**Lab Task:**

**Connect 4 switches A, B, C and D, all switches must be password protected (encrypted password) and apply the following configuration, show network topology and configuration in your lab task.**

1. **Switch B, C, D must be connected to switch A**
2. **Switch B with VLAN name Faculty & Students having 5 logical ports each**
3. **Switch C with VLAN name Management having 3 logical ports**
4. **Switch D with VLAN name SRC & NCMPR having 3 logical ports each**
5. **Choose network IP from Class B for LAN like 172.16.X.X for hosts to test your LAN network**

**Solution:**

**Adding Password to Switches:**

Switch>EN

Switch#config t

Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)#hostname A

A(config)#enable secret 11111

A(config)#exit

A#

And so on in all switches with same code.

**Switch A secret password: 11111**

**Switch B secret password: 22222**

**Switch C secret password: 33333**

**Switch D secret password: 44444**

**Creating Faculty VLAN in switch B**

B#config t

Enter configuration commands, one per line. End with CNTL/Z.

B(config)#vlan 1

B(config-vlan)#name Faculty

Default VLAN 1 may not have its name changed.

B(config-vlan)#exit

B(config)#vlan 2

B(config-vlan)#name Faculty

B(config-vlan)#exit

**On switch B adding PC’s for Faculty**

**PC 0**

B(config)#interface fastethernet 0/1

B(config-if)#switch port mode access

^

% Invalid input detected at '^' marker.

B(config-if)#switchport mode access

B(config-if)#switchport access vlan 2

B(config-if)#

**PC 1:**

B(config)#interface fastethernet 0/3

B(config-if)#switchport mode access

B(config-if)#switchport access vlan 2

B(config-if)#exit

**PC 2:**

B#config t

Enter configuration commands, one per line. End with CNTL/Z.

B(config)#interface fastethernet 0/4

B(config-if)#switchport mode access

B(config-if)#switchport access vlan 2

B(config-if)#exit

**PC3:**

B(config)#interface fastethernet 0/5

B(config-if)#switchport mode access

B(config-if)#switchport access vlan 2

**PC4:**

B(config-if)#INTERFACE fastethernet 0/6

B(config-if)#switchport mode access

B(config-if)#switchport access vlan 2

**Now lets create vlan of Students in same switch B**

B(config)#vlan 3

B(config-vlan)#name Students

B(config-vlan)#exit

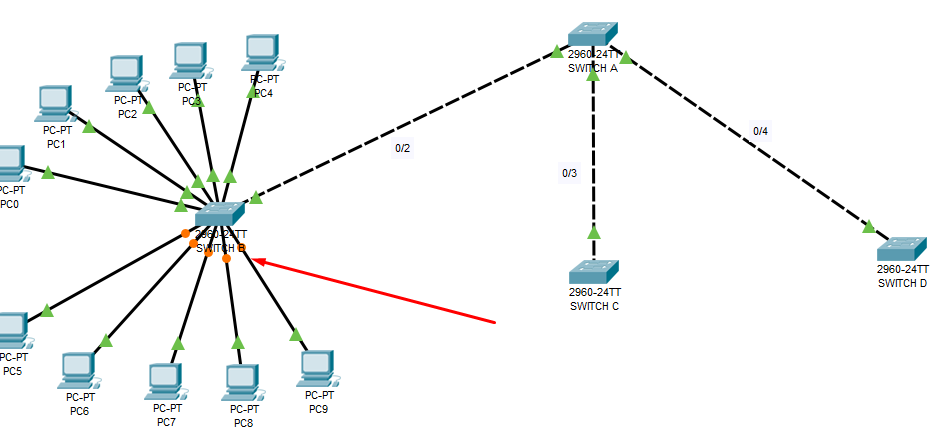
**On switch B adding PC’s for VLAN named Students:**

B(config)#int range fa 0/7-11

B(config-if-range)#switchport mode access

B(config-if-range)#switchport access vlan 3

B(config-if-range)#exit



**Switch C with VLAN name Management**

C>en

Password:

C#

C#

C#config t

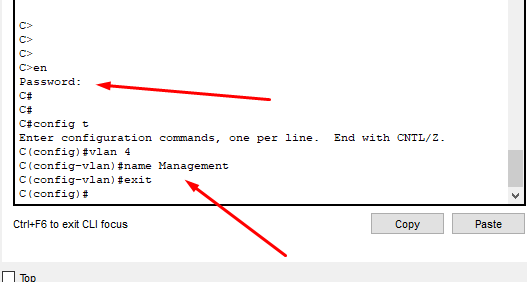
Enter configuration commands, one per line. End with CNTL/Z.

C(config)#vlan 4

C(config-vlan)#name Management

C(config-vlan)#exit

C(config)#



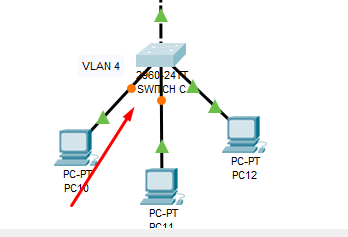
**Adding 3 pc in Management VLAN:**

C(config)#int range fa 0/1-2

C(config-if-range)#switchport mode access

C(config-if-range)#switchport access vlan 4

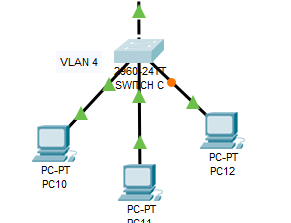
C(config-if-range)#exit



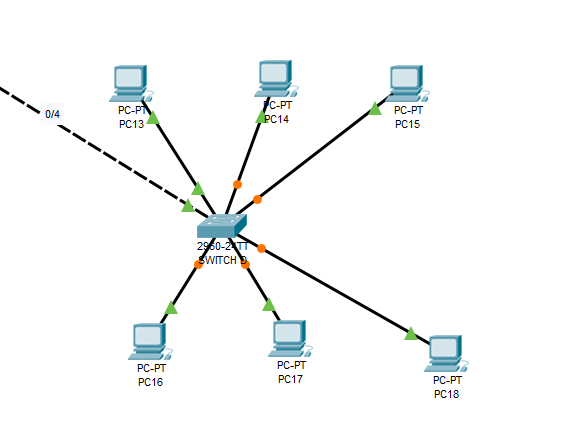
C(config)#interface fastethernet 0/4

C(config-if)#switchport mode access

C(config-if)#switchport access vlan 4



**Switch D with VLAN name SRC and 3 ports**



**Now**

D>

D>en

Password:

D#

D#

D#config t

Enter configuration commands, one per line. End with CNTL/Z.

D(config)#vlan 5

D(config-vlan)#name SRC

D(config-vlan)#exit

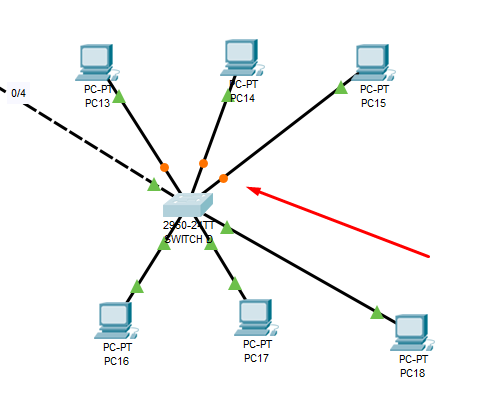
D(config)#int range fa 0/1-3

D(config-if-range)#switchport mode access

D(config-if-range)#switchport access vlan 5

D(config-if-range)#exit

D(config)#



**Switch D with VLAN NCMPR and 3 ports**

D(config)#VLAN 6

D(config-vlan)#name NCMPR

D(config-vlan)#exit

**Now**

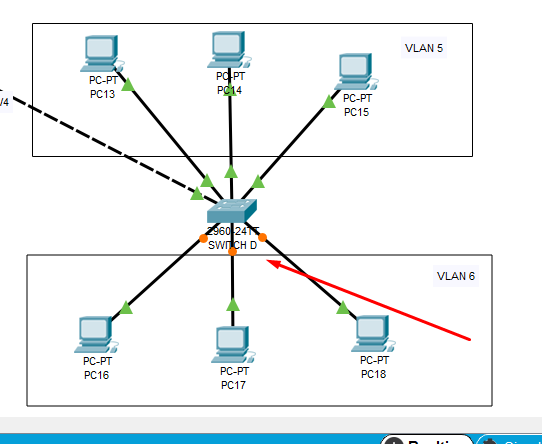
D(config)#INT range fa 0/5-7

D(config-if-range)#switchport mode access

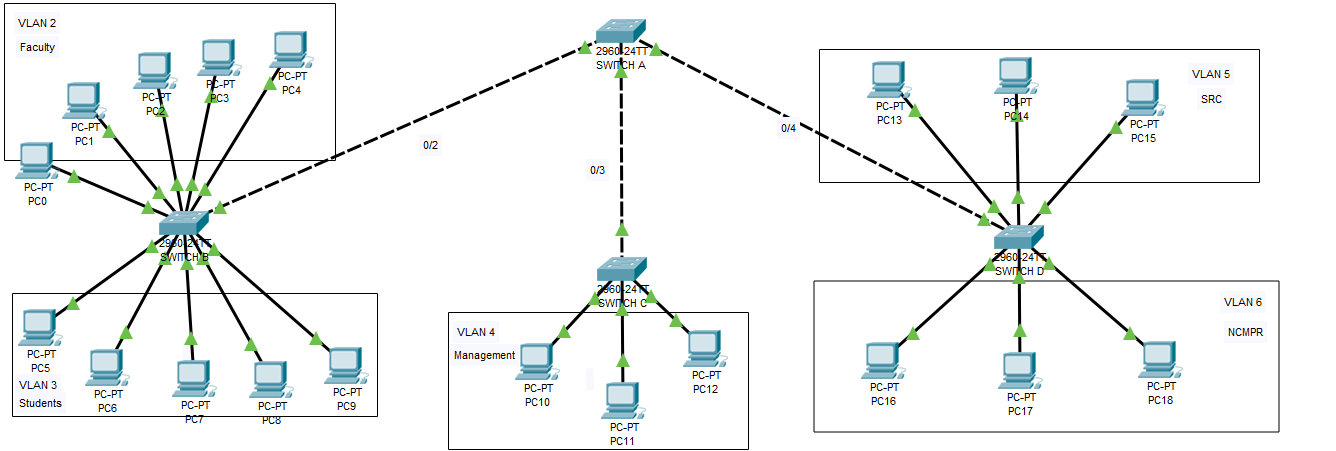
D(config-if-range)#switchport access vlan 6

D(config-if-range)#exit

D(config)#



**Overall Configuration:**



**SHOW Command for Switch B:**

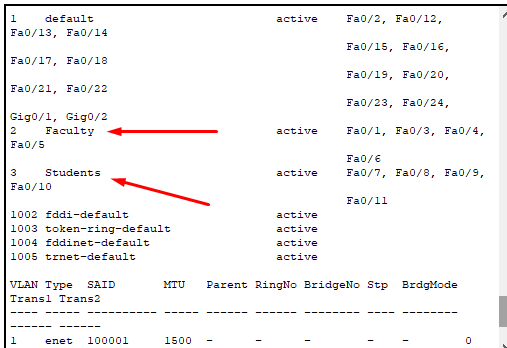
B>en

Password:

B#config t

Enter configuration commands, one per line. End with CNTL/Z.

B(config)#do show vlan



**SHOW Command for Switch C:**

C>en

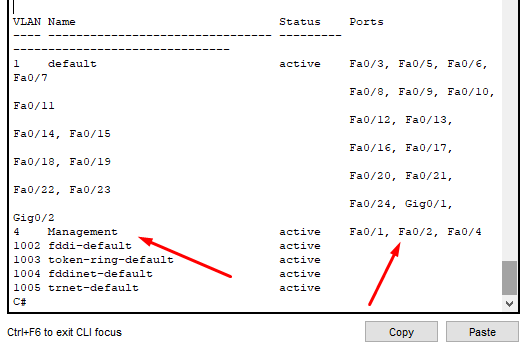
Password:

C#do show vlan

^

% Invalid input detected at '^' marker.

C#show vlan brief



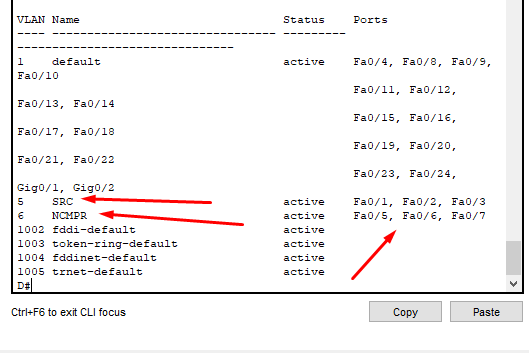
**SHOW Command for Switch D:**

D>

D>en

Password:

D#show vlan brief



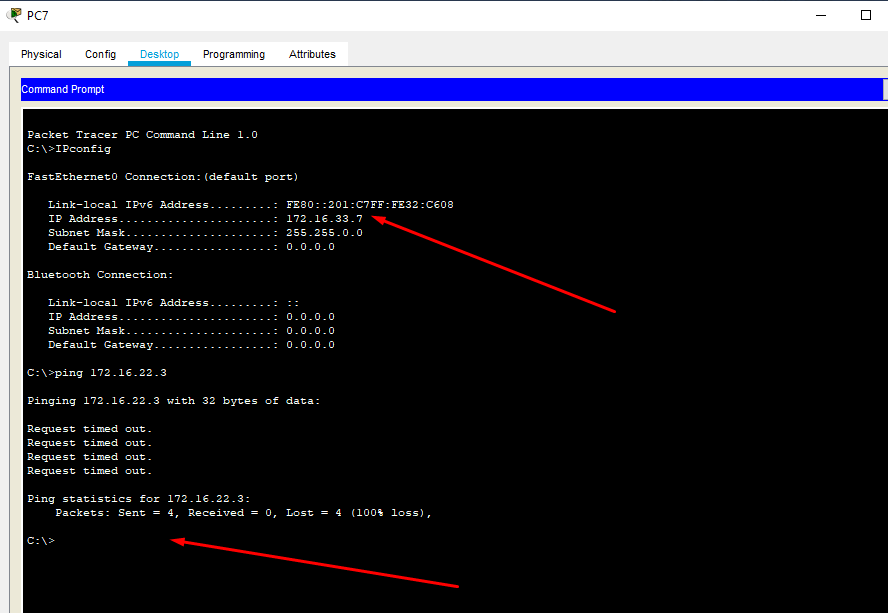
**Configuration:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Vlan Name | NLAN No. | PC connected to LAN | Ports | Switch Name |
| Faculty | VLAN 2 | PC 0,1,2,3,4 | 0/1, 0/3, 0/4, 0/5, 0/6 | SWITCH B |
| Students | VLAN 3 | 5,6,7,8,9 | 0/7, 0/8, 0/9, 0/10, 0/11 | SWITCH B |
| Management | VLAN 4 | 10,11,12 | 0/1, 0/2, 0/4 | SWITCH C |
| SRC | VLAN 5 | 13,14,15 | 0/1, 0/2, 0/3 | SWITCH D |
| NCMPR | VLAN 6 | 16,17,18 | 0/5, 0/6, 0/7 | SWITCH D |

|  |  |
| --- | --- |
| PC NO | IP |
| 0 | 172.16.22.0 |
| 1 | 172.16.22.1 |
| 2 | 172.16.22.2 |
| 3 | 172.16.22.3 |
| 4 | 172.16.22.4 |
| 5 | 172.16.33.5 |
| 6 | 172.16.33.6 |
| 7 | 172.16.33.7 |
| 8 | 172.16.33.8 |
| 9 | 172.16.33.9 |
| 10 | 172.16.44.10 |
| 11 | 172.16.44.11 |
| 12 | 172.16.44.12 |
| 13 | 172.16.55.13 |
| 14 | 172.16.55.14 |
| 15 | 172.16.55.15 |
| 16 | 172.16.66.16 |
| 17 | 172.16.66.17 |
| 18 | 172.16.66.18 |

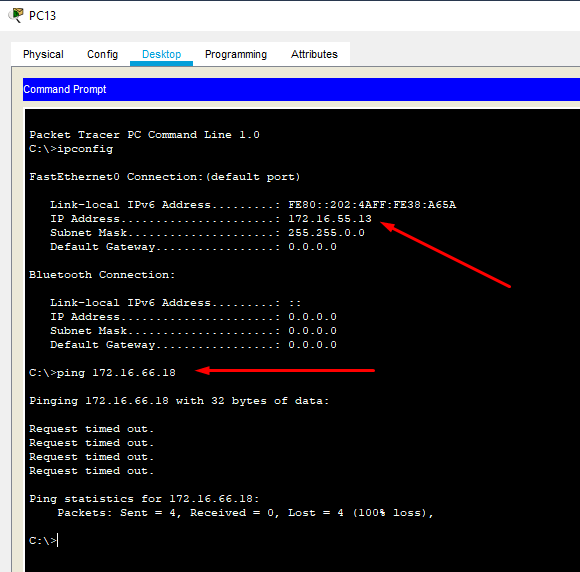
**LAN Testing:**

**PC3 From PC 7:**



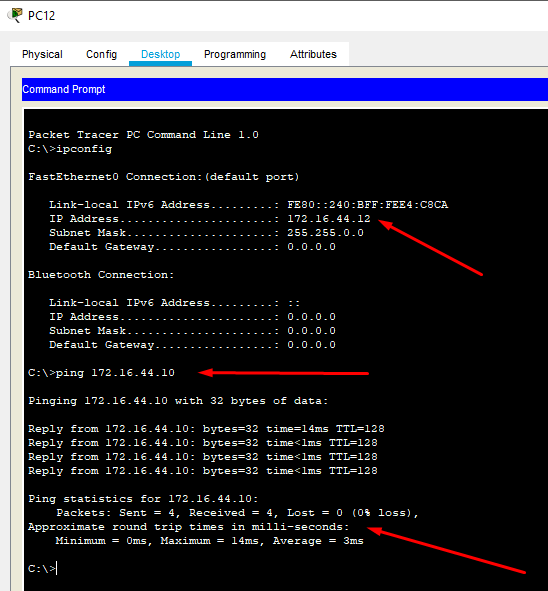
**Failed because pc7 is in Students VLAN while pc3 is in Faculty VLAN.**

**PC18 From PC 13:**



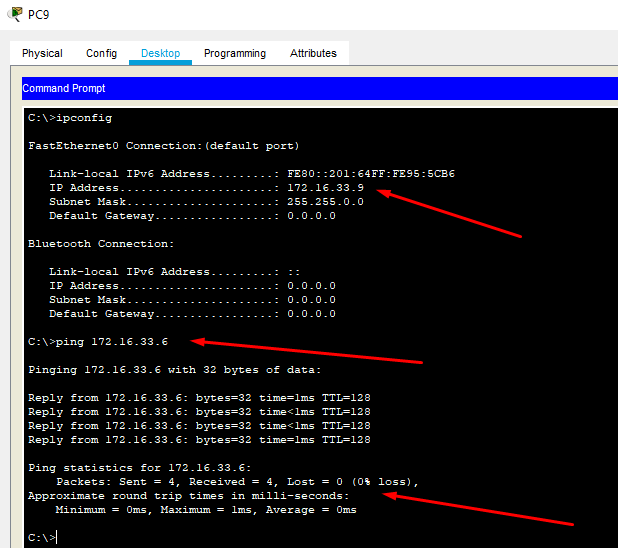
**Failed because pc13 is in SRC VLAN while pc18 is in NCMPR VLAN.**

**PC10 From PC 12:**



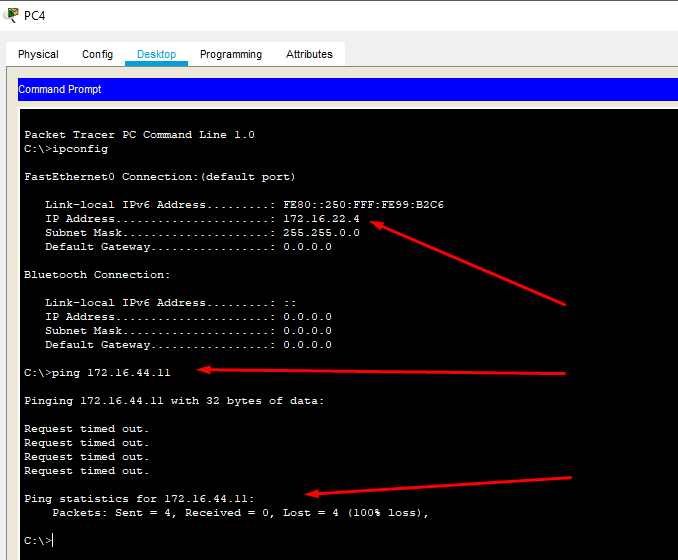
**Because both of these pc’s exist in same vlan Management, hence no packet is lost.**

**PC6 From PC 9:**



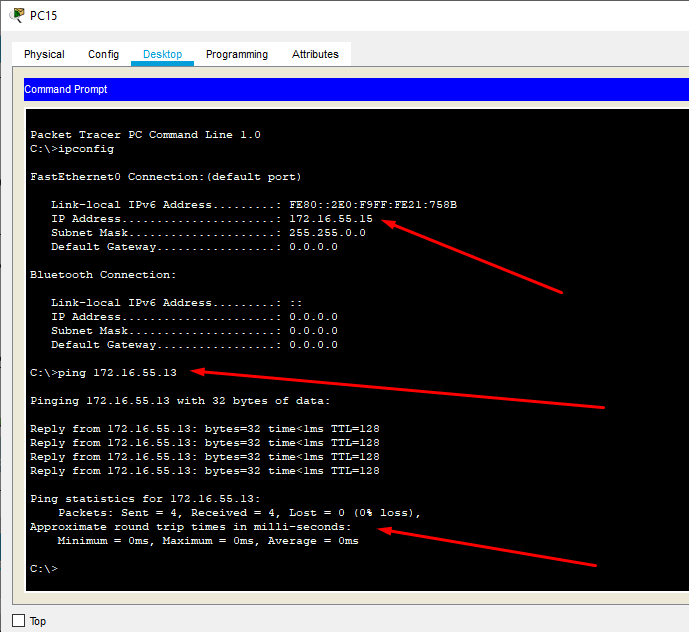
**Because both of these pc’s exist in same vlan Students, hence no packet is lost.**

**PC11 From PC 4:**



**Failed because pc11 is in Management VLAN while pc4 is in Faculty VLAN.**

**PC13 From PC 15:**



**Because both of these pc’s exist in same vlan SRC, hence no packet is lost.**