Typical MCE Configuration

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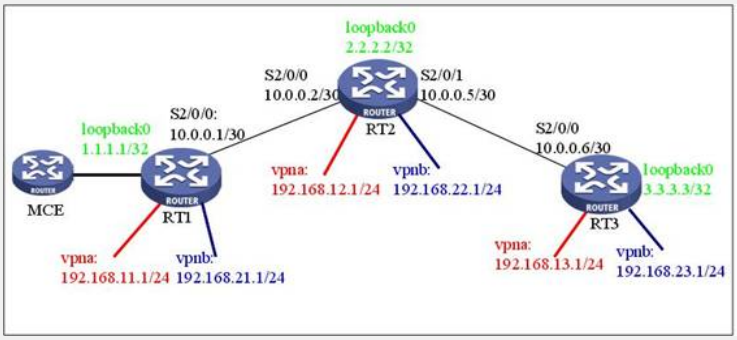
Typical MCE Configuration

[Requirements]

The router MCE realizes VPN interworking by using the multi-instance CE.

[Networking diagram]



[Configuration script–OSPF multi-instance]

Configuration script (MCE)
sysname MCE # radius scheme system # ip vpn-instance vpna /Create vpna/ route-distinguisher 100:1 /Configure RD without RT/ # ip vpn-instance vpnb /Create vpnb/ route-distinguisher 200:1 /Configure RD without RT/ # domain system # interface Ethernet1/0/0 # interface Ethernet1/0/0.10 ip binding vpn-instance vpna ip address 192.168.15.2 255.255.255.0 vlan-type dot1q vid 10 # interface Ethernet1/0/0.20 ip binding vpn-instance vpnb ip address 192.168.16.2 255.255.255.0 vlan-type dot1q vid 20 # interface NULL0 # interface LoopBack10 ip binding vpn-instance vpna ip address 192.168.16.1 255.255.255.0 # interface LoopBack20 ip binding vpn-instance vpnb ip address 192.168.26.1 255.255.255.0 # ospf 10 vpn-instance vpna **/Bind ospf 10 with vpna/** **vpn-instance-capability simple /Configure the router as the multi-instance CE/** import-route direct area 0.0.0.0 network 192.168.15.0 0.0.0.255 network 192.168.16.0 0.0.0.255 # ospf 20 vpn-instance vpnb **/Bind ospf 20 with vpnb/** **vpn-instance-capability simple /Configure the router as the multi-instance CE/** area 0.0.0.0 network 192.168.25.0 0.0.0.255 network 192.168.26.0 0.0.0.255 # user-interface con 0 user-interface vty 0 4 # return
Configuration script (RT1)
#

```
sysname RT1
#
router id 1.1.1.1
#
mpls lsr-id 1.1.1.1
#
radius scheme system
#
mpls
#
mpls ldp
#
ip vpn-instance vpna
route-distinguisher 100:1
vpn-target 100:1 export-extcommunity
vpn-target 100:1 import-extcommunity
#
ip vpn-instance vpnb
route-distinguisher 200:1
vpn-target 200:1 export-extcommunity
vpn-target 200:1 import-extcommunity
#
domain system
#
interface Ethernet1/0/0
#
interface Ethernet1/0/0.10
ip binding vpn-instance vpna
ip address 192.168.15.1 255.255.255.0
vlan-type dot1q vid 10
#
interface Ethernet1/0/0.20
ip binding vpn-instance vpnb
ip address 192.168.25.1 255.255.255.0
vlan-type dot1q vid 20
#
interface Serial2/0/0
link-protocol ppp
ip address 10.0.0.1 255.255.255.252
mpls
mpls ldp enable
#
interface NULL0
#
interface LoopBack0
ip address 1.1.1.1 255.255.255.255
#
interface LoopBack11
ip binding vpn-instance vpna
ip address 192.168.11.1 255.255.255.0
#
interface LoopBack21
ip binding vpn-instance vpnb
ip address 192.168.21.1 255.255.255.0
#
bgp 100
undo synchronization
group inter internal
peer 2.2.2.2 group inter
peer 2.2.2.2 connect-interface LoopBack0
#
ipv4-family vpn-instance vpna
import-route direct
import-route ospf 10                          /Import ospf 10 route/
undo synchronization
#
ipv4-family vpn-instance vpnb
import-route direct
import-route ospf 20                          /Import ospf 20 route/
undo synchronization
#
ipv4-family vpnv4
peer inter enable
peer 2.2.2.2 group inter
#
ospf 1
area 0.0.0.0
network 1.1.1.1 0.0.0.0
network 10.0.0.0 0.0.0.3
network 10.0.0.8 0.0.0.3
#
ospf 10 vpn-instance vpna                     /Bind ospf 10 with vpna/
import-route bgp                                /Import BGP private route/
import-route direct
area 0.0.0.0
network 192.168.15.0 0.0.0.255
#
ospf 20 vpn-instance vpnb                     /Bind ospf 20 with vpnb/
import-route bgp                                /Import BGP private route/
```

```
import-route direct
area 0.0.0.0
network 192.168.25.0 0.0.0.255
#
user-interface con 0
user-interface vty 0 4
#
return
```

Note: The configuration of RT2/RT3 is the same as the common MPLS/VPN configuration. You can see the preceding typical configuration for reference.

[Configuration script–static route]

Configuration script (MCE)

```
#
sysname MCE
#
radius scheme system
#
ip vpn-instance vpna                          /Create vpna/
route-distinguisher 100:1                     /Configure RD without RT/
#
ip vpn-instance vpnb                          /Create vpnb/
route-distinguisher 200:1                     /Configure RD without RT/
#
domain system
#
interface Ethernet1/0/0
#
interface Ethernet1/0/0.10                    /Create the sub-interface/
ip binding vpn-instance vpna                  /Bind the sub-interface to vpna/
ip address 192.168.15.2 255.255.255.0
vlan-type dot1q vid 10
#
interface Ethernet1/0/0.20                    /Create the sub-interface/
ip binding vpn-instance vpnb                  /Bind the sub-interface to vpnb/
ip address 192.168.16.2 255.255.255.0
vlan-type dot1q vid 20
#
interface NULL0
#
interface LoopBack10
ip binding vpn-instance vpna
ip address 192.168.16.1 255.255.255.0
#
interface LoopBack20
ip binding vpn-instance vpnb
ip address 192.168.26.1 255.255.255.0
#
ip route-static vpn-instance vpna 0.0.0.0 0.0.0.0 192.168.15.1  preference 60
/Create the default route in vpna/
ip route-static vpn-instance vpnb 0.0.0.0 0.0.0.0 192.168.25.1  preference 60
/Create the default route in vpnb/
#
user-interface con 0
user-interface vty 0 4
#
return
```

Configuration script (RT1)

```
#
sysname RT1
#
router id 1.1.1.1
#
mpls lsr-id 1.1.1.1
#
radius scheme system
#
mpls
#
mpls ldp
#
ip vpn-instance vpna
route-distinguisher 100:1
vpn-target 100:1 export-extcommunity
vpn-target 100:1 import-extcommunity
#
ip vpn-instance vpnb
route-distinguisher 200:1
vpn-target 200:1 export-extcommunity
vpn-target 200:1 import-extcommunity
#
domain system
#
interface Ethernet1/0/0
```

```
#
interface Ethernet1/0/0.10                    /Create the sub-interface/
ip binding vpn-instance vpna                  /Bind the sub-interface to vpna/
ip address 192.168.15.1 255.255.255.0
vlan-type dot1q vid 10
#
interface Ethernet1/0/0.20                    /Create the sub-interface/
ip binding vpn-instance vpnb                  /Bind the sub-interface to vpnb/
ip address 192.168.25.1 255.255.255.0
vlan-type dot1q vid 20
#
interface Serial2/0/0
link-protocol ppp
ip address 10.0.0.1 255.255.255.252
mpls
mpls ldp enable
#
interface NULL0
#
interface LoopBack0
ip address 1.1.1.1 255.255.255.255
#
interface LoopBack11
ip binding vpn-instance vpna
ip address 192.168.11.1 255.255.255.0
#
interface LoopBack21
ip binding vpn-instance vpnb
ip address 192.168.21.1 255.255.255.0
#
bgp 100
undo synchronization
group inter internal
peer 2.2.2.2 group inter
peer 2.2.2.2 connect-interface LoopBack0
peer 4.4.4.4 group inter
peer 4.4.4.4 connect-interface LoopBack0
#
ipv4-family vpn-instance vpna
import-route direct
import-route static                           /Import static route/
undo synchronization
#
ipv4-family vpn-instance vpnb
import-route direct
import-route static                           /Import static route/
undo synchronization
#
ipv4-family vpnv4
peer inter enable
peer 2.2.2.2 group inter
peer 4.4.4.4 group inter
#
ospf 1
area 0.0.0.0
network 1.1.1.1 0.0.0.0
network 10.0.0.0 0.0.0.3
network 10.0.0.8 0.0.0.3
#
ip route-static vpn-instance vpna 192.168.16.0 255.255.255.0 192.168.15.2  pre
f
erence 60                                     /Create the static route in vpna/
ip route-static vpn-instance vpnb 192.168.26.0 255.255.255.0 192.168.25.2  pre
f
erence 60                                     /Create the static route in vpnb/
#
user-interface con 0
user-interface vty 0 4
#
return
```

Note: The configuration of RT2/RT3 is the same as the common MPLS/VPN configuration. You can see the preceding typical configuration for reference. [Verification]

In the MCE, vpna and vpnb can learn private routes, and can successfully ping each other.

```
[MCE]disp ip rout vpn-instance vpna
  vpna   Route Information
 Routing Table:  vpna   Route-Distinguisher:   100:1
Destination/Mask   Protocol Pre  Cost       Nexthop         Interface
192.168.11.0/24    O_ASE    150  1          192.168.15.1    Ethernet1/0/0.10
192.168.12.0/24    O_ASE    150  1          192.168.15.1    Ethernet1/0/0.10
192.168.13.0/24    O_ASE    150  1          192.168.15.1    Ethernet1/0/0.10
```

```
192.168.15.0/24    DIRECT  0    0          192.168.15.2    Ethernet1/0/0.10
192.168.15.2/32    DIRECT  0    0          127.0.0.1       InLoopBack0
192.168.16.0/24    DIRECT  0    0          192.168.16.1    LoopBack10
192.168.16.1/32    DIRECT  0    0          127.0.0.1       InLoopBack0
```

[Tip]

1. In the OSPF mode, routes of OSPF and BGP shall be imported mutually on PE1 to realize interworking.
2. It is unnecessary to configure RT for the VRF where the VPN is created because it is used only to bind the interface and OSPF process to the relevant VPN.