



DHCP Lease Limit per ATM/RBE Unnumbered Interface

The DHCP Lease Limit per ATM/RBE Unnumbered Interface feature limits the number of Dynamic Host Configuration Protocol (DHCP) leases per subinterface offered to DHCP clients connected from an ATM routed bridge encapsulation (RBE) unnumbered interface or serial unnumbered interface of the DHCP server or DHCP relay agent.

Feature History for the DHCP Lease Limit per ATM/RBE Unnumbered Interface Feature

Release	Modification
12.3(2)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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Restrictions for DHCP Lease Limit per ATM/RBE Unnumbered Interface

This feature is not supported on numbered interfaces. The lease limit can be applied only to ATM with RBE unnumbered interfaces or serial unnumbered interfaces.

Information About DHCP Lease Limit per ATM/RBE Unnumbered Interface

Before you configure DHCP lease limit, you should understand the following concepts:

- [DHCP Lease Limit per ATM/RBE Unnumbered Interface Feature Design, page 2](#)
- [Benefits of DHCP Lease Limit per ATM/RBE Unnumbered Interface, page 2](#)

DHCP Lease Limit per ATM/RBE Unnumbered Interface Feature Design

If this feature is enabled on a Cisco IOS DHCP relay agent connected to clients through unnumbered interfaces, the relay agent keeps information about the DHCP leases offered to the clients per subinterface. When a DHCPACK message is forwarded to the client, the relay agent increments the number of leases offered to clients on that subinterface. If a new DHCP client tries to obtain an IP address and the number of leases has already reached the configured lease limit, DHCP messages from the client will be dropped and will not be forwarded to the DHCP server.

If this feature is enabled on the Cisco IOS DHCP server directly connected to clients through unnumbered interfaces, the server allocates addresses and increments the number of leases per subinterface. If a new client tries to obtain an IP address, the server will not offer an IP address if the number of leases on the subinterface has already reached the configured lease limit.

Benefits of DHCP Lease Limit per ATM/RBE Unnumbered Interface

This feature allows an Internet service provider (ISP) to globally limit the number of leases available to clients per household or connection.

How to Configure DHCP Lease Limit per ATM/RBE Unnumbered Interface

This section contains the following procedures:

- [Configuring the DHCP Lease Limit](#)
- [Troubleshooting the DHCP Lease Limit](#)

Configuring the DHCP Lease Limit

This task describes how to limit the number of DHCP leases allowed on ATM RBE unnumbered or serial unnumbered interfaces.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ip dhcp limit lease per interface** *lease-limit*

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	ip dhcp limit lease per interface <i>lease-limit</i> Example: Router(config)# ip dhcp limit lease per interface 2	Limits the number of leases offered to DHCP clients behind an ATM RBE unnumbered or serial unnumbered interface.

Troubleshooting the DHCP Lease Limit

This task describes how to troubleshoot the DHCP lease limit.

SUMMARY STEPS

1. **enable**
2. **debug ip dhcp server packet**
3. **debug ip dhcp server events**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	debug ip dhcp server packet Example: Router# debug ip dhcp server packet	(Optional) Decodes DHCP receptions and transmissions.
Step 3	debug ip dhcp server events Example: Router# debug ip dhcp server events	(Optional) Displays server events.

Configuration Examples for DHCP Lease Limit per ATM/RBE Unnumbered Interface

This section provides the following configuration example:

- [DHCP Lease Limit: Example](#)

DHCP Lease Limit: Example

In the following example, if more than three clients try to obtain an IP address from interface ATM4/0.1, the DHCPDISCOVER packets will not be forwarded to the DHCP server. If the DHCP server resides on the same router, DHCP will not reply to more than three clients.

```
ip dhcp limit lease per interface 3
!
interface loopback0
 ip address 10.1.1.129 255.255.255.192
!
interface ATM4/0.1
 no ip address
!
interface ATM4/0.1 point-to-point
 ip helper-address 172.16.1.2
 ip unnumbered loopback0
 atm route-bridged ip
 pvc 88/800
 encapsulation aal5snap
```

Additional References

The following section provides additional information related to the DHCP Lease Limit per ATM/RBE Unnumbered Interface feature.

Related Documents

Related Topic	Document Title
DHCP commands	<i>Cisco IOS IP Command Reference, Volume 1 of 4: Addressing and Services</i> , Release 12.3
DHCP configuration tasks	<i>Cisco IOS IP Configuration Guide</i> , Release 12.3

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

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 a new command. All other commands used with this feature are documented in the Cisco IOS Release 12.3T command reference publications.

- [ip dhcp limit lease per interface](#)

ip dhcp limit lease per interface

To limit the number of leases offered to (DHCP) clients behind an ATM routed bridge encapsulation (RBE) unnumbered or serial unnumbered interface, use the **ip dhcp limit lease per interface** command in global configuration mode. To remove the restriction on the number of leases, use the **no** form of the command.

ip dhcp limit lease per interface *lease-limit*

no ip dhcp limit lease per interface *lease-limit*

Syntax Description	<i>lease-limit</i>	Number of leases allowed.
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Defaults	This functionality is disabled
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Command Modes	Global configuration
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Command History	Release	Modification
	12.3(2)T	This command was introduced.
	12.2(27)SBA	This command was integrated into Cisco IOS Release 12.2(27)SBA.

Usage Guidelines	This command is not supported on numbered interfaces. The lease limit can be applied only to ATM with RBE unnumbered interfaces or serial unnumbered interfaces.
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Examples	The following example allows three DHCP clients to receive IP addresses. If a fourth DHCP client tries to obtain an IP address, the DHCPDISCOVER messages will not be forwarded to the DHCP server. <pre>ip dhcp limit lease per interface 3</pre>
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