

COMPUTER NETWORK PRACTICUM PRACTICUM 6



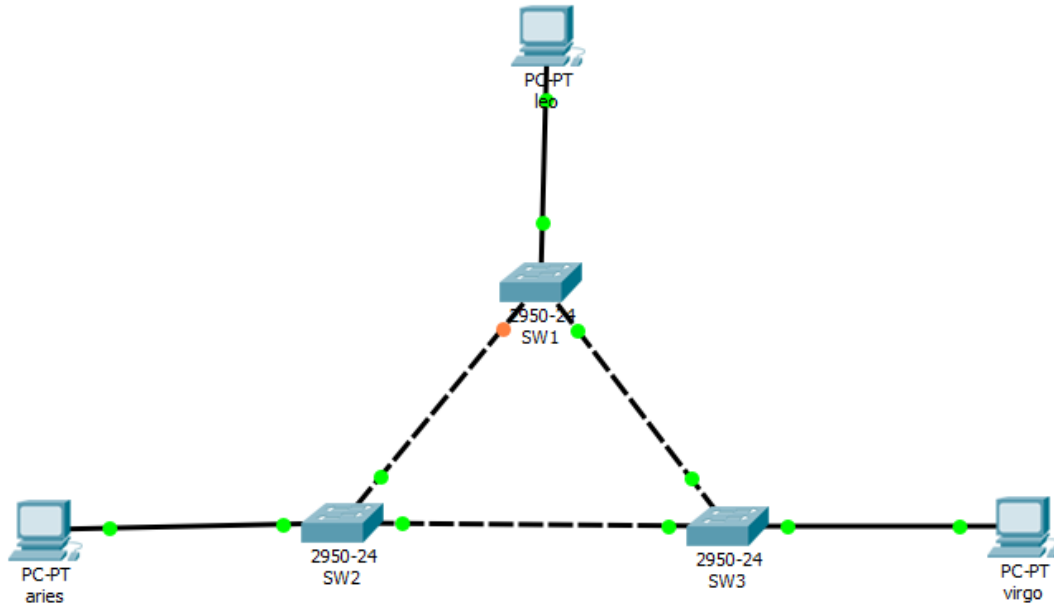
Writed by :

Name : Ainayah Syifa Hendri
NIM : L200183203
Class : X

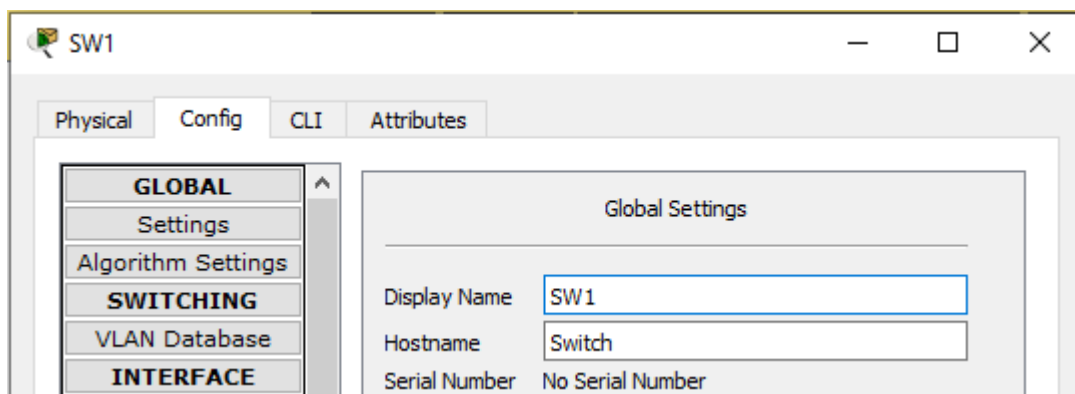
**INFORMATION TECHNOLOGY
FACULTY OF COMMUNICATION AND INFORMATICS
MUHAMMADIYAH UNIVERSITY OF SURAKARTA
2020**

Activity 1. Topology 1

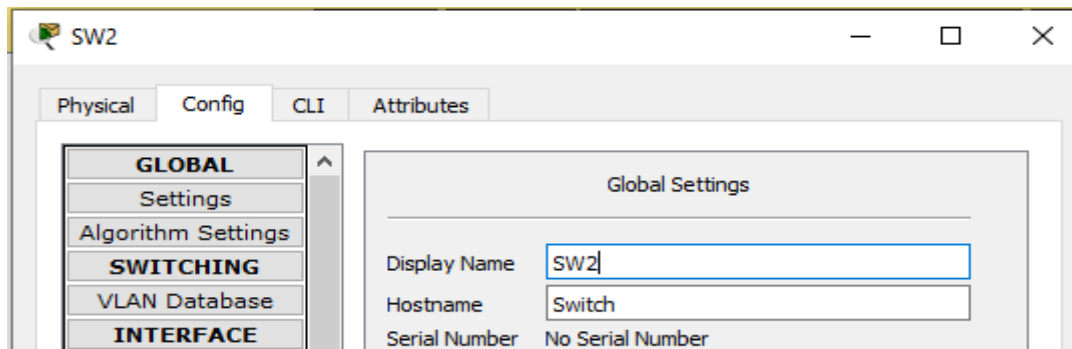
1. Make a topology design



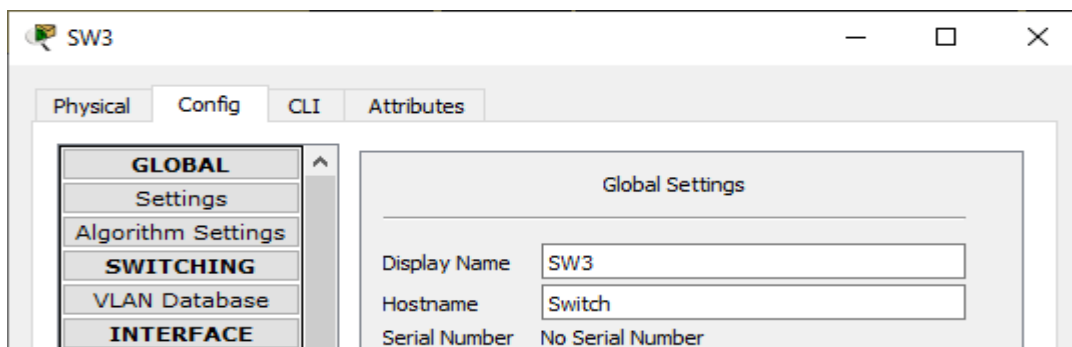
2. Change the name of the Switch to SW1, SW2, and SW3, like the example below. Or you can also directly click on Switch0, Switch1, and Switch2 then just change the name to SW1, SW2, and SW3
 - a. Switch0 → SW1



b. Switch1 → SW2

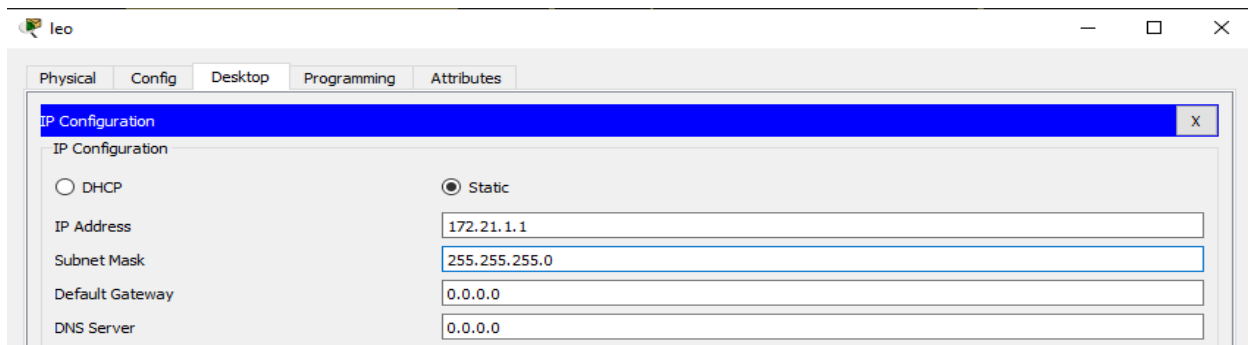


c. Switch2 → SW3



3. Configure the IP address on each PC

a. Leo



b. Aries

The screenshot shows the 'aries' window with the 'Config' tab selected. The 'IP Configuration' sub-tab is active, displaying a form for static IP configuration. The form includes fields for 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 'Static' radio button is selected.

Field	Value
IP Address	172.21.1.2
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

c. Virgo

The screenshot shows the 'virgo' window with the 'Config' tab selected. The 'IP Configuration' sub-tab is active, displaying a form for static IP configuration. The form includes fields for 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 'Static' radio button is selected.

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

4. - 4A. See STP status on each switch

a. SW1

The screenshot shows the 'SW1' window with the 'CLI' tab selected. The 'IOS Command Line Interface' is displayed, showing the output of the 'show spanning-tree' command. The output includes details for VLAN0001, including the root ID, bridge ID, and interface roles.

```
Switch>enable
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0001.4328.BA34
             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     0060.3EA9.C487
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15
sec
             Aging Time  20

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

Switch#
```

b. SW2

The screenshot shows the CLI interface of switch SW2. The 'CLI' tab is selected. The command prompt is 'Switch>'. The user has entered 'enable' to enter privileged mode, and then 'show spanning-tree' to display the spanning-tree information for VLAN0001. The output shows that the spanning tree is enabled with the IEEE protocol. The root bridge is identified as 0001.4328.BA34 with a priority of 32769. The local bridge ID is 0001.6319.3BD8. The interface Fa0/2 is the root port. The output also shows the role of each interface: Fa0/3 is Designated Forwarding (FWD), Fa0/1 is Designated Forwarding (FWD), and Fa0/2 is the Root Forwarding (FWD). The aging time is 20 seconds.

```
Switch>enable
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
            Address     0001.4328.BA34
            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     0001.6319.3BD8
            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          Desg FWD 19        128.1    P2p
Fa0/2          Root FWD 19        128.2    P2p

Switch#
```

Ctrl+F6 to exit CLI focus

Copy Paste

☐ Top

c. SW3

The screenshot shows the CLI interface of switch SW3. The 'CLI' tab is selected. The command prompt is 'Switch>'. The user has entered 'enable' to enter privileged mode, and then 'show spanning-tree' to display the spanning-tree information for VLAN0001. The output shows that the spanning tree is enabled with the IEEE protocol. The root bridge is identified as 0001.4328.BA34 with a priority of 32769. The local bridge ID is 0001.4328.BA34. The interface Fa0/2 is the root port. The output also shows the role of each interface: Fa0/3 is Designated Forwarding (FWD), Fa0/1 is Designated Forwarding (FWD), and Fa0/2 is the Root Forwarding (FWD). The aging time is 20 seconds.

```
Switch>enable
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
            Address     0001.4328.BA34
            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     0001.4328.BA34
            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          Desg FWD 19        128.1    P2p
Fa0/2          Desg FWD 19        128.2    P2p

Switch#
```

Ctrl+F6 to exit CLI focus

Copy Paste

☐ Top

- 4B. Populate the table on each switch
 - a. SW1

No	Variable	Value
1	Root ID	32769 : 0001.4328.BA34
2	Priority	32769
3	MAC Address	0060.3EA9.C487
4	Bridge ID	32769 : 0060.3EA9.C487
5	Cost (0/1;0/2;0/3)	0/1 → 19 0/2 → 19 0/3 → 19
6	Hello Time	2 sec
7	MaxAge	20 sec
8	Forward Delay	15 sec

- b. SW2

No	Variable	Value
1	Root ID	32769 : 0001.4328.BA34
2	Priority	32769
3	MAC Address	0001.6319.3BD8
4	Bridge ID	32769 : 0001.6319.3BD8
5	Cost (0/1;0/2;0/3)	0/1 → 19 0/2 → 19 0/3 → 19
6	Hello Time	2 sec
7	MaxAge	20 sec
8	Forward Delay	15 sec

- c. SW3

No	Variable	Value
1	Root ID	32769:0001.4328.BA34
2	Priority	32769
3	MAC Address	0001.4328.BA34
4	Bridge ID	32769:0001.4328.BA34
5	Cost (0/1;0/2;0/3)	0/1 → 19 0/2 → 19 0/3 → 19
6	Hello Time	2 sec
7	MaxAge	20 sec
8	Forward Delay	15 sec

- 4C.
 - Root bridge : SW3
 - Designated bride : SW1 and SW2
 - Root port : SW1(Fa0/3), SW2(Fa0/2)
 - Designated port : SW1(Fa0/1), SW2(Fa0/1, Fa0/2), SW3(Fa0/1, Fa0/2, Fa0/3)
- 4D.
 - The port is in the forwarding state : SW1(Fa0/1, Fa0/2), SW2(Fa0/1, Fa0/2, Fa0/3), SW3(Fa0/1, Fa0/2, Fa0/3),
 - Port yang berada pada keadan blocking : SW1(Fa0/2)

5. Ping leo to virgo

```

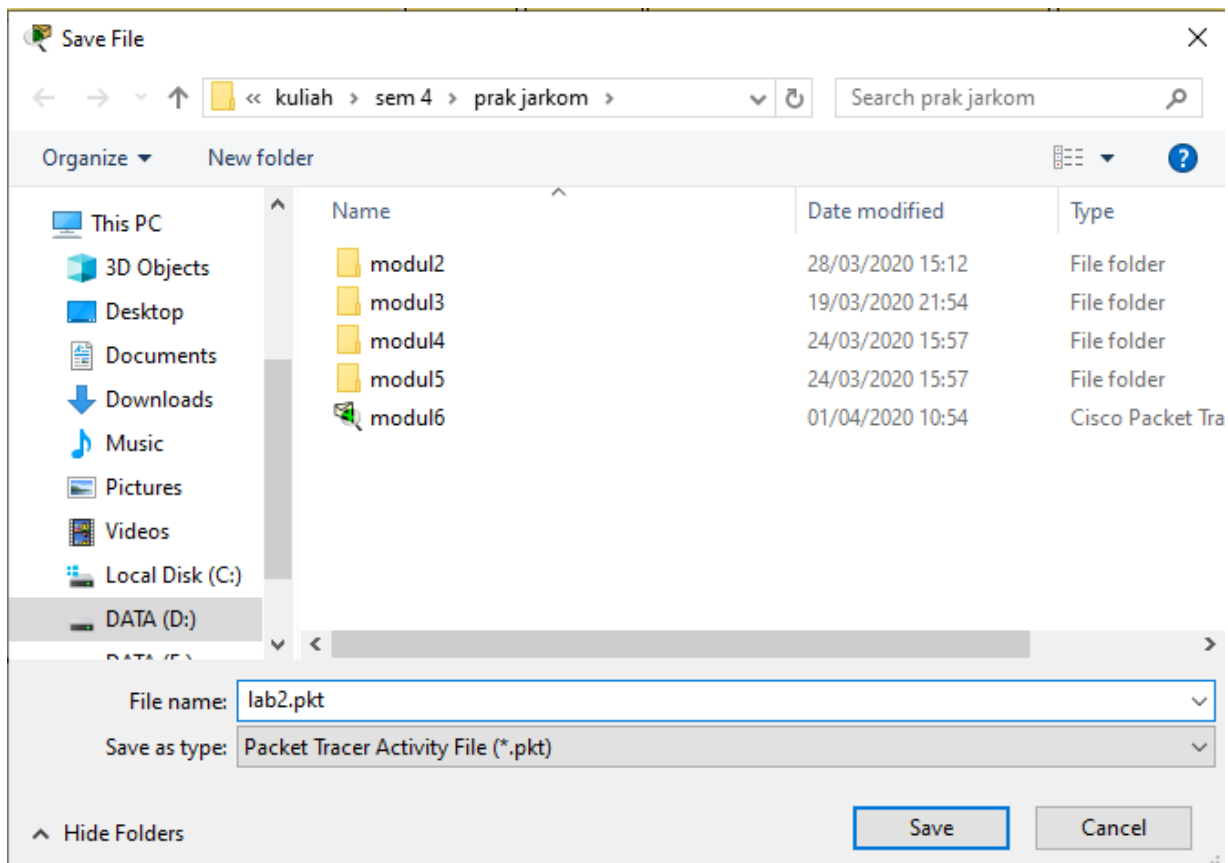
C:\>ping 172.21.1.3

Pinging 172.21.1.3 with 32 bytes of data:

Reply from 172.21.1.3: bytes=32 time=106ms 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

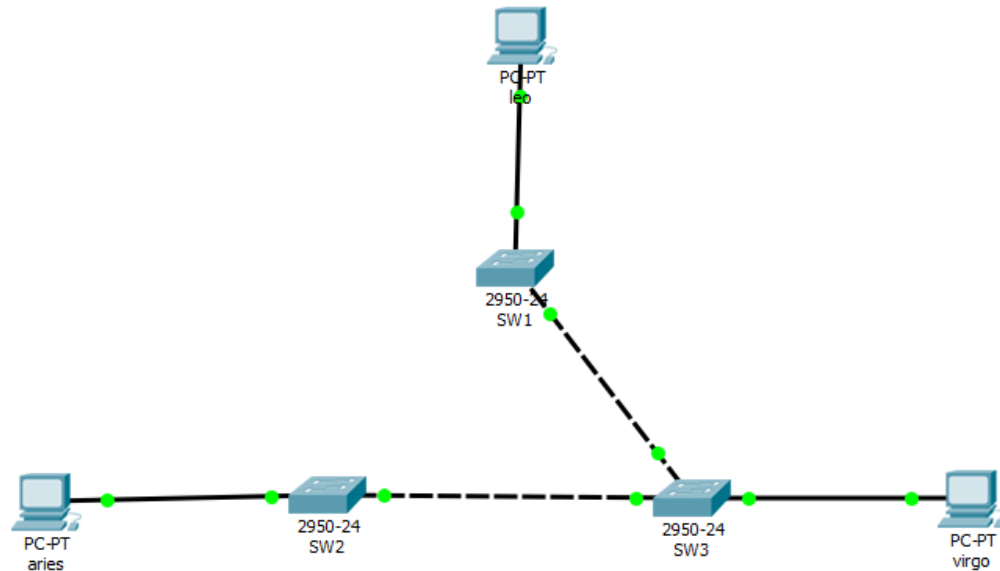
Ping statistics for 172.21.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 106ms, Average = 26ms
  
```

6. Save the network configuration with the name lab2.pkt



Activity 2. Topology 2

1. Make a topology design



2. See STP status on each switch
 - a. SW1

```
SW1
Physical Config CLI Attributes
IOS Command Line Interface

Switch>enable
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
            Address     0001.4328.BA34
            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     0060.3EA9.C487
            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
Fa0/3        Root FWD 19        128.3    P2p

Switch#
```

Ctrl+F6 to exit CLI focus

Copy Paste

☐ Top

b. SW2

SW2

Physical Config CLI Attributes

IOS Command Line Interface

```
Switch>enable
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
            Address     0001.4328.BA34
            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     0001.6319.3BD8
            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

Switch#
```

Ctrl+F6 to exit CLI focus

Copy Paste

☐ Top

c. SW3

SW3

Physical Config CLI Attributes

IOS Command Line Interface

```
Switch>enable
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
            Address     0001.4328.BA34
            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     0001.4328.BA34
            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        Desg FWD 19        128.1    P2p

Switch#
```

Ctrl+F6 to exit CLI focus

Copy Paste

☐ Top

3. Populate the table on each switch

a. SW1

No	Variable	Value
1	Root ID	32769 : 0001.4328.BA34
2	Priority	32769
3	MAC Address	0060.3EA9.C487
4	Bridge ID	32769 : 0060.3EA9.C487
5	Cost (0/1;0/3)	0/1 → 19 0/3 → 19
6	Hello Time	2 sec
7	MaxAge	20 sec
8	Forward Delay	15 sec

b. SW2

No	Variable	Value
1	Root ID	32769 : 0001.4328.BA34
2	Priority	32769
3	MAC Address	0001.6319.3BD8
4	Bridge ID	32769 : 0001.6319.3BD8
5	Cost (0/2;0/3)	0/2 → 19 0/3 → 19
6	Hello Time	2 sec
7	MaxAge	20 sec
8	Forward Delay	15 sec

c. SW3

No	Variable	Value
1	Root ID	32769 : 0001.4328.BA34
2	Priority	32769
3	MAC Address	0001.4328.BA34
4	Bridge ID	32769 : 0001.4328.BA34
5	Cost (0/1;0/2;0/3)	0/1 → 19 0/2 → 19 0/3 → 19
6	Hello Time	2 sec
7	MaxAge	20 sec
8	Forward Delay	15 sec

- Root bridge : SW3
- Designated bride : SW1 and SW2

- Root port : SW1(0/3), SW2(0/2)
- Designated port : SW1(0/1), SW2(0/3), SW3(0/1, 0/2 0/3)
- The port is in the forwarding state : SW1(0/1, 0/3), SW2(0/2, 0/3), SW3(0/1, 0/2, 0/3). So, all switches are forwarded,
- Port yang berada pada keadaan blocking : no ports are blocked

4. Ping from PC Leo to PC Virgo

