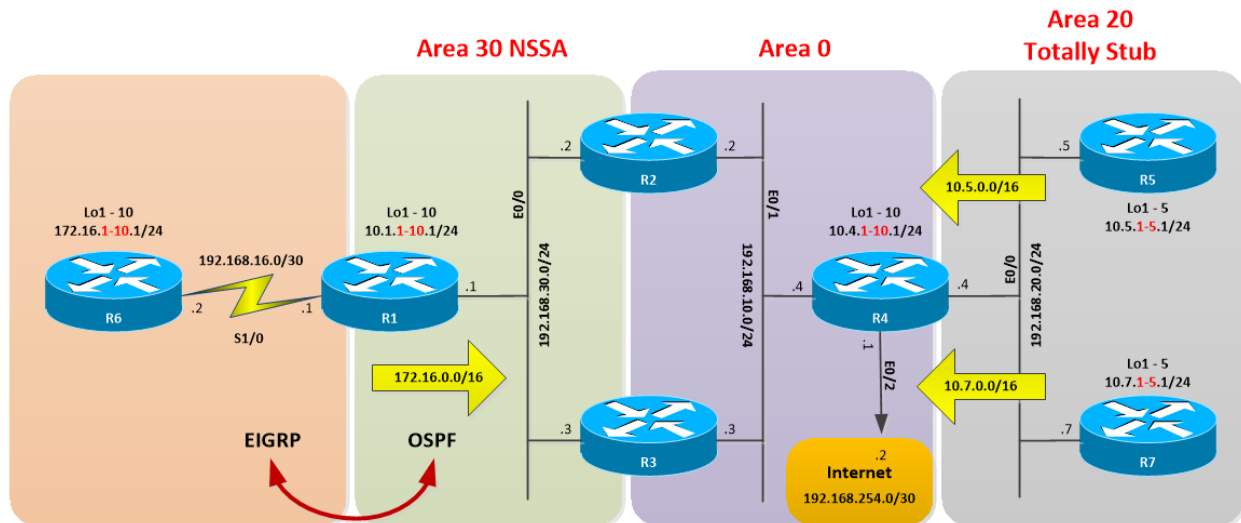


Traffic Engineering with OSPF Summarization (Part 2)



Initial Configurations:

R1:

```
!
hostname R1
!
no aaa new-model
no ip icmp rate-limit unreachable
no ip domain lookup
ip cef
no cdp log mismatch duplex
ip tcp synwait-time 5
!
interface Loopback0
ip address 1.1.1.1 255.255.255.255
ip ospf 1 area 30
!
interface Loopback1
ip address 10.1.1.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback2
ip address 10.1.2.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback3
ip address 10.1.3.1 255.255.255.0
```

```
ip ospf network point-to-point
!
interface Loopback4
ip address 10.1.4.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback5
ip address 10.1.5.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback6
ip address 10.1.6.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback7
ip address 10.1.7.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback8
ip address 10.1.8.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback9
ip address 10.1.9.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback10
ip address 10.1.10.1 255.255.255.0
ip ospf network point-to-point
```

```

!
interface Ethernet0/0
ip address 192.168.30.1 255.255.255.0
ip ospf 1 area 30
!
interface Serial1/0
ip address 192.168.16.1 255.255.255.252
serial restart-delay 0
!
router eigrp Branch-B
!
address-family ipv4 unicast autonomous-system 100
!
topology base
default-metric 10000 100 255 1 1500
redistribute ospf 1
exit-af-topology
network 192.168.16.0 0.0.0.3
eigrp router-id 1.1.1.1
exit-address-family
!
router ospf 1
router-id 0.0.0.1
area 30 nssa
summary-address 172.16.0.0 255.255.0.0
redistribute eigrp 100 subnets
network 10.1.0.0 0.0.255.255 area 30
!
no ip http server
no ip http secure-server
!
line vty 0 4
exec-timeout 0 0
privilege level 15
logging synchronous
width 180
!
end

```

R2:

```

!
hostname R2
!
no aaa new-model
no ip icmp rate-limit unreachable
no ip domain lookup
ip cef
no ipv6 cef
no cdp log mismatch duplex
ip tcp synwait-time 5
!
interface Loopback0
ip address 2.2.2.2 255.255.255.255
ip ospf 1 area 0
!
interface Ethernet0/0

```

```

ip address 192.168.30.2 255.255.255.0
ip ospf 1 area 30
!
interface Ethernet0/1
ip address 192.168.10.2 255.255.255.0
ip ospf 1 area 0
!
router ospf 1
router-id 0.0.0.2
area 30 nssa
!
no ip http server
no ip http secure-server
!
line vty 0 4
exec-timeout 0 0
privilege level 15
logging synchronous
width 180
!
end

```

R3:

```

!
hostname R3
!
no aaa new-model
no ip icmp rate-limit unreachable
no ip domain lookup
ip cef
no ipv6 cef
no cdp log mismatch duplex
ip tcp synwait-time 5
!
interface Loopback0
ip address 3.3.3.3 255.255.255.255
ip ospf 1 area 0
!
interface Ethernet0/0
ip address 192.168.30.3 255.255.255.0
ip ospf 1 area 30
!
interface Ethernet0/1
ip address 192.168.10.3 255.255.255.0
ip ospf 1 area 0
ip ospf cost 20
!
router ospf 1
router-id 0.0.0.3
area 30 nssa
!
no ip http server
no ip http secure-server
!
line vty 0 4
exec-timeout 0 0

```

```
privilege level 15
logging synchronous
width 180
!
end
```

R4:

```
!
hostname R4
!
no aaa new-model
no ip icmp rate-limit unreachable
no ip domain lookup
ip cef
no ipv6 cef
no cdp log mismatch duplex
ip tcp synwait-time 5
!
interface Loopback0
ip address 4.4.4.4 255.255.255.255
ip ospf 1 area 0
!
interface Loopback1
ip address 10.4.1.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback2
ip address 10.4.2.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback3
ip address 10.4.3.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback4
ip address 10.4.4.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback5
ip address 10.4.5.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback6
ip address 10.4.6.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback7
ip address 10.4.7.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback8
ip address 10.4.8.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback9
ip address 10.4.9.1 255.255.255.0
```

```
ip ospf network point-to-point
!
interface Loopback10
ip address 10.4.10.1 255.255.255.0
ip ospf network point-to-point
!
interface Ethernet0/0
ip address 192.168.20.4 255.255.255.0
ip ospf 1 area 20
!
interface Ethernet0/1
ip address 192.168.10.4 255.255.255.0
ip ospf 1 area 0
!
interface Ethernet0/2
description *** Internet Access ***
ip address 192.168.254.2 255.255.255.252
!
router ospf 1
router-id 0.0.0.4
area 20 stub no-summary
area 20 range 10.5.0.0 255.255.248.0
area 20 range 10.7.0.0 255.255.248.0
network 10.4.0.0 0.0.255.255 area 0
default-information originate
!
no ip http server
no ip http secure-server
!
ip route 0.0.0.0 0.0.0.0 192.168.254.1
!
line vty 0 4
exec-timeout 0 0
privilege level 15
logging synchronous
width 180
!
end
```

R5:

```
!
hostname R5
!
no aaa new-model
no ip icmp rate-limit unreachable
no ip domain lookup
ip cef
no ipv6 cef
no cdp log mismatch duplex
ip tcp synwait-time 5
!
interface Loopback0
ip address 5.5.5.5 255.255.255.255
ip ospf 1 area 20
!
interface Loopback1
```

```

ip address 10.5.1.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback2
ip address 10.5.2.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback3
ip address 10.5.3.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback4
ip address 10.5.4.1 255.255.255.0
ip ospf network point-to-point
!
interface Loopback5
ip address 10.5.5.1 255.255.255.0
ip ospf network point-to-point
!
interface Ethernet0/0
ip address 192.168.20.5 255.255.255.0
ip ospf 1 area 20
!
router ospf 1
router-id 0.0.0.5
area 20 stub
network 10.5.0.0 0.0.255.255 area 20
!
no ip http server
no ip http secure-server
!
line vty 0 4
exec-timeout 0 0
privilege level 15
logging synchronous
width 180
!
end

```

R6:

```

!
hostname R6
!
no aaa new-model
no ip icmp rate-limit unreachable
no ip domain lookup
ip cef
no ipv6 cef
no cdp log mismatch duplex
ip tcp synwait-time 5
!
interface Loopback0
ip address 6.6.6.6 255.255.255.255
!
interface Loopback1
ip address 172.16.1.1 255.255.255.0

```

```

!
interface Loopback2
ip address 172.16.2.1 255.255.255.0
!
interface Loopback3
ip address 172.16.3.1 255.255.255.0
!
interface Loopback4
ip address 172.16.4.1 255.255.255.0
!
interface Loopback5
ip address 172.16.5.1 255.255.255.0
!
interface Loopback6
ip address 172.16.6.1 255.255.255.0
!
interface Loopback7
ip address 172.16.7.1 255.255.255.0
!
interface Loopback8
ip address 172.16.8.1 255.255.255.0
!
interface Loopback9
ip address 172.16.9.1 255.255.255.0
!
interface Loopback10
ip address 172.16.10.1 255.255.255.0
!
interface Serial1/0
ip address 192.168.16.2 255.255.255.252
serial restart-delay 0
!
router eigrp Branch-B
!
address-family ipv4 unicast autonomous-system 100
!
topology base
exit-af-topology
network 6.6.6.6 0.0.0.0
network 172.16.0.0
network 192.168.16.0 0.0.0.3
eigrp router-id 6.6.6.6
exit-address-family
!
no ip http server
no ip http secure-server
!
line vty 0 4
exec-timeout 0 0
privilege level 15
logging synchronous
width 180
!
end

```

R7:

```
!  
hostname R7  
!  
no aaa new-model  
no ip icmp rate-limit unreachable  
no ip domain lookup  
ip cef  
no ipv6 cef  
no cdp log mismatch duplex  
ip tcp synwait-time 5  
!  
interface Loopback0  
ip address 7.7.7.7 255.255.255.255  
ip ospf 1 area 20  
!  
interface Loopback1  
ip address 10.7.1.1 255.255.255.0  
ip ospf network point-to-point  
!  
interface Loopback2  
ip address 10.7.2.1 255.255.255.0  
ip ospf network point-to-point  
!  
interface Loopback3  
ip address 10.7.3.1 255.255.255.0  
ip ospf network point-to-point  
!  
interface Loopback4  
ip address 10.7.4.1 255.255.255.0  
ip ospf network point-to-point  
!  
interface Loopback5  
ip address 10.7.5.1 255.255.255.0  
ip ospf network point-to-point  
!  
interface Ethernet0/0  
ip address 192.168.20.7 255.255.255.0  
ip ospf 1 area 20  
!  
interface Ethernet0/2  
ip address 192.168.254.5 255.255.255.252  
!  
router ospf 1  
router-id 0.0.0.7  
area 20 stub  
network 10.7.0.0 0.0.255.255 area 20  
!  
no ip http server  
no ip http secure-server  
!  
line vty 0 4  
exec-timeout 0 0  
privilege level 15  
logging synchronous  
width 180  
!  
end
```