

**LAPORAN PRAKTIKUM JARINGAN KOMPUTER**  
**MODUL 6**  
**“SPANNING TREE PROTOCOL”**



**Oleh:**

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**PRODI : INFORMATIKA**

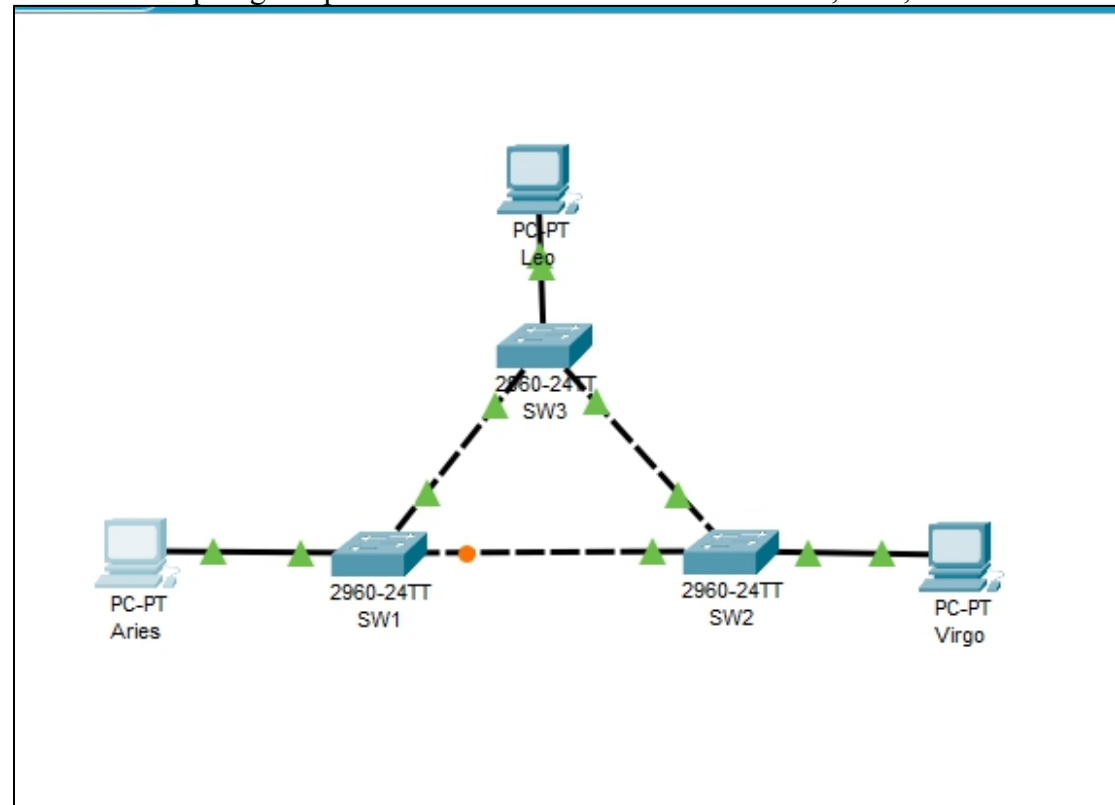
**Fakultas Komunikasi dan Informatika Universitas  
Muhammadiyah Surakarta**

## C. Kegiatan Praktikum

### 1. Kegiatan 1. Topologi 1

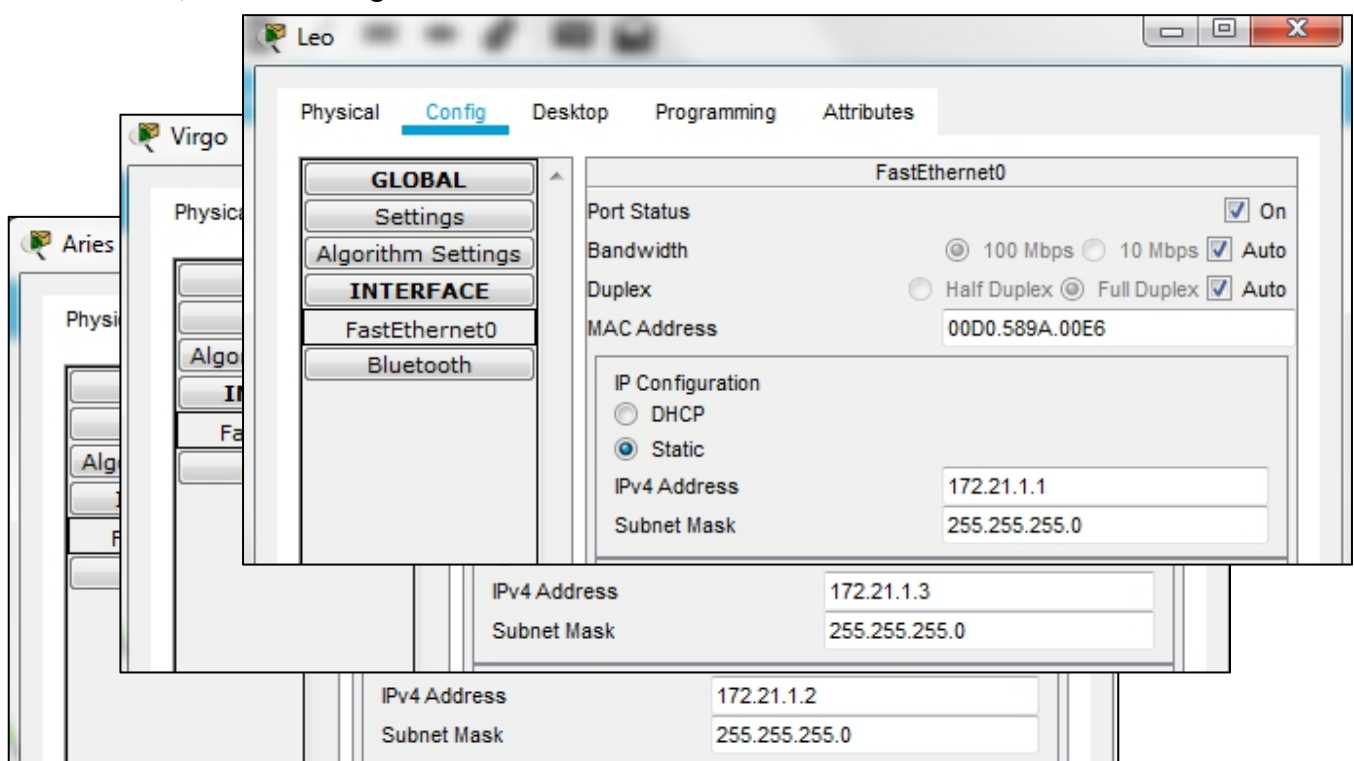
#### Tugas 1A

Membuat “Topologi” seperti di modul dan memberi nama SW1,SW2, dan SW3.



#### Tugas2A

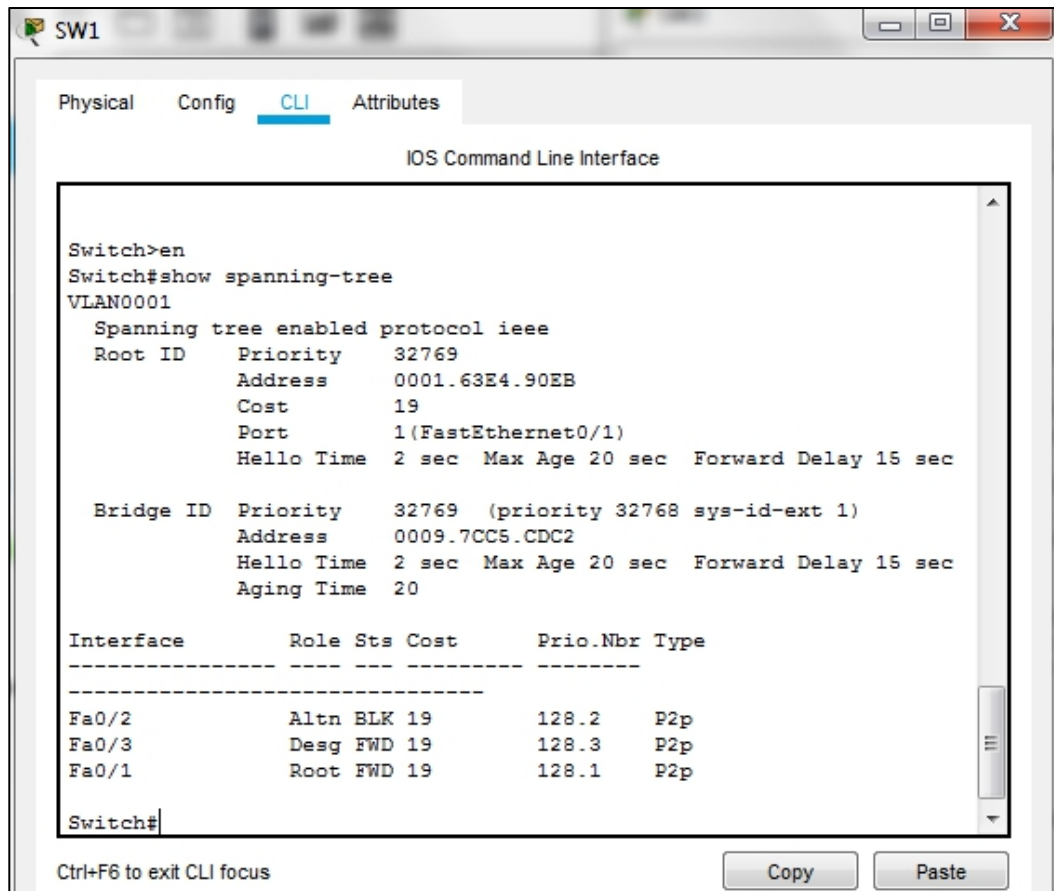
Konfigurasi alamat IP pada masing-masing PC, serta mengganti nama PC menjadi Leo, Aries dan Virgo.



#### Tugas 4A

Melihat status STP pada masing-masing Switch, dengan masuk ke “CLI” > masuk ke mode privileged > ketik “show spanning-tree” pada SW1, SW2, dan SW3.

-SW1



The screenshot shows the CLI of switch SW1. The user has entered the command 'show spanning-tree' for VLAN0001. The output displays the spanning tree enabled protocol IEEE, the root ID (0001.63E4.90EB) with priority 32769, and the bridge ID (0009.7CC5.CDC2) with priority 32769. A table at the bottom shows the roles of interfaces Fa0/2, Fa0/3, and Fa0/1.

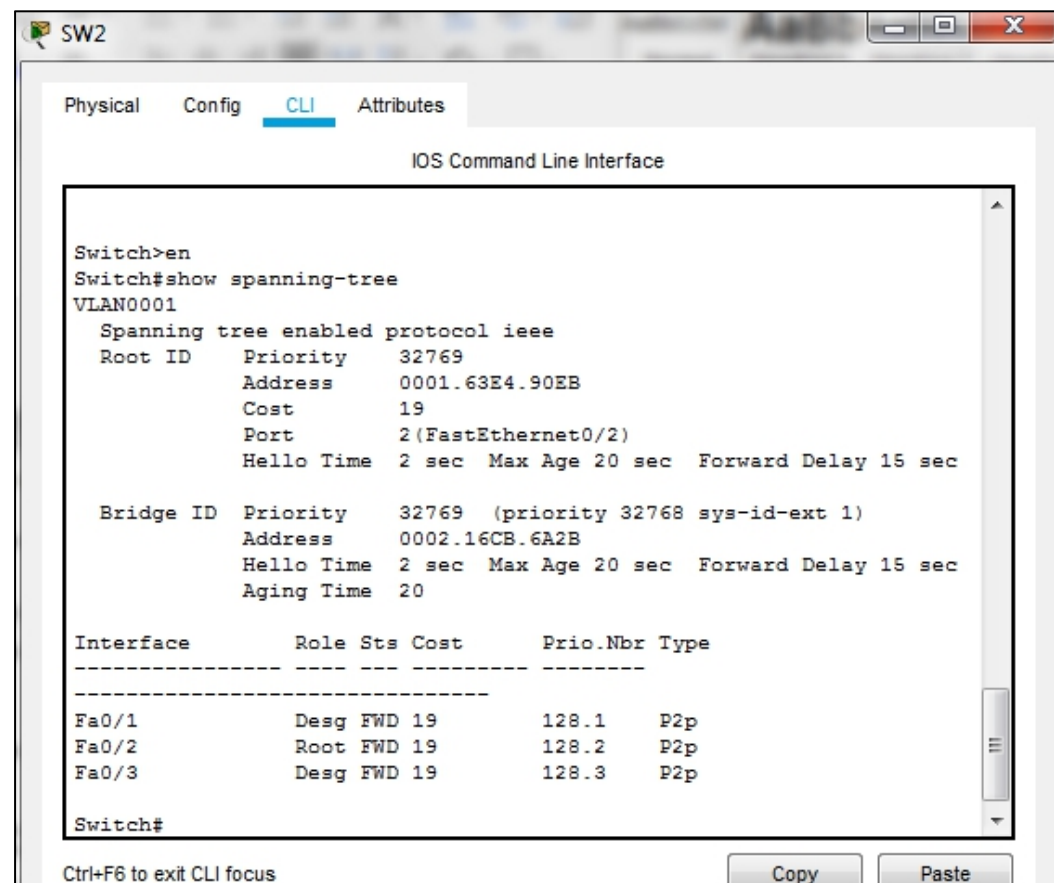
```
Switch>en
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
    Root ID    Priority    32769
              Address     0001.63E4.90EB
              Cost        19
              Port        1 (FastEthernet0/1)
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

    Bridge ID  Priority    32769 (priority 32768 sys-id-ext 1)
              Address     0009.7CC5.CDC2
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
              Aging Time  20

Interface                Role Sts Cost      Prio.Nbr Type
-----
Fa0/2                    Altn BLK 19        128.2    P2p
Fa0/3                    Desg FWD 19        128.3    P2p
Fa0/1                    Root FWD 19        128.1    P2p

Switch#
```

-SW2



The screenshot shows the CLI of switch SW2. The user has entered the command 'show spanning-tree' for VLAN0001. The output displays the spanning tree enabled protocol IEEE, the root ID (0001.63E4.90EB) with priority 32769, and the bridge ID (0002.16CB.6A2B) with priority 32769. A table at the bottom shows the roles of interfaces Fa0/1, Fa0/2, and Fa0/3.

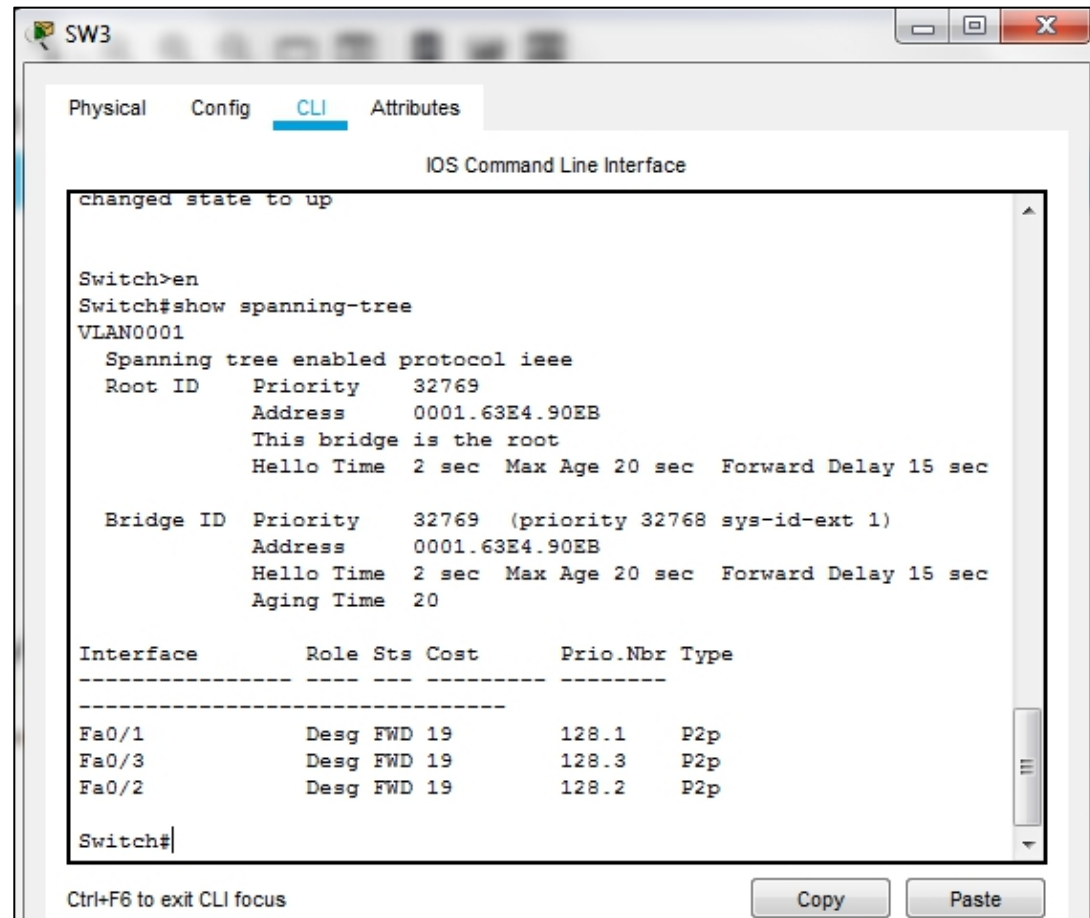
```
Switch>en
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
    Root ID    Priority    32769
              Address     0001.63E4.90EB
              Cost        19
              Port        2 (FastEthernet0/2)
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

    Bridge ID  Priority    32769 (priority 32768 sys-id-ext 1)
              Address     0002.16CB.6A2B
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
              Aging Time  20

Interface                Role Sts Cost      Prio.Nbr Type
-----
Fa0/1                    Desg FWD 19        128.1    P2p
Fa0/2                    Root FWD 19        128.2    P2p
Fa0/3                    Desg FWD 19        128.3    P2p

Switch#
```

-SW3



#### Tugas 4B

Mengisi tabel pada tiap switch:

-SW1

| No | Variabel          | Nilai                  |
|----|-------------------|------------------------|
| 1  | Root ID           | 32769 : 0001.63E4.90EB |
| 2  | Priority          | 32769                  |
| 3  | MAC Adress        | 0009.7CC5.CDC2         |
| 4  | Bridge ID         | 32769 : 0009.7CC5.CDC2 |
| 5  | Cost(0/1;0/2;0/3) | 19/19/19               |
| 6  | Hello Time        | 2 sec                  |
| 7  | Max Age           | 20 sec                 |
| 8  | Forward Delay     | 15 sec                 |

-SW2

| No | Variabel          | Nilai                  |
|----|-------------------|------------------------|
| 1  | Root ID           | 32769 : 0001.63E4.90EB |
| 2  | Priority          | 32769                  |
| 3  | MAC Adress        | 0002.16CB.6A2B         |
| 4  | Bridge ID         | 32769 : 0002.16CB.6A2B |
| 5  | Cost(0/1;0/2;0/3) | 19/19/19               |
| 6  | Hello Time        | 2 sec                  |
| 7  | Max Age           | 20 sec                 |
| 8  | Forward Delay     | 15 sec                 |

-SW3

| No | Variabel          | Nilai                  |
|----|-------------------|------------------------|
| 1  | Root ID           | 32769 : 0001.63E4.90EB |
| 2  | Priority          | 32769                  |
| 3  | MAC Adress        | 0001.63E4.90EB         |
| 4  | Bridge ID         | 32769 : 0001.63E4.90EB |
| 5  | Cost(0/1;0/2;0/3) | 19/19/19               |
| 6  | Hello Time        | 2 sec                  |
| 7  | Max Age           | 20 sec                 |
| 8  | Forward Delay     | 15 sec                 |

#### Tugas 4C:

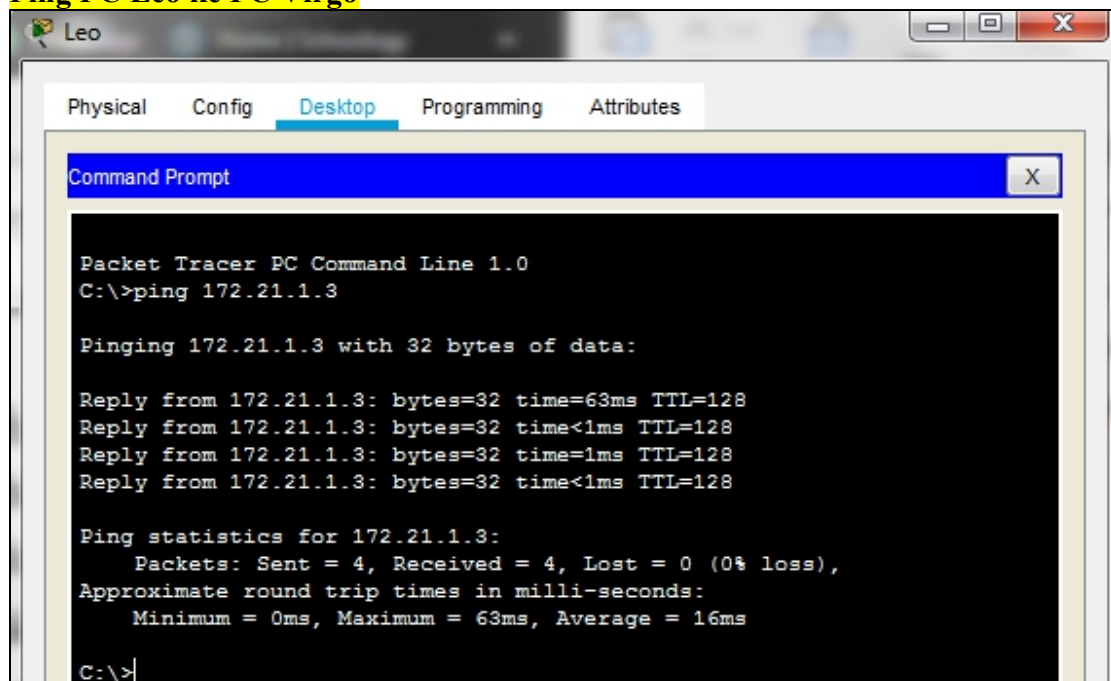
- Root bridge : SW3 (dapat dilihat "*this bridge is the root*").
- Designated bride : SW2 (dapat dilihat dari role "*Desg,Root,Desg*").
- Root port : SW1(Fa0/1) dan SW2(Fa0/2).
- Designated port : SW1(Fa0/3), SW2(Fa0/1;Fa0/3) dan SW3(Fa0/1;Fa0/2;Fa0/3).

#### Tugas 4D:

- Keadaan forwarding : SW1(Fa0/1;Fa0/3), SW2(Fa0/1;Fa0/2;Fa0/3). dan SW3(Fa0/1;Fa0/2;Fa0/3) (dapat dilihat dari status "*FWD*").
- Keadaan blocking : SW1(Fa0/2) -> (dapat dilihat dari status "*BLK*").

#### Tugas 5A:

##### Ping PC Leo ke PC Virgo



```
Leo
Physical Config Desktop Programming Attributes
Command Prompt
Packet Tracer PC Command Line 1.0
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=63ms 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

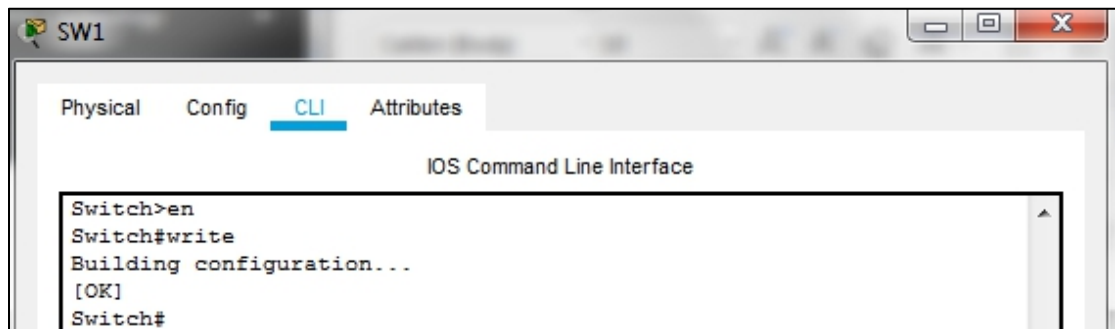
Ping statistics for 172.21.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 63ms, Average = 16ms

C:\>
```

Masuk ke PC > Desktop > Command Prompt, lalu ketik "ping 172.21.1.3".

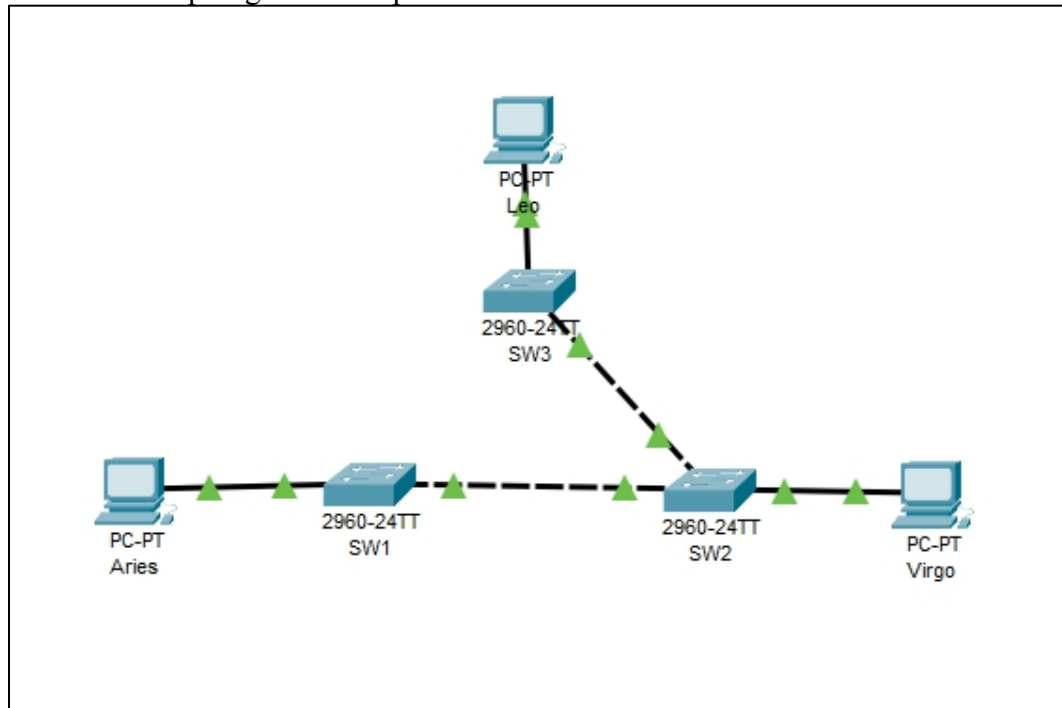
## Tugas 6A

Lakukan perintah pada setiap Switch:  
Untuk menyimpan konfigurasi jaringan



## 2. Kegiatan 2. Topologi 2

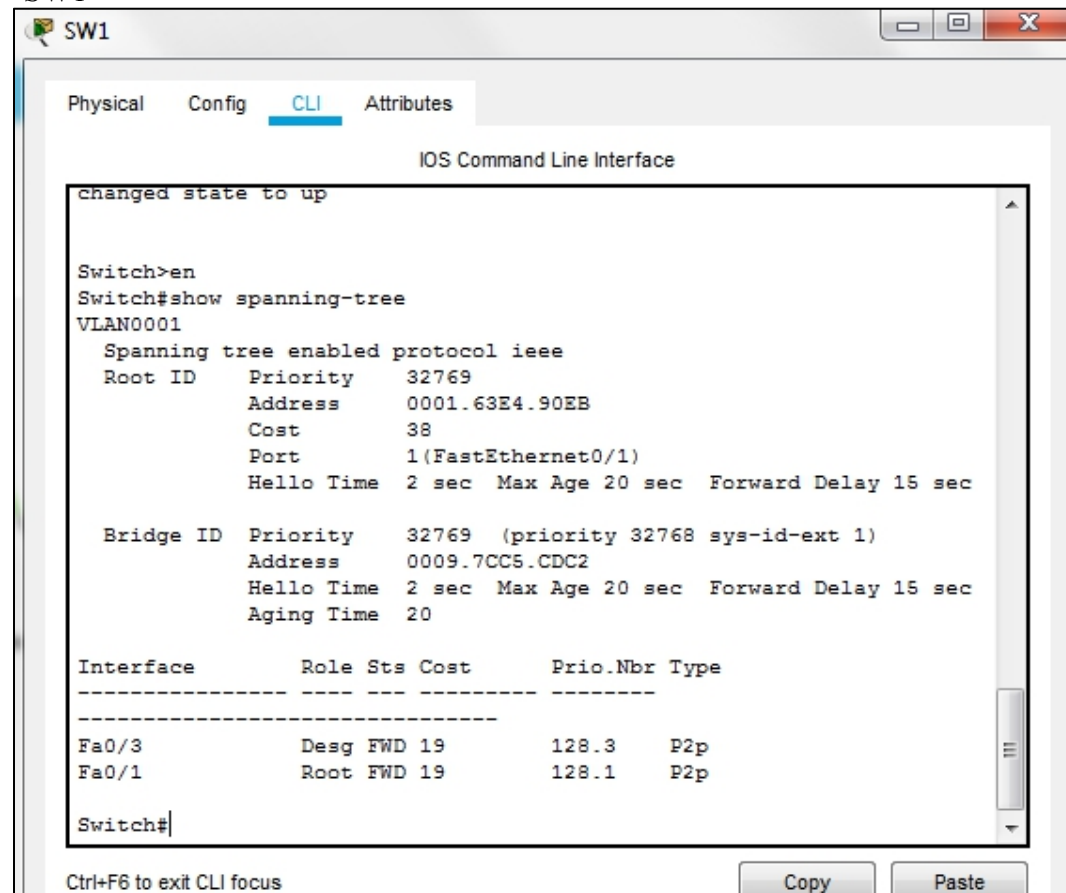
Membuat "Topologi" sama seperti di modul.



### Tugas 9A

Melihat status STP pada masing-masing Switch, dengan masuk ke “CLI” > masuk ke mode privileged > ketik show spanning-tree pada SW1, SW2, dan SW3.

-SW1



The screenshot shows a network switch configuration window for SW1. The 'CLI' tab is selected, displaying the 'IOS Command Line Interface'. The command 'show spanning-tree' has been executed for VLAN0001, showing the following output:

```
changed state to up

Switch>en
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0001.63E4.90EB
             Cost        38
             Port        1(FastEthernet0/1)
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    32769 (priority 32768 sys-id-ext 1)
             Address     0009.7CC5.CDC2
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
             Aging Time  20

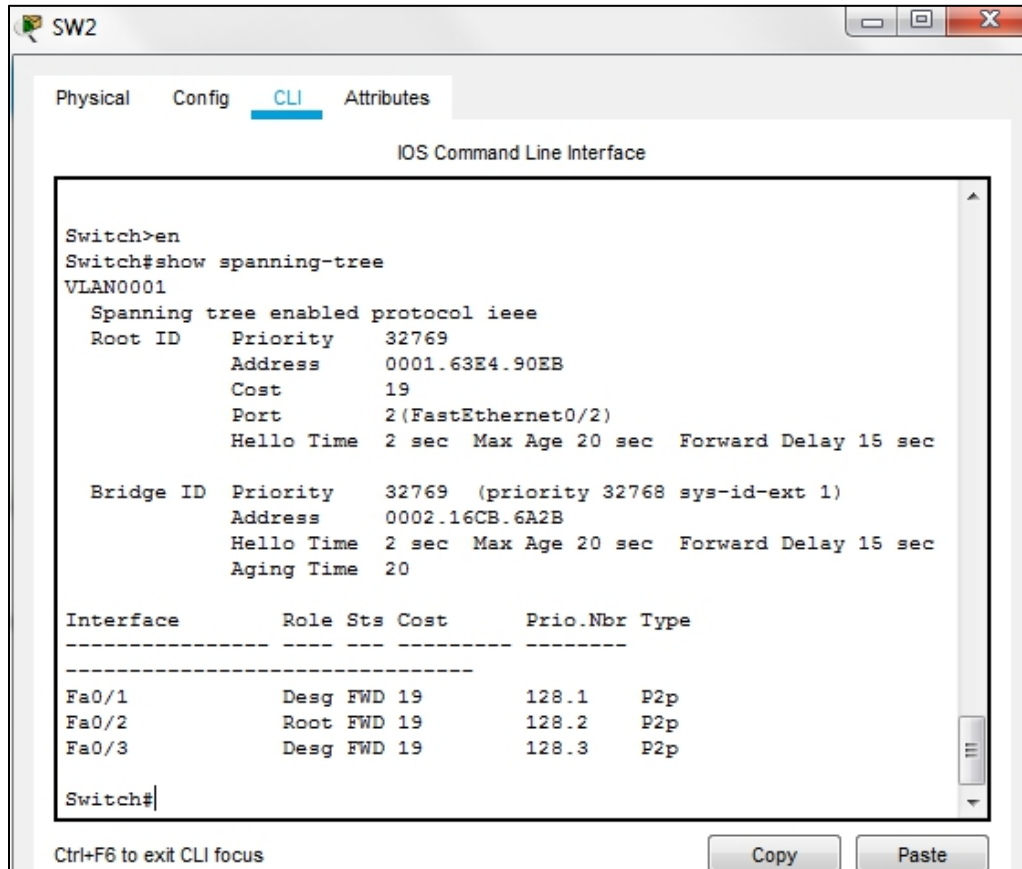
Interface      Role Sts Cost      Prio.Nbr Type
-----
Fa0/3          Desg FWD 19        128.3   P2p
Fa0/1          Root FWD 19        128.1   P2p

Switch#
```

At the bottom of the window, there is a status bar with 'Ctrl+F6 to exit CLI focus' and buttons for 'Copy' and 'Paste'.



-SW2



SW2

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch>en
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
    Root ID    Priority    32769
              Address     0001.63E4.90EB
              Cost        19
              Port        2(FastEthernet0/2)
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

    Bridge ID  Priority    32769  (priority 32768 sys-id-ext 1)
              Address     0002.16CB.6A2B
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
              Aging Time  20

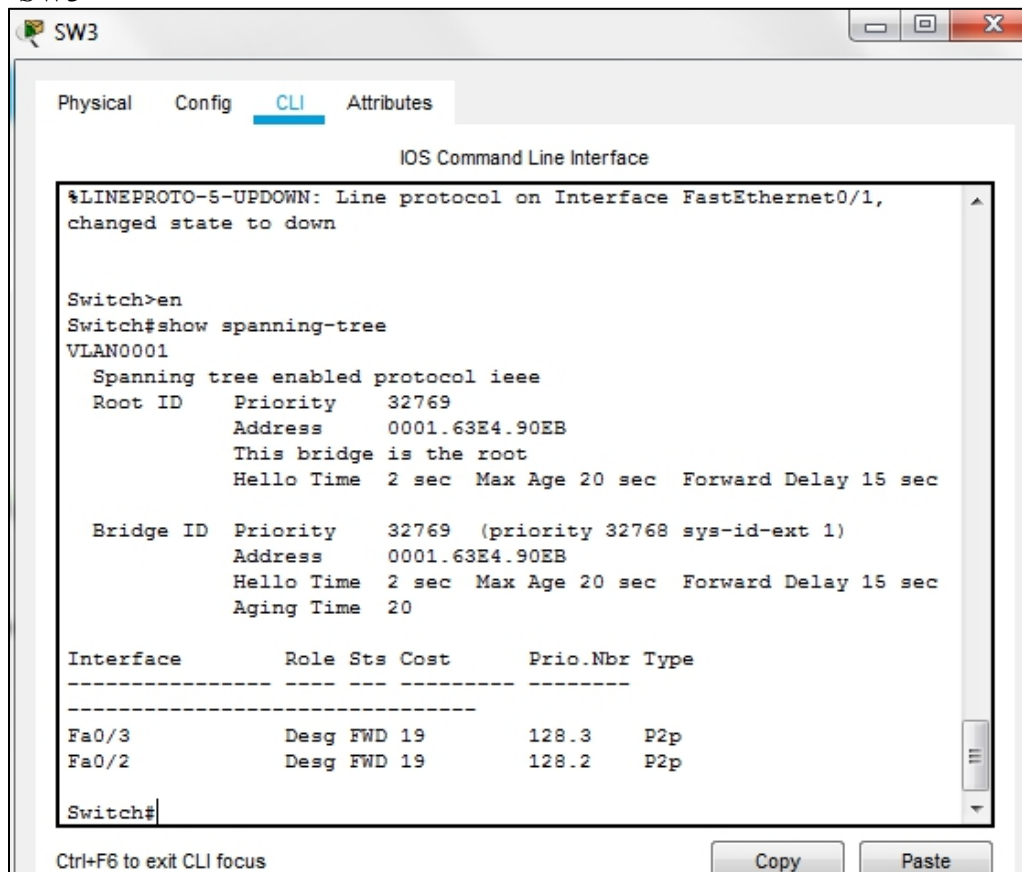
Interface                Role Sts Cost      Prio.Nbr Type
-----
Fa0/1                    Desg FWD 19        128.1    P2p
Fa0/2                    Root FWD 19        128.2    P2p
Fa0/3                    Desg FWD 19        128.3    P2p

Switch#
```

Ctrl+F6 to exit CLI focus

Copy Paste

-SW3



SW3

Physical Config **CLI** Attributes

IOS Command Line Interface

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to down

Switch>en
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
    Root ID    Priority    32769
              Address     0001.63E4.90EB
              This bridge is the root
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

    Bridge ID  Priority    32769  (priority 32768 sys-id-ext 1)
              Address     0001.63E4.90EB
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
              Aging Time  20

Interface                Role Sts Cost      Prio.Nbr Type
-----
Fa0/3                    Desg FWD 19        128.3    P2p
Fa0/2                    Desg FWD 19        128.2    P2p

Switch#
```

Ctrl+F6 to exit CLI focus

Copy Paste



Mengisi tabel pada masing-masing switch:

-SW1

| No | Variabel      | Nilai                  |
|----|---------------|------------------------|
| 1  | Root ID       | 32769 : 0001.63E4.90EB |
| 2  | Priority      | 32769                  |
| 3  | MAC Adress    | 0009.7CC5.CDC2         |
| 4  | Bridge ID     | 32769 : 0009.7CC5.CDC2 |
| 5  | Cost(0/1;0/3) | 19/19                  |
| 6  | Hello Time    | 2 sec                  |
| 7  | Max Age       | 20 sec                 |
| 8  | Forward Delay | 15 sec                 |

-SW2

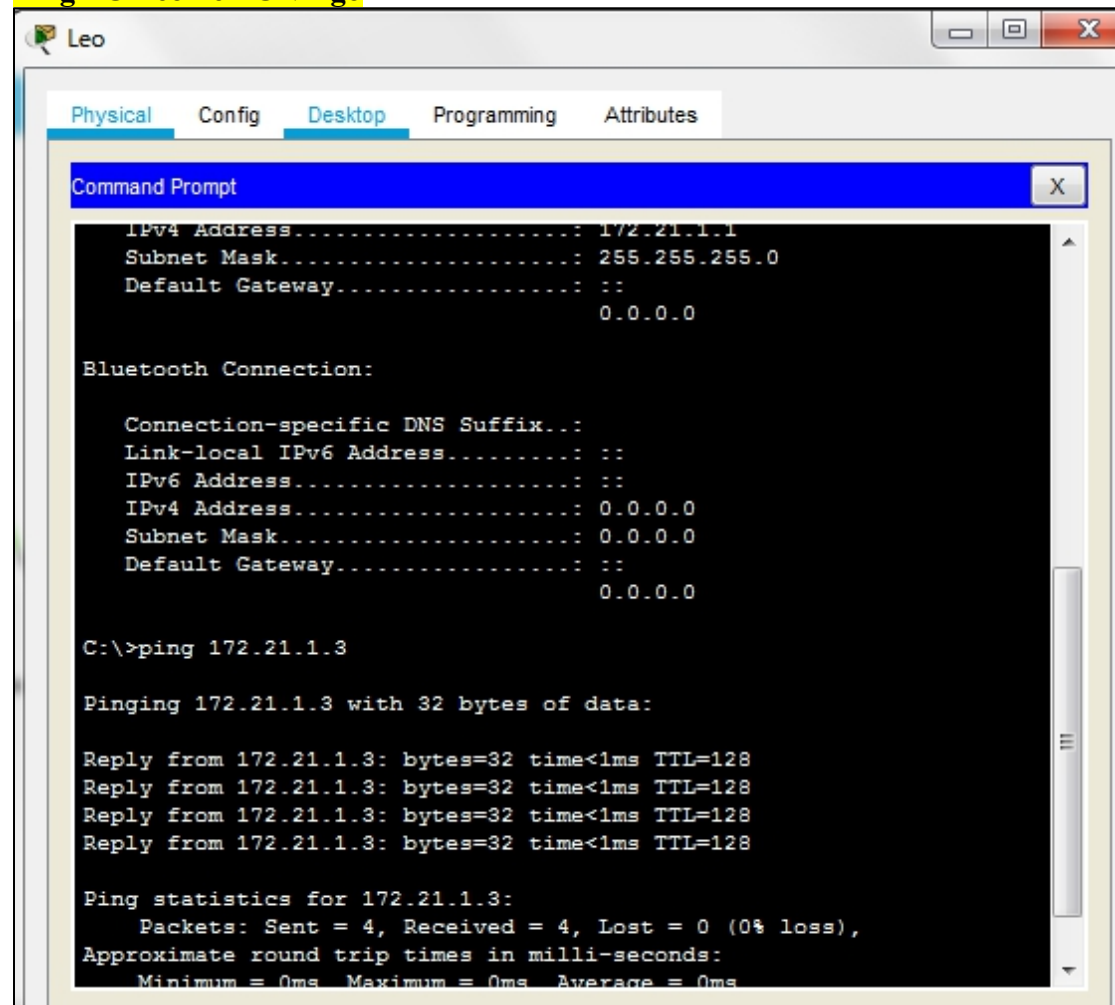
| No | Variabel          | Nilai                  |
|----|-------------------|------------------------|
| 1  | Root ID           | 32769 : 0001.63E4.90EB |
| 2  | Priority          | 32769                  |
| 3  | MAC Adress        | 0002.16CB.6A2B         |
| 4  | Bridge ID         | 32769 : 0002.16CB.6A2B |
| 5  | Cost(0/1;0/2;0/3) | 19/19/19               |
| 6  | Hello Time        | 2 sec                  |
| 7  | Max Age           | 20 sec                 |
| 8  | Forward Delay     | 15 sec                 |

-SW3

| No | Variabel      | Nilai                  |
|----|---------------|------------------------|
| 1  | Root ID       | 32769 : 0001.63E4.90EB |
| 2  | Priority      | 32769                  |
| 3  | MAC Adress    | 0001.63E4.90EB         |
| 4  | Bridge ID     | 32769 : 0001.63E4.90EB |
| 5  | Cost(0/2;0/3) | 19/19                  |
| 6  | Hello Time    | 2 sec                  |
| 7  | Max Age       | 20 sec                 |
| 8  | Forward Delay | 15 sec                 |

- Root bridge : SW3 (dapat dilihat "*this bridge is the root*").
- Designated bride : SW2 (dapat dilihat dari role "*Desg,Root.Desg*").
- Root port : SW1(Fa0/1) dan SW2(Fa0/2).
- Designated port : SW1(Fa0/3), SW2(Fa0/1;Fa0/3) dan SW3(Fa0/2;Fa0/3).
- Keadaan forwading : SW1(Fa0/1;Fa0/3), SW2(Fa0/1;Fa0/2;Fa0/3). dan SW3(Fa0/2;Fa0/3) (dapat dilihat dari status "*FWD*").
- Keadaan blocking : None (Tidak ada).

**Tugas :**  
**Ping PC Leo ke PC Virgo**



Masuk ke PC > Desktop > Command Promp, lalu ketik “ping 172.21.3”

**Tugas**

Lakukan perintah pada setiap Switch:  
Untuk menyimpan konfigurasi jaringan

