Nama   : Ayasha Ninda Maharani

NIM   : L200170143
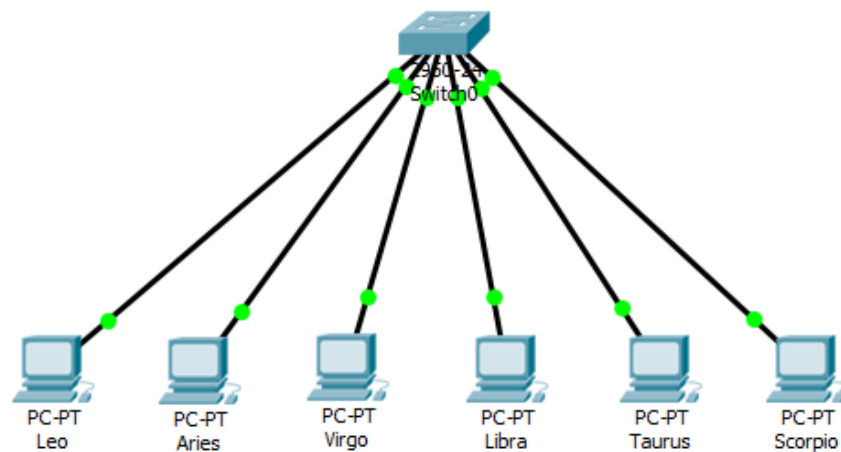
Kelas   : C → D

MODUL IV

Virtual Land dan Trunking

Kegiatan 1. Topologi 1

1. Desain

2. Memberi nama dan IP address pada masing-masing PC
   a. PC 1 : Leo

IP Configuration

IP Configuration

○ 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::240:BFF:FED6:97D2
IPv6 Gateway	
IPv6 DNS Server	

b. PC 2 : Aries

Global Settings

Display Name Aries

Gateway/DNS IPv4

○ DHCP
● Static

Gateway	0.0.0.0
DNS Server	0.0.0.0

Gateway/DNS IPv6

○ DHCP
○ Auto Config
● Static

IPv6 Gateway	
IPv6 DNS Server	

IP Configuration

IP Configuration

○ 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::201:43FF:FEE4:291E

IPv6 Gateway   _____

IPv6 DNS Server   _____

c. PC 3 : Virgo

Global Settings

Display Name Virgo

Gateway/DNS IPv4

○ DHCP

● Static

Gateway   0.0.0.0

DNS Server   0.0.0.0

Gateway/DNS IPv6

○ DHCP

○ Auto Config

● Static

IPv6 Gateway   _____

IPv6 DNS Server   _____

IP Configuration

IP Configuration

○ DHCP   ◉ Static

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 Configuration

○ DHCP   ○ Auto Config   ◉ Static

IPv6 Address	/
Link Local Address	FE80::260:2FFF:FE89:4914
IPv6 Gateway	
IPv6 DNS Server	

d. PC 4 : Libra

Global Settings

Display Name   Libra

Gateway/DNS IPv4

○ DHCP

◉ Static

Gateway   0.0.0.0

DNS Server   0.0.0.0

Gateway/DNS IPv6

○ DHCP

○ Auto Config

◉ Static

IPv6 Gateway

IPv6 DNS Server

IP Configuration

IP Configuration

- ○ DHCP   ◉ Static

IP Address	172.21.1.4
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::209:7CFF:FE64:9811
IPv6 Gateway	
IPv6 DNS Server	

e. PC 5: Taurus

Global Settings

Display Name Taurus

Gateway/DNS IPv4

- ○ DHCP
- ◉ Static

Gateway	0.0.0.0
DNS Server	0.0.0.0

Gateway/DNS IPv6

- ○ DHCP
- ○ Auto Config
- ◉ Static

IPv6 Gateway	
IPv6 DNS Server	

IP Configuration

IP Configuration

○ DHCP	◉ Static
IP Address	172.21.1.5
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::290:21FF:FEAB:566E	
IPv6 Gateway		
IPv6 DNS Server		

f. PC 6 : Scorpio

Global Settings

Display Name Scorpio

Gateway/DNS IPv4

○ DHCP
◉ Static

Gateway   0.0.0.0
DNS Server 0.0.0.0

Gateway/DNS IPv6

○ DHCP
○ Auto Config
◉ Static

IPv6 Gateway
IPv6 DNS Server

3. Melakukan konfigurasi pada switch

```
Switch>enable
Switch#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan zodiak1
                   ^
% Invalid input detected at '^' marker.

Switch(config)#vlan 10
Switch(config-vlan)#name zodiak1
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name zodiak2
Switch(config-vlan)#exit
Switch(config)#vlan 30
Switch(config-vlan)#name zodiak3
Switch(config-vlan)#exit
Switch(config)#int fa 0/1
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 10
Switch(config-if)#int fa 0/4
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 10
Switch(config-if)#int fa 0/2
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 20
Switch(config-if)#int fa 0/5
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 20
Switch(config-if)#int fa 0/3
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 30
Switch(config-if)#int fa 0/6
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 30
Switch(config-if)#end
Switch#
```

4. Melihat konfigurasi VLAN yang telah di buat

```
%SYS-5-CONFIG_I: Configured from console by console
show vlan brief

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/7, Fa0/8, Fa0/9, Fa0/10
                                                Fa0/11, Fa0/12, Fa0/13, Fa0/14
                                                Fa0/15, Fa0/16, Fa0/17, Fa0/18
                                                Fa0/19, Fa0/20, Fa0/21, Fa0/22
                                                Fa0/23, Fa0/24
10   zodiak1                          active    Fa0/1, Fa0/4
20   zodiak2                          active    Fa0/2, Fa0/5
30   zodiak3                          active    Fa0/3, Fa0/6
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active


Switch# show vlan id 10

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
10   zodiak1                          active    Fa0/1, Fa0/4

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
10   enet  100010     1500  -      -      -        -    -        0      0

Switch#show vlan id 20

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
20   zodiak2                          active    Fa0/2, Fa0/5

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
20   enet  100020     1500  -      -      -        -    -        0      0

Switch#show vlan id 30

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
30   zodiak3                          active    Fa0/3, Fa0/6

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
30   enet  100030     1500  -      -      -        -    -        0      0

Switch#
```

Kegiatan 2. Topologi 2

1. Desain
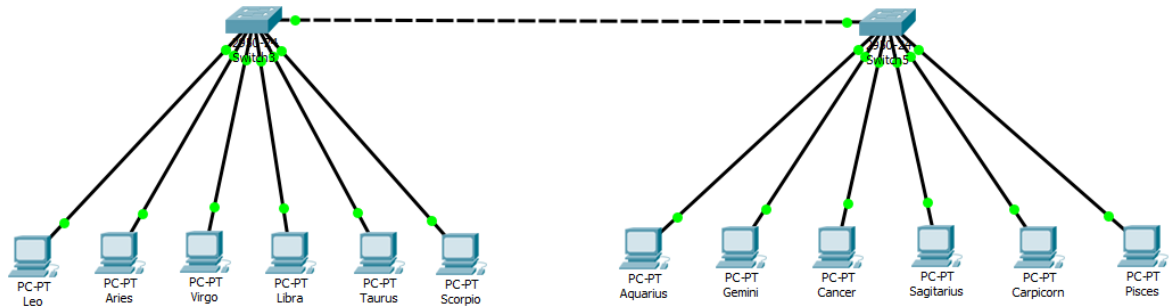
2. Memberi IP Address pada masing-masing PC
   a. Leo

IP Configuration	
○ DHCP	◉ Static
IP Address	171.21.1.1
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

   b. Aries

IP Configuration	
○ DHCP	◉ Static
IP Address	171.21.1.2
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

   c. Virgo

IP Configuration	
○ DHCP	◉ Static
IP Address	172.21.2.1
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

d. Libra

IP Configuration

○ DHCP　　　　　　　　　　　◉ Static

IP Address　　　　　172.21.2.2

Subnet Mask　　　　255.255.255.0

Default Gateway　　0.0.0.0

DNS Server　　　　　0.0.0.0

e. Taurus

IP Configuration

○ DHCP　　　　　　　　　　　◉ Static

IP Address　　　　　172.21.3.1

Subnet Mask　　　　255.255.255.0

Default Gateway　　0.0.0.0

DNS Server　　　　　0.0.0.0

f. Scorpio

IP Configuration

○ DHCP　　　　　　　　　　　◉ Static

IP Address　　　　　172.21.3.2

Subnet Mask　　　　255.255.255.0

Default Gateway　　0.0.0.0

DNS Server　　　　　0.0.0.0

g. Aquarius

IP Configuration

○ DHCP　　　　　　　　　　　◉ Static

IP Address　　　　　172.21.1.3

Subnet Mask　　　　255.255.255.0

Default Gateway　　0.0.0.0

DNS Server　　　　　0.0.0.0

h. Gemini

IP Configuration

○ DHCP　　　　　　　　　　　◉ Static

IP Address　　　　　172.21.1.4

Subnet Mask　　　　255.255.255.0

Default Gateway　　0.0.0.0

DNS Server　　　　　0.0.0.0

i. Cancer

IP Configuration

○ DHCP   ⦿ Static

IP Address	172.21.2.3
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

j. Sagitarius

IP Configuration

○ DHCP   ⦿ Static

IP Address	172.21.2.4
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

k. Capricorn

IP Configuration

○ DHCP   ⦿ Static

IP Address	172.21.3.3
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

l. Pisces

IP Configuration

○ DHCP   ⦿ Static

IP Address	172.21.3.4
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

3. Konfigurasi switch 1 dengan mode privileged dan konfigurasi port-port switch ke dalam VLAN.

   a. Konfigurasi dengan mode privileged

```
Switch>enable
Switch#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name zodiak1
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name zodiak2
Switch(config-vlan)#exit
Switch(config)#vlan 30
Switch(config-vlan)#name zodiak3
Switch(config-vlan)#exit
```

b. Konfigurasi port-port ke dalam VLAN.

```
Switch(config)#int fa 0/1
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 10
Switch(config-if)#int fa 0/4
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 10
Switch(config-if)#int fa 0/2
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 20
Switch(config-if)#int fa 0/5
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 20
Switch(config-if)#int fa 0/3
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 30
Switch(config-if)#int fa 0/6
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 30
Switch(config-if)#end
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```

4. Konfigurasi VLAN trunking pada switch 1

```
Switch#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#int fa 0/7
Switch(config-if)#sw mode trunk

Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to up

Switch(config-if)#exit
```

5. Melihat konfigurasi trunking yang telah dibuat pada mode privileged.

```
Switch(config)#end
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show int fa 0/7 switchport
Name: Fa0/7
Switchport: Enabled
Administrative Mode: trunk
Operational Mode: trunk
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: On
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Voice VLAN: none
Administrative private-vlan host-association: none
Administrative private-vlan mapping: none
Administrative private-vlan trunk native VLAN: none
Administrative private-vlan trunk encapsulation: dot1q
Administrative private-vlan trunk normal VLANs: none
Administrative private-vlan trunk private VLANs: none
Operational private-vlan: none
Trunking VLANs Enabled: All
Pruning VLANs Enabled: 2-1001
Capture Mode Disabled
Capture VLANs Allowed: ALL
Protected: false
Appliance trust: none

Switch#show int trunk
Port         Mode          Encapsulation  Status         Native vlan
Fa0/7        on            802.1q         trunking       1

Port         Vlans allowed on trunk
Fa0/7        1-1005

Port         Vlans allowed and active in management domain
Fa0/7        1,10,20,30

Port         Vlans in spanning tree forwarding state and not pruned
Fa0/7        1,10,20,30
```

```
Switch#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/8, Fa0/9, Fa0/10, Fa0/11
                                                Fa0/12, Fa0/13, Fa0/14, Fa0/15
                                                Fa0/16, Fa0/17, Fa0/18, Fa0/19
                                                Fa0/20, Fa0/21, Fa0/22, Fa0/23
                                                Fa0/24
10   zodiak1                          active    Fa0/1, Fa0/4
20   zodiak2                          active    Fa0/2, Fa0/5
30   zodiak3                          active    Fa0/3, Fa0/6
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
10   enet  100010     1500  -      -      -        -    -        0      0
20   enet  100020     1500  -      -      -        -    -        0      0
30   enet  100030     1500  -      -      -        -    -        0      0
 --More--
```

6. Melakukan ping dari PC Leo ke PC Pisces

```
Packet Tracer PC Command Line 1.0
C:\>ping 172.21.3.4

Pinging 172.21.3.4 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.21.3.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

7. Konfigurasi VLAN trunking pada switch 2

```
Switch#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                                Fa0/5, Fa0/6, Fa0/8, Fa0/9
                                                Fa0/10, Fa0/11, Fa0/12, Fa0/13
                                                Fa0/14, Fa0/15, Fa0/16, Fa0/17
                                                Fa0/18, Fa0/19, Fa0/20, Fa0/21
                                                Fa0/22, Fa0/23, Fa0/24
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
1002 fddi  101002     1500  -      -      -        -    -        0      0
1003 tr    101003     1500  -      -      -        -    -        0      0
1004 fdnet 101004     1500  -      -      -        ieee -        0      0
1005 trnet 101005     1500  -      -      -        ibm  -        0      0

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------

Remote SPAN VLANs
------------------------------------------------------------------------------

Primary Secondary Type              Ports
------- --------- ----------------- --------------------------------------------
```

8. Konfigurasi port-port pada switch 2 ke dalam VLAN

```
Switch#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name zodiak1
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name zodiak2
Switch(config-vlan)#exit
Switch(config)#vlan 30
Switch(config-vlan)#name zodiak3
Switch(config-vlan)#exit
Switch(config)#int fa 0/1
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 10
Switch(config-if)#int fa 0/2
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 10
Switch(config-if)#int fa 0/3
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 20
Switch(config-if)#int fa 0/4
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 20
Switch(config-if)#int fa 0/5
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 30
Switch(config-if)#int fa 0/6
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 30
Switch(config-if)#exit
Switch(config)#end
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```

9. Melakukan Ping
   a. Ping dari PC Leo ke PC Aries

```
C:\>ping 172.21.1.2

Pinging 172.21.1.2 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.21.1.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

b. Ping dari PC Leo ke PC Aquarius

```
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=60ms 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 = 60ms, Average = 15ms
```

c. Ping dari PC Leo ke PC Pisces

```
C:\>ping 172.21.3.4

Pinging 172.21.3.4 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.21.3.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

d. Ping dari PC Libra ke PC Cancer

```
C:\>ping 172.21.2.3

Pinging 172.21.2.3 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.21.2.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

e. Ping dari PC Libra ke PC Leo

```
C:\>ping 172.21.1.1

Pinging 172.21.1.1 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.21.1.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```