

DHCP-Snooping Configuration Commands

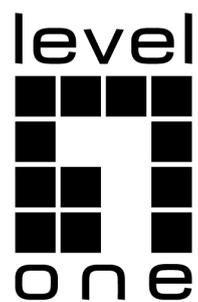


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Chapter 1 DHCP-Relay Snooping Configuration Commands

The DHCP-relay snooping configuration commands include:

- ip dhcp-relay snooping
- ip dhcp-relay snooping vlan
- ip dhcp-relay snooping vlan vlan_id max-client
- ip dhcp-relay snooping log
- ip dhcp-relay snooping rapid-refresh-bind
- dhcp-relay snooping information option
- ip verify source vlan
- ip arp inspection vlan
- ip source binding
- arp inspection trust
- dhcp snooping trust
- ip-source trust
- dhcp snooping deny
- dhcp snooping information circuit-id
- dhcp snooping information remote-id
- dhcp snooping information vendor-specific
- dhcp snooping information append
- dhcp snooping information drop
- dhcp snooping information replace
- dhcp snooping information transmit
- show ip dhcp-relay snooping
- show ip dhcp-relay snooping binding
- show ip dhcp-relay snooping statistics
- show ip dhcp-relay snooping debug
- show ip dhcp-relay snooping run-config

- debug ip dhcp-relay snooping
- debug ip dhcp-relay event
- debug ip dhcp-relay binding
- debug ip dhcp-relay all

1.1.1 ip dhcp-relay snooping

Syntax

ip dhcp-relay snooping

no ip dhcp-relay snooping

To enable or disable the DHCP-relay snooping function in a VLAN, run **ip dhcp-relay snooping**. To resume the corresponding default settings, run **no dhcp-relay snooping**.

Parameter

None

Default

The dhcp-relay snooping function is disabled by default.

Usage Guidelines

None

Example

The following example shows how to enable the DHCP-relay snooping function:

```
Switch(config)#ip dhcp-relay snooping
Switch(config)#
```

1.1.2 ip dhcp-relay snooping vlan

Syntax

ip dhcp-relay snooping vlan *vlan_id*

no ip dhcp-relay snooping vlan *vlan_id*

Parameter

| Parameter | Description |
|----------------|----------------------------|
| <i>vlan_id</i> | ID of a VLAN Range: 1-4094 |

Default

None

Usage Guidelines

This command is used to configure the VLAN of DHCP snooping.

Example

The following example shows how to conduct the snooping inspection to the DHCP packets in VLAN2.

```
Switch(config)#ip dhcp-relay snooping vlan 2
Switch(config)#
```

1.1.3 ip dhcp-relay snooping vlan *vlan_id* max-client

Syntax

ip dhcp-relay snooping vlan *vlan_id* max-client *number*

no ip dhcp-relay snooping vlan *vlan_id* max-client

Parameter

| Parameter | Description |
|----------------|---|
| <i>vlan_id</i> | VLAN id. The value ranges from 1 to 4094. |
| <i>number</i> | The max user number: 0~65535 |

Default

The max user number is 65535 by default.

Usage Guidelines

You can use this command to set the maximum users in a VLAN of DHCP snooping. During this settings, the principle “first come and first be distributed” will be followed. When the number of users in the VLAN reaches the maximum value, new clients are then forbidden to distribute.

Example

The following example shows how to set snooping detection for DHCP packets on VLAN 2 and the number of maximum users is 3.

```
Switch(config)#ip dhcp-relay snooping vlan 2 max-client 3
Switch(config)#
```

1.1.4 ip dhcp-relay snooping log

Syntax

```
ip dhcp-relay snooping log
no ip dhcp-relay snooping log
```

Parameter

None

Default

None

Usage Guidelines

After this function is enabled, if there are any packet of dhcp server in the untrusted port, the syslog indicates that there is an illegal dhcp server.

Example

The following example shows how to enable the log function of dhcp snooping.

```
Switch(config)#ip dhcp-relay snooping log
Switch(config)#
```

1.1.5 ip dhcp-relay snooping rapid-refresh-bind

Syntax

```
ip dhcp-relay snooping rapid-refresh-bind
no ip dhcp-relay snooping rapid-refresh-bind
```

To enable dhcp snooping rapid refresh item function, run the first one of the above commands. To return to the default setting, use the no form of this command.

Parameter

None

Default

None

Usage Guidelines

After this function is enabled, the DHCP attack of fake MAC will be closed; when the client is allowed to change the access port, the IP address can be directly acquired without waiting for the expiration of the IP lease.

After this function is enabled, if the client changes its access port, the device with snooping enabled will take it as the dhcp packet attack of the fake mac and drop the dhcp packets.

Example

None

1.1.6 dhcp-relay snooping information option

Syntax

```
ip dhcp-relay snooping information option [ format snmp-ifindex | manual | cm-type|hw-type | hn-type [host] ]
```

```
no ip dhcp-relay snooping information option [ format snmp-ifindex | manual | cm-type|hw-type | hn-type [host] ]
```

Parameter

| Parameter | Description |
|------------------------------|--|
| format snmp-ifindex | Fills in option 82 in SNMP ifindex mode (optional). |
| format manual | Fills in option 82 manually (optional). |
| format cm-type | Fills in option 82 in cm-type mode (optional). |
| format hw-type | Fills in option 82 in hw-type mode (optional). |
| format hn-type [host] | Fills in option 82 in cisco mode (optional). Host indicates the device is the master switch. |

Default

Option 82 will not be added to or removed from the report by default.

Usage Guidelines

This command is used to set whether DHCP option82 can be handled when a switch is conducting DHCP snooping. If **format snmp-ifindex** is designated, use the **SNMP ifindex** mode to fill in option 82; If **format manual** is designated, use the string configured on each port with the command "dhcp snooping information circuit-id string" to fill in the circuit-id option of option82; if **cm-type** is designated, means that the mac obtained by remote-id is cpu mac; if **format hw-type** is designated, fill in option82 in huawei format; otherwise, fill in option 82 according to RFC3046.

Example

The following example shows how to fill in option 82 in **SNMP ifindex** mode:

```
Switch(config)#ip dhcp-relay snooping
Switch(config)#ip dhcp-relay snooping information option format snmp-ifindex
```

The following example shows how to fill in option 82 in **manual** mode:

```
Switch(config)#ip dhcp-relay snooping
Switch(config)#ip dhcp-relay snooping vlan [WORD] // [WORD] is the vlan name that
means need for enable snooping function
Switch(config)# ip dhcp-relay snooping information option format manual
```

1.1.7 ip verify source vlan

Syntax

ip verify source vlan *vlanid*

no ip verify source vlan *vlanid*

Parameter

| Parameter | Description |
|----------------|----------------------------|
| <i>vlan id</i> | ID of a VLAN Range: 1-4094 |

Default

None

Usage Guidelines

This command is used to configure a VLAN for monitoring the source IP address. The “no” form of this command is used to cancel this VLAN. If the source IP and source MAC of the IP packet are not the legal client address assigned by the dhcp server monitored by dhcp snooping, then such a packet is regarded as an illegal packet in the vlan with IP source address monitoring enabled, and the packet is discarded Text.

Example

The following example shows how to conduct source IP address monitoring to the packets from all physical interfaces (except trusted interfaces) in VLAN2.

```
Switch(config)#ip verify source vlan 2
Switch(config)#
```

1.1.8 ip arp inspection vlan

Syntax

ip arp inspection vlan *vlanid*

no ip arp inspection vlan *vlanid*

Parameter

| Parameter | Description |
|----------------|--|
| <i>vlan id</i> | Queries the time of the timer. Range: 1-4094 |

Default

None

Usage Guidelines

This command is used to configure a VLAN for monitoring the source address of the ARP packet. The “no” form of this command is used to cancel this VLAN. Under the VLAN that enables ARP packet source address monitoring, ARP packets with SIP and SMAC corresponding to the IP address and mac address assigned by the dhcp server to the client are discarded.

Example

The following example shows how to conduct source address monitoring to the ARP packets from all physical interfaces (except trusted interfaces) in VLAN2.

```
Switch(config)#ip arp inspection vlan 2
Switch(config)#
```

1.1.9 ip source binding

Syntax

ip source binding *xx:xx:xx:xx:xx:xx A.B.C.D interface name vlan vlan-id*

no ip source binding *xx:xx:xx:xx:xx:xx A.B.C.D vlan vlan-id*

To add MAC-to-IP binding to an interface, run **ip source binding *xx-xx-xx-xx-xx-xx A.B.C.D interface name***.

Parameter

| Parameter | Description |
|--------------------------|-----------------------|
| <i>xx-xx-xx-xx-xx-xx</i> | MAC address. |
| <i>A.B.C.D</i> | IP address |
| <i>Name</i> | Name of the interface |
| <i>vlan-id</i> | vlan id number |

Default

None

Usage Guidelines

None

Example

The following example shows how to bind MAC address **08:00:3e:00:00:01** to IP address **192.168.1.2** on interface g0/0/1.

```
Switch(config)#ip source binding 08:00:3e:00:00:01 192.168.1.2 interface g0/0/1
Switch(config)#
```

1.1.10 arp inspection trust

Syntax

arp inspection trust

no arp inspection trust

Parameter

None

Default

The interfaces are distrusted ones by default.

Usage Guidelines

The ARP monitoring is not conducted to the ARP-trusted interface. The “no” form of this command is used to configure the Default of this interface.

Example

The following example shows how to set interface GigaEthernet0/0/1 to an ARP-trusted interface.

```
Switch(config-g0/0/1)#arp inspection trust
```

1.1.11 dhcp snooping trust

Syntax

dhcp snooping trust

no dhcp snooping trust

Parameter

None

Default

The default interface is a distrusted one.

Usage Guidelines

DHCP snooping is not conducted to the DHCP-trusted interface. The “no” form of this command is used to resume the Default of this interface.

Example

The following example shows how to set interface GigaEthernet0/0/1 to a DHCP-trusted interface.

```
Switch(config-g0/0/1)#dhcp snooping trust
```

1.1.12 dhcp snooping deny

Syntax

dhcp snooping deny
no dhcp snooping deny

Parameter

None

Default

DHCP snooping is allowed on the default interface.

Usage Guidelines

After this command is configured, DHCP snooping trust, IP-sourcetrust and ARP inspection trust are automatically enabled. The “no” form of this command is used to configure the Default of this interface.

Example

The following example shows how to disable DHCP snooping on interface GigaEthernet0/0/1.

```
Switch(config-g0/0/1)#dhcp snooping deny
```

1.1.13 dhcp snooping information circuit-id

Syntax

dhcp snooping information circuit-id {string *STRING* | hex *xx-xx-xx-xx-xx-xx*}

Parameter

| Parameter | Description |
|-------------------------------------|---|
| string <i>STRING</i> | Stands for the character string carried by the sub-option of option82 circuit-id. |
| hex <i>xx-xx-xx-xx-xx-xx</i> | Stands for the Hex system carried by option82 circuit-id. |

Default

None

Usage Guidelines

This command can be set on each port that connects the client. This command is used to configure option82 of the DHCP packet, which is sent by DHCP client to DHCP server and monitored by DHCP snooping. (The switch of manually set option82 need be enabled. See the command, **ip dhcp-relay snooping information option format manual**)

Example

The following example shows how to set option82 to group1 manually on interface g1/3, which belongs to interface g0/0/3.

```
Switch(config)#ip dhcp-relay snooping
```

```
Switch(config)#ip dhcp-relay snooping vlan 1
```

```
Switch(config)#ip dhcp-relay snooping information option format manual
```

```
Switch(config)#interface g0/0/3
```

```
Switch(config-g0/0/3)#dhcp snooping information circuit-id string group1
```

1.1.14 dhcp snooping information remote-id

Syntax

dhcp snooping information remote-id {string *STRING* | hex *xx-xx-xx-xx-xx-xx*}

Parameter

| Parameter | Description |
|------------------------------|--|
| string <i>STRING</i> | Stands for the character string carried by the sub-option of option82 remote-id. |
| hex <i>xx-xx-xx-xx-xx-xx</i> | Stands for the Hex system carried by option82 remote-id. |

Default

None

Usage Guidelines

This command can be set on each port that connects the client. This command is used to configure option82 of the DHCP packet, which is sent by DHCP client to DHCP server and monitored by DHCP snooping. (The switch of manually set option82 need be enabled. See the command, **ip dhcp-relay snooping information option format manual**)

Example

The following example shows how to set option82 to group1 manually on interface g1/3, which belongs to interface g0/0/3.

```
Switch(config)# ip dhcp-relay snooping
```

```
Switch(config)# ip dhcp-relay snooping vlan 1
```

```
Switch(config)# ip dhcp-relay snooping information option format manual
```

```
Switch(config)# interface g0/0/3
```

```
Switch(config-g0/0/3)# dhcp snooping information remote-id string group1
```

1.1.15 dhcp snooping information vendor-specific

Syntax

```
dhcp snooping information vendor-specific { string STRING | hex  
xx-xx-xx-xx-xx-xx }
```

Parameter

| Parameter | Description |
|-------------------------------------|--|
| string <i>STRING</i> | Stands for the character string carried by the sub-option of option82 vendor-specific. |
| hex <i>xx-xx-xx-xx-xx-xx</i> | Stands for the Hex system carried by option82 vendor-specific. |

Default

None

Usage Guidelines

This command can be set on each port that connects the client. This command is used to configure option82 of the DHCP packet, which is sent by DHCP client to DHCP server and monitored by DHCP snooping. (The switch of manually set option82 need be enabled. See the command, **ip dhcp-relay snooping information option format manual**)

Example

The following example shows how to set vendor-specific (suboption 9) of option 82 by the hex system 00-00-00-09-0d-01-0b-78-69-61-6f-6d-69-6e-37-31-31-34 on interface g0/0/3.

```
Switch(config)# ip dhcp-relay snooping
```

```
Switch(config)# ip dhcp-relay snooping vlan 1

Switch(config)#ip dhcp-relay snooping information option format manual

Switch(config)#interface g0/0/3

Switch(config-g0/0/3)# dhcp snooping information vendor-specific hex 00-00-00-09-0d-01-0b-
78-69-61-6f-6d-69-6e-37-31-31-34
```

1.1.16 dhcp snooping information append

Syntax

dhcp snooping information append

dhcp snooping information append first-subop9-param { hex *XX-XX-XX-XX-XX-XX* | hostname | vlanip }

dhcp snooping information append second-subop9-param { hex *XX-XX-XX-XX-XX-XX* | hostname | vlanip }

no dhcp snooping information append

no dhcp snooping information append first-subop9-param

no dhcp snooping information append second-subop9-param

Parameter

| Parameter | Description |
|---|---|
| first-subop9-param hex [<i>xx-xx-xx-xx-xx-xx</i>] | Stands for the Hex system of the first parameter carried by option82 vendor-specific (suboption9). |
| second-subop9-param hex [<i>xx-xx-xx-xx-xx-xx</i>] | Stands for the Hex system of the second parameter carried by option82 vendor-specific (suboption9). |
| hostname | Stands for the host name carried by option82 vendor-specific (suboption9). |
| vlanip | Stands for the IP address of the interface vlan carried by option82 vendor-specific (suboption9). |

Default

None

Usage Guidelines

This command can be set on each port that connects the client. This command is used to configure option82 of the DHCP packet, which is sent by DHCP client to DHCP server and monitored by DHCP snooping.

This command without parameters acts as a switch command. When append is enabled, the information of this command will be added to suboption9 of option82. The added information is first-subop9-param and second-subop9-param.

Example

The following example shows how to expand the packet with option82 on interface g0/0/3 and add parameter 1 for suboption9 with the hex system 61-62-63-61-62-63.

```
Switch(config-g0/0/3)# dhcp snooping information append
Switch(config-g0/0/3)#dhcp snooping information append first-subop9-param hex
61-62-63-61-62-63
```

61-62-63-61-62-63 is the hex system for the added parameter.

1.1.17 dhcp snooping information drop

Syntax

dhcp snooping information drop

no dhcp snooping information drop

Parameter

None

Default

None

Usage Guidelines

This command can be set on each port that connects the client.

After this command is set, the request packets that contain option82 will be dropped on the stipulated port.

Example

The following example shows how to drop the dhcp packet with option82 on interface g0/0/3.

```
Switch(config-g0/0/3)# dhcp snooping information drop
```

1.1.18 dhcp snooping information replace

Syntax

dhcp snooping information replace

no dhcp snooping information replace

Parameter

None

Default

None

Usage Guidelines

This command can be configured on each port the client is connected to.

After this command is configured, option82 in the packets received from the downlink port will be stripped, and then the global configuration option82 will be added.

Example

The following example shows how to configure an alternative to DHCP packets with option82 on port g0/0/3.

```
Switch(config-g0/0/3)# dhcp snooping information replace
```

1.1.19 dhcp snooping information transmit

Syntax

dhcp snooping information transmit

no dhcp snooping information transmit

Parameter

None

Default

None

Usage Guidelines

This command can be configured on each port the client is connected to.

After this command is configured, the dhcp packets with option82 from the relay can be directly forwarded without packet loss.

Example

The following example shows how to configure forwarding of DHCP packets with option82 on port g0/0/3.

```
Switch(config-g0/0/3)# dhcp snooping information transmit
```

1.1.20 ip-source trust

Syntax

ip-source trust

no ip-source trust

Parameter

None

Default

The default interface is a distrusted one.

Usage Guidelines

Source IP address snooping is not conducted to the source-IP-trusted interface. The “no” form of this command is used to resume the Default of this interface.

Example

The following example shows how to set interface GigaEthernet1/1 to a source-ip-trusted interface.

```
Switch_config_g1/1#ip-source trust
```

1.1.21 show ip dhcp-relay snooping

Syntax

show ip dhcp-relay snooping

Parameter

None

Default

None

Usage Guidelines

This command is used to display the information about DHCP-relay snooping configuration.

Example

The following example shows how to display the information about DHCP-relay snooping configuration.

```
Switch(config)#show ip dhcp-relay snooping
```

1.1.22 show ip dhcp-relay snooping binding

Syntax

show ip dhcp-relay snooping binding [all]

Parameter

None

Default

None

Usage Guidelines

This command is used to display the binding information about DHCP-relay snooping.

If the **all** parameter is in the command sentence, all binding information about DHCP-relay snooping will be displayed.

Example

The following example shows how to display the binding information about DHCP-relay snooping.

```
Switch(config)#show ip dhcp-relay snooping binding
```

1.1.23 show ip dhcp-relay snooping statistics

Syntax

show ip dhcp-relay snooping statistics

Parameter

None

Default

None

Usage Guidelines

This command is used to display the data information of dhcp-relay snooping.

Example

The following example shows how to display the data information of dhcp-relay snooping.

```
Switch(config)#show ip dhcp-relay snooping statistics
```

1.1.24 show ip dhcp-relay snooping debug

Syntax

show ip dhcp-relay snooping debug

Parameter

None

Default

None

Usage Guidelines

This command is used to display the debug information of enabling dhcp-relay snooping.

Example

The following example shows how to enable debug information for dhcp-relay snooping.

```
Switch(config)#show ip dhcp-relay snooping debug
```

1.1.25 show ip dhcp-relay snooping run-config

Syntax

```
show ip dhcp-relay snooping run-config [interface name]
```

Parameter

None

Default

None

Usage Guidelines

This command is used to display the global or port configuration information of dhcp-relay snooping.

Example

The following example shows how to display the global configuration information for dhcp-relay snooping.

```
Switch(config)#show ip dhcp-relay snooping run-config
```

1.1.26 debug ip dhcp-relay snooping

Syntax

debug ip dhcp-relay snooping

no debug ip dhcp-relay snooping

Parameter

None

Default

None

Usage Guidelines

This command is used to enable or disable the debugging switch of DHCP-relay snooping.

Example

The following example shows how to enable the debugging switch of DHCP-relay snooping.

```
Switch#debug ip dhcp-relay snooping  
Switch#
```

1.1.27 debug ip dhcp-relay event

Syntax

debug ip dhcp-relay eventr

no debug ip dhcp-relay event

Parameter

None

Default

None

Usage Guidelines

This command is used to enable or disable the event debugging switch of DHCP-relay.

Example

The following example shows how to enable the event debugging switch of DHCP-relay.

```
Switch#debug ip dhcp-relay event
Switch#
```

1.1.28 debug ip dhcp-relay binding

Syntax

```
debug ip dhcp-relay binding
no debug ip dhcp-relay binding
```

Parameter

None

Default

None

Usage Guidelines

This command is used to enable or disable the binding debugging switch of DHCP-relay snooping.

Example

The following example shows how to enable the binding debugging switch of DHCP-relay snooping.

```
Switch#debug ip dhcp-relay binding
Switch#
```

1.1.29 debug ip dhcp-relay all

Syntax

```
debug ip dhcp-relay all
```

no debug ip dhcp-relay all

Parameter

None

Default

None

Usage Guidelines

This command is used to turn on/off all debugging switches of Dhcp-relay, including binding, event, and snooping.

Example

The following example shows how to turn on all the debugging switches of dhcp-relay.

```
Switch#debug ip dhcp-relay all  
Switch#
```