

LAPORAN PRAKTIKUM JARINGAN KOMPUTER

MODUL 4

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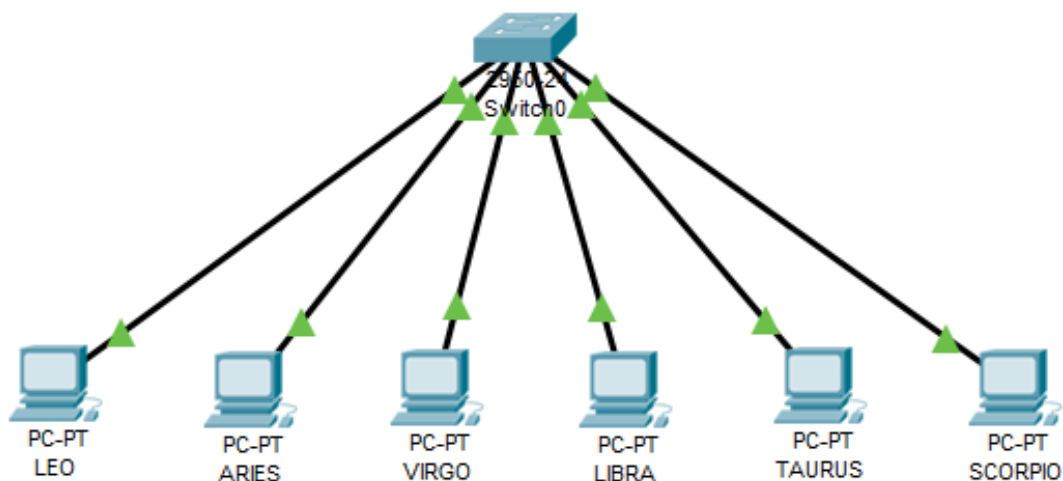
KEGIATAN 1

A. Praktikum 1 Switch Mode VLAN

1. Merancang topologi jaringan yang akan dibangun dan dikonfigurasi dengan simulasi

cisco packet tracer.

- Jaringan terbangun dengan user device yang saling terkoneksi dengan Switch



- Jaringan terdiri dari 1 buah switch dan 6 buah host(PC)

2. Konfigurasi IP

No	Nama PC	IP
1.	Leo	172.21.1.1 / 24
2.	Aries	172.21.1.2 / 24
3.	Virgo	172.21.1.3 / 24
4.	Libra	172.21.1.4 / 24
5.	Taurus	172.21.1.5 / 24
6.	Scorpio	172.21.1.6 / 24

3. Melakukan konfigurasi VLAN pada switch

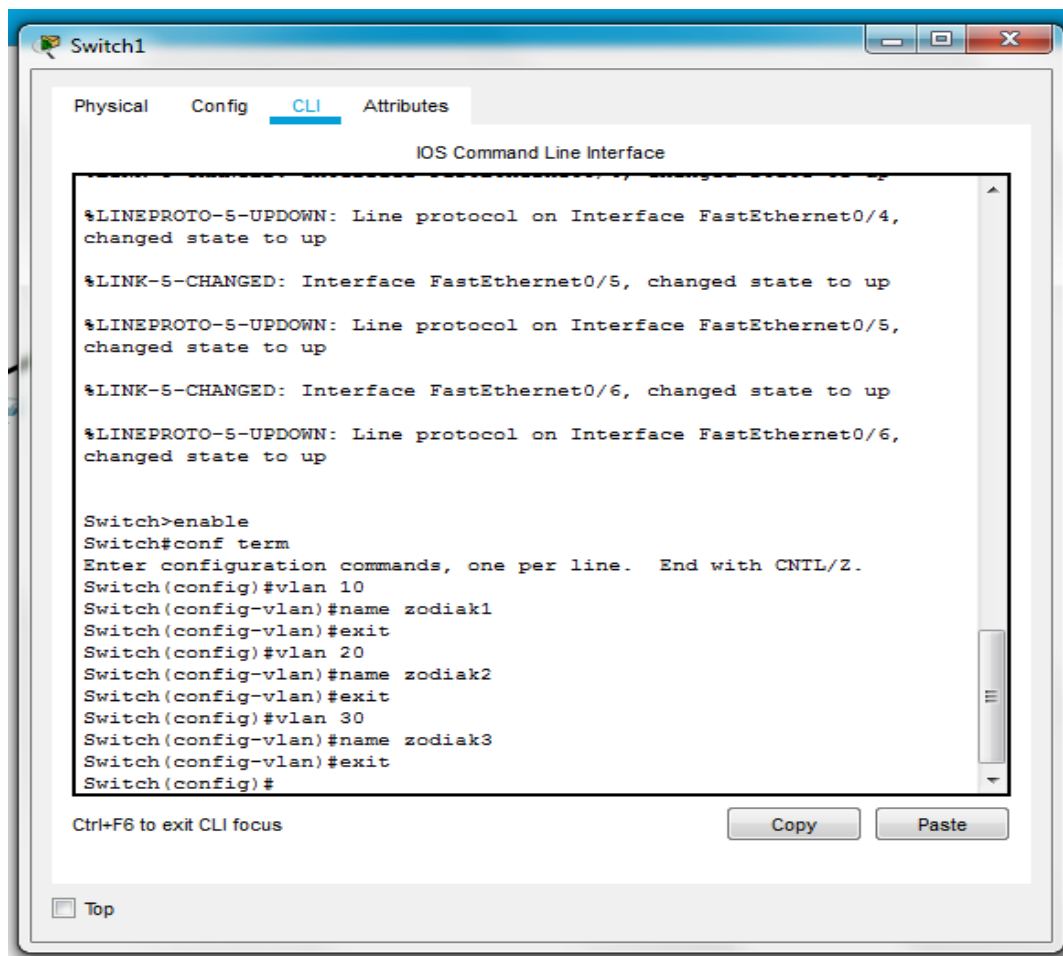
- VLAN pada dasarnya ialah salah satu teknik yang bisa diterapkan di konsep switching dalam jaringan. VLAN banyak digunakan karena banyak menguntungkan dibanding teknik routing.
- Cara kerja dari VLAN adalah semua data yang mengandung informasi pengalamatan akan disimpan dalam sebuah tabel/ database. Switch akan menentukan kemana data akan diforward
- Melakukan konfigurasi sesuai dengan contoh dalam modul praktikum

Zodiak1 = Leo dan Libra

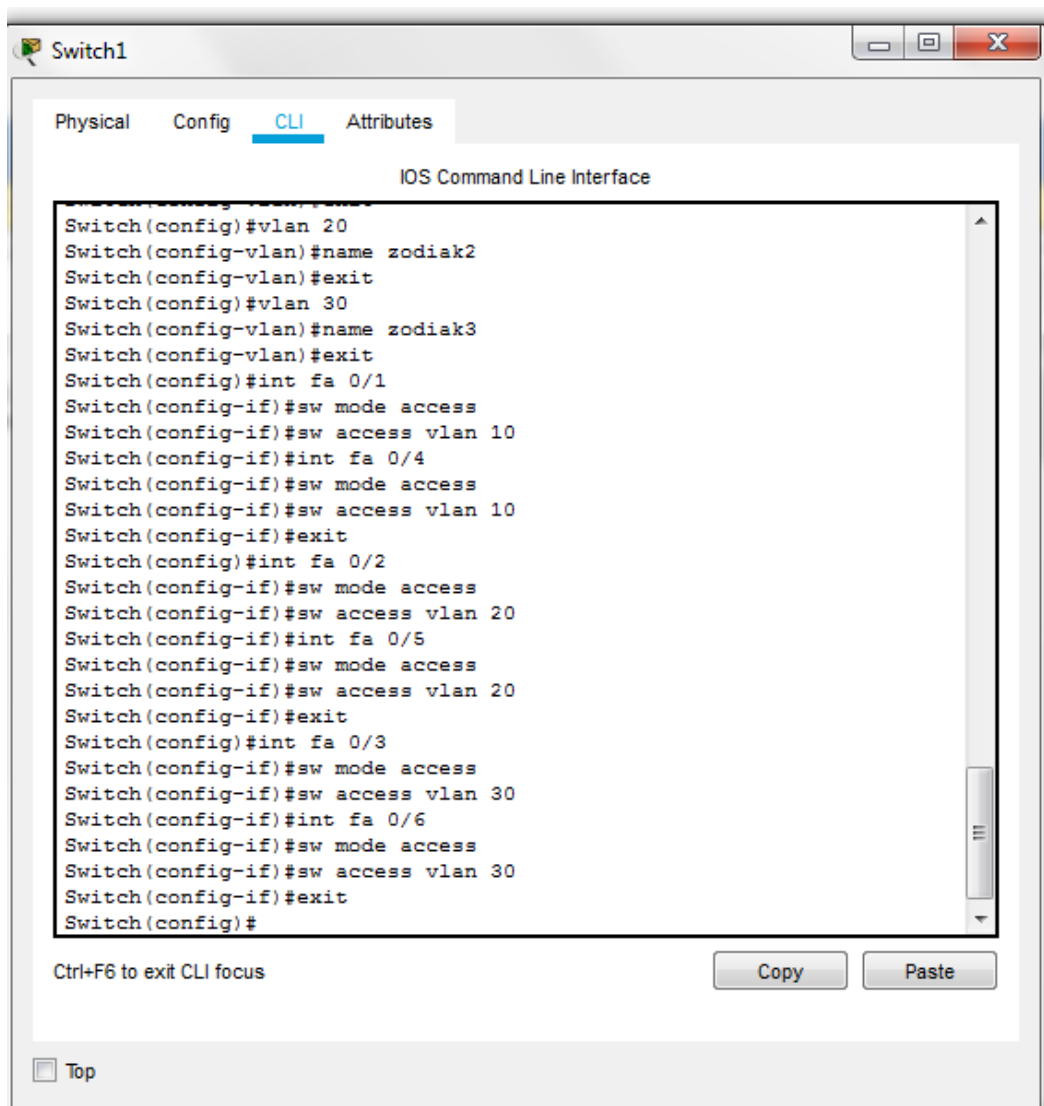
Zodiak2 = Aries dan Taurus

Zodiak3 = Virgo dan Scorpio

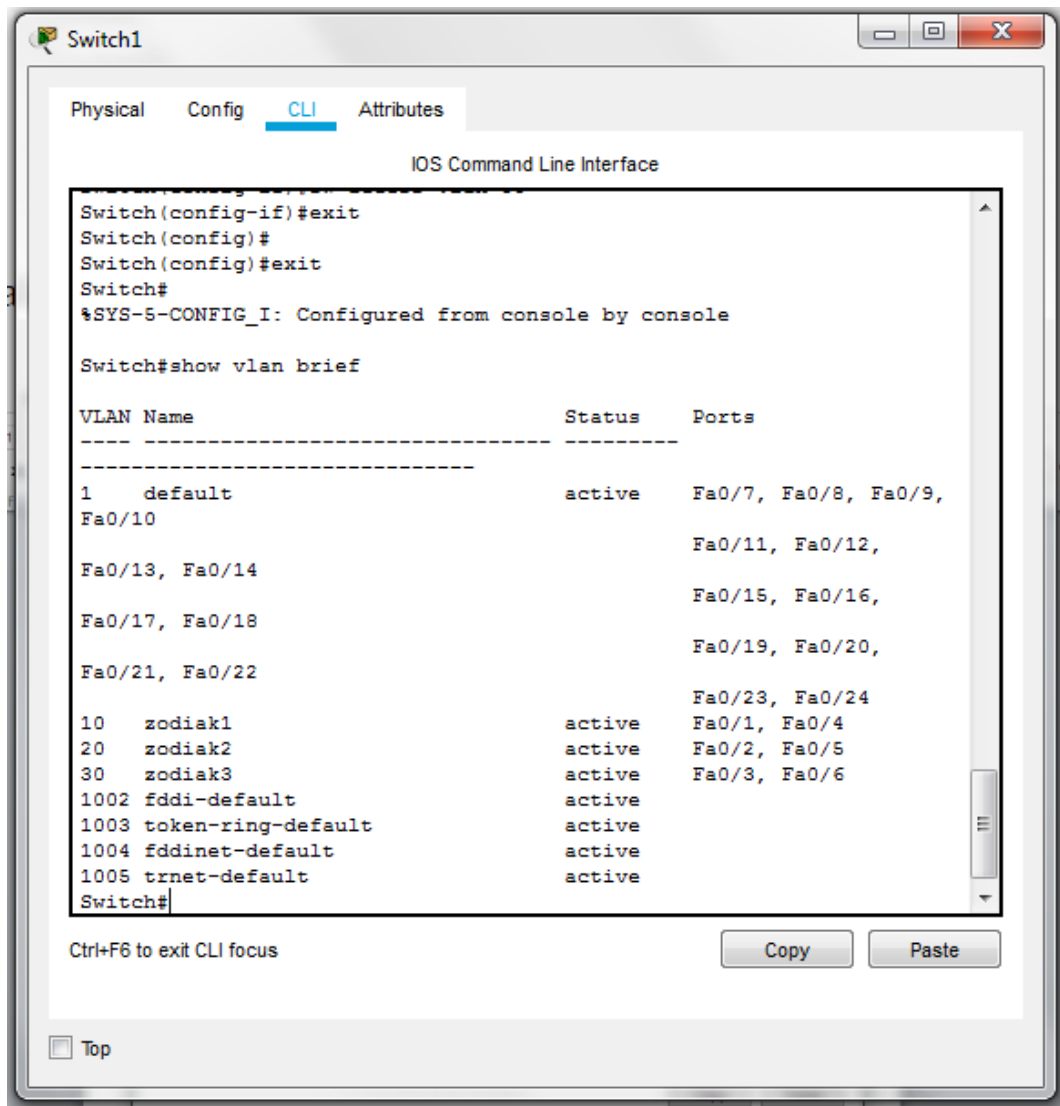
Membuat VLAN dengan nama Zodiak1, Zodiak2, dan Zodiak 3



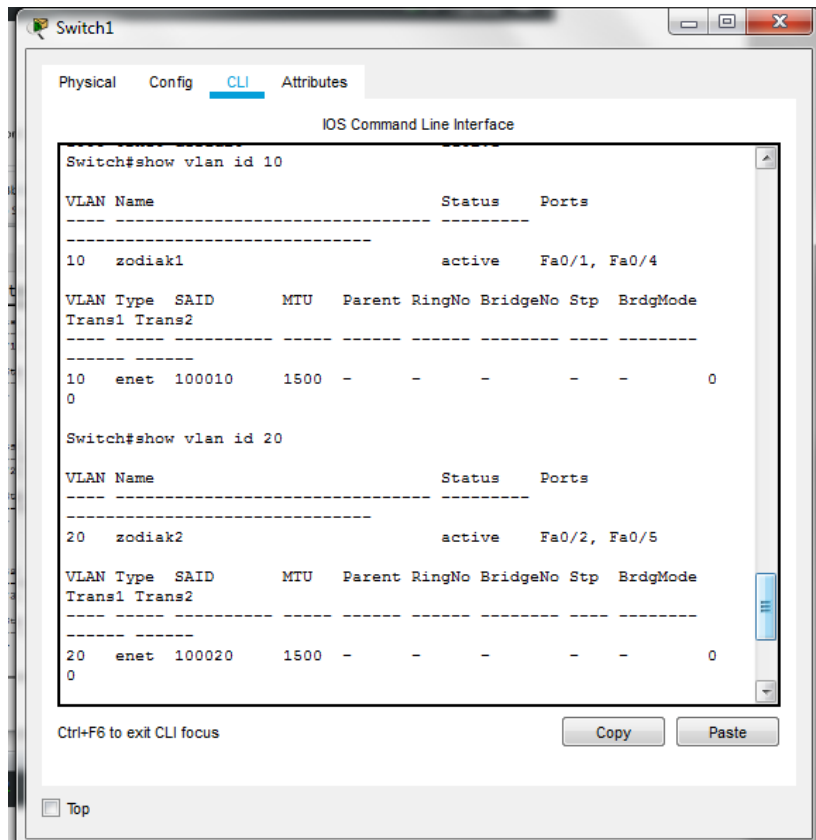
Konfigurasi port-port switch ke dalam VLAN

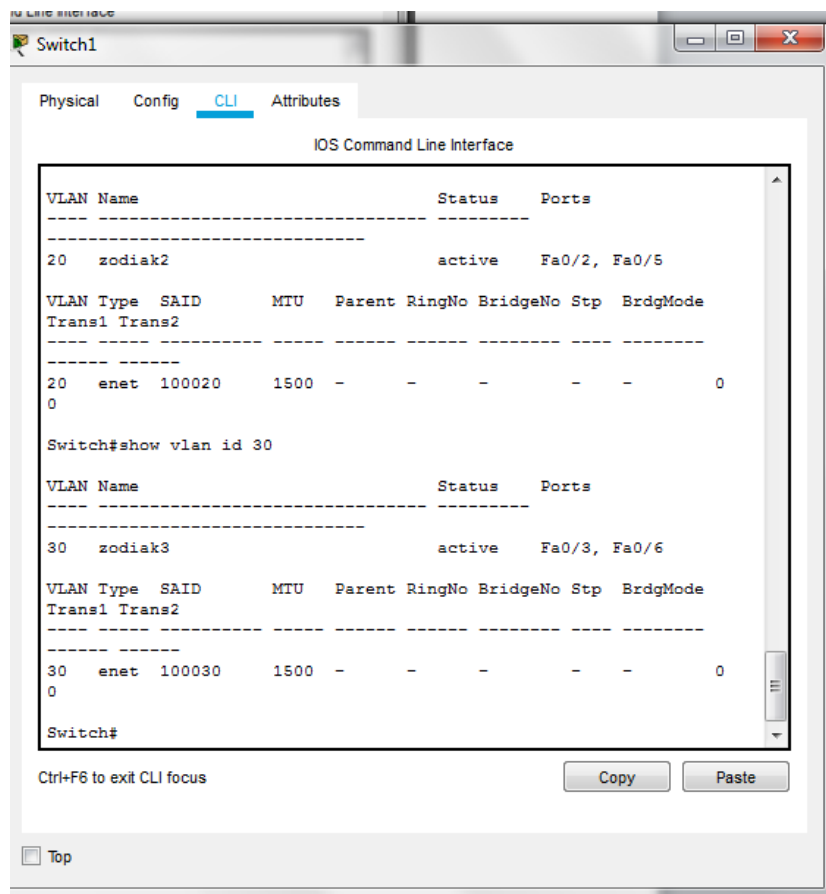


Perintah **show lan brief**



Perintah **show vlan id xx**





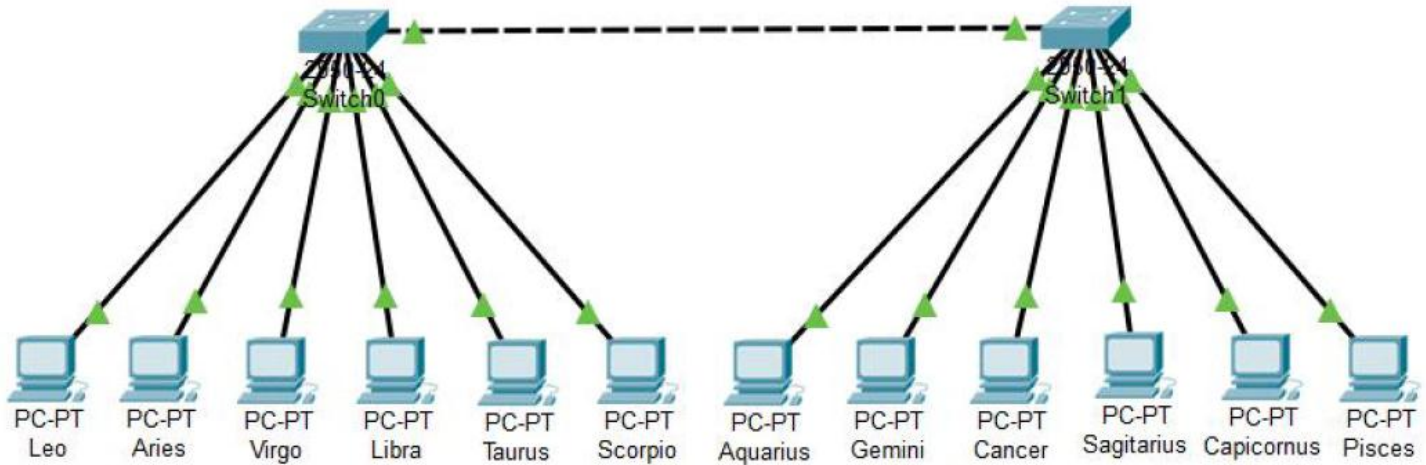
NO	VARIABEL	NILAI
1	Nomor VLAN	10
2	Nama VLAN	Zodiak1
3	Port	Fa 0/1, fa 0/4
4	Status	active

NO	VARIABEL	NILAI
1	Nomor VLAN	20
2	Nama VLAN	Zodiak2
3	Port	Fa 0/2, fa 0/5
4	Status	Active

NO	VARIABEL	NILAI
1	Nomor VLAN	30
2	Nama VLAN	Zodiak3
3	Port	Fa 0/3, fa 0/6
4	Status	active

Kegiatan 2. Topologi 2

1. Menggunakan cisco packet tracer buat topologi berikut :



2. Beri nama masing-masing perangkat dengan SW1(switch 1), Leo(PC0), Aries(PC1), Virgo(PC2), Libra(PC3), Taurus(PC4), dan Scorpio(PC5) untuk segmen switch 1.

3. Beri nama masing-masing perangkat dengan SW2(switch 2), Aquarius(PC6), Gemini(PC7), Cancer(PC8), Sagitarius(PC9), Capricornus(PC10), dan Pisces(PC11) untuk segmen switch 2.

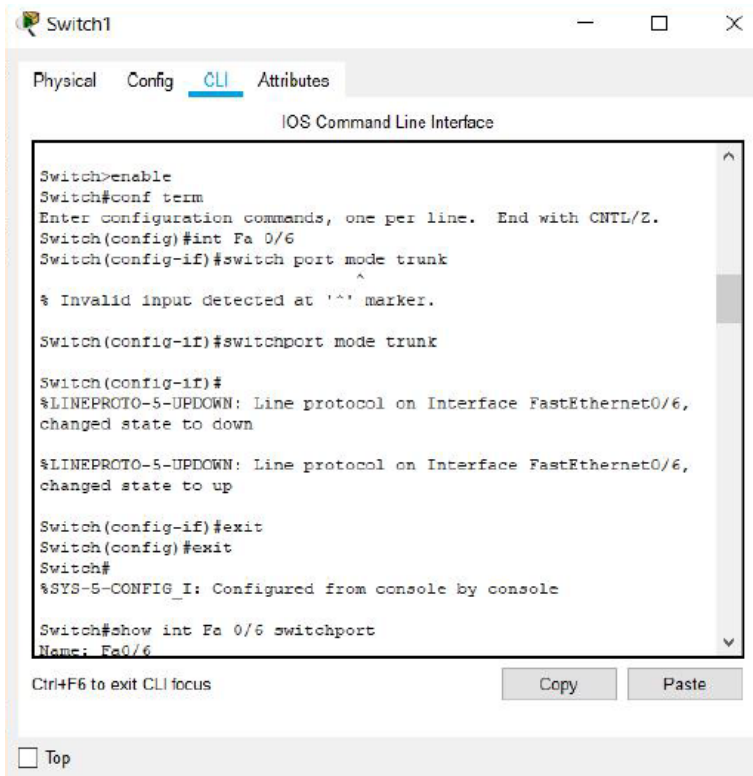
4. Konfigurasi masing-masing PC dengan nama dan alamat IP berikut ini :

- Leo = **172.21.1.1/24**
- Aries = **172.21.1.2/24**
- Virgo = **172.21.2.1/24**
- Libra = **172.21.2.2/24**
- Taurus = **172.21.3.1/24**
- Scorpio = **172.21.3.2/24**
- Aquarius = **172.21.1.3/24**
- Gemini = **172.21.1.4/24**
- Cancer = **172.21.2.3/24**
- Sagitarius = **172.21.2.4/24**
- Capricornus = **172.21.3.3/24**
- Pisces = **172.21.3.4/24**

5. Konfigurasi VLAN trunking pada switch 1.

Langkah pengoperasian :

- Switch(config)#interface Fa 0/6
- Switch(config-if)#switchport mode trunk
- Switch(config-if)#exit



The screenshot shows a network switch CLI window titled "Switch1". The "CLI" tab is selected. The command history shows the following sequence of commands and outputs:

```
Switch>enable
Switch#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#int Fa 0/6
Switch(config-if)#switch port mode trunk
Switch(config-if)#switchport mode trunk
Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/6,
changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/6,
changed state to up
Switch(config-if)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
Switch#show int Fa 0/6 switchport
Name: Fa0/6
```

At the bottom of the CLI window, there is a "Ctrl+F6 to exit CLI focus" message and "Copy" and "Paste" buttons. A "Top" button is also visible at the bottom left of the window.

6. Melihat konfigurasi :

- Ketik show int Fa 0/6 switchport

Switch1

Physical

Config

CLI

Attributes

IOS Command Line Interface

Switch#show int Fa 0/6 switchport
Name: Fa0/6
Switchport: Enabled
Administrative Mode: trunk
Operational Mode: trunk
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: On
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Voice VLAN: none
Administrative private-vlan host-association: none
Administrative private-vlan mapping: none
Administrative private-vlan trunk native VLAN: none
Administrative private-vlan trunk encapsulation: dot1q
Administrative private-vlan trunk normal VLANs: none
Administrative private-vlan trunk private VLANs: none
Operational private-vlan: none
Trunking VLANs Enabled: All
Pruning VLANs Enabled: 2-1001
Capture Mode Disabled
Capture VLANs Allowed: ALL
Protected: false
Appliance trust: none

Ctrl+F6 to exit CLI focus

Copy

Paste

☐ Top

- Ketik show vlan

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch#show vlan
```

VLAN Name	Status	Ports
1 default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4, Fa0/5, 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
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 trnet-default	active	

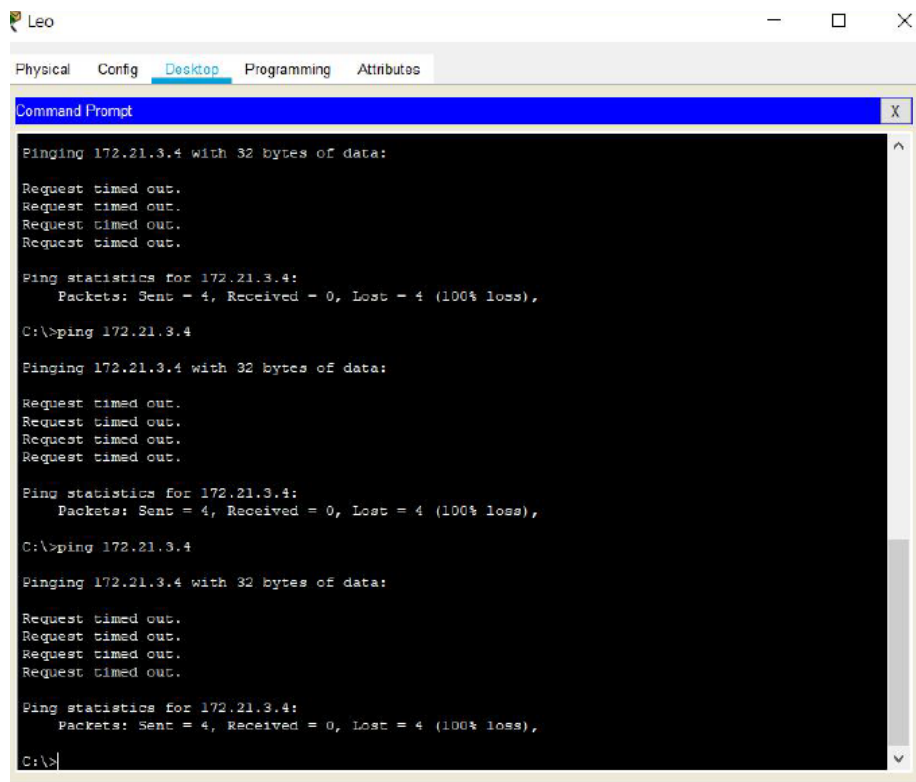
VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode
1	enet	100001	1500	-	-	-	-	-
1002	fddi	101002	1500	-	-	-	-	-
1003	tr	101003	1500	-	-	-	-	-
1004	fdnet	101004	1500	-	-	-	ieee	-
1005	trnet	101005	1500	-	-	-	ibm	-

--More--

Ctrl+F6 to exit CLI focus

Copy Paste

7. Lakukan PC Leoke PC Pisces



Leo

Physical Config **Desktop** Programming Attributes

Command Prompt

```
Pinging 172.21.3.4 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.21.3.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 172.21.3.4

Pinging 172.21.3.4 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.21.3.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

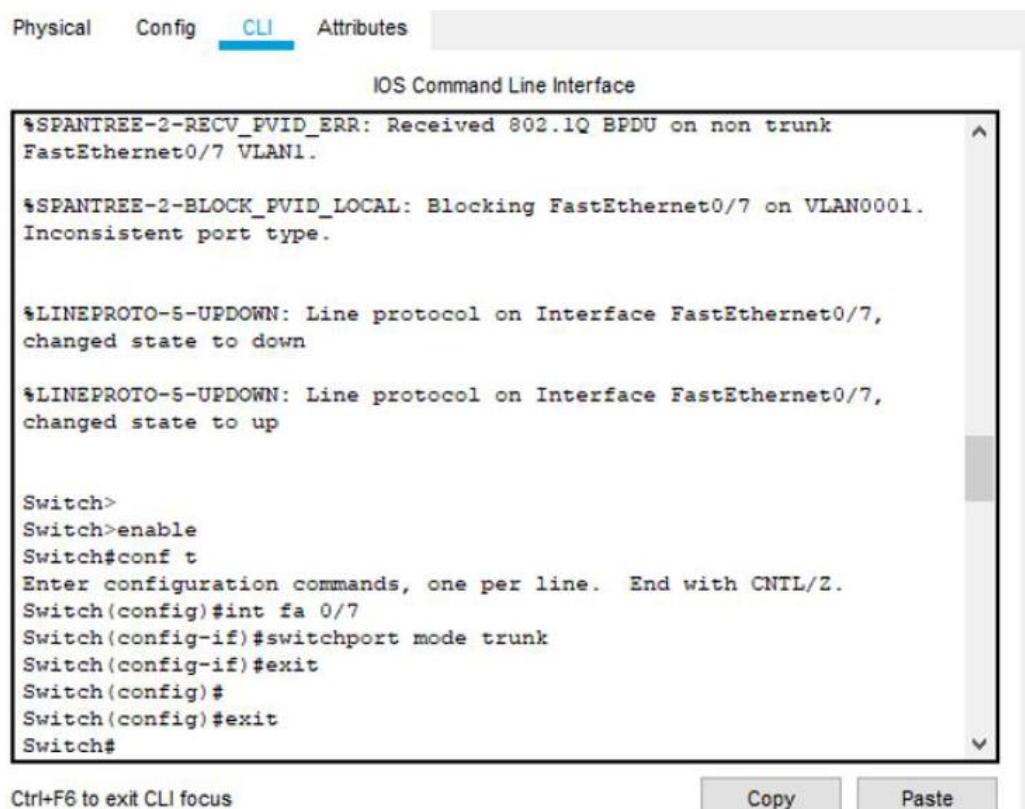
C:\>ping 172.21.3.4

Pinging 172.21.3.4 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.21.3.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

8. Konfigurasi VLAN trunking pada switch 2



Physical Config **CLI** Attributes

IOS Command Line Interface

```
%SPANTREE-2-RECV_PVID_ERR: Received 802.1Q BPDU on non trunk
FastEthernet0/7 VLAN1.

%SPANTREE-2-BLOCK_PVID_LOCAL: Blocking FastEthernet0/7 on VLAN0001.
Inconsistent port type.

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7,
changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7,
changed state to up

Switch>
Switch>enable
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#int fa 0/7
Switch(config-if)#switchport mode trunk
Switch(config-if)#exit
Switch(config)#
Switch(config)#exit
Switch#
```

Ctrl+F6 to exit CLI focus

Copy Paste

9. Melihat hasil konfigurasi trunking pada switch 2

```
IOS Command Line Interface

Switch#
Switch#show vlan

VLAN Name                Status    Ports
-----
1    default                active    Fa0/1, Fa0/2, Fa0/3,
Fa0/4                      Fa0/5, Fa0/6, 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
1002 fddi-default          active
1003 token-ring-default    active
1004 fddinet-default        active
1005 trnet-default          active

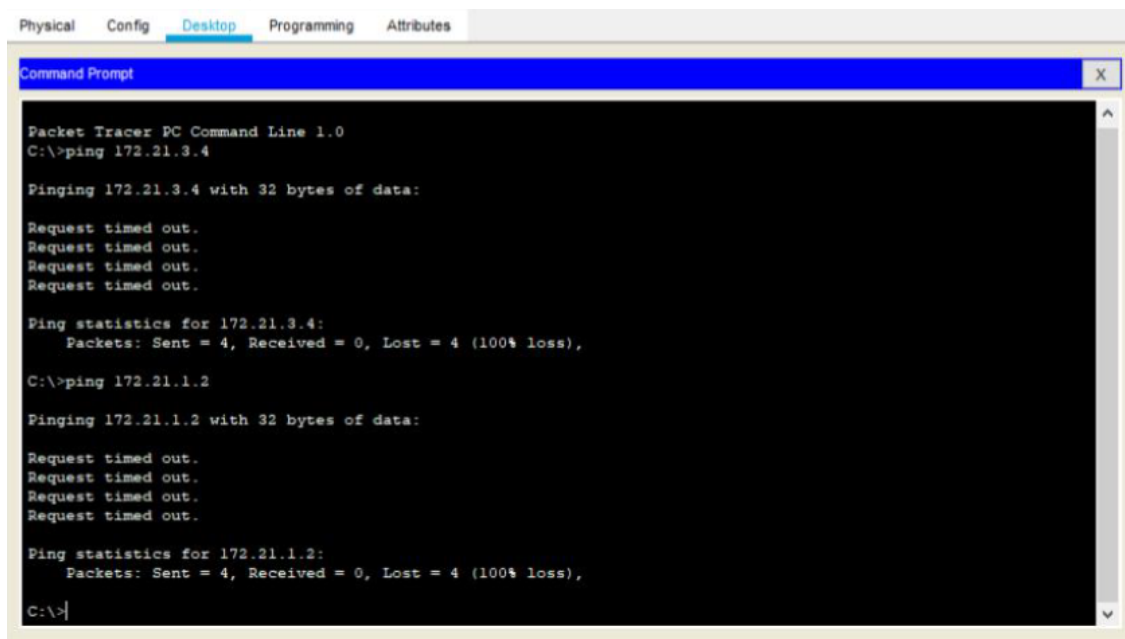
VLAN Type  SAID      MTU    Parent RingNo BridgeNo Stp  BrdgMode
Trans1 Trans2
-----
1    enet     1000001   1500   -      -      -      -      -      0
0
1002 fddi     1010002   1500   -      -      -      -      -      0
0
1003 tr       1010003   1500   -      -      -      -      -      0
0
1004 fdnet    1010004   1500   -      -      -      ieee  -      0
0
1005 trnet    1010005   1500   -      -      -      ibm   -      0
0

VLAN Type  SAID      MTU    Parent RingNo BridgeNo Stp  BrdgMode
Trans1 Trans2
-----

Remote SPAN VLANs
-----

Primary Secondary Type      Ports
-----
Switch#
```

10. Uji coba ping



The screenshot shows the Packet Tracer Desktop environment with the 'Desktop' tab selected. A Command Prompt window is open, displaying the results of two ping tests. The first test is for 172.21.3.4, and the second is for 172.21.1.2. Both tests show a 100% loss of packets.

```
Packet Tracer PC Command Line 1.0
C:\>ping 172.21.3.4

Pinging 172.21.3.4 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.21.3.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 172.21.1.2

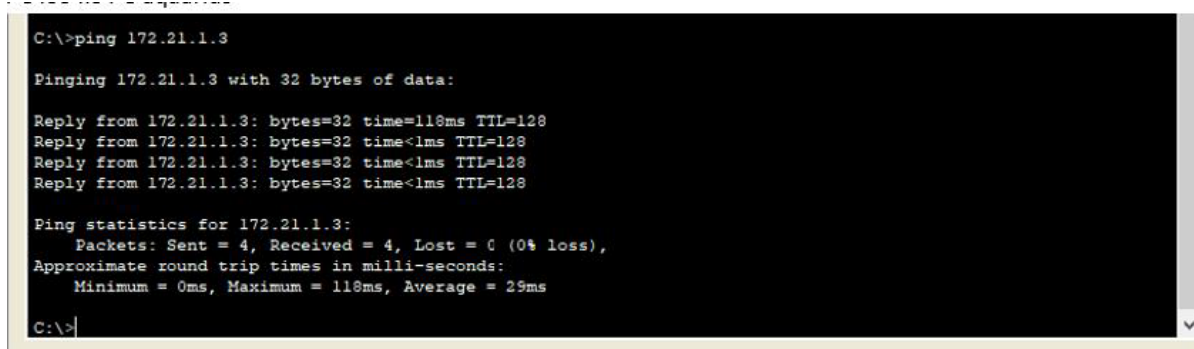
Pinging 172.21.1.2 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.21.1.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

PC LEO KE AQUARIUS



The screenshot shows the Packet Tracer Desktop environment with the 'Desktop' tab selected. A Command Prompt window is open, displaying the results of a successful ping test to 172.21.1.3. The test shows four successful replies with a 0% loss of packets.

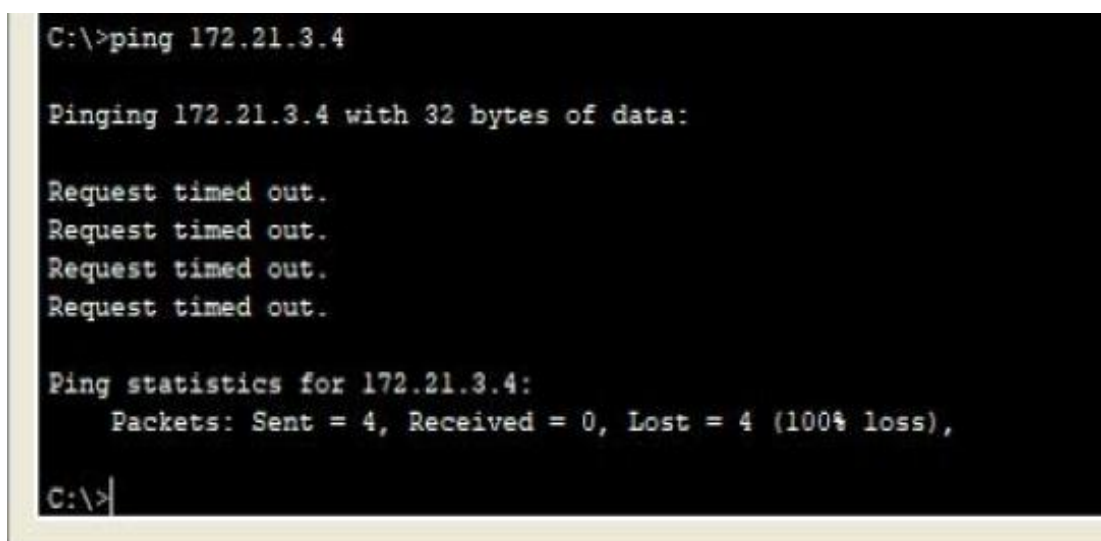
```
C:\>ping 172.21.1.3

Pinging 172.21.1.3 with 32 bytes of data:

Reply from 172.21.1.3: bytes=32 time=118ms TTL=128
Reply from 172.21.1.3: bytes=32 time<1ms TTL=128
Reply from 172.21.1.3: bytes=32 time<1ms TTL=128
Reply from 172.21.1.3: bytes=32 time<1ms TTL=128

Ping statistics for 172.21.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 118ms, Average = 29ms

C:\>
```



The screenshot shows the Packet Tracer Desktop environment with the 'Desktop' tab selected. A Command Prompt window is open, displaying the results of a failed ping test to 172.21.3.4. The test shows four request timed out messages and a 100% loss of packets.

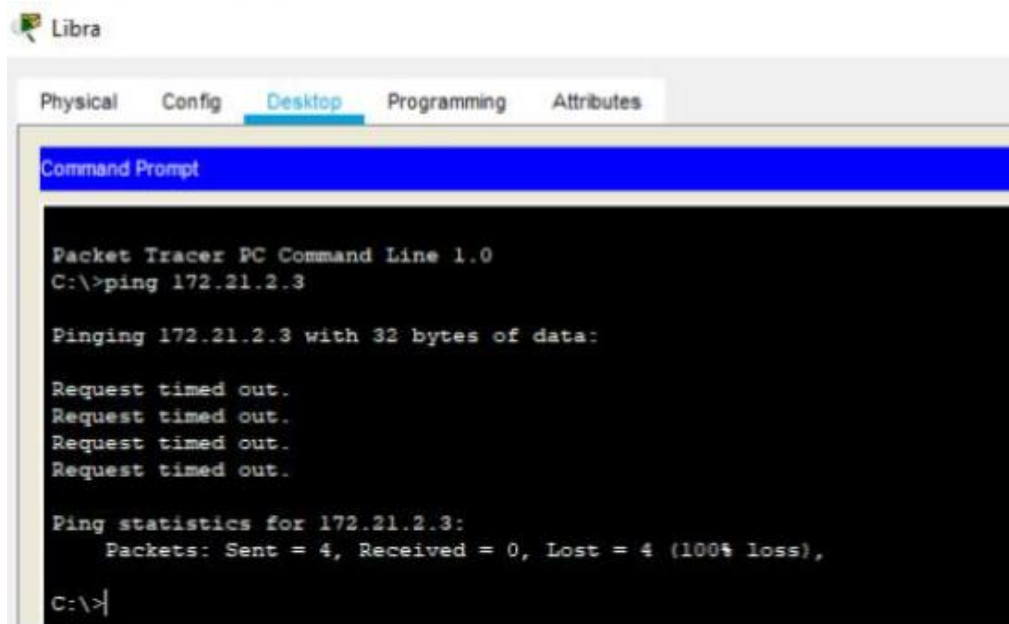
```
C:\>ping 172.21.3.4

Pinging 172.21.3.4 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.21.3.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```



Libra

Physical Config **Desktop** Programming Attributes

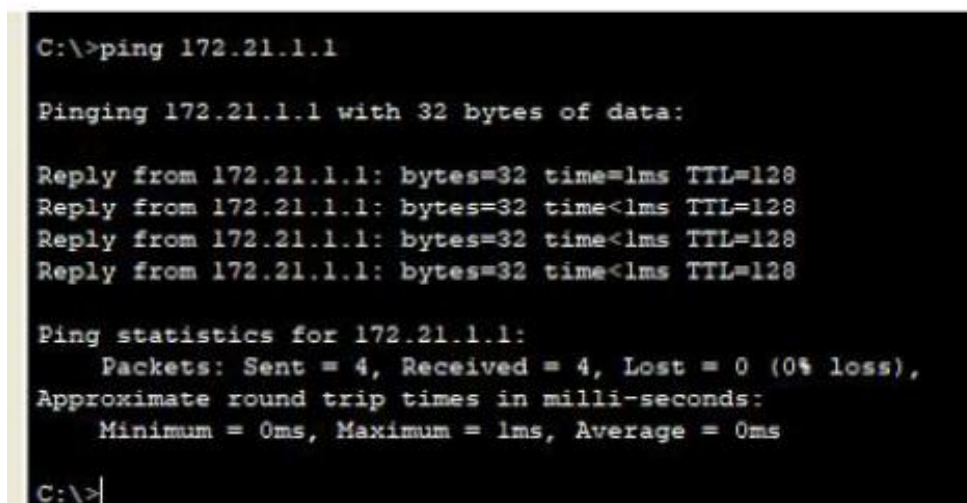
Command Prompt

```
Packet Tracer PC Command Line 1.0
C:\>ping 172.21.2.3

Pinging 172.21.2.3 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.21.2.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>
```



```
C:\>ping 172.21.1.1

Pinging 172.21.1.1 with 32 bytes of data:

Reply from 172.21.1.1: bytes=32 time=1ms TTL=128
Reply from 172.21.1.1: bytes=32 time<1ms TTL=128
Reply from 172.21.1.1: bytes=32 time<1ms TTL=128
Reply from 172.21.1.1: bytes=32 time<1ms TTL=128

Ping statistics for 172.21.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
C:\>
```

Dari hasil percobaan diatas, dapat disimpulkan apabila PC berada pada VLAN yang sama, maka akan menghasilkan status Reply. Akan tetapi jika berada pada VLAN yang berbeda akan menghasilkan status Request Time Out