**Goal**. Use the provided PKT file and configure the following:

1. On switches and MLSs, configure RSTP, Portfast, Access, Trunk, Root Bridge, VLANs on all switches
2. IP addresses on router GW and MLSs
3. Gateway IPs on MLSs for both VLANs
4. OSPF on all Layer 3 devices (both routers and MLSs)
5. HSRP on MLSs with first IPs in both VLAN ranges, use one HSRP group per VLAN

Hostnames, IP addresses on PCs and the Serial link between GW and Internet are already configured.
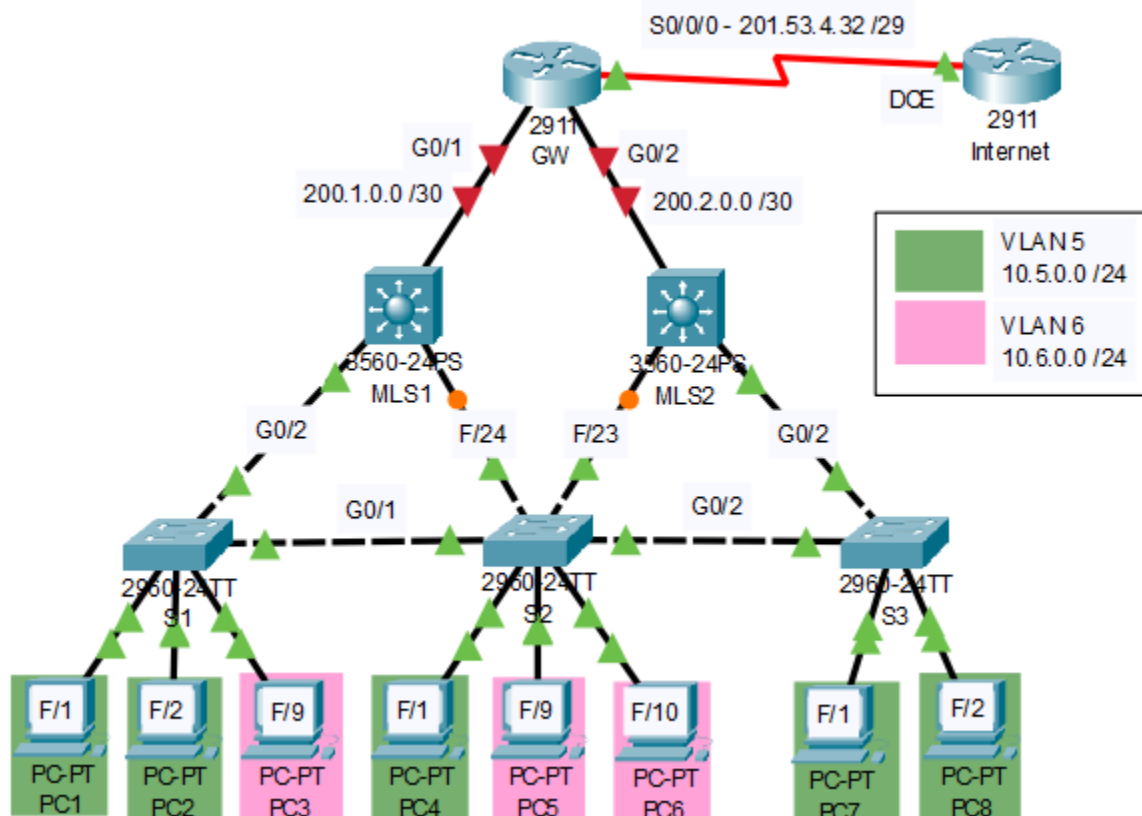
1. VLAN configuration

Configure on all switches (including MLSs), according to the diagram above:

```
S(config)# spanning-tree mode rapid-pvst

S(config-if-range)#switchport access vlan X
S(config-if-range)#spanning-tree portfast

S(config-if-range)#switchport mode trunk

MLS(config-if)#switchport trunk encapsulation dot1q
MLS(config-if-range)#switchport mode trunk

S(config)#vlan 5
S(config)#vlan 6
```

Root Bridge:

```
MLS1(config)#spanning-tree vlan 5 root primary
MLS1(config)#spanning-tree vlan 6 root primary

MLS2(config)#spanning-tree vlan 5 root secondary
MLS2(config)#spanning-tree vlan 6 root secondary
```

2. IP addresses on router GW and MLSs

Router Gateway:

```
GW(config)#interface GigabitEthernet 0/1
GW(config-if)#ip addr 200.1.0.1 255.255.255.252
GW(config-if)#no shutdown

GW(config)#interface GigabitEthernet 0/2
GW(config-if)#ip addr 200.2.0.1 255.255.255.252
GW(config-if)#no shutdown
```

Multilayer Switches:

```
MLS1(config)#interface GigabitEthernet 0/1
MLS1(config-if)#no switchport
MLS1(config-if)#ip address 200.1.0.2 255.255.255.252
MLS1(config-if)#exit

MLS2(config)#interface GigabitEthernet 0/2
MLS2(config-if)#no switchport
MLS2(config-if)#ip address 200.2.0.2 255.255.255.252
MLS2(config-if)#exit
```

3. VLAN gateways

```
MLS1(config)#interface vlan 5
MLS1(config-if)#ip address 10.5.0.2 255.255.255.0
MLS1(config-if)#exit


MLS1(config)#interface vlan 6
MLS1(config-if)#ip address 10.6.0.2 255.255.255.0
MLS1(config-if)#exit


MLS2(config)#interface vlan 5
MLS2(config-if)#ip address 10.5.0.3 255.255.255.0
MLS2(config-if)#exit


MLS2(config)#interface vlan 6
MLS2(config-if)#ip address 10.6.0.3 255.255.255.0
MLS2(config-if)#exit
```

4. OSPF on all L3 devices

```
GW(config)#router ospf 1
GW(config-router)#network 201.53.4.32 0.0.0.7 area 0
GW(config-router)#network 200.1.0.0 0.0.0.3 area 0
GW(config-router)#network 200.2.0.0 0.0.0.3 area 0
GW(config-router)#exit


MLS1(config)#ip routing
MLS1(config)#router ospf 1
MLS1(config-router)#network 10.5.0.0 0.0.0.255 area 0
MLS1(config-router)#network 10.6.0.0 0.0.0.255 area 0
MLS1(config-router)#network 200.1.0.0 0.0.0.3 area 0
MLS1(config-router)#exit
```

5. HSRP on MLSs

```
MLS1(config)#interface vlan 5
MLS1(config-if)#standby 1 ip 10.5.0.1
MLS1(config-if)#standby 1 priority 125
MLS1(config-if)#standby 1 preempt
MLS1(config-if)#standby 1 track Gi
MLS1(config-if)#standby 1 track GigabitEthernet 0/1


MLS1(config)#interface vlan 6
MLS1(config-if)#standby 2 ip 10.6.0.1
MLS1(config-if)#standby 2 priority 125
MLS1(config-if)#standby 2 preempt
MLS1(config-if)#standby 2 track GigabitEthernet 0/1


MLS2(config)#interface vlan 5
MLS2(config-if)#standby 1 ip 10.5.0.1
MLS2(config-if)#standby 1 priority 120
MLS2(config-if)#standby 1 preempt
MLS2(config-if)#standby 1 track GigabitEthernet 0/2


MLS2(config)#interface vlan 6
MLS2(config-if)#standby 2 ip 10.6.0.1
MLS2(config-if)#standby 2 priority 120
MLS2(config-if)#standby 2 preempt
MLS2(config-if)#standby 2 track GigabitEthernet 0/2
```