Release Notes for Cisco IOS Release 12.0(8)DA4 for Cisco DSLAMs with NI-2

April 17, 2000

Note You can find the most current Cisco IOS documentation, including release notes, on Cisco Connection Online (CCO). These electronic documents may contain updates and modifications made after the hard copy documents were printed.

These release notes describe features and caveats in Cisco IOS Release 12.0(8)DA4 for the Cisco 6260 and Cisco 6130 digital subscriber line (DSL) access multiplexers (DSLAMs).

For pointers to more information about the Cisco 6260, the Cisco 6130, and their software, refer to the "Related Documentation" section on page 20. To learn more about caveats, visit Cisco's web site—see the "Cisco Connection Online" section on page 21 for details. Information about electronic documentation can be found in both the "Cisco Connection Online" section on page 21 and in the "Documentation CD-ROM" section on page 22.

Contents

This document discusses the following topics:

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System Requirements

Cisco IOS Releases 12.0(8)DA4, 12.0(8)DA3, 12.0(8)DA2, 12.0(8)DA1 and 12.0(5)DA1 run on these DSLAM systems:

- Cisco 6260
- Cisco 6130 with second-generation network interface (NI-2) module and Cisco 6130-specific system I/O card

Cisco IOS Release 12.0(5)DA runs on all Cisco 6260 systems.

New and Changed Information

This section describes new features.

New Features in Release 12.0(8)DA4

There are no new features in Cisco IOS Release 12.0(8)DA4. This is a maintenance release designed to improve the reliability and performance of the Cisco DSLAMs.

New Features in Release 12.0(8)DA3

New Command: payload-scrambling

A new command, **payload-scrambling**, has been added in profile configuration mode.

To enable ATM cell payload scrambling on a DMT subscriber port, use the **payload-scrambling** profile configuration command. To disable payload scrambling, use the **no** form of the command.

```
payload-scrambling
no payload-scrambling
```

Payload scrambling is enabled by default.

The two ends of a connection must have the same payload scrambling value—that is, payload scrambling must be enabled at both ends or disabled at both ends. The line does not pass valid data if payload scrambling is enabled at one end and disabled at the other.

Enabling or disabling payload scrambling does not untrain or retrain a port.

Use the **show dsl profile** command to display the status of payload scrambling for a profile.

In this example, payload scrambling is disabled for the default DSL profile:

```
DSLAM# conf t
DSLAM(config)# dsl-profile default
DSLAM(cfg-dsl-prof)# no payload-scrambling
```

Reduced Microcode Download Time

When you boot the DSLAM for the first time after installing Cisco IOS Release 12.0(8)DA3, the DSLAM downloads new microcode to the ATUC-1-4DMT line cards. The microcode download time has been reduced to 10 minutes. (Download time was about 35 minutes in the previous release.)

See the "New Feature in Release 12.0(8)DA2" section on page 3 for more information on the microcode download.

New Feature in Release 12.0(8)DA2

Cisco IOS Release 12.0(8)DA2 supports SST flash on revision 800-05262-03 of the ATUC-1-4DMT line card for Cisco 6260 and Cisco 6130 DSLAMs. If you install the new line card, you must also install this new software so that the DSLAM can recognize the line card.

Caution When you boot the DSLAM for the first time after installing Cisco IOS Release 12.0(8)DA2, the DSLAM downloads new microcode to the line cards. The microcode download takes about 35 minutes. During the download period, the Active LED on each line card blinks and the DSLAM does not pass data. Until the download is complete, **do not** remove cards from the chassis. **Do not** reboot the chassis. If you interrupt the download, the line card's flash memory might be damaged, making it necessary to replace the card. When the download is complete, the Active LEDs on the line cards stop blinking and the lines train as usual.

You can track the status of a microcode download through software using the command **show dsl int atm** *slot/port*. In the resulting display, look at the Line Status field. If the Line Status field says DOWNLOADING MICROCODE, wait a few minutes and check again.

Cisco IOS Release 12.0(8)DA2 runs on both the Cisco 6260 and the new Cisco 6130. The Cisco 6130 is described in the section "New Features in Release 12.0(5)DA1." For a description of the Cisco 6260, see the "New Features in Release 12.0(5)DA" section on page 5.

New Feature in Release 12.0(8)DA1

Cisco IOS Release 12.0(8)DA1 includes support for DS-3 trunk and subtending interfaces on both the Cisco 6130 and the Cisco 6260.

Cisco IOS Release 12.0(8)DA1 runs on both the Cisco 6260 and the new Cisco 6130. The Cisco 6130 is described in the section "New Features in Release 12.0(5)DA1." For a description of the Cisco 6260, see the "New Features in Release 12.0(5)DA" section on page 5.

New Features in Release 12.0(5)DA1

The Cisco 6130 is a multiservice DSLAM designed for markets in North America and for worldwide multitenant dwelling unit (MDU) service provider markets. The Cisco 6130 is a NEBS-compliant platform that supports up to 128 discrete multitone (DMT) T1.413-1998 Issue 2-compliant modems per chassis; up to 13 Cisco 6130 chassis can be linked together through the use of advanced, fair-service subtending. (Higher port concentrations are planned for future releases.) OC-3c trunk/subtending interfaces are available immediately, and DS-3 interfaces will be available shortly. The Cisco 6130 also includes optional support for analog voice telephony (POTS, or plain old telephone service) through a companion POTS splitter available from Siecor or RSX. The Cisco 6130 runs the widely deployed Cisco IOS software.

Availability and Compliance

The Cisco 6130 is designed for 23-inch deployments requiring NEBS compliance and compatibility with international telephone network requirements. Cisco technical and customer service support teams ensure the highest level of customer care and service support available.

Advanced Services ATM Architecture

The Cisco 6130 internal design is based on a high-performance ATM switching architecture that includes more than 1 million cells of buffering, support for multiple ATM quality of service (QoS) levels, and a variety of ATM traffic management and shaping capabilities.

Scalability with Fair-Service Subtending

The Cisco 6130 supports subtending of up to 13 shelves (chassis) of user traffic all concentrated onto a single network WAN interface port. A variety of WAN and subtending interface port configurations are available, allowing for flexible service architecture design and optimized cost. The Cisco 6130 subtending architecture provides fair and prioritized access to network bandwidth for all subscriber traffic, ensuring sustained throughput and performance for all users.

Standards-Compliant ADSL Support

The Cisco 6130 supports a four-port DMT T1.413-1998 Issue 2-compliant line card and up to 128 ports per shelf. Other DSL line card options are planned for the future.

Switched Virtual Circuits (SVCs)

Support for ITU and ATM Forum UNI 3.0, 3.1, and 4.0 SVCs provides end-user applications with real-time access to bandwidth and QoS. Support for Private Network Node Interface (PNNI) call routing and Call Admission Control (CAC) is also included.

Soft PVC Provisioning

ATM signaling can be used for automated provisioning of ATM virtual circuits. This capability, also referred to as soft PVCs, greatly reduces the time and cost of manual, node-by-node PVC provisioning.

Life-line POTS Splitter Support

Optional support for voice telephone service (POTS) is available through use of POTS splitter equipment available from a third party (Siecor or RSX). This POTS splitter solution is optimized for international copper access networks and is designed to ensure that basic telephone service is always available, a feature known as life-line POTS. The Siecor product is the ADSL POTS splitter rack-mount shelf, central office version. These are the Siecor part numbers:

- Shelf with 16 modules: COSG128S4R012
- Shelf only: COSF00S2R007
- Module only: COSP00S40000

These cable kits for the POTS splitter are available from both Siecor/RSX and from Cisco. The Cisco part numbers are provided:

- Cisco one-to-one cable kit: CAB-61-014 (connects the Cisco 6130 to the POTS chassis)
- Cisco three-to-three cable kit: CAB-DSLAM128-MDF (connects the Cisco 6130 to the MDF)

Use these contacts to get more product information on this POTS solution:

- In the United States, contact Siecor at 828-327-5000 or www.siecor.com.
- Outside the United States, contact RSX in Germany at +49 (0)1805-202620 or www.rsx.de.

Network Management Support

The Cisco DSL Manager (CDM) provides comprehensive Cisco 6130 element management and operations support based on standard Simple Network Management Protocol (SNMP) technology. Additionally, if you use standards-based network management interfaces and protocols, the CDM can be directly integrated with other Cisco or customer-provided operations management systems for delivery of integrated, end-to-end service management solutions.

New Features in Release 12.0(5)DA

Cisco IOS Release 12.0(5)DA runs on the Cisco 6260. The Cisco 6260 is a multiservice DSLAM designed for markets in Asia/Pacific, Europe, the Middle East, Africa, South/Central America, and Mexico, and for customers including post, telephone and telegraph agencies (PTTs) and competitive local exchange carriers (CLECs). The Cisco 6260 is also designed for worldwide multitenant dwelling unit (MDU) service provider markets, including those in North America. The Cisco 6260 is an ETSI-compliant platform that supports up to 120 discrete multitone (DMT) T1.413-1998 Issue 2-compliant modems per chassis; up to 13 Cisco 6260 chassis can be linked together through the use of advanced, fair-service subtending. (Higher port concentrations are planned for future releases.) The Cisco 6260 also includes optional support for analog voice telephony (POTS) through a companion POTS splitter available from Siecor or RSX. The Cisco 6260 runs the widely deployed Cisco IOS software.

Global Availability and Compliance

The Cisco 6260 is designed for worldwide markets requiring ETSI compliance and compatibility with international telephone network requirements. Cisco technical and customer service support teams are regionally deployed around the world to ensure the highest level of customer care and service support available.

ETS-300 Mechanical Design

The Cisco 6260 is designed for ETS-300 and/or 19-inch deployments. Interface cabling and wiring are 100 percent front-access, making the product ideal for the back-to-back or flush-to-wall installations often found in MDU environments.

Advanced Services ATM Architecture

The Cisco 6260 internal design is based on a high-performance ATM switching architecture that includes more than 1 million cells of buffering, support for multiple ATM quality of service (QoS) levels, and a variety of ATM traffic management and shaping capabilities.

Scalability with Fair-service Subtending

The Cisco 6260 supports subtending of up to 13 shelves (chassis) of user traffic all concentrated onto a single network WAN interface port. A variety of WAN and subtending interface port configurations are available, allowing for flexible service architecture design and optimized cost. The Cisco 6260 subtending architecture provides fair and prioritized access to network bandwidth for all subscriber traffic, ensuring sustained throughput and performance for all users.

Standards-compliant ADSL Support

The Cisco 6260 supports a four-port DMT T1.413-1998 Issue 2-compliant line card and up to 120 ports per shelf. Other DSL line card options are planned for the future.

Switched Virtual Circuits (SVCs)

Support for ITU and ATM Forum UNI 3.0, 3.1, and 4.0 SVCs provides end-user applications with real-time access to bandwidth and QoS. Support for PNNI call routing and Call Admission Control (CAC) is also included.

Soft PVC Provisioning

ATM signaling can be used for automated provisioning of ATM virtual circuits. This capability, also referred to as soft PVCs, greatly reduces the time and cost of manual, node-by-node PVC provisioning.

Life-line POTS Splitter Support

Optional support for voice telephone service (POTS) is available through the use of POTS splitter equipment available from a third party (Siecor or RSX). The recommended POTS splitter solution is optimized for international copper access networks and is designed to ensure that basic telephone service is always available, a feature known as life-line POTS. These are the Siecor part numbers:

- ADSL splitter shelf: COSH000S11R016
- Cable assembly for splitter: COSKOC160000
- Octal card for splitter (up to 15 per shelf): COSP00S110000

Use these contacts to get more product information on this POTS solution:

- In the United States, contact Siecor at 828-327-5000 or www.siecor.com.
- Outside the United States, contact RSX in Germany at +49 (0)1805-202620 or www.rsx.de.

Network Management Support

The Cisco DSL Manager (CDM) provides comprehensive Cisco 6260 element management and operations support based on standard Simple Network Management Protocol (SNMP) technology. Additionally, if you use standards-based network management interfaces and protocols, the CDM can be directly integrated with other Cisco or customer-provided operations management systems for delivery of integrated, end-to-end service management solutions.

Limitations and Restrictions

Cisco IOS Release 12.0(8)DA4

The limitations and restrictions for Cisco IOS Release 12.0(8)DA4 are the same as the limitations and restrictions for Cisco IOS Release 12.0(8)DA3, listed below.

Cisco IOS Release 12.0(8)DA3

The following restrictions apply to this release:

- Cisco IOS Release 12.0(8)DA2 or greater is required for Cisco 6260 and Cisco 6130 systems that contain new 4DMT cards (revision 800-05262-03 or greater). Releases 12.0(8)DA2 and above are also compatible with earlier revisions of the 4DMT line card.

  If you need to fall back to an earlier release, note the following restrictions:

  – You can fall back only to Release 12.0(8)DA1 or greater. The DSLAMs cannot operate under releases prior to 12.0(8)DA1.

  – New 4DMT cards (revision 800-05262-03 or greater) require Cisco IOS Release 12.0(8)DA2 or greater; the cards will not operate under prior releases of software.

- Cisco IOS Release 12.0(8)DA3 runs only on this hardware:

  – Cisco 6260

  – Cisco 6130 with NI-2 and Cisco 6130-specific system I/O cards

- The VP tunneling feature cannot be used in conjunction with VCs outside of VP tunnels.

Cisco IOS Release 12.0(8)DA2

The following restrictions apply to this release:

- Cisco IOS Release 12.0(8)DA2 or greater is required for Cisco 6260 and Cisco 6130 systems that contain new 4DMT cards (revision 800-05262-03 or greater). Release 12.0(8)DA2 is also compatible with earlier revisions of the 4DMT line card.

  If you need to fall back from Cisco IOS Release 12.0(8)DA2 to an earlier release, note the following restrictions:

  – From Release 12.0(8)DA2, you can fall back only to Release 12.0(8)DA1. The DSLAMs cannot operate under releases prior to 12.0(8)DA1.

  – New 4DMT cards (revision 800-05262-03 or greater) will not operate under the older software; these cards require Release 12.0(8)DA2.

- Cisco IOS Release 12.0(8)DA2 runs only on this hardware:

  – Cisco 6260

  – Cisco 6130 with NI-2 and Cisco 6130-specific system I/O cards

- The VP tunneling feature cannot be used in conjunction with VCs outside of VP tunnels.

Cisco IOS Release 12.0(8)DA1

The following restrictions apply to this release:

- Cisco IOS Release 12.0(8)DA1 runs only on this hardware:
  - Cisco 6260
  - Cisco 6130 with NI-2 and Cisco 6130-specific system I/O cards
- The VP tunneling feature cannot be used in conjunction with VCs outside of VP tunnels.

Cisco IOS Release 12.0(5)DA1

The following restrictions apply to this release:

- Cisco IOS Release 12.0(5)DA1 runs only on this hardware:
  - Cisco 6260
  - Cisco 6130 with NI-2 and Cisco 6130-specific system I/O cards
- The VP tunneling feature cannot be used in conjunction with VCs outside of VP tunnels.

Cisco IOS Release 12.0(5)DA

The following restrictions apply to this release:

- Cisco IOS Release 12.0(5)DA runs only on Cisco 6260 hardware.
- The VP tunneling feature cannot be used in conjunction with VCs outside of VP tunnels.
- This release does not support the minimum cell rate parameter.

Important Notes

Quick Training Mode is Recommended

Under some circumstances, lines using the standard training mode, which is the default, might train more slowly than they did under previous software releases. Therefore Cisco now recommends that you use quick training mode instead of standard. Use the command **dmt training-mode quick** to set the training mode for a DSL profile.

Synchronizing the Management Database

If you use both the Cisco DSL Manager (CDM) application and the command line interface (CLI) to configure and manage your DSLAMs, you need to use the CDM to synchronize your management database on a regular basis. (If you use only the CDM or only the CLI, you need not worry about synchronizing your database.) Refer to the Cisco DSL Manager 2.0 release notes for more information.

Console Logging

Turn console logging off if you plan to reboot the DSLAM. Turn console logging back on after the system comes up. (Console logging is turned on by default.) Use the global configuration commands **no logging console** (to turn the feature off) and **logging console** (to turn it on).

If console logging is on when the system reboots, the large volume of console messages consumes CPU time. As a result, the system comes back up more slowly and line cards might reload repeatedly, causing further delays.

Caveats

This section describes unexpected behavior in the system. A tracking number, if one exists, is provided in square brackets at the end of each description. Please refer to the tracking number if you communicate with Cisco about any of these issues.

Open Caveats – Release 12.0(8)DA4

The caveats for Cisco IOS Release 12.0(8)DA4 are the same as the caveats for the previous releases. See "Open Caveats – Release 12.0(8)DA1," below.

Open Caveats – Release 12.0(8)DA3

The caveats for Cisco IOS Release 12.0(8)DA3 are the same as the caveats for the two previous releases. See "Open Caveats – Release 12.0(8)DA1," below.

Open Caveats – Release 12.0(8)DA2

The caveats for Cisco IOS Release 12.0(8)DA2 are the same as the caveats for the previous release. See "Open Caveats – Release 12.0(8)DA1," below.

Open Caveats – Release 12.0(8)DA1

SMB-CRC Errors

Periodically, the system generates a serial management bus cyclic redundancy check (SMBCRC) error message such as this:

```
%NI2-5-LC_NOTICE:Slot[15] SMBCRC (1 days, 3 hours, 37 minutes, 6 seconds)
```

These messages are informational only and do not affect performance. [CSCdp00996]

Problems with CLI Commands

- When you execute the **shutdown** command for a port, the port goes out of service, but Cisco IOS still lists the port's administrative status as UP. [CSCdp17666]

- The **clear counter** command does not consistently return all counter values to zero. [CSCdm92046]

MIB Problem

The dmtCodewordSize object does not allow a setting of automatic, as the CLI does. [CSCdp19413]

Problems Affecting Management Systems

These problems affect SNMP-based management systems, including the Cisco DSL Manager (CDM). You can work around these problems by using the CLI.

- No error message is generated when you try to delete a DMT profile that is in use. [CSCdp03232]
- The MIB defines the ifAlias (subscriber ID) object as a 64-character field. SNMP truncates the field at 20 characters. [CSCdp18533]
- You cannot set or change the subtend node ID using SNMP.

  Workaround: Use the CLI command **subtend-id** *node#* to set or change the subtend ID. [CSCdm93577]
- Default ATM traffic descriptors cannot be deleted. When you attempt to delete them through the MIB, the MIB incorrectly indicates that the deletion is successful. [CSCdm89206]

Only CBR Tunnels Are Allowed

The system incorrectly allows you to create VBR-RT and VBR-NRT tunnels. In fact the system can handle only CBR tunnels, and tunnels created as VBR-RT or VBR-NRT behave like CBR tunnels. [CSCdp21731]

Training Problems

- DMT lines do not train to upstream bit rates that are multiples of 128 kbps. This applies to both standard training and quick training modes, but only in the upstream direction. If a line is configured with a maximum upstream bit rate that is a multiple of 128 kbps, the best upstream bit rate to which the line can train is 32 kbps less than the configured value.

  Workaround: If you want to guarantee service at a minimum upstream bit rate that is a multiple of 128 kbps (for example, 512 kbps or 128 kbps), you can configure the line for 32 kbps above the contracted upstream bit rate (assuming the network can withstand this additional 32 kbps of bandwidth). [CSCdm66087]
- DMT lines sometimes train at 8096 kbps (downstream), although the maximum configurable bit rate is 8032 kbps. This occurs with Cisco 676 CPEs and might also occur with other vendors' Issue 1 equipment. [CSCdm66998]
- DMT ports sometimes attempt to train (port LEDs blink) when no CPE is connected at the far end of the subscriber loop. This occurs when a neighboring port that is connected to CPE is training on a very short loop (less than 1000 feet). [CSCdm85326]
- There may be no benefit in lowering configured end-to-end signal-to-noise ratio (SNR) margins below certain effective minimum values. Although the system allows margins to be configured below these effective minimums, the resulting bit rates and actual end-to-end margins might be the same as those realized when the margins are configured at the effective minimum values.

  The effective minimum values depend upon

  – Training mode (standard or quick)

- Bit rates to which the line trains
- Whether interleaving is used

For the standard training mode, the effective minimum end-to-end margin is 1 to 3 dB. For the quick training mode, the effective minimum end-to-end margin is 4 to 6 dB. The effective margins might be better (that is, at the lower ends of the specified ranges) if interleaving is turned off and/or the bit rates fall between 6 Mbps and 3 Mbps. [CSCdm89068]

Trellis Coding Can Cause Errors

We recommend that trellis coding not be enabled in this release. (Trellis coding is disabled by default.)

Although trellis coding works reliably on most loops and most trains, it does not always work reliably. For some trains on some loops, enabling trellis coding causes continuous errored seconds, as well as corrupted data in the upstream direction. There is no way to predict the circumstances under which this happens. This will be fixed in a later release. [CSCdm73343]

Some Combinations of Framing Mode and Bit Rate Cause Data Corruption

Under certain combinations of upstream bit rate and overhead framing mode, no valid data flows upstream. When the line trains at these combinations, data going upstream is corrupted. Avoid these data rate and framing mode combinations:

Upstream Bit Rate	Overhead Framing Mode
32 kbps	Mode 1
64 kbps	Mode 2
96 kbps	Mode 3

Workaround: To avoid this data corruption problem, use these combinations of settings for the lower data rates:

Upstream Bit Rate	Overhead Framing Mode
32 kbps	Mode 3
64 kbps	Mode 1
96 kbps	Mode 1

[CSCdm66085]

4DMT Line Card Reloads Current Code

If the 4DMT line card boot register is set for the card to reload application code, it reloads when the system reboots even if the load image is the same as the code already loaded on the card. (The reload takes about 2 minutes.) This problem occurs only when the system is rebooted; it does not occur when the line card is installed in a chassis. The card should reload only if the version of the load image is different from the version for the code already loaded. [CSCdm64615]

Bitswap Command Not Functional

The **dmt bitswap margin** command has no effect in this release. Bit swapping is always disabled. [CSCdm80069]

Decreasing Interleaving Delay Increases Errored Seconds

When the DLSAM is connected to a Cisco 676 or any other CPE that is based on ADI's AD20MSP910 chipset (which was designed to support the older Issue 1 version of the T1.413 ADSL standard), you might experience higher than normal numbers of errored seconds, corrected superframes, and uncorrected superframes. This can occur when the interleaving delay is configured at values less than the maximum (16 msec). The errors can occur in both the upstream and downstream directions. This problem might be more apparent with short loop lengths (for example, those less than 4000 feet).

Workarounds: Do either of the following to eliminate the problem:

- Use the **dmt interleaving-delay** command to increase the interleaving delay to 16 msec.
- Use the **dmt bitrate** command to lower the maximum bit rates (both upstream and downstream, if necessary) to something lower than the bit rate at which the errors were observed. [CSCdm82076]

Symbols per Codeword Value Is Not Reported Correctly

When a port is set to use quick training mode, its symbols per codeword value is sometimes reported as "?" (a question mark). This value is displayed when you enter the **show dsl int atm** command. [CSCdm91877]

Check Bytes Are Not Reported Correctly

The value you configure for the check bytes parameter might not be properly reported by the system. An incorrect check bytes value equal to half of the configured value is reported when the port is set to use standard training mode and the downstream data rate is greater than 7 Mbps. Only the downstream path is affected. The actual ratio of user data to check bytes matches the configuration. [CSCdm90741]

Interleaving Delay Is Not Reported Correctly

When a line that is configured for quick-train training mode trains to a downstream bit rate of 8 Mbps or higher, the actual interleaving delay might be reported incorrectly. (The interleaving delay appears in the display for the command **show dsl int atm** *slot/port*.) When this problem occurs, the reported interleaving delay is one-half of the value that is actually in effect. [CSCdp14712]

Virtual Path Deconfiguration Problems

- The system does not allow you to remove VC/VP configuration parameters from the table, falsely claiming the parameters are in use by a connection. The command that fails is **no atm connection-traffic-table-row**. [CSCdp63686]
- Sometimes it is impossible to remove a configured PVP. When VP switching is configured from one subscriber port to another using the same VPI number on both the ports, the VP circuit is not set up correctly.

  Workaround: Configure different VPI numbers on the subscriber ports. [CSCdp44469]

BITS Clock Problem

If the BITS plug is configured as the system's timing source, and the BITS clock source fails, an alarm is generated. (This behavior is correct.) However, the alarm is not cleared even after the BITS plug is removed from the valid list of clock sources. [CSCdp26405]

OAM RDI Cannot Be Enabled

If you create a PVC using network management, the system does not allow you to enable OAM RDI. Regardless of your selection for OAM RDI, the cross connect setting forces the OAM RDI to disable. This is related to the CDM issue CSCdp08324.

Workaround: In CDM, edit the PVC and enable OAM RDI. Or in the CLI, use the interface configuration version of the **atm oam rdi** command. [CSCdp74861]

ATM Input Queue is Limited to 255 Cells

The maximum size of input queue counter that can be supported by hardware is 255 cells. (You can configure this using the **max-size** argument of the **atm input-queue** command.) But software allows configuration of values beyond 255. Limiting input traffic will work only for queue sizes configured 255 cells or less. When you enter a value higher than 255, no input queue function is performed—all traffic is allowed through. [CSCdp25887]

Boot Problem

No matter what you set the configuration register or the bootvar to, rommon always boots up off bootflash.

Workaround: To correct the problem, follow these steps.

Step 1 Add the following command to the startup configuration file: **boot system flash flash:***filename*, where *filename* is the name of the image to be loaded. For example:

```
boot system flash flash:ni2-dsl-dmt.120-8.DA
```

Step 2 To make the system boot correctly, enter these commands, beginning in privileged EXEC mode:

```
c6260#> configure terminal
c6260#> config-register 0x2102
```

[CSCdp61780]

Open Caveats – Release 12.0(5)DA1

SMB-CRC Errors

Periodically, the system generates a serial management bus cyclic redundancy check (SMBCRC) error message such as this:

```
%NI2-5-LC_NOTICE:Slot[15] SMBCRC (1 days, 3 hours, 37 minutes, 6 seconds)
```

These messages are informational only and do not affect performance. [CSCdp00996]

Problems with CLI Commands

- When you execute the **shutdown** command for a port, the port goes out of service, but Cisco IOS still lists the port's administrative status as UP. [CSCdp17666]
- The **alarms** command disables minor DMT alarms on subscriber ports, as it should, but it does not clear existing alarms. [CSCdp25790]
- The **clear counter** command does not consistently return all counter values to zero. [CSCdm92046]

MIB Problems

- The dmtCodewordSize object does not allow a setting of automatic, as the CLI does. [CSCdp19413]
- The MIB and in some cases the CLI allow you to set invalid VPI values. Legal values are 0 to 31. However, values up to 255 are accepted by the MIB and by certain CLI commands, including **atm soft-vp**. [CSCdp03335, CSCdp21747]

Problems Affecting Management Systems

These problems affect SNMP-based management systems, including the Cisco DSL Manager (CDM). You can work around these problems by using the CLI.

- No error message is generated when you try to delete a DMT profile that is in use. [CSCdp03232]
- The MIB defines the ifAlias (subscriber ID) object as a 64-character field. SNMP truncates the field at 20 characters. [CSCdp18533]
- You cannot set or change the subtend node ID using SNMP.
- **Workaround:** Use the CLI command **subtend-id** *node#* to set or change the subtend ID. [CSCdm93577]
- Default ATM traffic descriptors cannot be deleted. When you attempt to delete them through the MIB, the MIB incorrectly indicates that the deletion is successful. [CSCdm89206]

Cisco 6130 Fan LEDs

In the Cisco 6130, the fan LEDs on the NI-2 card are not used. Fan status is indicated by the fan LEDs on the fan tray. [CSCdm92642]

Only CBR Tunnels Are Allowed

The system incorrectly allows you to create VBR-RT and VBR-NRT tunnels. In fact the system can handle only CBR tunnels, and tunnels created as VBR-RT or VBR-NRT behave like CBR tunnels. [CSCdp21731]

Training Problems

- DMT lines do not train to upstream bit rates that are multiples of 128 kbps. This applies to both standard training and quick training modes, but only in the upstream direction. If a line is configured with a maximum upstream bit rate that is a multiple of 128 kbps, the best upstream bit rate to which the line can train is 32 kbps less than the configured value.

Workaround: If you want to guarantee service at a minimum upstream bit rate that is a multiple of 128 kbps (for example, 512 kbps or 128 kbps), you can configure the line for 32 kbps above the contracted upstream bit rate (assuming the network can withstand this additional 32 kbps of bandwidth). [CSCdm66087]

- DMT lines sometimes train at 8096 kbps (downstream), although the maximum configurable bit rate is 8032 kbps. This occurs with Cisco 676 CPEs and might also occur with other vendors' Issue 1 equipment. [CSCdm66998]
- DMT ports sometimes attempt to train (port LEDs blink) when no CPE is connected at the far end of the subscriber loop. This occurs when a neighboring port that is connected to CPE is training on a very short loop (less than 1000 feet). [CSCdm85326]
- There may be no benefit in lowering configured end-to-end signal-to-noise ratio (SNR) margins below certain effective minimum values. Although the system allows margins to be configured below these effective minimums, the resulting bit rates and actual end-to-end margins might be the same as those realized when the margins are configured at the effective minimum values.

  The effective minimum values depend upon

  – Training mode (standard or quick)

  – Bit rates to which the line trains

  – Whether interleaving is used

  For the standard training mode, the effective minimum end-to-end margin is 1 to 3 dB. For the quick training mode, the effective minimum end-to-end margin is 4 to 6 dB. The effective margins might be better (that is, at the lower ends of the specified ranges) if interleaving is turned off and/or the bit rates fall between 6 Mbps and 3 Mbps. [CSCdm89068]

Trellis Coding Can Cause Errors

We recommend that trellis coding not be enabled in this release. (Trellis coding is disabled by default.)

Although trellis coding works reliably on most loops and most trains, it does not always work reliably. For some trains on some loops, enabling trellis coding causes continuous errored seconds, as well as corrupted data in the upstream direction. There is no way to predict the circumstances under which this happens. This will be fixed in a later release. [CSCdm73343]

Some Combinations of Framing Mode and Bit Rate Cause Data Corruption

Under certain combinations of upstream bit rate and overhead framing mode, no valid data flows upstream. When the line trains at these combinations, data going upstream is corrupted. Avoid these data rate and framing mode combinations

:

Upstream Bit Rate	Overhead Framing Mode
32 kbps	Mode 1
64 kbps	Mode 2
96 kbps	Mode 3

Workaround: To avoid this data corruption problem, use these combinations of settings for the lower data rates

:

Upstream Bit Rate	Overhead Framing Mode
32 kbps	Mode 3
64 kbps	Mode 1
96 kbps	Mode 1

[CSCdm66085]

4DMT Line Card Reloads Current Code

If the 4DMT line card boot register is set for the card to reload application code, it reloads when the system reboots even if the load image is the same as the code already loaded on the card. (The reload takes about 2 minutes.) This problem occurs only when the system is rebooted; it does not occur when the line card is installed in a chassis. The card should reload only if the version of the load image is different from the version for the code already loaded. [CSCdm64615]

Bitswap Command Not Functional

The **dmt bitswap margin** command has no effect in this release. Bit swapping is always disabled. [CSCdm80069]

Decreasing Interleaving Delay Increases Errored Seconds

When the DLSAM is connected to a Cisco 676 or any other CPE that is based on ADI's AD20MSP910 chipset (which was designed to support the older Issue 1 version of the T1.413 ADSL standard), you might experience higher than normal numbers of errored seconds, corrected superframes, and uncorrected superframes. This can occur when the interleaving delay is configured at values less than the maximum (16 msec). The errors can occur in both the upstream and downstream directions. This problem might be more apparent with short loop lengths (for example, those less than 4000 feet).

Workarounds: Do either of the following to eliminate the problem:

- Use the **dmt interleaving-delay** command to increase the interleaving delay to 16 msec.
- Use the **dmt bitrate** command to lower the maximum bit rates (both upstream and downstream, if necessary) to something lower than the bit rate at which the errors were observed. [CSCdm82076]

Symbols per Codeword Value Is Not Reported Correctly

When a port is set to use quick training mode, its symbols per codeword value is sometimes reported as "?" (a question mark). This value is displayed when you enter the **show dsl int atm** command. [CSCdm91877]

Check Bytes Are Not Reported Correctly

The value you configure for the check bytes parameter might not be properly reported by the system. An incorrect check bytes value equal to half of the configured value is reported when the port is set to use standard training mode and the downstream data rate is greater than 7 Mbps. Only the downstream path is affected. The actual ratio of user data to check bytes matches the configuration. [CSCdm90741]

Interleaving Delay Is Not Reported Correctly

When a line that is configured for quick-train training mode trains to a downstream bit rate of 8 Mbps or higher, the actual interleaving delay might be reported incorrectly. (The interleaving delay appears in the display for the command **show dsl int atm** *slot/port*.) When this problem occurs, the reported interleaving delay is one-half of the value that is actually in effect. [CSCdp14712]

Open Caveats – Release 12.0(5)DA

Training Problems

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Squeeze Command Causes Ports to Retrain

The **squeeze** command, which defragments the flash memory, is CPU intensive. It causes the NI-2 card to lose contact with some line cards, which causes ports on those cards to retrain.

Workaround: Use the **squeeze** command only during maintenance. [CSCdp02339]

Resolved Caveats – Release 12.0(8)DA4

The problem listed in Table 1 is fixed in Cisco IOS Release 12.0(8)DA4.

Table 1 Problem Resolved in Release 12.0(8)DA4

Caveat Number	Description
CSCdr26662	When another device sets the UU field of the AAL5 trailer to a nonzero value, the Cisco 6260 treats all incoming packets terminating on interface ATM0/0 (the SAR) as giant packets, which are discarded.

Resolved Caveats – Release 12.0(8)DA3

The problem listed in Table 2 is fixed in Cisco IOS Release 12.0(8)DA3.

Table 2 Problem Resolved in Release 12.0(8)DA3

Caveat Number	Description
CSCdr18187	The SNMP agent does not work for the ATM MIB variable atmInterfaceMaxActiveVpiBits. When an snmpset is done on this variable, the SNMP agent reports an error.

Resolved Caveats – Release 12.0(8)DA2

There are no resolved caveats in Cisco IOS Release 12.0(8)DA2.

Resolved Caveats – Release 12.0(8)DA1

The problems listed in Table 3 are fixed in Cisco IOS Release 12.0(8)DA1.

Table 3 Problems Resolved in Release 12.0(8)DA1

Caveat Number	Description
CSCdp25790	The **alarms** command disables minor DMT alarms on subscriber ports, as it should, but it does not clear existing alarms.
CSCdp03335, CSCdp21747	The MIB and in some cases the CLI allow you to set invalid VPI values. Legal values are 0 to 31. However, values up to 255 are accepted by the MIB and by certain CLI commands, including **atm soft-vp**.

Resolved Caveats – Release 12.0(5)DA1

The problem listed in Table 4 is fixed in Cisco IOS Release 12.0(5)DA1.

Table 4 Problems Resolved in Release 12.0(8)DA1

Caveat Number	Description
CSCdp02339	The **squeeze** command causes subscriber ports to retrain.

Related Documentation

These documents contain information that might be useful to Cisco 6260 users:

- *Configuration Guide for Cisco 6000 Family DSLAMs with NI-2*
- *Command Reference for Cisco 6000 Family DSLAMs with NI-2*
- *Cisco 6260 Hardware Installation and Troubleshooting Guide*
- *NI-2 Card Installation and Configuration for the Cisco 6260*
- *ATUC-1-4DMT Card Installation and Configuration for the Cisco 6260*
- *I/O Interface Module Installation and Configuration for the Cisco 6260*
- *Cisco 6260 PEM and Fan Tray Installation and Replacement*

These documents contain information that might be useful to Cisco 6130 users:

- *Configuration Guide for Cisco 6000 Family DSLAMs with NI-2*
- *Command Reference for Cisco 6000 Family DSLAMs with NI-2*

- *Cisco 6130 DSLAM with NI-2 Installation Guide*
- *Cisco 6100 Series DSLAM with NI-2 ATUC-1-4DMT Module Installation and Configuration*
- *Cisco 6130 DSLAM System I/O Card Installation and Configuration*
- *Cisco 6100 Series DSLAMs NI-2 Module Installation and Configuration*
- *Regulatory Compliance and Safety Information for the Cisco 6100 Series System*

In these ATM software manuals, look for information pertaining to the LightStream 1010, which uses the same software base as the Cisco 6000 Family DSLAMs:

- *ATM Switch Router Software Configuration Guide*
- *ATM Switch Router Command Reference Guide*
- *Guide to ATM Technology*

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- WWW: http://www-europe.cisco.com
- WWW: http://www-china.cisco.com
- Telnet: cco.cisco.com
- Modem: From North America, 408 526-8070; from Europe, 33 1 64 46 40 82. Use the following terminal settings: VT100 emulation; databits: 8; parity: none; stop bits: 1; and connection rates up to 28.8 kbps.

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