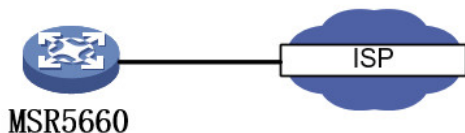


组网及说明

某局点MSR5660作为DHCPv6客户端从运营商获取IPv6地址以及前缀。



问题描述

在接口配置如下命令时无法获取IPv6地址与前缀：

```
ipv6 dhcp client stateful prefix 1 rapid-commit option-group 1
```

在接口配置如下命令时可以正常获取IPv6地址与前缀：

```
ipv6 address dhcp-alloc rapid-commit option-group 1
```

```
ipv6 dhcp client pd 1 rapid-commit option-group 2
```

过程分析

1. 分析三条命令的功能，命令3可以同时获取IPv6地址、IPv6前缀和其他网络配置参数，与命令1、命令2同时配置的功能相同

命令1：

```
ipv6 address dhcp-alloc [ option-group group-number | rapid-commit ]*
```

接口作为DHCPv6客户端，通过DHCPv6方式获取IPv6地址和其他网络配置参数

命令2：

```
ipv6 dhcp client pd prefix-number [ option-group group-number | rapid-commit ]*
```

接口作为DHCPv6客户端，通过DHCPv6方式获取IPv6前缀和其他网络配置参数

命令3：

```
ipv6 dhcp client stateful prefix prefix-number [ option-group option-group-number | rapid-commit ]*
```

接口作为DHCPv6客户端，通过DHCPv6方式同时获取IPv6地址、IPv6前缀和其他网络配置参数

2. 查看DHCPv6客户端的信息，发现客户端的状态一直是IDLE闲置状态

```
display ipv6 dhcp client
```

```
GigabitEthernet2/0/0:
```

```
Type: Stateful client requesting address and prefix
```

```
State: IDLE
```

```
Client DUID: 000300017ebc89240200
```

3.通过debugging dhcpv6客户端信息，发现设备没有发出DHCPv6请求

```
debugging ipv6 dhcp client all
```

```
terminal monitor
```

```
terminal debugging
```

4.查看接口状态发现接口没有link-local地址，所以无法发出DHCPv6报文。

```
display ipv6 interface GigabitEthernet 2/0/0
```

```
GigabitEthernet2/0/0 current state: UP
```

```
Line protocol current state: UP
```

5. 分析两种配置方法的区别

方法1：无法自动生成link-local地址，需要单独命令配置link-local地址

```
ipv6 dhcp client stateful prefix 1 rapid-commit option-group 1
```

方法2：可以自动生成link-local地址

```
ipv6 address dhcp-alloc rapid-commit option-group 1 //该命令设备会自动生成了link-local地址
```

```
ipv6 dhcp client pd 1 rapid-commit option-group 2
```

解决方法

在接口配置命令自动生成link-local地址：

```
ipv6 address auto link-local
```

```
display ipv6 dhcp client
```

```
GigabitEthernet2/0/0:
```

```
Type: Stateful client requesting address and prefix
```

State: OPEN

Client DUID: 000300017ebc89240200

Preferred server:

Reachable via address: FE80::7CBC:85FF:FE64:105

Server DUID: 000300017ebc85640100

IA_NA: IAID 0x00000001, T1 302400 sec, T2 483840 sec

Address: 2001::2

Preferred lifetime 604800 sec, valid lifetime 2592000 sec

Will expire on Mar 25 2019 at 16:36:11 (2591973 seconds left)

IA_PD: IAID 0x00000001, T1 302400 sec, T2 483840 sec

Prefix: 2002::/64

Preferred lifetime 604800 sec, valid lifetime 2592000 sec

Will expire on Mar 25 2019 at 16:36:11 (2591973 seconds left)

DNS server addresses:

3001::A48:4224