# Configure and Verify Interswitch Connectivity:
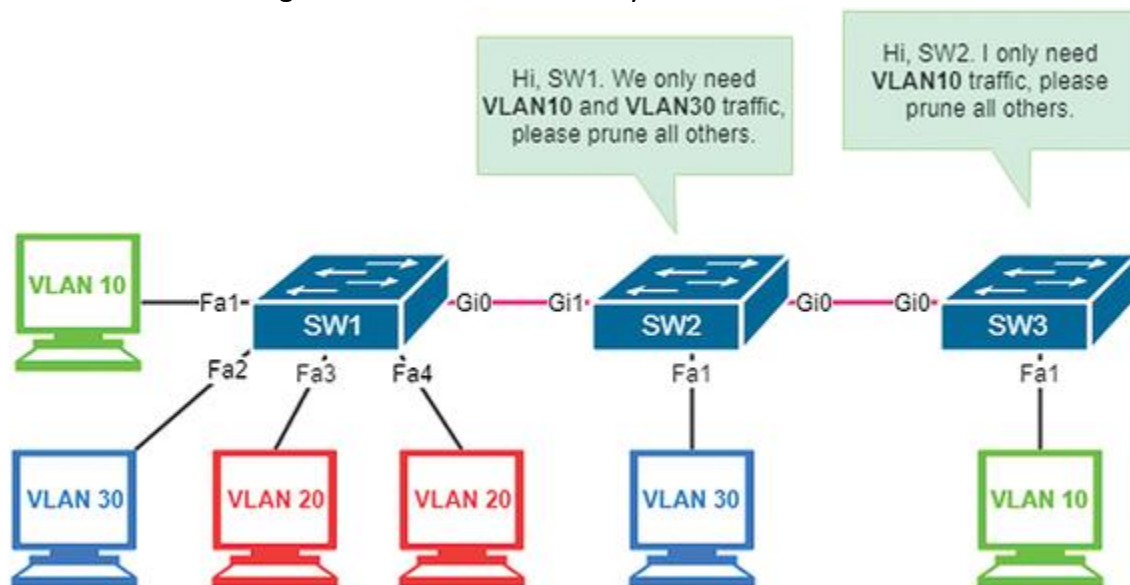
Trunk Ports:
o A Trunk port is a port that is assigned to carry traffic for all the VLANs.
o In order to pass the traffic from VLANs on one switch to another switch.
o We need to implement what is called a 'trunk' port or trunk interface.
o That are accessible by a specific switch, a process known as trunking.
o It mark frames with unique identifying tags either 802.1Q tags or ISL tags.
o Trunk Port or interface mark the traffic When move between cisco switches.
o Therefore, every single frame can be directed to its designated VLAN.
o Trunk ports are designed for interconnecting and allow one or more VLANs.
o Trunk ports are designed for interconnecting switches and support all VLANs.
o Trunk switch ports belongs to and carry the traffic of more than one VLAN.
o Each port on a switch can be configured as either an access or a trunk port.
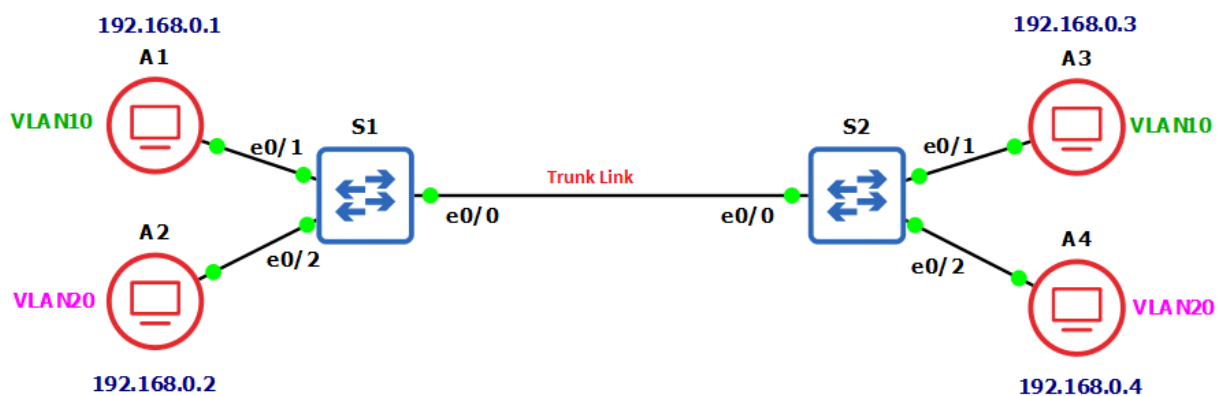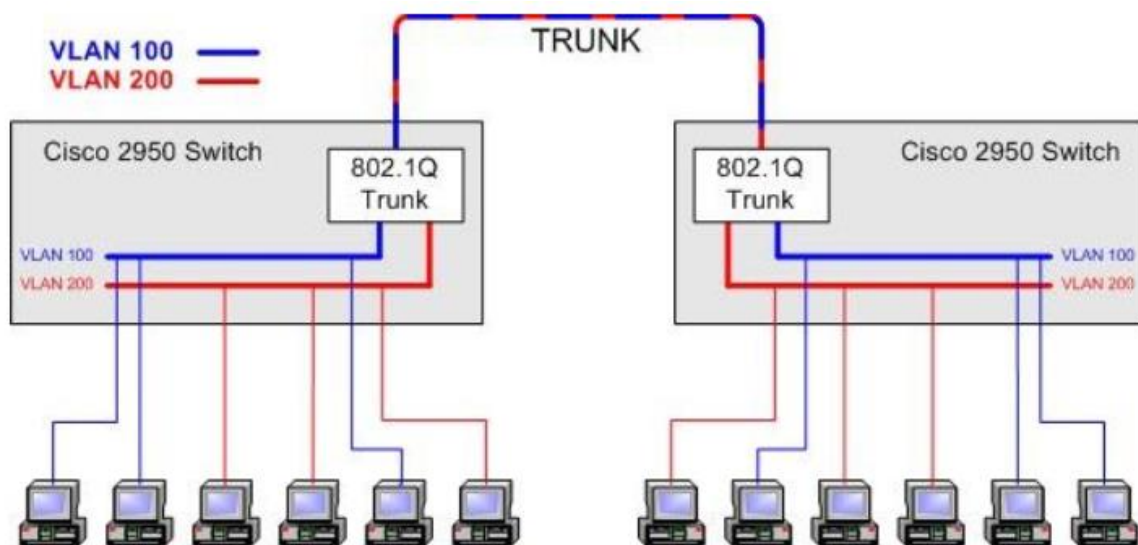
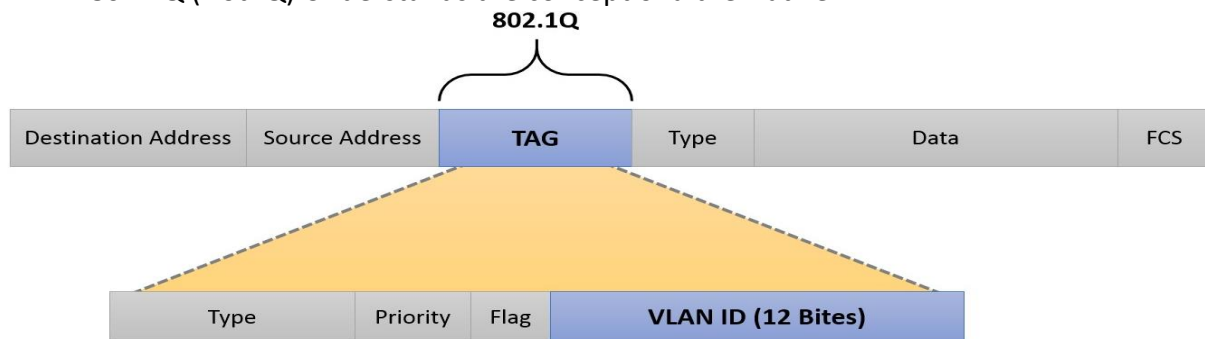| S1 Configuration |
| --- |
| S1(config)#interface ethernet 0/0
S1(config-if-range)#switchport trunk encapsulation dot1q
S1(config-if-range)#switchport mode trunk |
| S1# show interface trunk |
| **S2 Configuration** |
| S2(config)#interface ethernet 0/0
S2(config-if-range)#switchport trunk encapsulation dot1q
S2(config-if-range)#switchport mode trunk |
| S2# show interface trunk |

Manual Pruning:

- o By default, all Virtual Local Area Network VLANs are allowed on a trunk interface.
- o VLANs can be manually added or removed using switchport trunk allowed command.
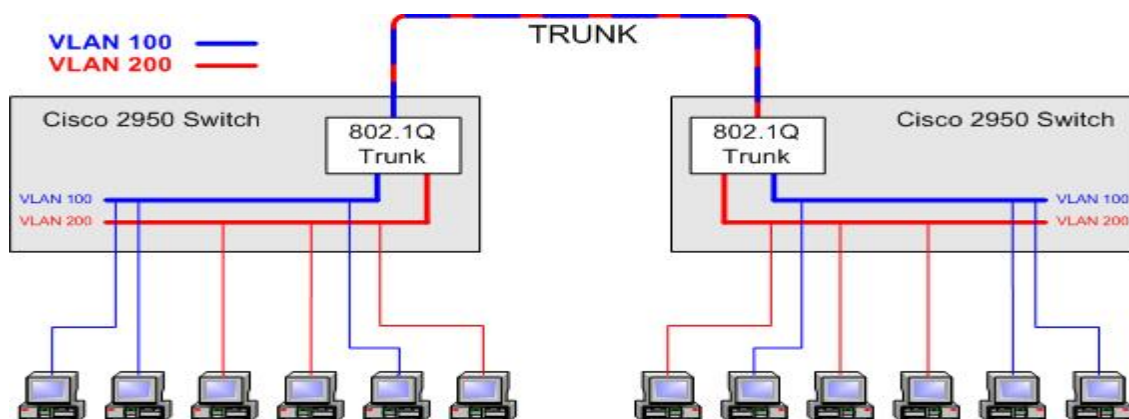- o Recommend limiting the allowed VLANs to only those that need to traverse the trunk.

S1 & S2 Configuration
S(config)#interface ethernet 0/0 S(config-if-range)#switchport trunk encapsulation dot1q S(config-if-range)#switchport mode trunk S(config-if-range)# switchport trunk allowed vlan remove 10 S(config-if-range)# switchport trunk allowed vlan 20 S(config-if)#switchport trunk allowed vlan all S(config-if)#switchport trunk allowed vlan none S(config-if)#switchport trunk allowed vlan add 10 S(config-if)#switchport trunk allowed vlan add 20 S(config-if)#switchport trunk allowed vlan except 10
S# show interface trunk

Dot1Q (IEEE 802.1Q):

o   Dot1Q is IEEE 802.1Q, the standard for trunking encapsulation.
o   Common trunking protocol, standard and supported by many vendors.
o   On Cisco Switches, you configure IEEE 802.1Q (dot1q) on trunk ports.
o   Dot1Q allow tagged frames to be transported on a trunk link or ports.
o   Dot1Q allowing multiple VLANs to traverse through one link or ports.
o   IEEE 802.1Q (Dot1Q) extends the VLANs across the whole network.
o   IEEE 802.1Q (Dot1Q) trunks use VLAN 1 as the default native VLAN.
o   VLAN tagging is usually done based on the standard IEEE 802.1Q.
o   Tag includes info related to particular VLAN which frame belongs to.
o   Its indicate VLAN membership within a frame going across the network.
o   802.1Q also adds a 4-byte tag into the Ethernet frame for VLAN tagging.
o   IEEE 802.1Q (Dot1Q) Supports both Normal and Extended range VLANs.
o   IEEE 802.1Q (Dot1Q) Inserts tag into existing Switches Ethernet header.
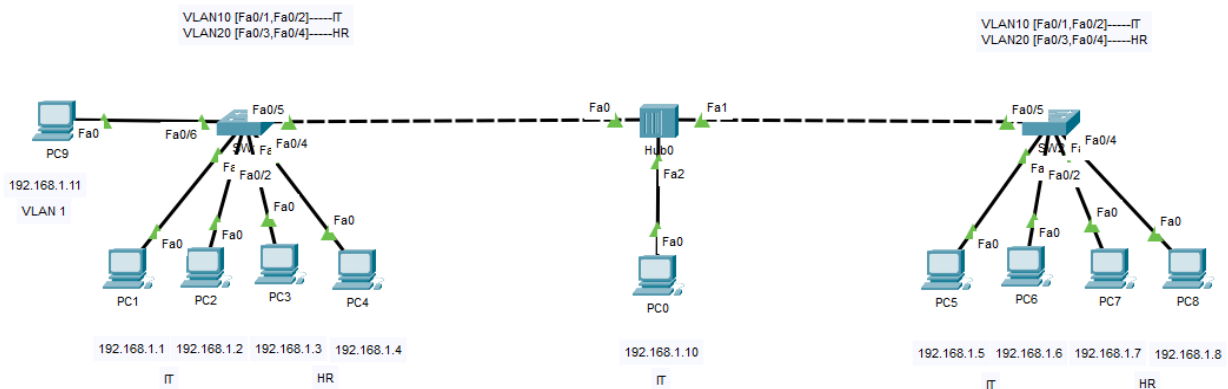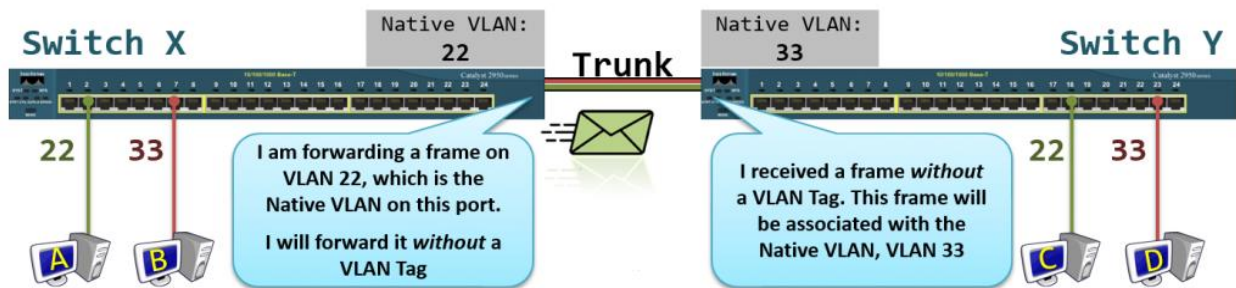o   IEEE 802.1Q (Dot1Q) Understands the concept of a the Native VLAN.

802.1Q

Destination Address	Source Address	TAG	Type	Data	FCS

Type	Priority	Flag	VLAN ID (12 Bites)

Commands	Description
S1(config)# interface Ethernet 0/0	Configure a VLAN trunk interface
S1(config-if)# switchport trunk encapsulation dot1q	Configure VLAN encapsulation
S1# show interfaces Ethernet 0/0 switchport	Verify the trunk configuration
S1# show interfaces Ethernet 0/0 trunk	Verify the trunk configuration
S1# show interfaces trunk	Verify the trunk configuration

VLAN 100
VLAN 200

TRUNK

Cisco 2950 Switch

802.1Q
Trunk

VLAN 100
VLAN 200

802.1Q
Trunk

Cisco 2950 Switch

VLAN 100
VLAN 200

Native VLAN:

o Without tag, Switch will not know what VLAN the traffic belongs to.
o Switch associates untagged traffic with configured as the Native VLAN.
o A VLAN that any received untagged traffic gets assigned to on Trunk port.
o A VLAN that travel without tag it assigned to an 802.1Q trunk port.
o By default, the Native Virtual Local Area Network (VLAN) is one 1.
o Packet without tagged on a dot1q link belongs to Native VLAN.
o Best practice and security to change Native VLAN on all switches.
o Native VLAN ID must match on both end of the Cisco Switch trunk.
o The VLAN dot1q tag native command will tag VLAN on all trunks.
o SW(config-if) # switchport trunk native vlan vlan-id

S1 Configuration
S(config)#interface ethernet f0/5
S(config-if-range)#switchport mode trunk
S(config-if)#switchport trunk native vlan 10
S# show interface trunk

S2 Configuration
S(config)#interface ethernet f0/5
S(config-if-range)#switchport mode trunk
S(config-if)#switchport trunk native vlan 10
S# show interface trunk