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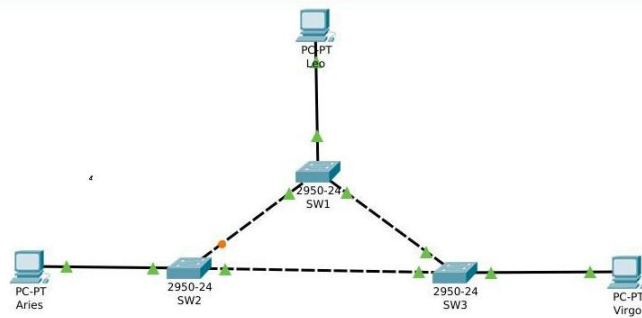
NIM : L200170096

Kelas : C

Modul: 6

## Kegiatan 1. Topologi 1

### 1. Rancangan Jaringan



Drag 3 switch catalyst 2950 yang diambil dari network devices dan drop ke lembar kerja. Setelah itu drag 3 PC yang di ambil di end devices dan drop ke lembar kerja, hubungkan switch dengan switch dan switch dengan PC dengan connections.

### 2. Memberi nama Switch.

- SW1

```
Switch>enable
Switch#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname Switch1
Switch1(config)#hostname SW1
SW1(config)#exit
SW1#
%SYS-5-CONFIG_I: Configured from console by console
```

- SW2

```
Switch>enable
Switch#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname SW2
SW2(config)#exit
SW2#
%SYS-5-CONFIG_I: Configured from console by console
```

- SW3

```
Switch>enable
Switch#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname SW3
SW3(config)#exit
SW3#
%SYS-5-CONFIG_I: Configured from console by console
```

3. konfigurasi setiap PC dengan alamat IP Address :

- Leo = 172.21.1.1/24

The screenshot shows the configuration window for a device named 'Leo'. The 'Desktop' tab is selected, displaying the following settings:

- Physical** | **Config** | **Desktop** | **Programming** | **Attributes**
- ☐ DHCP | ☒ **Static**
- IP Address: 172.21.1.1
- Subnet Mask: 255.255.255.0
- 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:FE0D:8B5
- IPv6 Gateway: [ ]
- IPv6 DNS Server: [ ]

**802.1X**

- ☐ Use 802.1X Security
- Authentication: MD5

☐ Top

- Aries = 172.21.1.2/24

The screenshot shows the 'Aries' configuration window with the 'Desktop' tab selected. The 'Physical' section has 'Static' selected, with IP Address '172.21.1.2', Subnet Mask '255.255.255.0', Default Gateway '0.0.0.0', and DNS Server '0.0.0.0'. The 'IPv6 Configuration' section has 'Static' selected, with IPv6 Address, Link Local Address 'FE80::202:4AFF:FECC:5009', IPv6 Gateway, and IPv6 DNS Server. The '802.1X' section has 'Use 802.1X Security' unchecked and 'Authentication' set to 'MD5'. A 'Top' button is at the bottom left.

Section	Option	Value
Physical	DHCP	<input type="radio"/>
	Static	<input checked="" type="radio"/>
	IP Address	172.21.1.2
	Subnet Mask	255.255.255.0
IPv6 Configuration	DHCP	<input type="radio"/>
	Auto Config	<input type="radio"/>
	Static	<input checked="" type="radio"/>
	Link Local Address	FE80::202:4AFF:FECC:5009
802.1X	Use 802.1X Security	<input type="checkbox"/>
	Authentication	MD5

- Virgo = 172.21.1.3/24

The screenshot shows the 'Virgo' configuration window with the 'Desktop' tab selected. The 'Physical' section has 'Static' selected, with IP Address '172.21.1.3', Subnet Mask '255.255.255.0', Default Gateway '0.0.0.0', and DNS Server '0.0.0.0'. The 'IPv6 Configuration' section has 'Static' selected, with IPv6 Address, Link Local Address 'FE80::20C:85FF:FEA0:B38B', IPv6 Gateway, and IPv6 DNS Server. The '802.1X' section has 'Use 802.1X Security' unchecked and 'Authentication' set to 'MD5'. A 'Top' button is at the bottom left.

Section	Option	Value
Physical	DHCP	<input type="radio"/>
	Static	<input checked="" type="radio"/>
	IP Address	172.21.1.3
	Subnet Mask	255.255.255.0
IPv6 Configuration	DHCP	<input type="radio"/>
	Auto Config	<input type="radio"/>
	Static	<input checked="" type="radio"/>
	Link Local Address	FE80::20C:85FF:FEA0:B38B
802.1X	Use 802.1X Security	<input type="checkbox"/>
	Authentication	MD5

4. Melihat Status STP pada Switch.

- SW1

No	Variable	Nilai
	<b>Root ID</b>	
1	Priority	32769
2	MAC Address	0005.5EAA.02D5
	<b>Bridge ID</b>	
3	Cost(0/1;0/2;0/3)	19
4	Hello Time	2 Sec
5	Max Age	20 Sec
6	Forward Delay	15 Sec

SW1

Physical
Config
**CLI**
Attributes

IOS Command Line Interface

```

APPLY completed.
Exiting....
Switch#
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
            Address     0005.5EAA.02D5
            Cost        19
            Port        3(FastEthernet0/3)
            Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    32769 (priority 32768 sys-id-ext 1)
            Address     000D.BDAD.A092
            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        Desg FWD 19        128.2    P2p
Fa0/3        Root FWD 19        128.3    P2p
Switch#

```

Ctrl+F6 to exit CLI focus

Copy

Paste

☐ Top

- SW2

The screenshot shows the CLI of a switch named SW2. The 'CLI' tab is selected. The command 'show spanning-tree' is entered, displaying the following output:

```

Switch>en
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address    0005.5EAA.02D5
             Cost        19
             Port        3(FastEthernet0/3)
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

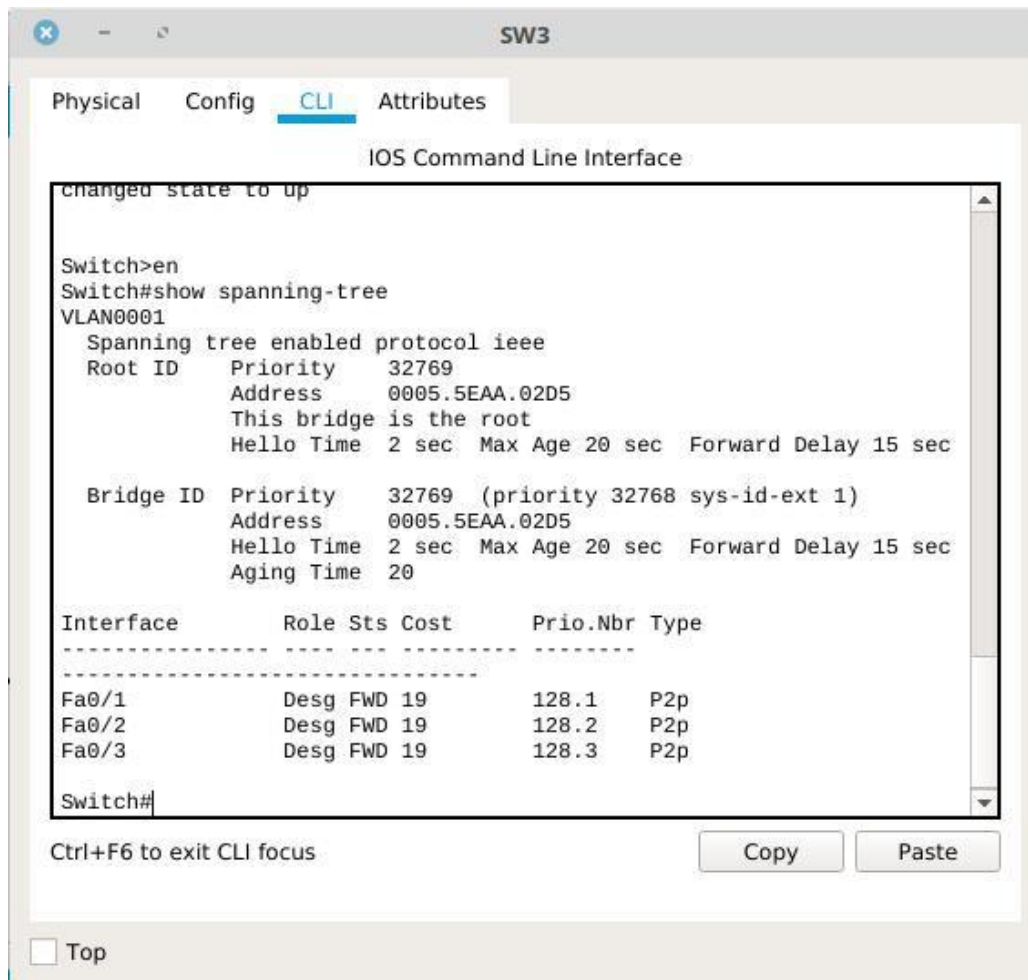
  Bridge ID  Priority    32769 (priority 32768 sys-id-ext 1)
             Address    0060.7004.B00A
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
             Aging Time  20

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

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

No	Variable	Nilai
	<b>RootID</b>	
1	Priority	32769
2	MAC Address	0005.5EAA.02D5
	<b>Bridge ID</b>	
3	Cost(0/1;0/2;0/3)	19
4	Hello Time	2 Sec
5	Max Age	20 Sec
6	Forward Delay	15 Sec

- SW3

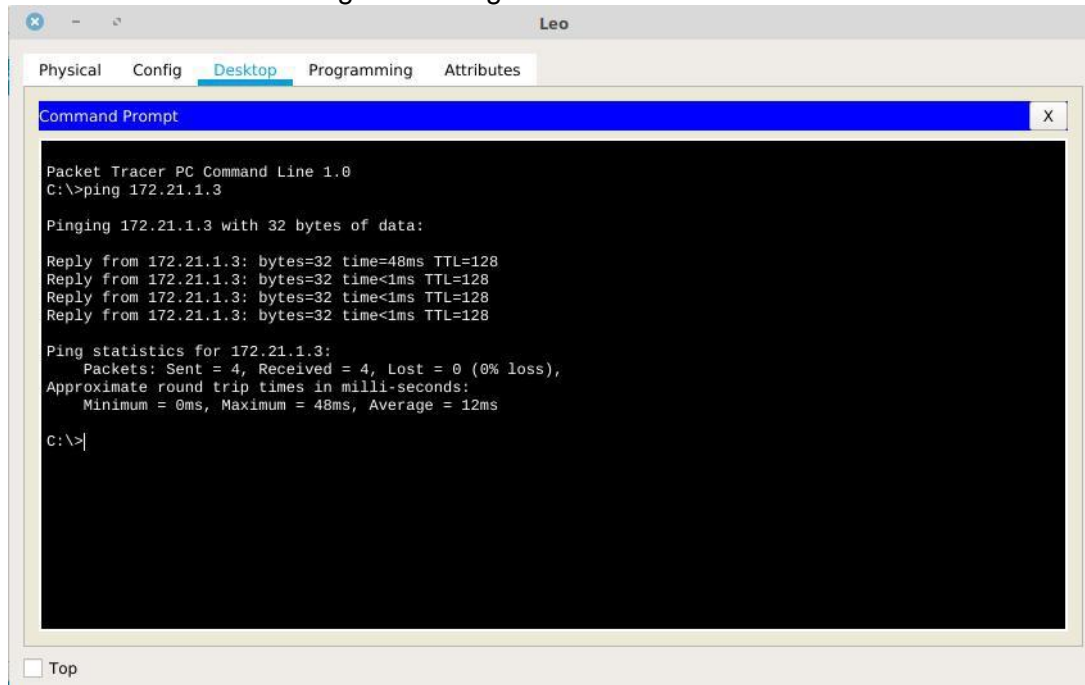


No	Variable	Nilai
	<b>Root ID</b>	
1	Priority	32769
2	MAC Address	0005.5EAA.02D5
	<b>Bridge ID</b>	
3	Cost(0/1;0/2;0/3)	19
4	Hello Time	2 Sec
5	Max Age	20 Sec
6	Forward Delay	15 Sec

- Pada kondisi default Switch dan Port yang menjadi :
  - Root Bridge ialah **Switch SW3**
  - Designated Bridge ialah **Switch SW1**
  - Root Port ialah **Fa0/3** pada **SW1** dan **Fa0/3** pada **SW2**
  - Designated Port ialah **Fa0/1** dan **Fa0/2**

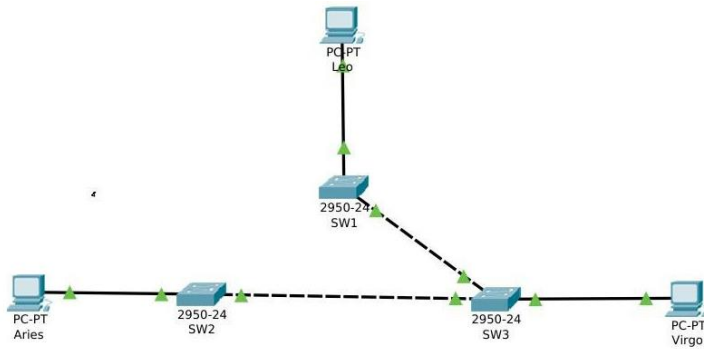
- Pada kondisi default, port mana saja yang:
  - Berada pada keadaan forwarding pada **SW1(Fa0/1, Fa0/2, dan Fa0/3)**, **SW2(Fa0/1 dan Fa0/3)**, dan **SW3(Fa0/1, Fa0/2, dan Fa0/3)**.
  - Berada pada keadaan blocking pada **SW2(Fa0/2)**.

5. Dari PC LEO lakukan Ping ke PC Virgo.



## Kegiatan 2. Topologi 2

1. menggunakan Packet Tracer mengubah struktur jaringan sebelumnya menjadi seperti dibawah ini.



2. Melihat Status STP pada Switch.
  - SW1

No	Variable	Nilai
<b>Root ID</b>		
1	Priority	32769
2	MAC Address	0005.5EAA.02D5
<b>Bridge ID</b>		
3	Cost(0/1;0/2;0/3)	19
4	Hello Time	2 Sec
5	Max Age	20 Sec
6	Forward Delay	15 Sec



SW1

PhysicalConfigCLIAttributes

IOS Command Line Interface

APPLY completed.  
Exiting....  
Switch#  
Switch#show spanning-tree  
VLAN0001  
Spanning tree enabled protocol ieee  
Root ID      Priority      32769  
             Address      0005.5EAA.02D5  
             Cost          19  
             Port          3(FastEthernet0/3)  
             Hello Time    2 sec    Max Age 20 sec    Forward Delay 15 sec  
  
Bridge ID    Priority      32769 (priority 32768 sys-id-ext 1)  
             Address      000D.BDAD.A092  
             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          Desg    FWD    19        128.2      P2p  
Fa0/3          Root    FWD    19        128.3      P2p  
  
Switch#

Ctrl+F6 to exit CLI focus

CopyPaste

☐ Top

- SW2

The screenshot shows a network switch interface (SW2) with tabs for Physical, Config, CLI (selected), and Attributes. The CLI window displays the output of the command 'show spanning-tree' for VLAN0001. The output shows the spanning tree is enabled with the IEEE protocol. It lists the Root ID (Priority 32769, Address 0005.5EAA.02D5, Cost 19, Port 3(FastEthernet0/3), Hello Time 2 sec, Max Age 20 sec, Forward Delay 15 sec) and the Bridge ID (Priority 32769, Address 0060.7004.B00A, Hello Time 2 sec, Max Age 20 sec, Forward Delay 15 sec, Aging Time 20). Below this, a table shows the role of each interface: Fa0/1 is Designated (Desg) Forwarding (FWD) with a cost of 19, priority 128.1, and P2p type; Fa0/2 is Alternate (Altn) Blocked (BLK) with a cost of 19, priority 128.2, and P2p type; Fa0/3 is Root Forwarding (Root FWD) with a cost of 19, priority 128.3, and P2p type. The prompt 'Switch#' is visible at the bottom of the CLI window.

```
Switch>en
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
    Root ID    Priority    32769
               Address      0005.5EAA.02D5
               Cost        19
               Port        3(FastEthernet0/3)
               Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

    Bridge ID  Priority    32769 (priority 32768 sys-id-ext 1)
               Address      0060.7004.B00A
               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          Altn BLK 19        128.2    P2p
Fa0/3          Root FWD 19        128.3    P2p

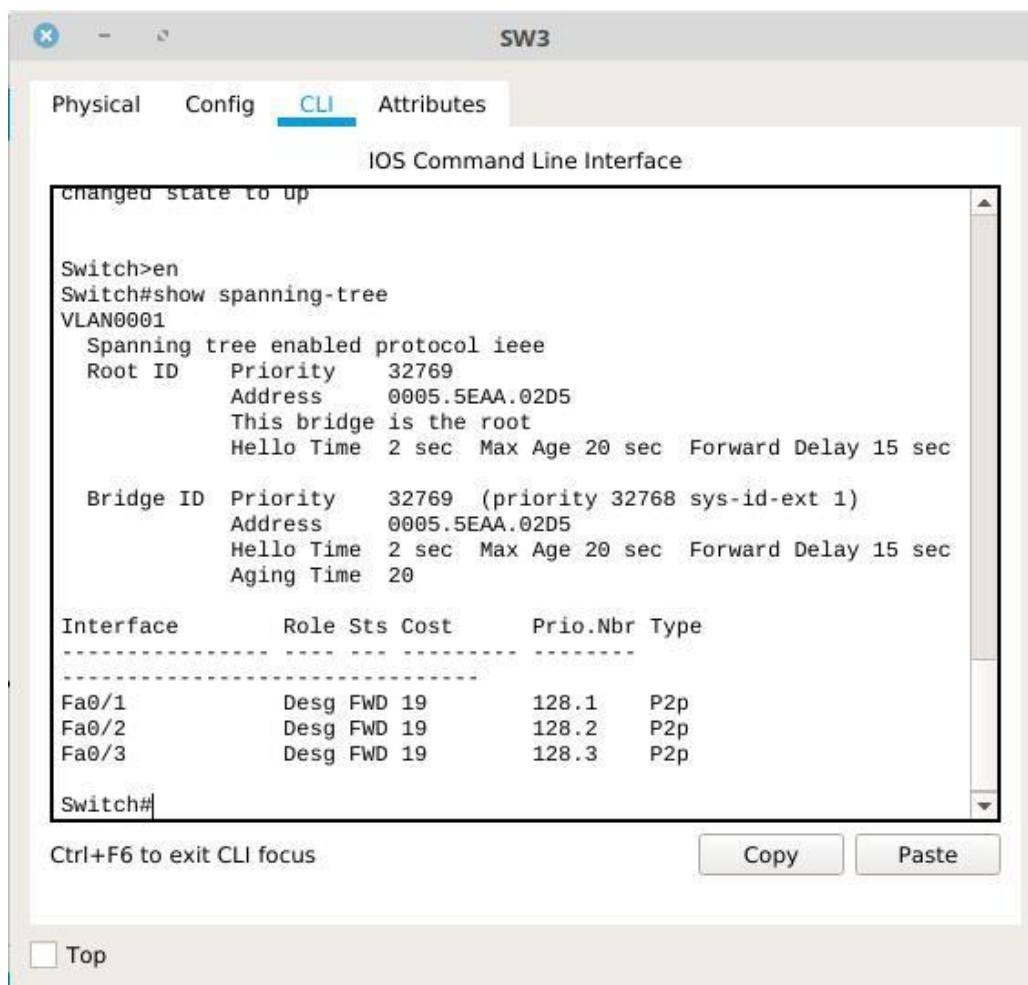
Switch#
```

Ctrl+F6 to exit CLI focus

Copy Paste

No	Variable	Nilai
	<b>RootID</b>	
1	Priority	32769
2	MAC Address	0005.5EAA.02D5
	<b>Bridge ID</b>	
3	<b>Cost(0/1;0/2;0/3)</b>	19
4	<b>Hello Time</b>	2 Sec
5	<b>Max Age</b>	20 Sec
6	<b>Forward Delay</b>	15 Sec

- SW3



No	Variable	Nilai
	<b>Root ID</b>	
1	Priority	32769
2	MAC Address	0005.5EAA.02D5
	<b>Bridge ID</b>	
3	Cost(0/1;0/2;0/3)	19
4	Hello Time	2 Sec
5	Max Age	20 Sec
6	Forward Delay	15 Sec

- Pada kondisi default Switch dan Port yang menjadi :
  - Root Bridge ialah **Switch SW3**
  - Designated Bridge ialah **Switch SW1**
  - Root Port ialah **Fa0/3** pada **SW1** dan **Fa0/3** pada **SW2**
  - Designated Port ialah **Fa0/1** dan **Fa0/2**
- Pada kondisi default, port mana saja yang :
  - Berada pada keadaan forwarding pada **SW1(Fa0/1, Fa0/2, dan Fa0/3)**, **SW2(Fa0/1 dan Fa0/3)**, dan **SW3(Fa0/1, Fa0/2, dan Fa0/3)**.
  - Berada pada keadaan blocking pada **SW2(Fa0/2)**.

6. Dari PC LEO lakukan Ping ke PC Virgo.

