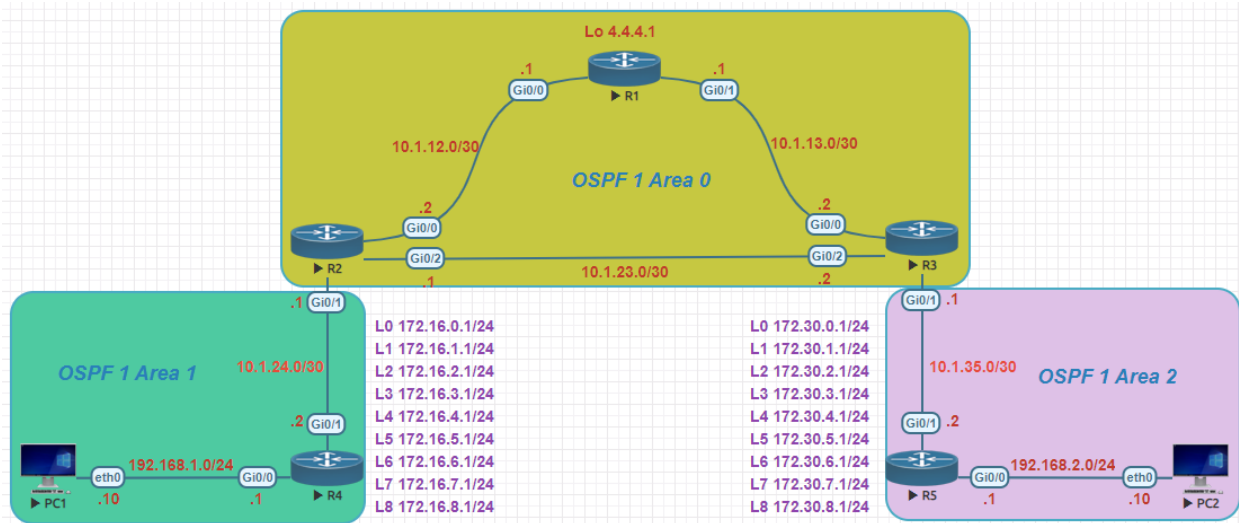


OSPF Lab:



Router Images	vios-adventerprisek9-m.spa.159-3.m2
Client PC	VPCS
Testing	OSPF
OSPF Process ID	1

R1 Basic Configuration

```

R1(config)#hostname R1
R1(config)#no ip domain lookup
R1(config)#line con 0
R1(config-line)#exec-timeout 0 0
R1(config-line)#logging synchronous
R1(config-line)#exit
R1(config)#interface Loopback0
R1(config-if)#ip address 4.4.4.1 255.255.255.255
R1(config-if)#exit
R1(config)#interface GigabitEthernet0/0
R1(config-if)#ip address 10.1.12.1 255.255.255.252
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#interface GigabitEthernet0/1
R1(config-if)#ip address 10.1.13.1 255.255.255.252
R1(config-if)#no shutdown
R1(config-if)#exit
    
```

R2 Basic Configuration

```
R2(config)#hostname R2
R2(config)#no ip domain lookup
R2(config)#line con 0
R2(config-line)#exec-timeout 0 0
R2(config-line)#logging synchronous
R2(config-line)#exit
R2(config)#interface GigabitEthernet0/0
R2(config-if)#ip address 10.1.12.2 255.255.255.252
R2(config-if)#no shutdown
R2(config-if)#exit
R2(config)#interface GigabitEthernet0/1
R2(config-if)#ip address 10.1.24.1 255.255.255.252
R2(config-if)#no shutdown
R2(config-if)#exit
R2(config)#interface GigabitEthernet0/2
R2(config-if)#ip address 10.1.23.1 255.255.255.252
R2(config-if)#no shutdown
R2(config-if)#exit
```

R3 Basic Configuration

```
R3(config)#hostname R3
R3(config)#no ip domain lookup
R3(config)#line con 0
R3(config-line)#exec-timeout 0 0
R3(config-line)#logging synchronous
R3(config-line)#exit
R3(config)#interface GigabitEthernet0/0
R3(config-if)#ip address 10.1.13.2 255.255.255.252
R3(config-if)#no shutdown
R3(config-if)#exit
R3(config)#interface GigabitEthernet0/1
R3(config-if)#ip address 10.1.35.1 255.255.255.252
R3(config-if)#no shutdown
R3(config-if)#exit
R3(config)#interface GigabitEthernet0/2
R3(config-if)#ip address 10.1.23.2 255.255.255.252
R3(config-if)#no shutdown
R3(config-if)#exit
```

R4 Basic Configuration

```
R4(config)#hostname R4
R4(config)#no ip domain lookup
R4(config)#line con 0
R4(config-line)#exec-timeout 0 0
R4(config-line)#logging synchronous
R4(config-line)#exit
R4(config)#interface Loopback0
R4(config-if)#ip address 172.16.0.1 255.255.255.0
R4(config-if)#exit
R4(config)#interface Loopback1
R4(config-if)#ip address 172.16.1.1 255.255.255.0
R4(config-if)#exit
R4(config)#interface Loopback2
R4(config-if)#ip address 172.16.2.1 255.255.255.0
R4(config-if)#exit
R4(config)#interface Loopback3
R4(config-if)#ip address 172.16.3.1 255.255.255.0
R4(config-if)#exit
R4(config)#interface Loopback4
R4(config-if)#ip address 172.16.4.1 255.255.255.0
R4(config-if)#exit
R4(config)#interface Loopback5
R4(config-if)#ip address 172.16.5.1 255.255.255.0
R4(config-if)#exit
R4(config)#interface Loopback6
R4(config-if)#ip address 172.16.6.1 255.255.255.0
R4(config-if)#exit
R4(config)#interface Loopback7
R4(config-if)#ip address 172.16.7.1 255.255.255.0
R4(config-if)#exit
R4(config)#interface Loopback8
R4(config-if)#ip address 172.16.8.1 255.255.255.0
R4(config-if)#exit
R4(config)#interface GigabitEthernet0/0
R4(config-if)#ip address 192.168.1.1 255.255.255.0
R4(config-if)#no shutdown
R4(config-if)#exit
R4(config)#interface GigabitEthernet0/1
R4(config-if)#ip address 10.1.24.2 255.255.255.252
R4(config-if)#no shutdown
R4(config-if)#exit
```

R5 Basic Configuration

```
R5(config)#hostname R5
R5(config)#no ip domain lookup
R5(config)#line con 0
R5(config-line)#exec-timeout 0 0
R5(config-line)#logging synchronous
R5(config-line)#exit
R5(config)#interface Loopback0
R5(config-if)#ip address 172.30.0.1 255.255.255.0
R5(config-if)#exit
R5(config)#interface Loopback1
R5(config-if)#ip address 172.30.1.1 255.255.255.0
R5(config-if)#exit
R5(config)#interface Loopback2
R5(config-if)#ip address 172.30.2.1 255.255.255.0
R5(config-if)#exit
R5(config)#interface Loopback3
R5(config-if)#ip address 172.30.3.1 255.255.255.0
R5(config-if)#exit
R5(config)#interface Loopback4
R5(config-if)#ip address 172.30.4.1 255.255.255.0
R5(config-if)#exit
R5(config)#interface Loopback5
R5(config-if)#ip address 172.30.5.1 255.255.255.0
R5(config-if)#exit
R5(config)#interface Loopback6
R5(config-if)#ip address 172.30.6.1 255.255.255.0
R5(config-if)#exit
R5(config)#interface Loopback7
R5(config-if)#ip address 172.30.7.1 255.255.255.0
R5(config-if)#exit
R5(config)#interface Loopback8
R5(config-if)#ip address 172.30.8.1 255.255.255.0
R5(config-if)#exit
R5(config)#interface GigabitEthernet0/0
R5(config-if)#ip address 192.168.2.1 255.255.255.0
R5(config-if)#no shutdown
R5(config-if)#exit
R5(config)#interface GigabitEthernet0/1
R5(config-if)#ip address 10.1.35.2 255.255.255.252
R5(config-if)#no shutdown
R5(config-if)#exit
```

PC1 Basic Configuration

```
VPCS> set pcname PC1  
PC1> ip 192.168.1.10 /24 192.168.1.1
```

PC2 Basic Configuration

```
VPCS> set pcname PC2  
PC2> ip 192.168.2.10 /24 192.168.2.10
```

R1 OSPF Configuration

```
R1(config)#router ospf 1  
R1(config-router)#router-id 1.1.1.1  
R1(config-router)#network 10.1.12.0 0.0.0.3 area 0  
R1(config-router)#network 10.1.13.0 0.0.0.3 area 0  
R1(config-router)#network 4.4.4.4 0.0.0.0 area 0
```

R2 OSPF Configuration

```
R2(config)#router ospf 1  
R2(config-router)#router-id 2.2.2.2  
R2(config-router)#network 10.1.12.0 0.0.0.3 area 0  
R2(config-router)#network 10.1.23.0 0.0.0.3 area 0  
R2(config-router)#network 10.1.24.0 0.0.0.3 area 1
```

R3 OSPF Configuration

```
R3(config)#router ospf 1  
R3(config-router)#router-id 3.3.3.3  
R3(config-router)#network 10.1.13.0 0.0.0.3 area 0  
R3(config-router)#network 10.1.23.0 0.0.0.3 area 0  
R3(config-router)#network 10.1.35.0 0.0.0.3 area 2
```

R4 OSPF Configuration

```
R4(config)#router ospf 1  
R4(config-router)#router-id 4.4.4.4  
R4(config-router)#network 10.1.24.0 0.0.0.3 area 1  
R4(config-router)#network 192.168.1.0 0.0.0.255 area 1  
R4(config-router)#network 172.16.0.0 0.0.255.255 area 1
```

R5 OSPF Configuration

```
R5(config)#router ospf 1  
R5(config-router)#router-id 5.5.5.5  
R5(config-router)#network 10.1.35.0 0.0.0.3 area 2  
R5(config-router)#network 192.168.2.0 0.0.0.255 area 2  
R5(config-router)#network 172.30.0.0 0.0.255.255 area 2
```

Show Commands

```
R1#show ip route ospf
R1#show ip ospf neighbor
R2#show ip ospf neighbor
R2#show ip route ospf
R3#show ip ospf neighbor
R4#show ip ospf neighbor
R5#show ip ospf neighbor
R5#show ip ospf neighbor
R5#show ip route ospf
PC1> ping 192.168.2.10
PC2> ping 192.168.1.10
```

Show Commands

```
R1#show ip ospf database
R1#show ip route ospf
R1#ping 172.16.7.1
R1#ping 172.30.7.1
R4#show ip ospf database
R4#show ip route ospf
R5#show ip protocols | b ospf
```

R4 OSPF Passive Interface Configuration

```
R4(config)#router ospf 1
R4(config-router)#passive-interface gigabitEthernet 0/0
R4(config-router)#exit
```

R5 OSPF Passive Interface Configuration

```
R5(config)#router ospf 1
R5(config-router)#passive-interface gigabitEthernet 0/0
R5(config-router)#exit
```

Show and Verification Commands

```
R4#show ip ospf interface gigabitEthernet 0/0
R4#show ip protocols | begin ospf
R5#show ip ospf interface gigabitEthernet 0/0
R5#show ip protocols | begin ospf
```