

# DHCPv6 Service Configuration Mode Commands

The Dynamic Host Configuration Protocol (DHCP) for Internet Protocol Version 6 (IPv6) Service Configuration Mode is used to create and manage DHCPv6 service instances for the current context.

**Command Modes**

Exec > Global Configuration > Context Configuration > DHCPv6 Service Configuration

**configure > context** *context_name* **> dhcpv6-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-dhcpv6-service)#
```

**Important** The commands or keywords/variables that are available are dependent on platform type, product version, and installed license(s).


- bind, on page 1
- deadtime, on page 2
- detect-dead-server, on page 3
- dhcpv6-client, on page 4
- dhcpv6-server, on page 5
- end, on page 6
- exit, on page 6
- server, on page 6


# bind

Binds the DHCPv6 service to a logical IP interface facilitating the system's connection to the DHCPv6 server.

**Product**

GGSN

P-GW

SAEGW

SaMOG

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > Context Configuration > DHCPv6 Service Configuration

**configure > context** *context_name* **> dhcpv6-service** *service_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-dhcpv6-service)#`

**Syntax Description**

**`bind address`** *`ipv6_address`* **`[ port`** *`port_number`* **`]`**
**`no bind address`**

**no**

Removes a previously configured binding.

**address *ipv6_address***

Specifies the IP address of an interface in the current context through which the communication with the DHCPv6 server occurs. *ipv6_address* must be expressed in IPv6 colon-separated-hexadecimal notation.

**port *port_number***

Specifies the listen port and is used to start the DHCPv6 server bound to it.

*port_number* must be an integer from 1 through 65535. If unspecified, the default port is 547.

**Usage Guidelines**

Use this command to associate or tie the DHCPv6 service to a specific logical IP address previously configured in the current context and bound to a port.

When this command is executed, the DHCPv6 service is started and begins the process of requesting addresses from the DHCPv6 server and storing them in cache memory for allocation to PDP contexts.

Only one interface can be bound to a service.

**Example**

The following command binds the DHCPv6 service to the interface with an IP address of *1234:245:3456:4567:5678:6789:7890:8901*:

**`bind address 1234:245:3456:4567:5678:6789:7890:8901`**

# deadtime

Configures the amount of time that the system waits prior to re-communicating with a DHCPv6 server that was previously marked as down.

**Product**

GGSN

P-GW

SAEGW

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > Context Configuration > DHCPv6 Service Configuration

**configure > context** *context_name* **> dhcpv6-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-dhcpv6-service)#
```

**Syntax Description**

**deadtime** *max_time*
**default deadtime**

**default**

Returns the command to its default setting of 120.

***max_time***

Specifies the maximum amount of time (in seconds) to wait before communicating with a DHCPv6 server that was previously unreachable.

*max_time* must be an integer value from 1 through 1932100.

Default: 120

**Usage Guidelines**

If the system is unable to communicate with a configured DHCPv6 server, after a pre-configured number of failures the system marks the server as being down.

This command specifies the amount of time that the system waits prior to attempting to communicate with the downed server.



**Important** If all DHCPv6 servers are down, the system will immediately treat all DHCPv6 servers as active, regardless of the **deadtime** that is specified.

Refer to the **detect-dead-server** and **max-retransmissions** commands for additional information on the process the system uses to mark a server as down.

**Example**

The following command configures the system to wait *600* seconds before attempting to re-communicate with a DHCPv6 server that was marked as down:

```
deadtime 600
```

# detect-dead-server

Configures the number of consecutive communication failures that could occur before the system marks a DHCPv6 server as down.

**Product**

GGSN

P-GW

SAEGW

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > Context Configuration > DHCPv6 Service Configuration

**configure > context** *context_name* **> dhcpv6-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-dhcpv6-service)#
```

**Syntax Description**

**detect-dead-server consecutive-failures** *max_number*
**default detect-dead-server consecutive-failures**

**default**

Returns the command to its default setting of 5.

**consecutive-failures *max_number***

Specifies the number of failures that could occur before marking a DHCPv6 server as down.

*max_number* must be an integer from 1 through 1000.

Default: 5

**Usage Guidelines**

This command works in conjunction with the **max-retransmissions** DHCPv6 client command to set a limit to the number of communication failures that can occur with a configured DHCPv6 server.

The **max-retransmissions** DHCPv6 client parameter limits the number of attempts to communicate with a server. Once that limit is reached, the system treats it as a single failure. This parameter limits the number of consecutive failures that can occur before the system marks the server as down and communicate with the server of next highest priority.

If all of the configured servers are down, the system ignores the **detect-dead-server** configuration and attempts to communicate with the highest priority server again.

If the system receives a message from a DHCPv6 server that was previously marked as down, the system immediately treats it as being active.

**Example**

The following command configures the system to allow *8* consecutive communication failures with a DHCPv6 server before it marks it as down:

**detect-dead-server consecutive-failures 8**

# dhcpv6-client

Enters the DHCPv6 Client Configuration Mode.

**Product**

GGSN

P-GW

SAEGW

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > Context Configuration > DHCPv6 Service Configuration

**configure > context** *context_name* **> dhcpv6-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-dhcpv6-service)#
```

**Syntax Description**

**dhcpv6-client**

**Usage Guidelines**

Use this command to cause the system to enter the DHCPv6 Client Configuration Mode where parameters are configured for the DHCPv6 client.

Entering this command results in the following prompt:

```
[context_name]hostname(config-dhcpv6-client)#
```

DHCPv6 Client Configuration Mode commands are defined in the *DHCPv6 Client Configuration Mode Commands* chapter.

# dhcpv6-server

Enters the DHCPv6 Server Configuration Mode.

**Product**

GGSN

P-GW

SAEGW

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > Context Configuration > DHCPv6 Service Configuration

**configure > context** *context_name* **> dhcpv6-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-dhcpv6-service)#
```

**Syntax Description**

**dhcpv6-server**

**Usage Guidelines**

Use this command to cause the system to enter the DHCPv6 Server Configuration Mode where parameters are configured for the DHCPv6 server.

Entering this command results in the following prompt:

```
[context_name]hostname(config-dhcpv6-server)#
```

DHCPv6 Server Configuration Mode commands are defined in the *DHCPv6 Server Configuration Mode Commands* chapter.

**Important** Multiple DHCPv6 servers can be configured by entering the **dhcpv6-server** command multiple times. A maximum of 3 DHCPv6 servers can be configured.

# end

Exits the current configuration mode and returns to the Exec mode.

**Product** All

**Privilege** Security Administrator, Administrator

**Syntax Description** **`end`**

**Usage Guidelines** Use this command to return to the Exec mode.

# exit

Exits the current mode and returns to the parent configuration mode.

**Product** All

**Privilege** Security Administrator, Administrator

**Syntax Description** **`exit`**

**Usage Guidelines** Use this command to return to the parent configuration mode.

# server

Configures DHCPv6 servers with which the DHCPv6 service is to communicate and specifies the algorithm used to select DHCPv6 servers with which to communicate when multiple servers are configured.

**Product** GGSN

P-GW

SAEGW

**Privilege** Security Administrator, Administrator

**Command Modes** Exec > Global Configuration > Context Configuration > DHCPv6 Service Configuration

**configure** > **context** *context_name* > **dhcpv6-service** *service_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-dhcpv6-service)#`

## Syntax Description

```
server { ipv6_address [ priority priority ] | selection-algorithm {
first-server | round-robin } }
default server selection-algorithm
no server ipv6_address
```

### default

Uses the first-server algorithm.

### no

Deletes a previously configured DHCPv6 server.

### *ipv6_address*

Specifies the IP address of the DHCPv6 server expressed in IPv6 colon-separated-hexadecimal notation.

### priority *priority*

Specifies the priority of the server if multiple servers are configured.

*priority* is an integer from 1 through 1000. 1 is the highest priority.

### selection-algorithm { first-server | round-robin }

Specifies the algorithm used to select DHCPv6 servers with which to communicate when multiple servers are configured.

**first-server**: Uses the first-server algorithm. This algorithm dictates that the system select the DHCPv6 servers according to their priority, starting with the highest priority server. The system communicates with the server of the next highest priority only when the previous server is unreachable.

Default: Enabled

**round-robin**: Uses the round-robin algorithm. This algorithm dictates that the system communicates with the servers in a circular queue according to the server's configured priority, starting with the highest priority server. The next request is communicated with the next highest priority server, and so on until all of the servers have been used. At this point, the system starts from the highest priority server.

Default: Disabled

## Usage Guidelines

Use this command to configure the DHCPv6 server(s) that the system is to communicate with. Multiple servers can be configured, each with their own priority. Up to 20 DHCPv6 servers can be configured.

In addition, use this command to determine how configured DHCPv6 servers are utilized by the system.



**Important** If a server is removed, all calls having an IP address allocated from the server will be released.

### Example

The following command configures a DHCPv6 server with an IP address of *1234:245:3456:4567:5678:6789:7890:8901* and a priority of *1*:

```
server 1234:245:3456:4567:5678:6789:7890:8901 priority 1
```