



ATM OAM Ping

First Published: December 15, 2001
Last Updated: November 20, 2009

The ATM OAM Ping feature sends an ATM Operation, Administration, and Maintenance (OAM) packet to confirm the connectivity of a specific permanent virtual circuit (PVC). The status of the PVC is displayed when a response to the OAM packet is received. The ATM OAM Ping feature allows the network administrator to verify PVC integrity and facilitates ATM network troubleshooting.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see 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 for the ATM OAM Ping Feature” section on page 9](#).

Use Cisco Feature Navigator to find information about platform support and Cisco IOS and Catalyst OS software image support. To access Cisco Feature Navigator, go to <http://www.cisco.com/go/cfn>. An account on Cisco.com is not required.

Contents

- [Prerequisites for the ATM OAM Ping Feature, page 2](#)
- [Restrictions for the ATM OAM Ping Feature, page 2](#)
- [Information About the ATM OAM Ping Feature, page 2](#)
- [How to Use the ATM OAM Ping Feature, page 3](#)
- [Configuration Examples for the ATM OAM Ping Feature, page 4](#)
- [Additional References, page 7](#)
- [Feature Information for the ATM OAM Ping Feature, page 9](#)



Americas Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

Prerequisites for the ATM OAM Ping Feature

A PVC corresponding to the virtual path identifier (VPI) and virtual channel identifier (VCI) values entered with the **ping** command should already exist. (For Cisco 827 series routers, the virtual circuit need not exist.)

For information about how to configure ATM PVCs, see the section “Configuring PVCs” in the chapter “Configuring ATM” in the *Cisco IOS Asynchronous Transfer Mode Configuration Guide*.

Restrictions for the ATM OAM Ping Feature

The ATM OAM Ping feature does not support pings based on the following:

- Network service access point (NSAP) addresses
- Multiple-hop loopbacks
- Loopback location identification

Information About the ATM OAM Ping Feature

To use the ATM OAM Ping feature, you must understand the following concepts:

- [Benefits of the ATM OAM Ping Feature, page 2](#)
- [How to Use the ATM OAM Ping Feature, page 3](#)

Benefits of the ATM OAM Ping Feature

The ATM OAM Ping feature modifies the **ping** command, which can be used to send an OAM packet to verify PVC connectivity. The status of the PVC is displayed when a response to the OAM packet is received. This is a common method for testing the accessibility of devices.

The **ping atm interface atm** command provides two ATM OAM ping options:

- End loopback—Verifies end-to-end PVC integrity.
- Segment loopback—Verifies PVC integrity to the immediate neighboring ATM device.

The **ping atm interface atm** command is used to determine the following:

- Whether a remote host is active or inactive.
- The round-trip delay in communicating with the host.
- Packet loss.

The simpler **ping** command provides an interactive mode for testing ATM network connectivity. The **ping** command first sends an OAM command loopback cell to the destination and then waits for an OAM response loopback cell. The ping is successful only when the following criteria are met:

- The OAM command loopback cell reaches the destination.
- The destination is able to send an OAM loopback response cell back to the source within a predetermined time called a *timeout*. The default value of the timeout is 2 seconds on Cisco routers.

How to Use the ATM OAM Ping Feature

The following sections describe tasks that use **ping** commands to test network connectivity in an ATM network:

- [Testing Network Connectivity Using ATM Interface Ping in the Normal Mode, page 3](#) (optional)
- [Testing Network Connectivity Using ATM Interface Ping in the Interactive Mode, page 3](#) (optional)
- [Aborting a Ping Session, page 4](#) (optional)

Testing Network Connectivity Using ATM Interface Ping in the Normal Mode

This section describes how to test the network connectivity by using the **ping atm interface atm** command in normal mode; that is, by entering all values for the **ping** test on the command line.

SUMMARY STEPS

1. **enable**
2. **ping atm interface atm** *interface-number vpi-value [vci-value [end-loopback | seg-loopback] [repeat [timeout]]]*

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	ping atm interface atm <i>interface-number vpi-value [vci-value [end-loopback seg-loopback] [repeat [timeout]]]</i> Example: Router# ping atm interface atm 1/1.1 0 500 end-loopback 1 2	Displays a response to confirm the connectivity of a specific PVC.

Testing Network Connectivity Using ATM Interface Ping in the Interactive Mode

This section describes how to test network connectivity by using the **ping** command; that is, by providing values for the **ping** test by typing the value after the prompts displayed and pressing the **Enter** key. Press the **Enter** key without supplying a value to use the default.

SUMMARY STEPS

1. **enable**
2. **ping**

DETAILED STEP

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	ping Example: Router# ping	Displays a response to confirm the connectivity of a specific PVC.

Aborting a Ping Session

To terminate a ping session, type the escape sequence **Ctrl-Shift-6**.

Configuration Examples for the ATM OAM Ping Feature

This section provides the following configuration examples:

- [Verifying the Connectivity of a Specific PVC: Example, page 4](#)
- [Testing Network Connectivity Using ATM Interface Ping in the Normal Mode: Example, page 5](#)
- [Testing Network Connectivity Using ATM Interface Ping in the Interactive Mode: Example, page 6](#)

Verifying the Connectivity of a Specific PVC: Example

The following example verifies the connectivity of a specific PVC by sending an ATM OAM packet and confirms the connectivity when it is successful:

```
Router# show atm pvc 0/500
```

```
VC 0/500 doesn't exist on interface ATM1/0 - cannot display
ATM1/1.1: VCD: 2, VPI: 0, VCI: 500
UBR, PeakRate: N/A (UBR VC)
AAL5-LLC/SNAP, etype:0x0, Flags: 0xC20, VCmode: 0x0
OAM frequency: 10 second(s), OAM retry frequency: 1 second(s)
OAM up retry count: 3, OAM down retry count: 5
OAM END CC Activate retry count: 3, OAM END CC Deactivate retry count: 3
OAM END CC retry frequency: 30 second(s),
OAM SEGMENT CC Activate retry count: 3, OAM SEGMENT CC Deactivate retry count: 3
OAM SEGMENT CC retry frequency: 30 second(s),
OAM Loopback status: OAM Received
OAM VC state: Verified
ILMI VC state: Not Managed
OAM END CC status: OAM CC Ready
OAM END CC VC state: Verified
OAM SEGMENT CC status: OAM CC Ready
OAM SEGMENT CC VC state: Verified
VC is managed by OAM.
InARP frequency: 15 minutes(s)
InPkts: 289035, OutPkts: 217088, InBytes: 21165546, OutBytes: 17367793
```

```

InPRoc: 289039, OutPRoc: 289274
InFast: 0, OutFast: 0, InAS: 1, OutAS: 2
Out CLP=1 Pkts: 0
OAM cells received: 119900
F5 InEndloop: 119809, F5 InSegloop: 0,
F5 InEndcc: 0, F5 InSegcc: 0, F5 InAIS: 92, F5 InRDI: 0
OAM cells sent: 119902
F5 OutEndloop: 119810, F5 OutSegloop: 0,
F5 OutEndcc: 0, F5 OutSegcc: 0, F5 OutAIS: 0, F5 OutRDI: 92
OAM cell drops: 0
Status: UP

```

Testing Network Connectivity Using ATM Interface Ping in the Normal Mode: Example

The following is sample output for the **ping atm interface atm** command in normal mode:

```
Router# ping atm interface atm1/1.1 0 500
```

```

Type escape sequence to abort.
Sending 5, 53-byte end-to-end OAM echoes, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/16/52 ms

```

```
Router# ping atm interface atm1/1.1 0 500 seg-loopback
```

```

Type escape sequence to abort.
Sending 5, 53-byte segment OAM echoes, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/1 ms

```

```
Router# ping atm interface atm1/1.1 0 500 end-loopback 100 25
```

```

Type escape sequence to abort.
Sending 100, 53-byte end-to-end OAM echoes, timeout is 25 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 4/13/180 ms

```

```
Router# ping atm interface atm1/1.1 0 500 seg-loopback 50 20
```

```

Type escape sequence to abort.
Sending 50, 53-byte segment OAM echoes, timeout is 20 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (50/50), round-trip min/avg/max = 1/1/4 ms

```

```
Router# show atm pvc 0/500
```

```

VC 0/500 doesn't exist on interface ATM1/0 - cannot display
ATM1/1.1: VCD: 2, VPI: 0, VCI: 500
UBR, PeakRate: N/A (UBR VC)
AAL5-LLC/SNAP, etype:0x0, Flags: 0xC20, VCmode: 0x0
OAM frequency: 10 second(s), OAM retry frequency: 1 second(s)
OAM up retry count: 3, OAM down retry count: 5
OAM END CC Activate retry count: 3, OAM END CC Deactivate retry count: 3
OAM END CC retry frequency: 30 second(s),
OAM SEGMENT CC Activate retry count: 3, OAM SEGMENT CC Deactivate retry count: 3
OAM SEGMENT CC retry frequency: 30 second(s),
OAM Loopback status: OAM Received
OAM VC state: Verified
ILMI VC state: Not Managed

```

```
OAM END CC status: OAM CC Ready
OAM END CC VC state: Verified
OAM SEGMENT CC status: OAM CC Ready
OAM SEGMENT CC VC state: Verified
VC is managed by OAM.
InARP frequency: 15 minutes(s)
InPkts: 290975, OutPkts: 219031, InBytes: 21306632, OutBytes: 17509085
InPRoc: 290979, OutPRoc: 291219
InFast: 0, OutFast: 0, InAS: 1, OutAS: 2
Out CLP=1 Pkts: 0
OAM cells received: 120881
F5 InEndloop: 120734, F5 InSegloop: 55,
F5 InEndcc: 0, F5 InSegcc: 0, F5 InAIS: 92, F5 InRDI: 0
OAM cells sent: 120882
F5 OutEndloop: 120735, F5 OutSegloop: 55,
F5 OutEndcc: 0, F5 OutSegcc: 0, F5 OutAIS: 0, F5 OutRDI: 92
OAM cell drops: 0
Status: UP
```

Testing Network Connectivity Using ATM Interface Ping in the Interactive Mode: Example

The following is sample output for the **ping** command in the interactive mode:

```
Router# ping

Protocol [ip]: atm

ATM Interface: atm1/1.1

VPI value [0]: 0

VCI value [1]: 500

Loopback - End(0), Segment(1) [0]:
Repeat Count [5]:
Timeout [2]:
Type escape sequence to abort.
Sending 5, 53-byte end-to-end OAM echoes, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/9/12 ms
```

Additional References

The following sections provide references related to the ATM OAM Ping feature.

Related Documents

Related Topic	Document Title
Configuring PVCs and mapping a protocol address to a PVC while configuring ATM	Configuring PVCs section of <i>Cisco IOS Configuring ATM Feature Guide</i>
Configuring ATM	<i>Cisco IOS Configuring ATM Feature Guide</i>
ATM commands, complete command syntax, command mode, command history, defaults, usage guidelines, and examples	<i>Cisco IOS Asynchronous Transfer Mode Command Reference</i>
Configuring ATM OAM traffic reduction	<i>ATM OAM Traffic Reduction</i> feature module
Configuring PVCs with or without OAM	<i>Using OAM for PVC Management</i> sample configuration
Detecting failures when using OAM cells and PVC management	<i>Troubleshooting PVC Failures When Using OAM Cells and PVC Management</i> technical note
Cisco IOS commands	<i>Cisco IOS Master Commands List, All Releases</i>

Standards

Standard	Title
ITU-T Specification I.610 (ITU-T specification for B-ISDN operation and maintenance principles and functions).	I.610 Series I: Integrated Services Digital Network Maintenance principles

MIBs

MIB	MIBs Link
None	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFC	Title
None	—

Technical Assistance

Description	Link
<p>The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.</p> <p>To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds.</p> <p>Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.</p>	<p>http://www.cisco.com/cisco/web/support/index.html</p>

Feature Information for the ATM OAM Ping Feature

Table 1 lists the release history for this feature.

Not all commands may be available in your Cisco IOS software release. For release information about a specific command, see the command reference documentation.

Use Cisco Feature Navigator to find information about platform support and software image support. Cisco Feature Navigator enables you to determine which Cisco IOS and Catalyst OS software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to <http://www.cisco.com/go/cfn>. An account on Cisco.com is not required.



Note

Table 1 lists only the Cisco IOS software release that introduced support for a given feature in a given Cisco IOS software release train. Unless noted otherwise, subsequent releases of that Cisco IOS software release train also support that feature.

Table 1 Feature Information for ATM OAM Ping

Feature Name	Releases	Feature Information
ATM OAM Ping	12.0(21)S 12.2(28)SB 12.2(18)SXE 12.2(33)SRE 12.2(13)T	The ATM OAM Ping feature lets the router automatically detect when a peer ATM interface is in loopback mode. When loopback is detected on an interface where end-to-end F5 OAM is enabled, the impacted PVC is moved to a DOWN state, and traffic is suspended. When the loopback condition in the peer ATM interface is removed, the PVC is moved back to an UP state. The following command was introduced: ping atm interface atm

Cisco and the Cisco Logo are trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and other countries. A listing of Cisco's trademarks can be found at www.cisco.com/go/trademarks. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1005R)

Any Internet Protocol (IP) addresses and phone numbers used in this document are not intended to be actual addresses and phone numbers. Any examples, command display output, network topology diagrams, and other figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses or phone numbers in illustrative content is unintentional and coincidental.

© 2001-2009 Cisco Systems, Inc. All rights reserved.

