

Hardware Troubleshooting for Cisco uBR9xx Series Cable Modems

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Introduction

This document discusses some of the most common hardware failures you can encounter with the Cisco uBR9xx series cable modems and provides ways to troubleshoot those failures. The document lists the most common symptoms that cable modems encounter. The document also walks you through a series of interactive steps that you can take to narrow down the failure. The purpose of this document is to enable you to troubleshoot the cable modem yourself in order to rule out hardware issues.

Note: Refer to Cisco Cable Voice Adapters (CVA120) Basic Installation and Troubleshooting for information on how to troubleshoot specific issues with Cisco Cable Voice Adapters CVA120.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this document is based on the Cisco uBR9xx Series Cable Modems.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

The Troubleshooting Flowchart

This Troubleshooting Flowchart identifies the common failures that Cisco uBR9xx Cable Modems can encounter.

Common Failures

These are the four common failures that Cisco uBR9xx Cable Modems can encounter:

- The cable modem does not boot up.
- The cable modem is unable to communicate.
- Error messages appear on the cable modem console.
- Access to the cable modem through Telnet or the console fails.

Note: When you troubleshoot, you must check for any existing field notices that can affect your cable modem. Refer to the Broadband Cable section of Product Field Notice Summary for more information.

Use the Troubleshooting Flowchart to match the symptom that your cable modem encounters. Then answer 'yes' or 'no' to navigate down the chart to the correct field. Also refer to the relevant sections in this document for additional information.

The Cable Modem Does Not Boot Up

When your cable modem does not boot, the first thing you need to check is whether the OK LED on the cable modem is lit.

- If the OK LED is not lit, ensure that you turn on the power to the cable modem. If the power is on but the OK LED is still not lit, the cable modem is probably faulty. Refer to the Hardware Installation Guide for the corresponding cable modem to look up LED self-test failure codes.
- If the OK LED is ON or blinks, connect a console to the cable modem and issue the **show version** command to verify whether the cable modem has the correct Cisco IOS® Software.
- If the OK LED is OFF but the self-test failure codes indicate no failure, the OK LED can be faulty.

Note: Refer to Cisco uBR900 Series Cable Access Routers for information on console port connection to the cable modem. Select the appropriate router platform., select the Hardware Installation Guide, and click on the Connector and Cable Specifications chapter.

This is the output of a **show version** command from a Cisco uBR924 router:

```
el-vulpix#show version
Cisco Internetwork Operating System Software
IOS (tm) 920 Software (UBR920-K8V6Y5-M), Version 12.2(5), RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2001 by cisco Systems, Inc.
Compiled Wed 12-Sep-01 03:33 by pwade
Image text-base: 0x800100A0, data-base: 0x806AE948
ROM: System Bootstrap, Version 12.0(6r)T3, RELEASE SOFTWARE (fc1)
el-vulpix uptime is 1 day, 2 hours, 7 minutes
System returned to ROM by reload at 22:37:37 - Wed Nov 14 2001
System restarted at 22:38:44 - Wed Nov 14 2001
System image file is "flash:ubr920-k8v6y5-mz.122-5.bin"
cisco uBR920 CM (MPC850) processor (revision 3.e) with 15872K/1024K bytes of me.
Processor board ID FAA0418Q0Z2
 Bridging software.
 1 Ethernet/IEEE 802.3 interface(s)
 1 Cable Modem network interface(s)
3968K bytes of processor board System flash (Read/Write)
```

```
1536K bytes of processor board Boot flash (Read/Write)
Configuration register is 0x2102
```

This output indicates that **ubr920-k8v6y5-mz.122-5.bin** is the correct image. Refer to Cisco IOS Downloads (registered customers only) to select and download the correct image for your cable modem. Refer to Cisco IOS Software Upgrade Procedure for Cisco uBR9xx Cable Modems Using Console or Telnet Access to upgrade the Cisco IOS Software on your cable modem. If the cable modem is stuck in ROMmon, set the configuration register to **0x2102** and reload the router:

```
rommon 1 > confreg 0x2102
rommon 2 > reset
```

If the router remains in the ROMmon mode, the Cisco IOS Software image is probably corrupt. Refer to the ROMmon Recovery for the Cisco 2500, 3000, AS5100, and uBR900 Series Routers for more information.

Sometimes, the router gets stuck in Bootmode. In this case, the Router_name(boot) > prompt appears. Check the **show version** command output again and make sure that the configuration register is **0x2102**. If the configuration register shows a different setting other than **0x2102**, perform this configuration:

```
Router_name(boot)#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router_name(boot)(config)#config-register 0x2102
Router_name(boot)(config)#end
Router_name(boot)#reload
System configuration has been modified. Save? [yes/no]: no
Proceed with reload? [confirm]
```

Note: You do not need to save the running configuration before the reload.

If these configurations do not solve the problem, ensure that the RESET switch is not stuck. If you are unsure whether or not the RESET switch is stuck, power cycle the cable modem, and watch for these console messages:

```
RESET SWITCH DETECTED
RESET SWITCH DETECTED - 10 seconds
RESET SWITCH DETECTED - 30 seconds
UBR924 platform with 16384 Kbytes of main memo
```

This message confirms that the RESET switch is stuck.

The Cable Modem is Unable to Communicate

Perform these steps to help detect the problem if the cable modem boots up but does not communicate with the headend:

- Check the LED status on the cable modem (refer to the cable modem troubleshooting documentation for information on LED status). For example, if a Cisco uBR905 cable modem LINK LED blinks, the cable modem is locked to a signal and connects to the headend per DOCSIS. If the LINK light continually blinks, investigate further to determine where the cable modem fails.
- Ask the service provider to run the **show cable modem** command on the Cable Modem Termination System (CMTS) to provide the status of the cable modem.
- Refer to the Troubleshooting Flowchart to narrow down the problem and determine what you need to do for the cable modem to achieve online status. Refer to Troubleshooting uBR Cable Modems Not Coming Online for more information.

If the cable modem is online but you are still unable to establish connectivity with certain hosts at or beyond

the Headend, check the CPE configuration and IP connection. Refer to CPE Inability To Connect for more information.

Error Messages Appear on the Cable Modem Console

If the cable modem displays an error message on the console, record the error and check to see if the error is documented in the most common cable modem error messages.

Access to the Cable Modem Through Telnet or the Console Fails

If you cannot connect to the cable modem through Telnet or the console after the cable modem comes online, the cable modem functions normally, and access to the cable modem is disabled. Refer to Console or Telnet Access to Cable Modem Is Disabled. In order to rule out hardware problems with the cable modem console connection, disconnect the coaxial cable of the cable modem and then perform a power cycle. You must now be able to connect to the cable modem through the console. If you are still unsuccessful, make sure you use the right console cable. Refer to the Hardware Installation Guide.

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