

Nama : Hafidh Putra Andhika

NIM : L200180085

Kelas : C

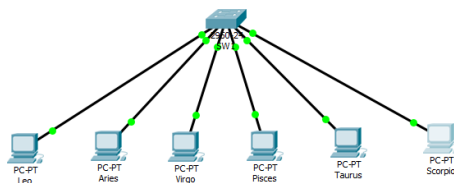
MODUL 4

Kegiatan Praktikum

❖ Kegiatan 1. Topologi 1

- Membuat topologi dengan menggunakan switch pada packet tracer. Kemudian memberi nama masing-masing perangkat dengan SW1(switch), Leo(PC0), Aries(PC1), Virgo(PC2), Pisces(PC3), Taurus(PC4), dan Scorpio(PC5).

Berikut adalah screenshot dari cisco packet tracer:



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

- Leo = 172.21.1.1/24
- Aries = 172.21.1.2/24
- Virgo = 172.21.1.3/24
- Pisces = 172.21.1.4/24
- Taurus = 172.21.1.5/24
- Scorpio = 172.21.1.6/24

Berikut adalah screenshot dari cisco packet tracer pada saat memberi IP Address:

Leo

Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.1.1

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::260:2FFF:FE5D:A997

IPv6 Gateway

IPv6 DNS Server

☐ Top

Aries

Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.1.2

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::201:C9FF:FE5D:1C0B

IPv6 Gateway

IPv6 DNS Server

☐ Top

Virgo

Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.1.3

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::260:47FF:FE59:2ECA

IPv6 Gateway

IPv6 DNS Server

☐ Top

Pisces

Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.1.4

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::201:97FF:FE74:4EA1

IPv6 Gateway

IPv6 DNS Server

☐ Top

Taurus

Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.1.5

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::2E0:8FFF:FE42:5ED4

IPv6 Gateway

IPv6 DNS Server

☐ Top

Scorpio

Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.1.6

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::206:2AFF:FE1A:E14B

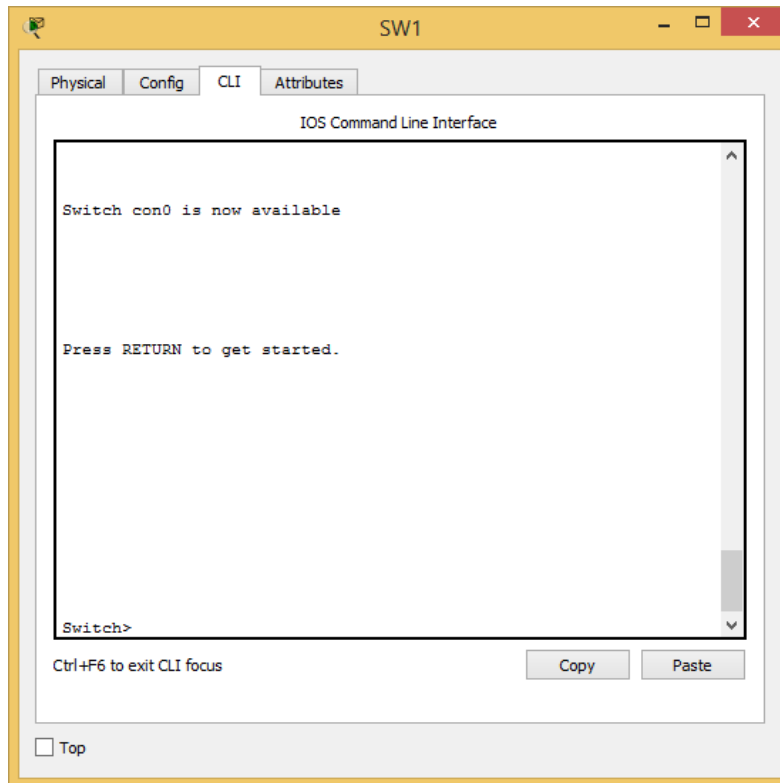
IPv6 Gateway

IPv6 DNS Server

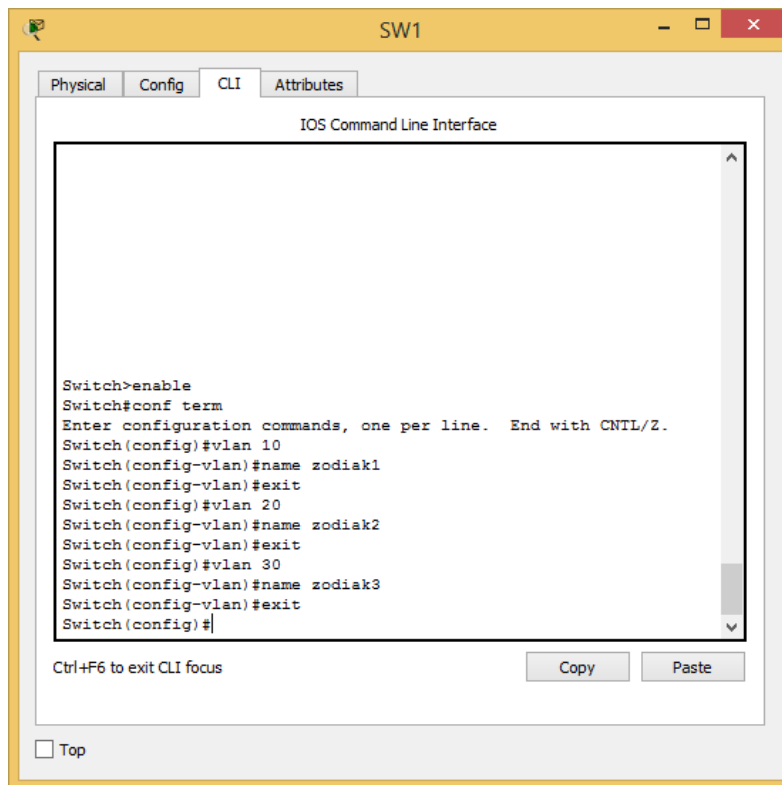
☐ Top

- Konfigurasi pada switch dengan mode user atau mode privileged, buat 3 VLAN dengan nama zodiak1, zodiak2, dan zodiak3. Dengan cara klik pada switch 2 kali, kemudian pilih cli.

Berikut adalah screenshotnya:

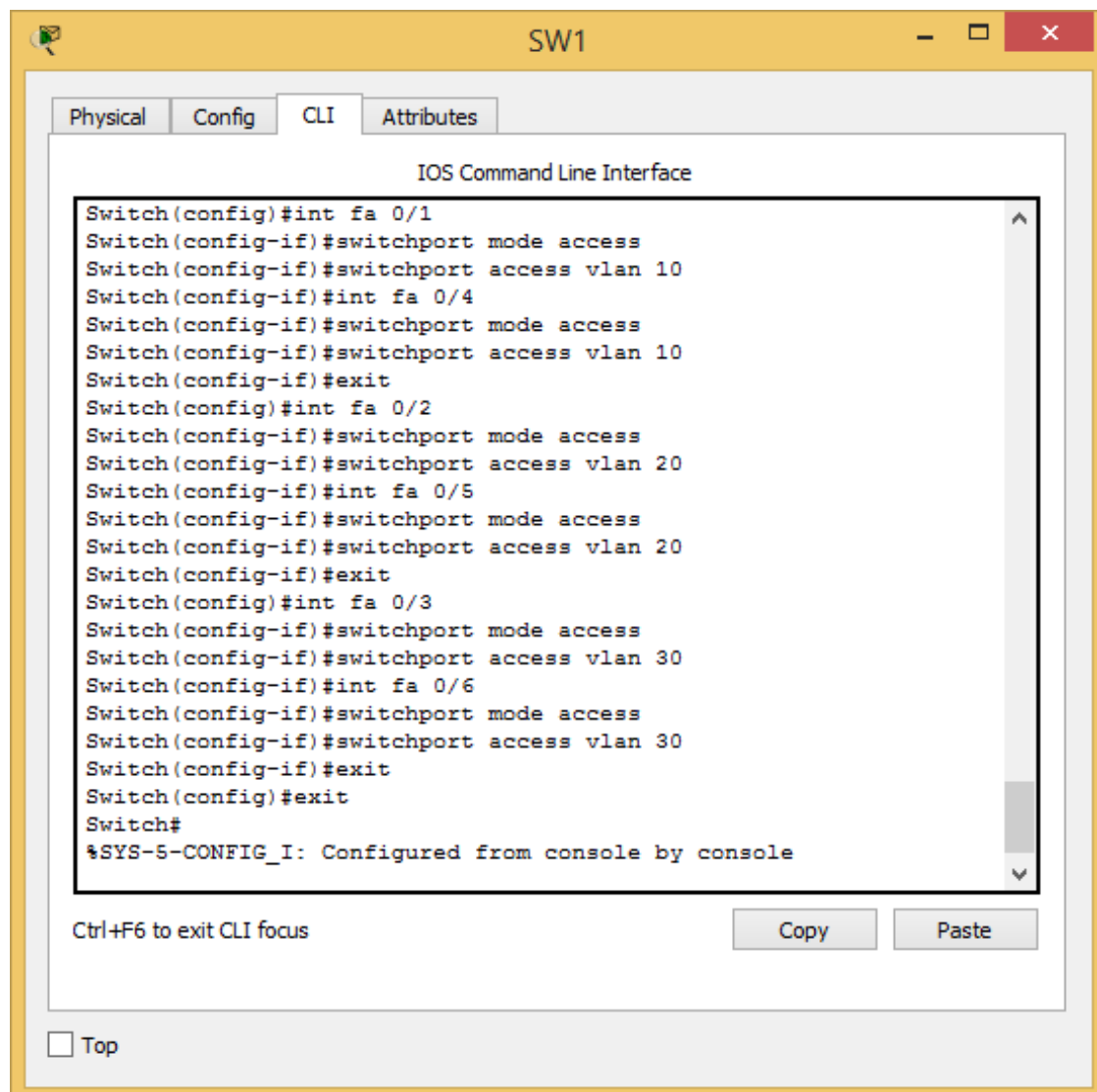


Berikut adalah screenshot dari langkah pengoperasiannya:



- Pada mode configuration, konfigurasi port – port switch ke dalam VLAN zodiak1, zodiak2, dan zodiak3 dengan anggota sebagai berikut:
- zodiak1 = Leo dan Pisces
 - zodiak2 = Aries dan Taurus
 - zodiak3 = Virgo dan Scorpio

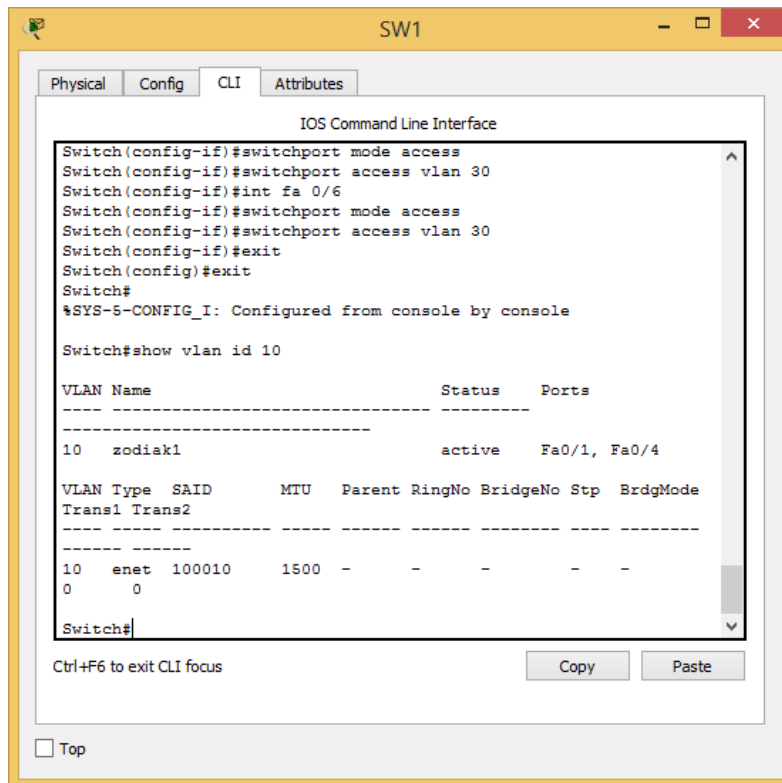
Berikut adalah screenshot dari langkah pengoperasiannya:



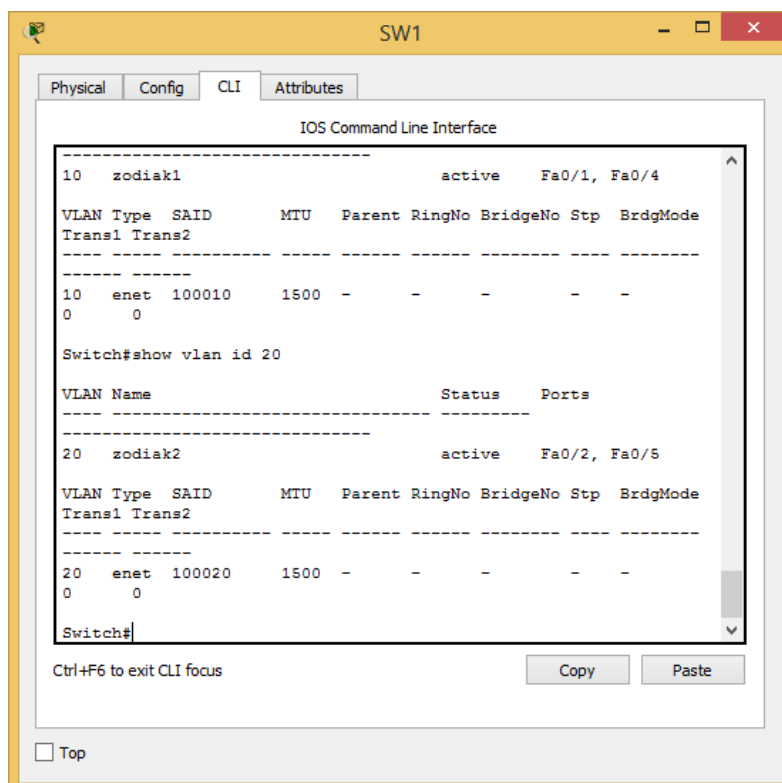
- Pada mode user atau mode privileged, lihat konfigurasi VLAN yang telah dibuat.

Berikut adalah screenshot pada saat melihat konfigurasi

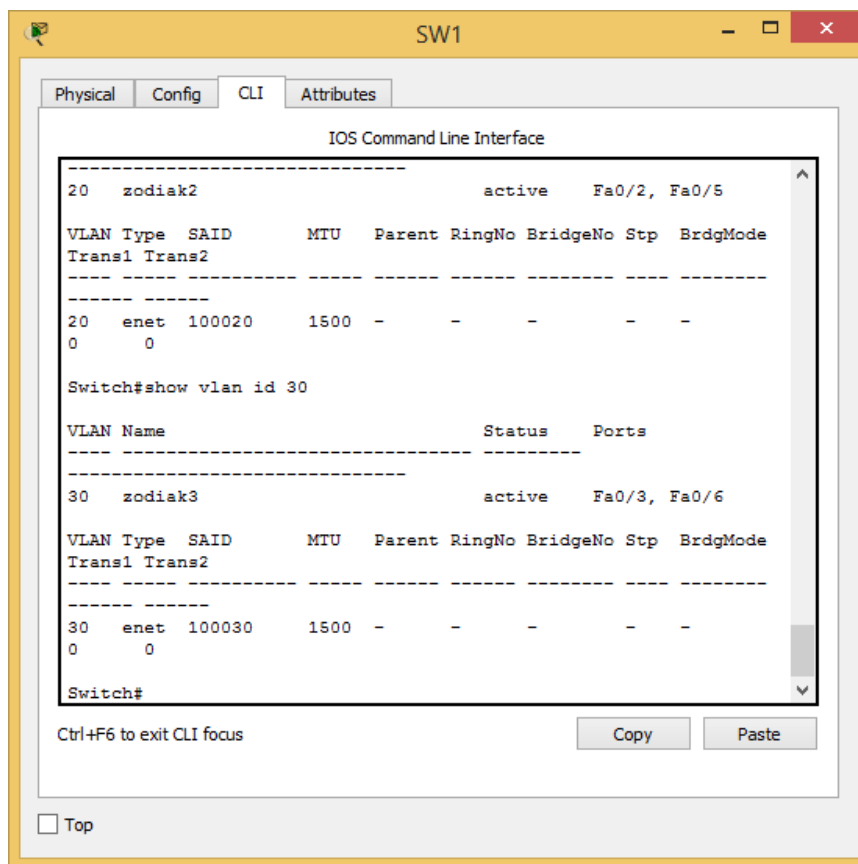
- VLAN 10



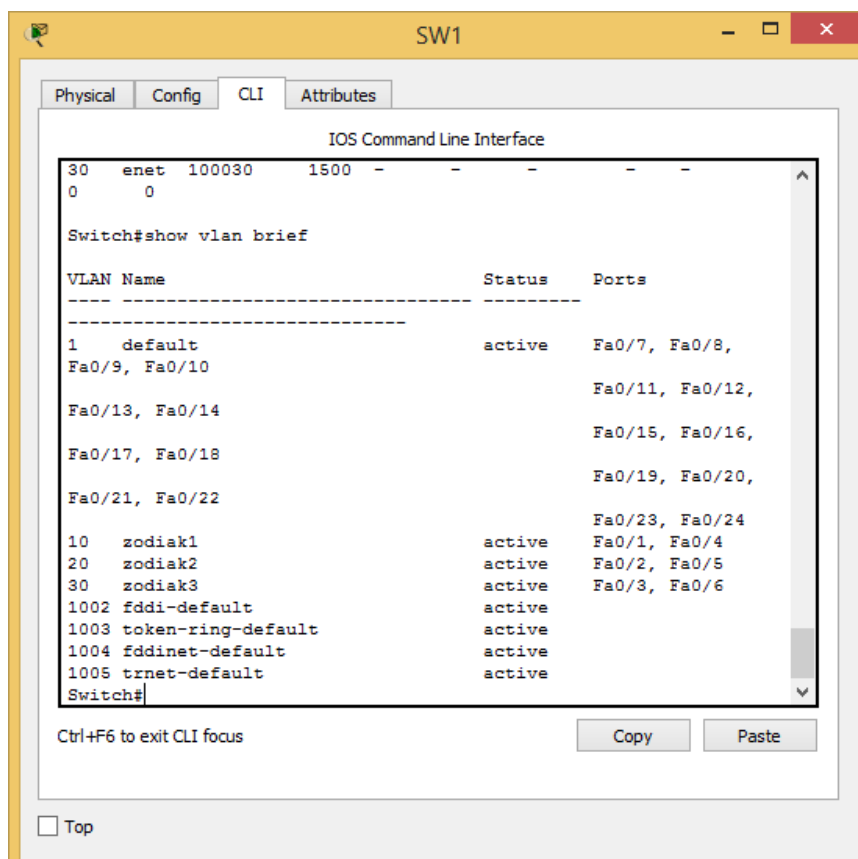
- VLAN 20



- VLAN 30



- VLAN keseluruhan



➤ Tugas 6A

- VLAN 10

No	Variabel	Nilai
1.	Nomor VLAN	10
2.	Nama VLAN	zodiak1
3.	Port	Fa 0/1, Fa 0/4
4.	Status	active

- VLAN 20

No	Variabel	Nilai
1.	Nomor VLAN	20
2.	Nama VLAN	zodiak2
3.	Port	Fa 0/2, Fa 0/5
4.	Status	active

- VLAN 30

No	Variabel	Nilai
1.	Nomor VLAN	30
2.	Nama VLAN	zodiak3
3.	Port	Fa 0/3, Fa 0/6
4.	Status	active

➤ Tugas 6B

- VLAN 10

Dengan nomor VLAN, yaitu 10, nama VLAN adalah zodiak1, memiliki port Fa 0/1 dan Fa 0/4 yang merupakan anggota dari zodiak1, yaitu Leo dan Pisces yang berstatus active.

- VLAN 20

Dengan nomor VLAN, yaitu 20, nama VLAN adalah zodiak2, memiliki port Fa 0/2 dan

Fa 0/5 yang merupakan anggota dari zodiak2, yaitu Aries dan Taurus yang berstatus active.

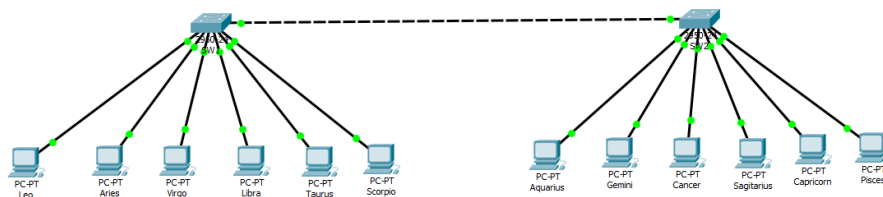
- VLAN 30

Dengan nomor VLAN, yaitu 30, nama VLAN adalah zodiak3, memiliki port Fa 0/3 dan Fa 0/6 yang merupakan anggota dari zodiak3, yaitu Virgo dan Scorpio yang berstatus active.

❖ Kegiatan 2. Topologi 2

- Membuat topologi dengan menggunakan switch Catalyst 2950 pada cisco packet tracer. Kemudian memberi 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. Lalu, SW2(switch 2), Aquarius(PC6), Gemini(PC7), Cancer(PC8), Sagitarius(PC9), Capricorn(PC10), dan Pisces(PC11) untuk segmen switch 2.

Berikut adalah screenshot dari cisco packet tracer:

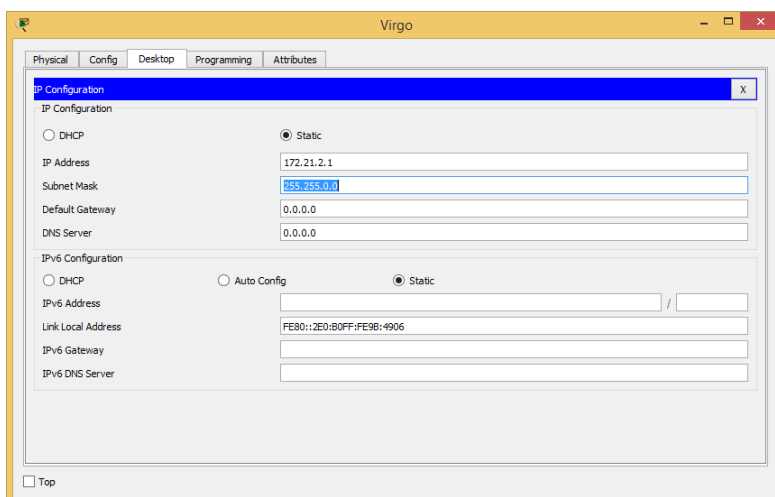
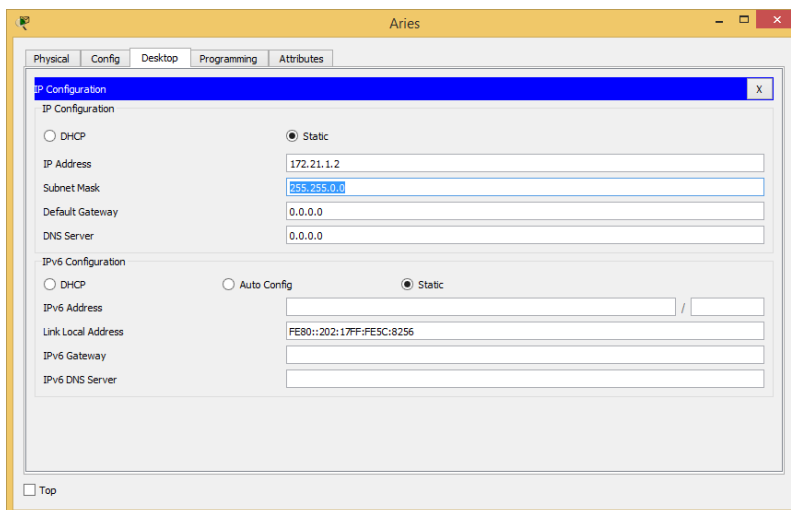
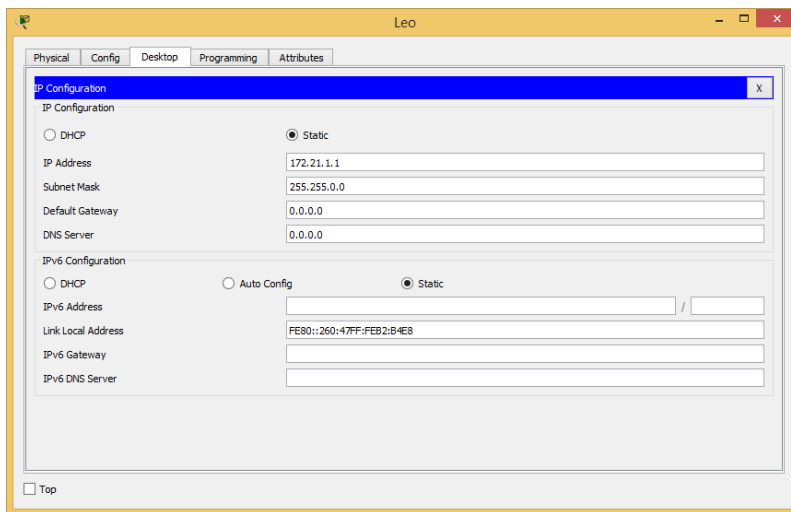


- Konfigurasi masing – masing PC dengan nama dan alamat IP berikut ini:

- 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

- Capricorn = 172.21.3.3/24
- Pisces= 172.21.3.4/24

Berikut adalah screenshot dari cisco packet tracer pada saat memberi IP Address:



Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.2.2

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::205:5E9F:FE6C:D96C

IPv6 Gateway

IPv6 DNS Server

☐ Top



Taurus



Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.3.1

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::201:42FF:FE01:4BA1

IPv6 Gateway

IPv6 DNS Server

Physical | Config | Desktop | Programming | Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address: 172.21.3.2

Subnet Mask: 255.255.0.0

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address: /

Link Local Address: FE80::200:CFF:FE75:4945

IPv6 Gateway:

IPv6 DNS Server:



Aquarius



Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.1.3

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::260:3E9F:FE03:9060

IPv6 Gateway

IPv6 DNS Server

☐ Top



Gemini



Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.1.4

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::203:E4FF:FEA3:20BA

IPv6 Gateway

IPv6 DNS Server

☐ Top

Physical | Config | Desktop | Programming | Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address: 172.21.2.3

Subnet Mask: 255.255.0.0

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address: /

Link Local Address: FE80::2E0:A3FF:FE92:EB2E

IPv6 Gateway:

IPv6 DNS Server:

Sagittarius

Physical Config Desktop Programming Attributes

IP Configuration X

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.2.4

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::204:9AFF:FE02:AD06

IPv6 Gateway

IPv6 DNS Server

☐ Top

Capricorn

Physical Config Desktop Programming Attributes

IP Configuration X

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.3.3

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

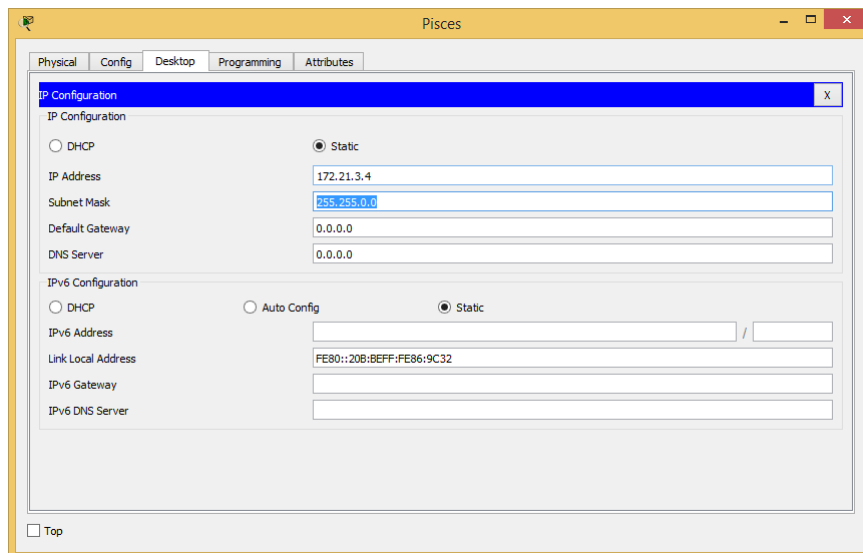
IPv6 Address /

Link Local Address FE80::260:47FF:FE3C:265A

IPv6 Gateway

IPv6 DNS Server

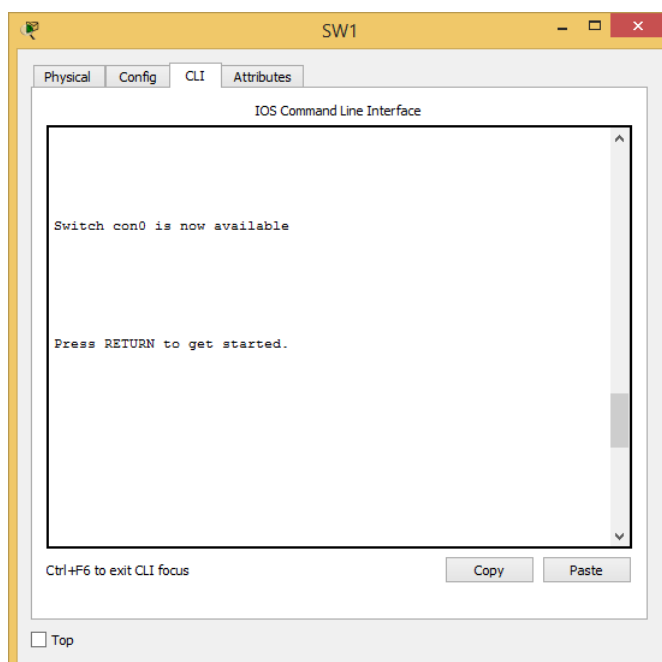
☐ Top



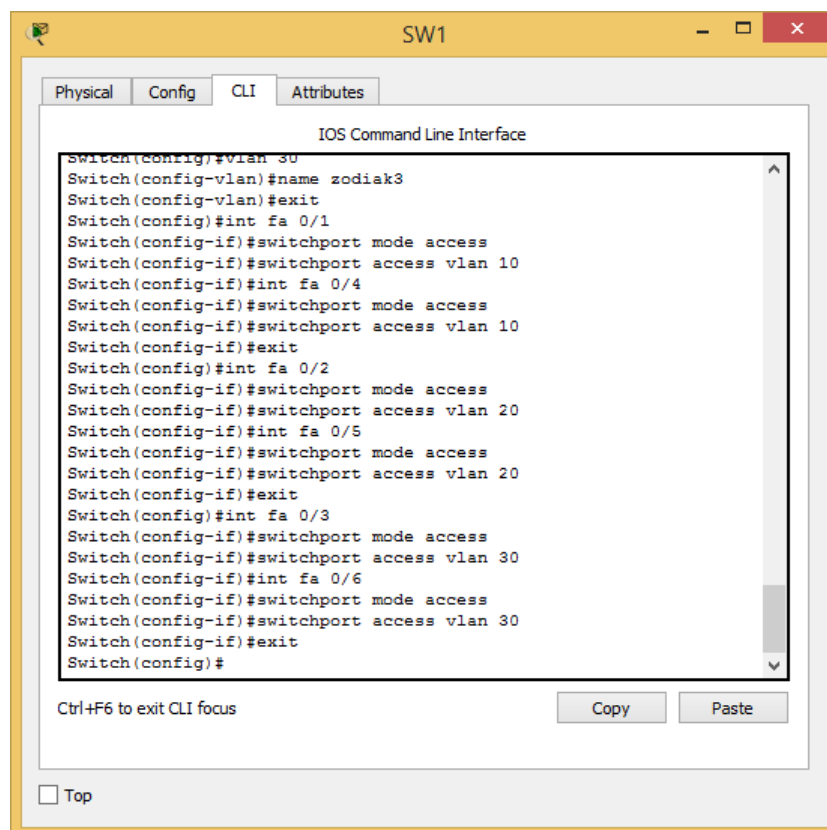
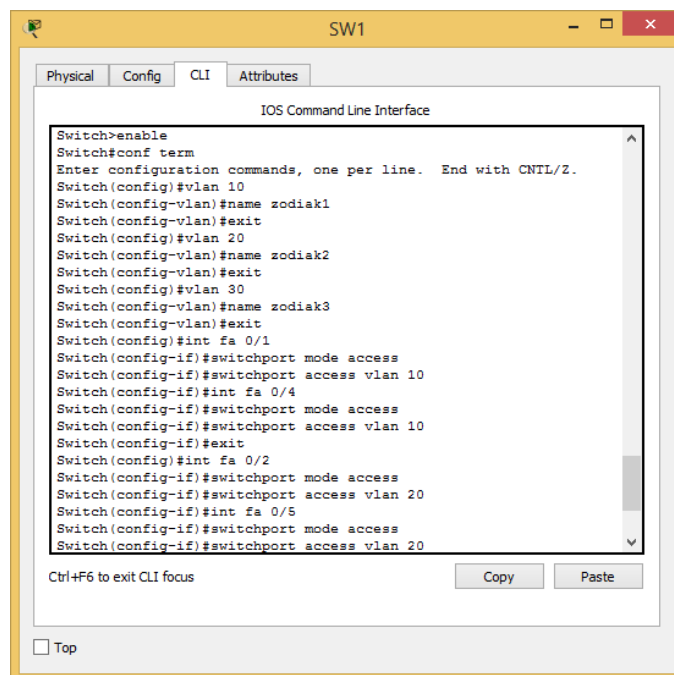
➤ Konfigurasi pada switch dengan mode user atau mode privileged, buat 3 VLAN dengan nama zodiak1, zodiak2, dan zodiak3. Dengan cara klik pada switch 2 kali, kemudian pilih cli. Pada mode configuration, konfigurasi port – port switch ke dalam VLAN zodiak1, zodiak2, dan zodiak3 dengan anggota sebagai berikut:

- zodiak1 = Leo dan Pisces
- zodiak2 = Aries dan Taurus
- zodiak3 = Virgo dan Scorpio

Berikut adalah screenshotnya:

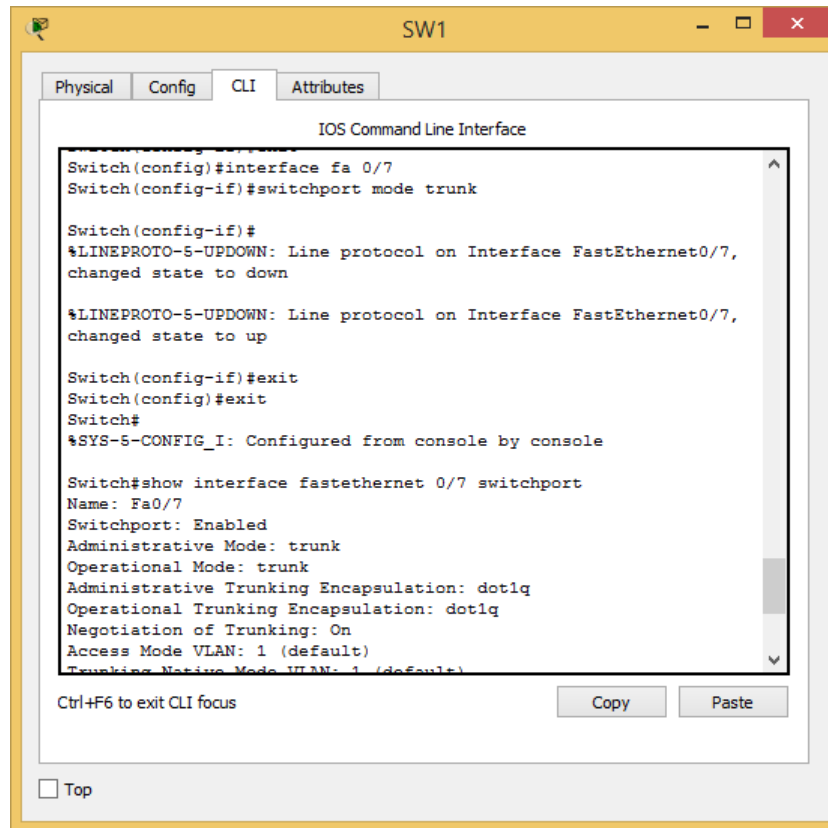


Berikut adalah screenshot dari langkah pengoperasiannya:



- Melakukan konfigurasi VLAN trunking pada switch 1.

Berikut adalah screenshot dari langkah pengoperasiannya:



The screenshot shows a network switch configuration window titled "SW1". It has tabs for "Physical", "Config", "CLI", and "Attributes". The "CLI" tab is active, displaying the "IOS Command Line Interface". The terminal output shows the following commands and responses:

```
Switch(config)#interface fa 0/7
Switch(config-if)#switchport mode trunk

Switch(config-if)#
%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

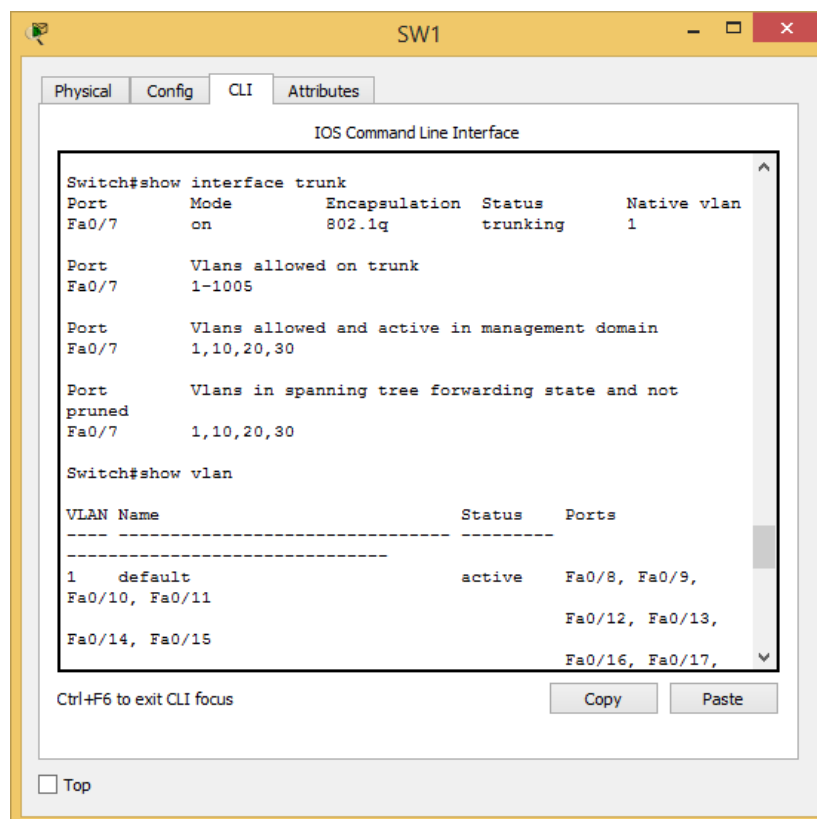
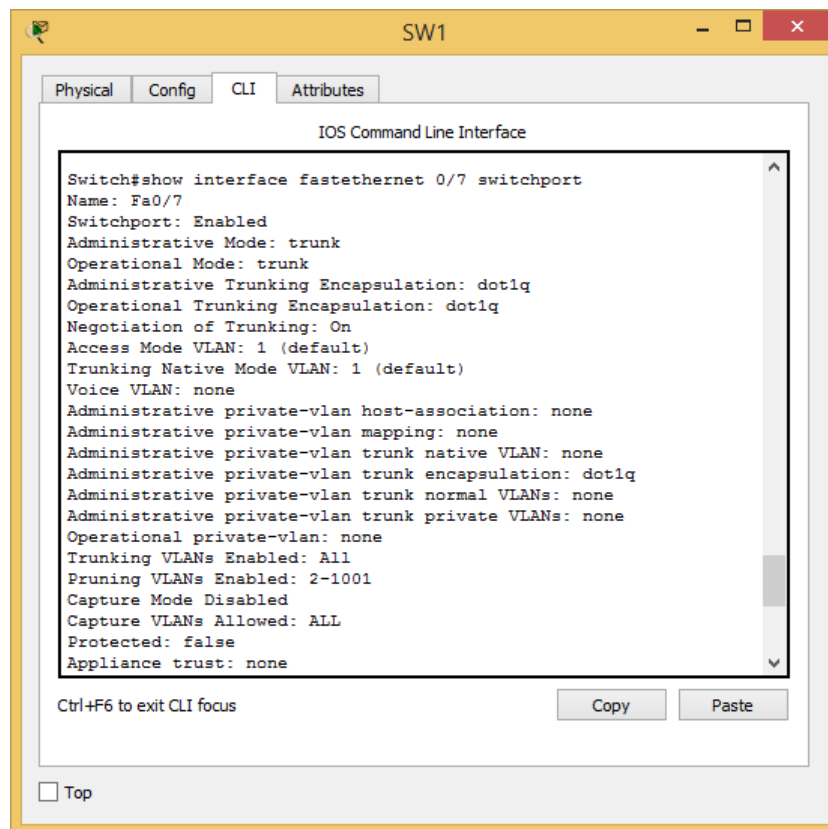
Switch(config-if)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show interface fastethernet 0/7 switchport
Name: Fa0/7
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)
```

Below the terminal output, there is a "Ctrl+F6 to exit CLI focus" message and two buttons: "Copy" and "Paste". At the bottom left, there is a "Top" button.

- Pada mode user atau mode privileged, lihat konfigurasi trunking yang telah dibuat.

Berikut adalah screenshot dari langkah pengoperasian dan hasilnya:



SW1

Physical

Config

CLI

Attributes

IOS Command Line Interface

VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode
Trans1	Trans2							
1	enet	100001	1500	-	-	-	-	-
0	0							
10	enet	100010	1500	-	-	-	-	-
0	0							
20	enet	100020	1500	-	-	-	-	-
0	0							
30	enet	100030	1500	-	-	-	-	-
0	0							
1002	fddi	101002	1500	-	-	-	-	-
0	0							
1003	tr	101003	1500	-	-	-	-	-
0	0							
1004	fdnet	101004	1500	-	-	-	ieee	-
0	0							
1005	trnet	101005	1500	-	-	-	ibm	-
0	0							

Ctrl+F6 to exit CLI focus

Copy

Paste

☐ Top

SW1

Physical

Config

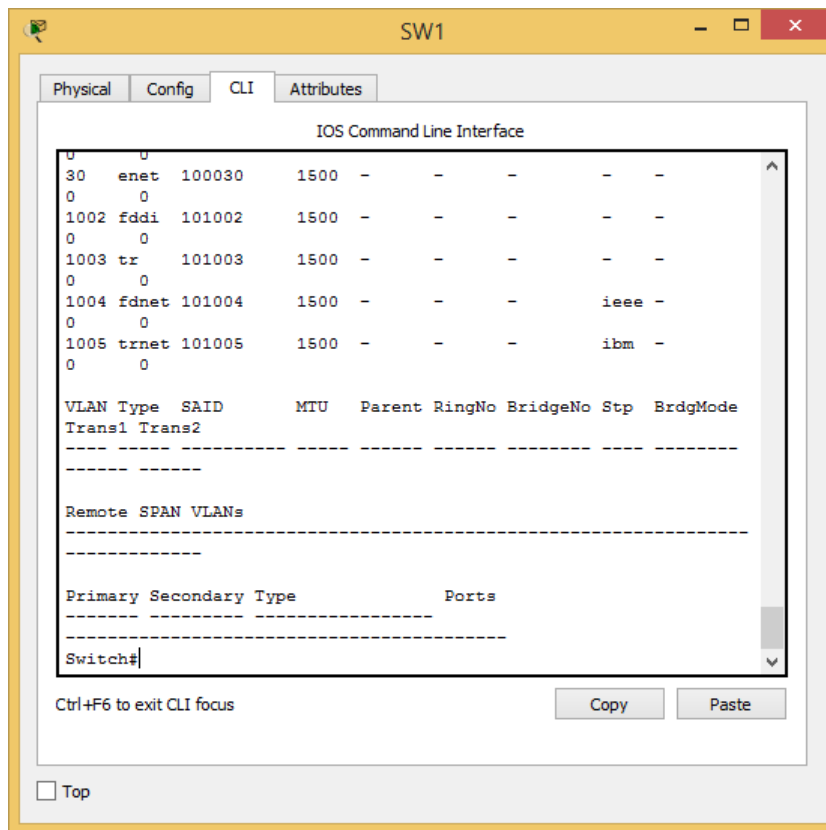
CLI

Attributes

IOS Command Line Interface

Switch#show vlan

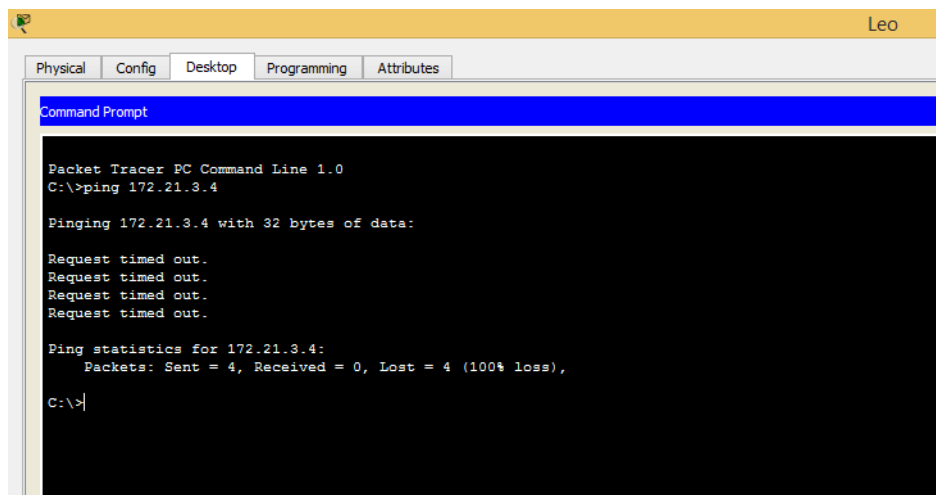
VLAN	Name	Status	Ports
1	default	active	Fa0/8, Fa0/9, Fa0/10, Fa0/11, Fa0/12, Fa0/13, Fa0/14, Fa0/15, Fa0/16, Fa0/17,



Pada langkah ini port yang sudah terkonfigurasi ke dalam vlan yaitu port 0/1 sampai port 0/6, sedangkan port 0/7 untuk trunking antar switch.

- Melakukan ping dari PC Leo ke PC Pisces

Berikut adalah screenshotnya:



Hasil ping dari PC Leo ke PC Pisces "Request timed out" karena PC Leo dan PC Pisces tidak berada dalam satu VLAN dan memiliki network access yang berbeda.

➤ Melakukan konfigurasi VLAN trunking pada switch 2

Berikut adalah screenshot dari cisco packet tracer:

```
Switch>enable
Switch#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface fa 0/1
Switch(config-if)#switchport mode trunk

Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

Switch(config-if)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show interface fastethernet 0/1 switchport
Name: Fa0/1
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

Ctrl+F6 to exit CLI focus
```

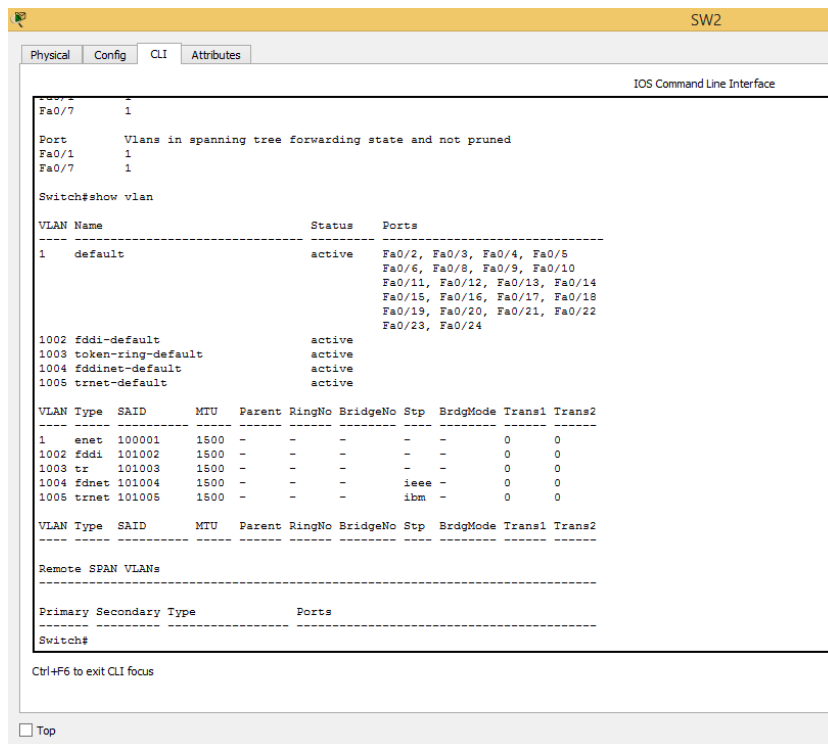
```
Switch#show interface trunk
Port      Mode      Encapsulation  Status        Native vlan
Fa0/1     on        802.1q         trunking      1
Fa0/7     auto      n-802.1q       trunking      1

Port      Vlans allowed on trunk
Fa0/1     1-1005
Fa0/7     1-1005

Port      Vlans allowed and active in management domain
Fa0/1     1
Fa0/7     1

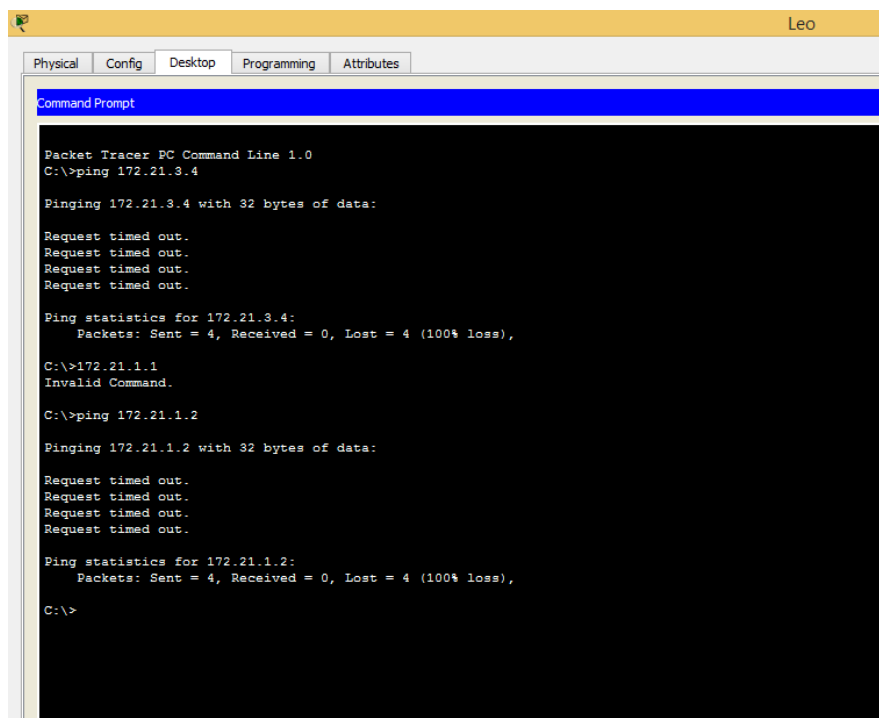
Port      Vlans in spanning tree forwarding state and not pruned
Fa0/1     1
Fa0/7     1

Switch#show vlan
VLAN Name                Status      Ports
-----
1    default                active      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
```

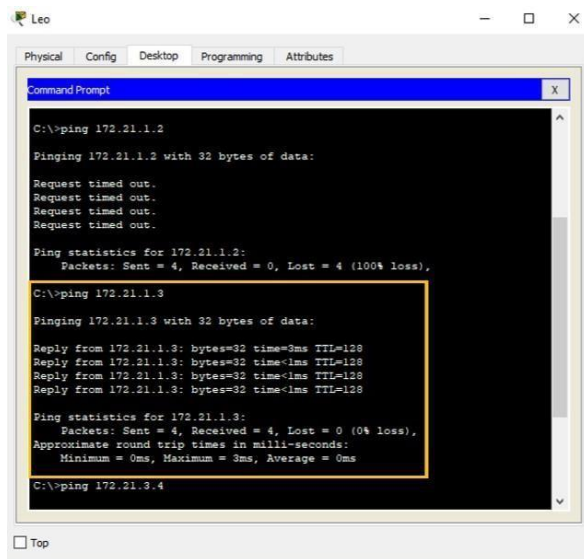


Pada langkah ini port port fastethernet belum terkonfigurasi ke dalam VLAN, bahkan VLAN nya belum dibuat.

- Melakukan ping dari PC Leo ke PC Aries



Hasil ping dari PC leo ke PC aries “Request timed out” karena PC leo dan PC aries tidak berada dalam satu VLAN meskipun memiliki network access yang sama.



```
Leo
Physical Config Desktop Programming Attributes
Command Prompt

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:\>ping 172.21.1.3

Pinging 172.21.1.3 with 32 bytes of data:

Reply from 172.21.1.3: bytes=32 time=3ms 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

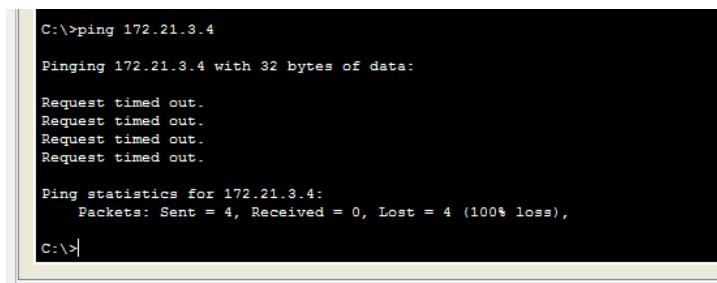
Ping statistics for 172.21.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 3ms, Average = 0ms

C:\>ping 172.21.3.4
```

- Melakukan ping dari PC Leo ke PC Aquarius

Hasil ping dari PC leo ke PC aquarius “Reply” karena PC leo dan PC aquarius berada dalam satu VLAN dan memiliki network access yang sama.

- Melakukan ping dari PC Leo ke PC Pisces



```
C:\>ping 172.21.3.4

Pinging 172.21.3.4 with 32 bytes of data:

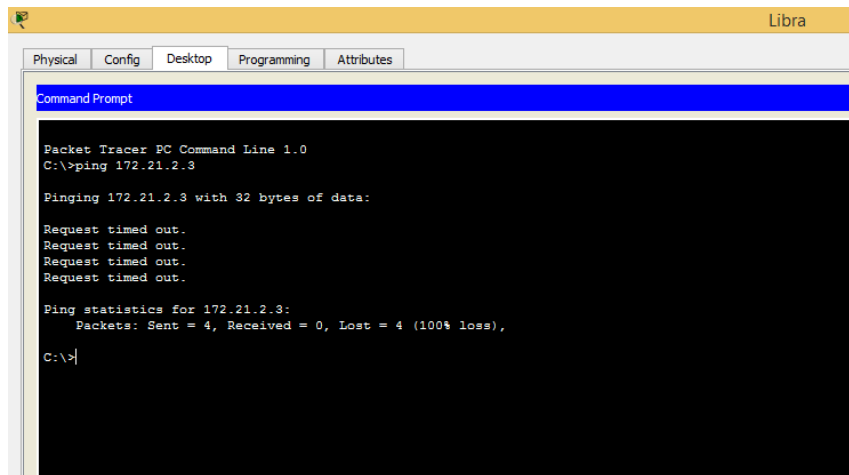
Request timed out.
Request timed out.
Request timed out.
Request timed out.

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

C:\>
```

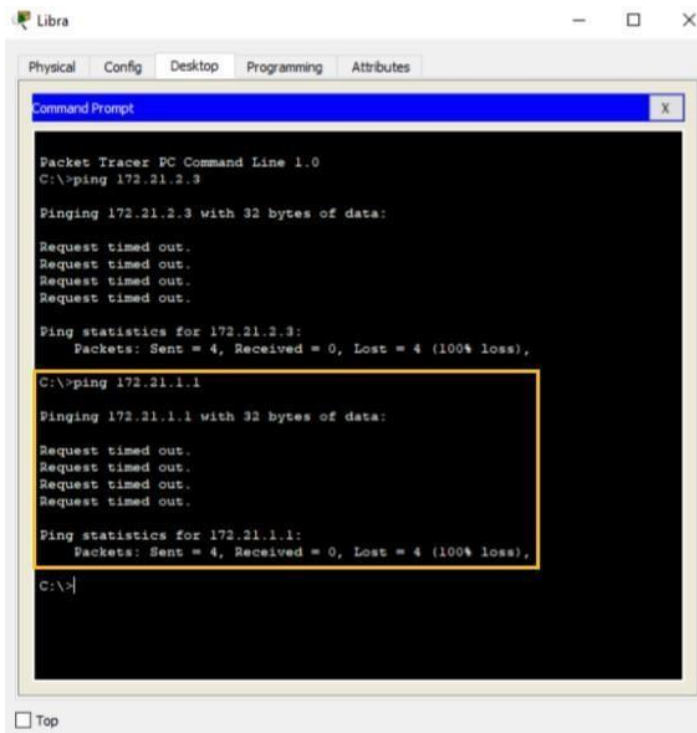
Hasil ping dari PC leo ke PC pisces “Request timed out” karena PC leo dan PC pisces tidak berada dalam satu VLAN dan memiliki network access yang berbeda.

- Melakukan ping dari PC Libra ke Cancer



Hasil ping dari PC libra ke PC cancer “Request timed out” karena PC libra dan PC cancer tidak berada dalam satu VLAN meskipun memiliki network access yang sama.

- Melakukan ping dari PC Libra ke PC Leo



```
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:\>ping 172.21.1.1

Pinging 172.21.1.1 with 32 bytes of data:

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

Ping statistics for 172.21.1.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

Hasil ping dari PC libra ke PC leo “Request timed out” karena PC libra dan PC leo tidak berada dalam satu VLAN meskipun memiliki network access yang sama.