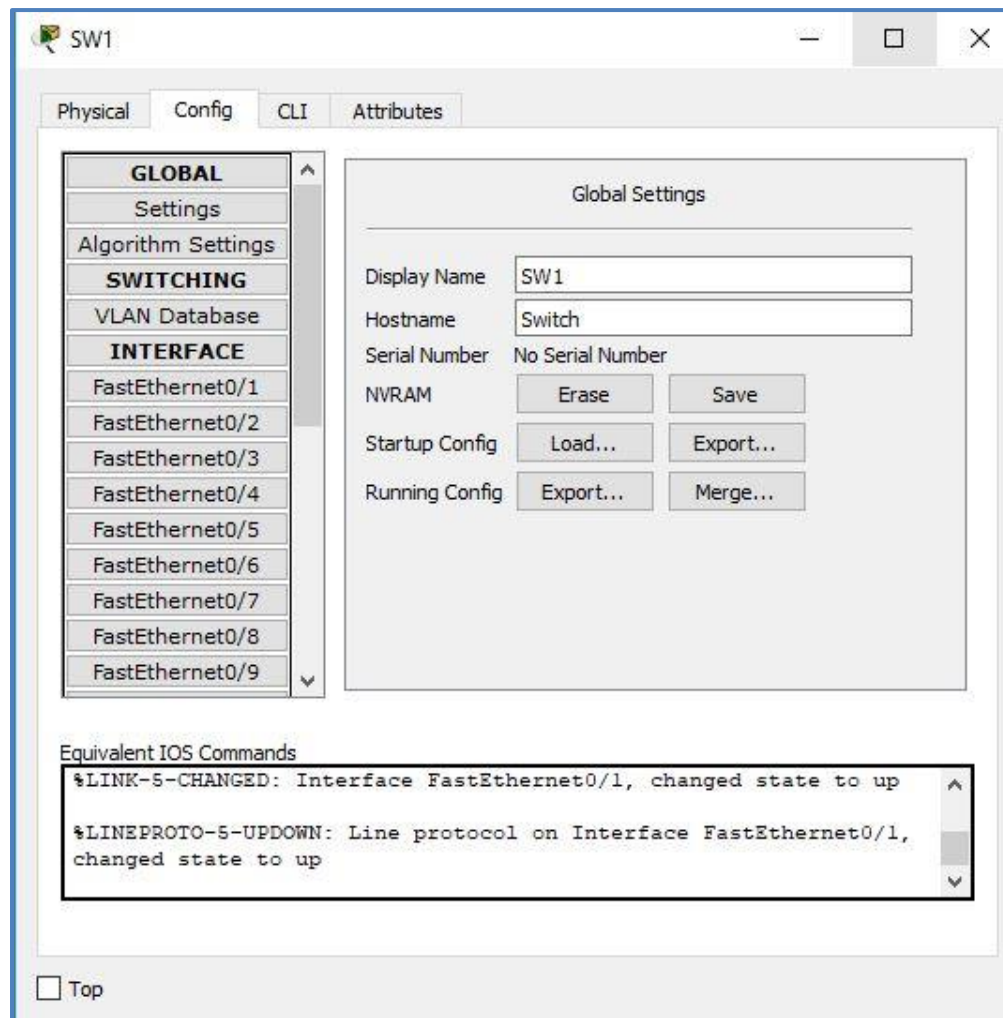


## TUGAS PRAKTIKUM JARKOM

### MODUL VI

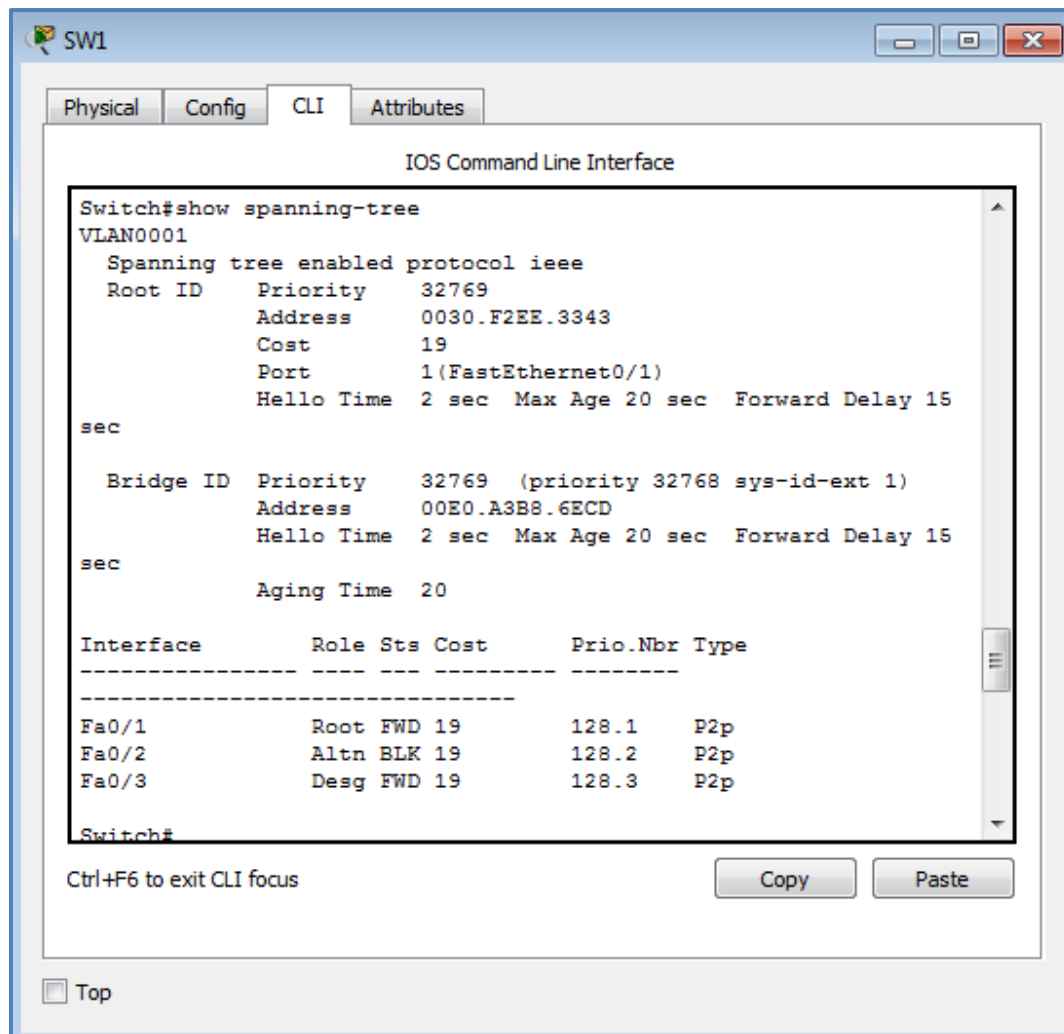
### SPANNING TREE PROTOCOL

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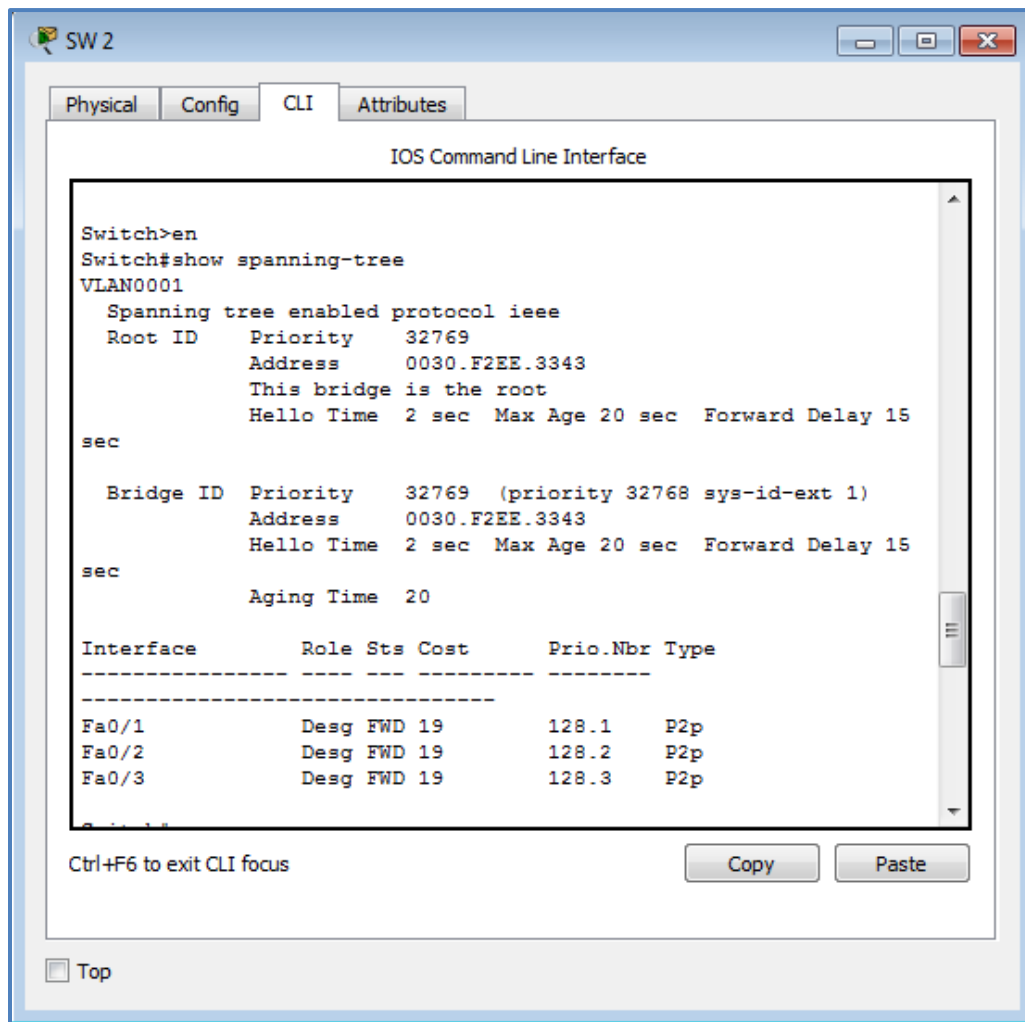
Tugas 4A : Pada kondisi default, capture masing-masing tampilan status STP switch (SW1,SW2, dan SW3)  
a. SW 1

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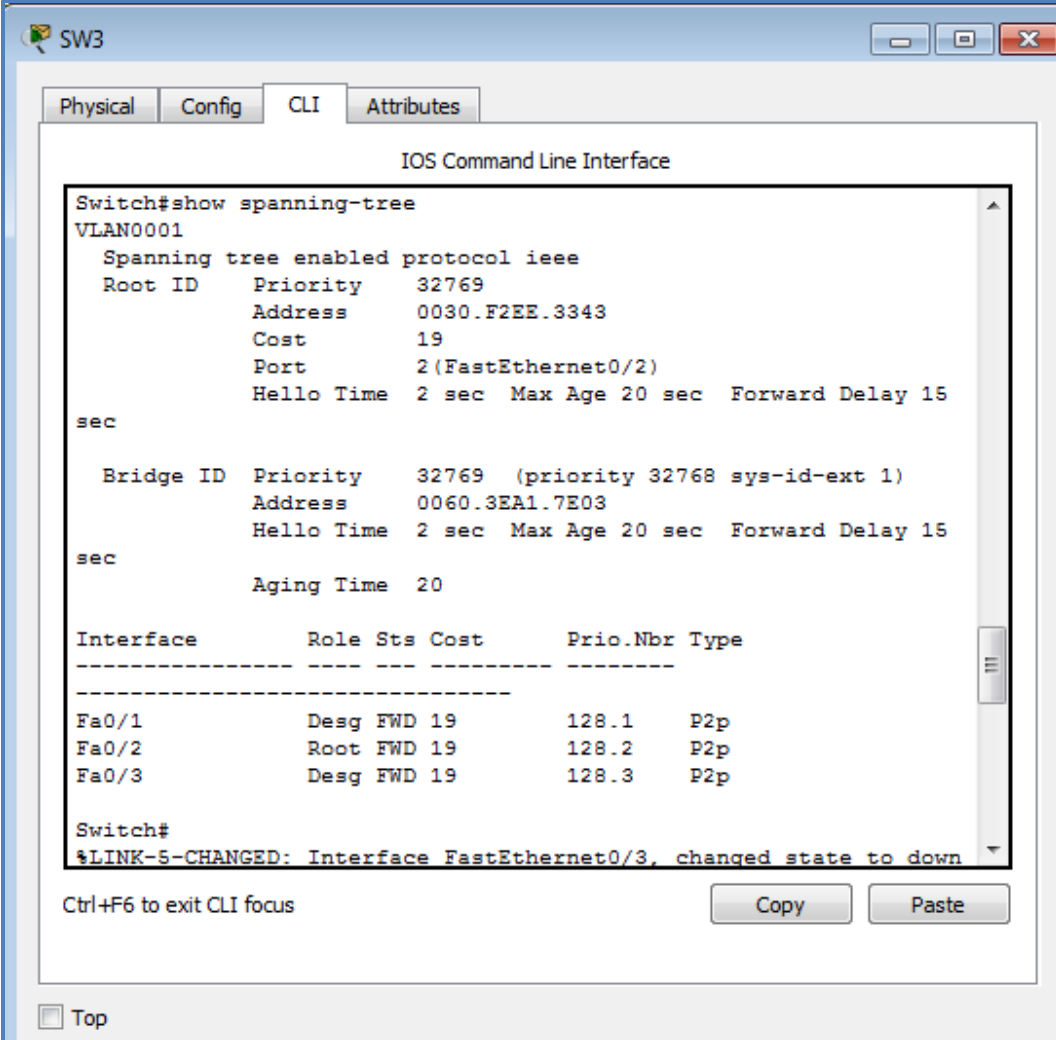
b. SW 2

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c. SW 3

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The screenshot shows a network switch CLI window titled "SW3". The window has tabs for "Physical", "Config", "CLI", and "Attributes". The "CLI" tab is active, displaying the "IOS Command Line Interface". The command "Switch#show spanning-tree" has been entered, and the output is shown. The output includes information for VLAN0001, the spanning tree enabled protocol (IEEE), the root ID (32769), the root address (0030.F2EE.3343), the root cost (19), the root port (2), and the root hello time (2 sec). It also shows the bridge ID (32769), the bridge address (0060.3EA1.7E03), the bridge hello time (2 sec), and the aging time (20). A table of interface roles and costs is displayed, showing Fa0/1 as Designated (FWD) with a cost of 19, Fa0/2 as Root (FWD) with a cost of 19, and Fa0/3 as Designated (FWD) with a cost of 19. The interface Fa0/3 is shown as changed to down.

```
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0030.F2EE.3343
             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     0060.3EA1.7E03
             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#
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to down
```

Ctrl+F6 to exit CLI focus

Copy Paste

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Tugas 4B :Untuk tiap-tiap switch, isikan tabel berikut ini :

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- SW 1

| No | Variabel          | Nilai                            |  | Interface | Role | Status |
|----|-------------------|----------------------------------|--|-----------|------|--------|
| 1. | Root ID           | 32769 : 0030.F2EE.3343           |  | Fa 0/1    | Root | FWD    |
| 2. | Priorty           | 32769                            |  | Fa 0/2    | Altn | BLK    |
| 3. | MAC Address       | 00E0.A3B8.6ECD                   |  | Fa 0/3    | Desg | FWD    |
| 4. | Bridge ID         | 32769 : 00E0. A3B8.6ECD          |  |           |      |        |
| 5. | Cost(0/1:0/2:0/3) | 0/1 = 19<br>0/2 = 19<br>0/3 = 19 |  |           |      |        |
| 6. | Hello Time        | 2 sec                            |  |           |      |        |
| 7. | Max Age           | 20 sec                           |  |           |      |        |
| 8. | Forward Delay     | 15 sec                           |  |           |      |        |

- SW2

| No | Variabel          | Nilai                            |  | Interface | Role | Status |
|----|-------------------|----------------------------------|--|-----------|------|--------|
| 1. | Root ID           | 32769 : 0030.F2EE.3343           |  | Fa 0/1    | Desg | FWD    |
| 2. | Priorty           | 32769                            |  | Fa 0/2    | Desg | FWD    |
| 3. | MAC Address       | 0030.F2EE.3343                   |  | Fa 0/3    | Desg | FWD    |
| 4. | Bridge ID         | 32769 : 0030.F2EE.3343           |  |           |      |        |
| 5. | Cost(0/1:0/2:0/3) | 0/1 = 19<br>0/2 = 19<br>0/3 = 19 |  |           |      |        |
| 6. | Hello Time        | 2 sec                            |  |           |      |        |
| 7. | Max Age           | 20 sec                           |  |           |      |        |
| 8. | Forward Delay     | 15 sec                           |  |           |      |        |

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- SW 3

| No | Variabel          | Nilai                            | Interface | Role | Status |
|----|-------------------|----------------------------------|-----------|------|--------|
| 1. | Root ID           | 32769 : 0030.F2EE.3343           | Fa 0/1    | Desg | FWD    |
| 2. | Priorty           | 32769                            | Fa 0/2    | Root | FWD    |
| 3. | MAC Address       | 0060.3EA1.7E03                   | Fa 0/3    | Desg | FWD    |
| 4. | Bridge ID         | 32769 : 0060.3EA1.7E03           |           |      |        |
| 5. | Cost(0/1:0/2:0/3) | 0/1 = 19<br>0/2 = 19<br>0/3 = 19 |           |      |        |
| 6. | Hello Time        | 2 sec                            |           |      |        |
| 7. | Max Age           | 20 sec                           |           |      |        |
| 8. | Forward Delay     | 15 sec                           |           |      |        |

Tugas 4C : Pada kondisi default tersebut, switch dan port mana saja yang :

- Menjadi *root bridge* : SW 2
- Menjadi *designated bridge* : SW 1
- Menjadi *root port* : SW 1 Fa 0/1 dan SW 3 Fa 0/3
- Menjadi *designated port* : SW 1 Fa 0/3 , SW 2 (Fa 0/1 ;0/2;0/3) dan SW 3 (Fa 0/1, Fa 0/3)

Tugas 4D : Pada kondisi default tersebut, dan port mana saja yang :

- Berada pada keadaan *forwarding* : SW 1 (Fa 0/1;0/3), SW 2 (Fa 0/1;0/2;0/3) SW 3 (Fa 0/1;0/2;0/3)
- Berada pada keadaan *blocking* : SW 1 (Fa 0/2)

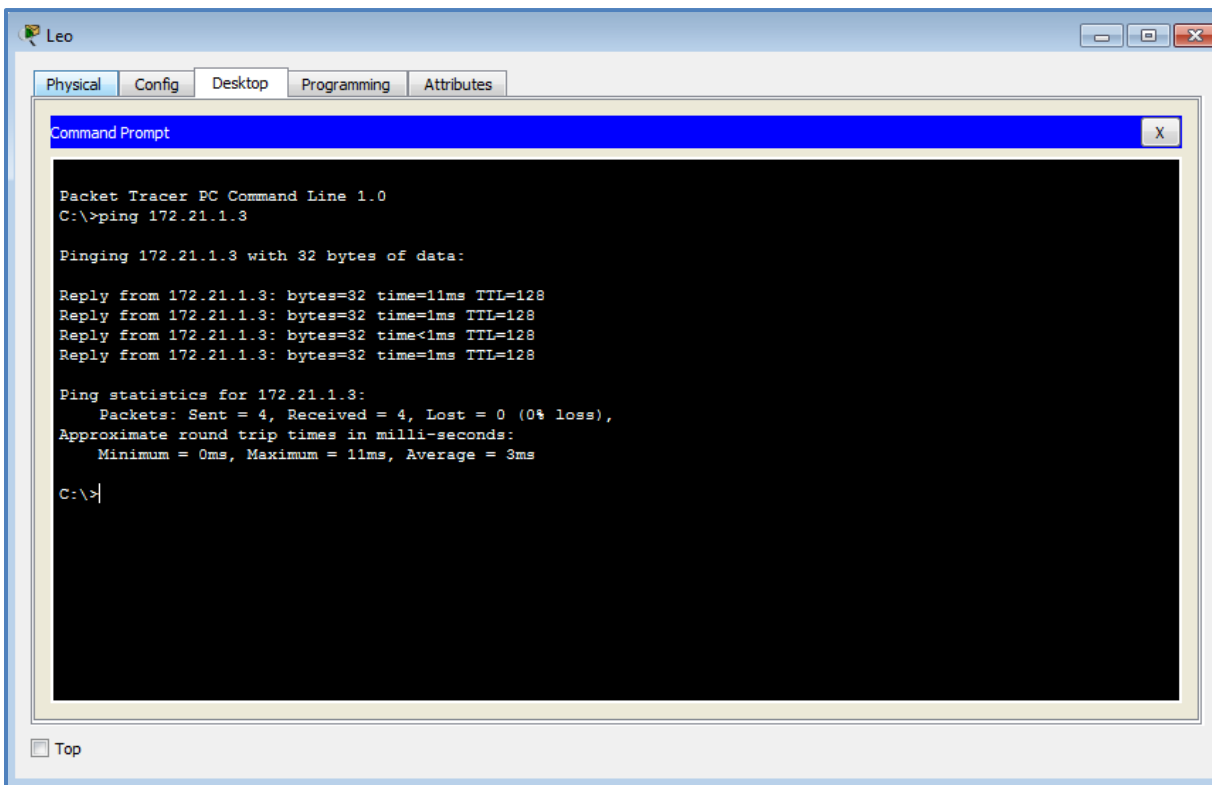
Tugas 5A : Tulis langkah untuk melakukan perintah ping.

Jawab : Pilih salah satu PC kemudian klik PC tersebut, selanjutnya pilih desktop kemudian pilih command prompt lalu ketik *ping 172.21.1.3* (sesuai dengan ip pada pc yang ingin di ping)

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The screenshot shows a Packet Tracer PC Command Line window titled "Leo". The window has tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes". The "Desktop" tab is active, displaying a "Command Prompt" window. The command prompt shows the execution of the command "C:\>ping 172.21.1.3". The output indicates a successful ping with 32 bytes of data, 4 packets sent and received, and a 0% loss rate. The round trip times are listed as Minimum = 0ms, Maximum = 11ms, and Average = 3ms. The prompt ends with "C:\>".

```
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=11ms 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 = 11ms, Average = 3ms

C:\>
```

Tugas 6A : Tulis Langkah untuk menyimpan konfigurasi jaringan.

Jawab : Klik switch kemudian pilih CLI masuk ke mode user/privillage kemudian tulis

Switich#copy running-config startup-config

Lalu enter.

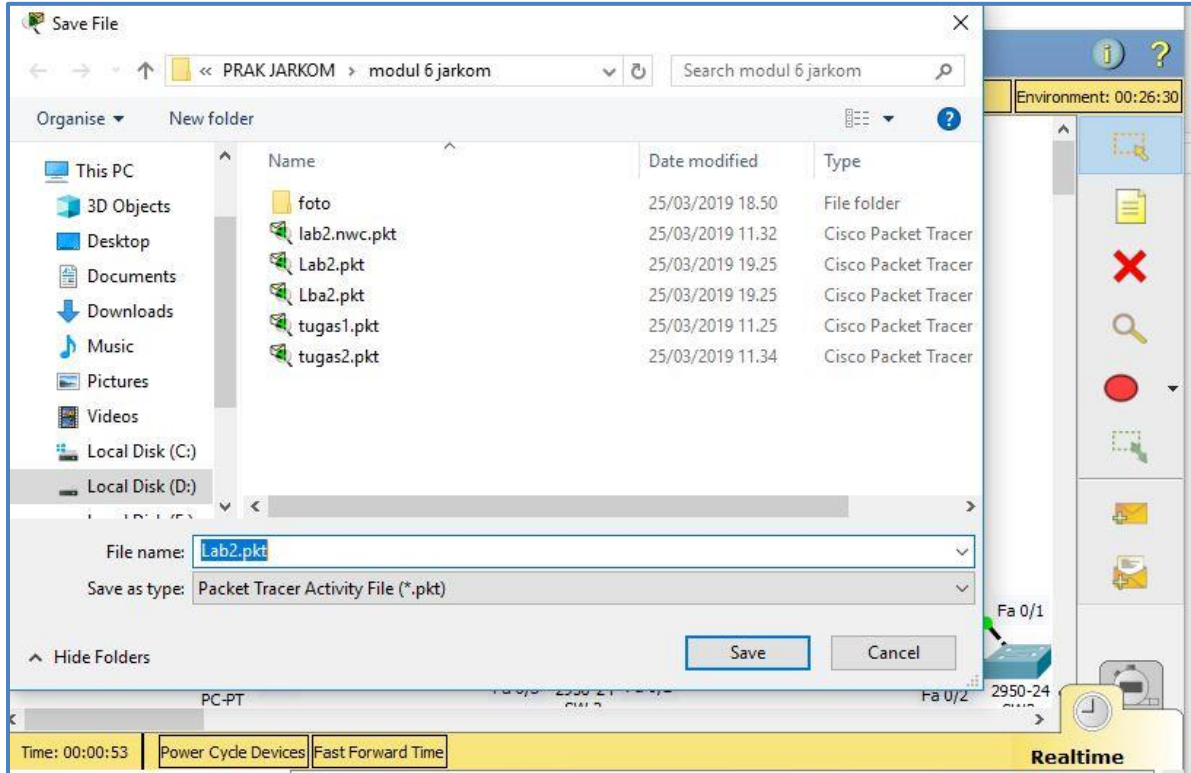
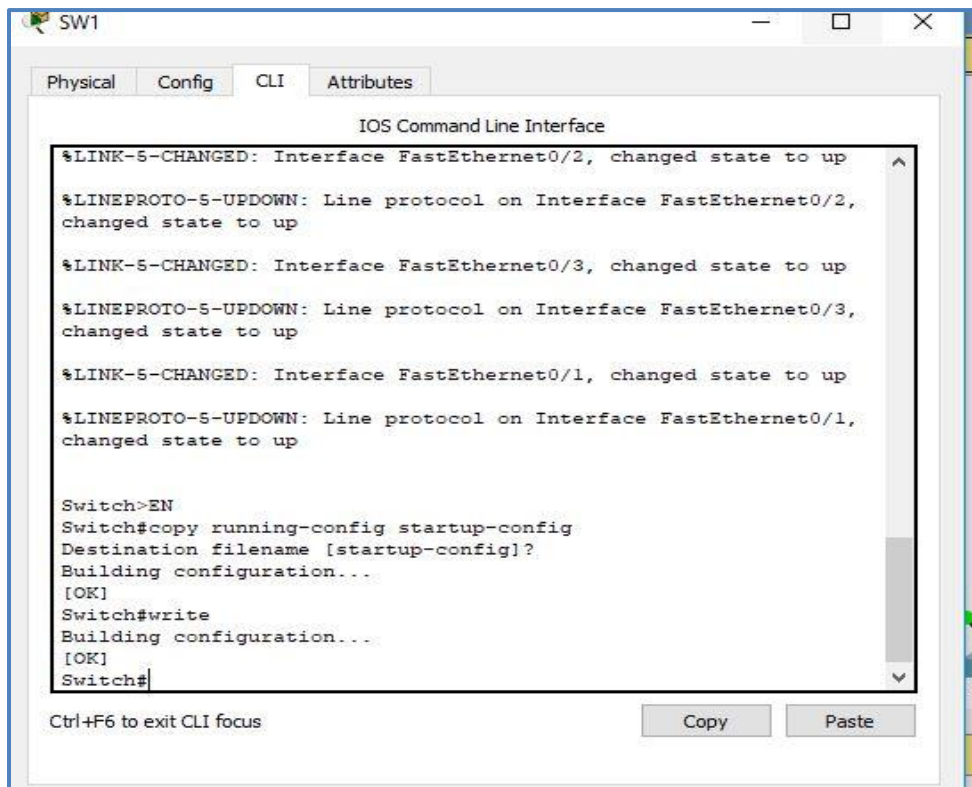
Simpan konfigurasi jaringan dengan nama lab2.pkt



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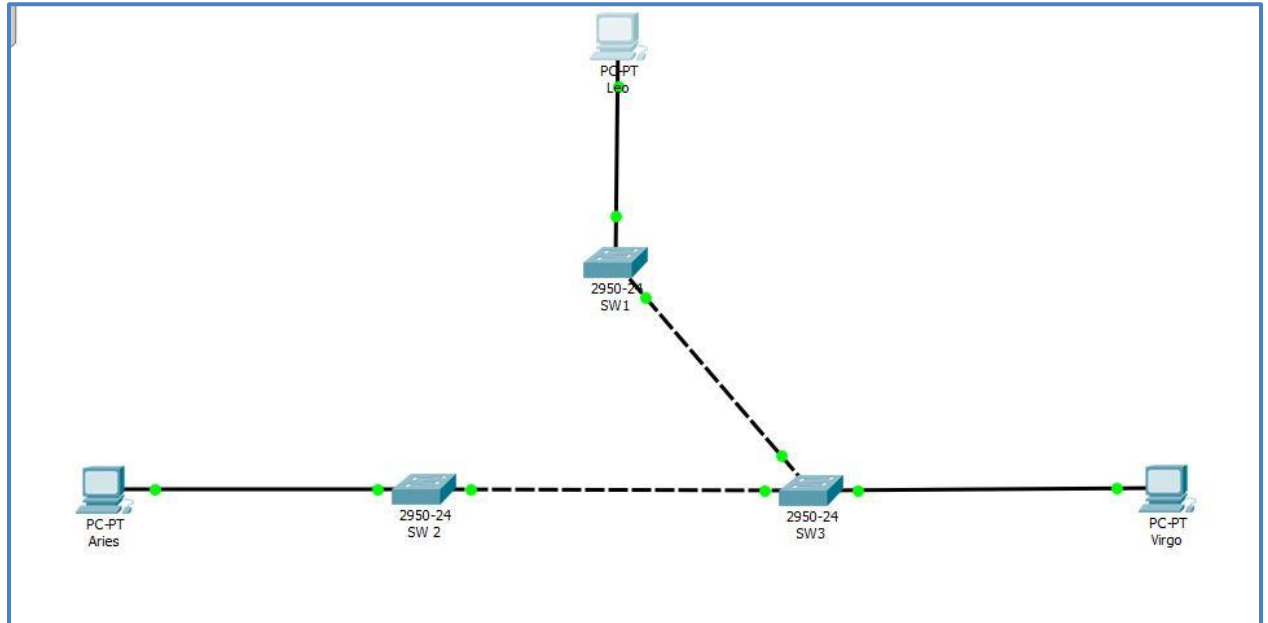
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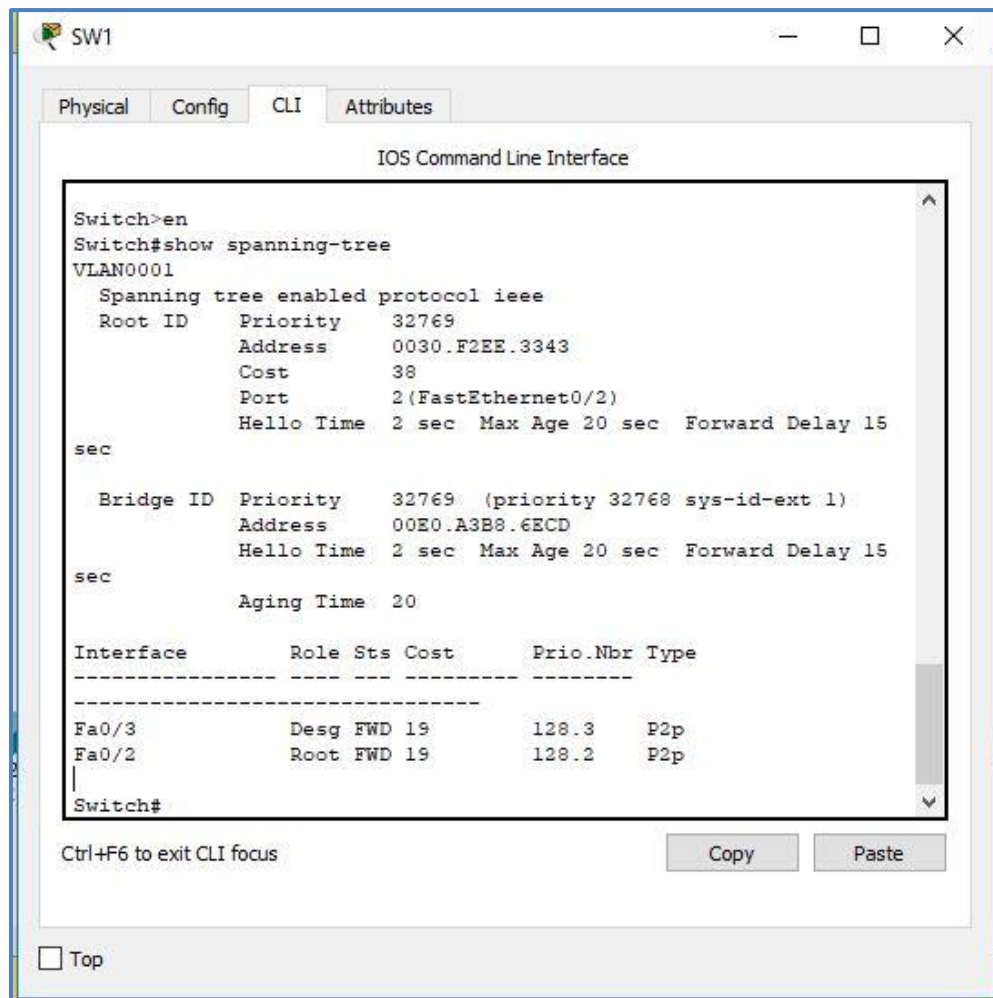
## **Kegiatan2. Topologi 2**

Tugas 9A : Kerjakan tugas seperti pada tugas langkah lab.4 .



1. Melihat status STP pada masing-masing switch.
  - SW 1

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The screenshot shows a network switch window titled 'SW1' with tabs for Physical, Config, CLI, and Attributes. The CLI tab is active, displaying the 'IOS Command Line Interface'. The user has entered the command 'show spanning-tree' in VLAN0001. The output shows the spanning tree is enabled with protocol IEEE. The root ID is 32769 with address 0030.F2EE.3343, cost 38, and port 2 (FastEthernet0/2). The bridge ID is 32769 (priority 32768 sys-id-ext 1) with address 00E0.A3B8.6ECD. The aging time is 20 seconds. A table shows the roles of interfaces Fa0/3 and Fa0/2.

```
Switch>en
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0030.F2EE.3343
             Cost        38
             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     00E0.A3B8.6ECD
             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        Root FWD 19        128.2    P2p
Switch#
```

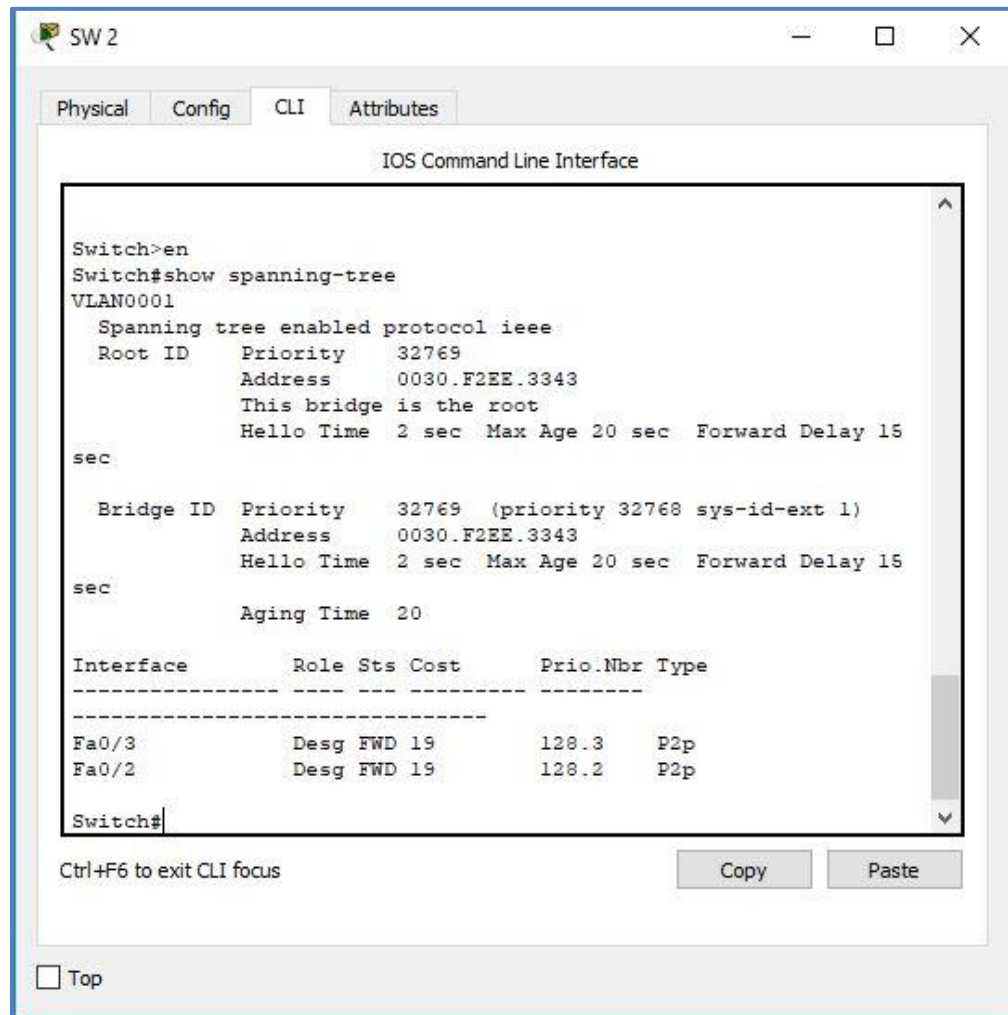
Ctrl+F6 to exit CLI focus

Copy Paste

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- SW 2



The screenshot shows a network switch configuration window titled "SW 2" with tabs for Physical, Config, CLI, and Attributes. The CLI tab is active, displaying the "IOS Command Line Interface". The user has entered the command "show spanning-tree" in VLAN0001. The output shows that spanning tree is enabled using the IEEE protocol, with the switch acting as the root. The root ID is 32769, with an address of 0030.F2EE.3343. The hello time is 2 seconds, max age is 20 seconds, and forward delay is 15 seconds. The bridge ID is also 32769. The aging time is 20 seconds. A table lists the interfaces Fa0/3 and Fa0/2, both in the Designated Forwarding (Desg FWD) state with a cost of 19. The priority for Fa0/3 is 128.3 and for Fa0/2 is 128.2, both connected via P2P links.

```
Switch>en
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0030.F2EE.3343
             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     0030.F2EE.3343
             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#
```

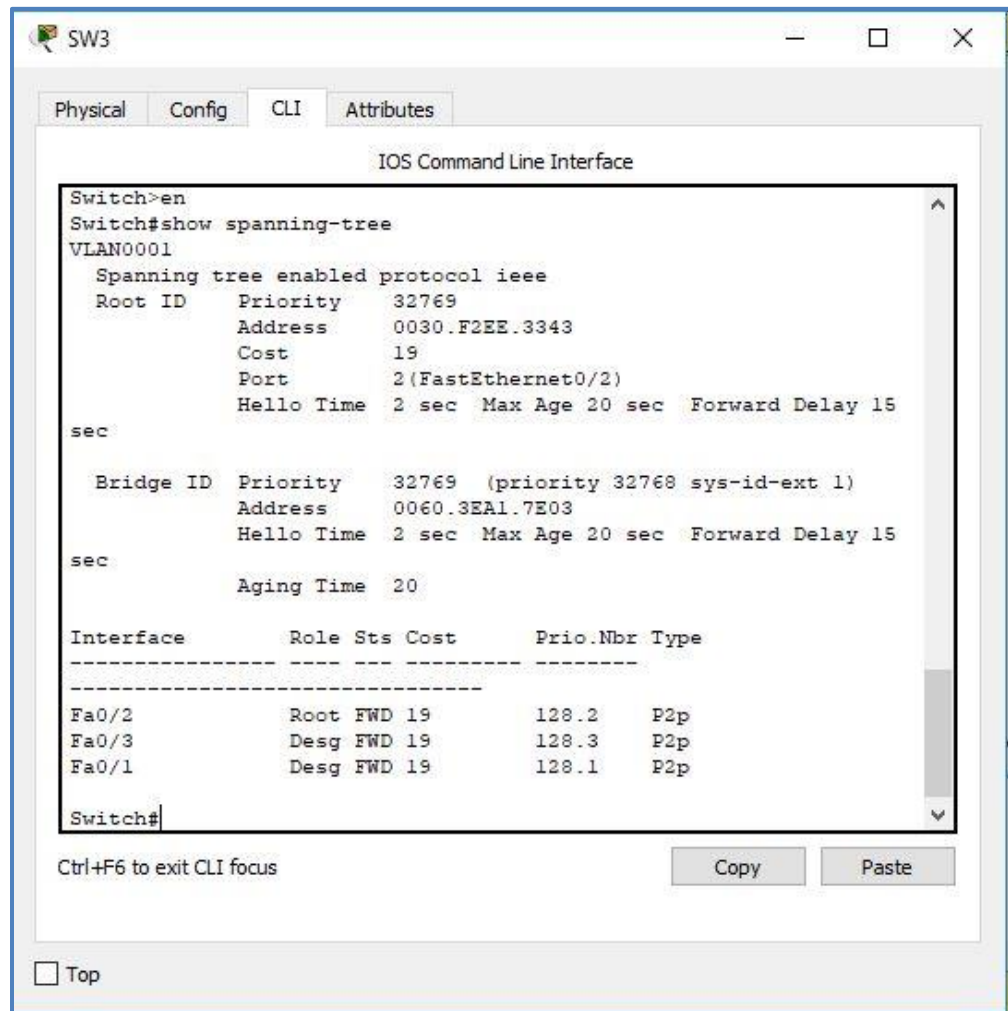
Ctrl+F6 to exit CLI focus

Copy Paste

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- SW 3



The screenshot shows a network switch CLI window titled "SW3". The window has tabs for "Physical", "Config", "CLI", and "Attributes", with "CLI" selected. The main area displays the "IOS Command Line Interface" with the following text:

```
Switch>en
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
    Root ID    Priority    32769
              Address    0030.F2EE.3343
              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    0060.3EAE.7E03
              Hello Time 2 sec  Max Age 20 sec  Forward Delay 15
sec

              Aging Time 20
```

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

Switch#

Below the CLI window, there is a "Ctrl+F6 to exit CLI focus" label and two buttons: "Copy" and "Paste". At the bottom left, there is a checkbox labeled "Top".

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- SW 1

| No | Variabel          | Nilai                  |  | Interface | Role | Status |
|----|-------------------|------------------------|--|-----------|------|--------|
| 1. | Root ID           | 32769 : 0030.F2EE.3343 |  | Fa 0/3    | Desg | FWD    |
| 2. | Priorty           | 32769                  |  | Fa 0/2    | Root | FWD    |
| 3. | MAC Address       | 00E0.A3B8.6ECD         |  |           |      |        |
| 4. | Bridge ID         | 32769: 00E0.A3B8.6ECD  |  |           |      |        |
| 5. | Cost(0/1:0/2:0/3) | 0/3 = 19<br>0/2 = 19   |  |           |      |        |
| 6. | Hello Time        | 2 sec                  |  |           |      |        |
| 7. | Max Age           | 20 sec                 |  |           |      |        |
| 8. | Forward Delay     | 15 sec                 |  |           |      |        |

- SW 2

| No | Variabel          | Nilai                  |  | Interface | Role | Status |
|----|-------------------|------------------------|--|-----------|------|--------|
| 1. | Root ID           | 32769 : 0030.F2EE.3343 |  | Fa 0/3    | Desg | FWD    |
| 2. | Priorty           | 32769                  |  | Fa 0/2    | Desg | FWD    |
| 3. | MAC Address       | 0030.F2EE.3343         |  |           |      |        |
| 4. | Bridge ID         | 32769 : 0030.F2EE.3343 |  |           |      |        |
| 5. | Cost(0/1:0/2:0/3) | 0/3 = 19<br>0/2 = 19   |  |           |      |        |
| 6. | Hello Time        | 2 sec                  |  |           |      |        |
| 7. | Max Age           | 20 sec                 |  |           |      |        |
| 8. | Forward Delay     | 15 sec                 |  |           |      |        |

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- SW 3

| No | Variabel          | Nilai                            | Interface | Role | Status |
|----|-------------------|----------------------------------|-----------|------|--------|
| 1. | Root ID           | 32769 : 0030.F2EE.3343           | Fa 0/2    | Root | FWD    |
| 2. | Priorty           | 32769                            | Fa 0/3    | Desg | FWD    |
| 3. | MAC Address       | 0060.3EA1.7E03                   | Fa 0/1    | Desg | FWD    |
| 4. | Bridge ID         | 32769 : 0060.3EA1.7E03           |           |      |        |
| 5. | Cost(0/1:0/2:0/3) | 0/2 = 19<br>0/3 = 19<br>0/1 = 19 |           |      |        |
| 6. | Hello Time        | 2 sec                            |           |      |        |
| 7. | Max Age           | 20 sec                           |           |      |        |
| 8. | Forward Delay     | 15 sec                           |           |      |        |

Tugas 4C : Pada kondisi default tersebut, switch dan port mana saja yang :

- Menjadi *root bridge* : SW 2
- Menjadi *designated bridge* : SW 1 dan SW 3
- Menjadi *root port* : SW 1 Fa 0/2 dan SW 3 Fa 0/2
- Menjadi *designated port* : SW 1 Fa 0/3 , SW 2 (Fa 0/2;0/3) dan SW 3 (Fa 0/1, Fa 0/3)

Tugas 4D : Pada kondisi default tersebut, dan port mana saja yang :

- Berada pada keadaan *forwarding* : SW 1 (Fa 0/2;0/3), SW 2 (Fa 0/2;0/3) SW 3 (Fa 0/1;0/2;0/3)
- Berada pada keadaan *blocking* : Tidak ada switch dan port dalam keadaan blocking

**Muhibah Fata Tika**

**L200170156**

**D**