VLANs and Trunks

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Course Code: Data Communication and Computer Networking

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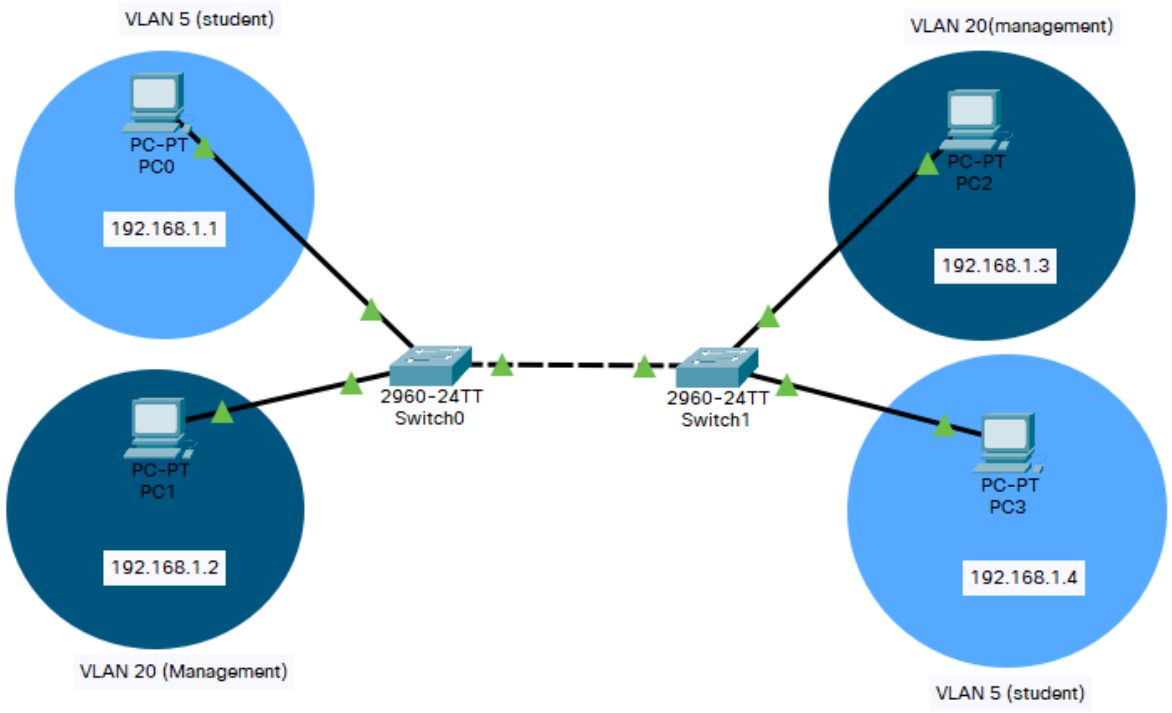
VLANs and Trunks:

Suppose there are two Blocks in an institute:

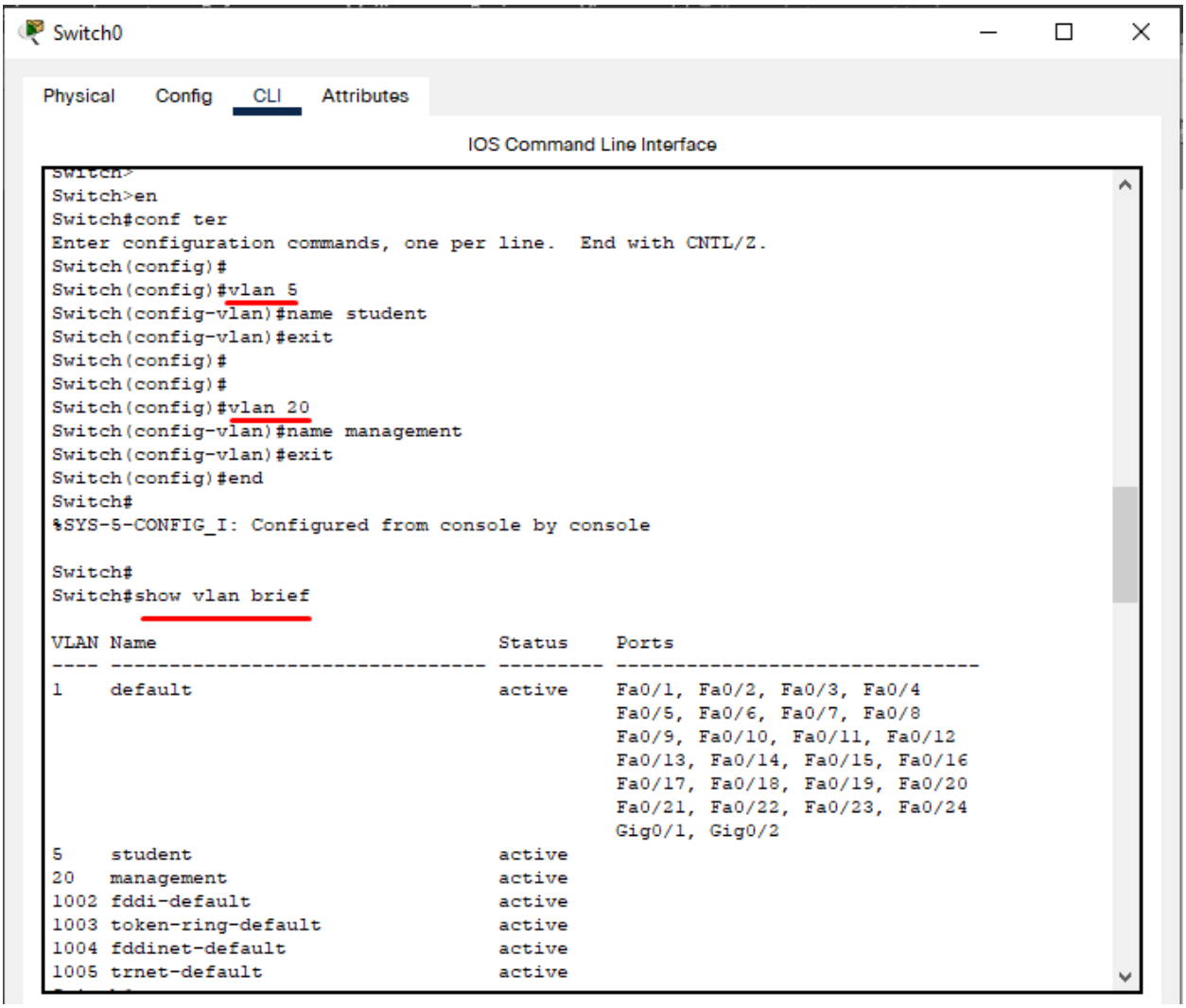
- Students
- Management

When we send a message, it broadcasted to all hosts over same network. To overcome this issue, we set two VLANs; one for students and one for teachers.

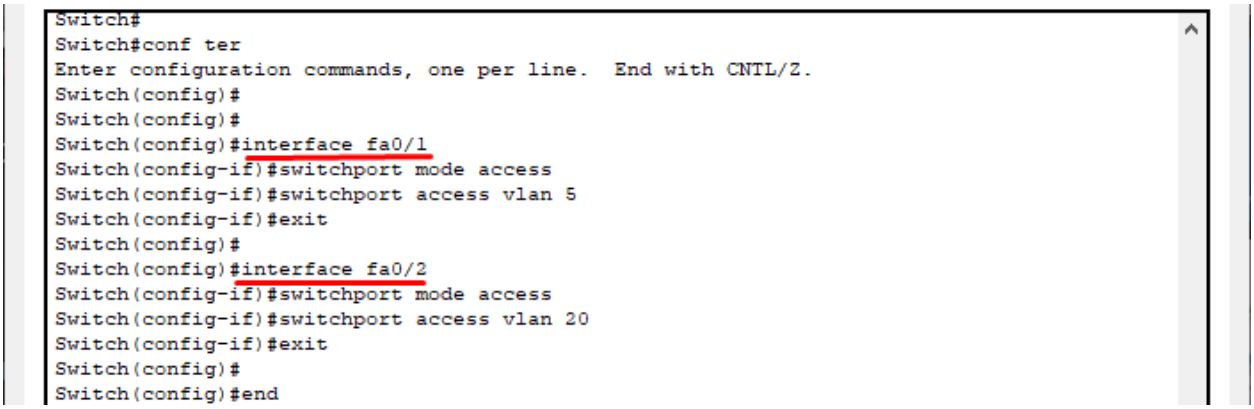


Step-By-Step Configuration

1. Configure IPs of All connected PCs.
2. Configure Switch-0
    a. Create VLANs



    b. Configure Interfaces



```
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#
Switch#show vlan

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
5    student                           active    Fa0/1
20   management                        active    Fa0/2
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
```

c. Trunking

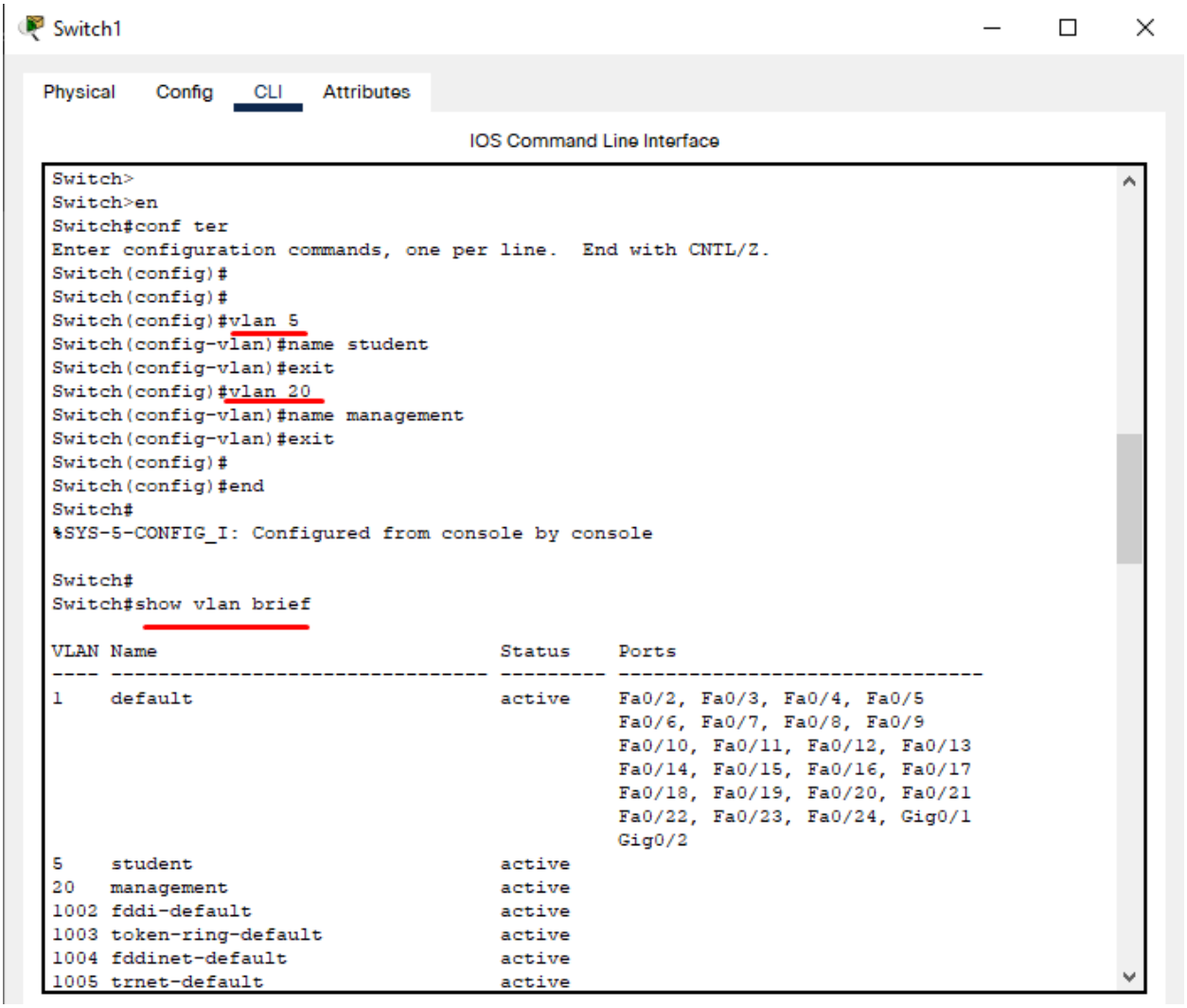
Switch0

Physical Config CLI Attributes

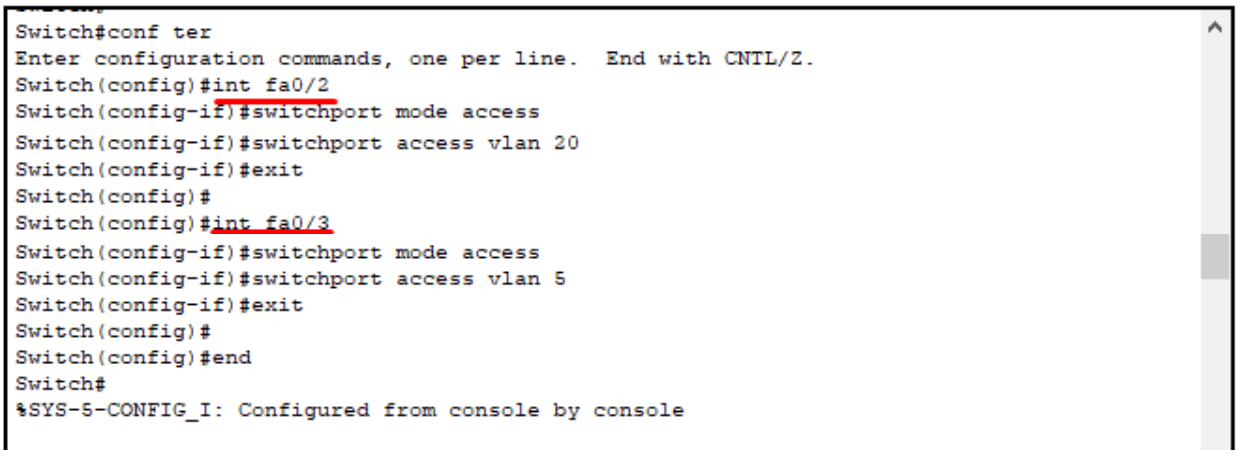
IOS Command Line Interface

```
Switch#
Switch#conf ter
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#
Switch(config)#
Switch(config)#interface fa0/3
Switch(config-if)#switchport mode trunk

Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up

Switch(config-if)#
```

3. Configure Switch-1
    a. Create VLANs

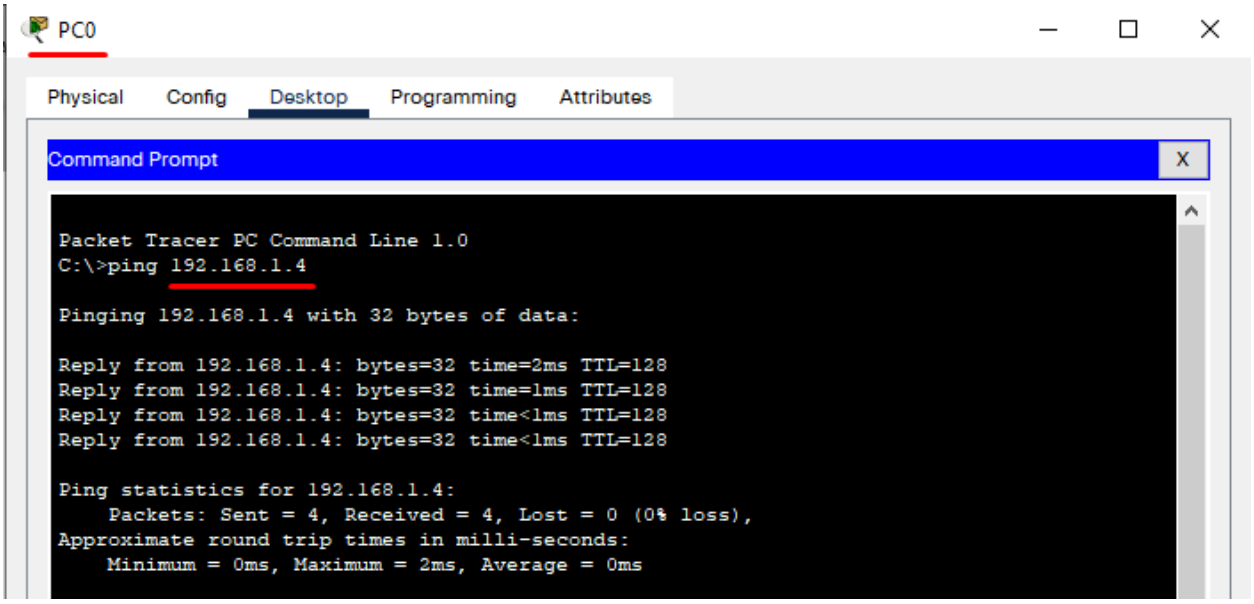


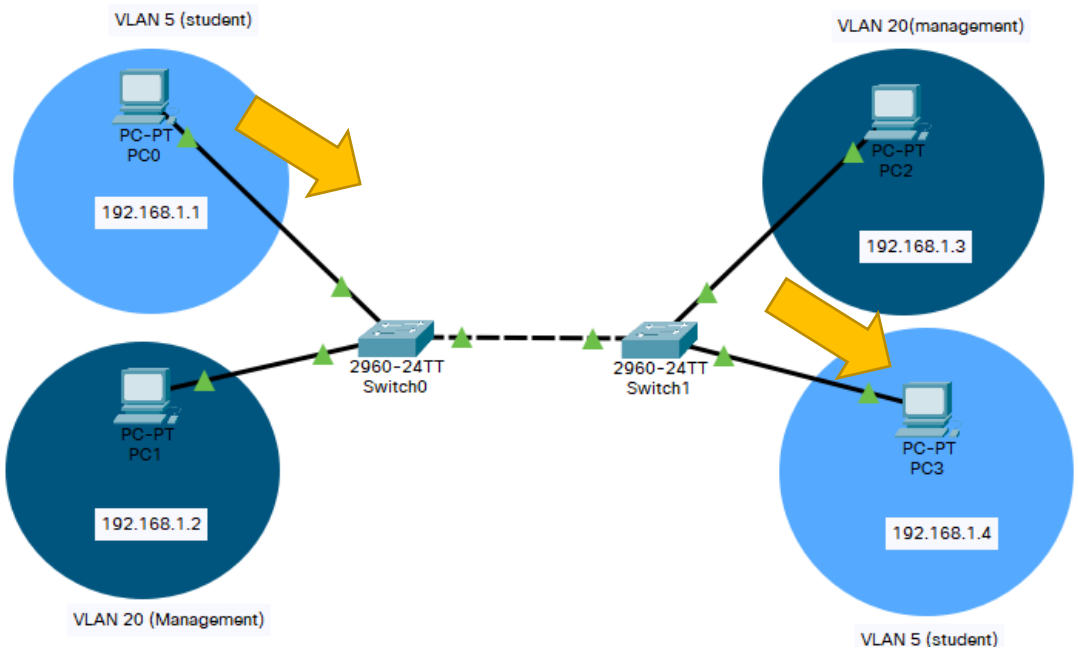
    b. Configure Interfaces



```
Switch#show vlan

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
5    student                           active    Fa0/3
20   management                        active    Fa0/2
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active
```

4. Ping from PC-0 to Pc-4 (Same VLAN)





5. Ping from PC-0 to Pc-1 (Different VLAN)