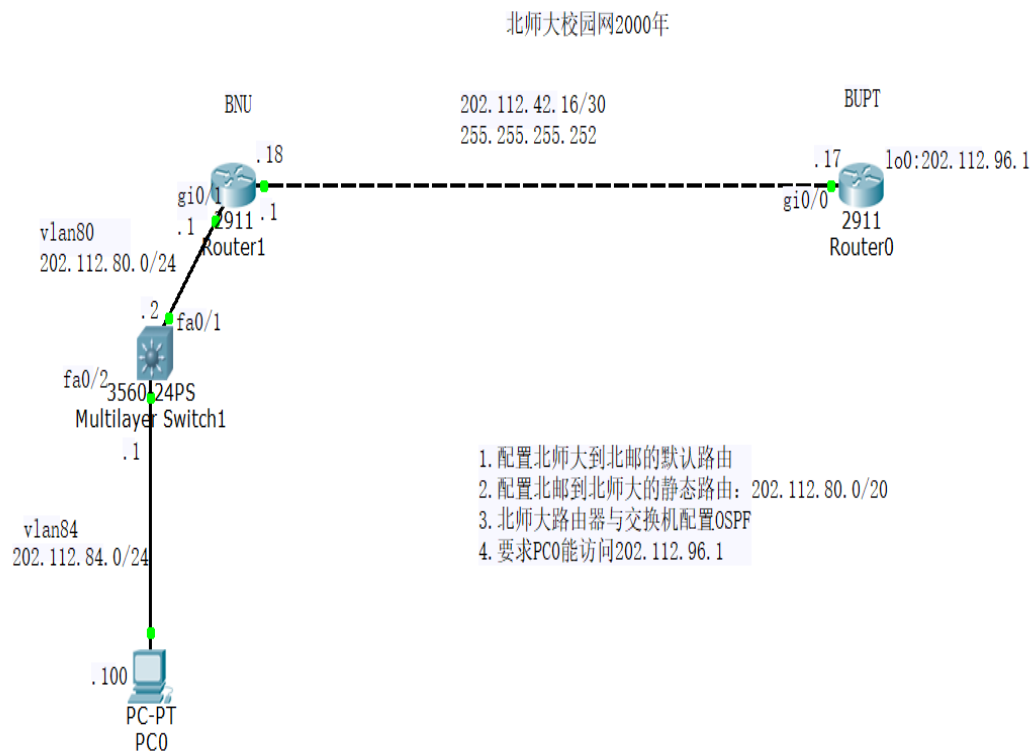


2023 期中实验 (20 分)



- 网络拓扑及 IP 编址如上图;
- 配置北师大到北邮的默认路由
配置北邮到北师大的静态路由: 202.112.80.0/20
北师大路由器与交换机配置 OSPF
要求 PC0 能访问 202.112.96.1

3. 在三个设备中

Show run

Show ip route

在 PC 上: ping 202.112.96.1

将上述输出生成一个 PDF 或 WORD 文件, 文件名: 期中测试_学号_姓名。

配置 5 分; 路由正确 10 分; 测试 5 分

(BNU 路由器分数 2-4; BUPT 路由器分数 1-3; BNU 交换机分数都是 2-3; PC 测试分数 5 分)

BNU 路由器

```
1. BNU#show run
2. Building configuration...
3. Current configuration : 1167 bytes
4. !
5. version 15.1
6. no service timestamps log datetime msec
```

```
7. no service timestamps debug datetime msec
8. no service password-encryption
9. !
10.hostname BNU
11.!
12.!
13.!
14.!
15.!
16.!
17.!
18.!
19.ip cef
20.no ipv6 cef
21.!
22.!
23.!
24.!
25.license udi pid CISCO2911/K9 sn FTX15244X55
26.!
27.!
28.!
29.!
30.!
31.!
32.!
33.!
34.!
35.!
36.!
37.spanning-tree mode pvst
38.!
39.!
40.!
41.!
42.!
43.!
44.interface GigabitEthernet0/0
45. ip address 202.112.42.18 255.255.255.252
46. duplex auto
47. speed auto
48.!
49.interface GigabitEthernet0/1
50. ip address 202.112.80.1 255.255.255.0
```

```
51. duplex auto
52. speed auto
53.!
54.interface GigabitEthernet0/2
55. no ip address
56. duplex auto
57. speed auto
58. shutdown
59.!
60.interface Vlan1
61. no ip address
62. shutdown
63.!
64.router ospf 1
65. log-adjacency-changes
66. redistribute static subnets
67. network 202.112.80.0 0.0.0.255 area 0
68. network 202.112.42.0 0.0.0.3 area 0
69. network 202.112.42.0 0.0.0.255 area 0
70. network 202.112.42.16 0.0.0.3 area 0
71. network 202.112.96.0 0.0.0.255 area 0
72. network 202.112.96.1 0.0.0.0 area 0
73. network 202.112.96.0 0.0.0.0 area 0
74. default-information originate
75.!
76.ip classless
77.ip route 0.0.0.0 0.0.0.0 GigabitEthernet0/0
78.ip route 0.0.0.0 0.0.0.0 202.112.42.17
79.!
80.ip flow-export version 9
81.!
82.!
83.!
84.!
85.!
86.!
87.!
88.line con 0
89.!
90.line aux 0
91.!
92.line vty 0 4
93. login
94.!
```

```
95. !
96. !
97. end
```

```
1. BNU#show ip route
2. Codes: L - local, C - connected, S - static, R - RIP, M - mobile,
   B - BGP
3.         D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter
   area
4.         N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external ty
   pe 2
5.         E1 - OSPF external type 1, E2 - OSPF external type 2, E -
   EGP
6.         i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-
   2, ia - IS-IS inter area
7.         * - candidate default, U - per-user static route, o - ODR
8.         P - periodic downloaded static route
9.
10. Gateway of last resort is 0.0.0.0 to network 0.0.0.0
11.
12.       202.112.42.0/24 is variably subnetted, 2 subnets, 2 masks
13. C       202.112.42.16/30 is directly connected, GigabitEthernet0/
   0
14. L       202.112.42.18/32 is directly connected, GigabitEthernet0/
   0
15.       202.112.80.0/24 is variably subnetted, 2 subnets, 2 masks
16. C       202.112.80.0/24 is directly connected, GigabitEthernet0/1
17. L       202.112.80.1/32 is directly connected, GigabitEthernet0/1
18. O       202.112.84.0/24 [110/2] via 202.112.80.2, 01:06:50, GigabitE
   thernet0/1
19. S*      0.0.0.0/0 is directly connected, GigabitEthernet0/0
20.         [1/0] via 202.112.42.17
```

BUPT 路由器

```
1. BUPT#show run
2. Building configuration...
3.
4. Current configuration : 868 bytes
5. !
6. version 15.1
```

```
7. no service timestamps log datetime msec
8. no service timestamps debug datetime msec
9. no service password-encryption
10.!
11.hostname BUPT
12.!
13.!
14.!
15.!
16.!
17.!
18.!
19.!
20.ip cef
21.no ipv6 cef
22.!
23.!
24.!
25.!
26.license udi pid CISC02911/K9 sn FTX1524M41E
27.!
28.!
29.!
30.!
31.!
32.!
33.!
34.!
35.!
36.!
37.!
38.spanning-tree mode pvst
39.!
40.!
41.!
42.!
43.!
44.!
45.interface Loopback0
46. ip address 202.112.96.1 255.255.255.255
47.!
48.interface GigabitEthernet0/0
49. ip address 202.112.42.17 255.255.255.252
50. duplex auto
```

```
51. speed auto
52.!
53.interface GigabitEthernet0/1
54. no ip address
55. duplex auto
56. speed auto
57. shutdown
58.!
59.interface GigabitEthernet0/2
60. no ip address
61. duplex auto
62. speed auto
63. shutdown
64.!
65.interface Vlan1
66. no ip address
67. shutdown
68.!
69.ip classless
70.ip route 202.112.80.0 255.255.255.0 202.112.42.18
71.ip route 202.112.80.0 255.255.240.0 202.112.42.18
72.!
73.ip flow-export version 9
74.!
75.!
76.!
77.!
78.!
79.!
80.!
81.line con 0
82.!
83.line aux 0
84.!
85.line vty 0 4
86. login
87.!
88.!
89.!
90.end
```

```
1. BUPT#sh ip route
```

2. Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
3. D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
4. N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
5. E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
6. i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
7. * - candidate default, U - per-user static route, o - ODR
8. P - periodic downloaded static route
- 9.
10. Gateway of last resort is not set
- 11.
12. 202.112.42.0/24 is variably subnetted, 2 subnets, 2 masks
13. C 202.112.42.16/30 is directly connected, GigabitEthernet0/0
14. L 202.112.42.17/32 is directly connected, GigabitEthernet0/0
15. S 202.112.80.0/20 [1/0] via 202.112.42.18
16. S 202.112.80.0/24 [1/0] via 202.112.42.18
17. 202.112.96.0/32 is subnetted, 1 subnets
18. C 202.112.96.1/32 is directly connected, Loopback0

BNU 交换机

1. Switch#show run
2. Building configuration...
- 3.
4. Current configuration : 1544 bytes
5. !
6. version 12.2
7. no service timestamps log datetime msec
8. no service timestamps debug datetime msec
9. no service password-encryption
10. !
11. hostname Switch
12. !
13. !
14. !
15. !
16. !

```
17.!
18.!
19.ip routing
20.!
21.!
22.!
23.!
24.!
25.!
26.!
27.!
28.!
29.!
30.!
31.!
32.!
33.!
34.spanning-tree mode pvst
35.spanning-tree vlan 1-500 priority 24576
36.!
37.!
38.!
39.!
40.!
41.!
42.interface FastEthernet0/1
43. switchport access vlan 80
44. switchport mode access
45.!
46.interface FastEthernet0/2
47. switchport access vlan 84
48. switchport mode access
49.!
50.interface FastEthernet0/3
51.!
52.interface FastEthernet0/4
53.!
54.interface FastEthernet0/5
55.!
56.interface FastEthernet0/6
57.!
58.interface FastEthernet0/7
59.!
60.interface FastEthernet0/8
```



```
61. !
62. interface FastEthernet0/9
63. !
64. interface FastEthernet0/10
65. !
66. interface FastEthernet0/11
67. !
68. interface FastEthernet0/12
69. !
70. interface FastEthernet0/13
71. !
72. interface FastEthernet0/14
73. !
74. interface FastEthernet0/15
75. !
76. interface FastEthernet0/16
77. !
78. interface FastEthernet0/17
79. !
80. interface FastEthernet0/18
81. !
82. interface FastEthernet0/19
83. !
84. interface FastEthernet0/20
85. !
86. interface FastEthernet0/21
87. !
88. interface FastEthernet0/22
89. !
90. interface FastEthernet0/23
91. !
92. interface FastEthernet0/24
93. !
94. interface GigabitEthernet0/1
95. !
96. interface GigabitEthernet0/2
97. !
98. interface Vlan1
99. no ip address
100. shutdown
101. !
102. interface Vlan80
103. ip address 202.112.80.2 255.255.255.0
104. !
```

```

105.interface Vlan84
106. ip address 202.112.84.1 255.255.255.0
107.!
108.router ospf 1
109. log-adjacency-changes
110. network 202.112.80.0 0.0.0.255 area 0
111. network 202.112.84.0 0.0.0.255 area 0
112. default-information originate
113.!
114.ip classless
115.!
116.ip flow-export version 9
117.!
118.!
119.!
120.!
121.!
122.!
123.!
124.line con 0
125.!
126.line aux 0
127.!
128.line vty 0 4
129. login
130.!
131.!
132.!
133.end

```

1. Switch#*show ip route*
2. Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
3. D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
4. N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
5. E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
6. i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
7. * - candidate default, U - per-user static route, o - ODR
8. P - periodic downloaded static route

9.
10. Gateway of last resort is 202.112.80.1 to network 0.0.0.0
11.
12. 202.112.42.0/30 is subnetted, 1 subnets
13.0 202.112.42.16 [110/2] via 202.112.80.1, 02:12:53, Vlan80
14.C 202.112.80.0/24 is directly connected, Vlan80
15.C 202.112.84.0/24 is directly connected, Vlan84
16.0*E2 0.0.0.0/0 [110/1] via 202.112.80.1, 01:59:20, Vlan80

PC 测试

