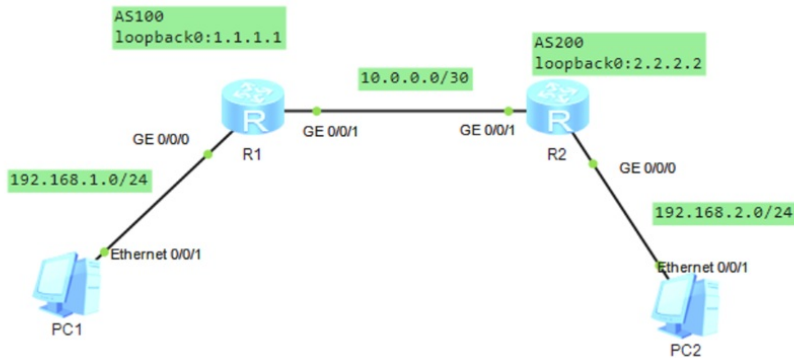


组网及说明



组网说明:

本案例采用ENSP模拟器模拟IBGP组网环境，通过部署IBGP实现R1、R2建立IBGP邻居关系，PC之间得以互通。

配置步骤

- 1、按照网络拓扑图配置IP地址。
- 2、分别配置R1、R2的OSPF路由协议，为后续建立IBGP邻居关系奠定基础。
- 3、分别配置R1、R2的BGP路由协议，通过建立IBGP邻居关系，实现PC之间互通。

配置关键点

R1:

```
<Huawei>u t m
Info: Current terminal monitor is off.
<Huawei>u t d
Info: Current terminal debugging is off.
<Huawei>sys
Enter system view, return user view with Ctrl+Z.
[Huawei]sysname R1
[R1]int gi 0/0/0
[R1-GigabitEthernet0/0/0]ip address 192.168.1.1 24
[R1-GigabitEthernet0/0/0]quit
[R1]int gi 0/0/1
[R1-GigabitEthernet0/0/1]ip address 10.0.0.1 30
[R1-GigabitEthernet0/0/1]quit
[R1]int loopback 0
[R1-LoopBack0]ip address 1.1.1.1 32
[R1-LoopBack0]quit
[R1]ospf 1 router-id 1.1.1.1
[R1-ospf-1]area 0.0.0.0
[R1-ospf-1-area-0.0.0.0]network 10.0.0.0 0.0.0.3
[R1-ospf-1-area-0.0.0.0]network 1.1.1.1 0.0.0.0
[R1-ospf-1-area-0.0.0.0]quit
[R1-ospf-1]quit
[R1]bgp 100 //创建BGP进程，进程ID为100
[R1-bgp]router-id 1.1.1.1 //指定router-id
[R1-bgp]peer 2.2.2.2 as-number 100 //指定IBGP邻居关系
[R1-bgp]peer 2.2.2.2 connect-interface LoopBack 0 //指定路由更新的源
[R1-bgp]network 192.168.1.0 24 //发布路由
[R1-bgp]quit
```

R2:

```
<Huawei>u t m
Info: Current terminal monitor is off.
```

```

<Huawei>u t d
Info: Current terminal debugging is off.
<Huawei>sys
Enter system view, return user view with Ctrl+Z.
[Huawei]sysname R2
[R2]int gi 0/0/0
[R2-GigabitEthernet0/0/0]ip address 192.168.2.1 24
[R2-GigabitEthernet0/0/0]quit
[R2]int gi 0/0/1
[R2-GigabitEthernet0/0/1]ip address 10.0.0.2 30
[R2-GigabitEthernet0/0/1]quit
[R2]int LoopBack 0
[R2-LoopBack0]ip address 2.2.2.2 32
[R2-LoopBack0]quit
[R2]ospf 1 router-id 2.2.2.2
[R2-ospf-1]area 0.0.0.0
[R2-ospf-1-area-0.0.0.0]network 10.0.0.0 0.0.0.3
[R2-ospf-1-area-0.0.0.0]network 2.2.2.2 0.0.0.0
[R2-ospf-1-area-0.0.0.0]quit
[R2-ospf-1]quit
[R2]bgp 100
[R2-bgp]router-id 2.2.2.2
[R2-bgp]peer 1.1.1.1 as-number 100
[R2-bgp]peer 1.1.1.1 connect-interface LoopBack 0
[R2-bgp]network 192.168.2.0 24
[R2-bgp]quit

```

分别查看R1、R2已建立OSPF邻居关系。

```

[R1]dis ospf peer

      OSPF Process 1 with Router ID 1.1.1.1
      Neighbors

Area 0.0.0.0 interface 10.0.0.1(GigabitEthernet0/0/1)'s neighbors
Router ID: 2.2.2.2      Address: 10.0.0.2
  State: Full Mode:Nbr is Master Priority: 1
  DR: 10.0.0.1 BDR: 10.0.0.2 MTU: 0
  Dead timer due in 40 sec
  Retrans timer interval: 5
  Neighbor is up for 00:01:01
  Authentication Sequence: [ 0 ]

[R1]

```

```

[R2]dis ospf peer

      OSPF Process 1 with Router ID 2.2.2.2
      Neighbors

Area 0.0.0.0 interface 10.0.0.2(GigabitEthernet0/0/1)'s neighbors
Router ID: 1.1.1.1      Address: 10.0.0.1
  State: Full Mode:Nbr is Slave Priority: 1
  DR: 10.0.0.1 BDR: 10.0.0.2 MTU: 0
  Dead timer due in 30 sec
  Retrans timer interval: 5
  Neighbor is up for 00:01:45
  Authentication Sequence: [ 0 ]

[R2]

```

分别查看R1、R2路由器已建立IBGP邻居关系。

```

[R1-bgp]dis bgp peer

BGP local router ID : 1.1.1.1
Local AS number : 100
Total number of peers : 1          Peers in established state : 1

Peer          V          AS  MsgRcvd  MsgSent  OutQ  Up/Down      State Pre
fRcv
  2.2.2.2      4          100      3         3       0 00:00:44 Established
  1
[R1-bgp]

```

```
[R2-bgp]dis bgp peer

BGP local router ID : 2.2.2.2
Local AS number : 100
Total number of peers : 1          Peers in established state : 1

Peer          V          AS  MsgRcvd  MsgSent  OutQ  Up/Down      State Pre
fRcv
1.1.1.1      4          100    3         4         0  00:00:58  Established
1
[R2-bgp]
```

分别查看R1、R2路由器的路由表，发现已经通过BGP学习到对端发布的路由。

```
[R1-bgp]dis ip routing-table
Route Flags: R - relay, D - download to fib
-----
Routing Tables: Public
Destinations : 9          Routes : 9

Destination/Mask  Proto  Pre  Cost    Flags NextHop          Interface
-----
1.1.1.1/32       Direct  0    0        D    127.0.0.1          LoopBack0
2.2.2.2/32       OSPF   10   1        D    10.0.0.2           GigabitEthernet
0/0/1
10.0.0.0/30      Direct  0    0        D    10.0.0.1           GigabitEthernet
0/0/1
10.0.0.1/32      Direct  0    0        D    127.0.0.1          GigabitEthernet
0/0/1
127.0.0.0/8      Direct  0    0        D    127.0.0.1          InLoopBack0
127.0.0.1/32     Direct  0    0        D    127.0.0.1          InLoopBack0
192.168.1.0/24   Direct  0    0        D    192.168.1.1       GigabitEthernet
0/0/0
192.168.1.1/32   Direct  0    0        D    127.0.0.1          GigabitEthernet
0/0/0
192.168.2.0/24   IBGP   255  0        RD   2.2.2.2            GigabitEthernet
0/0/1
[R1-bgp]e
```

```
[R2-bgp]dis ip routing-table
Route Flags: R - relay, D - download to fib
-----
Routing Tables: Public
Destinations : 9          Routes : 9

Destination/Mask  Proto  Pre  Cost    Flags NextHop          Interface
-----
1.1.1.1/32       OSPF   10   1        D    10.0.0.1           GigabitEthernet
0/0/1
2.2.2.2/32       Direct  0    0        D    127.0.0.1          LoopBack0
10.0.0.0/30      Direct  0    0        D    10.0.0.2           GigabitEthernet
0/0/1
10.0.0.2/32      Direct  0    0        D    127.0.0.1          GigabitEthernet
0/0/1
127.0.0.0/8      Direct  0    0        D    127.0.0.1          InLoopBack0
127.0.0.1/32     Direct  0    0        D    127.0.0.1          InLoopBack0
192.168.1.0/24   IBGP   255  0        RD   1.1.1.1            GigabitEthernet
0/0/1
192.168.2.0/24   Direct  0    0        D    192.168.2.1       GigabitEthernet
0/0/0
192.168.2.1/32   Direct  0    0        D    127.0.0.1          GigabitEthernet
0/0/0
[R2-bgp]
```

PC分别填写IP地址且能相互PING通对方。



PC2

基础配置 命令行 组播 UDP发包工具 串口

主机名:

MAC 地址:

IPv4 配置

静态 DHCP 自动获取 DNS 服务器地址

IP 地址: DNS1:

子网掩码: DNS2:

网关:

PC1

基础配置 命令行 组播 UDP发包工具 串口

```

Welcome to use PC Simulator!

PC>ping 192.168.2.2

Ping 192.168.2.2: 32 data bytes, Press Ctrl_C to break
From 192.168.2.2: bytes=32 seq=1 ttl=126 time=93 ms
From 192.168.2.2: bytes=32 seq=2 ttl=126 time=78 ms
From 192.168.2.2: bytes=32 seq=3 ttl=126 time=93 ms
From 192.168.2.2: bytes=32 seq=4 ttl=126 time=47 ms
From 192.168.2.2: bytes=32 seq=5 ttl=126 time=78 ms

--- 192.168.2.2 ping statistics ---
 5 packet(s) transmitted
 5 packet(s) received
 0.00% packet loss
 round-trip min/avg/max = 47/77/93 ms

PC>

```

PC2

基础配置 命令行 组播 UDP发包工具 串口

```

Welcome to use PC Simulator!

PC>ping 192.168.1.2

Ping 192.168.1.2: 32 data bytes, Press Ctrl_C to break
From 192.168.1.2: bytes=32 seq=1 ttl=126 time=47 ms
From 192.168.1.2: bytes=32 seq=2 ttl=126 time=78 ms
From 192.168.1.2: bytes=32 seq=3 ttl=126 time=63 ms
From 192.168.1.2: bytes=32 seq=4 ttl=126 time=63 ms
From 192.168.1.2: bytes=32 seq=5 ttl=126 time=62 ms

--- 192.168.1.2 ping statistics ---
 5 packet(s) transmitted
 5 packet(s) received
 0.00% packet loss
 round-trip min/avg/max = 47/62/78 ms

PC>

```

至此，IBGP典型组网配置案例已完成！