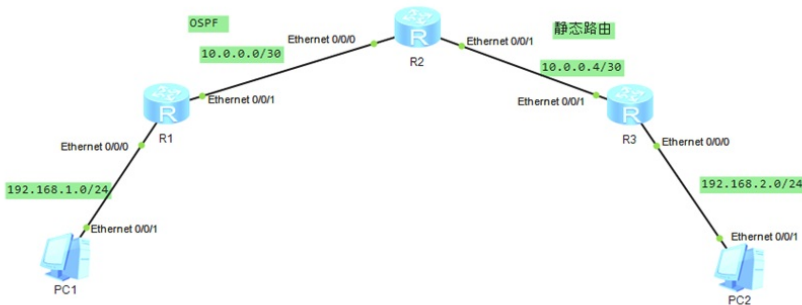


组网及说明



组网说明：

本案例采用ENSP模拟器来部署华为路由器的路由重分布的案例，在该网络中，R1与R2部署OSPF，R2与R3部署静态路由。为了实现PC之间的网络互通，需要在R2路由器部署OSPF与静态路由重分布。

配置步骤

- 1、按照网络拓扑图配置IP地址。
- 2、部署R1与R2的OSPF。
- 3、部署R2与R3的静态路由。
- 4、在R2配置OSPF与静态路由重分布。

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>system
Enter system view, return user view with Ctrl+Z.
[Huawei]sysname R1
[R1]int eth 0/0/0
[R1-Ethernet0/0/0]ip address 192.168.1.1 24
[R1-Ethernet0/0/0]quit
[R1]int eth 0/0/1
[R1-Ethernet0/0/1]ip address 10.0.0.1 30
[R1-Ethernet0/0/1]quit
[R1]ospf 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 192.168.1.0 0.0.0.255
[R1-ospf-1-area-0.0.0.0]quit
[R1-ospf-1]quit
```

R2：

```
<Huawei>u t m
Info: Current terminal monitor is off.
<Huawei>u t d
Info: Current terminal debugging is off.
<Huawei>system
Enter system view, return user view with Ctrl+Z.
[Huawei]sysname R2
[R2]int eth 0/0/0
[R2-Ethernet0/0/0]ip address 10.0.0.2 30
[R2-Ethernet0/0/0]quit
[R2]int eth 0/0/1
[R2-Ethernet0/0/1]ip address 10.0.0.5 30
[R2-Ethernet0/0/1]quit
```

```
[R2]ip route-static 192.168.2.0 24 10.0.0.6
[R2]ospf 1
[R2-ospf-1]import-route direct
[R2-ospf-1]import-route static
[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 10.0.0.4 0.0.0.3
[R2-ospf-1-area-0.0.0.0]quit
[R2-ospf-1]quit
```

R3:

```
<Huawei>u t m
Info: Current terminal monitor is off.
<Huawei>u t d
Info: Current terminal debugging is off.
<Huawei>system
Enter system view, return user view with Ctrl+Z.
[Huawei]sysname R3
[R3]int eth 0/0/1
[R3-Ethernet0/0/1]ip address 10.0.0.6 30
[R3-Ethernet0/0/1]quit
[R3]int eth 0/0/0
[R3-Ethernet0/0/0]ip address 192.168.2.1 24
[R3-Ethernet0/0/0]quit
[R3]ip route-static 192.168.1.0 24 10.0.0.5
[R3]ip route-static 10.0.0.0 30 10.0.0.5
```

PC分别填写IP地址，且能相互PING通。

The image shows two configuration windows for PCs in a network simulator. The top window is for PC1 and the bottom for PC2. Both windows have tabs for '基础配置' (Basic Configuration), '命令行' (Command Line), '组播' (Multicast), 'UDP发包工具' (UDP Packet Tool), and '串口' (Serial Port). The '基础配置' tab is active in both.

PC1 Configuration:

- 主机名: (empty)
- MAC 地址: 54-89-98-60-1D-D9
- IPv4 配置:
 - ☒ 静态 (Static) | ☐ DHCP
 - ☐ 自动获取 DNS 服务器地址
 - IP 地址: 192 . 168 . 1 . 2 | DNS1: 0 . 0 . 0 . 0
 - 子网掩码: 255 . 255 . 255 . 0 | DNS2: 0 . 0 . 0 . 0
 - 网关: 192 . 168 . 1 . 1

PC2 Configuration:

- 主机名: (empty)
- MAC 地址: 54-89-98-46-4C-E8
- IPv4 配置:
 - ☒ 静态 (Static) | ☐ DHCP
 - ☐ 自动获取 DNS 服务器地址
 - IP 地址: 192 . 168 . 2 . 2 | DNS1: 0 . 0 . 0 . 0
 - 子网掩码: 255 . 255 . 255 . 0 | DNS2: 0 . 0 . 0 . 0
 - 网关: 192 . 168 . 2 . 1

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=125 time=141 ms
From 192.168.2.2: bytes=32 seq=2 ttl=125 time=78 ms
From 192.168.2.2: bytes=32 seq=3 ttl=125 time=94 ms
From 192.168.2.2: bytes=32 seq=4 ttl=125 time=109 ms
From 192.168.2.2: bytes=32 seq=5 ttl=125 time=110 ms

--- 192.168.2.2 ping statistics ---
 5 packet(s) transmitted
 5 packet(s) received
 0.00% packet loss
 round-trip min/avg/max = 78/106/141 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=125 time=78 ms
From 192.168.1.2: bytes=32 seq=2 ttl=125 time=93 ms
From 192.168.1.2: bytes=32 seq=3 ttl=125 time=94 ms
From 192.168.1.2: bytes=32 seq=4 ttl=125 time=110 ms
From 192.168.1.2: bytes=32 seq=5 ttl=125 time=109 ms

--- 192.168.1.2 ping statistics ---
 5 packet(s) transmitted
 5 packet(s) received
 0.00% packet loss
 round-trip min/avg/max = 78/96/110 ms
```

在R1与R2分别使用dis ospf peer brief命令查看到R1、R2已完成OSPF邻居的建立。

```
[R1]dis ospf peer brief

      OSPF Process 1 with Router ID 192.168.1.1
      Peer Statistic Information
-----
Area Id      Interface          Neighbor id      State
0.0.0.0      Ethernet0/0/1      10.0.0.2        Full
-----
[R1]
```

```
[R2]dis ospf peer brief

      OSPF Process 1 with Router ID 10.0.0.2
      Peer Statistic Information
-----
Area Id      Interface          Neighbor id      State
0.0.0.0      Ethernet0/0/0      192.168.1.1     Full
-----
[R2]
```

分别在R1、R2、R3使用dis ip routing-table命令查看路由表，均已学习到了相应的路由。

```
[R1]dis ip routing-table
Route Flags: R - relay, D - download to fib
-----
Routing Tables: Public
      Destinations : 8          Routes : 8

Destination/Mask    Proto   Pre  Cost           Flags NextHop         Interface
-----
 10.0.0.0/30       Direct   0    0             D   10.0.0.1       Ethernet0/0/1
 10.0.0.1/32       Direct   0    0             D   127.0.0.1       Ethernet0/0/1
 10.0.0.4/30       OSPF    10    2             D   10.0.0.2       Ethernet0/0/1
 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     Ethernet0/0/0
192.168.1.1/32     Direct   0    0             D   127.0.0.1       Ethernet0/0/0
192.168.2.0/24     O_ASE   150    1             D   10.0.0.2       Ethernet0/0/1

[R1]
```

```
[R2]dis ip routing-table
Route Flags: R - relay, D - download to fib
-----
Routing Tables: Public
      Destinations : 8          Routes : 8

Destination/Mask    Proto   Pre  Cost           Flags NextHop         Interface
-----
 10.0.0.0/30       Direct   0    0             D   10.0.0.2       Ethernet0/0/0
 10.0.0.2/32       Direct   0    0             D   127.0.0.1       Ethernet0/0/0
 10.0.0.4/30       Direct   0    0             D   10.0.0.5       Ethernet0/0/1
 10.0.0.5/32       Direct   0    0             D   127.0.0.1       Ethernet0/0/1
 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     OSPF    10    2             D   10.0.0.1       Ethernet0/0/0
192.168.2.0/24     Static  60    0             RD  10.0.0.6       Ethernet0/0/1

[R2]
```

```
[R3]dis ip routing-table
Route Flags: R - relay, D - download to fib
-----
Routing Tables: Public
      Destinations : 8          Routes : 8

Destination/Mask    Proto   Pre  Cost           Flags NextHop         Interface
-----
 10.0.0.0/30       Static  60    0             RD  10.0.0.5       Ethernet0/0/1
 10.0.0.4/30       Direct   0    0             D   10.0.0.6       Ethernet0/0/1
 10.0.0.6/32       Direct   0    0             D   127.0.0.1       Ethernet0/0/1
 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     Static  60    0             RD  10.0.0.5       Ethernet0/0/1
192.168.2.0/24     Direct   0    0             D   192.168.2.1     Ethernet0/0/0
192.168.2.1/32     Direct   0    0             D   127.0.0.1       Ethernet0/0/0

[R3]
```

至此，华为路由器OSPF与静态路由典型组网配置案例已完成。