



# ATM OAM Ping

---

**Last Updated: May 4, 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

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 ATM OAM Ping” section on page 8](#).

Use Cisco Feature Navigator to find information about platform support and Cisco IOS XE 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 2](#)
- [Configuration Examples for ATM OAM Ping, page 4](#)
- [Additional References, page 6](#)
- [Feature Information for ATM OAM Ping, page 8](#)



---

**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.

## Restrictions for the ATM OAM Ping Feature

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

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

## Information About the ATM OAM Ping Feature

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

## 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

- [Testing Network Connectivity Using ATM Interface Ping \(Normal Mode\), page 3](#)
- [Testing Network Connectivity Using ATM Interface Ping \(Interactive Mode\), page 4](#)

- [Aborting a Ping Session, page 4](#)

## Testing Network Connectivity Using ATM Interface Ping (Normal Mode)

Perform this task 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** [*repeat* [*timeout*]]] | **seg-loopback** [*repeat* [*timeout*]]]

### DETAILED STEPS

|        | Command or Action                                                                                                                                                                                               | Purpose                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 1 | <b>enable</b><br><br><b>Example:</b><br>Router> enable                                                                                                                                                          | Enables privileged EXEC mode. <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Step 2 | <b>ping atm interface atm</b> <i>interface-number</i> <i>vpi-value</i> [ <i>vci-value</i> [ <b>end-loopback</b> [ <i>repeat</i> [ <i>timeout</i> ]]]   <b>seg-loopback</b> [ <i>repeat</i> [ <i>timeout</i> ]]] | Displays a response to confirm the connectivity of a specific PVC for the ASR 1000 series router. <ul style="list-style-type: none"> <li>• <b>atm interface-number</b>—ATM interface name.</li> <li>• <b>vpi-value</b>—Virtual path identifier. Range: 0 to 255.</li> <li>• <b>vci-value</b>—Virtual channel identifier. Range: 0 to 65535.</li> <li>• <b>end-loopback</b>—Sends ATM end loopback cells. This is the default.</li> <li>• <b>seg-loopback</b>—Sends ATM segment loopback cells.</li> <li>• <b>repeat</b>—Number of ping packets that are sent to the destination. Range: 1 to 1000. Default: 5.</li> <li>• <b>timeout</b>—Timeout interval, in seconds. Range: 1 to 30. Default: 2.</li> </ul> |

## Testing Network Connectivity Using ATM Interface Ping (Interactive Mode)

Perform this task 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 | <b>enable</b><br><br><b>Example:</b><br>Router> <b>enable</b> | Enables privileged EXEC mode.<br><ul style="list-style-type: none"><li>• Enter your password if prompted.</li></ul> |
| Step 2 | <b>ping</b><br><br><b>Example:</b><br>Router# <b>ping</b>     | Displays a response to confirm the connectivity of a specific PVC.                                                  |

## Aborting a Ping Session

To terminate a ping session, type the escape sequence—by default, Ctrl-Shift-6.

## Configuration Examples for ATM OAM Ping

- [Verifying the Connectivity of a Specific PVC: Example, page 4](#)
- [Normal Mode ping atm interface atm Command: Example, page 5](#)
- [Interactive ping Command: 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 10/100
```

```
ATM1/1/0.100: VCD: 3, VPI: 10, VCI: 100
UBR, PeakRate: 100000 (235850 cps)
AAL5-LLC/SNAP, etype:0x0, Flags: 0x40, VCmode: 0x0, Encapsz: 12
OAM frequency: 0 second(s), OAM retry frequency: 1 second(s)
OAM up retry count: 3, OAM down retry count: 5
OAM Loopback status: OAM Disabled
Last cell looped No
Loop detect state 0, Last cell looped 0, OAM Retries 0, Loop Retries 0
```

```

OAM VC Status: Not Managed
ILMI VC status: Not Managed
InARP frequency: 15 minutes(s)
Transmit priority 3
InPkts: 78310, OutPkts: 78310, InBytes: 218651435, OutBytes: 218651435
InPRoc: 0, OutPRoc: 16, Broadcasts: 15
InFast: 0, OutFast: 0, InAS: 78310, OutAS: 78281
InPktDrops: 0, OutPktDrops: 0
CrcErrors: 0, SarTimeOuts: 0, OverSizedSDUs: 0, LengthViolation: 0, CPiErrors: 0
Out CLP=1 Pkts: 0
OAM cells received: 315
F5 InEndloop: 310, F5 InSegloop: 5, F5 InAIS: 0, F5 InRDI: 0
OAM cells sent: 315
F5 OutEndloop: 310, F5 OutSegloop: 5, F5 OutAIS: 0, F5 OutRDI: 0
OAM cell drops: 0
Status: UP

VC 10/100 doesn't exist on 2 of 3 ATM interface(s)
Router#

```

## Normal Mode ping atm interface atm Command: Example

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

```
Router# ping atm interface atm1/1/0.1 500
```

```

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 atm1/1/0.1 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 atm1/1/0.1 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 atm1/1/0.1 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 10/100
```

```

ATM1/1/0.100: VCD: 3, VPI: 10, VCI: 100
UBR, PeakRate: 100000 (235850 cps)
AAL5-LLC/SNAP, etype:0x0, Flags: 0x40, VCmode: 0x0, Encapsize: 12
OAM frequency: 10 second(s), OAM retry frequency: 1 second(s)
OAM up retry count: 3, OAM down retry count: 5

```

```

OAM Loopback status: OAM Received
Last cell looped No
Loop detect state 0, Last cell looped 0, OAM Retries 0, Loop Retries 0
OAM VC Status: Verified
ILMI VC status: Not Managed
VC is managed by OAM.
InARP frequency: 15 minutes(s)
Transmit priority 3
InPkts: 78310, OutPkts: 78310, InBytes: 218651435, OutBytes: 218651435
InPRoc: 0, OutPRoc: 16, Broadcasts: 15
InFast: 0, OutFast: 0, InAS: 78310, OutAS: 78281
InPktDrops: 0, OutPktDrops: 0
CrcErrors: 0, SarTimeOuts: 0, OverSizedSDUs: 0, LengthViolation: 0, CPISerialErrors: 0
Out CLP=1 Pkts: 0
OAM cells received: 331
F5 InEndloop: 326, F5 InSegloop: 5, F5 InAIS: 0, F5 InRDI: 0
OAM cells sent: 331
F5 OutEndloop: 326, F5 OutSegloop: 5, F5 OutAIS: 0, F5 OutRDI: 0
OAM cell drops: 0
Status: UP

VC 10/100 doesn't exist on 2 of 3 ATM interface(s)
Router#

```

## Interactive ping Command: Example

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

```

router# ping

Protocol [ip]: atm
ATM Interface: atm1/1/0.100
VPI value [0]: 10
VCI value [1]: 100
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 = 1/1/1 ms
Router#

```

## Additional References

### Related Documents

| Related Topic      | Document Title                                                         |
|--------------------|------------------------------------------------------------------------|
| Cisco IOS commands | <a href="#">Cisco IOS Master Commands List, All Releases</a>           |
| ATM commands       | <a href="#">Cisco IOS Asynchronous Transfer Mode Command Reference</a> |
| ATM Overview       | <a href="#">Overview of the ATM SPAs</a>                               |

| Related Topic                                              | Document Title                                                                       |
|------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Configuring ATM OAM traffic reduction                      | <a href="#">ATM OAM Traffic Reduction</a>                                            |
| Detecting failures when using OAM cells and PVC management | <a href="#">Troubleshooting PVC Failures When Using OAM Cells and PVC Management</a> |

## 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 XE software releases, and feature sets, use Cisco MIB Locator found at the following URL:<br><a href="http://www.cisco.com/go/mibs">http://www.cisco.com/go/mibs</a> |

## 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> | <a href="http://www.cisco.com/techsupport">http://www.cisco.com/techsupport</a> |

# Feature Information for ATM OAM Ping

Table 1 lists the release history for this feature.

Use Cisco Feature Navigator to find information about platform support and software image support. Cisco Feature Navigator enables you to determine which Cisco IOS XE 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 XE software release that introduced support for a given feature in a given Cisco IOS XE software release train. Unless noted otherwise, subsequent releases of that Cisco IOS XE software release train also support that feature.

**Table 1** Feature Information for ATM OAM Ping

| Feature Name | Releases                 | Feature Information                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ATM OAM Ping | Cisco IOS XE Release 2.3 | <p>The ATM OAM Ping feature sends an ATM OAM packet to confirm the connectivity of a specific 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.</p> <p>The following command was introduced or modified: <b>ping atm interface atm</b>.</p> |

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](http://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.

© 2002 - 2009 Cisco Systems, Inc. All rights reserved..