MSR路由器BGP4+路由反射器的配置

张瑞 2006-09-21 发表

MSR路由器

BGP4+路由反射器的配置

关键字: MSR;IPv6;BGP4+; 路由反射

一、组网需求

RouterB接收了一个经过EBGP的更新报文并将之传给RouterC。RouterC被配置为路由反射器，它有两个客户：RouterB和RouterD。RouterB和RouterD间不需一个IBGP连接，当RouterC接收了来自RouterB的路由更新时，它将此信息反射给RouterD，反之亦然。

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

适用版本：Version 5.20, Beta 1105

二、组网图

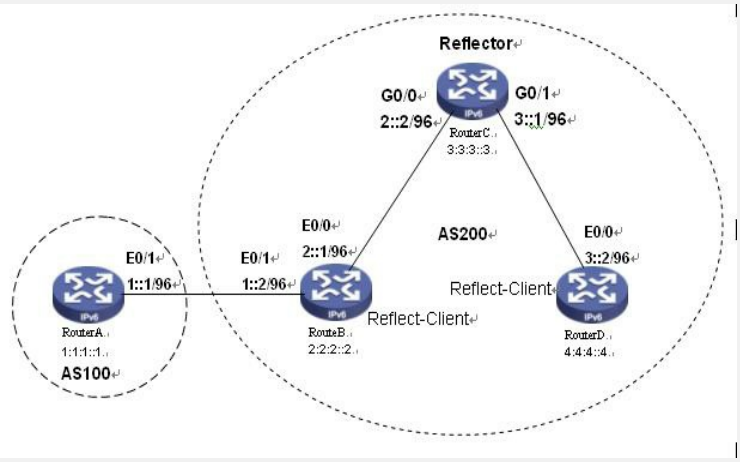

图 1 BGP4+路由反射组网图

三、配置步骤

RouterA配置
ipv6 # interface Ethernet0/1 port link-mode route ipv6 address 1::1/96 # interface NULL0 # interface LoopBack0 ipv6 address 1:1:1::1/128 # bgp 100 undo synchronization # ipv6-family //发布该网段的路由，此处为loopback0地址 network 1:1:1::1 128 undo synchronization //与对端建立EBGP连接 peer 1::2 as-number 200
RouterB配置

```
#
 ipv6
#
interface Ethernet0/0
 port link-mode route
 ipv6 address 2::1/96
#
interface Ethernet0/1
 port link-mode route
 ipv6 address 1::2/96
#
interface LoopBack0
 ipv6 address 2:2:2::2/128
#
bgp 200
undo synchronization
#
ipv6-family
network 2:2:2::2 128
//引入直连路由以保证下一跳路由可达
import-route direct
undo synchronization
//注意：此处并未将Router D加入对等体
peer 1::1 as-number 100
peer 2::2 as-number 200
```

RouterC配置

```
#
 ipv6
#
interface LoopBack0
 ipv6 address 3:3:3::3/128
#
interface GigabitEthernet0/0
 port link-mode route
 ipv6 address 2::2/96
#
interface GigabitEthernet0/1
 port link-mode route
 ipv6 address 3::1/96
//BGP部分配置
#
bgp 200
undo synchronization
#
ipv6-family
network 3:3:3::3 128
import-route direct
undo synchronization
group alanker internal
//设定组内的对等体都为反射器的客户端
peer alanker reflect-client
peer 2::1 group alanker
peer 3::2 group alanker
```

RouterD配置

```
#
 ipv6
#
interface LoopBack0
 ipv6 address 4:4:4::4/128
#
interface GigabitEthernet0/0
 port link-mode route
 ipv6 address 3::2/96
 ip address 1.0.0.4 255.255.255.0
#
interface GigabitEthernet0/1
 port link-mode route
#
bgp 200
undo synchronization
#
ipv6-family
network 4:4:4::4 128
import-route direct
undo synchronization
peer 3::1 as-number 200
```

四、配置关键点

1．作为反射client的RouterB、D上无需配reflect-client，这些都是要在反射器routerC上配的

2．需要在边界路由器RouterB与RouterC上引入直连路由，否则在ping 1:1:1::1地址的时候找不到下一跳1::1, 即无法到达BGP路由表中的下一跳。因为边界路由器在向IBGP发布路由的时候不改变该条路由的下一跳。

五、试验分析

1. 在RouterA上再配置一个loopback地址：2001：da8::1, 并在BGP视图下用如下命

令使能：（红色部分）

```
[RouterA-2021-bgp-af-ipv6]dis th
#
 ipv6-family
  network 1:1:1::1 128
  network 2001:DA8::1 128
  undo synchronization
  peer 1::2 as-number 200
```

此时在RouterB与RouterD的BGP路由表中均有到达该地址的路由，

```
<RouterB-2020>display bgp ipv6 routing-table

 Total Number of Routes: 9

 BGP Local router ID is 1.0.0.2
 Status codes: * - valid, > - best, d - damped,
               h - history,  i - internal, s - suppressed, S - Stale
               Origin : i - IGP, e - EGP, ? - incomplete

 *>  Network : 1::                          PrefixLen : 96
     NextHop : 1::2                         LocPrf    :
     PrefVal : 0                           Label     : NULL
     MED     : 0
     Path/Ogn: ?

 *>  Network : 1:1:1::1                      PrefixLen : 128
     NextHop : 1::1                         LocPrf    :
     PrefVal : 0                           Label     : NULL
     MED     : 0
     Path/Ogn: 100 i

 *>  Network : 2::                          PrefixLen : 96
     NextHop : 2::1                         LocPrf    :
     PrefVal : 0                           Label     : NULL
     MED     : 0
     Path/Ogn: ?

 * i Network : 2::                         PrefixLen : 96
     NextHop : 2::2                         LocPrf    : 100
     PrefVal : 0                           Label     : NULL
     MED     : 0
     Path/Ogn:  ?

 *>  Network : 2:2:2::2                     PrefixLen : 128
     NextHop : ::1                          LocPrf    :
     PrefVal : 0                           Label     : NULL
     MED     : 0
     Path/Ogn: i

 *>i Network : 3::                          PrefixLen : 96
     NextHop : 2::2                         LocPrf    : 100
     PrefVal : 0                           Label     : NULL
     MED     : 0
     Path/Ogn:  ?

 *>i Network : 3:3:3::3                     PrefixLen : 128
     NextHop : 2::2                         LocPrf    : 100
     PrefVal : 0                           Label     : NULL
     MED     : 0
```

```
    Path/Ogn:  i

 *>i Network : 4:4:4::4                    PrefixLen : 128
    NextHop : 3::2                         LocPrf    : 100
    PrefVal : 0                            Label     : NULL
    MED     : 0
    Path/Ogn:  i

 *>  Network : 2001:DA8::1                 PrefixLen : 128
    NextHop : 1::1                         LocPrf    :
    PrefVal : 0                            Label     : NULL
    MED     : 0
    Path/Ogn: 100 i
```

从D上可以ping通该地址，结果如下：

```
   <RouterD-3020>ping ipv6 2001:da8::1
  PING 2001:da8::1 : 56  data bytes, press CTRL_C to break
    Reply from 2001:DA8::1
    bytes=56 Sequence=1 hop limit=62  time = 3 ms
    Reply from 2001:DA8::1
    bytes=56 Sequence=2 hop limit=62  time = 3 ms
    Reply from 2001:DA8::1
    bytes=56 Sequence=3 hop limit=62  time = 3 ms
    Reply from 2001:DA8::1
    bytes=56 Sequence=4 hop limit=62  time = 4 ms
    Reply from 2001:DA8::1
    bytes=56 Sequence=5 hop limit=62  time = 3 ms

  --- 2001:da8::1 ping statistics ---
    5 packet(s) transmitted
    5 packet(s) received
    0.00% packet loss
    round-trip min/avg/max = 3/3/4 ms
```