

## DHCPv6 Relay

Generally, the DHCPv6 clients get IP by multicasting DHCP packets in the LAN, and the server will respond to the requests of the clients. In this case, it would be necessary to keep the DHCPv6 server and clients in the same LAN. DHCPv6 relay agent is used to transmit DHCPv6 packets in different subnets so that all subnets can share DHCPv6 server, and DHCPv6 server is not required on every LAN.

A DHCPv6 client sends most messages using a reserved, link-scoped multicast destination address so that the client need not be configured with the address or addresses of DHCP servers.

mceclip0.png

In a Relay-forward message, the received message is relayed to the next relay agent or server; in a Relay-reply message, the message is to be copied and relayed to the relay agent or client whose address is in the peer-address field of the Relay-reply message.

DHCPv6 relay between VLANs  
Tested model & firmware version  
Switch model name:  
AS7326-56X(DCS203)  
Edgecore SONiC version:  
202111.0  
202111.3  
202111.8  
Restriction:  
Known issues:

[202111.3] The sub port interface does not support use with DHCP relay service.  
[ SONIC-4288 ] The "DHCP\_Relay" feature is disabled by default in 202111.0.  
(This issue is fixed on 202111.1)  
In version 202111.0, if you want to use DHCPv6 RELAY, it needs to enable DHCP\_relay feature.

```
admin@sonic:~$ sudo config feature state dhcp_relay enabled
admin@sonic:~$ show feature status dhcp_relay
```

Feature	State	AutoRestart	SystemState	UpdateTime	ContainerId	Version	CurrentOwner	RemoteState	SetOwner
dhcp_relay	enabled	enabled	up	2022-06-24 13:01:19					
dhcp_relay		Edgecore-SONiC_20220520_095905_ec202111_111	local	local					
none									

[ SONIC-4289 ] Since "frr\_mgmt\_framework\_config\_mode" is true, it will create a interface called "pimreg", when "pimreg" exist, the "DHCPv6\_Relay" feature can not work properly. Please removes "frr\_mgmt\_framework\_config\_mode" from default configuration. (This issue is fixed on 202111.1)

```
admin@sonic:~$ sudo vi /etc/sonic/config_db.json
{
  "DEVICE_METADATA": {
    "localhost": {
      "hostname": "sonic",
      "hwsku": "Accton-AS7326-56X",
      "platform": "x86_64-accton_as7326_56x-r0",
      "mac": "80:a2:35:4f:4f:40",
      "type": "LeafRouter",
      "docker_routing_config_mode": "split",
      "frr_mgmt_framework_config": "true"
    }
  }
}
```

```

    },
    ...
}
[SONIC-4389] DHCPv6 Relay setting cannot save to startup configuration. (This
issue is fixed on 202111.1)
In version 202111.0, after setting, it needs to add DHCP relay configuration
in /etc/sonic/config_db.json.

```

```
admin@sonic:~$ sudo vi /etc/sonic/config_db.json
```

```

{
    ...
    "DHCP_RELAY": {
        "Vlan20": {
            "dhcpv6_servers": [
                "2001::1"
            ]
        }
    }
}

```

[SONIC-7819] Fix DHCPv6 Relay malfunction with specific VRF name. (This issue is fixed on 202111.8)

Topology:  
mceclip1.png

Expectation:  
DHCPv6 server could assign the IPv6 address and DNS to the DHCP client successfully.

Pre-configuration:  
Configure the VLAN and IP binding as topology. (refer to VLAN & Inter-VLAN Routing and Management and front port IPv4/IPv6 Address)

```
admin@sonic:~$ show vlan brief
```

VLAN ID	IP Address	Ports	Port Tagging	Proxy ARP	DHCP Helper Address
DHCP Relay Configuration					
10	2001::254/64	Ethernet0	untagged	disabled	
Source Interface:					
Link Selection:					
Server Vrf:					
Server ID Override:					
20	2002::254/64	Ethernet1	untagged	disabled	
Source Interface:					
Link Selection:					
Server Vrf:					

```

|                               |                               |                               |                               |
Server ID Override:           |                               |                               |                               |
+-----+-----+-----+-----+-----+-----+
+-----+
Procedure:
Step 1. Assigning the IP address of the DHCPv6 server on the VLAN which requests
the DHCPv6 relay.

```

+-----+-----+		+-----+-----+		+-----+-----+	
+-----+-----+		+-----+-----+		+-----+-----+	
VLAN ID   IP Address		Ports	Port	Proxy	DHCP Helper
DHCP Relay Configuration			Tagging	ARP	Address
+-----+-----+		+-----+-----+		+-----+-----+	
+-----+-----+		+-----+-----+		+-----+-----+	
10   2001::254/64		Ethernet0	untagged	disabled	
Source Interface:					
Link Selection:					
Server Vrf:					
Server ID Override:					
+-----+-----+		+-----+-----+		+-----+-----+	
+-----+-----+		+-----+-----+		+-----+-----+	
20   2002::254/64		Ethernet1	untagged	disabled	2001::1
Source Interface:					
Link Selection:					
Server Vrf:					
Server ID Override:					
+-----+-----+		+-----+-----+		+-----+-----+	
+-----+-----+		+-----+-----+		+-----+-----+	

Step 2. Save to startup configuration.

Result:  
Client's IPv6 address

```
5: ens11f3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 state UP qlen 1000
    inet6 2002::10/128 scope global
        valid_lft forever preferred_lft forever
    inet6 fe80::8eea:1bff:fe30:da52/64 scope link
        valid_lft forever preferred_lft forever
Client's IPv6 DNS
```