

Cisco DHCP Service

Implementing Cisco's IOS 12.0(1)T based Dynamic Host Configuration Protocol

RFC2131

The Dynamic Host Configuration Protocol (**DHCP**) provides a framework for passing configuration information to hosts on a TCP/IP network. DHCP is based on the Bootstrap Protocol (**BOOTP**), adding the capability of automatic allocation of reusable network addresses and additional configuration options. DHCP captures the behavior of BOOTP relay agents, and DHCP participants can interoperate with BOOTP participants.

DHCP Messages

DHCPDISCOVER	Client broadcast to locate available servers.
DHCPOFFER	Server to client in response to DHCPDISCOVER with offer of configuration parameters.
DHCPREQUEST	Client broadcast to servers requesting offered parameters from one server and implicitly declining offers from all others.
DHCPACK	Server to client with configuration parameters, including committed network address.
DHCPNAK	Server to client refusing request for configuration parameters (e.g., requested network address already allocated).
DHCPDECLINE	Client to server indicating configuration parameters (e.g., network address) invalid.
DHCPRELEASE	Client to server relinquishing network address and cancelling remaining lease.
DHCPINFORM	Client to server, asking only for local configuration parameters; client already has externally configured network address.

Cisco IOS-based DHCP servers lease their dynamic IP addresses for a default period of 24 hours, Windows (NT) uses a 72 hour default assignment with a renewal request every 36 hours, (typically set to half the lease period).

Cisco's DHCP service is on by default.

```
>no ip dhcp conflict logging
```

(Disable conflict logging)

```
>ip dhcp conflict logging
```

```
>ip dhcp database ftp://dhcuser:pwd@192.168.2.101/filename
```

(Saves automatic bindings on a remote host, called a database agent)

```
>sh ip dhcp conflict
```

(Displays address conflicts found by a Cisco IOS DHCP Server when addresses are offered to the client)

```
>ip dhcp excluded-address 192.168.1.100 192.168.1.103
```

(Exclude static IP addresses in the range - **LOW** to **HIGH**)

```
>ip dhcp pool testwrkstpool (Create a pool name for the pool)
```

```
> network 192.168.1.0 /8 (Scope of addresses)
```

```
> domain-name cisco.com
```

```
> dns-server 192.168.1.102
```

```
> default-router 192.168.1.1
```

```
> netbios-name-server 192.168.1.102
```

```
> netbios-node-type 1
```

```
>
```

DHCP Options (RFC 1533)

Tag	Name
-----	------

0	Pad
---	-----

1	Subnet Mask V
---	---------------

2	Time Offset
---	-------------

3	Gateway
---	---------

4	Time
---	------

5	N
---	---

6	
---	--

7	
---	--

8	
---	--

9	
---	--

```
>sh ip dhcp binding
```

```
>sh ip dhcp server
```

Memory usage

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the DHCP

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