

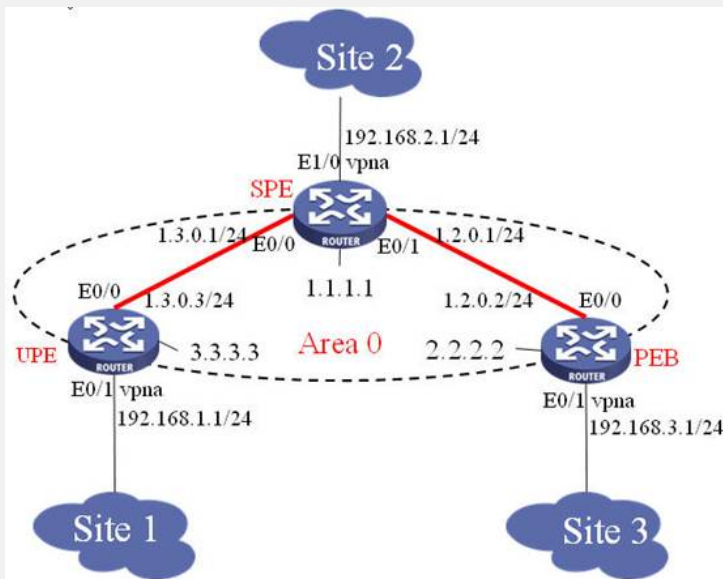
SR6600路由器MPLS HoVPN配置

关键词: SR66;MPLS;BGP;HoVPN

一、组网需求:

UPE、SPE和PEB是VPN站点接入路由器。UPE、PEB和SPE建立MP-IBGP连接。
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

UPE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 192.168.1.1 255.255.255.0
#
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
#
SPE配置:
#
router id 1.1.1.1
#
ip vpn-instance vpna
route-distinguisher 1:1
vpn-target 1:1 export-extcommunity
vpn-target 1:1 import-extcommunity
#
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 Ethernet1/0
port link-mode route
ip binding vpn-instance vpna
ip address 192.168.2.1 255.255.255.0
#
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
```

```
peer 1 enable
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
peer 3.3.3.3 upe //指定UPE为upe, 及生成vpna默认路由
peer 3.3.3.3 default-route-advertise vpn-instance vpna
#
ipv4-family vpn-instance vpna
network 192.168.2.0 255.255.255.0
#
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 192.168.3.1 255.255.255.0
#
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 2.1.1.1 255.255.255.255
#
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SPE上指定up和发布默认路由。

五、实验分析

在UPE和PEB上检查vpn路由及其标签。

UPE上查看vpn路由, 注意默认路由:

```
<UPE>dis bg v a r
BGP Local router ID is 3.3.3.3
Total number of routes from all PE: 1
Route Distinguisher: 1:1
Network      NextHop      In/Out Label  MED      LocPrf
*i 0.0.0.0    1.1.1.1      NULL/1032     0         100
Total routes of vpn-instance vpna: 2
Network      NextHop      In/Out Label  MED      LocPrf
*i 0.0.0.0    1.1.1.1      NULL/1032     0         100
*> 3.1.1.1/32 0.0.0.0      1025/NULL     0
```

PEB上查看vpn路由情况:

```
<PEB>dis bgp vpnv4 vpn-instance vpna routing-table

Total Number of Routes: 3

BGP Local router ID is 2.2.2.2
Status codes: * - valid, > - best, d - damped,
h - history, i - internal, s - suppressed, S - Stale
Origin : i - IGP, e - EGP, ? - incomplete
Network      NextHop      MED      LocPrf  PrefVal Path/Ogn
*i 1.0.0.1/32 1.1.1.1      0         100     0      i
*> 2.1.1.1/32 0.0.0.0      0          0       0      i
*i 3.1.1.1/32 1.1.1.1      0         100     0      ?
```

SPE上查看vpn路由情况:

```
<SPE>dis bgp 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      1031/1025     0         100
Route Distinguisher: 2:1
Network      NextHop      In/Out Label  MED      LocPrf
*i 2.1.1.1/32 2.2.2.2      NULL/1033     0         100
Total routes of vpn-instance vpna: 3
Network      NextHop      In/Out Label  MED      LocPrf
*> 1.0.0.1/32 0.0.0.0      1029/NULL     0
*i 2.1.1.1/32 2.2.2.2      NULL/1033     0         100
*i 3.1.1.1/32 3.3.3.3      NULL/1025     0         100
```