



## Monitoring and Retraining on Reception of Loss of Margin Messages

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Loss of Margin (LoM) monitoring allows the router to handle asymmetric digital subscriber line (ADSL) loss of margin messages received from the digital subscriber line access multiplexer (DSLAM). The **dsl lom** command is used to set digital subscriber line (DSL) LoM monitoring. The **no dsl lom** command disables LoM monitoring after the router has been configured to monitor LoM messages.

When set to monitor LoM, the router will retrain with the DSLAM when it receives LoM messages consecutively for the number of times specified in the *number* argument.

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## Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see [Bug Search Tool](#) and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to [www.cisco.com/go/cfn](http://www.cisco.com/go/cfn). An account on Cisco.com is not required.

# Information About Monitoring and Retraining on Reception of Loss of Margin Messages

## ATM Technology

Asynchronous Transfer Mode (ATM) is a technology designed for the high-speed transfer of voice, video, and data through public and private networks using cell relay technology. ATM is an International Telecommunication Union Telecommunication Standardization Sector (ITU-T) standard. Ongoing work on ATM standards is being done primarily by the ATM Forum, which was jointly founded by Cisco Systems, NET/ADAPTIVE, Northern Telecom, and Sprint in 1991.

A cell switching and multiplexing technology, ATM combines the benefits of circuit switching (constant transmission delay, guaranteed capacity) with those of packet switching (flexibility, efficiency for intermittent traffic). To achieve these benefits, ATM uses the following features:

- Fixed-size cells, permitting more efficient switching in hardware than is possible with variable-length packets
- Connection-oriented service, permitting routing of cells through the ATM network over virtual connections, sometimes called virtual circuits, using simple connection identifiers
- Asynchronous multiplexing, permitting efficient use of bandwidth and interleaving of data of varying priority and size

The combination of these features allows ATM to provide different categories of service for different data requirements and to establish a service contract at the time a connection is set up. This means that a virtual connection of a given service category can be guaranteed a certain bandwidth, as well as other traffic parameters, for the life of the connection.

For more details on ATM Technology, refer to the following URL:

[http://www.cisco.com/univercd/cc/td/doc/product/atm/c8540/12\\_1/pereg\\_1/atm\\_tech/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/atm/c8540/12_1/pereg_1/atm_tech/index.htm)

## DSL Technology

Digital Subscriber Line (DSL) is a public network technology that delivers high bandwidth over conventional copper wiring at limited distances. There are four types of DSL: Asymmetric DSL (ADSL), High-Data-Rate DSL (HDSL), Single-line DSL (SDSL), and Very-high-data-rate DSL (VDSL). All are provisioned via modem pairs, with one modem located at a central office and the other at the customer site. Because most DSL technologies do not use the whole bandwidth of the twisted pair, there is room remaining for a voice channel.

For more details on DSL Technology, refer to the following URL: [http://www.cisco.com/en/US/tech/tk175/tsd\\_technology\\_support\\_category\\_home.html](http://www.cisco.com/en/US/tech/tk175/tsd_technology_support_category_home.html).

# How to Enable Monitoring and Retraining on Reception of Loss of Margin Messages

## Enabling LOM Monitoring

To enable LOM monitoring, perform the following steps:

### SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface atm** *interface-number*
4. **dsl lom** number *number*
5. **end**
6. **show dsl interface atm**

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b>  <b>Example:</b> Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul>
<b>Step 2</b>	<b>configure terminal</b>  <b>Example:</b> Router# configure terminal	Enters global configuration mode.
<b>Step 3</b>	<b>interface atm</b> <i>interface-number</i>  <b>Example:</b> Router(config)# interface atm 3	Configures an ATM interface and enters interface configuration mode.
<b>Step 4</b>	<b>dsl lom</b> number <i>number</i>  <b>Example:</b> Router(config-if)# dsl lom 200	Enables LoM monitoring and checks for the specified number of consecutive LoM messages.

	Command or Action	Purpose
Step 5	<b>end</b>  <b>Example:</b> Router(config-if)# end	Ends the current configuration session and returns to privileged EXEC mode.
Step 6	<b>show dsl interface atm</b>  <b>Example:</b> Router# show dsl interface atm	Verifies the LOM monitoring configuration.

## Configuration Examples for Monitoring and Retraining on Reception of Loss of Margin Messages

### Enabling LoM Monitoring Example

The following example shows LoM monitoring enabled on an ATM interface with retraining configured for 200 counts:

```
configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
interface atm0
dsl lom 200
end
!
show run interface atm0
00:16:46: %SYS-5-CONFIG_I: Configured from console by consoleint a0
Building Configuration
Current configuration: 209 bytes
!
interface atm0
ip address 1.2.3.4 255.255.255.0
no atm ilmi-keepalive
pvc 1/40
protocol ip 1.2.3.5 broadcast
encapsulation aal5snap
!
dsl operating-mode auto
dsl lom 200
dsl power-cutback 0
end
```

## Additional References

### Related Documents

Related Topic	Document Title
Cisco IOS Release 12.3 Configuration Guides and Command References	Cisco IOS Release 12.3 Configuration Guides and Command References

### Standards

Standards	Title
None	--

### MIBs

MIBs	MIBs Link
<ul style="list-style-type: none"> <li>None</li> </ul>	<p>To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL:</p> <p><a href="http://www.cisco.com/go/mibs">http://www.cisco.com/go/mibs</a></p>

### RFCs

RFCs	Title
None	--

### Technical Assistance

Description	Link
<p>Technical Assistance Center (TAC) home page, containing 30,000 pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.</p>	<p><a href="http://www.cisco.com/public/support/tac/home.shtml">http://www.cisco.com/public/support/tac/home.shtml</a></p>

# Feature Information for Monitoring and Retraining on Reception of Loss of Margin Messages

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to [http://www.cisco.com/go/featurenavigator](#). An account on Cisco.com is not required.

**Table 1: Feature Information for Phrase Based on Module Title**

Feature Name	Releases	Feature Information
Monitoring and Retraining on Reception of Loss of Margin Messages	12.3(2)T	<p>Loss of Margin (LoM) monitoring allows the router to handle asymmetric digital subscriber line (ADSL) loss of margin messages received from the digital subscriber line access multiplexer (DSLAM). The <b>dsl lom</b> command is used to set digital subscriber line (DSL) LoM monitoring. The <b>no dsl lom</b> command disables LoM monitoring after the router has been configured to monitor LoM messages.</p> <p>When set to monitor LoM, the router will retrain with the DSLAM when it receives LoM messages consecutively for the number of times specified in the <i>number</i> argument.</p> <p>The following command was introduced or modified: <b>dsl lom</b>.</p>