

Configure DHCP Server - Exclude Addresses

```
! (config) ip dhcp excluded-address 10.10.10.1 10.10.10.100
```

```
! (config) ip dhcp excluded-address 192.168.10.1 192.168.10.9
```

```
! (config) ip dhcp excluded-address 192.168.10.254
```

Define a range of addresses that DHCP is not to allocate.

These are usually static addresses reserved for the router interface, switch management IP address, servers, and local network printers.

Required Tasks	Command
Define the address pool.	<code>network network-number [mask-1 /prefix-length]</code>
Define the default router or gateway.	<code>default-router address [address2...address8]</code>

Optional Tasks	Command
Define a DNS server.	<code>dns-server address [address2...address8]</code>
Define the domain name.	<code>domain-name domain</code>
Define the duration of the DHCP lease.	<code>lease {days [hours] [minutes] infinite}</code>
Define the NetBIOS WINS server.	<code>netbios-name-server address [address2...address8]</code>

Verifying and Troubleshooting DHCP

```
! (config) ip dhcp server statistics
```

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To verify that messages are being received or sent by the router, use the `show ip dhcp server statistics` command.

This command displays count information regarding the number of DHCP messages that have been sent and received.

Verifying and Troubleshooting DHCP

```
! (config) ip dhcp binding
```

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To verify the operation of DHCP, use the `show ip dhcp binding` command.

This command displays a list of all IP address to MAC address bindings that have been provided by the DHCP service.

Configuración de IP Helper-Address

IP helper-addresses son configurados en el router:

```
router(config)# interface Ethernet0
router(config-if)# ip helper-address 161.44.54.7
router(config-if)# ip helper-address 161.44.55.8
```

```
! (config) ip dhcp server statistics
```

The default template does not support static routing.

If IPv4 addressing has been enabled, the template will be dual-ipv4-and-static default.

Size of the template does not support static routing.

Changes to the routing SDM preferences have been stored, but cannot take effect until the next reload.

Now DHCPv4 can be configured.

Configuring a Router as a DHCPv4 Client

```
! (config) ip dhcp client
```

```
! (config) ip dhcp client
```

Configure DHCPv4 Client

IP address	Detection method	Detection time
172.16.1.32	Ping	Feb 16 1998 12:28 PM
172.16.1.64	Gratuitous ARP	Feb 23 1998 08:12 AM

The show ip dhcp conflict command displays all address conflicts recorded by the DHCPv4 server.

Troubleshooting DHCPv4

Troubleshooting Task 1: Resolve IPv4 Address Conflicts

Troubleshooting Task 2: Verify Physical Connectivity

Troubleshooting Task 3: Test Connecting using a Static IP Address

Troubleshooting Task 4: Verify Switch Port Configuration

Troubleshooting Task 5: Test DHCPv4 Operation on the Same Subnet or VLAN

VERIFYING THE ROUTER DHCPV4 CONFIGURATION

```
! (config) ip dhcp relay
```

```
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```

Verify the router DHCPv4 Relay and DHCPv4 Services

Verifying DHCPv4 Using Router debug Commands

```
! (config) ip dhcp server statistics
```

```
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Verifying DHCPv4 Using Router debug Commands

Debugging DHCPv4