100, and uBR900 Series Routers

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Introduction

This document explains how to recover Cisco 2500, 3000, AS5100, and uBR900 Series Routers stuck in ROMmon (`rommon#>` or `>` prompt).

Prerequisites

Requirements

To recover a router from ROMmon mode, the router should be physically accessible and should have a terminal connected to the console port. Recovering a router from ROMmon is not possible by telnetting to any of the interfaces. You must know how to copy the Cisco IOS® software image from a TFTP server to the router.

Components Used

The information in this document is based on the:

- Cisco 2500 Series Router
- Cisco 3000 Series Router
- Cisco AS5100 Series Universal Access Server
- Cisco uBR900 Series Router

The information presented in this document was created from devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If you are working in a live network, ensure that you understand the potential impact of any command before using it.

Conventions

For more information on document conventions, see the Cisco Technical Tips Conventions.

Verify the Configuration Register Value

The first thing that needs to be investigated is why the router is booting up in ROMmon mode (indicated by the "rommon # >" or ">" prompt). Determine whether the cause is due to the change of the configuration register value, or a corrupted Cisco IOS software image.

If the router has a valid Cisco IOS software image, then simply changing the configuration value register to 0x2102 will recover the router. The procedure for this is explained below.

1. If the ROMmon prompt is ">", type the following at the ROMmon prompt:

```
>o/r 0x2102
>i
System Bootstrap, Version 11.0(10c)XB2, RELEASE SOFTWARE
Copyright (c) 1986-2003 by cisco Systems
2500 processor with 16384 Kbytes of main memory

F3: 10021772+224116+562960 at 0x3000060

Restricted Rights Legend

Use, duplication,.....
```

2. If the ROMmon prompt is "rommon #>", type the following at the prompt:

```
rommon 1> confreg 0x2102
```

You must reset or power cycle the router for the new configuration to take effect:

```
rommon 2> reset
System Bootstrap, Version 12.0(6r)T3, RELEASE SOFTWARE (fc1)
Copyright (c) 1999 by cisco Systems, Inc.
UBR924 platform with 16384 Kbytes of main memory.....
```

If the router boots up successfully, then the cause was a configuration register value issue.

If the router boots up in ROMmon again, proceed to Download Cisco IOS Image Using the Boot Image from a Trivial File Transfer Protocol (TFTP) Server.

Download Cisco IOS Image Using the Boot Image from a Trivial File Transfer Protocol (TFTP) Server

There is only one way to install an image on the 2500, 3000, AS5100, or uBR900 Series Routers if the main Cisco IOS software has been deleted or corrupted. You must use its boot image.

Since you have already determined that the cause of the router booting up in ROMmon is not due to the configuration register value, the only option available for recovery is to re-install or upgrade the Cisco IOS software from a TFTP server using the built-in boot image (Rx-boot) in ROM.

To get into the Rx-boot mode or boot image, do the following:

1. If the rommon prompt is "rommon # >", type:

```
rommon 1 > confreg 0x2101
```

You must reset or power cycle the router for the new configuration to take effect:

!--- Output suppressed

```
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
[OK - 16294764/16777216 bytes]

Verifying checksum... OK (0x96AA)
Flash copy took 0:08:23 [hh:mm:ss]
hostname(boot)#
```

4. Use the **show flash** command to verify the newly-loaded Cisco IOS image version.

```
hostname(boot)#show flash

System flash directory:
File Length Name/status
  1 16294764 c2500-is-1.123-1a.bin
[16294828 bytes used, 482388 available, 16777216 total]
16384K bytes of processor board System flash (Read/Write)
hostname(boot)#
```

5. After successfully copying the Cisco IOS image to the router, make sure that you change the configuration register back to 0x2102 and reload the router to boot from the Cisco IOS image.

```
hostname(boot)(config)#config-register 0x2102
hostname(boot)#reload
System configuration has been modified. Save? [yes/no]: no
Proceed with reload? [confirm]
```

!--- Press Enter to confirm

```
*Mar  1 00:12:58.463: %SYS-5-RELOAD: Reload requested
System Bootstrap, Version 11.0(10c)XB2, PLATFORM SPECIFIC RELEASE SOFTWARE (fc1)

Copyright (c) 1986-2003 by cisco Systems
2500 processor with 14336 Kbytes of main memory

F3: 15405292+889440+952984 at 0x3000060
```

!--- Output suppressed

Press RETURN to get started!

hostname>

6. Use the **show version** command to verify the configuration register value and the newly-loaded Cisco IOS image version.

```
hostname>show version
Cisco Internetwork Operating System Software
IOS (tm) 2500 Software (C2500-IS-L), Version 12.3(1a), RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2003 by cisco Systems, Inc.
Compiled Fri 06-Jun-03 07:46 by dchih
Image text-base: 0x0307F6E8, data-base: 0x00001000

ROM: System Bootstrap, Version 11.0(10c)XB2, PLATFORM SPECIFIC RELEASE SOFTWARE
(fc1)
BOOTLDR: 3000 Bootstrap Software (IGS-BOOT-R), Version 11.0(10c)XB2, PLATFORM SP
ECIFIC RELEASE SOFTWARE (fc1)
```

```
Router uptime is 2 minutes
System returned to ROM by reload
System image file is "flash:c2500-is-1.123-1a.bin"

cisco 2500 (68030) processor (revision L) with 14336K/2048K bytes of memory.
Processor board ID 13587050, with hardware revision 00000000
Bridging software.
X.25 software, Version 3.0.0.
2 Ethernet/IEEE 802.3 interface(s)
2 Serial network interface(s)
32K bytes of non-volatile configuration memory.
16384K bytes of processor board System flash (Read ONLY)

Configuration register is 0x2102
```

The **show version** command output above shows that the router has loaded the new Cisco IOS image and the configuration register value is 0x2102.

See Software Installation and Upgrade Procedure for the 1600, 2000, 2500, 3000, AS5100, and AS5200 for more information.

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