



Date: 30/07/2024

Lab Practical #05:

Study the concept of VLAN using packet tracer.

Practical Assignment #05:

1. Implement the different network structures in VLAN and VLAN trunking. Also check connectivity between them using ping command or PDU utility.

Instructions:

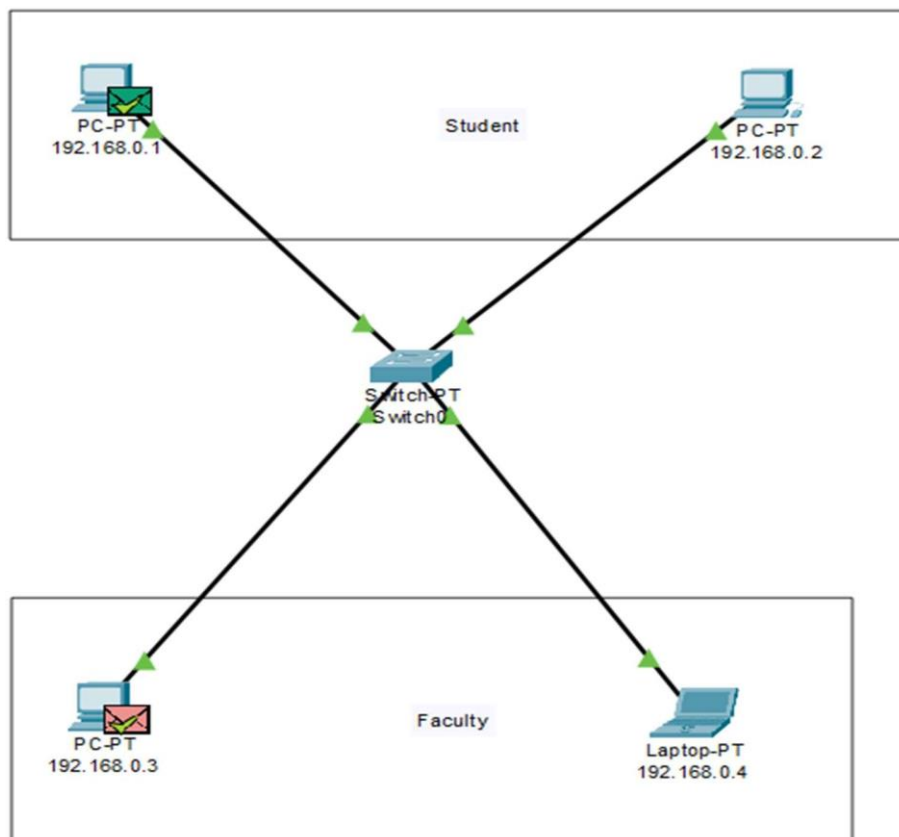
1. Different VLANs configuration setup screenshot. (VLAN example given by lab faculty)
2. Write steps to create VLANs in packet tracer.
3. Mention IP address of each pc as label.
4. Ping command or PDU screenshot between two VLANs.

1.

- Drag and drop a switch onto the workspace (e.g., a 2960 switch).
- Drag and drop four PCs onto the workspace.
- Connect each PC to the switch using Copper Straight-Through cables.
- Assign IP addresses to every pc and change the label name of pc through ip address.
- Click on Switch, go to in Config=>VLAN Database. Add Vlan Number And Name according to group.
- FastEthernet0/1 and FastEthernet0/2 are assigned to VLAN 100 (Group 1 Student).
- FastEthernet0/3 and FastEthernet0/4 are assigned to VLAN 150 (Group 2 Faculty).
- you will successfully set up a VLAN configuration with two separate groups of PCs on a single switch check connectivity between them using ping command or PDU utility.



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Switch0

Physical **Config** CLI Attributes

GLOBAL

- Settings
- Algorithm Settings
- SWITCHING**
- VLAN Database
- INTERFACE**
- FastEthernet0/1
- FastEthernet1/1
- FastEthernet2/1
- FastEthernet3/1
- FastEthernet4/1
- FastEthernet5/1

VLAN Configuration

VLAN Number

VLAN Name

VLAN No	VLAN Name
1	default
100	Student
150	Faculty
1002	fddi-default
1003	token-ring-default
1004	fddinet-default
1005	trnet-default

Equivalent IOS Commands

```
Switch(config-if)#  
Switch(config-if)#exit  
Switch(config)#interface FastEthernet3/1  
Switch(config-if)#  
Switch(config-if)#  
Switch(config-if)#switchport access vlan 150  
Switch(config-if)#  
Switch(config-if)#exit  
Switch(config)#  
Switch(config)#  
Switch(config)#  
Switch(config)#
```

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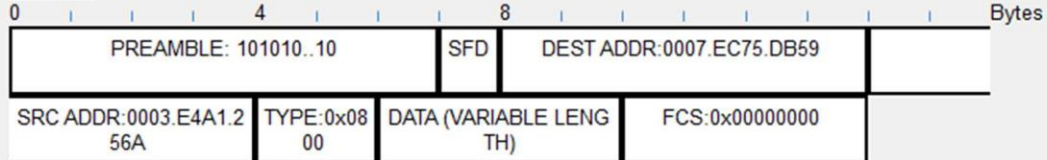
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PDU Information at Device: 192.168.0.1

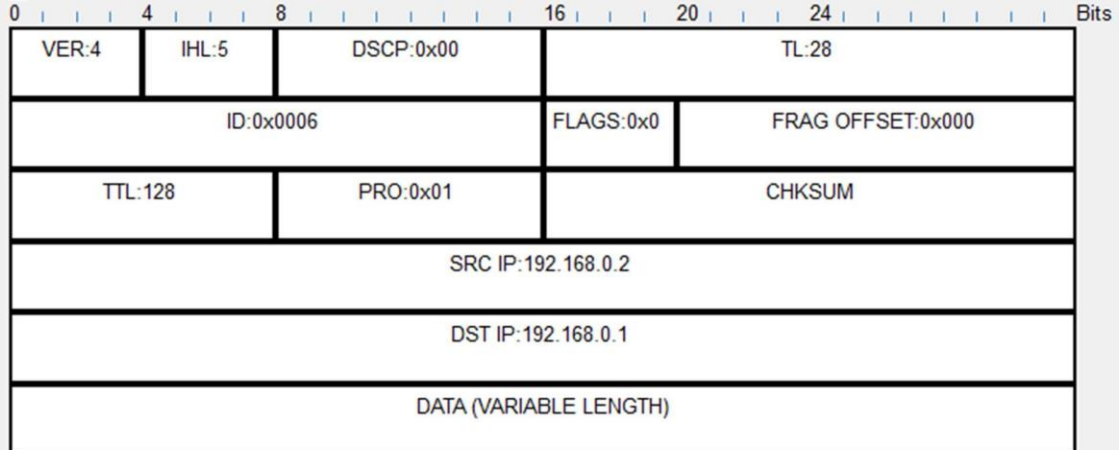
OSI Model [Inbound PDU Details](#)

PDU Formats

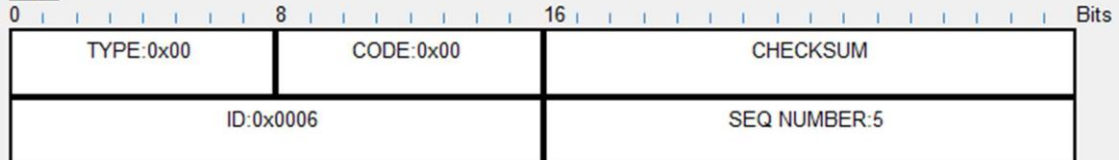
EthernetII



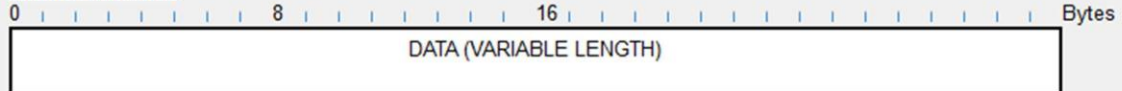
IP



ICMP



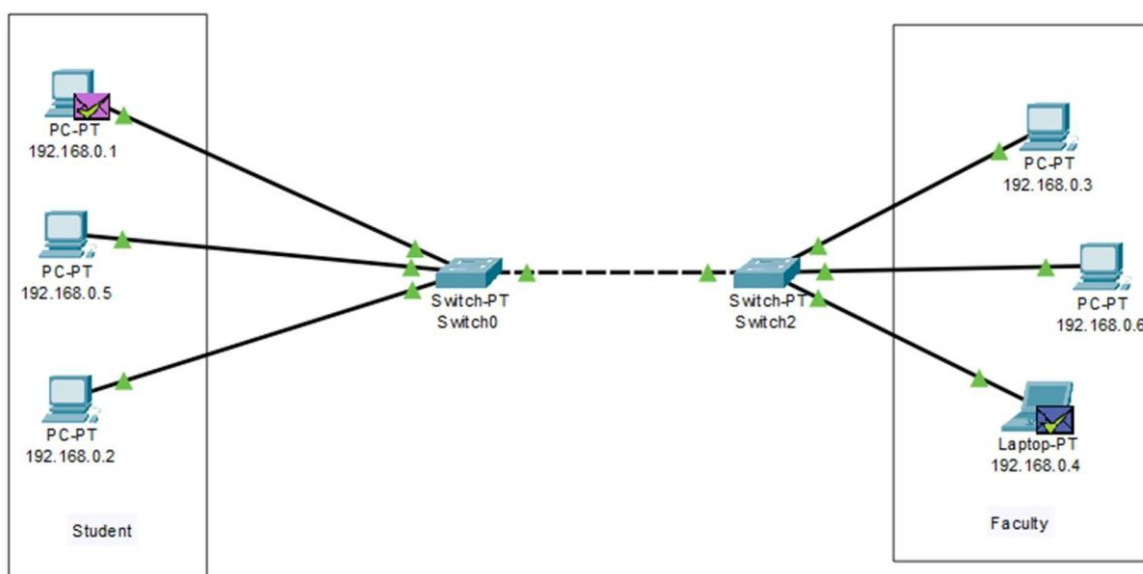
Variable Size PDU



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2.

- Drag and drop a 2 switch onto the workspace (e.g., a 2960 switch).
- Drag and drop Six PCs onto the workspace.
- Connect 3 PC to the switch using Copper Straight-Through cables and Connect Another 3 PC to the another switch using Copper Straight-Through cables and Connect both Switch each other.
- Assign IP addresses to every pc and change the label name of pc through ip address.
- Click on Switch,go to in Config=>VLAN Databse. Add Vlan Number And Name according to group.
- FastEthernet0/1 and FastEthernet0/2 and FastEthernet0/3 of switch 1 are assigned to VLAN 100 (group 1 student).
- FastEthernet0/1 and FastEthernet0/2 and FastEthernet0/3 of switch 1 are assigned to VLAN 150 (group 2 Faculty).
- you will successfully set up a VLAN configuration with two separate groups of PCs on a single switch check connectivity between them using ping command or PDU utility.





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Switch0

Physical **Config** CLI Attributes

GLOBAL

- Settings
- Algorithm Settings

SWITCHING

- VLAN Database

INTERFACE

- FastEthernet0/1
- FastEthernet1/1
- FastEthernet2/1
- FastEthernet3/1
- FastEthernet4/1
- FastEthernet5/1

VLAN Configuration

VLAN Number

VLAN Name

Add Remove

VLAN No	VLAN Name
1	default
100	Student
150	Faculty
1002	fddi-default
1003	token-ring-default
1004	fddinet-default
1005	trnet-default

Equivalent IOS Commands

```
Switch(config-if)#  
Switch(config-if)#exit  
Switch(config)#interface FastEthernet3/1  
Switch(config-if)#  
Switch(config-if)#  
Switch(config-if)#switchport access vlan 150  
Switch(config-if)#  
Switch(config-if)#exit  
Switch(config)#  
Switch(config)#  
Switch(config)#  
Switch(config)#
```

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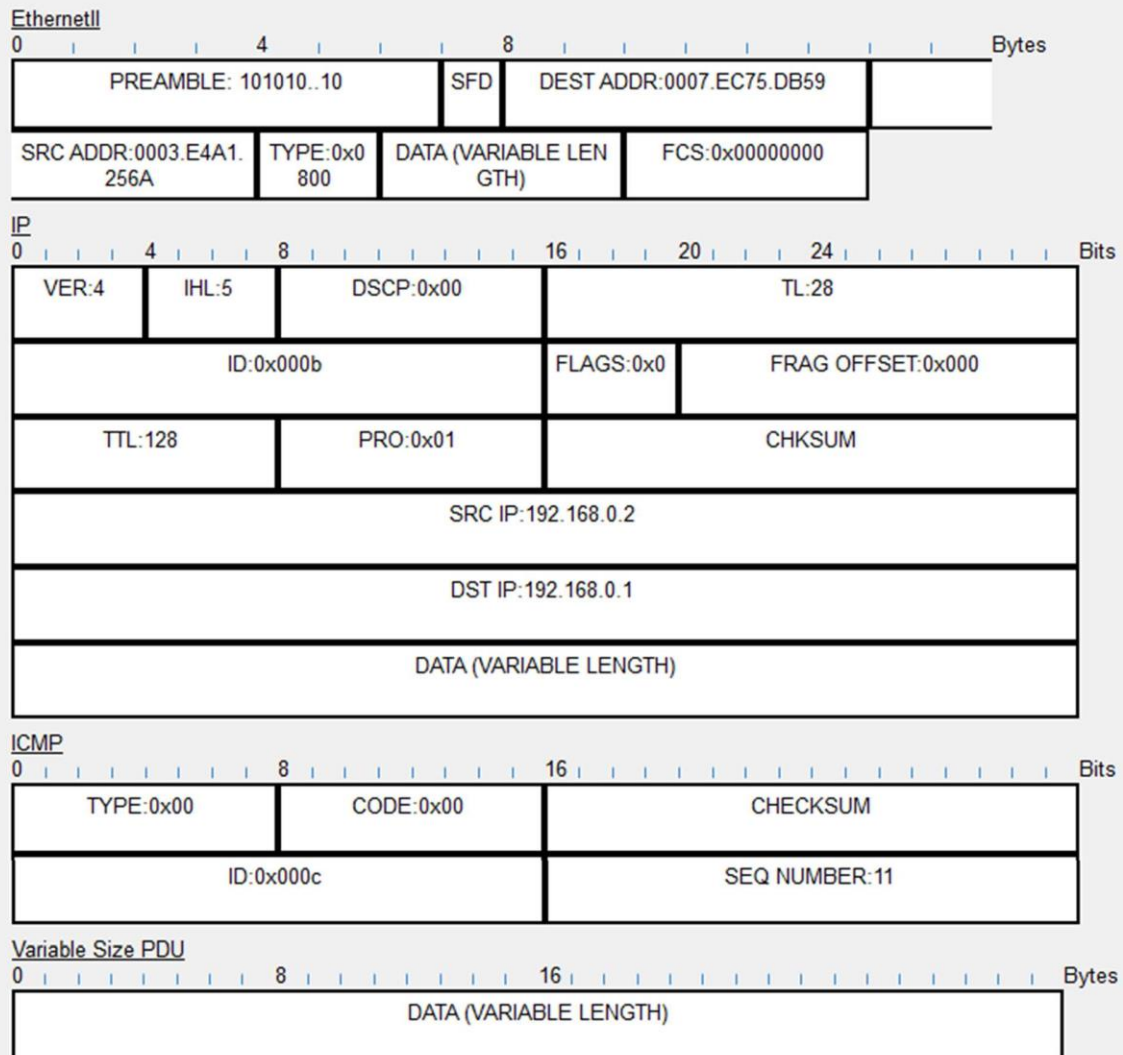


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PDU Information at Device: 192.168.0.1

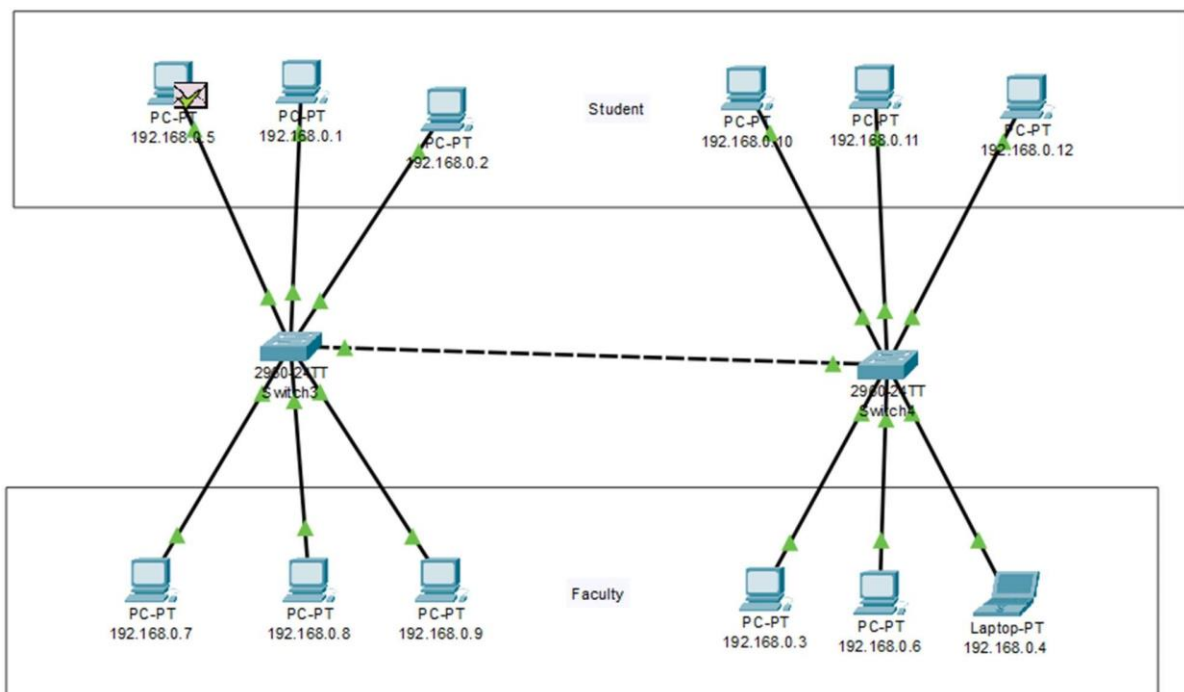
OSI Model [Inbound PDU Details](#)

PDU Formats



3.

- Drag and drop a 2 switch onto the workspace (e.g., a 2960 switch).
- Drag and drop twelve PCs onto the workspace.
- Connect 6 PC to the switch using Copper Straight-Through cables and Connect Another 6 PC to the another switch using Copper Straight-Through cables and Connect both Switch each other.
- Assign IP addresses to every pc and change the label name of pc through ip address.
- Click on Switch,go to in Config=>VLAN Database. Add Vlan Number And Name according to group.
- FastEthernet0/1 and FastEthernet0/2 and FastEthernet0/3 of switch 1 are assigned to VLAN 100 (group 1 student).
- FastEthernet0/4 and FastEthernet0/5 and FastEthernet0/6 of switch 1 are assigned to VLAN 150 (group 2 faculty).
- FastEthernet0/1 and FastEthernet0/2 and FastEthernet0/3 of switch 2 are assigned to VLAN 100 (group 1 student).
- FastEthernet0/4 and FastEthernet0/5 and FastEthernet0/6 of switch 2 are assigned to VLAN 150 (group 2 faculty).
- FastEthernet0/3 and FastEthernet0/4 of switch 2 are assigned to VLAN 250 (group HOD).
- you will successfully set up a VLAN configuration with two separate groups of PCs on a single switch check connectivity between them using ping command or PDU utility.





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Switch0

Physical **Config** CLI Attributes

GLOBAL

- Settings
- Algorithm Settings

SWITCHING

- VLAN Database**

INTERFACE

- FastEthernet0/1
- FastEthernet1/1
- FastEthernet2/1
- FastEthernet3/1
- FastEthernet4/1
- FastEthernet5/1

VLAN Configuration

VLAN Number

VLAN Name

Add Remove

VLAN No	VLAN Name
1	default
100	Student
150	Faculty
1002	fddi-default
1003	token-ring-default
1004	fddinet-default
1005	trnet-default

Equivalent IOS Commands

```
Switch(config-if)#
Switch(config-if)#exit
Switch(config)#interface FastEthernet3/1
Switch(config-if)#
Switch(config-if)#
Switch(config-if)#switchport access vlan 150
Switch(config-if)#
Switch(config-if)#exit
Switch(config)#
Switch(config)#
Switch(config)#
Switch(config)#
```

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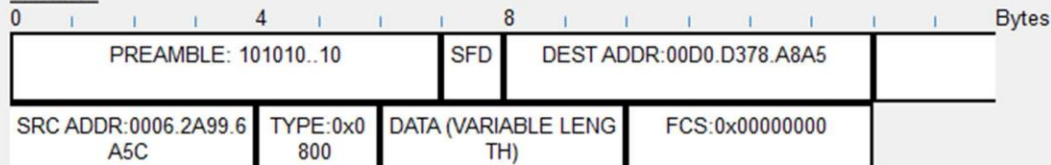
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PDU Information at Device: 192.168.0.5

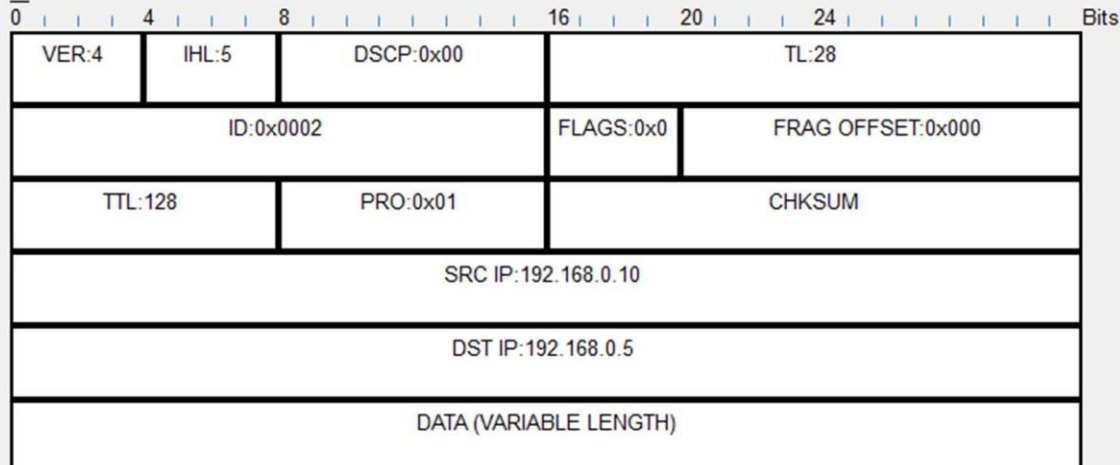
OSI Model [Inbound PDU Details](#)

PDU Formats

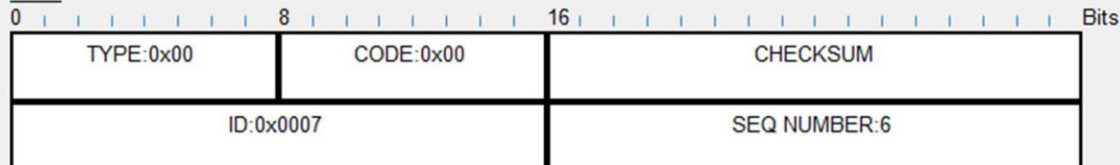
EthernetII



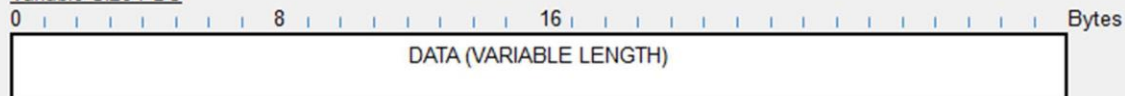
IP



ICMP



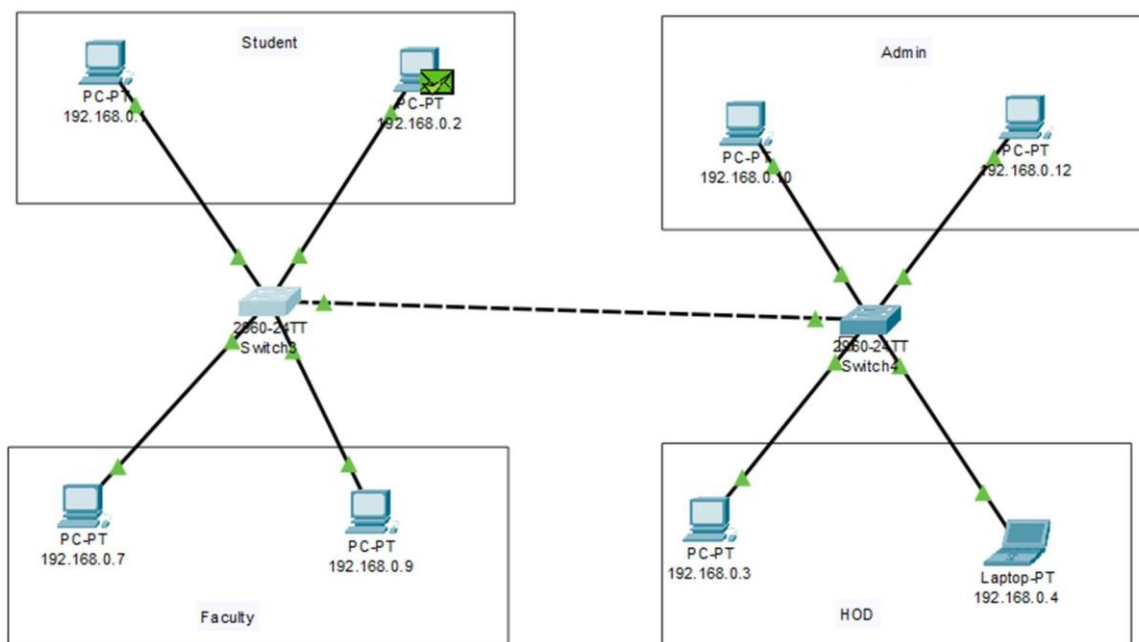
Variable Size PDU



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4.

- Drag and drop a 2 switch onto the workspace (e.g., a 2960 switch).
- Drag and drop eight PCs onto the workspace.
- Connect 4 PC to the switch using Copper Straight-Through cables and Connect Another 4 PC to the another switch using Copper Straight-Through cables and Connect both Switch each other.
- Assign IP addresses to every pc and change the label name of pc through ip address.
- Click on Switch,go to in Config=>VLAN Database. Add Vlan Number And Name according to group.
- FastEthernet0/1 and FastEthernet0/2 of switch 1 are assigned to VLAN 100 (group 1 student).
- FastEthernet0/3 and FastEthernet0/4 of switch 1 are assigned to VLAN 150 (group 2 Faculty).
- FastEthernet0/1 and FastEthernet0/2 of switch 2 are assigned to VLAN 200 (group Admin).
- FastEthernet0/3 and FastEthernet0/4 of switch 2 are assigned to VLAN 250 (group HOD).
- you will successfully set up a VLAN configuration with four separate groups of PCs on a single switch check connectivity between them using ping command or PDU utility.





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Switch3

Physical **Config** CLI Attributes

GLOBAL

Settings

Algorithm Settings

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/1

FastEthernet0/2

FastEthernet0/3

FastEthernet0/4

FastEthernet0/5

FastEthernet0/6

FastEthernet0/7

FastEthernet0/8

FastEthernet0/9

FastEthernet0/10

FastEthernet0/11

FastEthernet0/12

FastEthernet0/13

FastEthernet0/14

FastEthernet0/15

FastEthernet0/16

FastEthernet0/17

VLAN Configuration

VLAN Number

VLAN Name

Add Remove

VLAN No	VLAN Name
1	default
100	Student
150	Faculty
200	Admin
250	HOD
1002	fdi-default
1003	token-ring-default
1004	fdinet-default
1005	trnet-default

Equivalent IOS Commands

```
Switch(config-if)#exit
Switch(config)#interface FastEthernet0/5
Switch(config-if)#
Switch(config-if)#exit
Switch(config)#interface FastEthernet0/4
Switch(config-if)#
Switch(config-if)#exit
Switch(config)#interface FastEthernet0/1
Switch(config-if)#
Switch(config-if)#exit
Switch(config)#
Switch(config)#
```



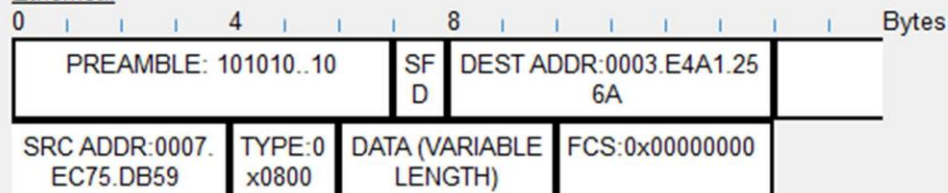
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PDU Information at Device: 192.168.0.2

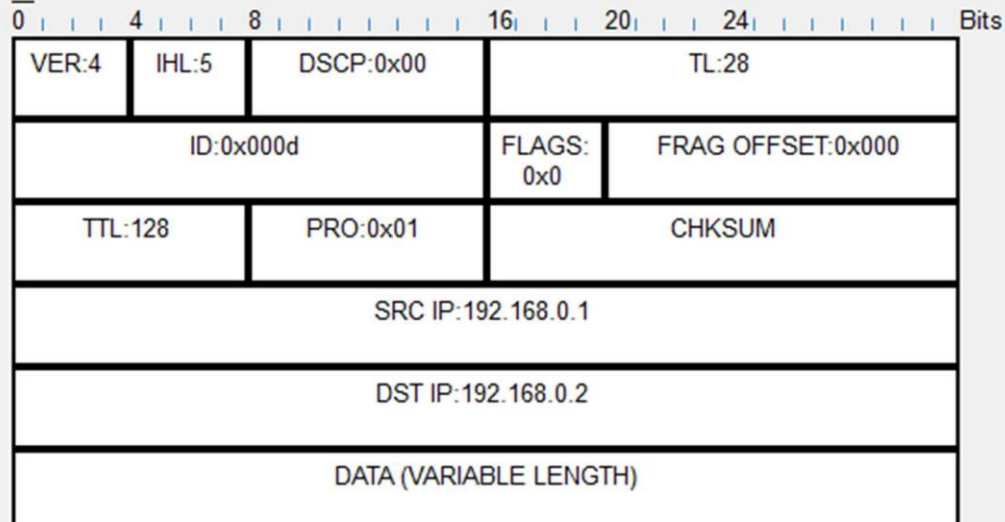
OSI Model Inbound PDU Details

PDU Formats

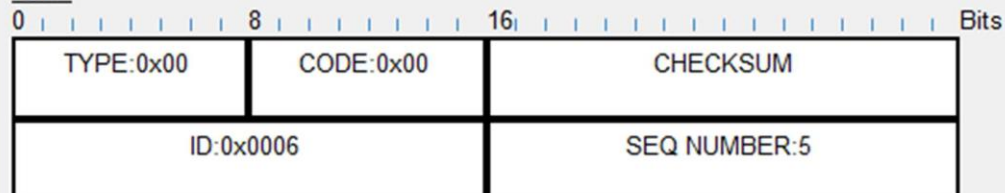
EthernetII



IP



ICMP



Variable Size PDU

