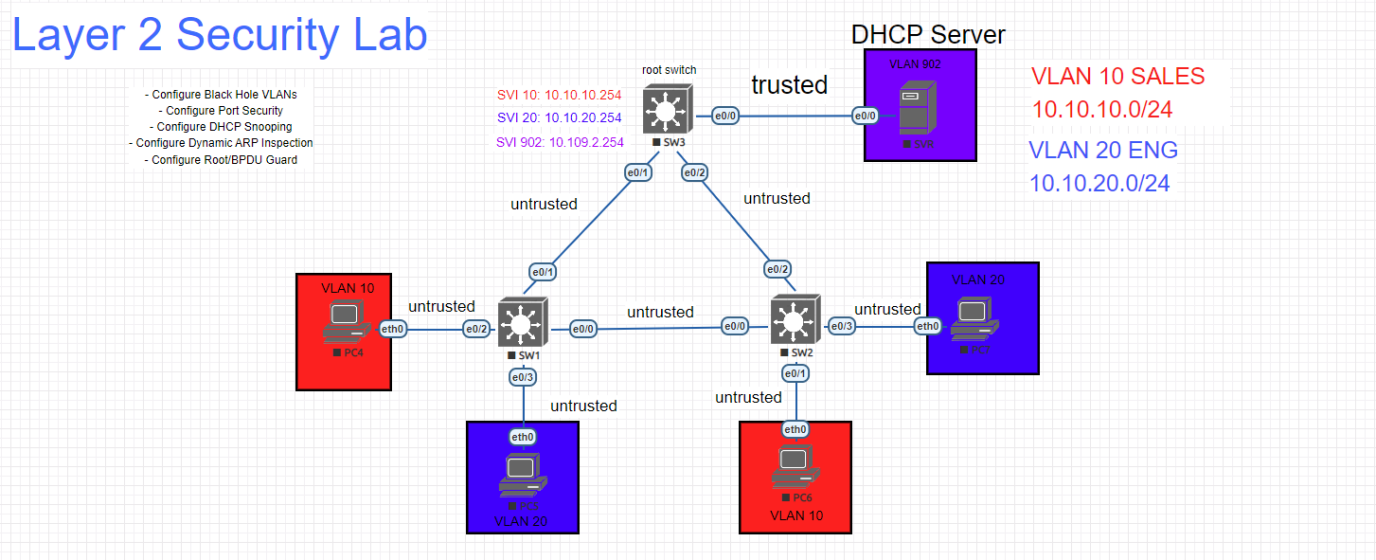
Blackhole VLAN Configuration

For this How To we will configure a "Black Hole" VLAN. The purpose of a blackhole VLAN is to ensure that any unused and open ports are configured with a VLAN TAG/ID that does not have any network access. This means the "Black Hole" VLAN is not a part of any broadcast domain or subnet.



- First we must configure the network for basic reachability. This How To assumes you already know how to configure and assign VLANs, trunks, SVIs, DHCP(Our DHCP server is a router), and DHCP relay.
- Next comes the simple configuration of a blackhole VLAN. All we do here is configure a VLAN ID that has a random number we will not use in production, and then assign that VLAN to all unused ports.

`SW1(config)#interface range eth0/4 - 11` # This command brings into the sub-configuration mode for a range of interfaces

`SW1(config-if-range)#switchport mode access` # This sets the switchport to access mode

`SW1(config-if-range)# switchport access vlan 888` # This sets the access VLAN to be used on the port

Now we must prune the "Black Hole" VLAN on all our trunk ports.

`SW1(config-if-range)#switchport trunk allowed vlan except 888` # This command will allow all VLANs across the trunk except for the VLAN specified.

The full configuration is shown below.

```
SW1(config)#vlan 888
SW1(config-vlan)#name BLACKHOLE VLAN
SW1(config-vlan)#exit
SW1(config)#interface range eth1/0 - 3, eth2/0 - 3
SW1(config-if-range)#switchport mode access
SW1(config-if-range)#switchport access vlan 888
SW1(config-if-range)#exit
SW1(config)#interface range eth0/0 - 1
SW1(config-if-range)#switchport trunk allowed vlan except 888
SW1(config-if-range)#exit
SW1(config)#
```

Below is a picture of all the ports on our switches we are using for demonstration.

```
SW1#show ip int br
Interface              IP-Address      OK? Method Status                Protocol
Ethernet0/0            unassigned      YES unset  up                    up
Ethernet0/1            unassigned      YES unset  up                    up
Ethernet0/2            unassigned      YES unset  up                    up
Ethernet0/3            unassigned      YES unset  up                    up
Ethernet1/0            unassigned      YES unset  up                    up
Ethernet1/1            unassigned      YES unset  up                    up
Ethernet1/2            unassigned      YES unset  up                    up
Ethernet1/3            unassigned      YES unset  up                    up
Ethernet2/0            unassigned      YES unset  up                    up
Ethernet2/1            unassigned      YES unset  up                    up
Ethernet2/2            unassigned      YES unset  up                    up
Ethernet2/3            unassigned      YES unset  up                    up
SW1#
```