

ROMmon Recovery Procedure for the Cisco 7200, 7300, 7400, 7500, RSP7000, Catalyst 5500 RSM, uBR7100, uBR7200, uBR10000, and 12000 Series Routers

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Introduction

This page explains how to recover a Cisco 7200, 7300, 7400, 7500, RSP7000, Catalyst 5500 RSM, uBR7100, uBR7200, uBR10000, or 12000 Series Router stuck in ROMmon (`rommon # >` prompt).

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

This document is not restricted to specific software and hardware versions.

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.

Check Configuration Register Settings

If a router keeps entering the ROM monitor mode each time the router is powered up or reloaded, the first setting that should be checked is the configured value of the configuration register.

The first four bits of the configuration register comprise the boot field. The value of the boot field defines the source of a default Cisco IOS® software image that will be used to run the router. If the value of the boot field is 0 configuration register value of XXX0 on startup, the system enters and remains in the ROM monitor mode (rommon>), awaiting a user command to boot the system manually.

For more information on the Software Configuration Register bit meanings, see Configuring the Software Configuration Register. To verify the configured value of the configuration register, use the **confreg** command as shown below.

```
rommon 2 > confreg

Configuration Summary
enabled are:
load rom after netboot fails
console baud: 9600
boot: the ROM Monitor

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

As indicated by the output of the **confreg** command above, the configuration register is set to a value that forces the router to go into the ROMmon mode each time it is reloaded or power cycled. To make the router boot automatically from a default Cisco IOS software image, change the configuration register value as shown below:

```
rommon 2 > confreg

Configuration Summary
enabled are:
load rom after netboot fails
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]:
disable "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
[2]: 2

Configuration Summary
enabled are:
load rom after netboot fails
console baud: 9600
boot: image specified by the boot system commands
or default to: cisco2-C7200

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

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

By doing this, you have changed the configuration register to a value that makes it look for a valid Cisco IOS software image on startup and boots from the same. The router must now be reset as follows:

```
rommon 3 > reset

System Bootstrap, Version 11.1(10) [dschwart 10], RELEASE SOFTWARE (fc1)
Copyright (c) 1994 by cisco Systems, Inc.
C7200 processor with 65536 Kbytes of main memory

CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Self decompressing the image : #####
#####

<SNIP>
```

The router should now reload with a valid Cisco IOS software image.

Look for a Valid Image in Flash:

If the configuration register value is set to make the system boot automatically from a default Cisco IOS software image, and if no break signal is sent during start up, the router should boot normally. However, if the router still enters the rommon mode, it is most likely because the router is unable to locate a valid Cisco IOS software image.

In this case, the first thing you need to do is look for a valid Cisco IOS software image in each available device. Issue the **dev** command to see which devices are available on your router:

```
rommon 1 > dev
  Devices in device table:
      id  name
bootflash:  boot flash
  slot0:  PCMCIA slot 0
  slot1:  PCMCIA slot 1
  eprom:  EPROM
rommon 2 >
```

Next, issue the **dir [device ID]** command for each of the available devices, and look for a valid Cisco IOS software image (the device ID is slot0: and/or slot1:, corresponding to the PCMCIA cards inserted in the respective slots):

```
rommon 2 > dir slot0:
  File size      Checksum      File name
  12566060 bytes (0xbfbe2c)  0x38d1c81b   c7200-ik8s-mz.122-10b.bin
rommon 3 >
```

Note that if the router returns a "bad device name" message, the device specified probably does not exist.

The output of the **dir slot0:** command above indicates that a valid image is indeed present in the Flash. Try to boot from that image by using the **boot** command.

```
rommon 3> boot slot0:c7200-ik8s-mz.122-10b.bin
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCCCCCCCCC

<SNIP>
```

The router should now boot with the valid Cisco IOS software image. However, there are times when a valid image for the router does not exist on any of the devices. The possible reasons are:

- All devices might be empty (as indicated by the system message "No files in directory")
- The devices may have been formatted on a router belonging to a different filesystem (indicated by the system message "device does not contain a valid magic number")
- The devices may not be working (system message "trouble reading device magic number")
- The Cisco IOS software image may have been corrupted

In these cases, a valid image must be downloaded using Trivial File Transfer Protocol (TFTP) or from another router using the PCMCIA card as explained below.

Download Using the Boot Image and a Trivial File Transfer Protocol (TFTP) Server

See [How to Upgrade from ROMmon Using TFTP with Boot Image](#) for detailed instructions.

If both the main image and the boot image are corrupted or deleted, the only way to recover the router is to swap the PCMCIA card.

Use Another Router to Get a Valid Cisco IOS Software Image into the PCMCIA Card

In the event that you have another similar router, or at least one other router which has a compatible PCMCIA flash card filesystem (see [PCMCIA Filesystem Compatibility Matrix](#)), you can use that Flash card to recover the router.

- If both routers are identical (in the same series), you can use the Flash card from the other router to boot the one you want to recover. You can then download a valid image the normal way. 7500 routers run their Cisco IOS Software from dynamic RAM (DRAM), so you can remove a PCMCIA card while the router is running.
- If both routers are different, but have a compatible PCMCIA Flash card filesystem, you can use the other router to load a Cisco IOS Software image into a Flash card which you can then move to the router you are trying to recover.
- If you don't have another PCMCIA card on a similar router, the only option is the Return Materials Authorization (RMA).

Related Information

- **Product Support**
- **Technology Support**
- **Technical Support – Cisco Systems**

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