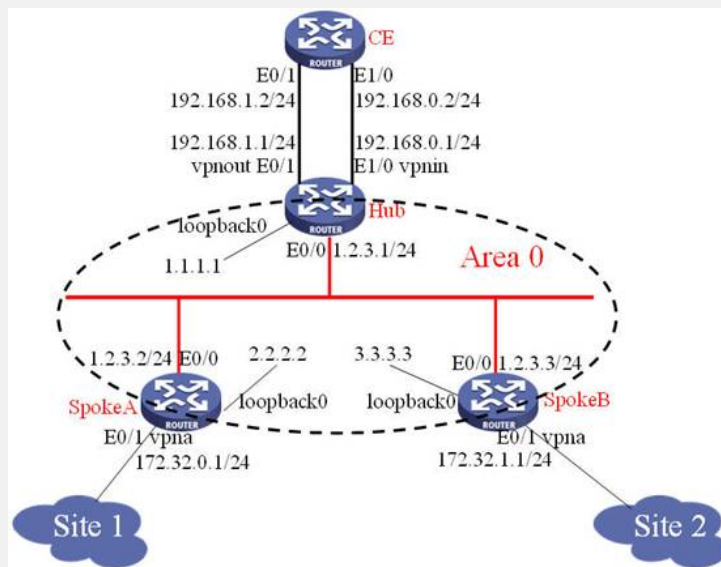**SR6600路由器**
**MPLS L3VPN HubSpoke配置**

关键词：SR66;MPLS;BGP;L3VPN;HubSpoke

**一、组网需求**：
SPOKEA和SPOKEB是vpna的2个分布站点接入PE，总部站点用CE表示，CE的接入
PE是Hub，要求SPOKEA和SPOKEB之间的VPN流量都需要从总部站点转发。
设备清单：SR6600路由器4台

**二、组网图**：



**三、配置步骤：**
**SpokeA配置**
```
#
router id 2.2.2.2
#
ip vpn-instance vpna
route-distinguisher 2:1
vpn-target 2:1 export-extcommunity   //配置vpna的出团体属性
vpn-target 1:1 import-extcommunity   //配置vpna的入团体属性
#
mpls lsr-id 2.2.2.2
#
mpls
ttl propagate vpn           //使能vpn的ttl复制，用于tracert
#
mpls ldp
#
interface Ethernet0/0
port link-mode route
ip address 1.2.3.2 255.255.255.0
mpls
mpls ldp
#
```

```
interface Ethernet0/1
 port link-mode route
ip binding vpn-instance vpna    //绑定vpn实例vpna
ip address 172.32.0.1 255.255.255.0
#
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 vpnv4
peer 1.1.1.1 enable
#
ipv4-family vpn-instance vpna
import-route direct
#
ospf 1
area 0.0.0.0
network 2.2.2.2 0.0.0.0
network 1.2.3.0 0.0.0.255
#
```
**SpokeB配置**
```
#
router id 3.3.3.3
#
ip vpn-instance vpna
route-distinguisher 3:1
vpn-target 3:1 export-extcommunity    //配置vpna的出团体属性
vpn-target 1:1 import-extcommunity    //配置vpna的入团体属性
#
mpls lsr-id 3.3.3.3
#
mpls
ttl propagate vpn            //使能vpn的ttl复制，用于tracert
#
mpls ldp
#
interface Ethernet0/0
port link-mode route
ip address 1.2.3.3 255.255.255.0
mpls
mpls ldp
#
interface Ethernet0/1
port link-mode route
ip binding vpn-instance vpna    //绑定vpn实例vpna
ip address 172.32.1.1 255.255.255.0
#
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
network 172.32.1.0 255.255.255.0
```

```
#
ospf 1                    //OSPF保证全网互通
area 0.0.0.0
network 3.3.3.3 0.0.0.0
network 1.2.3.0 0.0.0.255
#
```

**Hub配置**

```
#
router id 1.1.1.1
#
ip vpn-instance vpnin
route-distinguisher 1:2
vpn-target 2:1 3:1 import-extcommunity  //入团体属性
#
ip vpn-instance vpnout
route-distinguisher 1:1
vpn-target 1:1 export-extcommunity      //出团体属性
#
mpls lsr-id 1.1.1.1
#
mpls
ttl propagate vpn          //使能vpn的ttl复制，用于tracert
#
mpls ldp
#
interface Ethernet0/0
port link-mode route
ip address 1.2.3.1 255.255.255.0
mpls
mpls ldp
#
interface Ethernet0/1
 port link-mode route
ip binding vpn-instance vpnout //绑定vpn实例vpnout
ip address 192.168.1.1 255.255.255.0
#
interface Ethernet1/0
port link-mode route
ip binding vpn-instance vpnin  //绑定vpn实例vpnin
ip address 192.168.0.1 255.255.255.0
#
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 3.3.3.3 group 1
peer 2.2.2.2 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
#
ipv4-family vpn-instance vpnin //vpnin的路由和peer配置
peer 192.168.0.2 as-number 2 //与CEA建立EBGP连接
#
ipv4-family vpn-instance vpnout //vpnout的路由和peer配置
peer 192.168.1.2 as-number 2 //与CEA建立EBGP连接
network 192.168.1.0
```

```
peer 192.168.1.2 allow-as-loop //必配，使能接受路由环路
#
ospf 1
area 0.0.0.0
network 1.1.1.1 0.0.0.0
network 1.2.3.0 0.0.0.255
#
```

**CE配置**

```
#
interface Ethernet0/1
 port link-mode route
ip address 192.168.1.2 255.255.255.0
#
interface Ethernet1/0
port link-mode route
ip address 192.168.0.2 255.255.255.0
#
bgp 2
network 192.168.0.0
undo synchronization
peer 192.168.1.1 as-number 1
peer 192.168.0.1 as-number 1
group 1 external
peer 192.168.1.1 group 1
peer 192.168.0.1 group 1
#
```

**四、配置关键点**：

1. 掌握VPN路由的流向；
2. 注意Spoke上vpn-target的配置；
3. Hub上配置2个vpn实例及其vpn-target配置；
4. Hub的BGP配置，需要与CE建立2条EBGP连接，都配置在vpn实例视图下；
5. Hub上vpnout实例要配置接受环路路由。