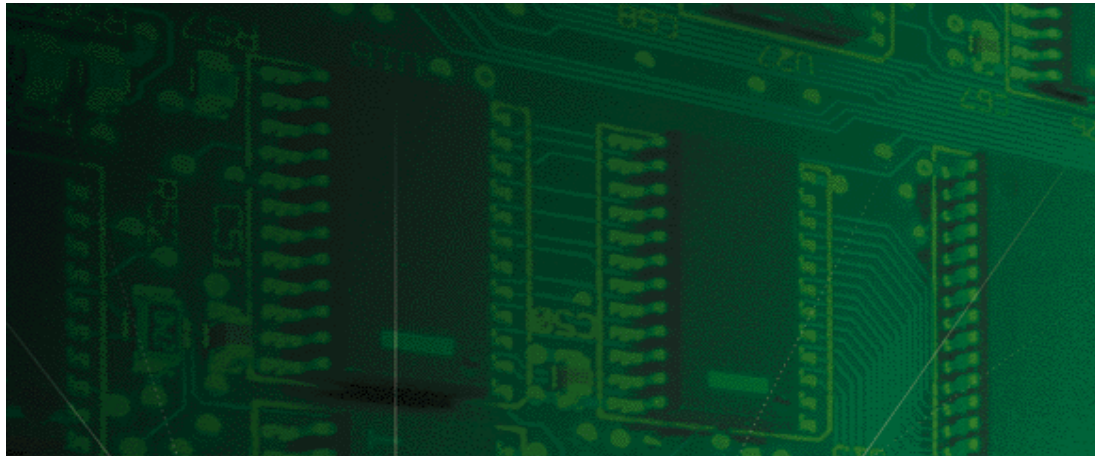




Cable Modem Termination System Release 2.5.1

Release Notes



Part No. 10030998



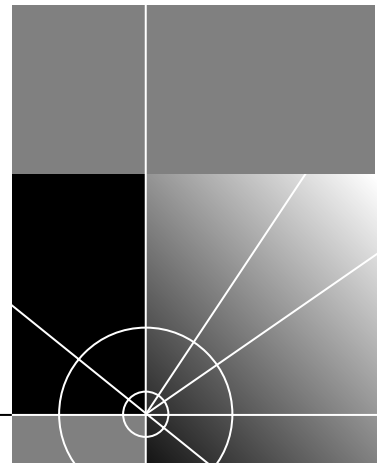


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<http://www.3com.com/>

Part No. 10030998



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CABLE MODEM TERMINATION SYSTEM 2.5.1 RELEASE NOTES

About These Release Notes

These Release Notes contain information important to the installation, configuration, and use of System Release 2.5.1 3Com Cable Modem Termination System (CMTS) software.

System Release 2.5.1 CMTS software is comprised of Cable Access Router (CAR) Network Application Card (NAC) software version 3.60.37 and Upstream Receiver Card (URC) NAC software version 4.04.17.

Hardware and Software Compatibility

CMTS System Release 2.5.1 supports the 3Com hardware and software versions listed in the following tables.

Table 1 CMTS 2.5.1 Hardware Compatibility

Product	Hardware Version
CAR Network Application Card (NAC)	all versions
CAR NIC	REV C Type 5
Upstream Receiver Card (URC) NAC	all single slot versions
QAM Modulator Network Interface Card (NIC)	all versions
Cable Management System	N/A
Cable Headend Manager	N/A
Cable Modem Manager	N/A
Cable Modem Configuration File Editor	N/A

Table 2 CMTS 2.5.1 Software Compatibility

Product	Software Version
CAR Network Application Card (NAC)	3.60.37
CAR NIC	N/A
Upstream Receiver Card (URC) NAC	Operational Code 4.04.17 or greater, and Boot Code 4.1.8t or greater
QAM Modulator Network Interface Card (NIC)	N/A
Cable Management System	1.2.2 or greater
Cable Headend Manager	2.1.14 or greater*
Cable Modem Manager	2.2.1 or greater*
Cable Modem Configuration File Editor	3.1.14 or greater*

*This product provides only limited functionality when used in conjunction with System Release 2.51 CMTS hardware and software. Complete compatibility is available only through Cable Management System (CMS) software. Contact your 3Com Sales representative for details on CMS.

New Feature Commands and Descriptions

CMTS System Release 2.5.1 is a maintenance release that resolves service issues. In addition, some new Command Line Interface (CLI) commands and SNMP MIB variables have been added to aid in diagnosing modem issues.

list cable cpe table

Lists all the active CPEs on the Cable Access Router.

Sample Output: HiPerCMTS>> list caBLE cpe taBLE

--- CPE table ---

CM	CPE	IP	CPE MAC	CM MAC
INDEX	INDEX	ADDR	ADDR	ADDR

```
-----
```

1	1	10.10.1.15	00:20:AF:EB:44:C1	00:10:95:00:F1:FA
---	---	------------	-------------------	-------------------

**list cable cpe cminindex
<cm_index>**

Lists all the CPEs connected to a specific cable modem, which is specified by cm_index.

Sample Output: HiPerCMTS>> list caBLE cpe cminDEX 1

--- CPE table ---

CM INDEX	CPE INDEX	IP ADDR	CPE MAC ADDR	CM MAC ADDR
1	1	10.10.1.15	00:20:AF:EB:44:C1	00:10:95:00:F1:FA

**list cable cpe cmmac
<cm_mac_addr>**

Lists all the CPEs connected to a specific cable modem, which is specified by the cable modem's MAC address.

Sample Output: HiPerCMTS>> list caBLE cpe cmmACADDR
00:10:95:00:f1:fa

--- CPE table ---

CM INDEX	CPE INDEX	CM MAC ADDR	IP ADDR	CPE MAC ADDR
1	1	00:10:95:00:F1:FA	10.10.1.15	00:20:AF:EB:44:C1

**list cable cpe cpeip
<cpe_ip_addr>**

This command displays a single entry of the table, which is specified by CPE IP address.

Sample Output: HiPerCMTS>> list caBLE cpe cpeip 10.10.1.15

--- CPE table ---

CM INDEX	CPE INDEX	IP ADDR	CPE MAC ADDR	CM MAC ADDR
1	1	10.10.1.15	00:20:AF:EB:44:C1	00:10:95:00:F1:FA

SNMP: usrCableCmtsCPETable was added to usr_cable.mib. This table maintains the CPE related information.

**list cable cmstatus
upstream slot
<slot #> channel
<channel #>**

Lists the cable modem status of all entries on a given upstream channel. The table format is the same as "list cable cmstatus table".

Sample Output: HiPerCMTS>> list caBLE cmsSTATUS upsTREAM sLOT 7
chANNEL 2

--- CM Status table ---

UP IDX	CM INDEX	MAC ADDR	IP ADDR	DN IDX	STATUS
30	1	00:10:95:00:F1:FA	10.10.1.12	4	REG COMPLETE

**list cable
cmstatus...status
<rangingAborted |
registrationComplete,
etc. >**

This option works with the CM status table commands to filter the table based on the cable modem status. The commands **list cable cmstatus table** and **list cable cmstatus upstream slot** output all status entries. For example, to list all modems in the rangingAborted state, type **list cable cmstatus table status rangingaborted**.

Sample Output: HiPerCMTS>> list caBLE cmsSTATUS status regCOMPLETE

--- CM Status table ---

STATUS	CM INDEX	MAC ADDR	IP ADDR	DN IDX	UP IDX
REG COMPLETE	1	00:10:95:00:F1:FA	10.10.1.12	4	30

list cable cmcount table

This command provides a simple summary of how many cable modems are in each state on each channel (upstream and downstream), totalled across all channels.

SNMP: usr_cable.mib was extended to support this command. usrCableCmtsStatisticsTable was introduced, this table maintains the statistics.

Sample Output

```
HiPerCMTS>> list caBLE cmCOUNT taBLE
```

CM Count Table

Channel	RegCompl	AccessDeny	IPCompl	RngCompl	RngAbort	Ranging	Total
umc: 7-1	1	0	0	0	0	0	1

Upgrading Your Current Software to Release 2.5.1

Refer to the upgrade instructions in the following guide to upgrade to CMTS Release 2.5.1:

Cable Modem Termination System Software Upgrade Instructions System Release 1.0 to System Release 2.02, Part Number: 10030504



WARNING: After upgrading to Release 2.5.1, check to see if you connected a non-standard 3Com console cable to the Cable Access Router's console port. If so, you must set DIP switch number 5 on the CAR NAC to the "ON" position. The switch is set to "ON" when it is positioned away from the faceplate of the CAR NAC.

See a summary describing the exact sequence in the "Unresolved Issues" section at the end of these Release Notes.

Accessing the Upgrade Instructions

Use these steps to access the guide from 3Com's totalservice website.



Please note that although the title of these upgrade instructions does not reflect Release 2.5.1, the instructions apply to this release.

- 1 Go to **<http://totalservice.3com.com>** via your web browser.
- 2 Click **Documentation Library**.

- 3 From the Document Types pull-down menu, select **Upgrade Instructions**.
- 4 From the Product Family window, select **Data-Over-Cable**.
- 5 Select the approximate date of this release.
- 6 Select **Doc Name** from the Sort pull-down menu.
- 7 Click the **Start Search** button.
- 8 Click **10030504.pdf** from the File Name area. The *Cable Modem Termination System Software Upgrade Instructions System Release 1.0 to System Release 2.02* guide displays.

Restoring Previous CAR Software via TFTP

This section describes how to restore previous CAR software version by instructing the CAR to boot off the headend TFTP server and issuing a TFTP “get” operation to load the software downgrade file. Note that this is different from the TFTP “put” procedure used to upgrade CAR software.

Follow these steps to restore the previous version of CAR software via TFTP.

- 1 Save the CAR software file that you want to restore to the TFTP server defined in the CAR.
- 2 Note the IP address of the TFTP server and the directory path that leads to the CAR downgrade file.
- 3 Access the CAR CLI.
- 4 Enter this command to verify network connectivity from the CAR to the TFTP server:

```
ping <ip_address> [Enter]
```

Where <ip_address> is the IP address of the TFTP server defined in the CAR.



If the PING operation is unsuccessful, isolate and repair the network connectivity problem before proceeding with this procedure.

- 5 Enter this command:

```
set boot boot interface eth:1 [Enter]
```

6 Enter this command:

```
set boot config bootmode network [Enter]
```

7 Enter this command:

```
set boot config ip_config_source static [Enter]
```

8 Enter this command to save your settings:

```
save all [Enter]
```

9 Enter this command to verify your entries:

```
show boot settings [Enter]
```

10 Verify that your boot settings display correctly. If any of the settings (*eth:1*, *network*, and/or *static*) are incorrect, repeat steps 5 - 10 until they are correct.

11 Enter this command to initiate the CAR software restore procedure:

```
set boot ip interface eth:1
  loadfile <path/car_filename>
  tftpserver <ip_address>
  address <ethernet_ip_network_address> netmask
  <subnet_mask>
  gateway <ip_address>
  tftp_boot once [Enter]
```

Table 3 describes the required entries.

Table 3 Set Boot IP Interface Parameter Descriptions

Parameter	Entry
interface	For TFTP restoration of CAR software, this entry must always be eth:1 .
loadfile	Enter the directory path and filename that locates the CAR downgrade file that you saved to the TFTP server
tftpserver	Enter the IP address of the TFTP server assigned to this CAR.
address / netmask	Enter the IP address and subnet mask of the Ethernet IP Network currently defined in the CAR.
gateway	Enter the IP address of the default gateway currently defined in this CAR.
tftp_boot	Enter the number of times you want the CAR to reboot from the TFTP server. For this restore procedure, always enter the word "once," as indicated.

For example:

```
set boot ip interface eth:1 loadfile c:\car\ne035025.dmf
tftpserver 149.112.155.199 address 149.112.155.50 netmask
255.255.255.255 gateway 149.112.155.191 tftp_boot once [Enter]
```

In this example:

- The interface from which the CAR will reboot is **eth:1**.
 - The directory path and filename for the CAR downgrade file is **c:\car\ne035025.dmf**.
 - The IP address of the TFTP server on which the CAR downgrade file resides is **149.112.155.199**.
 - The IP address of the CAR ethernet IP network is **149.112.155.50**.
 - The subnet mask of the CAR Ethernet IP Network is **255.255.255.255**.
 - The IP address of the default gateway currently defined in this CAR is **149.112.155.191**.
 - The CAR has been instructed to reboot **once** from the network.
- 12** Once you execute this command, the CAR will reboot, restore the downgrade file, save the restored file to the its FLASH memory, and reboot once more. When the load and reboot sequence is complete, continue with the *Verify CAR File Transfer* instructions, listed next.



The CAR will repeat the sequence described in step 12 indefinitely until it successfully loads the downgrade file. If the CAR encounters a TFTP timeout (30 seconds), it reboots and automatically cycles through the sequence again.

Verify CAR File Transfer

Use these steps to verify that the CAR software upgrade file restored successfully.

- 1 Telnet to the CAR CLI by entering these commands:

```
a telnet <car_ethernet_ip_network_address> [Enter]
```

```
b login <username> [Enter]
```

```
c password <password> [Enter]
```

- 2 At CAR CLI prompt, enter this command to verify that the correct CAR software version displays:

```
show system [Enter]
```

- 3 The *System Version:* field should display the software version number reflected in the filename of the CAR software file you restored. For example, if your CAR software downgrade filename was *ne035025.dmf*, the CAR software version number listed should be *V3.50.25*.
 - **If the software version number is correct:** The CAR software restore procedure is complete.
 - **If the software version number is incorrect:** Repeat this restore and verification procedure. If the software version number is still incorrect, contact 3Com Technical Support.
- 4 Continue with *Restore Default Boot Settings* instructions, listed next.

Restore Default CAR Boot Settings

Use these steps to restore the default boot settings in the CAR.

- 1 Enter this command:

```
set boot config bootmode flash [Enter]
```

- 2 Enter this command to save your change:

```
save all [Enter]
```

- 3 Enter this command to verify the *bootmode*:

```
show boot settings [Enter]
```

- 4 Verify that the bootmode is **flash**. If it is not, repeat steps 1 - 4 until it is correct.

The restore procedure is complete. See *Resolved Issues*, and *Unresolved Issues*, listed next.

Resolved Issues

Table 4 describes the service issues resolved by CMTS Release 2.5.1.

Table 4 CMTS Release 2.5.1 Resolved Issues

Log Number	Description
CADpc 2267	<p>Issue — CMTS Release 2.5.0 restricted the maximum number of unique MAC addresses to 2048.</p> <p>Resolution — CMTS Release 2.5.1 does not restrict the maximum number of unique MAC addresses to 2048. This release meets DOCSIS Radio Frequency (RF) specifications for the number of addresses in a MAC domain</p> <p>Procedure — None. Fix is transparent to user.</p>
CADpc 2269	<p>Issue — The list ip arp command in CMTS Release 2.5.0 caused cable modems to reset when 1000-plus cable modems were connected to the CMTS.</p> <p>Resolution — CMTS Release 2.5.1 integrates an updated list ip arp command, improving execution time, and resolving the reset problem.</p> <p>Procedure — None. Fix is transparent to user.</p>
CADpc 1762	<p>Issue — In CMTS Release 2.5.0, an erroneous printout occurred on the CAR console when a cable modem registered with the CMTS for the 8000th time.</p> <p>Resolution — CMTS Release 2.5.1 resolves this issue.</p> <p>Procedure — None. Fix is transparent to user.</p>

Unresolved Issues

These issues remain unresolved with this release.

Table 5 CMTS Release 2.5.1 Unresolved Issues

Issue	Workaround
<p>If both Concatenation and Baseline Privacy are enabled in the CMTS, the system experiences a loss of traffic caused by all packets having CRC errors. This causes cable modems to reboot.</p>	<p>There is no workaround to this problem. Currently, this is a limitation of the CMTS. Do not use Concatenation and Baseline Privacy simultaneously in any given CMTS.</p>
<p>If while upgrading to Release 2.5.1, you connect a non-standard 3Com console cable to the CAR NIC, the CAR may not transmit any data to the console.</p>	<p>Set DIP SW5 on the CAR NAC to the "ON" position. The switch is set to "ON" when it is positioned away from the faceplate of the CAR NAC. Here is a summary.</p> <ul style="list-style-type: none"> ■ TFTP new software images ■ Reboot CAR, upgrade the software ■ Unplug the CAR and move DIP SW5 to "ON" position ■ Reseat the CAR
<p>If a QAM Modulator NIC is installed in the NIC slot that corresponds to a NAC slot containing a single slot URC, the CMTS does not function properly.</p>	<p>There is no workaround to this problem. Do not install a QAM Modulator NIC directly behind a single slot URC.</p>





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