ATM Conditional Debug Support

First Published: May 7, 2004
Last Updated: November 20, 2009

Most ATM debugging commands are implemented either at the system level or at the interface level. The ATM Conditional Debug Support feature uses the **debug condition interface** command for debugging to be limited specifically to an ATM interface, to a virtual channel identifier (VCI), or to a virtual path identifier/virtual channel identifier (VPI/VCI) pair.

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 ATM Conditional Debug Support" section on page 8.

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.

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

Prerequisites for ATM Conditional Debug Support

Before you can use the ATM Conditional Debug Support feature, one or more ATM-encapsulated interfaces must be enabled, and one or more of the following **debug** commands must be enabled:

- **debug atm arp**
- **debug atm counters**
- **debug atm errors**
- **debug atm events**
- **debug atm oam**
- **debug atm packet**
- **debug atm state**

Restrictions for ATM Conditional Debug Support

- Only the ATM debugging commands listed in the "Prerequisites for ATM Conditional Debug Support" section on page 2 can use the ATM Conditional Debug Support feature.
- Conditional debugging for virtual circuits (VCs) can be enabled only for permanent virtual circuits (PVCs). Switched virtual circuits (SVCs) are not supported.

Information About ATM Conditional Debug Support

Before using the ATM Conditional Debug Support feature, you should understand the following concept:

- ATM Debugging Extended to the Virtual Circuit Level

ATM Debugging Extended to the Virtual Circuit Level

The ATM **debug** commands are implemented either at the interface level or at the system level. The **debug** command output at these levels is not very useful when the user is interested in a particular set of VCs.

The Cisco IOS software has the infrastructure to support conditional debugging based on various filters that are set at the command-line interface (CLI). The conditional debugging infrastructure can filter out or suppress unwanted messages from the output of any existing debug command. The ATM Conditional Debug Support feature extends the support of this infrastructure to enable conditional debugging at the ATM VC level by extending the **debug condition interface** command with keywords that address specific virtual circuits. This feature can be implemented on top of conventional debugging, so that backward compatibility is ensured and at the same time applications can take advantage of conditional debugging where required. However, the extended **debug condition interface** command has priority over the older version of the command; that is, a debug condition setting using the older **debug condition interface** command will be discarded as soon as a new debug condition is enabled on a virtual circuit.

How to Configure Conditional Debugging on ATM Interfaces

The following sections describe how to configure an ATM PVC for conditional debugging and enable debugging for the ATM interface:

- Enabling Debugging for the ATM Interface (required)
- Verifying ATM Conditional Debug Support (optional)

Enabling Debugging for the ATM Interface

The task in this section enables conditional debugging on a set of specified interfaces. For information on configuring an ATM interface, refer to the documents listed in the "Additional References" section on page 6.

Prerequisites

You must turn on ATM debugging and specify the conditions (interface, VCI, or VPI/VCI pair) for the ATM Conditional Debug Support feature to work.

SUMMARY STEPS

1. **enable**
2. **debug atm** [**arp** | **counters** | **errors** | **events** | **oam** | **packet** | **state**]
3. **debug condition interface** *interface-type interface-number* [**vc** {*vci* | *vpi*/*vci*}]

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**debug atm** [**arp** | **counters** | **errors** | **events** | **oam** | **packet** | **state**] **Example:** `Router# debug atm state`	Displays various ATM events.
Step 3	**debug condition interface** *interface-type interface-number* [**vc** {*vci* | *vpi*/*vci*}] **Example:** `Router# debug condition interface atm 2/0 vc 255/62610`	Limits output for debugging according to the interface or ATM VC number.

Verifying ATM Conditional Debug Support

To verify that the ATM Conditional Debug Support feature is working correctly, perform this task.

SUMMARY STEPS

1. **enable**
2. **show debug condition**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**show debug condition** **Example:** `Router# show debug condition`	Displays filtered debug condition.

Configuration Examples for ATM Conditional Debug Support

This section provides the following configuration example:

- Enabling Debugging for a Specific ATM Interface and VPI/VCI Pair: Example, page 4
- Enabling Debugging for a Specific VCI: Example, page 5

Enabling Debugging for a Specific ATM Interface and VPI/VCI Pair: Example

The following example enables an ATM interface, specifies an IP address for the interface, enables conditional debugging for that interface with a VPI/VCI pair of 255/62610, and verifies that debugging has been enabled:

```
Router> enable

Password:
Router# configure terminal

Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)# interface atm 2/0
Router(config-if)# ip address 209.165.201.2 255.255.255.0
Router(config-if)# pvc 255/62610
Router(config-if-atm-vc)# no shutdown
Router(config-if)# exit
Router(config)# exit
Router#

2w3d: %SYS-5-CONFIG_I: Configured from console by console

Router# debug atm state

ATM VC States debugging is on
Router# debug condition interface atm 2/0 vc 255/62610
Condition 1 set
Router#
2w3d: ATM VC Debug: Condition 1, atm-vc 255/62610 AT2/0 triggered, count 1
```

```
Router# show debug condition

Condition 1: atm-vc 255/62610 AT2/0 (1 flags triggered)
        Flags: ATM VC
```

Enabling Debugging for a Specific VCI: Example

The following example shows how to enable conditional debugging on a specific VCI. Note that when you enable conditional debugging on a specific VCI alone, the VPI value is automatically set to “0".

```
Router# debug condition interface atm 1/0 vc 4335

Condition 1 set

Router# configure terminal

Enter configuration commands, one per line.  End with CNTL/Z.

Router(config)# interface atm 1/0
Router(config-if)# pvc 4335
Router(config-if-atm-vc)# end
Router#

*Jul 12 21:46:52.487: atmdx_setup_vc(ATM1/0): vc=5, vpi=0, vci=4335,  config_status=0
*Jul 12 21:46:52.487: atmdx_setup_cos(ATM1/0): vc=5, wred_name=, max_q=0
*Jul 12 21:46:52.487: ATM VC Debug: Condition 1, atm-vc 0/4335 AT1/0 triggered, count 1
*Jul 12 21:46:52.487: ATM1/0 Current Active VC count 4

*Jul 12 21:46:52.487:  ATM VC notification event 0
*Jul 12 21:46:52.487: atmdx_platform_set_vc_state(ATM1/0): Setting the VC 5 state to UP
*Jul 12 21:46:52.487: ATM: PVC activated, ATM1/0 VCD 5 (0/4335)
*Jul 12 21:46:52.487:  ATM VC notification event 2
*Jul 12 21:46:52.487: %SYS-5-CONFIG_I: Configured from console by console


Router# show atm vc

Codes: DN - DOWN, IN - INACTIVE

           VCD /                                              Peak Av/Min Burst
Interface  Name         VPI   VCI Type    Encaps     SC     Kbps   Kbps Cells St
1/0        1              0    16 PVC     ILMI       UBR  149760              UP
1/0.10     4              0   100 PVC     SNAP       UBR  149760              UP
1/0        5              0  4335 PVC     SNAP       UBR  149760              UP
1/0.1      one            1    40 PVC     SNAP       UBR  149760              UP
1/0        2              3   100 PVC-A   SNAP       VBR    1000   1000     0 IN
4/ima1     1             23    34 PVC     SNAP       UBR       0              IN
```

Additional References

The following sections provide references related to the ATM Conditional Debug Support feature.

Related Documents

Related Topic	Document Title
ATM commands: complete command syntax, defaults, command mode, command history, usage guidelines, and examples.	*Cisco IOS Asynchronous Transfer Mode Command Reference*
Conditionally triggered debugging	"Conditionally Triggered Debugging" chapter in the *Cisco IOS Debug Command Reference*
Configuring ATM	*Configuring ATM Feature Guide*
Cisco IOS commands	*Cisco IOS Master Commands List, All Releases*

Standards

Standard	Title
None	—

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
The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies. 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. Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

Feature Information for ATM Conditional Debug Support

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 Conditional Debug Support

Feature Name	Releases	Feature Information
ATM Conditional Debug Support	12.0(28)S 12.2(27)SBC 12.2(28)SB 12.2(33)SRE 15.0(1)M	ATM Conditional Debug Support feature allows debugging to be limited specifically to an ATM interface, to a VCI or to a VPI/VCI pair. The following section provides information about this feature: • ATM Debugging Extended to the Virtual Circuit Level, page 2 The following command was modified: **debug condition interface**.