

SR6600路由器MPLS 反射VPN功能的配置

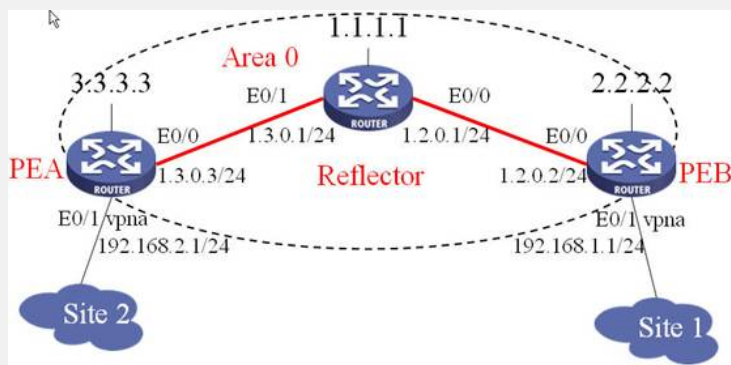
关键词: SR66;MPLS;BGP;L3VPN;reflect

一、组网需求:

PEA和PEB是VPN站点接入路由器。PEA、PEB和Reflector建立MP-IBGP连接, vpn路由都由Reflector反射传播。

设备清单: SR6600路由器3台

二、组网图:



三、配置步骤:

设备和版本: SR6600、Version 5.20, Release 1509

PEA配置:

```
#
router id 3.3.3.3
#
ip vpn-instance vpna
route-distinguisher 3:1
vpn-target 1:1 export-extcommunity
vpn-target 1:1 import-extcommunity
#
mpls lsr-id 3.3.3.3
#
mpls
#
mpls ldp
#
interface Ethernet0/0
port link-mode route
ip address 1.3.0.3 255.255.255.0
mpls
mpls ldp
#
interface Ethernet0/1
port link-mode route
ip binding vpn-instance vpna
ip address 192.168.2.1 255.255.255.0
#
interface LoopBack0
ip address 3.3.3.3 255.255.255.255
```

```
#
bgp 1
undo synchronization
peer 1.1.1.1 as-number 1
peer 1.1.1.1 connect-interface LoopBack0
#
ipv4-family vpnv4
peer 1.1.1.1 enable
#
ipv4-family vpn-instance vpna
import-route direct
#
ospf 1
area 0.0.0.0
network 3.3.3.3 0.0.0.0
network 1.3.0.0 0.0.0.255
#
Reflector配置:
#
router id 1.1.1.1
#
mpls lsr-id 1.1.1.1
#
mpls
#
mpls ldp
#
interface Ethernet0/0
port link-mode route
ip address 1.2.0.1 255.255.255.0
mpls
mpls ldp
#
interface Ethernet0/1
port link-mode route
ip address 1.3.0.1 255.255.255.0
mpls
mpls ldp
#
interface LoopBack0
ip address 1.1.1.1 255.255.255.255
#
bgp 1
undo synchronization
group 1 internal
peer 1 connect-interface LoopBack0
peer 2.2.2.2 group 1
peer 3.3.3.3 group 1
#
ipv4-family vpnv4
undo policy vpn-target //接收所有vpn路由
peer 1 enable
peer 1 reflect-client //配置反射组
peer 2.2.2.2 enable
peer 2.2.2.2 group 1
peer 3.3.3.3 enable
peer 3.3.3.3 group 1
#
ospf 1
area 0.0.0.0
network 1.1.1.1 0.0.0.0
network 1.3.0.0 0.0.0.255
network 1.2.0.0 0.0.0.255
#
```

PEB配置:

```
#
router id 2.2.2.2
#
ip vpn-instance vpna
route-distinguisher 2:1
vpn-target 1:1 export-extcommunity
vpn-target 1:1 import-extcommunity
#
#                               mpls lsr-id 2.2.2.2
#
mpls
#
mpls ldp
#
interface Ethernet0/0
port link-mode route
ip address 1.2.0.2 255.255.255.0
mpls
mpls ldp
#
interface Ethernet0/1
port link-mode route
ip binding vpn-instance vpna
ip address 192.168.1.1 255.255.255.0
#
interface LoopBack0
ip address 2.2.2.2 255.255.255.255
#
bgp 1
undo synchronization
peer 1.1.1.1 as-number 1
peer 1.1.1.1 connect-interface LoopBack0
#
ipv4-family vpv4
peer 1.1.1.1 enable
#
ipv4-family vpn-instance vpna
network 192.168.1.0
#
ospf 1
area 0.0.0.0
network 2.2.2.2 0.0.0.0
network 1.2.0.0 0.0.0.255
#
```

四、配置关键点:

在MPLS L3VPN基本配置**正确**的基础上, 配置主要在Reflector上, Reflector不需配置vpn实例, 注意其BGP配置。

五、实验分析

在PEA和PEB上检查vpn路由及其标签。

PEA上查看vpn路由, 注意默认路由:

```
[PEA]dis bg v a r
BGP Local router ID is 3.3.3.3
Total number of routes from all PE: 1
Route Distinguisher: 2:1
Network      NextHop      In/Out Label  MED    LocPrf
* > i 2.1.1.1/32    2.2.2.2      NULL/1025    0      100
Total routes of vpn-instance vpna: 2
Network      NextHop      In/Out Label  MED    LocPrf
* > i 2.1.1.1/32    2.2.2.2      NULL/1025    0      100
* > 3.1.1.1/32     0.0.0.0      1024/NULL    0
```

PEB上查看vpn路由情况:

[PEB]dis bg v a r

BGP Local router ID is 2.2.2.2

Total number of routes from all PE: 1

Route Distinguisher: 3:1

Network	NextHop	In/Out Label	MED	LocPrf
*>i 3.1.1.1/32	3.3.3.3	NULL/1024	0	100

Total routes of vpn-instance vpna: 2

Network	NextHop	In/Out Label	MED	LocPrf
*> 2.1.1.1/32	0.0.0.0	1025/NULL	0	
*>i 3.1.1.1/32	3.3.3.3	NULL/1024	0	100

SPE上查看vpn路由情况:

<SPE>dis bg v a r

BGP Local router ID is 1.1.1.1

Total number of routes from all PE: 2

Route Distinguisher: 3:1

Network	NextHop	In/Out Label	MED	LocPrf
*>i 3.1.1.1/32	3.3.3.3	NULL/1024	0	100

Route Distinguisher: 2:1

Network	NextHop	In/Out Label	MED	LocPrf
*>i 2.1.1.1/32	2.2.2.2	NULL/1025	0	100