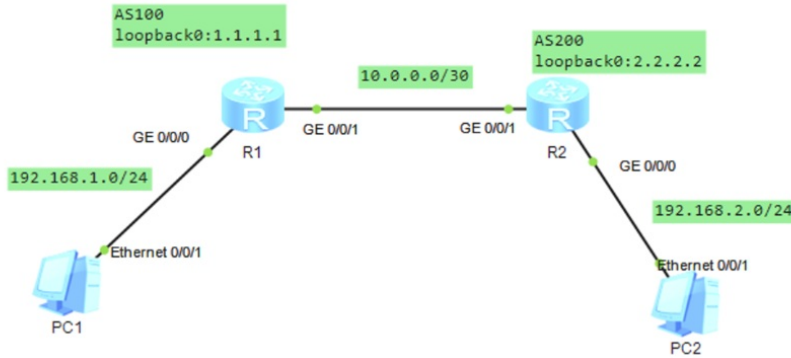


组网及说明



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]peer 2.2.2.2 password simple weijianing //指定邻居认证的密钥
[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]peer 1.1.1.1 password simple weijianing
[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。

The screenshot shows the configuration window for PC1. The IPv4 configuration is set to static. The IP address is 192.168.1.2, the subnet mask is 255.255.255.0, and the gateway is 192.168.1.1. The DNS servers are both set to 0.0.0.0. The MAC address is 54-89-98-50-02-09.

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 MD5认证典型组网配置案例已完成！