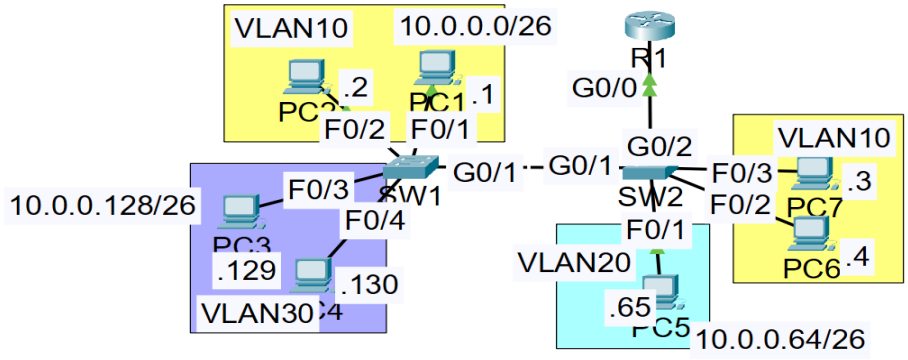
VLANs - Network Topology:



SW1 CLI:

SW1

Physical | Config | CLI | Attributes

```
SW1>en
SW1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
SW1(config)#int range f0/1 - 2
SW1(config-if-range)#switchport mode access
SW1(config-if-range)#switchport access vlan 10
% Access VLAN does not exist. Creating vlan 10
SW1(config-if-range)#do sh vlan br

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    Fa0/3, Fa0/4, Fa0/5, Fa0/6
                                                 Fa0/7, Fa0/8, Fa0/9, Fa0/10
                                                 Fa0/11, Fa0/12, Fa0/13, Fa0/14
                                                 Fa0/15, Fa0/16, Fa0/17, Fa0/18
                                                 Fa0/19, Fa0/20, Fa0/21, Fa0/22
                                                 Fa0/23, Fa0/24, Gig0/1, Gig0/2
10   VLAN0010                          active    Fa0/1, Fa0/2
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active
SW1(config-if-range)#vlan 10
SW1(config-vlan)#name 10
SW1(config-vlan)#do sh vlan br

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    Fa0/3, Fa0/4, Fa0/5, Fa0/6
                                                 Fa0/7, Fa0/8, Fa0/9, Fa0/10
                                                 Fa0/11, Fa0/12, Fa0/13, Fa0/14
                                                 Fa0/15, Fa0/16, Fa0/17, Fa0/18
                                                 Fa0/19, Fa0/20, Fa0/21, Fa0/22
                                                 Fa0/23, Fa0/24, Gig0/1, Gig0/2
10   10                                active    Fa0/1, Fa0/2
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active
SW1(config-vlan)#int range f0/3 - 4
SW1(config-if-range)#switchport access vlan 30
% Access VLAN does not exist. Creating vlan 30
SW1(config-if-range)#vlan 30
SW1(config-vlan)#name 30
SW1(config-vlan)#do sh vlan br

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                                 Fa0/9, Fa0/10, Fa0/11, Fa0/12
                                                 Fa0/13, Fa0/14, Fa0/15, Fa0/16
                                                 Fa0/17, Fa0/18, Fa0/19, Fa0/20
                                                 Fa0/21, Fa0/22, Fa0/23, Fa0/24
                                                 Gig0/1, Gig0/2
10   10                                active    Fa0/1, Fa0/2
30   30                                active    Fa0/3, Fa0/4
1002 fddi-default                      active
1003 token-ring-default                active
```

SW1

Physical | Config | CLI | Attributes

IOS Command Line

```
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active
SW1(config-vlan)#exit
SW1(config)#int g0/1
SW1(config-if)#switchport mode trunk

SW1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

SW1(config-if)#switchport trunk allowed vlan 10,30
SW1(config-if)#do sh int trunk
Port        Mode         Encapsulation  Status        Native vlan
Gig0/1      on           802.1q         trunking      1

Port        Vlans allowed on trunk
Gig0/1      10,30

Port        Vlans allowed and active in management domain
Gig0/1      10,30

Port        Vlans in spanning tree forwarding state and not pruned
Gig0/1      10,30

SW1(config-if)#switchport trunk native vlan 1001
SW1(config-if)#do sh int trunk
Port        Mode         Encapsulation  Status        Native vlan
Gig0/1      on           802.1q         trunking      1001

Port        Vlans allowed on trunk
Gig0/1      10,30

Port        Vlans allowed and active in management domain
Gig0/1      10,30

Port        Vlans in spanning tree forwarding state and not pruned
Gig0/1      10,30

SW1(config-if)#
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on GigabitEthernet0/1 (1001), with SW2 GigabitEthernet0/1 (1).

%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on GigabitEthernet0/1 (1001), with SW2 GigabitEthernet0/1 (1).




SW1 con0 is now available
```

SW2 CLI:

SW2

Physical | Config | CLI | Attributes

IOS Commanc

```
SW2>en
SW2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
SW2(config)#int f0/1
SW2(config-if)#switchport mode access
SW2(config-if)#switchport access vlan 20
% Access VLAN does not exist. Creating vlan 20
SW2(config-if)#vlan 20
SW2(config-vlan)#name 20
SW2(config-vlan)#do sh vlan br

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    Fa0/2, Fa0/3, Fa0/4, Fa0/5
                                                 Fa0/6, Fa0/7, Fa0/8, Fa0/9
                                                 Fa0/10, Fa0/11, Fa0/12, Fa0/13
                                                 Fa0/14, Fa0/15, Fa0/16, Fa0/17
                                                 Fa0/18, Fa0/19, Fa0/20, Fa0/21
                                                 Fa0/22, Fa0/23, Fa0/24, Gig0/1
                                                 Gig0/2
20   20                                active    Fa0/1
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active
SW2(config-vlan)#int range f0/2 - 3
SW2(config-if-range)#switchport access vlan 10
% Access VLAN does not exist. Creating vlan 10
SW2(config-if-range)#vlan 10
SW2(config-vlan)#name 10
SW2(config-vlan)#do sh vlan br

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    Fa0/4, Fa0/5, Fa0/6, Fa0/7
                                                 Fa0/8, Fa0/9, Fa0/10, Fa0/11
                                                 Fa0/12, Fa0/13, Fa0/14, Fa0/15
                                                 Fa0/16, Fa0/17, Fa0/18, Fa0/19
                                                 Fa0/20, Fa0/21, Fa0/22, Fa0/23
                                                 Fa0/24, Gig0/1, Gig0/2
10   10                                active    Fa0/2, Fa0/3
20   20                                active    Fa0/1
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active
SW2(config-vlan)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

SW2(config-vlan)#exit
SW2(config)#int g0/1
SW2(config-if)#switchport mode trunk
SW2(config-if)#switchport trunk allowed vlan 10,30
SW2(config-if)#do sh int tru
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on GigabitEthernet0/1 (1), with SW1 GigabitEtherne
SW2(config-if)#do sh int trunk
```

SW2

Physical | Config | CLI | Attributes

```
SW2(config-if)#switchport trunk allowed vlan 10,20,30
SW2(config-if)#do sh vlan br

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    Fa0/4, Fa0/5, Fa0/6, Fa0/7
                                                 Fa0/8, Fa0/9, Fa0/10, Fa0/11
                                                 Fa0/12, Fa0/13, Fa0/14, Fa0/15
                                                 Fa0/16, Fa0/17, Fa0/18, Fa0/19
                                                 Fa0/20, Fa0/21, Fa0/22, Fa0/23
                                                 Fa0/24
10   10                                active    Fa0/2, Fa0/3
20   20                                active    Fa0/1
30   VLAN0030                          active
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active
SW2(config-if)#vlan 30
SW2(config-vlan)#name 30
SW2(config-vlan)#do sh vlan br

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    Fa0/4, Fa0/5, Fa0/6, Fa0/7
                                                 Fa0/8, Fa0/9, Fa0/10, Fa0/11
                                                 Fa0/12, Fa0/13, Fa0/14, Fa0/15
                                                 Fa0/16, Fa0/17, Fa0/18, Fa0/19
                                                 Fa0/20, Fa0/21, Fa0/22, Fa0/23
                                                 Fa0/24
10   10                                active    Fa0/2, Fa0/3
20   20                                active    Fa0/1
30   30                                active
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active
SW2(config-vlan)#do sh int trunk
Port        Mode         Encapsulation  Status        Native vlan
Gig0/1      on           802.1q         trunking      1001
Gig0/2      on           802.1q         trunking      1

Port        Vlans allowed on trunk
Gig0/1      10,30
Gig0/2      10,20,30

Port        Vlans allowed and active in management domain
Gig0/1      10,30
Gig0/2      10,20,30

Port        Vlans in spanning tree forwarding state and not pruned
Gig0/1      10,30
Gig0/2      10,20,30

SW2(config-vlan)#
```

R1 CLI:

R1

Physical | Config | CLI | Attributes

```
R1>en
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#int g0/0
R1(config-if)#no shutdown

R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up

R1(config-if)#do sh ip int br
Interface              IP-Address      OK? Method Status                Protocol
GigabitEthernet0/0     unassigned      YES unset  up                    up
GigabitEthernet0/1     unassigned      YES unset  administratively down down
GigabitEthernet0/2     unassigned      YES unset  administratively down down
Vlan1                  unassigned      YES unset  administratively down down
R1(config-if)#int g0/0.10
R1(config-subif)#
%LINK-3-UPDOWN: Interface GigabitEthernet0/0.10, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0.10, changed state to up

R1(config-subif)#encapsulation dot1q 10
R1(config-subif)#ip address 10.0.0.62 255.255.255.192
R1(config-subif)#int g0/0.20
R1(config-subif)#
%LINK-3-UPDOWN: Interface GigabitEthernet0/0.20, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0.20, changed state to up

R1(config-subif)#encapsulation dot1q 20
R1(config-subif)#ip address 10.0.0.126 255.255.255.192
R1(config-subif)#int g0/0.30
R1(config-subif)#
%LINK-3-UPDOWN: Interface GigabitEthernet0/0.30, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0.30, changed state to up

R1(config-subif)#encapsulation dot1q 30
R1(config-subif)#ip address 10.0.0.190 255.255.255.192
R1(config-subif)#do sh ip int br
Interface              IP-Address      OK? Method Status                Protocol
GigabitEthernet0/0     unassigned      YES unset  up                    up
GigabitEthernet0/0.10  10.0.0.62       YES manual up                    up
GigabitEthernet0/0.20  10.0.0.126      YES manual up                    up
GigabitEthernet0/0.30  10.0.0.190      YES manual up                    up
GigabitEthernet0/1     unassigned      YES unset  administratively down down
GigabitEthernet0/2     unassigned      YES unset  administratively down down
Vlan1                  unassigned      YES unset  administratively down down
R1(config-subif)#
```

PC1 Command Prompt: