



Release Notes for the Cisco Broadband Operating System Release 2.3.5

May 24, 2000

These release notes describe new features, important caveats, resolved issues, and the software upgrade process for the Cisco Broadband Operating System (CBOS) Release 2.3.5. Please refer to previous release notes for specific information concerning past releases.

For more detailed information about the features in these release notes, refer to the “Related Documentation” section on page 11. Information about electronic documentation can be found in the “Obtaining Documentation” section on page 11.

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Cisco Broadband Operating System

CBOS is the common operating system for Cisco customer premises equipment (CPE). The CBOS is modeled after Cisco IOS software and features a similar command syntax and format. This operating system is bundled with the CPE products listed below and can also be downloaded from Cisco Connection Online.



The CBOS Release 2.3.5 supports the following Cisco CPE products:

- Cisco 627
- Cisco 633
- Cisco 673
- Cisco 675
- Cisco 675e
- Cisco 677
- Cisco 678

New Features for CBOS Release 2.3.5

G.Lite and G.dmt Support for the Cisco 627 and Cisco 677

CBOS Release 2.3.5 adds support for G.Lite and G.dmt for the Cisco 627 and Cisco 677 CPEs.

The Cisco 627 and Cisco 677 make use of new capabilities that must be configured at the service provider's location. The service provider ensures that your service user information and network connections are valid and accurate. When service orders are processed and completed, the service provider alerts customers when an upgrade is available and orders a Cisco 627 or Cisco 677 to be delivered to them.

The Cisco 627 and Cisco 677 allow you to choose transmission protocols to match your network configuration by changing the CPE's configuration file and operating system. You will use the Trivial File Transfer Protocol (TFTP) to transfer files to and from the CPE. This section describes procedures to configure the Cisco 627 and Cisco 677 for G.Lite and G.dmt protocols.



Note

You will be notified by your DSL service provider when you need to use the following procedures to configure the Cisco 627 and Cisco 677 for a different transmission protocol. Changes to your CPE must be coordinated with your DSL service provider.

Configuring the CPE for DMT2

Follow these steps:

-
- Step 1** Verify the connection from the router to the location where the correct software image is stored. This location is provided by your service provider. Typically, you use the **ping** command for this step.
- Step 2** Enable TFTP by entering:
- ```
cbos#set tftp enabled
TFTP is enabled
```
- Step 3** Set the remote address for the TFTP host computer by entering:
- ```
cbos # tftp remote ip address
```

This command tells the CPE to accept TFTP transfers from a specific IP address. An example remote IP address would be *192.168.35.4*. This address is an example only; do not use it to configure the router.



Note If you do not have the CPE address, consult your network administrator or service provider.

For more information about TFTP, see Chapter 3, “Configuration Procedures,” of the *Cisco 627 ADSL Modem User Guide* or the *Cisco 677 ADSL Router Installation and Operation Guide*.

Step 4 To start the file transfer from a PC, start a DOS session and enter the following command:

```
c:>tftp -i CPE IP address put image_filename
```

To start the file transfer from a UNIX machine, enter the following commands:

```
root@staten-</6xx>tftp
tftp> mode binary
tftp> put CPE IP address:image_filename
Sent 922294 bytes in 54.9 seconds
```

Where necessary, implement the following values:

- i** Sets the transfer mode to binary mode
- get** Downloads a file to a specified IP address
- put** Uploads a file onto that IP address

Substitute the filename for the software image update. See “Upgrading to CBOS Release 2.3.5” for the appropriate filenames to use.

**Caution**

Do not turn off the power to the router until after the file transfer is completed.

Step 5 Be sure to reboot the CPE to activate the new image. When you log back in to the CPE after the reboot, use the **show version** command to verify the version of the firmware that is active. Note the DMT firmware version.

Sample Output of Configuration Session for DMT2

```
cbos#set tftp enabled
TFTP is enabled

cbos#tftp image TFTP_server_IP_address image_filename
Starting download...
  Downloading in progress..... done.
  Saving image.....done.
  Please reboot the CPE for the new downl
cbos#reboot
Hello!
C6xx self-update code: Release 2.3.0
NOTE: Do not power off router until update is finished!

Decompressing router...
Erasing FLASH.....
Programming...
```

```
Decompressing monitor...
Erasing FLASH.....
Programming...
Finished. Rebooting...
Hello!
Expanding CBOS image...
CBOS v2.3.5.012 - Release Software
```

```
User Access Verification
Password:
```

```
cbos>enable
Password:
```

```
cbos#show version
```

```
Cisco Broadband Operating System
CBOS (tm) 2.3.5.012 - Release Software
Copyright (c) 1986-1999 by cisco Systems, Inc.
Compiled Dec 21 1999 20:37:27
DMT firmware version 210
NVRAM image at 0x10356930
```

Configuring the CPE for G.dmt

Before the CPE can be configured for G.dmt, the **.full** image must be loaded. See “Upgrading to CBOS Release 2.3.5” for the appropriate filenames to use. The service provider must correctly configure the central office hardware to accept a G.dmt service user.

Follow these steps:

Step 1 Enter the following command:

```
cbos# set interface wan0 standard g.992.1
```

Step 2 Be sure to retrain the CPE to activate the new line code. When the CPE is retrained, use the **show interface wan0** command to verify the G.dmt standard is active. Note that the standard configuration for the **.full** image is DMT2.



Note Changes made to the running configuration must be written to NVRAM for changes to be seen on reboot.

Sample Output of Configuration Session for G.dmt

```
cbos#set interface wan0 standard
SET INTERFACE WANx STANDARD requires one of the following arguments
T1.413
G.dmt (G992.1)
```

```
cbos#set interface wan0 standard g.992.1
Note: Change will take effect on next retrain.
```

```
cbos#show interface wan0
wan0  ADSL Physical Port
      Line Trained
Actual Configuration:
```

```

Overhead Framing:          3
Trellis Coding:           Disabled
Standard Compliance:      g.992.1
Downstream Data Rate:     8032 Kbps
Upstream Data Rate:       864 Kbps
Interleave S Downstream:  1
Interleave D Downstream:  64
Interleave R Downstream:  2
Interleave S Upstream:    4
Interleave D Upstream:    8
Interleave R Upstream:    16
Modem Microcode:          G96
DSP version:               0
Operating State:          Showtime/Data Mode
Configured:
Echo Cancellation:        Disabled
Overhead Framing:        3
Coding Gain:              Auto
TX Power Attenuation:     0dB
Trellis Coding:           Enabled
Bit Swapping:             Disabled
Standard Compliance:      Multimode
Remote Standard Compliance:g.992.1
Tx Start Bin:             0x6
Tx End Bin:               0x1f
Data Interface:           Utopia L1
Status:
Local SNR Margin:         3.5dB
Local Coding Gain:        0.0dB
Local Transmit Power:    12.5dB
Local Attenuation:        28.5dB
Remote Attenuation:       18.5dB
Local Counters:
Interleaved RS Corrected Bytes: 0
Interleaved Symbols with CRC Errors: 2
No Cell Delineation Interleaved: 0
Out of Cell Delineation Interleaved: 0
Header Error Check Counter Interleaved:0
Count of Severely Errored Frames: 0
Count of Loss of Signal Frames: 0
Remote Counters:
Interleaved RS Corrected Bytes: 0
Interleaved Symbols with CRC Errors: 0
No Cell Delineation Interleaved: 0
Header Error Check Counter Interleaved:0
Count of Severely Errored Frames: 0
Count of Loss of Signal Frames: 0

```

Upgrading to CBOS Release 2.3.5

The upgrade process is the same whether you use the Trivial File Transfer Protocol (TFTP) or download the new image of the CBOS software by the management port. After the new file is written to Flash memory, enter the **reboot** command from the CBOS command line to reset your system. The new image loads, decompresses, and programs the new image to the correct Flash memory locations.

Two files make up the CBOS Release 2.3.5. One file contains an image for upgrading systems with CBOS 2.2 release software. The second file contains an image with CRC headers and platform identifiers. These headers and identifiers validate image and configuration file transfers for supported platforms. This second file is for upgrading systems with CBOS 2.3 or subsequent releases.

Upgrading from CBOS 2.2

Table 1 lists the filenames to download for each Cisco CPE model. The **.full** file provides DMT2 and G.dmt line coding support. The **.glite** file provides G.Lite line coding support. Download the appropriate file for your platform. This file cannot be validated by the TFTP checksum feature. Use a terminal emulation application such as Hyperterminal to download the image.

Table 1 Filenames for Upgrading from CBOS 2.2

| CPE Model | Filename |
|---------------|--------------------------------------|
| Cisco 627 | nsrouter.c627.full.2.3.5.012.bin |
| | nsrouter.c627.glite.2.3.5.012.bin |
| Cisco 633 | nsrouter.c633.2.3.5.012.bin |
| Cisco 675 | nsrouter.c675.2.3.5.012.bin |
| Cisco 675e | nsrouter.c675.2.3.5.012.bin |
| Cisco 673 | nsrouter.c673.2.3.5.012.bin |
| Cisco 677 | nsrouter.c677.full.2.3.5.012.bin |
| | nsrouter.c677.glite.2.3.5.012.bin |
| Cisco 678 DMT | nsrouter.c678dmt.full.2.3.5.014.bin |
| | nsrouter.c678dmt.glite.2.3.5.014.bin |
| Cisco 678 CAP | nsrouter.c678cap.2.3.5.012.bin |

To serially download the image, enter the following settings through a serial console connected to your system:

- 38.4 Kbaud
- No parity
- 8-data bits
- 1-stop bit
- No flow control



Note

Serial downloads at this setting take approximately 5 minutes to complete.



Caution

Downloading the image with the CRC headers onto a CBOS 2.2 system will result in a *No router image present* error when the CPE is rebooted. To recover, use the monitor's xmodem download procedure.

Enter the following:

```
df 10008000
es 0
es 1
es 2
es 3
es 4
es 5
pb 10008000 fee00000 <byte size reported by df command>
```

If upgrading a Cisco 62x, enter the following:

```
df 10008000
es 0
es 1
es 2
es 3
es 4
es 5
pb 10008000 fef00000 <byte size reported by df command>
```



Caution

Do not reset the system or halt its operation in any way during the upgrade process. Resetting while writing a new image to Flash memory *will corrupt* the Flash memory. The router will not reboot. Use the monitor's xmodem download procedure to recover.

Sample output

The following shows a sample output of a successful image download:

```
Ron960 User Interface:Build 111 (Jan 30 2000 17:25:27)
NetSpeed HomeRunner(TM); i960 JX; JA step number 03
Copyright 1997 NetSpeed Corporation
Copyright 1998, 1999 Cisco Systems
=>es 0
Erasing sector 00000000...
Sector erased
=>es 1
Erasing sector 00000001...
Sector erased
=>es 2
Erasing sector 00000002...
Sector erased
=>es 3
Erasing sector 00000003...
Sector erased
=>es 4
Erasing sector 00000003...
Sector erased
=>es 5
Erasing sector 00000003...
Sector erased
=>df 10008000
Downloading
CCCCCCCCCC
-- Download complete --
   Transferred 000ce000 bytes
=>pb 10008000 fee00000 ce000
Programming flash address 00000000 from 10008000...
Flash programmed
=>rb
```

```

Hello!
C6xx self-update code:Release 2.3.5
NOTE:Do not power off router until update is finished!

Decompressing router...
Erasing FLASH.....
Programming...
Decompressing monitor...
Erasing FLASH.....
Programming...
Finished. Rebooting...
Hello!
Expanding CBOS image...
CBOS v2.3.5.012 - Release Software
    
```

Upgrading from CBOS 2.3 or later

Table 2 lists the filenames to download for each Cisco CPE model. The **.full** file provides DMT2 and G.dmt line coding support. The **.glite** file provides G.Lite line coding support. Download the appropriate file for your platform. This file is validated by the TFTP checksum feature. Use TFTP to download the image.

Table 2 Filenames for Upgrading from CBOS 2.3 or later

| CPE Model | Filename |
|---------------|---|
| Cisco 627 | c627.full.2.3.5.012.bin c627.glite.2.3.5.012.bin |
| Cisco 633 | c633.2.3.5.012.bin |
| Cisco 675 | c675.2.3.5.012.bin |
| Cisco 675e | c675.2.3.5.012.bin |
| Cisco 673 | c673.2.3.5.012.bin |
| Cisco 677 | c677.full.2.3.5.012.bin c677.glite.2.3.5.012.bin |
| Cisco 678 DMT | c678dmt.full.2.3.5.014.bin c678dmt.glite.2.3.5.014.bin |
| Cisco 678 CAP | c678cap.2.3.5.012.bin |

TFTP Download

To use TFTP to download a new software image:

-
- Step 1** Log in to the Cisco equipment using the Enable password.
 - Step 2** Enable TFTP on the Cisco equipment:
`set tftp enabled`
 - Step 3** Determine the equipment's IP address:
`show int eth0`

- Step 4** From the DOS window or TFTP client, use TFTP to send the image to the CPE. In a DOS window, the command is:

```
tftp -i ip address of CPE put filename
```



Note Download the appropriate filename for your CPE model as listed in Table 2.

- Step 5** Ensure that the file downloaded correctly:

```
show errors
```

You should see an "Image downloaded successfully" message.

- Step 6** Reboot the CPE.

Resolved Issues in CBOS Release 2.3.5

Table 3 lists resolved issues for CBOS 2.3.5 and the affected platform.

Table 3 Resolved Issues for CBOS Release 2.3.5

| Resolved Issue | | Platform | | | | | | | |
|----------------|--|----------|-----|-----|-----|------|-----|---------|---------|
| ID Number | Description | 627 | 633 | 673 | 675 | 675e | 677 | 678 DMT | 678 CAP |
| CSCdp31484 | cbos: set filter command should have an option to change all rules at once | | | | x | | | | |
| CSCdr05562 | DHCP server pool netmask overrides DHCP pool size command | | | | x | | | | |
| CSCdr11520 | Cisco 675 DHCP server handing out addresses on wrong subnet. | | | | x | | | | |
| CSCdr14919 | cbos: Acceptance of enable password at exec prompt should be option | | | | x | | | | |
| CSCdr28299 | Central Office 673 DHCP relay doesn't forward DHCP requests to Ethernet | | | x | | | | | |
| CSCdr30222 | cmdr/ commander does not accept extended characters | | | | x | x | | | x |
| CSCdr30239 | cmdr/ no warning when DOH enabled | | | | x | x | | | x |
| CSCdr32921 | New values for Vendor ID and Vendor Rev. Number are required. | | | | | | | x | |
| CSCdr33039 | CBOS and Globespan op states get out of synch. | | | | | | | x | |

Table 3 Resolved Issues for CBOS Release 2.3.5

| Resolved Issue | | Platform | | | | | | | |
|----------------|--|----------|-----|-----|-----|------|-----|---------|---------|
| ID Number | Description | 627 | 633 | 673 | 675 | 675e | 677 | 678 DMT | 678 CAP |
| CSCdr35815 | CPE will detrain/retrain after the idle timeout expires. | | | | x | x | | | x |
| CSCdr37414 | Multicast IGMP request packets not being forwarded | | | x | x | x | x | x | x |

Known Issues in CBOS Release 2.3.5

The following list describes known issues and functionality details.

- When you download a new configuration file, you must name it `nscfg.xxx`, where `xxx` can be any extension.
- The following **enable** level commands do not appear on the **exec** user help screen: **show running**, **show running#**, **show nvram**, and **show nvram#**.

Table 4 lists known issues, conditions, and workarounds for CBOS Release 2.3.5.

Table 4 Open Issues for CBOS Release 2.3.5

| ID Number | Description |
|------------|---|
| CSCdr29618 | <p>Description: The Cisco 677 will take longer than expected to train when experiencing CRCRA1_ERROR.</p> <p>Condition: The Cisco 677 might intermittently experience long training times when using a Cisco 677 with ADI 3.0 firmware against a Cisco 6130 DSLAM with ADI firmware 3.0 on the line card.</p> <p>Workaround: Wait for the CPE to train.</p> |
| CSCdr31255 | <p>Description: Cisco 677 and Cisco 627 configured for G.992.1 (G.dmt) will fail to train on two European loops.</p> <p>Condition: When the Cisco 677 and Cisco 627 are configured for G.DMT (992.1), they will fail on Euro-K and ETSI-A European loops.</p> <p>Workaround: Currently there is no workaround.</p> |
| CSCdr37238 | <p>Description: The Cisco 627 (RFC 1483) TX and RX counters do not increment when data is passed.</p> <p>Condition: When data is being passed through the Cisco 627, the TX and RX counters will not increment.</p> <p>Workaround: Currently there is no workaround.</p> |
| CSCdr39128 | <p>Description: There is a 4% performance loss with the Cisco 677 running 2.3.5.012 against a 6130 DSLAM.</p> <p>Condition: There is a 4% performance loss at certain trained rates on a Cisco 677 with ADI 3.0 firmware trained against a Cisco 6130 DSLAM using 2.0 line card firmware.</p> <p>Workaround: Use a CPE with 2.0 firmware.</p> |

Information from Previous Releases

The following new features are supported by CBOS Release 2.3.0. See the *Cisco Broadband Operating System 2.3.0 Release Notes* for additional information.

- Port Address Translation Enhancements
- Support for Remote Shell (rsh), Remote Copy (rcp), and Remote Login (rlogin)
- Network Address Translation Enhancements
- Support for IP Precedence
- Support for TFTP Checksum
- New Default Settings
- Support for GSI 3.2 Firmware Update
- CBOS Modifications for Setting Upstream Transmit Power
- Enhancements to DHCP Pool Start Addressing
- Enhancements to WAN-LNK LED Blink Pattern
- Enhancements to the Set Filter Command

Related Documentation

Use these release notes in conjunction with these documents:

- *Cisco Broadband Operating System User Guide* (Cisco document number 78-5803-02)
- *Cisco 627 ADSL DMT Modem User Guide* (Cisco document number 78-6627-01)
- *Cisco 633 SDSL Modem Installation and Operation Guide* (Cisco document number 78-6624-01)
- *Cisco 673 SDSL Router Installation and Operation Guide* (Cisco document number 78-7254-01)
- *Cisco 675 ADSL Router Installation and Operation Guide* (Cisco document number 78-6866-01)
- *Cisco 675e ADSL Router Installation and Operation Guide* (Cisco document number 78-6872-01)
- *Cisco 677 ADSL DMT Router Installation and Operation Guide* (Cisco document number 78-6628-01)
- *Cisco 678 ADSL Router Installation and Operation Guide* (Cisco document number 78-10172-01)

Obtaining Documentation

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at <http://www.cisco.com>, <http://www-china.cisco.com>, or <http://www-europe.cisco.com>.

Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM is updated monthly. Therefore, it is probably more current than printed documentation. The CD-ROM package is available as a single unit or as an annual subscription.

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Obtaining Technical Assistance

Cisco provides Cisco Connection Online (CCO) as a starting point for all technical assistance. Warranty or maintenance contract customers can use the Technical Assistance Center. All customers can submit technical feedback on Cisco documentation using the web, e-mail, a self-addressed stamped response card included in many printed docs, or by sending mail to Cisco.

Cisco Connection Online

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You can access CCO in the following ways:

- WWW: www.cisco.com
- Telnet: [cco.cisco.com](telnet://cco.cisco.com)
- Modem using standard connection rates and the following terminal settings: VT100 emulation; 8 data bits; no parity; and 1 stop bit.
 - From North America, call 408 526-8070
 - From Europe, call 33 1 64 46 40 82

You can e-mail questions about using CCO to cco-team@cisco.com.

Technical Assistance Center

The Cisco Technical Assistance Center (TAC) is available to warranty or maintenance contract customers who need technical assistance with a Cisco product that is under warranty or covered by a maintenance contract.

To display the TAC web site that includes links to technical support information and software upgrades and for requesting TAC support, use www.cisco.com/techsupport.

To contact by e-mail, use one of the following:

| Language | E-mail Address |
|------------------|--|
| English | tac@cisco.com |
| Hanzi (Chinese) | chinese-tac@cisco.com |
| Kanji (Japanese) | japan-tac@cisco.com |
| Hangul (Korean) | korea-tac@cisco.com |
| Spanish | tac@cisco.com |
| Thai | thai-tac@cisco.com |

In North America, TAC can be reached at 800 553-2447 or 408 526-7209. For other telephone numbers and TAC e-mail addresses worldwide, consult the following web site:
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