



Date: 05/09/2023

**Lab Practical #06:**

Study the concept of VLAN using packet tracer.

**Practical Assignment #06:**

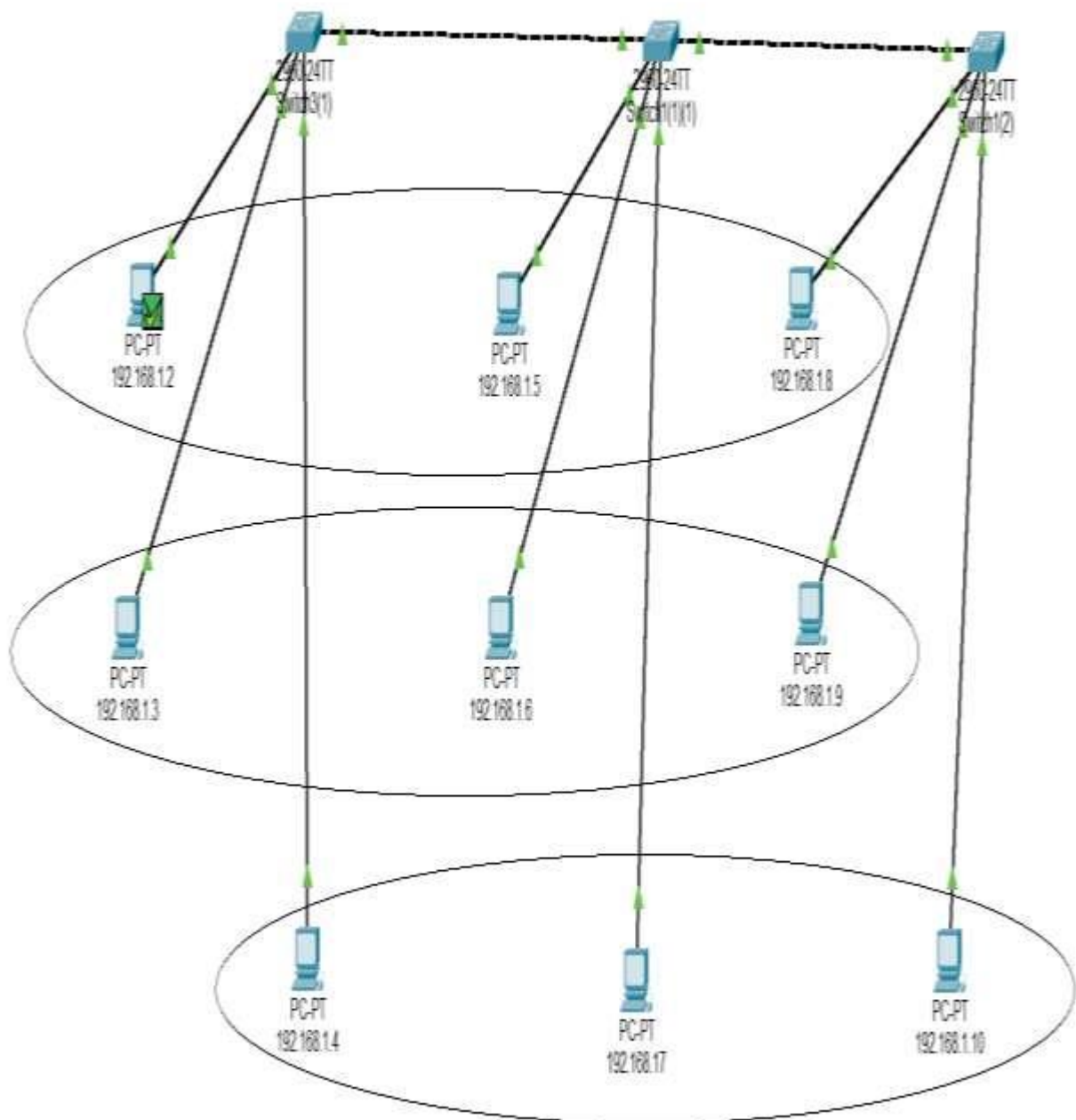
1. Implement the different network structures in VLAN and VLAN trunking. Also check connectivity between them using ping command or PDU utility.

**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.

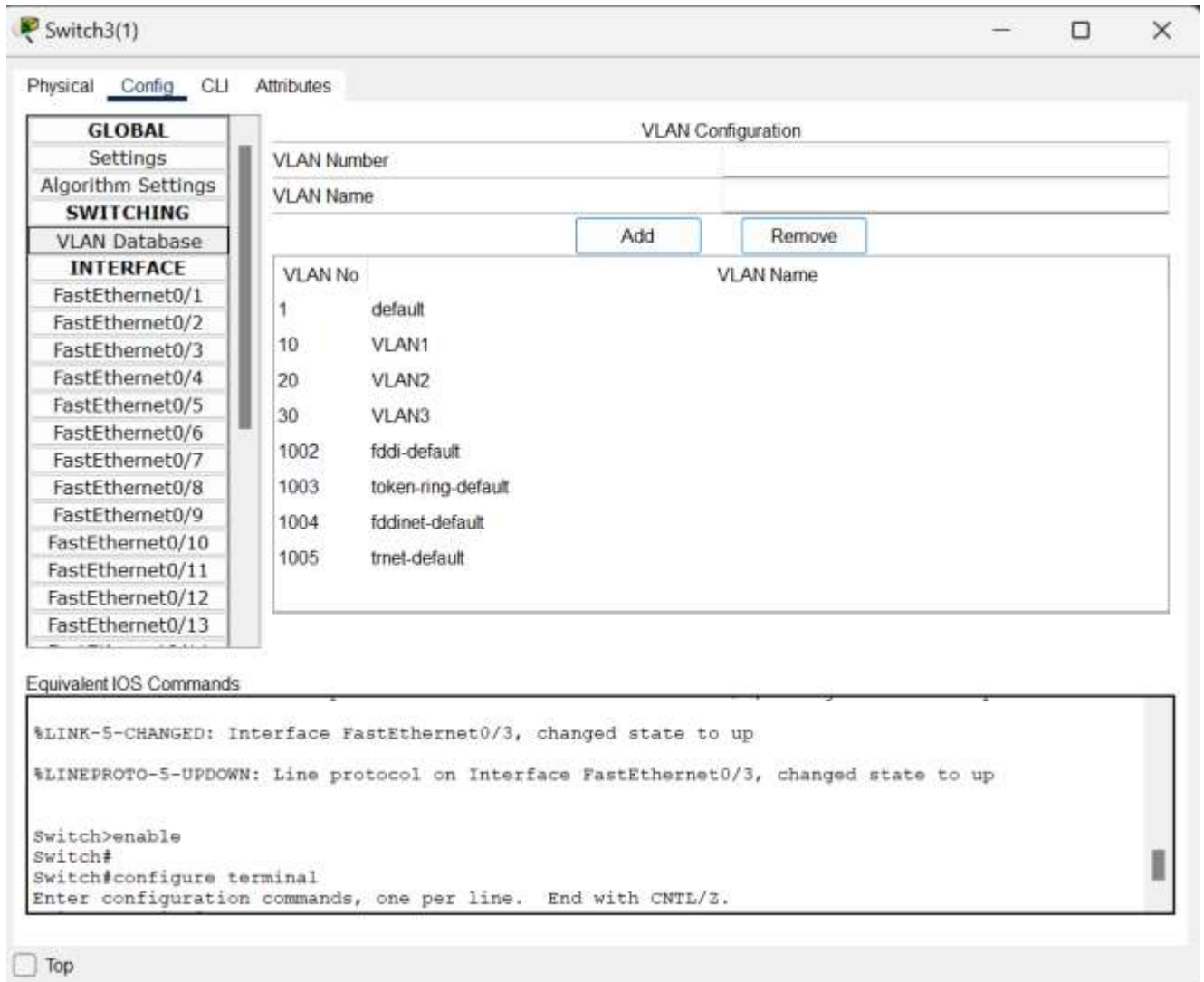
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## VLAN – 1



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## VLAN – 1 (Database)



**Switch3(1)**

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

**VLAN Configuration**

VLAN Number:

VLAN Name:

VLAN No	VLAN Name
1	default
10	VLAN1
20	VLAN2
30	VLAN3
1002	fdi-default
1003	token-ring-default
1004	fdinet-default
1005	trnet-default

**Equivalent IOS Commands**

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

Switch>enable
Switch#
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
```

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## VLAN – 1 (PDU Utility)

PDU Information at Device: 192.168.1.9

OSI Model Inbound PDU Details

PDU Formats

Ethernet 802.3

0	4	8	Bytes
PREAMBLE: 101010..10		DEST ADDR: 0180.C200.0000	
SRC ADDR: 0003.E443.B867	LEN: 3	DATA (VARIABLE LENGTH)	
FCS: 0x00000000		0	

LLC

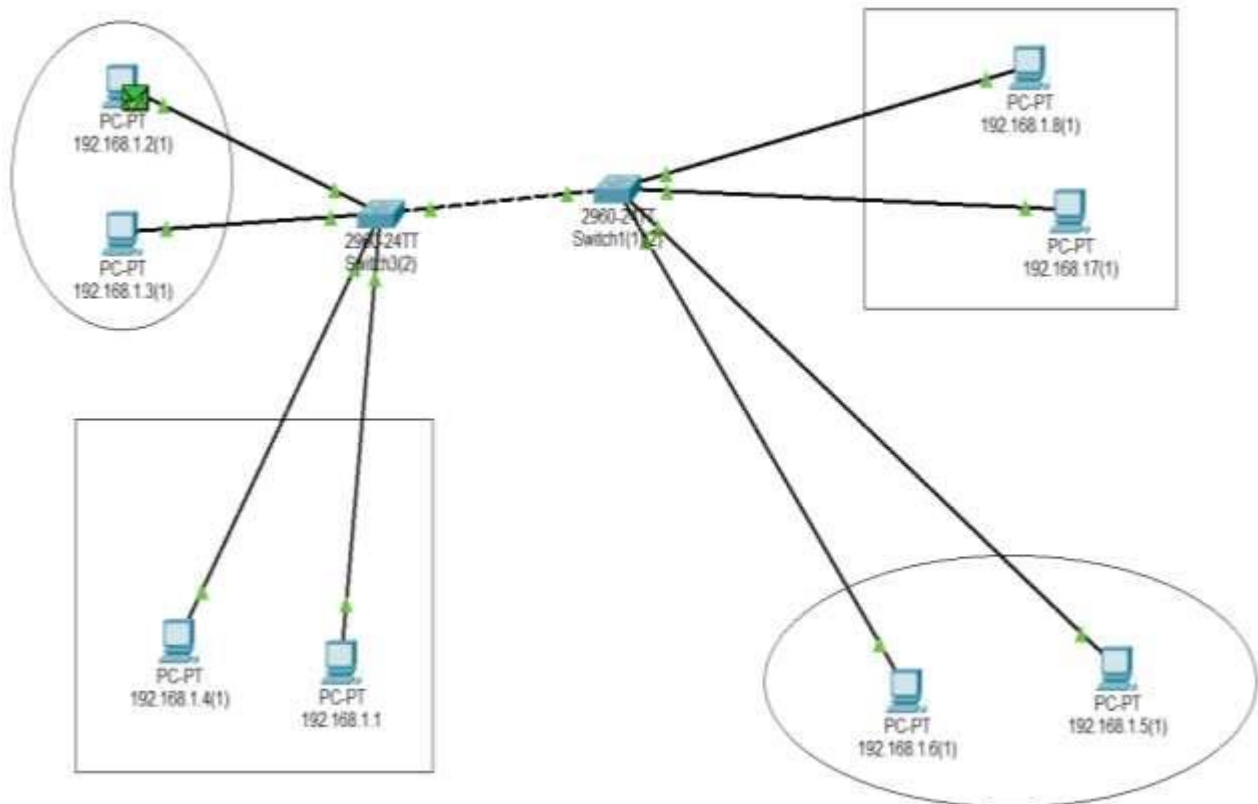
0	8	16	Bits
DSAP: 0x42		SSAP: 0x42	
CONTROL BYTE: 3			

STP BPDU

0	1	2	4	5	6	7	8	16	24	Bits	
PROTOCOL ID: 0								VERSION: 0		MESSAGE TYPE: 0	
ROOT ID: 32788 / 0001.9756.71AD											
ROOT PATH COST: 0											

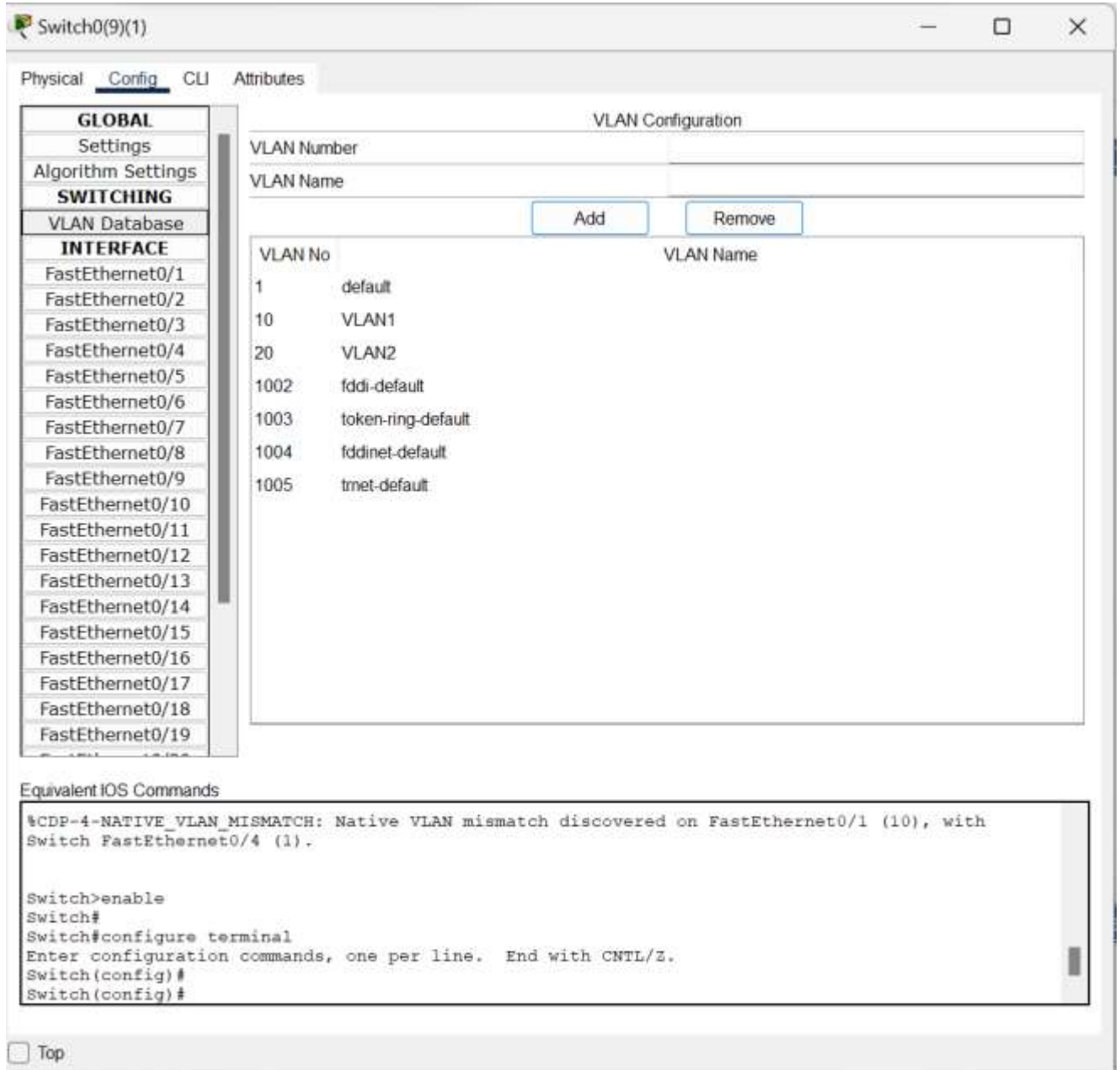
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## VLAN – 2



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## VLAN – 2 (Database)



**Switch0(9)(1)**

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
- FastEthernet0/18
- FastEthernet0/19

**VLAN Configuration**

VLAN Number

VLAN Name

Add Remove

VLAN No	VLAN Name
1	default
10	VLAN1
20	VLAN2
1002	fdi-default
1003	token-ring-default
1004	fdinet-default
1005	trnet-default

**Equivalent IOS Commands**

```
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/1 (10), with Switch FastEthernet0/4 (1).

Switch>enable
Switch#
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#
```

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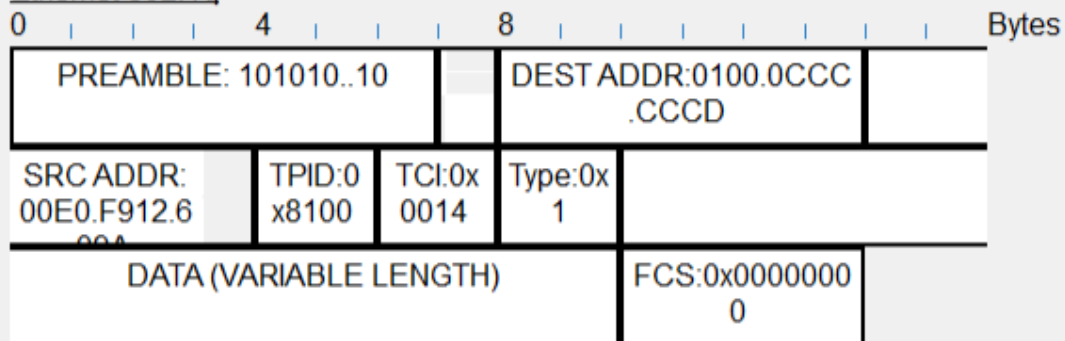
## VLAN – 2 (PDU Utility)

PDU Information at Device: Switch0(9)(1)

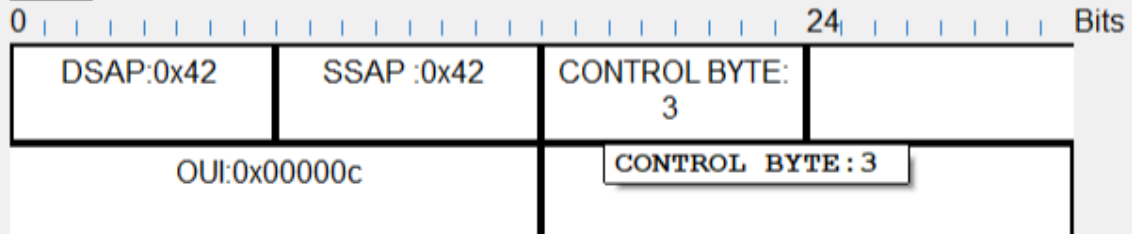
OSI Model [Inbound PDU Details](#)

PDU Formats

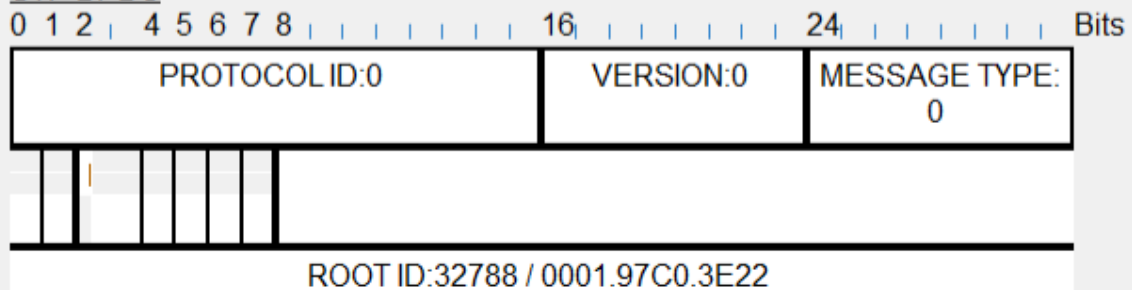
Ethernet 802.1q



SNAP

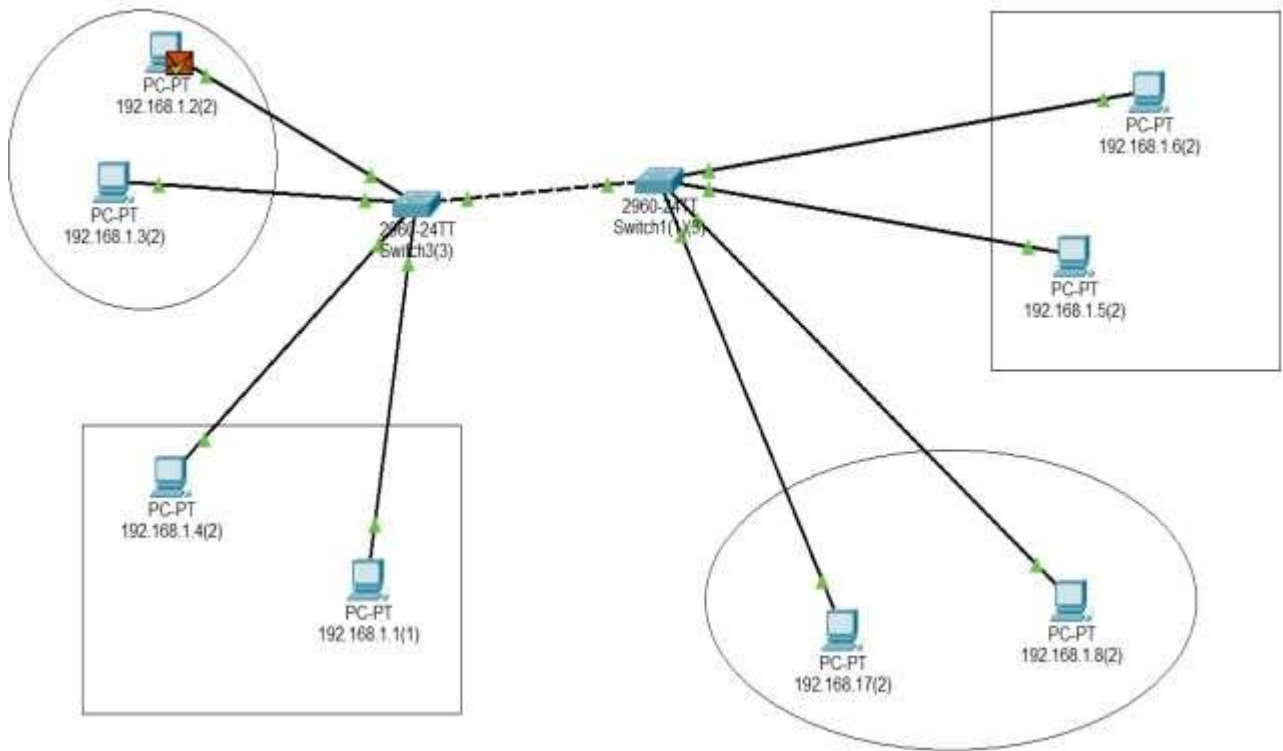


STP BPD



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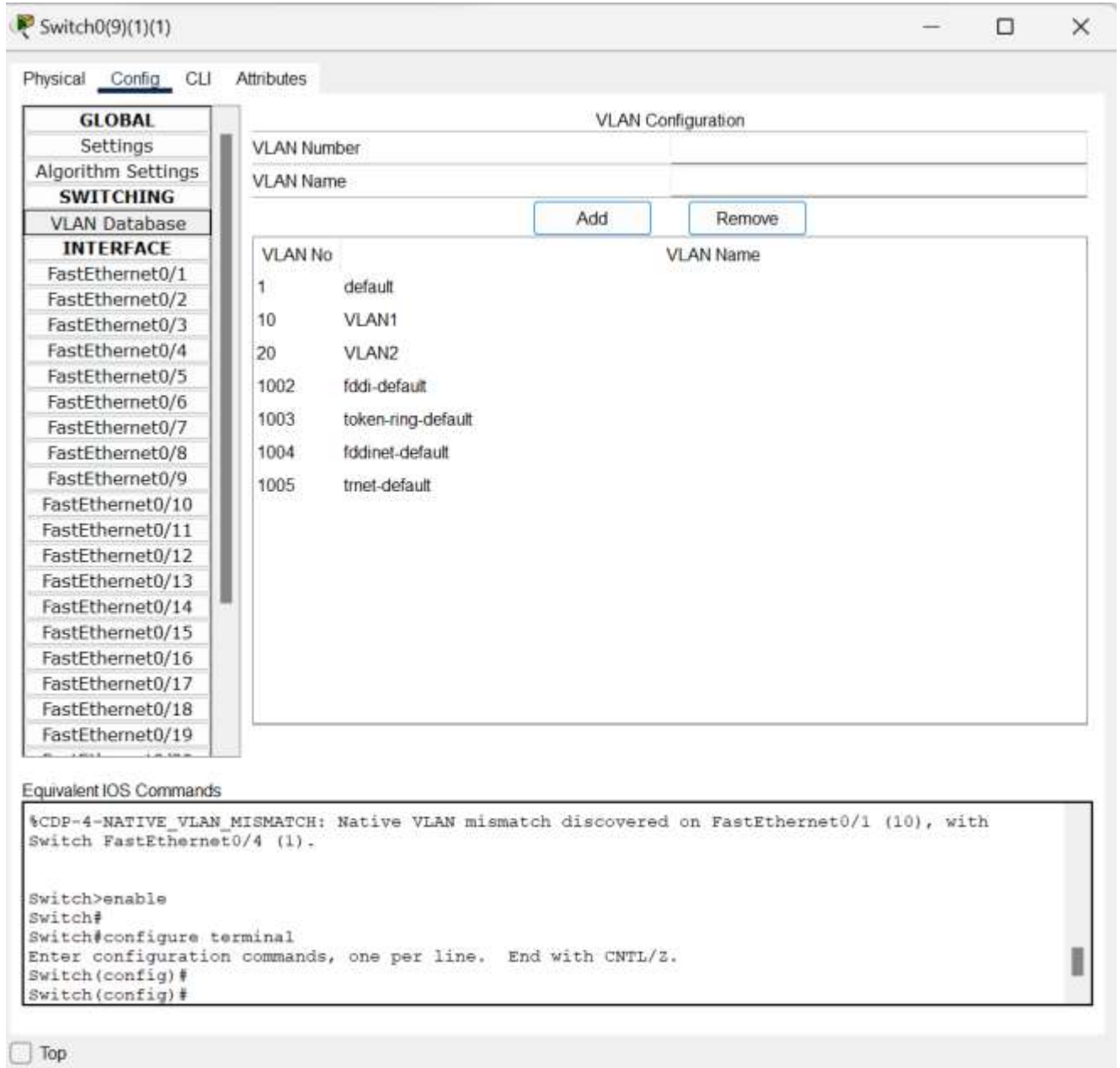
## VLAN – 3





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## VLAN – 3 (Database)



Switch0(9)(1)(1)

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
- FastEthernet0/18
- FastEthernet0/19

VLAN Configuration

VLAN Number

VLAN Name

Add Remove

VLAN No	VLAN Name
1	default
10	VLAN1
20	VLAN2
1002	fddi-default
1003	token-ring-default
1004	fddinet-default
1005	trnet-default

Equivalent IOS Commands

```
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/1 (10), with Switch FastEthernet0/4 (1).

Switch>enable
Switch#
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#
```

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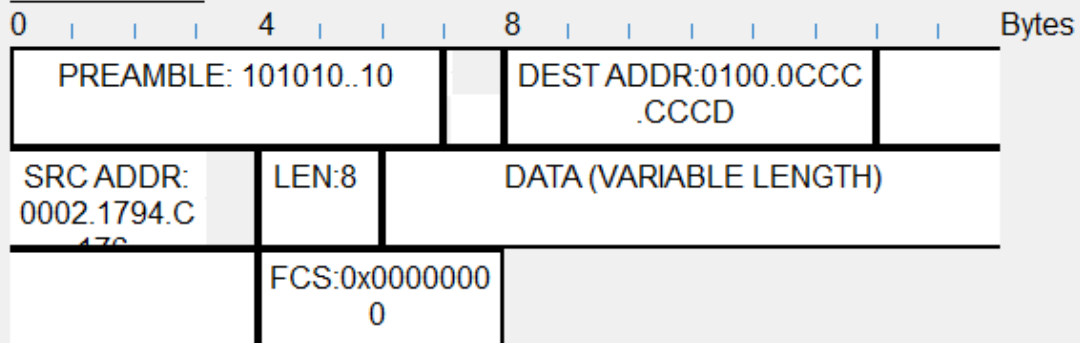
## VLAN – 3 (PDU Utility)

PDU Information at Device: Switch0(9)(1)(1)

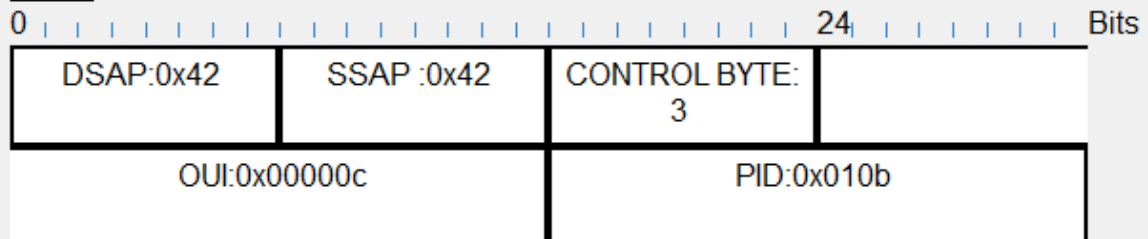
OSI Model [Inbound PDU Details](#)

### PDU Formats

#### Ethernet 802.3



#### SNAP



#### STP BPDU

