
LAB 3 : NETWORK TROUBLESHOOTING

I) R2 cannot reach the R7 loopback address

R7: The Loopback0 IP address (7.7.7.7) was added to OSPF using network 7.7.7.7 0.0.0.0 area 2,

```
router ospf 1
router-id 7.7.7.7
log-adjacency-changes
redistribute connected subnets
network 7.7.7.7 0.0.0.0 area 2
network 192.168.4.0 0.0.0.255 area 2
!
ip forward-protocol nd
no ip http server
no ip http secure-server
!
```

R3:

```
router ospf 1
router-id 3.3.3.3
log-adjacency-changes
redistribute connected subnets
network 192.168.2.0 0.0.0.255 area 0
network 192.168.3.0 0.0.0.255 area 0
network 192.168.4.0 0.0.0.255 area 2
!
```

Result:

```
R2#ping 7.7.7.7
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 7.7.7.7, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 228/833/1536 ms
R2#
```

II)

R5: redistributes OSPF routes into ISIS with a metric of 30

```
!
router ospf 1
 log-adjacency-changes
 redistribute connected subnets
 redistribute isis level-2 metric 30 subnets
 network 192.168.6.0 0.0.0.255 area 3
!
router isis
 net 49.0012.0000.0000.0001.00
 is-type level-2-only
 redistribute ospf 1 metric 30
!
ip forward-protocol nd
no ip http server
no ip http secure-server
!
```

Result:

```
R6#ping 7.7.7.7
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 7.7.7.7, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 64/548/1184 ms
R6#
```

III)

R3: Advertises the Loopback0 interface into OSPF Area 0

```
router ospf 1
 router-id 3.3.3.3
 log-adjacency-changes
 redistribute connected subnets
 network 3.3.3.3 0.0.0.0 area 0
 network 192.168.2.0 0.0.0.255 area 0
 network 192.168.3.0 0.0.0.255 area 0
 network 192.168.4.0 0.0.0.255 area 2
!
ip forward-protocol nd
no ip http server
no ip http secure-server
!
```

Result:

```
R1#ping 3.3.3.3
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 3.3.3.3, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/304/1204 ms
R1#
```

```
R4#PING 3.3.3.3
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 3.3.3.3, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 60/375/888 ms
R4#
```

IV)

```
R2(config)# router ospf 1
R2(config-router)#network 2.2.2.2 0.0.0.0 area 0
R2(config-router)#ex
R2(config)#ex
```

```
R4(config)#router ospf 1
R4(config-router)#network 4.4.4.4 0.0.0.0 area 1
R4(config-router)#ex
R4(config)#ex
```

```
R1#ping 2.2.2.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 32/300/564 ms
R1#ping 3.3.3.3
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 3.3.3.3, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 24/236/696 ms
R1#ping 4.4.4.4
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 4.4.4.4, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 48/201/732 ms
R1#ping 5.5.5.5
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 5.5.5.5, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 64/206/444 ms
R1#ping 6.6.6.6
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 6.6.6.6, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 36/307/700 ms
R1#ping 7.7.7.7
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 7.7.7.7, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 56/252/716 ms
R1#
```

```
R1#ping 192.168.1.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.2, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 28/178/500 ms
R1#ping 192.168.3.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.3.1, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 80/303/684 ms
R1#ping 192.168.6.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.6.1, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 8/20/52 ms
```

```
R1#ping 192.168.2.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.2.2, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/162/552 ms
R1#ping 192.168.3.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.3.2, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 28/112/228 ms
R1#ping 192.168.4.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.4.2, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/244/872 ms
R1#
```

```
R1#ping 192.168.5.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.5.2, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 8/57/200 ms
R1#
```

```
R1#ping 192.168.6.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.6.2, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 20/245/940 ms
R1#ping 192.168.7.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.7.1, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 132/264/592 ms
R1#
```

```
R1#ping 192.168.7.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.7.2, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 56/270/796 ms
R1#
```

```
R1#ping 192.168.4.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.4.1, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 212/367/680 ms
R1#
```