MSR路由器6to4隧道功能的配置

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关键字: MSR;IPv6;6to4;隧道;过渡技术

一、组网需求

6to4隧道可将多个IPv6孤岛网络通过IPv4网络连接到IPv6网络，本配置通过在RTA与RTC上建立6to4隧道，穿越IPv4网络RTB，使两端的IPv6主机互通（用loopback地址模拟），举例说明如何建立6to4隧道，同时如何测试配置是否成功。

试验设备：RTA（MSR20-21），RTB（MSR20-20）,RTC（MSR30-20）

二、组网图

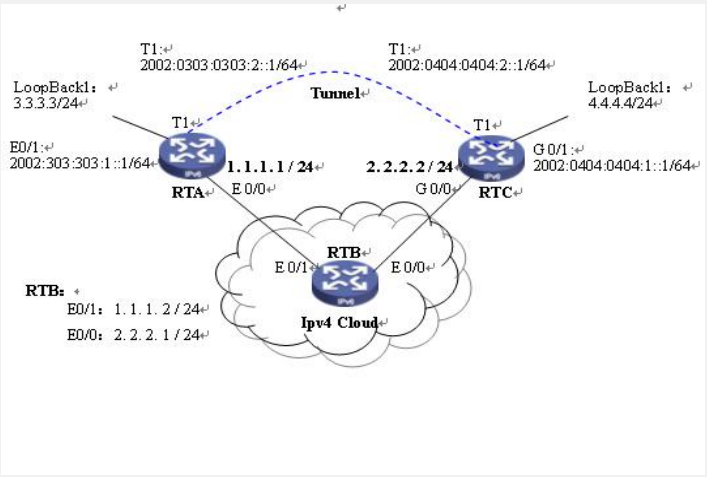

图1 IPv6 6to4隧道组网图

三、配置步骤

1．RTA配置：

```
 #
 router id 1.1.1.1
#
 ipv6
#
interface Ethernet0/0
 port link-mode route
 ip address 1.1.1.1 255.255.255.0
 undo ipv6 nd ra halt
#
interface Ethernet0/1
 port link-mode route
 ipv6 address 2002:303:303:1::1/64
#
interface NULL0
//用loopBack地址做为隧道入口地址
#
interface LoopBack1
 ip address 3.3.3.3 255.255.255.255
#
interface Ethernet0/9
 port link-mode bridge
//建立6to4隧道
#
interface Tunnel1
 ipv6 address 2002:303:303:2::1/64
 tunnel-protocol ipv6-ipv4 6to4
 //以loopback地址做为隧道源地址，可以保证隧道始终UP
source LoopBack1
//启动ipv4 ospf 以保证v4网络是连通的
```

```
#
ospf 1
 area 0.0.0.0
  network 1.1.1.0 0.0.0.255
  network 3.3.3.3 0.0.0.0
//将所有访问2002前缀的路由均指向隧道1
#
 ipv6 route-static 2002:: 16 Tunnel1
#
return
```

2．配置RTB：

```
 //RTB在实例中模拟Ipv4网络，配置简单
 //只需启动ospf 保证网络连通即可
#
 router id 2.2.2.2
#
 ipv6
#
interface Ethernet0/0
 port link-mode route
 ip address 2.2.2.1 255.255.255.0
#
interface Ethernet0/1
 port link-mode route
 ip address 1.1.1.2 255.255.255.0
#
ospf 1
 area 0.0.0.0
  network 1.1.1.0 0.0.0.255
  network 2.2.2.0 0.0.0.255
#
return
```

3．RTC配置：

```
#
 router id 3.3.3.3
#
 ipv6
#
interface NULL0
//用loopBack地址做为隧道入口地址
#
interface LoopBack1
 ip address 4.4.4.4 255.255.255.255
#
interface GigabitEthernet0/0
 port link-mode route
 ip address 2.2.2.2 255.255.255.0
#
interface GigabitEthernet0/1
 port link-mode route
 ipv6 address 2002:404:404:1::1/64
 undo ipv6 nd ra halt
#
interface Tunnel1
 ipv6 address 2002:404:404:2::1/64
 tunnel-protocol ipv6-ipv4 6to4
 source LoopBack1
#
ospf 1
 area 0.0.0.0
  network 4.4.4.4 0.0.0.0
  network 2.2.2.0 0.0.0.255
```

```
#
 ipv6 route-static 2002:: 16 Tunnel1
#
return
```

四、配置关键点

1. 注意6to4地址的格式：2002：××：××：。。。。
2. 注意静态路由的格式，只定义前缀长度为16的就可以。

五、试验分析

配置完成后，在RTC上ping路由器RTA 6to4的入口地址有如下结果：

```
 [RTC]ping ipv6 2002:0303:0303:2::1
 PING 2002:0303:0303:2::1 : 56  data bytes, press CTRL_C to break
   Reply from 2002:303:303:2::1
   bytes=56 Sequence=1 hop limit=64  time = 3 ms
   Reply from 2002:303:303:2::1
   bytes=56 Sequence=2 hop limit=64  time = 2 ms
   Reply from 2002:303:303:2::1
   bytes=56 Sequence=3 hop limit=64  time = 2 ms
   Reply from 2002:303:303:2::1
   bytes=56 Sequence=4 hop limit=64  time = 2 ms
   Reply from 2002:303:303:2::1
   bytes=56 Sequence=5 hop limit=64  time = 2 ms

 --- 2002:0303:0303:2::1 ping statistics ---
   5 packet(s) transmitted
   5 packet(s) received
   0.00% packet loss
   round-trip min/avg/max = 2/2/3 ms
```