



# DHCP Gleaning

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This document describes the Dynamic Host Configuration Protocol Gleaning feature.

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

## Prerequisites for DHCP Gleaning

- Ensure that the interface to be configured is a Layer 2 interface.
- Ensure that global snooping is enabled.

# Information About DHCP Gleaning

## Overview of DHCP Gleaning

Gleaning helps extract location information from Dynamic Host Configuration Protocol (DHCP) messages when messages are forwarded by a DHCP relay agent; the process is a completely passive snooping functionality that neither blocks nor modifies DHCP packets. Additionally, glean helps to differentiate an untrusted device port that is connected to an end user from a trusted port connected to a DHCP server.

DHCP glean is a read-only DHCP snooping functionality that allows components to register and glean only DHCP version 4 packets. When you enable DHCP glean, it does a read-only snooping on all active interfaces on which DHCP snooping is disabled. You can add a secondary VLAN to a private VLAN. When you add a secondary VLAN to a private VLAN, ensure that glean is enabled on the secondary VLAN, even though snooping is disabled on the primary VLAN. By default, the glean functionality is disabled. However, when you enable a device sensor, DHCP glean is automatically enabled.

## DHCP Snooping

Dynamic Host Configuring Protocol (DHCP) snooping is a security feature that acts like a firewall between untrusted hosts and trusted DHCP servers. The DHCP snooping feature performs the following activities:

- Validates DHCP messages received from untrusted sources and filters out invalid messages.
- Rate-limits DHCP traffic from trusted and untrusted sources.
- Builds and maintains the DHCP snooping binding database, which contains information about untrusted hosts with leased IP addresses.
- Utilizes the DHCP snooping binding database to validate subsequent requests from untrusted hosts.

Other security features, such as dynamic Address Resolution Protocol (ARP) inspection (DAI), also uses information stored in the DHCP snooping binding database.

DHCP snooping is enabled on a per-VLAN basis. By default, the feature is inactive on all VLANs. You can enable the feature on a single VLAN or on a range of VLANs.

## How to Configure DHCP Gleaning

### Configuring an Interface as a Trusted or an Untrusted Source for DHCP Gleaning

You can enable or disable DHCP glean on a device. You can configure an interface as a trusted or untrusted source of DHCP messages. Verify that no DHCP packets are dropped when DHCP glean is enabled on an untrusted interface or on a device port.

**Note**

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By default, DHCP glean is disabled.

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You can configure DHCP trust on the following types of interfaces:

- Layer 2 Ethernet interfaces
- Layer 2 port-channel interfaces



**Note** By default, all interfaces are untrusted.

## SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ip dhcp snooping glean**
4. **interface** *type number*
5. **[no] ip dhcp snooping trust**
6. **end**
7. **show ip dhcp snooping statistics**
8. **show ip dhcp snooping**

## DETAILED STEPS

	Command or Action	Purpose
Step 1	<b>enable</b>  <b>Example:</b> Device> enable	Enables privileged EXEC mode.  • Enter your password if prompted.
Step 2	<b>configure terminal</b>  <b>Example:</b> Device# configure terminal	Enters global configuration mode.
Step 3	<b>ip dhcp snooping glean</b>  <b>Example:</b> Device(config)# ip dhcp snooping glean	Enables DHCP gleaning on an interface.
Step 4	<b>interface</b> <i>type number</i>  <b>Example:</b> Device(config)# interface gigabitEthernet 1/0/1 Device(config-if)#	Enters interface configuration mode, where <i>type number</i> is the Layer 2 Ethernet interface which you want to configure as trusted or untrusted for DHCP snooping.

	Command or Action	Purpose
Step 5	<b>[no] ip dhcp snooping trust</b>  <b>Example:</b> Device(config-if)# ip dhcp snooping trust	Configures the interface as a trusted interface for DHCP snooping. The <b>no</b> option configures the port as an untrusted interface.
Step 6	<b>end</b>  <b>Example:</b> Device(config-if)# end	Exits interface configuration mode and returns to privileged EXEC mode.
Step 7	<b>show ip dhcp snooping statistics</b>  <b>Example:</b> Device# show ip dhcp snooping statistics	Displays packets that were dropped on the device port configured as an untrusted interface.
Step 8	<b>show ip dhcp snooping</b>  <b>Example:</b> Device# show ip dhcp snooping	Displays DHCP snooping configuration information, including information about DHCP gleaning.

## Configuration Examples for DHCP Gleaning

### Example: Configuring an Interface as a Trusted or an Untrusted Source for DHCP Gleaning

This example shows how to enable Dynamic Host Configuration Protocol (DHCP) gleaning and configure an interface as a trusted interface:

```
configure terminal
ip dhcp snooping glean
interface gigabitEthernet 1/0/1
ip dhcp snooping trust
exit
```

## Additional References

### Related Documents

Related Topic	Document Title
Master Commands List	<a href="#">Cisco IOS Master Commands List</a>

Related Topic	Document Title
DHCP Commands	<a href="#">Cisco IOS IP Addressing Services Command Reference</a>
IP Source Guard	<a href="#">IP Source Guard</a>
Dynamic ARP Inspection	<a href="#">Configuring Dynamic ARP Inspection</a>

### Standards and RFCs

Standard/RFC	Title
RFC-2131	<a href="#">Dynamic Host Configuration Protocol</a>
RFC-4388	<a href="#">DHCP Leasequery</a>

### MIBs

MIB	MIBs Link
	To locate and download MIBs for selected platforms, Cisco IOS 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>

### 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/support">http://www.cisco.com/support</a>

## Feature Information for DHCP Gleaning

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 DHCP Gleaning**

Feature Name	Releases	Feature Information
DHCP Gleaning	Cisco IOS 15.2(1)E Cisco IOS 15.2(2)E	<p>This document describes the DHCP Gleaning feature.</p> <p>In Cisco IOS Release 15.2(2)E, this feature is supported on the following platforms:</p> <ul style="list-style-type: none"> <li>• Cisco Catalyst 3750-E Series Switches</li> <li>• Cisco Catalyst 2960-S Series Switches</li> </ul> <p>The following commands were introduced or modified for this feature: <b>ip dhcp snooping glean</b>, <b>show ip dhcp snooping</b></p>