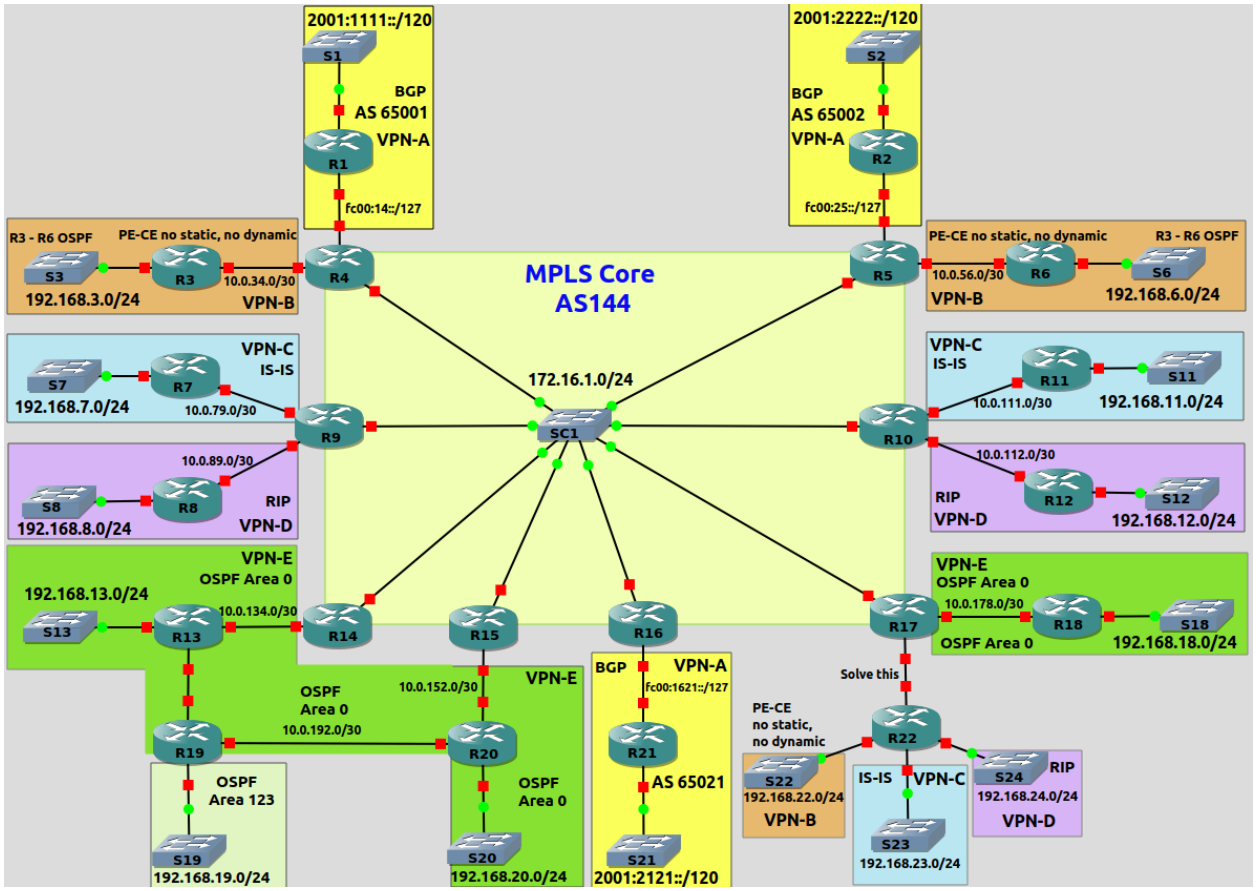
Lab L2 MPLS 2021

MPLS L3 VPNv4 and VPNv6 models

This lab is intended to reinforce your knowledge of Layer 3 VPN both IPv4 and IPv6. It contains the majority of the PE-CE relationships that can be encountered in any job situation. Even though its full implementation of 22 routers demands computer resources, it has been designed in a way that parts of the topology can be shut down while working in other parts.



Description

VPN-A

- The PE-CE relation runs BGP to advertise IPv6 routes.

VPN-B

- The PEs do not have any routing protocol (neither IGP nor BGP) or static relation with the CEs.
- R3 and R6 establish an OSPF adjacency.
- R3 and R22 establish an OSPF adjacency.
- R6 and R22 establish an OSPF adjacency.
- Solve that.

VPN-C

- PE-CE relationship is IS-IS.

VPN-D

- PE-CE relationship is RIP.

Notice:

- There is a particular situation between R17 and R22.
- Solve that.

VPN-E

- The PE-CE relationship is OSPF in the three sites.
- The link 10.0.192.0/30 is a fail-over. The main path should be going to the MPLS core.

Submission

- This is a result-only lab.
- Submit the snippets of the following:

R16# show bgp vpnv6 unicast vrf VPN-A

R21# show ipv6 route

R3# show running (remove irrelevant parts)

R9# show ip bgp vpnv4 vrf VPN-C

R9# show ip bgp vpnv4 vrf VPN-D

R17# show ip bgp vpvn4 all

R12# show running (remove irrelevant parts)

R14# show ip bgp vpnv4 vrf VPN-E

R19# show ip route

R15# show running (remove the irrelevant parts)