ATM OAM Ping

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, on page 1
- Prerequisites for the ATM OAM Ping Feature, on page 1
- Restrictions for the ATM OAM Ping Feature, on page 1
- Information About the ATM OAM Ping Feature, on page 2
- How to Use the ATM OAM Ping Feature, on page 2
- Configuration Examples for ATM OAM Ping, on page 4
- Additional References, on page 6
- Feature Information for ATM OAM Ping, on page 7

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 at the end of this module.

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. An account on Cisco.com is not required.

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
Information About the ATM OAM Ping Feature

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 Ping in 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

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
</tr>
<tr>
<td>enable</td>
<td>Enables privileged EXEC mode.</td>
</tr>
<tr>
<td>Example:Router&gt; enable</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
</tr>
<tr>
<td>ping atm interface atm interface-number vpi-value [vci-value [end-loopback[repeat [timeout]]] seg-loopback [repeat [timeout]]]</td>
<td>Displays a response to confirm the connectivity of a specific PVC for the ASR 1000 series router.</td>
</tr>
<tr>
<td>Example: ping atm interface atm 1/1/0.100 0 500</td>
<td></td>
</tr>
<tr>
<td>Example: end-loopback 1 2</td>
<td></td>
</tr>
</tbody>
</table>

### ATM OAM Ping

#### Testing Network Connectivity Using Ping in 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 STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
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<td>enable</td>
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<td>Example:Router&gt; enable</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
</tr>
<tr>
<td>ping</td>
<td>Displays a response to confirm the connectivity of a specific PVC.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
</tbody>
</table>
### 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

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

```plaintext
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, VCI: 100, Encapsize: 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
InProc: 0, OutProc: 16, Broadcasts: 15
InFast: 0, OutFast: 0, InAS: 78310, OutAS: 78281
InPktDrops: 0, OutPktDrops: 0
CrErrors: 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:

```plaintext
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
InProc: 0, OutProc: 16, Broadcasts: 15
InFast: 0, OutFast: 0, InAS: 78310, OutAS: 78281
InPktDrops: 0, OutPktDrops: 0
CrcErrors: 0, SarTimeOuts: 0, OverSizeSDUs: 0, LengthViolation: 0, CPIErrors: 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:
!!!!!
```
Additional References

Related Documents

<table>
<thead>
<tr>
<th>Related Topic</th>
<th>Document Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco IOS commands</td>
<td>Cisco IOS Master Commands List, All Releases</td>
</tr>
<tr>
<td>ATM commands</td>
<td>Cisco IOS Asynchronous Transfer Mode Command Reference</td>
</tr>
<tr>
<td>ATM Overview</td>
<td>&quot;Overview of the ATM SPAs&quot;</td>
</tr>
<tr>
<td>Configuring ATM OAM traffic reduction</td>
<td>&quot;ATM OAM Traffic Reduction&quot;</td>
</tr>
<tr>
<td>Detecting failures when using OAM cells and PVC management</td>
<td>&quot;Troubleshooting PVC Failures When Using OAM Cells and PVC Management&quot;</td>
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Standards

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MIBs

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<th>MIB</th>
<th>MIBs Link</th>
</tr>
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<tbody>
<tr>
<td>None</td>
<td>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: <a href="http://www.cisco.com/go/mibs">http://www.cisco.com/go/mibs</a></td>
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RFCs

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Technical Assistance

<table>
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<tr>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.</td>
<td><a href="http://www.cisco.com/techsupport">http://www.cisco.com/techsupport</a></td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.</td>
<td></td>
</tr>
</tbody>
</table>

Feature Information for ATM OAM Ping

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 www.cisco.com/go/cfn. An account on Cisco.com is not required.

Table 1: Feature Information for ATM OAM Ping

<table>
<thead>
<tr>
<th>Feature Name</th>
<th>Releases</th>
<th>Feature Information</th>
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<tbody>
<tr>
<td>ATM OAM Ping</td>
<td>Cisco IOS XE Release 2.3</td>
<td>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. The following command was introduced or modified: <strong>ping atm interface atm.</strong></td>
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