

MSR路由器 IPv6手工隧道的配置

关键词: 手工隧道;MSR;IPv6

试验设备: MSR 20-21/1台; MSR 20-20/1台; MSR 30-20/1台; PC (OS为WinXP) /2台;

一、组网需求:

通过在路由器RT_A、RT_B上配置IPv6手工隧道,达到穿越中间的IPv4网络(用RT_C模拟),使IPv6孤岛PC_A、PC_B互通的目的。

二、组网图:

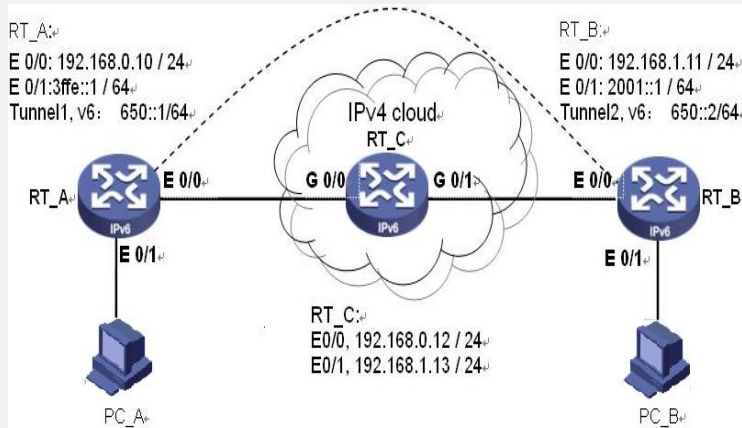


图1- IPv6手工隧道组网图

三、配置步骤:

1. 如图示,正确连接路由器与PC,
2. 依次进行如下配置:

【RT_A】配置:

```
<RT_A>sys
System View: return to User View with Ctrl+Z.
//全局视图下使能IPv6
[RT_A]ipv6
[RT_A]interface Ethernet 0/1
[RT_A-Ethernet0/1] ipv6 address 3FFE::1/64
//使能v6地址前缀发送功能(默认关闭)
[RT_A-Ethernet0/1]undo ipv6 nd ra halt
//退出接口视图,返回系统视图
[RT_A-Ethernet0/1]quit
[RT_A]interface Ethernet 0/0
//配置E0/0的IPv4地址
[RT_A-Ethernet0/0]ip add 192.168.0.10 24
//退出接口视图,返回系统视图
[RT_A-Ethernet0/0]quit
//建立隧道2
[RT_A]interface Tunnel 2
//设定隧道2的v6地址
[RT_A-Tunnel2]ipv6 address 650::1/64
//设定隧道类型为手工隧道
[RT_A-Tunnel2]tunnel-protocol ipv6-ipv4
//指定隧道起始点为端口E0/0
[RT_A-Tunnel2]source Ethernet 0/0
//设定隧道目的地,此处为隧道在远端RT_B的接口E0/0的v4地址
[RT_A-Tunnel2]destination 192.168.1.11
//查看隧道配置结果
[RT_A-Tunnel1]dis th
#
interface Tunnel2
ipv6 address 650::1/64
```

```

tunnel-protocol ipv6-ipv4
source Ethernet0/0
destination 192.168.1.11
#
return
[RT_A -Tunnel1]quit
//到RT_B的v4静态路由
[RT_A]ip route-static 192.168.1.0 255.255.255.0 192.168.0.12
//配静态路由，将到达RT_B端的PC网段的v6地址的下一跳指向本地隧道
[RT_A]ipv6 route-static 2001:: 64 Tunnel2
【RT_B】配置:
< RT_B >sys
System View: return to User View with Ctrl+Z.
//全局视图下使能Ipv6
[RT_B]ipv6
[RT_B]interface Ethernet 0/1
//接PC
[RT_B-Ethernet0/1]ipv6 address 2001::1/64
//使能Ipv6的路由广播功能（默认关闭）
[RT_B-Ethernet0/1]undo ipv6 nd ra halt
//查看配置结果
[RT_B-Ethernet0/1]dis th
#
interface Ethernet0/1
port link-mode route
ipv6 address 2001::1/64
undo ipv6 nd ra halt
#
return
[RT_B-Ethernet0/1]quit
[RT_B]interface Ethernet 0/0
//配置E0/0的Ipv4地址
[RT_B-Ethernet0/0]ip add 192.168.1.11 24
//退出接口视图，返回系统视图
[RT_B-Ethernet0/0]quit
//建立隧道1
[RT_B]interface Tunnel 1
//设定隧道1的v6地址
[RT_B-Tunnel1]ipv6 address 650::2/64
//设定隧道类型为6to4
[RT_B-Tunnel1]tunnel-protocol ipv6-ipv4
//设定隧道起始地址，接口，ip均可
[RT_B-Tunnel1]source Ethernet0/0
//设定隧道目的地，此处为隧道在源端RT_A的接口E0/0的v4地址
[RT_B-Tunnel1]destination 192.168.0.10
//查看隧道配置结果
[RT_B-Tunnel1]dis th
#
interface Tunnel1
ipv6 address 650::2/64
tunnel-protocol ipv6-ipv4
source Ethernet0/0
destination 192.168.0.10
#
return
[RT_B -Tunnel1]quit
//到RT_A的v4静态路由
[RT_B]ip route-static 192.168.0.0 255.255.255.0 192.168.1.13
//配到达对端主机网段的静态路由，将下一跳地址指向本地隧道
[RT_B]ipv6 route-static 3FFE:: 64 Tunnel1

【RT_C】配置: //RT_C上全为Ipv4地址,只要保证与RT_A,RT_B联通即可
< RT_C >sys
[RT_C]interface GigabitEthernet 0/0

```

```
[RT_C] ip address 192.168.0.12 255.255.255.0  
[RT_C]quit
```

```
[RT_C]interface GigabitEthernet 0/1  
[RT_C] ip address 192.168.1.13 255.255.255.0  
[RT_C]quit
```

3. 配置完成后通过PC_A ping PC_B,显示如下:

```
C:\>ping6 3ffe::213:72ff:fe8e:5225  
//PC_B自动获得的v6地址  
Pinging 3ffe::213:72ff:fe8e:5225  
from 2001::f571:8207:a392:14e8 with 32 bytes of data:  
  
Reply from 3ffe::213:72ff:fe8e:5225: bytes=32 time=3ms  
Reply from 3ffe::213:72ff:fe8e:5225: bytes=32 time=3ms  
Reply from 3ffe::213:72ff:fe8e:5225: bytes=32 time=3ms  
Reply from 3ffe::213:72ff:fe8e:5225: bytes=32 time=3ms  
  
Ping statistics for 3ffe::213:72ff:fe8e:5225:  
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
    Approximate round trip times in milli-seconds:  
        Minimum = 3ms, Maximum = 3ms, Average = 3ms
```

1. 至此手动隧道配置完成

四、配置关键点:

1. 在隧道两端的路由器上先全局启动IPv6协议
2. 做隧道验证前请保证路由器间的v4网络是连通的, 及RT_A可以ping通RT_B
3. 两台PC要ping通, 注意相关路由是否被添加。