FiberstoreOS
IPv6 Service Command Line Reference
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1 Tunnel Commands

1.1 interface

Use this command to create a new tunnel interface. Use the no form of this command to destroy the tunnel interface.

**Command Syntax**

```
interface tunnel tunnelid
no interface tunnel tunnelid
```

<table>
<thead>
<tr>
<th>tunnelid</th>
<th>The id range should be 0~1023</th>
</tr>
</thead>
</table>

**Command Mode**

Global Configuration

**Default**

None

**Usage**

None

**Examples**

This example shows how to create a tunnel interface.

Switch# configure terminal
Switch(config)# interface tunnel 1

**Related Commands**

show interface tunnel

1.2 tunnel mode ipv6ip

Use this command to specify the IPv6 transition tunnel protocol. Use the no form of this command to unset the tunnel protocol.

**Command Syntax**

```
tunnel mode ipv6ip (6to4 | isatap )
no tunnel mode
```

<table>
<thead>
<tr>
<th>6to4</th>
<th>Set the tunnel as automatic tunnel 6to4, which use 2002::/16 as its prefix</th>
</tr>
</thead>
<tbody>
<tr>
<td>isatap</td>
<td>Set the tunnel as automatic tunnel ISATAP, which</td>
</tr>
<tr>
<td>gre</td>
<td>When the destination of tunnel is single, the mode of the tunnel</td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>multi-dst-gre</td>
<td>When the destinations of tunnel are multi, the mode of the tunnel</td>
</tr>
</tbody>
</table>

### Command Mode

**Interface Configuration**

### Default

None

### Usage

This command specifies a tunnel encapsulation mode for IPv6 in IPv4. When the keywords "6to4" or "isatap" is not specified, then it is a manual tunnel. Tunnel mode is not allowed to change from 6to4 to ISATAP when 6to4 relay routes are configured. Users should unset the tunnel destination before change from manual tunnel to automatic tunnel.

### Examples

This example shows how to create a 6to4 Tunnel.

```
Switch# configure terminal
Switch(config)# interface tunnel 1
Switch(config-if)# tunnel mode ipv6ip 6to4
```

### Related Commands

- tunnel source
- tunnel destination

#### 1.3 tunnel source

Use this command to specify the tunnel source. Use the no form of this command to unset the tunnel source.

**Command Syntax**

```
tunnel source (A.B.C.D | IFNAME)
no tunnel source
```

- **A.B.C.D**
  - Specify a tunnel source in the IPv4 address format
- **IFNAME**
  - Specify a tunnel source in the IFNAME format, the IFNAME should be layer3 interface, like routed port, vlan interface, loopback.

**Command Mode**

**Interface Configuration**

**Default**

None

**Usage**

Every tunnel must have a tunnel source. If users specify the IFNAME format, system will choose the primary address as tunnel source.
Examples

This example shows how to set the tunnel source.
Switch# configure terminal
Switch(config)# interface tunnel 1
Switch(config-if)# tunnel source 3.3.3.3

Related Commands

tunnel mode ipv6ip
tunnel destination

1.4 tunnel destination

Use this command to specify a tunnel destination address in an IPv4 portion. Use the no parameter to un-specify the address.

Command Syntax

tunnel destination A.B.C.D
no tunnel destination

<table>
<thead>
<tr>
<th>A.B.C.D</th>
<th>Specify the tunnel destination IPv4 address</th>
</tr>
</thead>
</table>

Command Mode

Interface Configuration

Default

None

Usage

Automatic tunnel such as 6to4 and ISATAP must not configure tunnel destination.

Examples

This example shows how to set the tunnel destination.
Switch# configure terminal
Switch(config)# interface tunnel 1
Switch(config-if)# tunnel destination 4.4.4.4

Related Commands

tunnel source
tunnel mode ipv6ip

1.5 tunnel enable

Use this command to enable tunnel decapsulation for interfaces. Use the form of this command to restore the default configuration.

Command Syntax

tunnel (enable|disable)

<table>
<thead>
<tr>
<th>enable</th>
<th>Enable tunnel decapsulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>disable</td>
<td>Disable tunnel decapsulation</td>
</tr>
</tbody>
</table>
**Command Mode**

Interface Configuration

**Default**

By default, tunnel decapsulation is disabled on all interfaces.

**Usage**

None

**Examples**

This example shows how to enable tunnel decapsulation on interface eth-0-1.
Switch# configure terminal
Switch(config)# interface eth-0-1
Switch(config-if)# tunnel enable

**Related Commands**

`interface`

### 1.6 tunnel multi-destination

Use this command to configure tunnel destinations IP address.
Use the form of this command to unset this configuration: no tunnel multi-destination A.B.C.D

**Command Syntax**

tunnel multi-destination A.B.C.D

<table>
<thead>
<tr>
<th>A.B.C.D</th>
<th>destinations IP address</th>
</tr>
</thead>
</table>

**Command Mode**

Interface Configuration

**Default**

None

**Usage**

Automatic tunnel such as 6to4 and ISATAP must not configure tunnel destination (multi destination).

**Examples**

This example shows how to enable tunnel decapsulation on interface tunnel 1.
Switch(config-if)# tunnel multi-destination 1.1.1.1
Switch(config-if)# tunnel multi-destination 2.2.2.2

**Related Commands**

`tunnel source`
`tunnel mode (multi-dst-gre|gre)`

### 1.7 tunnel gre key

Use this command to configure the tunnel gre key value.
Use the form of this command to unset this configuration: no tunnel gre key.

**Command Syntax**

```
tunnel gre key key_value
```

<table>
<thead>
<tr>
<th>key_value</th>
<th>gre key value &lt;1-4294967295&gt;</th>
</tr>
</thead>
</table>

**Command Mode**

Interface Configuration

**Default**

None

**Usage**

Improve the security of the gre tunnel, configure the gre key to do the checkout of point to point.

**Examples**

This example shows how to enable tunnel decapsulation on interface tunnel 1.

Switch(config-if)# tunnel gre key 100

**Related Commands**

show running-config interface tunnel

1.8 **tunnel extend-header (dst-load-balance)\]**

Before the mirror traffic passes through the tunnel, encapsulate the traffic with the extend header.

Use the form of this command to unset this configuration: no tunnel extend-header (dst-load-balance).

**Command Syntax**

```
tunnel extend-header (dst-load-balance)
```

<table>
<thead>
<tr>
<th>dst-load-balance</th>
<th>(optional)the new hash covers the old hash, and be saved in the extend header</th>
</tr>
</thead>
</table>

**Command Mode**

Interface Configuration

**Default**

None

**Usage**

<table>
<thead>
<tr>
<th>0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1</th>
<th>spanid</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>PacketInfo.ptpCorrectionFieldHigh(34,3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PacketInfo.timestamp(61,30)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PacketInfo.timestamp(29,0)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
说明:

①spanExtendHeaderCopyHash, using the new hash or not;
②PacketInfo.skipTimeInfoUpdate, fixed with 1;
③if spanExtendHeaderCopyHash is 1, the filed consist with hash (8 bit) and 0 (8 bit); if spanExtendHeaderCopyHash is 0, the filed consist with source port of the mirror (16 bit).

Without dst-load-balance parameter, spanExtendHeaderCopyHash will be 0, and extend-header field does not contain the hash value;
with dst-load-balance parameter, spanExtendHeaderCopyHash will be 1, and extend-header field contain the hash value.

Examples

This example shows how to enable tunnel decapsulation on interface tunnel 1.
Switch(config-if)# tunnel extend-header
Switch(config-if)# tunnel extend-header dst-load-balance

Related Commands

show running-config interface tunnel

1.9 tunnel extend-header id
Use this command to configure the extend header id.
Use the form of this command to unset this configuration: no tunnel extend-header id.

Command Syntax

\[ \text{tunnel extend-header id} \ id_value \]

| id_value | the id value <0,1023> |

Command Mode

Interface Configuration

Default
None

Usage
None

Examples

This example shows how to enable tunnel decapsulation on interface tunnel 1.
Switch(config-if)# tunnel extend-header id 30
Related Commands

(show running-config interface tunne)

1.10 **tunnel dscp**

Use this command to specify a value of Differentiated Services Code Point (DSCP) in the tunnel IPv4 encapsulation header. Use the no parameter to inheriting the underlying physical interface value by default.

**Command Syntax**

```markdown
   tunnel dscp DSCP
   no tunnel dscp
```

| DSCP | The outer IPv4 header DSCP value, range is 0~63 |

**Command Mode**

Interface Configuration

**Default**

By default, the DSCP value is inherited from original IPv6 packet.

**Usage**

None

**Examples**

This example shows how to set the outer IPv4 header DSCP value as 40.

Switch# configure terminal
Switch(config)# interface tunnel 1
Switch(config-if)# tunnel dscp 40

**Related Commands**

interface

1.11 **ipv6 mtu**

Use this command to specify the Tunnel interface MTU. Use the no form of this command to restore to 1480 by default.

**Command Syntax**

```markdown
   ipv6 mtu MTU
   no ipv6 mtu
```

| MTU | Set the tunnel interface MTU, range is 1280~9500 |

**Command Mode**

Interface Configuration

**Default**

1480
Usage

System does not support Path MTU Discovery on tunnel interface. This command is only allowed on tunnel interface.

Examples

This example sets the tunnel interface MTU to 1280.

Switch# configure terminal
Switch(config)# interface tunnel 1
Switch(config-if)# ipv6 mtu 1280

Related Commands

```
tunnel ttl
```

1.12 show interface tunnel

Use this command to display the tunnel information.

Command Syntax

```
show interface tunnel tunnelid
```

```
tunnelid  The id range should be 0~1023
```

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

This example displays the tunnel information.

Switch# show interface tunnel1

```
Interface tunnel1
  Interface current state: UP
  Hardware is Tunnel
  Index 8193, Metric 1, Encapsulation TUNNEL
  VRF binding: not bound
  Tunnel protocol/transport IPv6/IP, Status Valid
  Tunnel source 1.1.1.1(eth-0-1), destination 2.2.2.2
  Tunnel DSCP inherit, Tunnel TTL 64
  Tunnel transport MTU 1480 bytes
```

Related Commands

```
show ipv6 interface tunnel
```
1.13 **show resource tunnel**

Use this command to display the tunnel peers resource information.

**Command Syntax**

`show resource tunnel`

**Command Mode**

Privileged EXEC

**Default**

None

**Usage**

None

**Examples**

This example displays the tunnel peers resource information.

```
Switch# show resource tunnel
```

<table>
<thead>
<tr>
<th>Tunnel Resource</th>
<th>Used</th>
<th>Capability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peers</td>
<td>1</td>
<td>64</td>
</tr>
</tbody>
</table>

**Related Commands**

None
2 NDP Commands

2.1 ipv6 neighbor

Use this command to configure a static neighbor entry.
To delete the static neighbor entry, use the no form of this command.

Command Syntax

```
ipv6 neighbor IPV6ADDR MAC (IFNAME)
no ipv6 neighbor IPV6ADDR (IFNAME)
```

<table>
<thead>
<tr>
<th>IPV6ADDR</th>
<th>IPv6 address in X:X::X format</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAC</td>
<td>MAC address in HHHH.HHHH.HHHH format</td>
</tr>
<tr>
<td>IFNAME</td>
<td>Interface name</td>
</tr>
</tbody>
</table>

Command Mode

Global Configuration

Default

By default, there is not any static ipv6 neighbor entry exist.

Usage

Use this command to configure a static neighbor entry. If the IPv6 address is link-local, the interface name must be specified.
Using the no form of this command should not remove any dynamic neighbor entries.

Examples

This example shows how to add a static neighbor entry:
```
Switch# configure terminal
Switch (config)# ipv6 neighbor 2001::1 0000.0000.0001
Switch (config)# ipv6 neighbor fe80::1 0000.0000.0002 eth-0-1
```

Related Commands

```
show ipv6 neighbors
```

2.2 clear ipv6 neighbors

Use this command to clear the dynamic neighbor entries.

Command Syntax

```
clear ipv6 neighbors (interface IFNAME)
```
clear ipv6 neighbors *IPV6ADDR (INTERFACE*)

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>interface <em>IFNAME</em></td>
<td>Clear neighbor cache on the interface</td>
</tr>
<tr>
<td><em>IPV6ADDR</em></td>
<td>IPv6 address in X:X::X format. Clear IPv6 neighbor cache by address</td>
</tr>
<tr>
<td>INTERFACE</td>
<td>Interface name is required when IPV6ADDR is link-local</td>
</tr>
</tbody>
</table>

**Command Mode**
EXEC

**Default**
None

**Usage**
Use this command to clear the dynamic neighbor entries.
User can clear dynamic ipv6 address by interface or address. If the specified address is link-local, the interface is required.

**Examples**
This example shows how to clear the neighbor entries:
Switch# clear ipv6 neighbors

**Related Commands**
show ipv6 neighbors

2.3 **ipv6 hop-limit**

Use this command to set the ipv6 hop limit of the packets.
To restore the default configuration, use the no form of this command.

**Command Syntax**
ipv6 hop-limit *HOP_LIMIT*
no ipv6 hop-limit

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>hop-limit <em>HOP_LIMIT</em></td>
<td>Hop limit. Between 1 and 255</td>
</tr>
</tbody>
</table>

**Command Mode**
Global Configuration

**Default**
By default, the value is 64.

**Usage**
The hop limit setting should affect all IPv6 packets send from this device, unless the hop-limit is overwritten by up layer application, for example, OSPF, etc.

**Examples**
This example shows how to set the hop limit:
Switch (config)# ipv6 hop-limit 255

Related Commands
None

2.4 ipv6 nd ra hop-limit

Use this command to set the "Current hop limit" in RA packets. To restore the default configuration, use the no form of this command.

Command Syntax
ipv6 nd ra hop-limit *HOP_LIMIT*
no ipv6 nd ra hop-limit

<table>
<thead>
<tr>
<th>hop-limit <em>HOP_LIMIT</em></th>
<th>Set cur hop limit. Between 0 and 255</th>
</tr>
</thead>
</table>

Command Mode
Interface Configuration

Default
By default, the value is 0.

Usage
None

Examples
This example shows how to set the "Current hop limit" in RA packets:
Switch(config-if)# ipv6 nd ra hop-limit 255

Related Commands
None

2.5 ipv6 nd dad attempts

Use this command to set the attempt times of DAD (Duplicate Address Detect). To restore the default configuration, use the no form of this command.

Command Syntax
ipv6 nd dad attempts *DAD_ATTEMPTS*
no ipv6 nd dad attempts

<table>
<thead>
<tr>
<th>DAD_ATTEMPTS</th>
<th>Set attempts number. Between 0 and 600</th>
</tr>
</thead>
</table>

Command Mode
Interface Configuration

Default
By default, the value is 1.
Usage
Use this command to set the attempt times of DAD (Duplicate Address Detect). "0" means DAD feature is disabled.

Examples
This example shows how to set the dad attempt:
Switch (config-if)# ipv6 nd dad attempts 3

Related Commands
None

2.6 ipv6 nd ns-interval
Use this command to set the interval of NS packets.
To restore the default configuration, use the no form of this command.

Command Syntax
```
ipv6 nd ns-interval NS_INTERVAL
no ipv6 nd ns-interval
```

| NS_INTERVAL | Set IPv6 neighbor solicitation interval. Between 1000 and 3600000 (milliseconds) |

Command Mode
Interface Configuration

Default
By default, the value is 1000

Usage
This configuration should affect the interval of NS packet during the DAD period or neighbor discovery period.

Examples
This example shows how to set the ns interval:
Switch (config-if)# ipv6 nd ns-interval 2000

Related Commands
None

2.7 ipv6 nd ra suppress
Use this command to enable the RA suppress function.
To disable this function, use the no form of this command.

Command Syntax
```
ipv6 nd ra suppress
no ipv6 nd ra suppress
```
Command Mode
Interface Configuration

Default
By default, RA suppress is enabled.

Usage
When RA suppress function is enabled, no RA/RS packet should be sent from this interface even a RS packet is received.

Examples
This example shows how to enable the RA suppress function:
Switch (config-if)# ipv6 nd ra suppress
This example shows how to disable the RA suppress function:
Switch (config-if)# no ipv6 nd ra suppress

Related Commands
ipv6 nd ra interval
ipv6 nd ra lifetime

2.8 ipv6 nd ra mtu suppress
Use this command to enable the RA MTU suppress function.
To disable this function, use the no form of this command.

Command Syntax
ipv6 nd ra mtu suppress
no ipv6 nd ra mtu suppress

Command Mode
Interface Configuration

Default
By default, RA MTU suppress is disabled.

Usage
When RA MTU suppress function is enabled, no MTU option should be sent in the RA packets from this interface.

Examples
This example shows how to enable the RA MTU suppress function:
Switch (config-if)# ipv6 nd ra mtu suppress
This example shows how to disable the RA MTU suppress function:
Switch (config-if)# no ipv6 nd ra mtu suppress

Related Commands
None

2.9 ipv6 nd ra interval
Use this command to set the interval of the RA packets.
To restore the default configuration, use the no form of this command.

**Command Syntax**

```
ipv6 nd ra interval MAX (MIN |)
nipv6 nd ra interval
```

<table>
<thead>
<tr>
<th>MAX</th>
<th>RA max interval (sec). Between 4 and 1800</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIN</td>
<td>RA min interval (sec). Between 3 and 1350</td>
</tr>
</tbody>
</table>

**Command Mode**

Interface Configuration

**Default**

By default, MAX interval should be 600 second; MIN interval should be 0.33*MAX.

**Usage**

The valid range should be between 4 and 1800 second for the max value. The valid range should be between 3 and 0.75 * MAX for the minimum value.

If the minimum value is not specified, it should be 0.33*MAX when MAX >= 9, and it should be equal to the MAX when MAX < 9.

**Examples**

This example shows how to set the RA interval:

```
Switch (config-if)# ipv6 nd ra interval 300
```

**Related Commands**

- `ipv6 nd ra suppress`
- `ipv6 nd ra lifetime`

### 2.10 ipv6 nd ra lifetime

Use this command to set the life time of the RA packets.

To restore the default configuration, use the no form of this command.

**Command Syntax**

```
ipv6 nd ra lifetime LIFE_TIME
no ipv6 nd ra lifetime
```

| LIFE_TIME | Set IPv6 router advertisement lifetime. 0-9000 seconds |

**Command Mode**

Interface Configuration

**Default**

By default, RA life time is 3* MAX RA interval.

**Usage**

None
Examples

This example shows how to set the ra life time:
Switch (config-if)# ipv6 nd ra lifetime 1000

Related Commands

ipv6 nd ra suppress
ipv6 nd ra interval

2.11 **ipv6 nd reachable-time**

Use this command to set reachable time of the neighbor entries. To restore the default configuration, use the no form of this command.

Command Syntax

```
ipv6 nd reachable-time REACHABLE_TIME
no ipv6 nd reachable-time
```

| REACHABLE_TIME | Reachablity time in milliseconds. Between 0 and 3600000 ms |

Command Mode

Interface Configuration

Default

By default, the value is 30000 ms

Usage

A reachable time 0 means to restore the default value 30000.
After the reachable time expired, the neighbor entries which state is "REACH" should change to "STALE".

Examples

This example shows how to set the reachable time:
Switch (config-if)# ipv6 nd reachable-time 3600000

Related Commands

None

2.12 **ipv6 nd managed-config-flag**

Use this command to set "Managed address configuration" flag. To unset this configuration, use the no form of this command.

Command Syntax

```
ipv6 nd managed-config-flag
no ipv6 nd managed-config-flag
```

Command Mode

Interface Configuration
Default
By default, the "Managed address configuration" is not set.

Usage
None

Examples
This example shows how to set the "Managed address configuration" flag:
Switch (config-if)# ipv6 nd managed-config-flag

Related Commands
ipv6 nd other-config-flag

2.13  ipv6 nd other-config-flag
Use this command to set the "Other configuration" flag.
To unset this configuration, use the no form of this command.

Command Syntax
ipv6 nd other-config-flag
no ipv6 nd other-config-flag

Command Mode
Interface Configuration

Default
By default, the "Other configuration" flag is not set.

Usage
None

Examples
This example shows how to set the "Other configuration" flag:
Switch (config-if)# ipv6 nd other-config-flag

Related Commands
ipv6 nd managed-config-flag

2.14  ipv6 nd prefix
Use this command to set prefix for route advertise (RA).
To unset a prefix to advertise, use the no form of this command.

Command Syntax
ipv6 nd prefix IPv6_PREFIX (VALID_TIME|infinite) (PERFERRED_TIME|infinite)
([off-link|no-autoconfig]])
no ipv6 nd prefix IPv6_PREFIX
ipv6 nd prefix default (VALID_TIME |infinite) (PERFERRED_TIME |infinite)
([off-link|no-autoconfig]])
no ipv6 nd prefix default
**IPv6_PREFIX**
Configure IPv6 routing prefix advertisement. IPv6 prefix in X:X::X:X/M format

**VALID_TIME**
Valid lifetime. 0-4294967295 second

**PERFERRED_TIME**
Preferred lifetime. 0-4294967295 second

**Command Mode**
Interface Configuration

**Default**
The valid range of valid lifetime should be between 0 and 4294967295 seconds. User can also use the keyword "infinite" to indicate the value 4294967295 (0xFFFFFFFF). The default value should be 2592000 seconds (30 days).
The valid range of preferred lifetime should be between 0 and 4294967295 seconds. User can also use the keyword "infinite" to indicate the value 4294967295 (0xFFFFFFFF). The default value should be 604800 seconds (7 days).

**Usage**
None

**Examples**
This example shows how to set the prefix:
Switch (config-if)# ipv6 nd prefix 2001::1/64 3000 3000

**Related Commands**

```
show ipv6 interface IFNAME prefix
```

**2.15 show ipv6 interface IFNAME prefix**
Use this command to show the prefix for route advertise (RA) on the specified interface.

**Command Syntax**
show ipv6 interface IFNAME prefix

| IFNAME | Name of the interface to show |

**Command Mode**
EXEC

**Default**
None

**Usage**
None

**Examples**
This example shows the result of this command:
Switch # show ipv6 interface eth-0-1 prefix

IPv6 Prefix Advertisements eth-0-1
Codes: A - Address, P - Prefix-Advertisement
Related Commands
ipv6 nd prefix

2.16 show ipv6 neighbors
Use this command to show all ipv6 neighbor entries.

Command Syntax
show ipv6 neighbors (dynamic|static|interface IFNAME|IPV6_ADDR|statistics)

<table>
<thead>
<tr>
<th>interface IFNAME</th>
<th>Name of the interface to show</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPV6_ADDR</td>
<td>IPv6 address in X:X::X format</td>
</tr>
</tbody>
</table>

Command Mode
EXEC

Default
None

Usage
Neighbor entries should be able to show globally, by interface, or by prefix. Dynamic and static entries can be displayed separately.

Examples
This example shows the result of this command:
Switch # show ipv6 neighbors

<table>
<thead>
<tr>
<th>IPv6 address</th>
<th>Age</th>
<th>Link-Layer Addr</th>
<th>State</th>
<th>Interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001::2</td>
<td>7</td>
<td>4E24:fd00:ac00</td>
<td>REACH</td>
<td>eth-0-9</td>
</tr>
<tr>
<td>fe80::25f2:fdff:fe60:ac00</td>
<td>6</td>
<td>4E24:fd00:ac00</td>
<td>STALE</td>
<td>eth-0-9</td>
</tr>
</tbody>
</table>

Related Commands
ipv6 neighbor

2.17 debug ipv6 nd
Use this command to open the debug of ipv6 ND feature.
To close the debug of ipv6 ND feature, use the no form of this command.

Command Syntax
debug ipv6 nd (packet|events|error|dump|info|all)
no debug ipv6 nd (packet|events|error|dump|info|all)

<table>
<thead>
<tr>
<th>packet</th>
<th>IPv6 ND packet</th>
</tr>
</thead>
<tbody>
<tr>
<td>events</td>
<td>IPv6 ND events</td>
</tr>
<tr>
<td>error</td>
<td>IPv6 ND Error message</td>
</tr>
<tr>
<td>dump</td>
<td>Dump message in hex format</td>
</tr>
</tbody>
</table>
**Command Mode**

EXEC

**Default**

By default, the ipv6 nd debug is closed.

**Usage**

None

**Examples**

This example shows how to open the ipv6 ND debug:

Switch # debug ipv6 nd all
Switch # terminal monitor

**Related Commands**

None
3 DHCPv6 Relay Commands

3.1 dhcpv6 relay

To enable the DHCPv6 relay service, use the dhcpv6 relay command in global configuration mode. To disable this function, use the no form of this command.

Command Syntax

```
dhcpv6 relay
no dhcpv6 relay
```

Command Mode

Global Configuration

Default

DHCPv6 relay is disabled.

Usage

The DHCPv6 service must be enabled with the dhcpv6 service command before DHCPv6 relay service can be used.

Examples

The following example shows how to enable DHCPv6 relay agent:

```
Switch(config)# dhcpv6 relay
```

Related Commands

```
service dhcpv6
```

3.2 dhcpv6-server (global)

To create a DHCPv6 server group, use the dhcpv6-server command in global configuration mode. To remove a DHCPv6 server group, use the no form of this command.

Command Syntax

```
dhcpv6-server NUMBER ADDRESS interface IFNAME
no dhcpv6-server NUMBER (ADDRESS ( interface IFNAME ))
```

| NUMBER | Number of the DHCPv6 server group. The range is from 1 to 16 |
| ADDRESS | The IPv6 address list of the DHCPv6 server. The range in number of the servers in a list is 1 to 8 |
| IFNAME | The name of supported interface |
Command Mode
Global Configuration

Default
No DHCPv6 server group is defined.

Usage
This command is used to specify the remote DHCPv6 server or relay.

Examples
The following example shows how to configure dhcpv6-server group globally:
Switch(config)# dhcpv6-server 1 2001::1
Switch(config)# dhcpv6-server 1 fe80::1 interface vlan1

Related Commands
service dhcpv6

3.3 dhcpv6-server (interface)
To add an interface into a DHCPv6 server group, use the dhcpv6-server command in interface configuration mode. To remove this interface from the DHCPv6 server group, use the no form of this command.

Command Syntax

\[
\begin{array}{|l|}
\hline
\text{dhcpv6-server \textit{NUMBER}} \\
\text{no dhcpv6-server} \\
\hline
\end{array}
\]

| \textit{NUMBER} | Number of the DHCPv6 server group. The range is from 1 to 16 |

Command Mode
Interface Configuration

Default
No DHCPv6 server group is configured for the interface.

Usage
This command is used to specify DHCPv6 server group which is configed by the command dhcpv6-server in global mode.

Examples
The following example shows how to configure dhcpv6-server group for interface:

Switch(config-if)# dhcpv6-server 1

Related Commands
service dhcpv6
3.4 **dhcpv6 relay remote-id option**

To enable remote-id option, use the dhcpv6 relay remote-id option command in global configuration mode. To disable remote-id option, use the no form of this command.

**Command Syntax**

- dhcpv6 relay remote-id option
- no dhcpv6 relay remote-id option

**Command Mode**

Global Configuration

**Default**

Remote-id option is not added into DHCPv6 RELAY_FORW packet sent by relay.

**Usage**

None

**Examples**

The following example shows how to enable remote-id option:

```
Switch(config)# dhcpv6 relay remote-id option
```

**Related Commands**

- dhcpv6 relay remote-id format

3.5 **dhcpv6 relay remote-id format**

To specify the format of remote-id, use the dhcpv6 relay remote-id format command in global configuration mode. To restore the default format, use the no form of this command.

**Command Syntax**

- dhcpv6 relay remote-id format { vlan | ifname | duid}
- no dhcpv6 relay remote-id format

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vlan</td>
<td>The ID of the vlan attached by client</td>
</tr>
<tr>
<td>ifname</td>
<td>The name of the interface received packet from client</td>
</tr>
<tr>
<td>duid</td>
<td>The duid of relay</td>
</tr>
</tbody>
</table>

**Command Mode**

Global Configuration

**Default**

The remote-id format is "duid:ifname:"

**Usage**

The format of remote-id can be a combination of vlan, interface name, DUID. This command specify the existing keywords in the combination.

**Examples**

The following example shows how to specify the format of remote-id.
Switch(config)# dhcpv6 relay remote-id format vlan

Related Commands

dhcpv6 relay remote-id option

3.6 dhcpv6 relay pd route

To enable learning route from prefix-delegation option, use the dhcpv6 relay pd route command in global configuration. To disable the function, use the no form of this command.

Command Syntax

dhcpv6 relay pd route
no dhcpv6 relay pd route

Command Mode

Global Configuration

Default

The DHCPv6 relay won't learn prefix-delegation route.

Usage

The DHCPv6 relay can learn route from prefix delegated by server to client. This kind of route should not replace static one. Use this command to enable this function.

Examples

The following example shows how to enable learning route from prefix-delegation option
Switch(config)# dhcpv6 relay pd route

Related Commands

clear dhcpv6 relay pd route
dhcpv6 relay pd route distance

3.7 dhcpv6 relay pd route distance

To configure the default distance for route learned by relay, use the dhcpv6 relay pd route distance command in global configuration. To restore the default value, use the no form of this command.

Command Syntax

dhcpv6 relay pd route distance <1-255>
no dhcpv6 relay pd route distance

Command Mode

Global Configuration

Default

The default value of distance is 254.

Usage

Use this command to configure the distance of the route learned by relay from prefix-delegation.
Examples

The following example shows how to configure the distance of route added by DHCPv6 relay:

Switch(config)# dhcpv6 relay pd route distance 233

Related Commands

dhcpv6 relay pd route

3.8 service dhcpv6

To enable the Dynamic Host Configuration Protocol (DHCP) V6 relay agent features on your router, use the service dhcpv6 command in global configuration mode. To disable the DHCPv6 relay agent features, use the no form of this command.

Command Syntax

service dhcpv6 enable
service dhcpv6 disable

Command Mode

Global Configuration

Default

DHCPv6 service is disabled globally.

Usage

Only the main DHCPv6 service is enabled by the service dhcpv6 command, can other DHCPv6 services be used, such as dhcpv6 relay.

Examples

The following example shows how to enable DHCPv6 service globally:

Switch(config)# service dhcpv6 enable

Related Commands

dhcpv6 relay

3.9 debug dhcpv6 relay

Use this command to turn on the debug switches of DHCPv6 relay module.

To restore the default, use the no form of this command.

Command Syntax

debug dhcpv6 relay ( events | error | dump | packet | all )
no debug dhcpv6 relay ( events | error | dump | packet | all )

<table>
<thead>
<tr>
<th>events</th>
<th>Relay events</th>
</tr>
</thead>
<tbody>
<tr>
<td>error</td>
<td>Error DHCP message</td>
</tr>
<tr>
<td>packet</td>
<td>DHCP message fields</td>
</tr>
<tr>
<td>dump</td>
<td>Dump message in hex format</td>
</tr>
<tr>
<td>all</td>
<td>Turn all debugging on</td>
</tr>
</tbody>
</table>
Command Mode
Privileged EXEC

Default
None

Usage
Use command “terminal monitor ” to make debug messages print on the VTY immediately.
Use command “show logging buffer” to check the debug messages in the logging buffer.

Examples
The following is sample to open dhcpv6 relay debug switches:
Switch# debug dhcpv6 relay all

Related Commands
terminal monitor
show logging buffer

3.10 show dhcpv6-server
To display the DHCPv6 server groups, use the show dhcpv6-server command in privileged EXEC mode.

Command Syntax
show dhcpv6-server

Command Mode
Privileged EXEC

Default
None

Usage
This command is used to display all the DHCPv6 server groups configured with command dhcpv6-server in global mode.

Examples
The following example shows how to display dhcpv6-server group information:
Switch# show dhcpv6-server
DHCPv6 server group information:
----------------------------------------------------------
group 1 ipv6 address list:
[1] 2001:1::1

Related Commands
dhcpv6-server (global)
3.11 **show dhcpv6 relay interfaces**

To display to which dhcpv6-server group the interface belongs, use the show dhcpv6 relay interfaces command in privileged EXEC mode.

**Command Syntax**

```
show dhcpv6 relay interfaces
```

**Command Mode**

Privileged EXEC

**Default**

None

**Usage**

This command is used to display the interface which is confined DHCPv6 relay.

**Examples**

The following example shows how to display dhcpv6 relay interfaces information:

```
Switch# show dhcpv6 relay interfaces
List of DHCPv6 relay enabled interface(s):
DHCPv6 relay service status: enabled
Interface Name DHCPv6 server group
--------------------------------------------------------------------------------
eth-0-1 1
```

**Related Commands**

```
show dhcpv6-server
```

3.12 **show dhcpv6 relay pd client**

To display the result of DHCPv6 relay's prefix-delegation route function, use the show dhcpv6 relay pd client command in privileged EXEC mode.

**Command Syntax**

```
show dhcpv6 relay pd client
```

**Command Mode**

Privileged EXEC

**Default**

None

**Usage**

None

**Examples**

The following example shows how to display information of prefix-delegation route:

```
Switch# show dhcpv6 relay pd client
DHCPv6 prefix-delegation client information:
--------------------------------------------------------------------------------
Interface : vlan2
Client DUID : 0001000117e9357b606da1820300
Client IPv6 address : fe80::626d:a1ff:fe82:300
```
Related Commands

dhcpv6 relay pd route
dhcpv6 relay pd route distance

3.13 show dhcpv6 relay statistics

To display the statistics of DHCPv6 packets relayed by the switch, use the show dhcpv6 relay statistics command in privileged EXEC mode.

Command Syntax

show dhcpv6 relay statistics

Command Mode

Privileged EXEC

Default

None

Usage

This command is used to display detail DHCPv6 statistics which processed by the switch.

Examples

The following example shows how to display DHCPv6 relay statistics:

Switch# show dhcpv6 relay statistics

DHCPv6 relay packet statistics:
================================================================================================
Client relayed packets: 48
Server relayed packets: 48
Client error packets: 0
Server error packets: 0

Related Commands

clear dhcpv6 relay statistics

3.14 clear dhcpv6 relay statistics

To reset the statistics of DHCPv6 packets relayed by the switch, use the clear dhcpv6 relay statistics command in privileged EXEC mode.

Command Syntax

clear dhcpv6 relay statistics

Command Mode

Privileged EXEC

Default

None
Usage
This command is used to reset DHCPv6 statistics.

Examples
The following example shows how to clear DHCPv6 relay statistics:
Switch# clear dhcpv6 relay statistics

Related Commands
show dhcpv6 relay statistics

3.15 clear dhcpv6 relay pd route
To clear the route learned by DHCPv6 relay from prefix-delegation, use the clear dhcpv6 relay pd route command in privileged EXEC mode.

Command Syntax
clear dhcpv6 relay pd route (prefix PREFIX) (interface IFNAME) (ADDRESS)

| PREFIX | The prefix delegated to client |
| ADDRESS | The IPv6 address of PD client |
| IFNAME | The name of supported interface |

Command Mode
Privileged EXEC

Default
None

Usage
If no parameter is specified, all route will be cleared.

Examples
The following example shows how to clear route learned by DHCPv6 relay:
Switch# clear dhcpv6 relay pd route interface eth-0-1

Related Commands
dhcpv6 relay pd route
show dhcpv6 relay pd client