

Computer Networks Practicum 4



By :

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INFORMATION TECHNOLOGY

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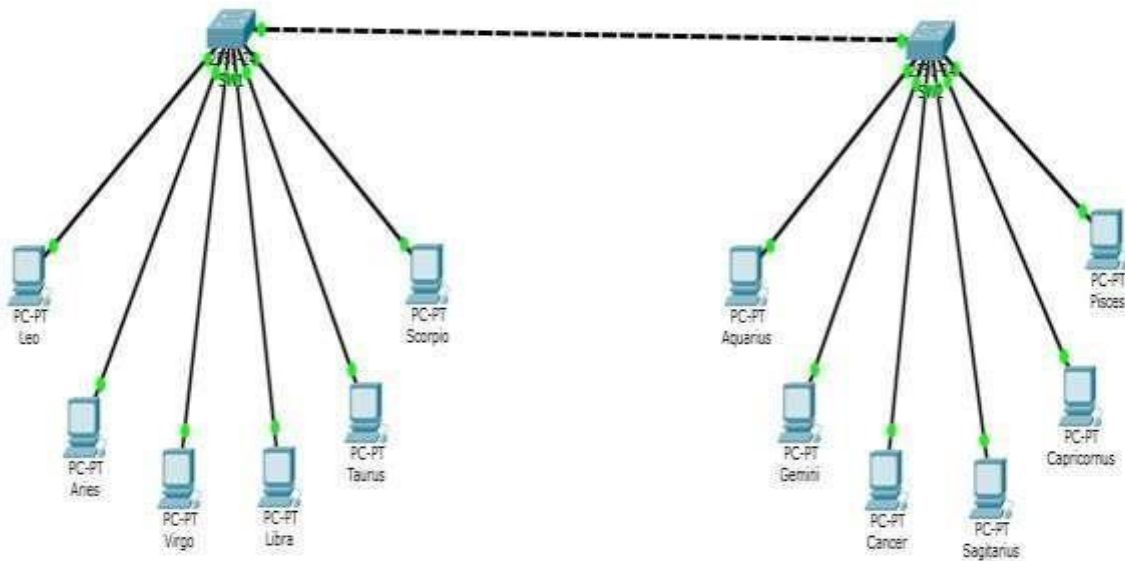
MUHAMMADIYAH UNIVERSITY OF SURAKARTA

2020

Activity 2. Topologi 2

1. Make the following topology using packet tracer
2. Give the name of each device

- | | |
|------------------|-----------------------|
| a. Switch1 : SW1 | h. Switch 2 : SW2 |
| b. Pc0 : Leo | i. Pc6 : Aquarius |
| c. Pc1 : Aries | j. Pc7 : Gemini |
| d. Pc2 : Virgo | k. Pc8 : Cancer |
| e. Pc3 : Libra | l. Pc9 : Sagitarius |
| f. Pc4 : Taurus | m. Pc10 : Capricornus |
| g. Pc5 : Scorpio | n. Pc11 : Pisces |



3. Change the configuration of each PC

- | | |
|----------------|-----------------|
| a. Leo | : 172.21.1.1/24 |
| b. Aries | : 172.21.1.2/24 |
| c. Virgo | : 172.21.2.1/24 |
| d. Libra | : 172.21.2.2/24 |
| e. Taurus | : 172.21.3.1/24 |
| f. Scorpio | : 172.21.3.2/24 |
| g. Aquarius | : 172.21.1.3/24 |
| h. Gemini | : 172.21.1.4/24 |
| i. Cancer | : 172.21.2.3/24 |
| j. Sagitarius | : 172.21.2.4/24 |
| k. Capricornus | : 172.21.3.3/24 |

/24 maksudnya adalah masuk kelas c

The screenshot shows a window titled "Leo" with a tabbed interface. The "Config" tab is selected. Inside the "Config" tab, there is a sub-window titled "IP Configuration" with a close button (X). This sub-window contains two sections: "IP Configuration" and "IPv6 Configuration".

IP Configuration Section:

- ☐ DHCP
- ☒ Static
- IP Address: 172.21.1.1
- Subnet Mask: 255.255.255.0
- Default Gateway: (empty field)
- DNS Server: (empty field)

IPv6 Configuration Section:

- ☐ DHCP
- ☐ Auto Config
- ☒ Static
- IPv6 Address: (empty field) / (empty field)
- Link Local Address: FE80::20B:BEFF:FE46:D5AA
- IPv6 Gateway: (empty field)
- IPv6 DNS Server: (empty field)

At the bottom left of the "Leo" window, there is a checkbox labeled "Top". At the bottom right, the word "Activ" is partially visible.

Aries

Physical Config Desktop Attributes Software/Services

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.1.2

Subnet Mask 255.255.255.0

Default Gateway

DNS Server

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::2D0:FFFF:FEA3:4D36

IPv6 Gateway

IPv6 DNS Server

☐ Top

Activ

Virgo

Physical Config Desktop Attributes Software/Services

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.2.1

Subnet Mask 255.255.255.0

Default Gateway

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::201:63FF:FE52:668A

IPv6 Gateway

IPv6 DNS Server

☐ Top

Activ

Libra

Physical Config Desktop Attributes Software/Services

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.2.2

Subnet Mask 255.255.255.0

Default Gateway

DNS Server

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::20A:41FF:FE80:8070

IPv6 Gateway

IPv6 DNS Server

☐ Top

Taurus

Physical Config Desktop Attributes Software/Services

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.3.1

Subnet Mask 255.255.255.0

Default Gateway

DNS Server

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::2D0:58FF:FE0A:5735

IPv6 Gateway

IPv6 DNS Server

☐ Top

Scorpio

Physical Config Desktop Attributes Software/Services

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.3.2

Subnet Mask 255.255.255.0

Default Gateway

DNS Server

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::2E0:F9FF:FE68:83E9

IPv6 Gateway

IPv6 DNS Server

Top

Aquarius

Physical Config Desktop Attributes Software/Services

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.1.3

Subnet Mask 255.255.255.0

Default Gateway

DNS Server

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::2D0:BAFF:FE34:39EA

IPv6 Gateway

IPv6 DNS Server

Top

Gemini

Physical Config Desktop Attributes Software/Services

IP Configuration X

IP Configuration

☐ DHCP ☒ Static

IP Address: 172.21.1.4

Subnet Mask: 255.255.255.0

Default Gateway:

DNS Server: 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address: /

Link Local Address: FE80::250:FFF:FEDE:7891

IPv6 Gateway:

IPv6 DNS Server:

☐ Top

Activ

Cancer

Physical Config Desktop Attributes Software/Services

IP Configuration X

IP Configuration

☐ DHCP ☒ Static

IP Address: 172.21.2.3

Subnet Mask: 255.255.255.0

Default Gateway:

DNS Server:

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address: /

Link Local Address: FE80::201:63FF:FE39:833E

IPv6 Gateway:

IPv6 DNS Server:

☐ Top

Activ

Sagittarius

Physical Config Desktop Attributes Software/Services

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address: 172.21.2.4

Subnet Mask: 255.255.255.0

Default Gateway:

DNS Server:

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address: /

Link Local Address: FE80::260:70FF:FE63:6222

IPv6 Gateway:

IPv6 DNS Server:

☐ Top

Activ

Capricornus

Physical Config Desktop Attributes Software/Services

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address: 172.21.3.3

Subnet Mask: 255.255.255.0

Default Gateway:

DNS Server:

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address: /

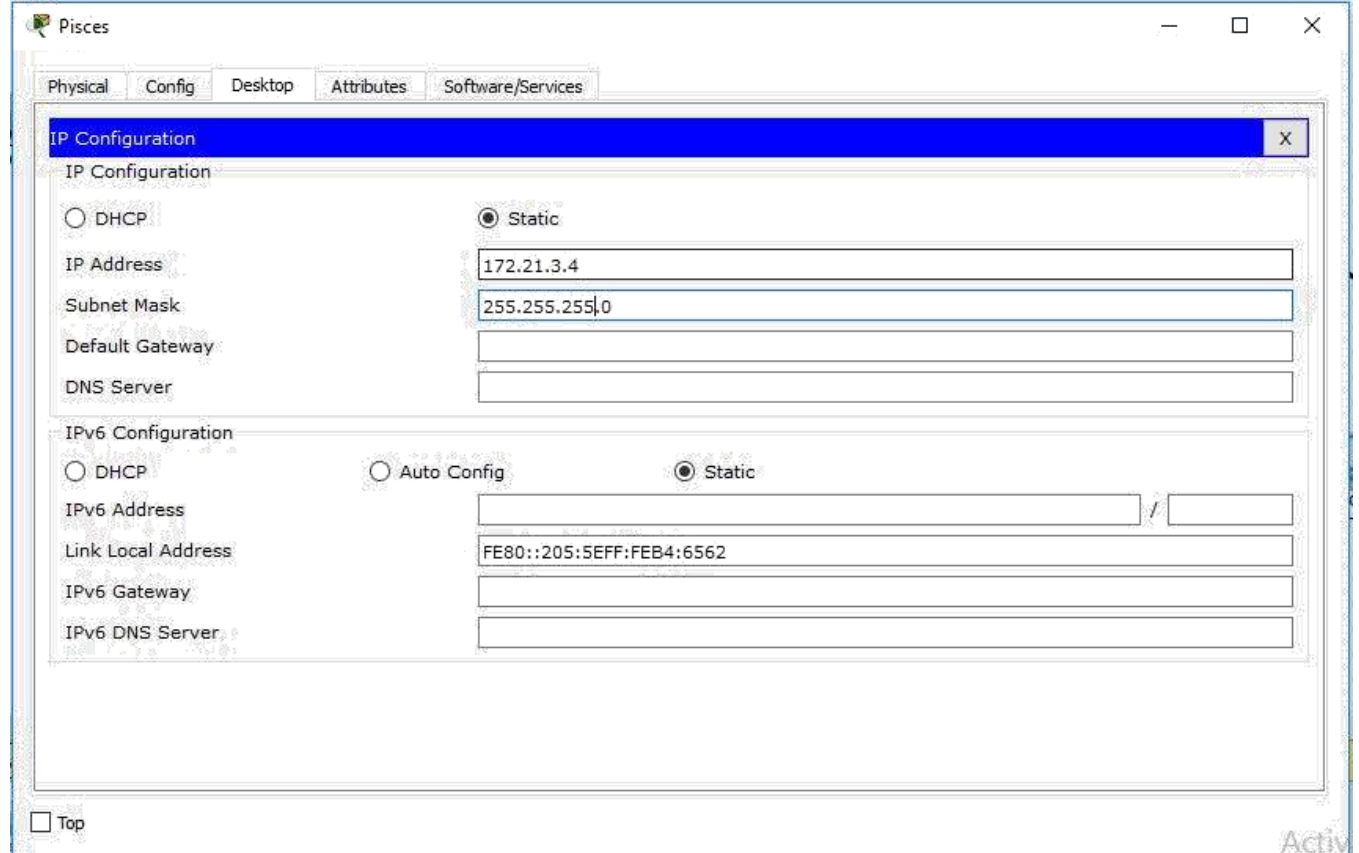
Link Local Address: FE80::230:F2FF:FE61:1250

IPv6 Gateway:

IPv6 DNS Server:

☐ Top

Activ



4. Make 3 pieces of Vlan with the names zodiac1, zodiac2, and zodiac3
5. Then in configuration mode, group the switch ports into the Zodiac1, zodiac2, and zodiac3 VLANs. The setting is :
 - Zodiak1 : leo and libra
 - Zodiak2 : aries and Taurus
 - Zodiak3 : virgo dan scorpio

```
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
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 0/3
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 30
Switch(config-if)#int fa 0/5
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 20
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
```

6. Configuring VLAN trunking on the switch

1. Rare operation as shown below:

```
Switch#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface fa 0/24
Switch(config-if)#switchport mode trunk
Switch(config-if)#exit
Switch(config)#
```

7. Configuring the trunking made privileged mode. Operation steps to see the configuration as shown below :

```

Switch#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface fa 0/24
Switch(config-if)#switchport mode trunk
% Invalid input detected at '-' marker.
Switch(config-if)#switchport mode trunk.
Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to up
Switch(config-if)#ex
Switch(config)#ex
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show interface fastethernet 0/24 switchport
Name: Fa0/24
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

```

```

Switch#show interface trunk
Port      Mode      Encapsulation  Status        Native vlan
Fa0/24    on        802.1q         trunking      1

Port      Vlans allowed on trunk
Fa0/24    1-1005

Port      Vlans allowed and active in management domain
Fa0/24    1,10,20,30

Port      Vlans in spanning tree forwarding state and not pruned
Fa0/24    1,10,20,30

Switch#show vlan
VLAN Name                Status    Ports
----
1    default                active    Fa0/6, 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
10   sdiak1                  active    Fa0/1, Fa0/4
20   sdiak2                  active    Fa0/2
30   sdiak3                  active    Fa0/3, Fa0/5
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    BrgdMode 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
1002 fddi  101002    1500   -      -      -      -      -      0      0
1003 enet  101003    1500   -      -      -      -      -      0      0

```

```
Switch#show vlan
```

VLAN	Name	Status	Ports
1	default	active	Fa0/6, 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
10	zodiak1	active	Fa0/1, Fa0/4
20	zodiak2	active	Fa0/2
30	zodiak3	active	Fa0/3, Fa0/5
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
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

```
Remote SPAN VLANs
```

Primary	Secondary	Type	Ports
Switch#			

8. Ping from PC Leo to Pisces :

```
Command Prompt
```

```
C:\>ping 172.21.1.1
```

```
Pinging 172.21.1.1 with 32 bytes of data:
```

```
Reply from 172.21.1.1: bytes=32 time=22ms TTL=128
```

```
Reply from 172.21.1.1: bytes=32 time=18ms TTL=128
```

```
Reply from 172.21.1.1: bytes=32 time=18ms TTL=128
```

```
Reply from 172.21.1.1: bytes=32 time=10ms TTL=128
```

```
Ping statistics for 172.21.1.1:
```

```
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

```
Approximate round trip times in milli-seconds:
```

```
Minimum = 10ms, Maximum = 22ms, Average = 17ms
```

```
C:\>
```

```
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),
```

```
C:\>ping 172.21.2.1
```

```
Pinging 172.21.2.1 with 32 bytes of data:
```

```
Request timed out.
```

```
Request timed out.
```

```
Request timed out.
```

```
Request timed out.
```

```
Ping statistics for 172.21.2.1:
```

```
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

```
C:\>ping 172.21.2.2
```

Command Prompt

```
C:\>ping 172.21.2.2

Pinging 172.21.2.2 with 32 bytes of data:

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

Ping statistics for 172.21.2.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 172.21.3.1

Pinging 172.21.3.1 with 32 bytes of data:

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

Ping statistics for 172.21.3.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 172.21.3.2

Pinging 172.21.3.2 with 32 bytes of data:

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

Ping statistics for 172.21.3.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 172.21.1.3

Pinging 172.21.1.3 with 32 bytes of data:

Request timed out.
```

Command Prompt

```
Request timed out.

Ping statistics for 172.21.1.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

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),

C:\>ping 172.21.2.4

Pinging 172.21.2.4 with 32 bytes of data:

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

Ping statistics for 172.21.2.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 172.21.3.3

Pinging 172.21.3.3 with 32 bytes of data:

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

Ping statistics for 172.21.3.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```


9. Configure VLAN trunking on the switch 2 :

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

Switch>enable
Switch#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface fa 0/24
Switch(config-if)#switchport mode trunk
Switch(config-if)#ex
Switch(config)#ex
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show vlan

VLAN Name                Status    Ports
-----
1    default                active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                           Fa0/5, Fa0/6, 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

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  BrgdMode Trans1 Trans2
-----
1    enet     1000001   1500    -      -      -      -    -        0      0
1002 fddi     1010002   1500    -      -      -      -    -        0      0
1003 tr      1010003   1500    -      -      -      -    -        0      0
1004 fcdnet  1010004   1500    -      -      -      -    ieee     0      0
1005 trnet   1010005   1500    -      -      -      -    ibm      0      0

Remote SPAN VLANs
-----

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

10. Change privileged mode:

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

Switch>enable
Switch#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface fa 0/24
Switch(config-if)#switchport mode trunk
Switch(config-if)#ex
Switch(config)#ex
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show vlan

VLAN Name                Status    Ports
-----
1    default                active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                           Fa0/5, Fa0/6, 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

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  BrgdMode Trans1 Trans2
-----
1    enet     1000001   1500    -      -      -      -    -        0      0
1002 fddi     1010002   1500    -      -      -      -    -        0      0
1003 tr      1010003   1500    -      -      -      -    -        0      0
1004 fcdnet  1010004   1500    -      -      -      -    ieee     0      0
1005 trnet   1010005   1500    -      -      -      -    ibm      0      0

Remote SPAN VLANs
-----

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

11. In Configures mode, configure switch ports into zodiac1, zodiac2, and zodiac3 VLANs with the following members :

- Zodiac1 = aquarius and Gemini
- Zosiak2 = cancer and sagitarius
- Zodiac3 = capricornus and pisces

```
Switch#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#int fa 0/1
Switch(config-if)#ex
Switch(config)#ex
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#enable
Switch#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name radiak1
Switch(config-vlan)#ex
Switch(config)#vlan 20
Switch(config-vlan)#name radiak2
Switch(config-vlan)#ex
Switch(config)#vlan 30
Switch(config-vlan)#name radiak3
Switch(config-vlan)#ex
Switch(config)#int fa 0/3
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 0/2
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 30
Switch(config-if)#int fa 0/5
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 20
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 30
Switch(config-if)#end
Switch#
```

12. Ping from PC Leo to PC Aries, PC Leo to PC Aquarius, PC Leo to PC Pisces, PC Libra to PC Cancer, and PC Libra to PC Leo

```
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),
```

```
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=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
```

```
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 = 1ms, Average = 0ms
```

```
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),
```

```
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),
```

```
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),
```

```
C:\>|
```