

LAB 13

1. It disconnected for a little bit, then routed through tol in 4 seconds
2. It's the central node on the OSPF network where all linked info must be transmitted through it
3. It's used for routing protocols and access control lists to have more specific groups that can't be made with just a subnet mask

OSPF route table

```
Port_Clinton#show ip route
```

Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP

D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area

N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2

E1 - OSPF external type 1, E2 - OSPF external type 2

i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2

ia - IS-IS inter area, * - candidate default, U - per-user static route

o - ODR, P - periodic downloaded static route, + - replicated route

Gateway of last resort is not set

10.0.0.0/8 is variably subnetted, 9 subnets, 2 masks

```
O      10.0.0.0/16 [110/2] via 10.4.1.1, 00:01:45, GigabitEthernet0/1
O      10.1.0.0/16 [110/2] via 10.5.1.2, 00:00:59, GigabitEthernet0/2
C      10.2.0.0/16 is directly connected, GigabitEthernet0/0
L      10.2.1.1/32 is directly connected, GigabitEthernet0/0
O      10.3.0.0/16 [110/2] via 10.5.1.2, 00:00:59, GigabitEthernet0/2
        [110/2] via 10.4.1.1, 00:00:49, GigabitEthernet0/1
C      10.4.0.0/16 is directly connected, GigabitEthernet0/1
L      10.4.1.2/32 is directly connected, GigabitEthernet0/1
C      10.5.0.0/16 is directly connected, GigabitEthernet0/2
L      10.5.1.1/32 is directly connected, GigabitEthernet0/2
```

Router OSPF config

```
hostname Port_Clinton
```

```
!
```

```
boot-start-marker
```

```
boot-end-marker
```

```
!
```

```
!
```

```
no aaa new-model
```

```
!  
no ipv6 cef  
ip source-route  
ip cef  
!  
!  
!  
!  
multilink bundle-name authenticated  
!  
!  
!  
!  
license udi pid CISC02911/K9 sn FTX1514AHF6  
!  
!  
!  
!  
!  
!  
!  
!  
interface GigabitEthernet0/0  
  ip address 10.2.1.1 255.255.0.0  
  duplex auto  
  speed auto  
!  
interface GigabitEthernet0/1  
  ip address 10.4.1.2 255.255.0.0  
  duplex auto  
  speed auto  
!  
interface GigabitEthernet0/2  
  ip address 10.5.1.1 255.255.0.0  
  duplex auto  
  speed auto
```

```
!  
router ospf 100  
  log-adjacency-changes  
  network 10.0.0.0 0.7.255.255 area 0  
!  
ip forward-protocol nd  
!  
no ip http server  
no ip http secure-server  
!  
!  
!  
!  
!  
control-plane  
!  
!  
line con 0  
line aux 0  
line vty 0 4  
  login  
!  
scheduler allocate 20000 1000  
end
```

Port_Clinton#config t

Enter configuration commands, one per line. End with CNTL/Z.

Port_Clinton(config)#router ospf 100

Port_Clinton(config-router)#network 10.0.0.0 0.7.255.255 area 0

Port_Clinton(config-router)#

*Apr 5 22:36:00.267: %LINK-3-UPDOWN: Interface GigabitEthernet0/2, changed state to up

*Apr 5 22:36:01.267: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to upend

Port_Clinton#s

*Apr 5 22:36:27.911: %SYS-5-CONFIG_I: Configured from console by consolehow run

Building configuration...

Current configuration : 933 bytes

!

! Last configuration change at 22:36:27 UTC Tue Apr 5 2022

!

version 15.0

service timestamps debug datetime msec

service timestamps log datetime msec

no service password-encryption

!

hostname Port_Clinton

!

boot-start-marker

boot-end-marker

!

!

no aaa new-model

!

no ipv6 cef

ip source-route

ip cef

!

!

!

!

multilink bundle-name authenticated

!

!

!

!

license udi pid CISCO2911/K9 sn FTX1514AHF6

!

!

!

!

!

```
!  
!  
!  
interface GigabitEthernet0/0  
    ip address 10.2.1.1 255.255.0.0  
    duplex auto  
    speed auto  
!  
interface GigabitEthernet0/1  
    ip address 10.4.1.2 255.255.0.0  
    duplex auto  
    speed auto  
!  
interface GigabitEthernet0/2  
    ip address 10.5.1.1 255.255.0.0  
    duplex auto  
    speed auto  
!  
router ospf 100  
    log-adjacency-changes  
    network 10.0.0.0 0.7.255.255 area 0  
!  
ip forward-protocol nd  
!  
no ip http server  
no ip http secure-server  
!  
!  
!  
!  
!  
control-plane  
!  
!  
line con 0  
line aux 0
```

```
line vty 0 4
  login
!
scheduler allocate 20000 1000
end
```

ping reroute to nap

```
Reply from 10.1.3.1: bytes=32 time=1ms TTL=126
Reply from 10.1.3.1: bytes=32 time=1ms TTL=126
Reply from 10.1.3.1: bytes=32 time=1ms TTL=126
Request timed out.
Reply from 10.2.1.1: Destination host unreachable.
Reply from 10.2.1.1: Destination host unreachable.
Reply from 10.2.1.1: Destination host unreachable.
Reply from 10.2.1.1: Destination host unreachable.
Reply from 10.1.3.1: bytes=32 time=1ms TTL=125
Reply from 10.1.3.1: bytes=32 time=1ms TTL=125
Reply from 10.1.3.1: bytes=32 time=1ms TTL=125
Reply from 10.1.3.1: bytes=32 time=1ms TTL=125
Reply from 10.1.3.1: bytes=32 time=1ms TTL=125
Reply from 10.1.3.1: bytes=32 time=1ms TTL=125

Ping statistics for 10.1.3.1:
    Packets: Sent = 68, Received = 67, Lost = 1 (1% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 1ms, Average = 1ms
```

Ping reroute to tol

```
Reply from 10.0.3.1: bytes=32 time=1ms TTL=126
Reply from 10.0.3.1: bytes=32 time=1ms TTL=126
Request timed out.
Reply from 10.2.1.1: Destination host unreachable.
Reply from 10.2.1.1: Destination host unreachable.
Request timed out.
Reply from 10.0.3.1: bytes=32 time=1ms TTL=125
Reply from 10.0.3.1: bytes=32 time=1ms TTL=125
Reply from 10.0.3.1: bytes=32 time=1ms TTL=125
Reply from 10.0.3.1: bytes=32 time=1ms TTL=125

Ping statistics for 10.0.3.1:
    Packets: Sent = 14, Received = 12, Lost = 2 (14% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

Show OSPF database

```
Port_Clinton#show ip ospf database

      OSPF Router with ID (10.2.1.1) (Process ID 100)

      Router Link States (Area 0)

Link ID      ADV Router    Age      Seq#       Checksum Link count
10.2.1.1     10.2.1.1      105      0x80000014 0x00662C 3
10.4.1.1     10.4.1.1      4        0x8000000F 0x00B9E0 3
10.5.1.2     10.5.1.2      4        0x8000000D 0x005141 3

      Net Link States (Area 0)

Link ID      ADV Router    Age      Seq#       Checksum
10.3.1.2     10.5.1.2      4        0x80000001 0x00896C
10.4.1.1     10.4.1.1      107      0x80000001 0x006B90
10.5.1.2     10.5.1.2      215      0x80000001 0x00599C
```

Show OSPF neighbor

```
Port_Clinton#show ip ospf neighbor

Neighbor ID    Pri   State           Dead Time   Address        Interface
10.5.1.2       1     FULL/DR         00:00:38   10.5.1.2      GigabitEthernet0/2
10.4.1.1       1     FULL/DR         00:00:37   10.4.1.1      GigabitEthernet0/1
```