

### MSR路由器 MPLS L3VPN基本功能配置

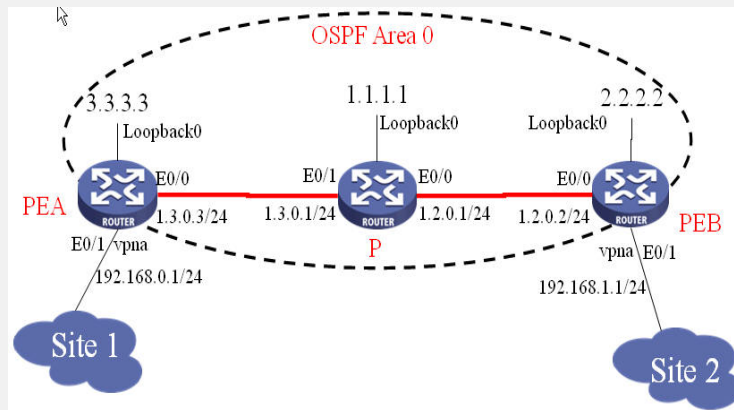
关键词: MSR;MPLS;BGP;L3VPN

#### 一、组网需求:

PEA和PEB是VPN站点接入路由器, 分别下挂vpna站点1和站点2。PEA和PEB建立M P-IBGP连接, 互相为VPN路由分发标签。P设备可选。

设备清单: MSR路由器3台

#### 二、组网图:



#### 三、配置步骤:

适用设备和版本: MSR、Version 5.20, Beta 1105后所有版本。

##### PEA配置:

```
#
router id 3.3.3.3 //BGP的router id
#
ip vpn-instance vpna //配置vpn实例vpna
route-distinguisher 3:1 //配置vpna的RD
vpn-target 1:1 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的LSR-ID
#
mpls //全局使能MPLS
#
mpls ldp //全局使能MPLS LDP
#
interface Ethernet0/0
port link-mode route
ip address 1.3.0.3 255.255.255.0
mpls //接口使能MPLS
mpls ldp //接口使能MPLS LDP
#
interface Ethernet0/1
port link-mode route
ip binding vpn-instance vpna //绑定vpn实例vpna
ip address 192.168.0.1 255.255.255.0
#
interface LoopBack0 //router id 和 MPLS LSR-ID
ip address 3.3.3.3 255.255.255.255
#
bgp 1 //启动BGP进程, AS为1
undo synchronization
peer 2.2.2.2 as-number 1 //2.2.2.2是PEB的router id
peer 2.2.2.2 connect-interface LoopBack0 //指定连接接口
```

```

#
ipv4-family vpnv4      //使能BGP的vpnv4路由能力
peer 2.2.2.2 enable    //指定与PEB互传vpnv4路由
#
ipv4-family vpn-instance vpna //引入vpna的路由
import-route direct    //引入vpna的直联路由
#
ospf 1                 //OSPF保证全网互通
area 0.0.0.0
network 3.3.3.3 0.0.0.0
network 1.3.0.0 0.0.0.255
#
P配置:
#
router id 1.1.1.1      //BGP的router id
#
mpls lsr-id 1.1.1.1    //MPLS的LSR-ID
#
mpls                   //使能MPLS
#
mpls ldp                //全局使能MPLS LDP
#
interface Ethernet0/0
port link-mode route
ip address 1.2.0.1 255.255.255.0
mpls                   //接口使能MPLS
mpls ldp                //接口使能MPLS LDP
#
interface Ethernet0/1
port link-mode route
ip address 1.3.0.1 255.255.255.0
mpls                   //接口使能MPLS
mpls ldp                //接口使能MPLS LDP
#
interface LoopBack0
ip address 1.1.1.1 255.255.255.255
#
ospf 1                 //OSPF保证全网互通
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      //BGP的router id
#
ip vpn-instance vpna    //配置vpn实例vpna
route-distinguisher 2:1 //配置vpna的RD
vpn-target 1:1 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的LSR-ID
#
mpls                   //全局使能MPLS
#
mpls ldp                //全局使能MPLS LDP
#
interface Ethernet0/0
port link-mode route
ip address 1.2.0.2 255.255.255.0
mpls                   //接口使能MPLS
mpls ldp                //接口使能MPLS LDP
#

```

```
interface Ethernet0/1
port link-mode route
ip binding vpn-instance vpna //绑定vpn实例vpna
ip address 192.168.1.1 255.255.255.0
#
interface LoopBack0 //router id 和 MPLS LSR-ID
ip address 2.2.2.2 255.255.255.255
#
bgp 1 //启动BGP进程, AS为1
undo synchronization
peer 3.3.3.3 as-number 1 //3.3.3.3是PEA的router id
peer 3.3.3.3 connect-interface LoopBack0 //指定连接接口
#
ipv4-family vpv4 //使能BGP的vpnv4路由能力
peer 3.3.3.3 enable //指定与PEB互传vpnv4路由
#
ipv4-family vpn-instance vpna //引入vpna的路由
network 192.168.1.0 //手工引入vpna路由
#
ospf 1 //OSPF保证全网互通
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基本配置**正确**的基础上:

- 1、PEA和PEB配置了vpn实例时注意vpn-target应配置一致;
- 2、配置BGP时注意使用connect-interface loopback0, 表示使用router id所在loopback口建立连接;
- 3、BGP注意vpnv4视图和vpn-instance视图的配置。