



## **Troubleshooting Guide, Cisco IOS XE Release 3S (Cisco ASR 1000)**

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# Conditional Debugging

The Conditional Debugging feature allows you to selectively enable debugging and logging for the specific features based on the set of conditions you define.

This module provides information about how to use the Conditional Debugging feature on a Cisco ASR 1000 platform.



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**Note** Do not perform the conditional debugging for your feature without the support of the Cisco Technical Assistance Center (TAC).

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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 Conditional Debugging

The Conditional Debugging feature allows you to filter out the debug information displayed based on the interface and conditions you specify. This feature is useful in systems where a large number of features are supported, and operates simultaneously across layered stacks spanning from control plane to data plane. The control plane deals with the configurations defined, and the data plane deals with the packet flow. Depending on where you want to see the logs, you can either enable control plane or data plane.

The Conditional Debugging feature reduces the performance impact caused by a given feature's debug output. It allows the feature to be more consistent in how they configure and present the debug output.

## Restrictions for Conditional Debugging

When troubleshooting a problem, you have to provide a specific debug statement rather than a broad **debug** command. Providing a broad **debug** command consumes a lot of system resources and impacts the system performance.

## Configuring Conditional Debugging

### Before You Begin

You need to understand these sequence of steps before you start conditional debugging on your system:

- First, define a set of conditions. The common conditions examples are, interface, access list, IP address, and so on.
- Secondly, enable conditional debugging for the specific set of features.
- Finally, start the conditional debug on your system.

To configure the Conditional Debugging feature, perform the following procedure.

## Procedure

	Command or Action	Purpose
<b>Step 1</b>	<p><b>debug platform condition</b> [<b>interface</b> <i>interface</i> ] { [<b>mpls</b>   <b>layer2</b>   <b>access-list</b> <i>access-list name</i> ]   [<b>ipv4</b> <i>ipv4-address/subnet-mask</i>   <b>ipv6</b> <i>ipv6-address/subnet-mask</i> ]   [<b>ingress</b>   <b>egress</b> ] }</p> <p><b>Example:</b></p> <pre>Router# debug platform condition interface gigabitEthernet 0/0/1 ipv4 2.2.2.2/24 ingress</pre>	<p>Defines the conditions applied to the specific features.</p> <p>The access list and IP address are mutually exclusive. If neither access list nor IP address is specified, all the packets are marked for debugging or packet trace.</p> <p>If you do not know what is causing the problem, use the packet trace feature to inspect and narrow down to the specific condition.</p> <p>You cannot modify an applied debug condition. Undo the command by using its no form.</p>
<b>Step 2</b>	<p><b>debug platform condition feature</b> <i>feature name</i> [ <b>control plane</b>   <b>data plane</b> ] [ <b>submode</b> ] [ <b>level</b> {<b>error</b>   <b>info</b>   <b>verbose</b>   <b>warning</b>} ]</p> <p><b>Example:</b></p> <pre>Router# debug platform condition feature ipsec dataplane submode cce level verbose</pre>	<p>Enables conditional debug for the feature you specify.</p> <p>If you do not specify either <b>control plane</b> or <b>data plane</b>, the feature debug is applied to both.</p> <p>(Optional) You can specify the submodes in any order. A submode allows you to drill down and debug a specific feature functionality or event.</p> <p>The <b>level</b> keyword specifies the debug information level. If you do not specify the level, it defaults to <b>info</b>.</p> <p><b>Note</b> The options available will vary according to the feature and keyword you select.</p>
<b>Step 3</b>	<p><b>debug platform condition</b> [ <b>start</b>   <b>stop</b> ]</p> <p><b>Example:</b></p> <pre>Router# debug platform condition start</pre>	<p>Starts conditional debugging on your system.</p>

## Configuration Examples for Conditional Debugging

### Example: Configuring Conditional Debugging

The following example shows how to enable debug for packets matching access list 100 and destination IPv4 address 10.1.1.1 on interface Gi0/0/1, and to enable conditional debug for the CEF-MPLS feature:

```
Router# access-list 100 permit ip any 10.1.1.1
Router# debug platform condition interface Gi0/0/1 access-list 100
Router# debug platform condition feature cef-mpls datapath level info
Router# debug platform condition start
```

The following example shows how to enable debug for packets matching access list 2700, matching mpls packets with a label of 16, on interface Gi0/0/1, and to enable conditional debug for the CEF-MPLS feature:

```
Router# access-list 2700 permit any 16 any any
Router# debug platform condition interface Gi0/0/1 access-list 2700
Router# debug platform condition feature cef-mpls datapath
Router# debug platform condition start
```

The following example shows how to enable debug for packets matching access list 700 that matches the specified MAC address on interface Gi0/0/1 efp-id 100, and to enable conditional debug for the EVC feature:

```
Router# access-list 700 permit 0000.0001.0002 0000.0000.0000
Router# debug platform condition interface Gi0/0/1 efp-id 100 access-list 700
Router# debug platform feature evc datapath
Router# debug platform condition start
```

## Example: Verifying Conditional Debugging Information

The following is a sample configuration of the **show platform condition** command :

```
Router# show platform condition
```

Conditional Debug Global State: Start

Conditions	Direction
VoIP-Null0	& IPV4 [2.2.2.2/24] both
LI-Null0	& IPV4 [2.2.2.2/24] both
GigabitEthernet0	& IPV4 [2.2.2.2/24] both
LIIN0	& IPV4 [2.2.2.2/24] both
GigabitEthernet0/0/0	& IPV4 [2.2.2.2/24] both
GigabitEthernet0/0/1	& IPV4 [2.2.2.2/24] both
GigabitEthernet0/1/0	& IPV4 [2.2.2.2/24] both
GigabitEthernet0/1/1	& IPV4 [2.2.2.2/24] both
GigabitEthernet0/3/0	& IPV4 [2.2.2.2/24] both
GigabitEthernet0/3/1	& IPV4 [2.2.2.2/24] both
GigabitEthernet0/3/6	& IPV4 [2.2.2.2/24] both
GigabitEthernet0/3/7	& IPV4 [2.2.2.2/24] both
Loopback1	& IPV4 [2.2.2.2/24] both
Overlay10	& IPV4 [2.2.2.2/24] both
Overlay30	& IPV4 [2.2.2.2/24] both
GigabitEthernet0/0/4.20	& IPV4 [2.2.2.2/24] both
Internal-RP	& IPV4 [2.2.2.2/24] both
Internal-Recycle	& IPV4 [2.2.2.2/24] both
GigabitEthernet0/0/2.EFP100	& IPV4 [2.2.2.2/24] both

Use the **clear platform condition all** command to remove the debug conditions applied to the platform.



### Note

Effective with Cisco IOS XE Release 3.13S, enabling the crypto conditional debugging enables platform conditional debugging also. Thus, the **show debug condition** command displays the enabled platform feature debugs and the **show crypto condition** command displays the enabled crypto conditional debugs. The **un all** command turns off crypto debugs only, not the platform debugs.

## Additional References

### Related Documents

Related Topic	Document Title
Cisco IOS commands	<a href="#">Cisco IOS Master Commands List, All Releases</a>
QoS commands	<i>Cisco IOS QoS Command Reference</i>

### Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	<a href="http://www.cisco.com/cisco/web/support/index.html">http://www.cisco.com/cisco/web/support/index.html</a>

## Feature Information for Conditional Debugging

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](http://www.cisco.com/go/cfn). An account on Cisco.com is not required.

**Table 1: Feature Information for Conditional Debugging**

Feature Name	Releases	Feature Information
Conditional Debugging	Cisco IOS XE 3.13S	The Conditional Debugging feature allows you to selectively enable debugging and logging for the specific features based on the set of conditions you define.

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