



# Release Notes for the Cisco 600 Series Products

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**September 27, 2000**

These release notes describe documentation updates for the following Cisco 600 series products:

- Cisco 627 ADSL DMT modem
- Cisco 633 SDSL modem
- Cisco 673 SDSL router
- Cisco 675 ADSL router
- Cisco 675e ADSL router
- Cisco 676 ADSL router
- Cisco 677 ADSL DMT router
- Cisco 677i and Cisco 677i-DIR ADSL over ISDN routers
- Cisco 678 ADSL router

For more detailed information about the features of the Cisco 600 series products, refer to the “Related Documentation” section on page 6. You can find information about electronic documentation in the “Obtaining Documentation” section on page 6.

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# Documentation Updates

The following section replaces the “Frequently Asked Questions about the WAN LNK LED” section in the *Cisco 600 Series Installation and Operation Guide*.

## Frequently Asked Questions about the WAN LNK LED

The WAN LNK LED blink patterns indicate the connection state of the customer premises equipment (CPE). Table 6-1 describes the meaning of the blink patterns that apply to all the Cisco 600 series CPEs.

**Table 6-1** WAN Link LED Blink Patterns

Blink Pattern/Rate	Description
Steady ON	A link is established to the WAN port. All parameters for physical and logical connections are correctly set. The CPE successfully transmits and receives data.
Continuous rapid blinking, about 3 blinks per second	The CPE is trying to establish a connection. The pattern continues until a connection is established.
Intermittent blinking. For the Cisco 675: 6 rapid blinks followed by a 2-second pause before repeating. For the Cisco 676 or 677: 5 rapid blinks followed by a 2-second pause before repeating.	The CPE is trying to establish a physical connection. At this time, the training session is not yet completed; there are no logical connections and negotiated line conditions with other equipment (such as DSLAMs) are not yet established.
OFF	Check all connections. Ensure the WAN0 interface is not disabled.

## Cisco 675 WAN LNK LED Blink Patterns

Table 6-2 describes the WAN LNK LED blink patterns that apply to the different versions of the Cisco Broadband Operating System (CBOS) on the Cisco 675 and the problems each blink pattern indicates.

**Table 6-2** Cisco 675 WAN LNK Blink Patterns

CBOS Version	Authentication Failure	PVC Failure	Not Trained
2.1.x or 2.2.x	Continuous blinking for 12 seconds; then, on for 5 seconds; then it turns off. See “Authentication Problem.”	On for approximately 100 seconds; then, it turns off. See “PPP Requests Are Not Being Answered.”	Continuous blinking or off. See “The CPE Doesn’t Train.”
2.3.x	On. See “Authentication Problem.”	On. See “PPP Requests Are Not Being Answered.”	5 rapid blinks followed by a 2-second pause before repeating. See “The CPE Doesn’t Train.”

## Cisco 677 WAN LNK LED Blink Patterns

Table 6-3 describes the WAN LNK LED blink patterns that apply to the different versions of CBOS on the Cisco 677 and the problems each blink pattern indicates.

*Table 6-3 Cisco 677 WAN LNK Blink Patterns*

CBOS Version	Authentication Failure	PVC Failure	Not Trained
2.1.x or 2.2.x	Continuous blinking for 12 seconds; then, on for 5 seconds; then, it turns off. See “Authentication Problem.”	On for approximately 100 seconds; then, it turns off. See “PPP Requests Are Not Being Answered.”	Continuous blinking. See “The CPE Doesn’t Train.”
2.3.x	On. See “Authentication Problem.”	On. See “PPP Requests Are Not Being Answered.”	5 rapid blinks followed by a 2-second pause before repeating. See “The CPE Doesn’t Train.”

## Cisco 678 WAN LNK LED Blink Patterns

Table 6-4 describes the WAN LNK LED blink patterns that apply to the Cisco 678 and the problems each blink pattern indicates.

*Table 6-4 Cisco 678 WAN LNK Blink Patterns*

RADIUS Failure	PVC Failure	Not Trained
On. See “Authentication Problem.”	On. See “PPP Requests Are Not Being Answered.”	Off. See “The CPE Doesn’t Train.”

See the following sections for descriptions of the possible causes and corrective actions to be taken for the problems described in Table 6-2, Table 6-3, and Table 6-4.

## The CPE Doesn’t Train

The Cisco 600 series never trains to a system such as the Cisco 6xxx series:

- ADSL/SDSL line is not connected to the Cisco 600 series.
- Subscriber is locked on the Cisco 6xxx series.
- Subscriber's LIM port is locked on the Cisco 6xxx series
- Subscriber's LIM port is not associated to an ATU-C pool
- ADSL/SDSL circuit is physically too long.
- There is excessive noise on the ADSL/SDSL circuit.

## PPP Requests Are Not Being Answered

The CPE PPP requests are not being answered by the equipment on the service provider's network, such as a Cisco 7200 series or Cisco 6400. There are a number of possibilities why this would happen:

- VPI/VCI provisioning is not correct in the ATM cloud. This could signify that the service provider's equipment or the ATM switch along the path does not have the correct provisioning.
- VPI/VCI mapping in the service provider's equipment or the CPE is not configured properly.
- ATM Cell scrambling is enabled on one end of the link but not the other. The **show running** command displays an entry with “*ATM WAN Cell Scrambling = disabled*” if cell scrambling is disabled. No entry implies the default behavior of ATM cell scrambling is enabled.
- Service provider's equipment is turned off.
- CPE is configured for routing mode, but the equipment at the service provider's network that is terminating CPE traffic is configured for bridging.

Use the **show errors** command to check the contents of the error log.

Use the **show ppp** command to see a summary of each virtual circuit for PPP mode. Check that the state of each virtual circuit is opened.

```
cbos#show ppp
VC      VPI/VCI  STATE      MRU  USERNAME  RADIUS  TX      RX
wan0-0  01/01    Starting   2048  ppp1     disabled 0      60742
wan0-1  01/02    Starting   2048  ppp2     disabled 0      59950
wan0-2  01/03    Starting   2048  ppp3     disabled 1476   738
wan0-3  01/00    Starting   2048  ppp4     disabled 0      59822
```

## No ATM Cell Delineation

If the CPE trains up and the WAN LNK LED turns off, this is a sign of no ATM cell delineation. Verify that you have the ATM link terminated at the central office end. Without ATM cell delineation, the router will attempt to retrain the line in 1 to 10 seconds.

## DMT Firmware Incompatibility

If the CPE trains up and then immediately drops the connection, the near-end DMT firmware may not be compatible with the far-end DMT firmware. For example, an ITU G.Lite router may not train to an ANSI Issue 1 Central Office. To see the DMT firmware version installed on your router, use the **show version** command.

## Timeout Set

If the WAN LNK LED turns off after the CPE has successfully been transferring data end-to-end for some time, this means that the CPE or the service provider's equipment may have a timeout set. Use the **show errors** command to see if the error log shows that timeouts caused the drop. There are two timeouts that could affect the WAN LNK LED:

- IDLE timeout—You can set this timeout on the CPE or the service provider's equipment. If you set the IDLE timeout to some value, then the CPE WAN LNK LED turns off if the CPE is idle for that specified period of time. Use the **show timeout** command to see the current timeout status and settings.

- **SESSION timeout**—This timeout can be set on the CPE or the service provider's equipment. If you set the **SESSION timeout** to some value, then the CPE WAN LNK LED turns off after the set time. Use the **show timeout** command to see the current timeout status and settings.

## Authentication Problem

After the CPE trains, and the service provider's equipment that is being used to authenticate its PPP session is using RADIUS, then the symptoms described in Table 6-2, Table 6-3, and Table 6-4 could point to a failed RADIUS authentication. Possible reasons for a failed RADIUS authentication include:

- Service provider's equipment has the wrong IP address for the RADIUS server.
- Username and password on the CPE do not match the username and password running on the RADIUS server's user list.
- RADIUS server is not running.

Disabling RADIUS on the service provider's equipment would be a simple test to see if it is a RADIUS problem.

## Useful Diagnostic Commands

Entering the **show interface wan0** command provides feedback on the wan0 configuration as well as the actual configuration negotiated with the central office equipment as shown here:

```
cbos#show interface wan0
wan0  ADSL Physical Port
      Line Trained
Actual Configuration:
  Overhead Framing:      3
  Trellis Coding:        Disabled
  Standard Compliance:   T1.413
  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:T1.413
  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

```

You can also use the **show interface wan0-0** command to see the status of the virtual circuit:

```

cbos#show int wan0-0
WAN0-0  ATM Logical Port
        PVC (VPI 1, VCI 1) is open.
        ScalaRate set to Auto
        AAL 5          UBR Traffic
        PPP LCP State: Starting
        PPP NCP State (IP Routing): Starting
        PPP MRU: 2048   HDLC Framing: enabled   MPOA Mode: VC Mux
        PPP Login: ppp1
        Authentication Type: Autodetecting/PAP
        RADIUS: disabled
        PPP Tx: 0          Rx: 60742
        Dest IP: 205.142.210.1
        Dest Mask: 255.255.255.255
        IP Port Enabled

```

## Related Documentation

Use these release notes in conjunction with the Cisco 600 series product documentation found at [http://www.cisco.com/univercd/cc/td/doc/product/dsl\\_prod/c600s/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/dsl_prod/c600s/index.htm).

## Obtaining Documentation

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- 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
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You can e-mail questions about using CCO to [cco-team@cisco.com](mailto:cco-team@cisco.com).

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