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Configuring UDP helper

About UDP helper

UDP helper can provide the following packet conversion services for packets with specific UDP destination port numbers:

- Convert broadcast to unicast, and forward the unicast packets to specific destinations.
- Convert broadcast to multicast, and forward the multicast packets.

Configuring UDP helper to convert broadcast to unicast

About broadcast to unicast conversion

You can configure UDP helper to convert broadcast packets with specific UDP port numbers to unicast packets.

Upon receiving a UDP broadcast packet, UDP helper uses the configured UDP ports to match the UDP destination port number of the packet.

- If a match is found, UDP helper duplicates the packet and modifies the destination IP address of the copy to the configured unicast address. Then UDP helper forwards the unicast packet to the unicast address.
- If no match is found, UDP helper does not process the packet.

Procedure

1. Enter system view.

```
system-view
```

2. Enable UDP helper.

```
udp-helper enable
```

By default, UDP helper is disabled.

3. Specify a UDP port number for UDP helper.

```
udp-helper port { port-number | dns | netbios-ds | netbios-ns | tacacs | tftp | time }
```

By default, no UDP port numbers are specified for UDP helper.

Do not set UDP ports 67 and 68 for UDP helper, because UDP helper cannot forward DHCP broadcast packets.

You can specify a maximum of 256 UDP ports for UDP helper.

4. Enter interface view.

```
interface interface-type interface-number
```

5. Specify a destination server for UDP helper to convert broadcast to unicast.

```
udp-helper server ip-address [ global | vpn-instance vpn-instance-name ]
```

By default, no destination servers are specified.

Use this command on the interface that receives broadcast packets.

You can specify a maximum of 20 unicast and multicast addresses for UDP helper to convert broadcast packets on an interface.

Configuring UDP helper to convert broadcast to multicast

About broadcast to multicast conversion

You can configure UDP helper to convert broadcast packets with specific UDP port numbers to multicast packets.

Upon receiving a UDP broadcast packet, UDP helper uses the configured UDP ports to match the UDP destination port number of the packet.

- If a match is found, UDP helper duplicates the packet and modifies the destination IP address of the copy to the configured multicast address. Then UDP helper forwards the packet to the multicast group.
- If no match is found, UDP helper does not process the packet.

Procedure

1. Enter system view.

```
system-view
```

2. Enable UDP helper.

```
udp-helper enable
```

By default, UDP helper is disabled.

3. Specify a UDP port number for UDP helper.

```
udp-helper port { port-number | dns | netbios-ds | netbios-ns | tacacs | tftp | time }
```

By default, no UDP port numbers are specified for UDP helper.

Do not set UDP ports 67 and 68 for UDP helper, because UDP helper cannot forward DHCP broadcast packets.

You can specify a maximum of 256 UDP ports for UDP helper.

4. Enter interface view.

```
interface interface-type interface-number
```

5. Specify a destination multicast address for UDP helper to convert broadcast to multicast.

```
udp-helper broadcast-map multicast-address [ acl acl-number ]
```

By default, no destination multicast addresses are specified for UDP helper.

Use this command on the interface that receives broadcast packets.

You can specify a maximum of 20 unicast and multicast addresses for UDP helper to convert broadcast packets on an interface.

Display and maintenance commands for UDP helper

Execute **display** command in any view and **reset** commands in user view.

Task	Command
Display information about broadcast to unicast conversion by UDP helper on an interface.	<pre>display udp-helper interface <i>interface-type interface-number</i></pre>

Task	Command
Clear packet statistics for UDP helper.	<code>reset udp-helper statistics</code>

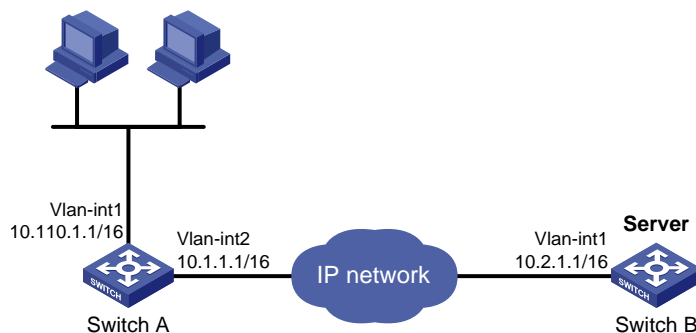
UDP helper configuration examples

Example: Configuring UDP helper to convert broadcast to unicast

Network configuration

As shown in [Figure 1](#), configure UDP helper to convert broadcast to unicast on VLAN-interface 1 of Switch A. This feature enables Switch A to forward broadcast packets with UDP destination port number 55 to the destination server 10.2.1.1/16.

Figure 1 Network diagram



Procedure

Make sure Switch A can reach the subnet 10.2.0.0/16.

Enable UDP helper.

```
[SwitchA] System-view
[SwitchA] udp-helper enable
```

Enable the UDP port 55 for UDP helper.

```
[SwitchA] udp-helper port 55
```

Specify the destination server 10.2.1.1 for UDP helper to convert broadcast to unicast on VLAN-interface 1.

```
[SwitchA] interface vlan-interface 1
[SwitchA-Vlan-interfacel] ip address 10.110.1.1 16
[SwitchA-Vlan-interfacel] udp-helper server 10.2.1.1
```

Verifying the configuration

Display information about broadcast to unicast conversion by UDP helper on VLAN-interface 1.

```
[SwitchA-Vlan-interfacel] display udp-helper interface vlan-interface 1
```

Interface	Server VPN instance	Server address	Packets sent
Vlan-interfacel	N/A	10.2.1.1	5

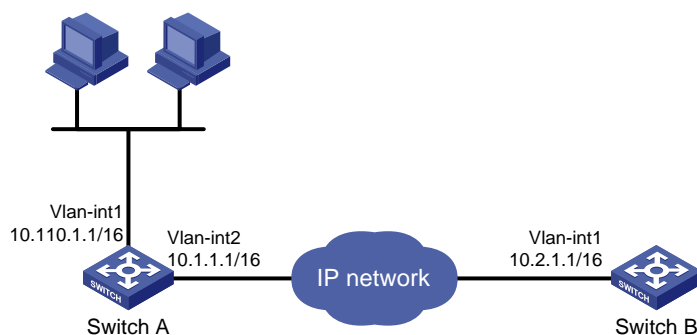
Example: Configuring UDP helper to convert broadcast to multicast

Network configuration

As shown in [Figure 2](#), VLAN-interface 1 of Switch B can receive multicast packets destined to 225.1.1.1.

Configure UDP helper to convert broadcast to multicast on VLAN-interface 1 of Switch A. This feature enables Switch A to forward broadcast packets with UDP destination port number 55 to the multicast group 225.1.1.1.

Figure 2 Network diagram



Procedure

Make sure Switch A can reach the subnet 10.2.0.0/16.

1. Configure Switch A:

Enable UDP helper.

```
<SwitchA> system-view
```

```
[SwitchA] udp-helper enable
```

Enable the UDP port 55 for UDP helper.

```
[SwitchA] udp-helper port 55
```

Configure UDP helper to convert broadcast packets to multicast packets destined for 225.1.1.1.

```
[SwitchA] interface vlan-interface 1
```

```
[SwitchA-Vlan-interface1] ip address 10.110.1.1 16
```

```
[SwitchA-Vlan-interface1] udp-helper broadcast-map 225.1.1.1
```

```
[SwitchA-Vlan-interface1] quit
```

Enable IP multicast routing globally.

```
[SwitchA] multicast routing
```

```
[SwitchA-mrib] quit
```

Enable PIM-DM on VLAN-interface 1.

```
[SwitchA] interface vlan-interface 1
```

```
[SwitchA-Vlan-interface1] pim dm
```

```
[SwitchA-Vlan-interface1] quit
```

Enable PIM-DM and IGMP on VLAN-interface 2.

```
[SwitchA] interface vlan-interface 2
```

```
[SwitchA-Vlan-interface2] pim dm
```

```
[SwitchA-Vlan-interface2] igmp enable
```

Configure VLAN-interface 2 as a static member of multicast group 225.1.1.1.

```
[SwitchA-Vlan-interface2] igmp static-group 225.1.1.1
```

2. Configure Switch B:

Enable IP multicast routing globally.

```
<SwitchB> system-view
```

```
[SwitchB] multicast routing
```

```
[SwitchB-mrib] quit
```

Enable PIM-DM and IGMP on VLAN-interface 1.

```
[SwitchB] interface vlan-interface 1
```

```
[SwitchB-Vlan-interface1] pim dm
```

```
[SwitchB-Vlan-interface1] igmp enable
```

Configure VLAN-interface 1 as a static member of multicast group 225.1.1.1.

```
[SwitchB-Vlan-interface1] igmp static-group 225.1.1.1
```

Verifying the configuration

Verify that you can capture multicast packets from Switch A on Switch B.