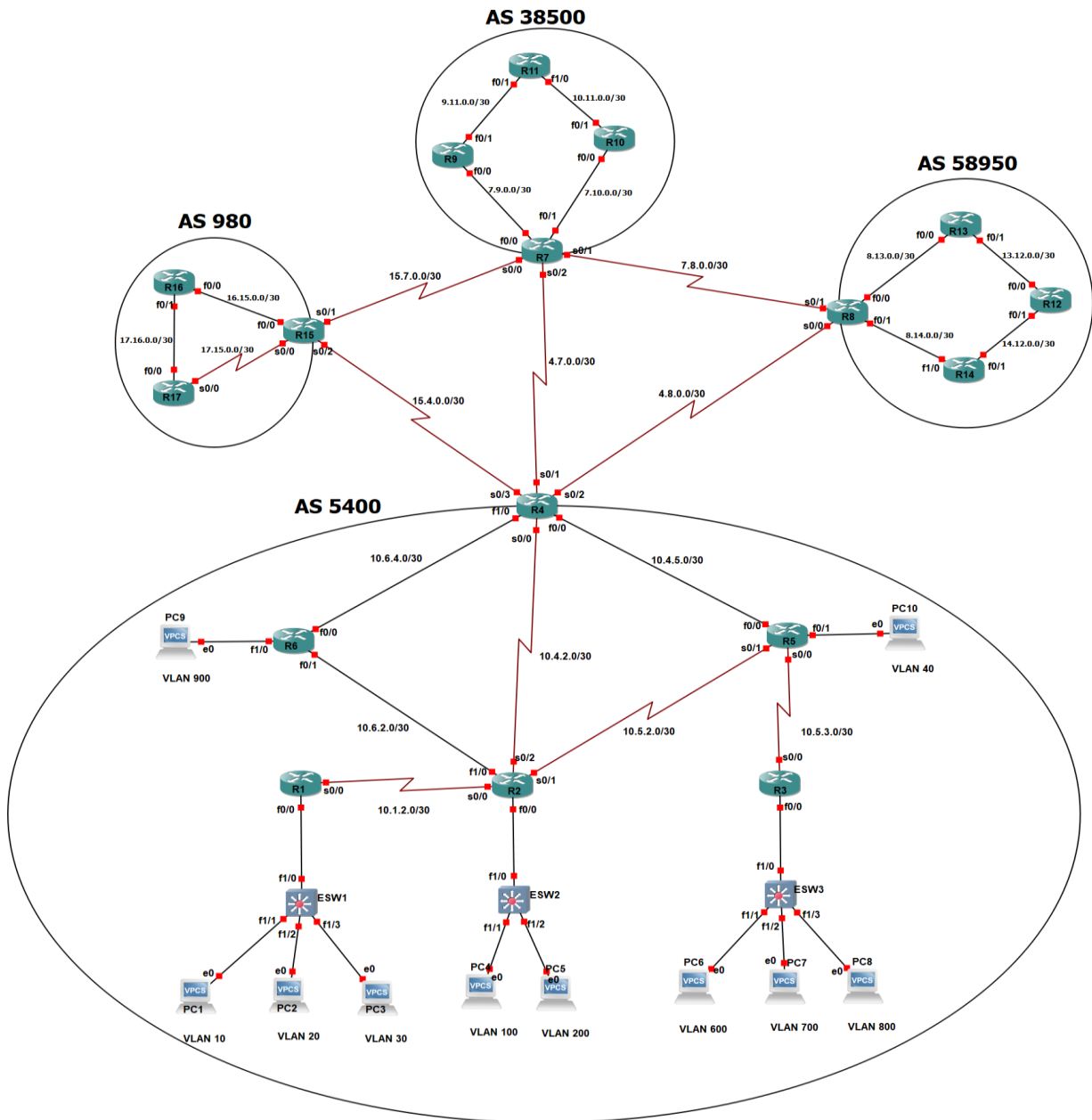


Netlab6 – Part 4: Advanced Router Configuration – with multiple Autonomous Systems

Purpose: To learn how to implement traffic engineering using route maps in BGP.



Netlab6 – Part 4:

1. In this part we will implement communication between all networks and manipulate the routing policies in BGP. First, we need to make sure communication between all the networks is enabled by pinging multiple network from different Autonomous Systems. To accomplish that, we have to distribute the IGP routes from each AS to the rest. Apply the following commands:

In the BGP process you have previously created apply: (### is the process number you are using)

For OSPF as IGP

```
R(config)#router bgp [AS number]
R(config-router)#redistribute ospf ###
R(config)#router ospf [###]
R(config-router)#redistribute bgp [AS number] subnets
```

For EIGRP as IGP

```
R(config)#router bgp [AS number]
R(config-router)#Redistribute eigrp ###
R(config)#router eigrp [###]
R(config-router)#Redistribute bgp [AS number] metric 10000 0 255 1 1
```

2. Test communications pinging multiple PCs to loopback in the newly created AS.
3. Now, we are ready to modify the bgp routes using route maps. (See IOS reference Sheet3)
 - a. Apply route map to force traffic from AS 58950 going to AS 980 to go thru AS 5400 first and then thru AS 38500. Confirm with trace route between two loopback interfaces. (Copy and paste the traceroute result here)

Hint:
In R8 set local preference for R4 higher than R7's
In R15 a long AS-PATH to R4 to reach AS980 (prepend 2 AS numbers)
 - b. Apply route map to force traffic from AS 5400 going to AS 58950 to go thru AS 980 and AS 38500. Confirm with trace route between one PC in AS 5400 and any loopback interface in AS 58950. (Copy and paste the traceroute result here)

Hint:
In R8 advertise a long AS-PATH to R4 to reach AS58950 (prepend 5 AS numbers)
In R7 create filter list to advertise to R4 routes going to 980 but not to 58950