Cisco™ CCNA : VLANs and VTP

VLANs – Points to Remember

1. VLAN 1 is the management VLAN.
2. **Static VLAN :** VLAN is statically assigned to the physical port and never changes.
3. **Dynamic VLAN :** VMPS automatically assigns VLAN based on MAC
4. **Access Link :** An access link can carry only one VLAN (used between host and switch port)
5. **Trunk Link :** A trunk link can carry multiple VLANs. Used to connect to other switches, routers, or servers
6. Two types of Trunk framing: ISL (Cisco only) and 802.1.q
7. Trunk links can carry 1 to 1005 VLANs
8. Switchport modes are trunk, dynamic desirable, dynamic auto, access.

VTP – Points to Remember

1. VTP is a Layer 2 messaging protocol. It carries configuration information throughout a single domain
2. VTP Modes are
   Server : Create, modify, or delete VLANs (This is the deafult vtp mode on a switch)
   Client : Can't create, change, or delete VLANs
   Transparent : Used when a switch is not required to participate in VTP, but only pass the information to other switches
3. VTP domain is common to all switches participating in VTP
4. Pruning is a technique where in VLANs not having any access ports on an end switch are removed from the trunk to reduce flooded traffic
5. **Configuration revision number** is a 32-bit number that indicates the level of revision for a VTP packet. Each time the VTP device undergoes a VLAN change, the config revision is incremented by one.

VLAN configuration

Creating VLANs

```
SW1#vlan database
SW1(vlan)#vlan 10 name firstvlan
SW1(vlan)#vlan 20 name secondvlan
```

Access Port configuration

```
SW1(config-if)#switchport mode access
SW1(config-if)#switchport access vlan 10
SW1(config-if)#switchport access vlan 20
```

Access port config to a range of interfaces

```
SW1(config)#interface range fa 0/2 - 5
SW1(config-if)#switchport access vlan 10
SW1(config)#interface range fa 0/6 - 10
SW1(config-if)#switchport access vlan 20
```

Trunk Port configuration

```
SW1(config-if)#switchport mode trunk
SW1(config-if)#switchport trunk encapsulation dot1q
```

VTP Configuration

```
SW1#vlan database
SW1(vlan)#vtp mode (Server/Client/Transparent)
SW1(vlan)#vtp domain <name>
SW1(vlan)#vtp password <password>
SW1(vlan)#vtp pruning
```

Troubleshooting commands

1. show vlan
2. show vlan-membership
3. show vtp status
4. show interfaces trunk
5. show interface <interface-name> switchport