



DHCP—Subscriber Identifier Suboption of Option82

The DHCP—Subscriber Identifier Suboption of Option82 feature adds a unique identifier that is a configurable string in the relay agent information option (option82.) The unique identifier enables an Internet Service Provider (ISP) to identify a subscriber, to assign specific actions to that subscriber (for example, assignment of host IP address, subnet mask, and domain name server [DNS]), and to trigger accounting.

In previous Cisco IOS releases, if a subscriber moved, each ISP had to be informed of the change and all of the ISPs had to change the DHCP settings for the affected customers at the same time. Even if the service was not changed, every move involved administrative changes in the ISP environment causing a delay in the customer service.

History for the DHCP—Subscriber Identifier Suboption of Option 82 Feature

Release	Modification
12.3(14)T	This feature was introduced.
12.2(27)SBA	This feature was integrated into Cisco IOS Release 12.2(27)SBA.

Finding Support Information for Platforms and Cisco IOS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS software image support. Access Cisco Feature Navigator at <http://www.cisco.com/go/fn>. You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

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How to Configure DHCP—Subscriber Identifier Suboption of Option 82

This section contains the following procedure:

- [Configuring the Unique Subscriber Identifier, page 2](#) (required)

Configuring the Unique Subscriber Identifier

When the unique subscriber identifier is configured on the interface of the relay agent, the identifier is added to option82 in all of the client DHCP packets to the DHCP server. When the server echoes option82 in the reply packets, the relay agent removes option82 before forwarding the reply packet to the client. When an interface is numbered, all renew packets and release packets are unicast to the server, so option82 is not added.

In case of unnumbered interfaces, all the client packets are sent to the relay. Option82 is added in all the client packets before forwarding the packets to the server. If the server does not echo option82 in the packet, and if the relay agent is configured to validate the option in the packet (the default), then the relay agent will drop the packet. If the reply packet does not contain option82, then the validation fails and the packet is dropped by the relay agent. The client cannot get any IP address because of the validation failure. In this case, the existing **no ip dhcp relay information check** command can be used to avoid the option82 invalidation.



Note

The unique identifier should be configured for each subscriber and when a subscriber moves from one interface to the other, the configuration of the interface should be changed also.

Prerequisites

The new configurable subscriber-identifier option should be configured on the interface connected to the client.

The server should be able to recognize the new suboption.

Restrictions

The configurable string is not an option for NAS-IP, because users can move between NAS termination points. When a subscriber moves from one NAS to another, this option does not result in a configuration change on the side of the DHCP server of the ISP.

The string can be ASCII text only.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface** *type number*
4. **ip dhcp relay information option subscriber-id** *string*
5. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	interface <i>type number</i> Example: Router(config)# interface atm4/0.1	Configures an interface and enters interface configuration mode. The arguments are as follows: <ul style="list-style-type: none"> • <i>type</i>—Type of interface to be configured. • <i>number</i>—Interface number. Note Refer to the <i>Cisco IOS Interface and Hardware Component Command Reference</i> , Release 12.3T, for more platform information and the appropriate hardware manual for slot information.
Step 4	ip dhcp relay information option subscriber-id <i>string</i> Example: Router(config-if)# ip dhcp relay information option subscriber-id newsubscriber123	Enables the subscriber-identifier unique identifier. The <i>string</i> argument can be up to a maximum of 50 characters and can be alphanumeric. Note If more than 50 characters are configured, the string is truncated. Note The ip dhcp relay information option subscriber-id command is disabled by default to ensure backward capability.
Step 5	exit Example: Router(config-if)# exit	Exits to global configuration mode.

Configuration Examples for DHCP—Subscriber Identifier Suboption of Option 82

This section provides the following configuration example:

- [ATM Interface Configuration for Subscriber-Identifier Option: Example, page 4](#)

ATM Interface Configuration for Subscriber-Identifier Option: Example

The following example shows how to configure an ATM interface for the subscriber identifier option.

```
ip dhcp relay information option
!
interface Loopback0
 ip address 10.1.1.129 255.255.255.192
!
interface ATM4/0
 no ip address
!
interface ATM4/0.1 point-to-point
 ip helper-address 10.16.1.2
 ip unnumbered Loopback0
 ip dhcp relay information option subscriber-id newperson123
 atm route-bridged ip
 pvc 88/800
 encapsulation aal5snap
```

Additional References

The following sections provide references related to the DHCP—Subscriber Identifier Suboption of Option 82 feature.

Related Documents

Related Topic	Document Title
IP addressing and services configuration tasks	<i>Cisco IOS IP Configuration Guide</i> , Release 12.3
IP addressing and services commands: complete command syntax, command mode, command history, defaults, usage guidelines, and examples	<i>Cisco IOS IP Command Reference, Volume 1 of 4: Addressing and Services</i> , Release 12.3T
DHCP configuration tasks	“Configuring DHCP” chapter of the <i>Cisco IOS IP Configuration Guide</i> , Release 12.3
DHCP Option 82 overview	<i>DHCP Option 82 Support for Routed Bridge Encapsulation</i>

Standards

Standards	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature.	—

MIBs

MIBs	MIBs Link
No new or modified MIBs are supported by this feature, and support for existing MIBs has not been modified by this feature.	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

RFCs	Title
Draft	<i>Subscriber-Identifier Suboption for the DHCP Relay Agent Option</i> (www.ietf.org/internet-drafts/draft-ietf-dhc-subscriber-id-07.txt)

Technical Assistance

Description	Link
Technical Assistance Center (TAC) home page, containing 30,000 pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/public/support/tac/home.shtml

Command Reference

This section documents one new command only.

- [ip dhcp relay information option subscriber-id](#)

ip dhcp relay information option subscriber-id

To specify that a Dynamic Host Configuration Protocol (DHCP) relay agent add a subscriber identifier suboption to option82, use the **ip dhcp relay information option subscriber-id** command in interface configuration mode. To disable the subscriber identifier, use the **no** form of this command.

ip dhcp relay information option subscriber-id *string*

no ip dhcp relay information option subscriber-id *string*

Syntax Description

<i>string</i>	Up to a maximum of 50 characters that can be alphanumeric. The string can be ASCII text only.
Note	If more than 50 characters are configured, the string is truncated.

Defaults

Disabled to allow backward capability.

Command Modes

Interface configuration

Command History

Release	Modification
12.3(14)T	This command was introduced.
12.2(27)SBA	This command was integrated into Cisco IOS Release 12.2(27)SBA.

Usage Guidelines

When the unique subscriber identifier is configured on the relay agent and the interface, the identifier is added to option82 in all of the client DHCP packets to the DHCP server. When the server echoes option82 in the reply packets, the relay agent removes option82 before forwarding the reply packet to the client. When an interface is numbered, all renew packets and release packets are unicast to the server, so option82 is not added.

The unique identifier should be configured for each subscriber and when a subscriber moves from one interface to the other, the configuration of the interface should be changed also.

In case of unnumbered interfaces, all the client packets are sent to the relay. Option82 is added in all the client packets before forwarding the packets to the server. If the server does not echo option82 in the packet, the relay agent tries to validate option82 in the reply packet. If the reply packet does not contain option82, then the validation fails and the packet is dropped by the relay agent. The client cannot get any IP address because of the validation failure. In this case, the existing **no ip dhcp relay information check** command can be used to avoid the option82 invalidation.



Note

The configurable string is not an option for network access server (NAS)-IP, because users can move between NAS termination points. When a subscriber moves from one NAS to another, this option does not result in a configuration change on the side of the DHCP server of the ISP.

Examples

The following example shows how to configure an ATM interface for the subscriber identifier suboption.

```
ip dhcp relay information option
!
interface Loopback0
 ip address 10.1.1.129 255.255.255.192
!
interface ATM4/0
 no ip address
!
interface ATM4/0.1 point-to-point
 ip helper-address 10.16.1.2
 ip unnumbered Loopback0
 ip dhcp relay information option subscriber-id newperson123
 atm route-bridged ip
 pvc 88/800
 encapsulation aal5snap
```

Related Commands

Command	Description
ip dhcp relay information check	Configures a Cisco IOS DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
ip dhcp relay information option	Enables the system to insert the DHCP relay agent information option in forwarded BOOTREQUEST messages to a DHCP server.
ip dhcp relay information policy	Configures the information reforwarding policy of a DHCP relay agent (what a DHCP relay agent should do if a message already contains relay information).
ip dhcp smart-relay	Enables the Cisco IOS DHCP relay agent to switch the gateway address (giaddr field of a DHCP packet) to secondary addresses when there is no DHCPOFFER message from a DHCP server
ip helper-address	Forwards UDP broadcasts, including BOOTP, received on an interface.

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■ ip dhcp relay information option subscriber-id