

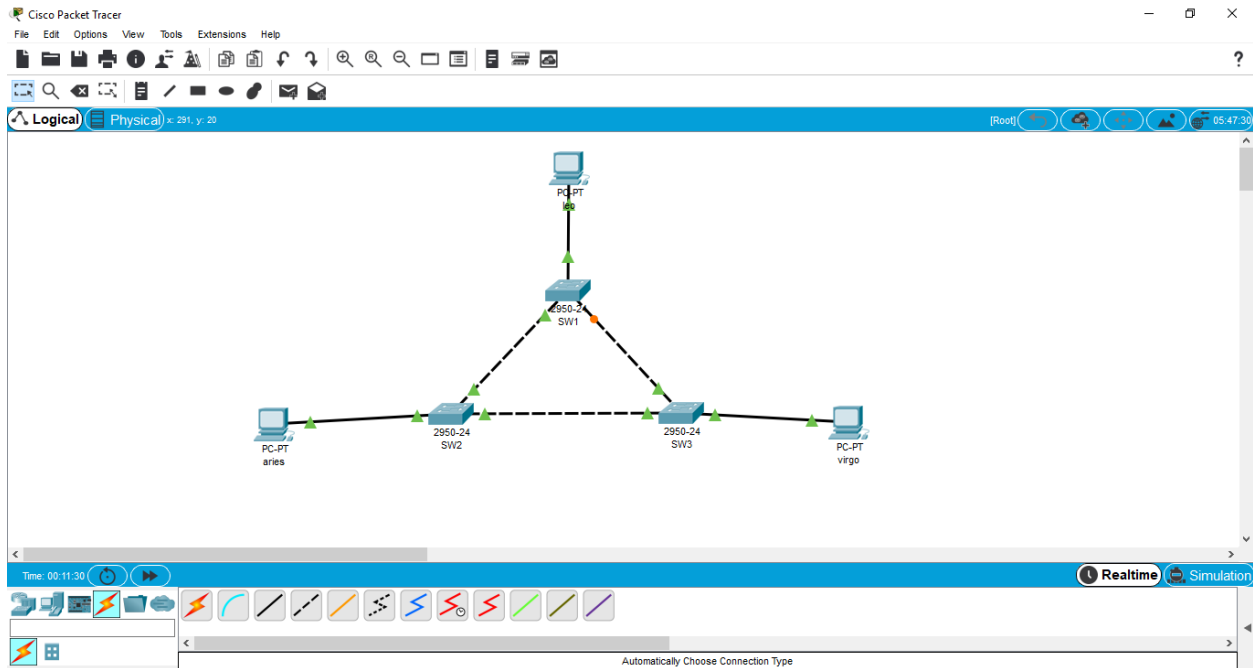
NAMA : DITA DENITA PRAMESTI

NIM : L200170139

KELAS : C

MODUL: 6


1.



Tugas 1A:

Klik pada gambar switch, kemudian pilih switch 2950-24 sebanyak 3 buah switch untuk disusun seperti gambar diatas. Kemudian klik pada 'end devices' kemudian pilih 'PC' sebanyak 3 buah dan di susun berdampingan dengan masing-masing switch. Setelah itu sambungkan semua switch dan PC dengan kabel, caranya klik 'connections' kemudian pilih gambar petir 'automatically choose connection type' untuk menyambungkannya. Dengan connection itu biasanya akan otomatis memilih sendiri kabel yang cocok digunakan.

## 2. Memberi nama switch → SW1, SW2, SW3

 SW1

Physical Config CLI Attributes

IOS Command Line Interface

```
Power supply part number: 34-0965-01
Motherboard serial number: FOC061004SZ
Power supply serial number: DAB0609127D
Model revision number: C0
Motherboard revision number: A0
Model number: WS-C2950-24
System serial number: FHK0610Z0WC

Cisco Internetwork Operating System Software
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(22)EA4,
RELEASE SOFTWARE(fcl)
Copyright (c) 1986-2005 by cisco Systems, Inc.
Compiled Wed 18-May-05 22:31 by jharirba


Press RETURN to get started!

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

Ctrl+F6 to exit CLI focus

Copy Paste

☐ Top

 SW2

Physical Config CLI Attributes

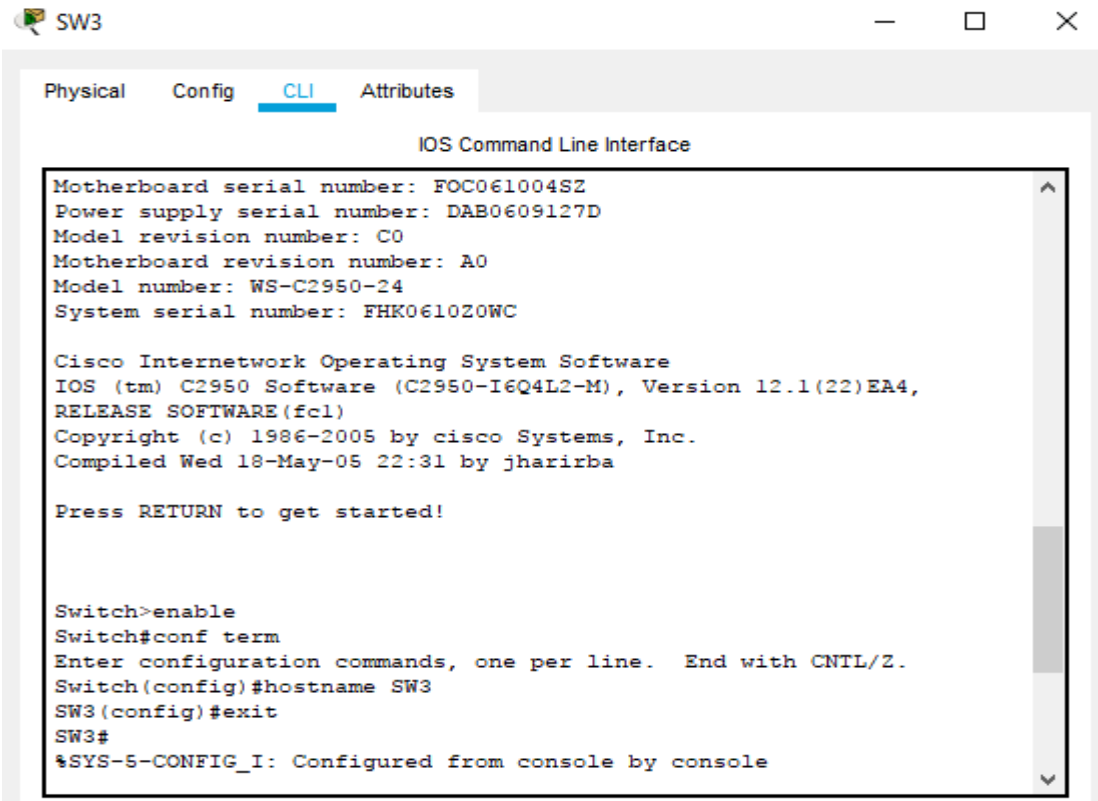
IOS Command Line Interface

```
Power supply part number: 34-0965-01
Motherboard serial number: FOC061004SZ
Power supply serial number: DAB0609127D
Model revision number: C0
Motherboard revision number: A0
Model number: WS-C2950-24
System serial number: FHK0610Z0WC

Cisco Internetwork Operating System Software
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(22)EA4,
RELEASE SOFTWARE(fcl)
Copyright (c) 1986-2005 by cisco Systems, Inc.
Compiled Wed 18-May-05 22:31 by jharirba

Press RETURN to get started!

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
```



Tugas 2A:

Klik switch→CLI

Switch>enable

Switch#conf term

Switch(config)#hostname SW1, kemudian enter

Maka nama switch sudah terhanti dengan SW1,SW2,SW3

### 3. Konfigurasi PC

leo

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::202:4AFF:FE68:AD62

IPv6 Gateway

IPv6 DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

☐ Top

aries

Physical Config **Desktop** Programming Attributes

☐ DHCP ☒ Static

IP Address 172.21.1.2

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::230:A3FF:FE02:969A

IPv6 Gateway

IPv6 DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

☐ Top

The screenshot shows the 'virgo' window with the 'Desktop' tab selected. The configuration is for a static IP address. The IP Address is 172.21.1.3, Subnet Mask is 255.255.255.0, Default Gateway is 0.0.0.0, and DNS Server is 0.0.0.0. The IPv6 Configuration section shows 'Static' selected, with an IPv6 Address field, Link Local Address set to FE80::2E0:B0FF:FE2B:441, and empty fields for IPv6 Gateway and IPv6 DNS Server. The 802.1X section has 'Use 802.1X Security' unchecked, Authentication set to MD5, and empty fields for Username and Password. A 'Top' button is at the bottom left.

| Field               | Value                    |
|---------------------|--------------------------|
| IP Address          | 172.21.1.3               |
| Subnet Mask         | 255.255.255.0            |
| Default Gateway     | 0.0.0.0                  |
| DNS Server          | 0.0.0.0                  |
| IPv6 Address        |                          |
| Link Local Address  | FE80::2E0:B0FF:FE2B:441  |
| IPv6 Gateway        |                          |
| IPv6 DNS Server     |                          |
| Use 802.1X Security | <input type="checkbox"/> |
| Authentication      | MD5                      |
| Username            |                          |
| Password            |                          |

Untuk mengkonfigurasi masing masing PC dengan alamat email, pertama klik PC kemudian pilih→desktop→ip configuration.

Leo →172.21.1.1/24

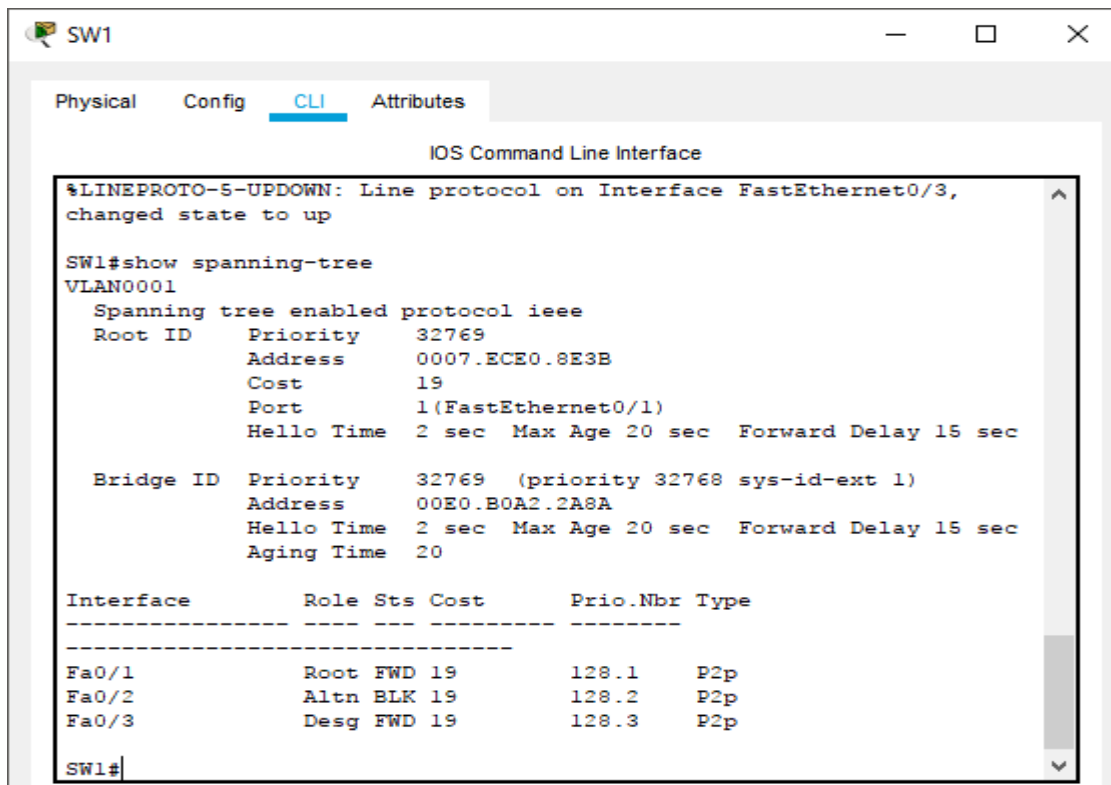
Aries → 172.21.1.2/24

Virgo → 172.21.1.3/24

Pada IP Address ketik ip yang telah ditentukan, kemudian pada subnet mask ketik 255.255.255.0

#### 4. Melihat status STP

Tugas 4A: menampilkan status STP dengan 'show spanning-tree'.



SW1

Physical Config **CLI** Attributes

IOS Command Line Interface

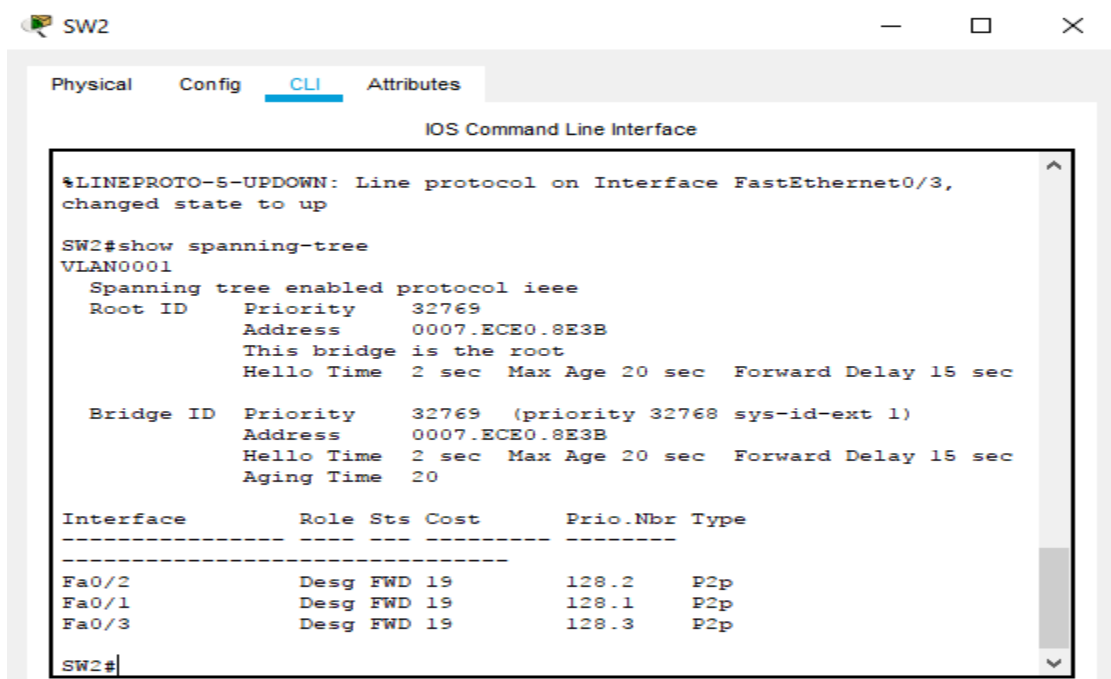
```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3,
changed state to up

SW1#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
            Address    0007.ECE0.8E3B
            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    00E0.B0A2.2A8A
            Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
            Aging Time  20

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

SW1#
```



SW2

Physical Config **CLI** Attributes

IOS Command Line Interface

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3,
changed state to up

SW2#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
            Address    0007.ECE0.8E3B
            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    0007.ECE0.8E3B
            Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
            Aging Time  20

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

SW2#
```

```

SW3
Physical Config CLI Attributes
IOS Command Line Interface

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3,
changed state to up

SW3#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0007.ECE0.8E3B
             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     0060.2F49.51C8
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
             Aging Time  20

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

SW3#

```

Tugas 4B:

SW1

| No. | Variable           | Nilai          |
|-----|--------------------|----------------|
| 1   | Root ID            | 32769          |
| 2   | Priority           | 32769          |
| 3   | MAC Address        | 00E0.B0A2.2A8A |
| 4   | Bridge ID          | 32769          |
| 5   | Cost (0/1;0/2;0/3) | 19;19;19       |
| 6   | Hello Time         | 2 sec          |
| 7   | MaxAge             | 20 sec         |
| 8   | Forward Delay      | 15 sec         |

SW2

| No. | Variable           | Nilai          |
|-----|--------------------|----------------|
| 1   | Root ID            | 32769          |
| 2   | Priority           | 32769          |
| 3   | MAC Address        | 0007.ECE0.8E3B |
| 4   | Bridge ID          | 32769          |
| 5   | Cost (0/1;0/2;0/3) | 19;19;19       |
| 6   | Hello Time         | 2 sec          |
| 7   | MaxAge             | 20 sec         |
| 8   | Forward Delay      | 15 sec         |

### SW3

| No. | Variable           | Nilai          |
|-----|--------------------|----------------|
| 1   | Root ID            | 32769          |
| 2   | Priority           | 32769          |
| 3   | MAC Address        | 0060.2F49.51C8 |
| 4   | Bridge ID          | 32769          |
| 5   | Cost (0/1;0/2;0/3) | 19;19;19       |
| 6   | Hello Time         | 2 sec          |
| 7   | MaxAge             | 20 sec         |
| 8   | Forward Delay      | 15 sec         |

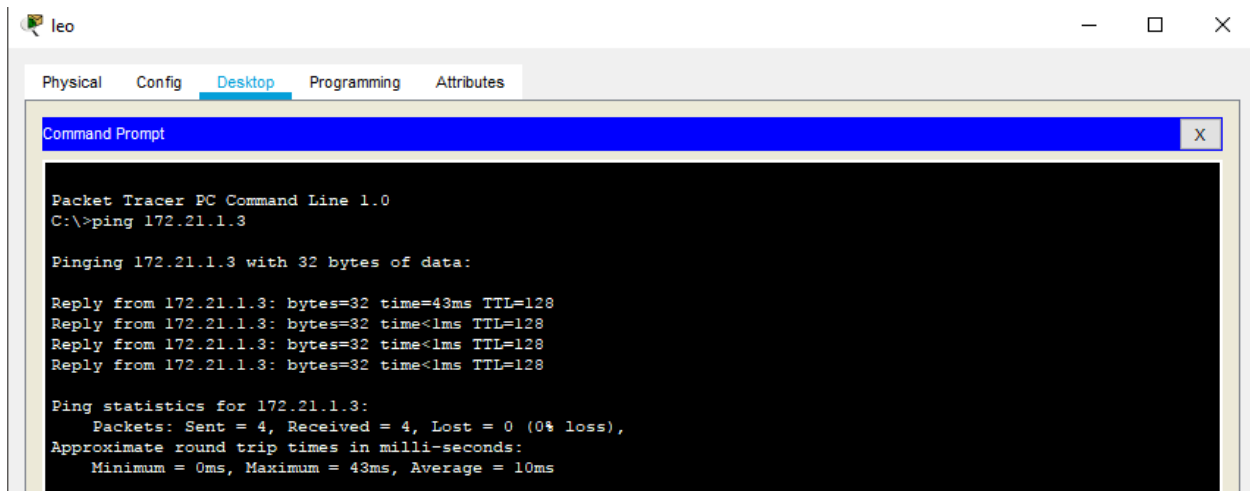
### Tugas 4C:

- Root bridge : SW2
- Designated bridge : SW1
- Root port : SW1 Fa0/1 SW3 Fa0/1 ; Fa0/2
- Designated port : SW2 Fa0/1 ; Fa0/2

### Tugas 4D:

- Port pada keadaan forwarding : SW1 Fa0/1 ; Fa0/3, SW2 Fa0/1 ; Fa0/2 ; Fa0/3, SW3 Fa0/1 ; Fa0/2 ; Fa0/3.
- Port pada keadaan blocking : SW1 Fa0/2

5. Ping dari PC leo ke PC virgo.



```
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=43ms 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

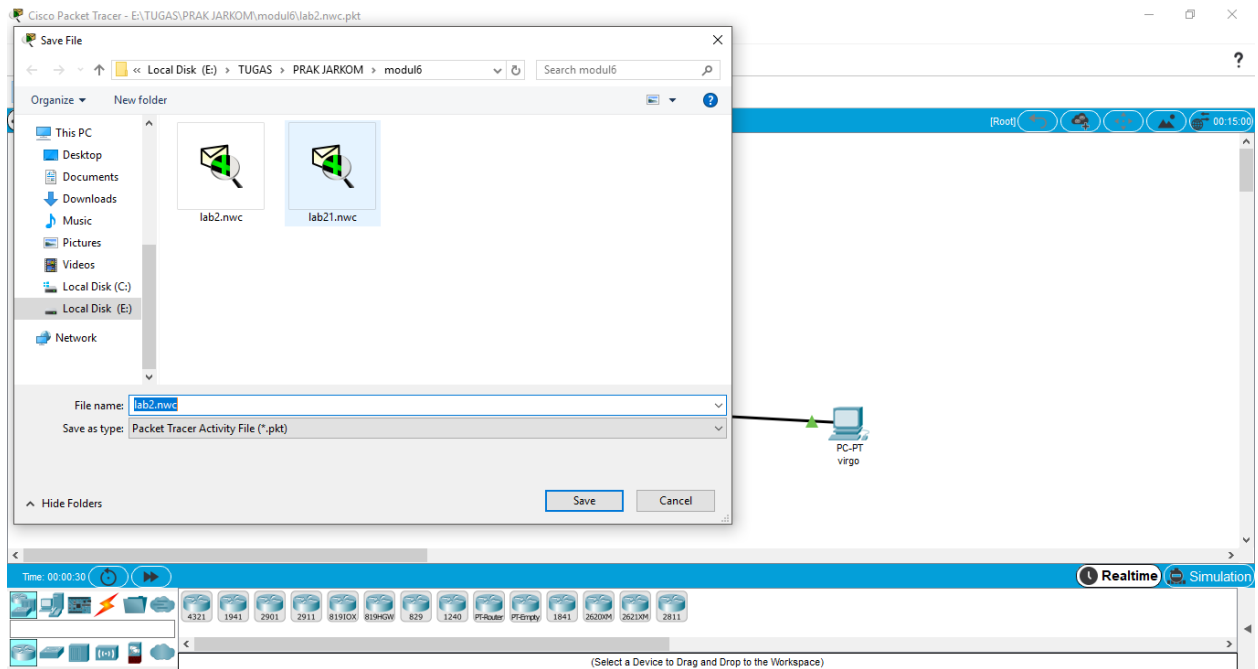
Ping statistics for 172.21.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 43ms, Average = 10ms
```

### Tugas 5A:

Klik PC leo→desktop→command promp, kemudian ketik perintah 'ping 172.21.1.3' untuk ping ke PC virgo.



## 6. Simpan konfigurasi jaringan dengan nama lab2.nwc

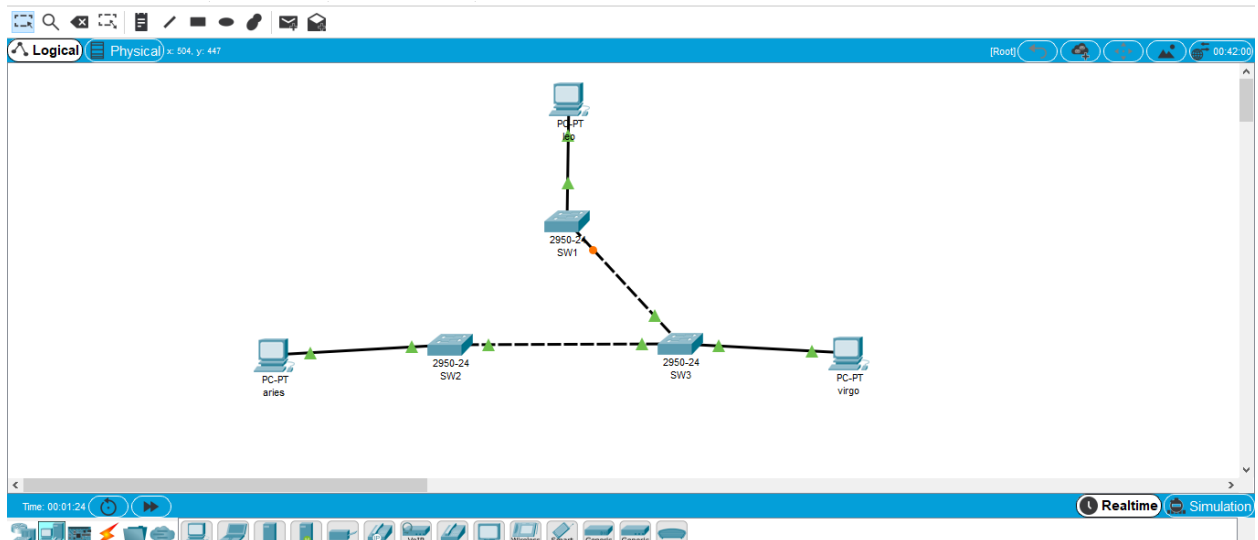


### Tugas 6A:

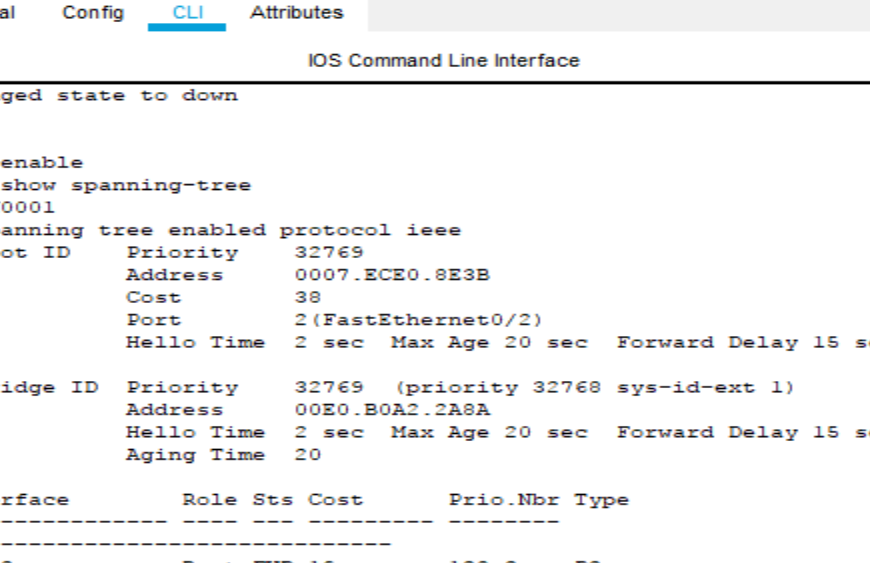
klik file → save as → pilih folder untuk menyimpan → beri nama file 'lab2.nwc' → klik save.

### Kegiatan 2

1. Ubah topologi sebelumnya menjadi topologi berikut.



- Tugas 2A: menampilkan status STP dengan 'show spanning-tree'.



The screenshot shows a network switch configuration window titled "SW1". The "CLI" tab is selected, displaying the "IOS Command Line Interface". The interface shows the following commands and output:

```

changed state to down

SW1>enable
SW1#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0007.ECE0.8E3B
             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.B0A2.2A8A
             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
  
```

The output shows that the spanning tree is enabled for VLAN0001. The root bridge is Fa0/2 with a priority of 32769. The bridge ID is 00E0.B0A2.2A8A. The interface Fa0/2 is the root port, and Fa0/3 is a designated port. Both interfaces are in the Forwarding state.

SW2

Physical Config CLI Attributes

IOS Command Line Interface

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

SW2>enable
SW2#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
            Address     0007.ECE0.8E3B
            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     0007.ECE0.8E3B
            Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
            Aging Time  20

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

SW3

Physical Config CLI Attributes

IOS Command Line Interface

```
SW3>enable
SW3#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
            Address     0007.ECE0.8E3B
            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     0060.2F49.51C8
            Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
            Aging Time  20

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

Tugas 2B:

SW1

| No. | Variable           | Nilai          |
|-----|--------------------|----------------|
| 1   | Root ID            | 32769          |
| 2   | Priority           | 32769          |
| 3   | MAC Address        | 00E0.B0A2.2A8A |
| 4   | Bridge ID          | 32769          |
| 5   | Cost (0/1;0/2;0/3) | 19;19          |
| 6   | Hello Time         | 2 sec          |
| 7   | MaxAge             | 20 sec         |
| 8   | Forward Delay      | 15 sec         |

SW2

| No. | Variable           | Nilai          |
|-----|--------------------|----------------|
| 1   | Root ID            | 32769          |
| 2   | Priority           | 32769          |
| 3   | MAC Address        | 0007.ECE0.8E3B |
| 4   | Bridge ID          | 32769          |
| 5   | Cost (0/1;0/2;0/3) | 19;19          |
| 6   | Hello Time         | 2 sec          |
| 7   | MaxAge             | 20 sec         |
| 8   | Forward Delay      | 15 sec         |

SW3

| No. | Variable           | Nilai          |
|-----|--------------------|----------------|
| 1   | Root ID            | 32769          |
| 2   | Priority           | 32769          |
| 3   | MAC Address        | 0060.2F49.51C8 |
| 4   | Bridge ID          | 32769          |
| 5   | Cost (0/1;0/2;0/3) | 19;19;19       |
| 6   | Hello Time         | 2 sec          |
| 7   | MaxAge             | 20 sec         |
| 8   | Forward Delay      | 15 sec         |

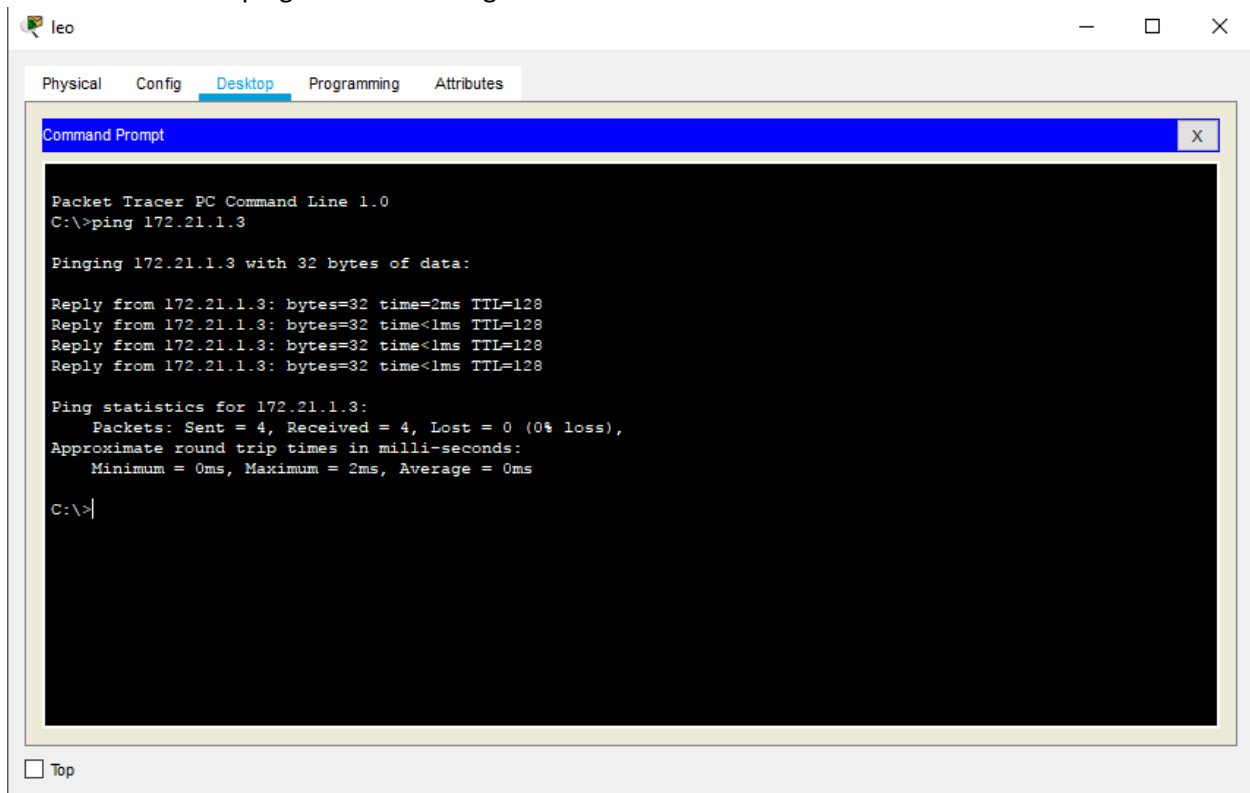
Tugas 2C:

- Root bridge : SW2
- Designated bridge : SW1
- Root port : SW1 Fa0/1 SW3 Fa0/1 ; Fa0/2
- Designated port : SW2 Fa0/1 ; Fa0/2

## Tugas 2D:

- Port pada keadaan forwarding : SW1 Fa0/2 ; Fa0/3, SW2 Fa0/2 ; Fa0/3 , SW3 Fa0/1 ; Fa0/2 ; Fa0/3.
- Port pada keadaan blocking : tidak ada

### 3. Melakukan ping PC leo ke PC virgo.



The screenshot shows the Packet Tracer interface with the 'Desktop' tab selected. A 'Command Prompt' window is open, displaying the results of a ping command from PC leo to PC virgo (172.21.1.3). The output shows four successful replies with 0% loss.

```
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=2ms 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 = 2ms, Average = 0ms

C:\>|
```