Nama : Ayasha Ninda Maharani

NIM : L200170143

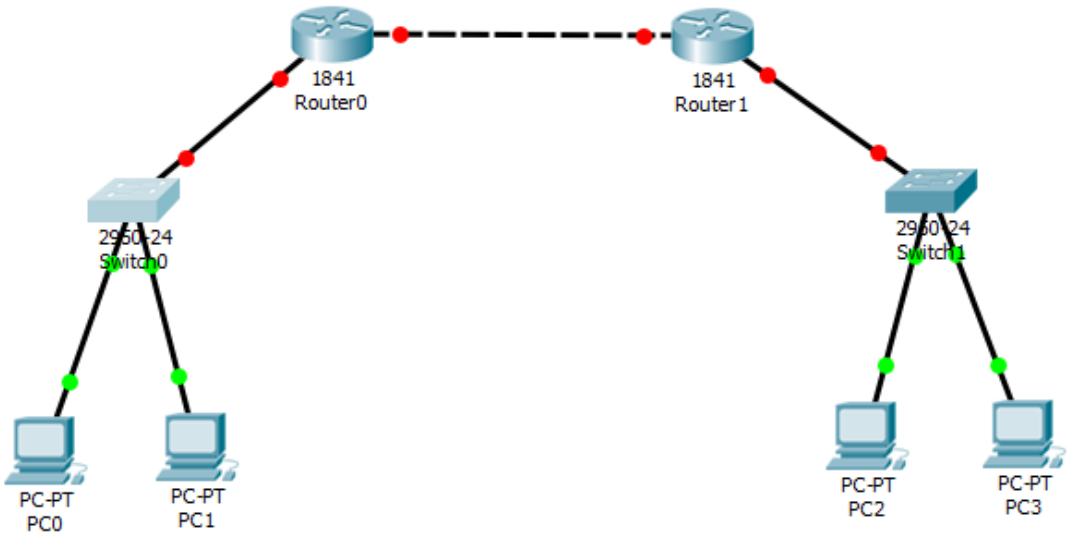
Kelas : C

MODUL 9

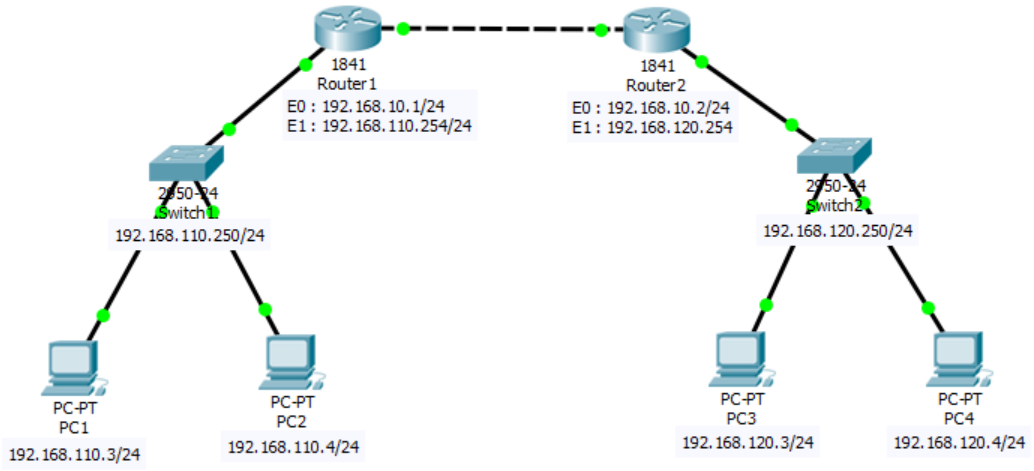
Packet Filtering dengan Access List

Kegiatan 1. Konfigurasi Access List

1. Desain jaringan.



2. Memberi Identitas.



3. Memberikan alamat IP pada masing-masing switch.

a. Switch 1.

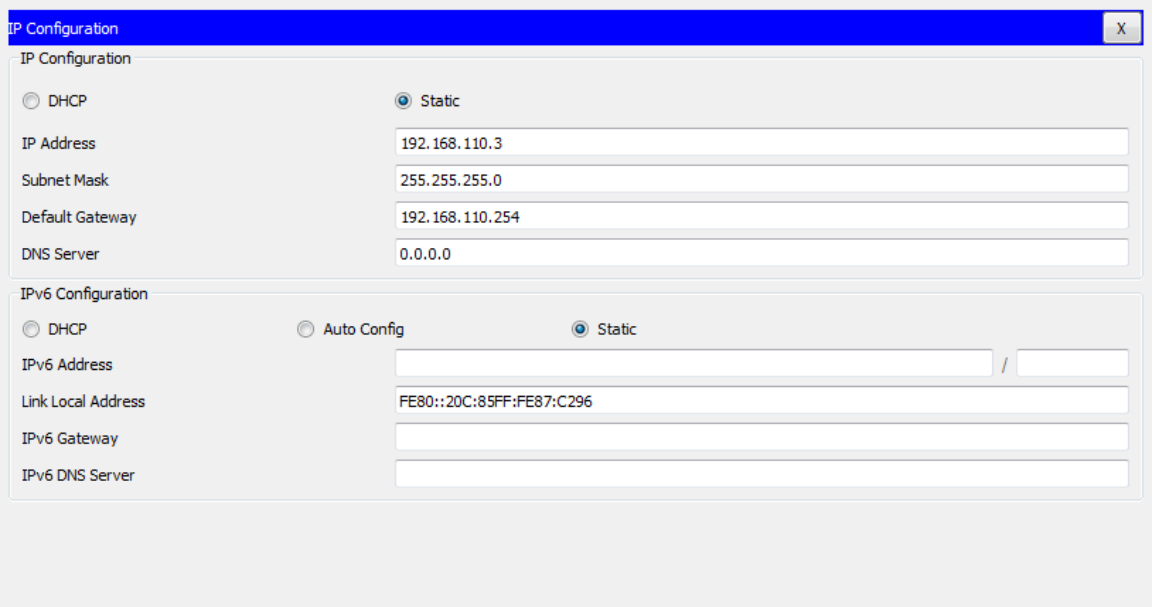
```
Switch>en
Switch#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#int vlan 1
Switch(config-if)#ip address 192.168.110.250 255.255.255.0
Switch(config-if)#no shut

Switch(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up

Switch(config-if)#exit
Switch(config)#
```

b. Switch 2.

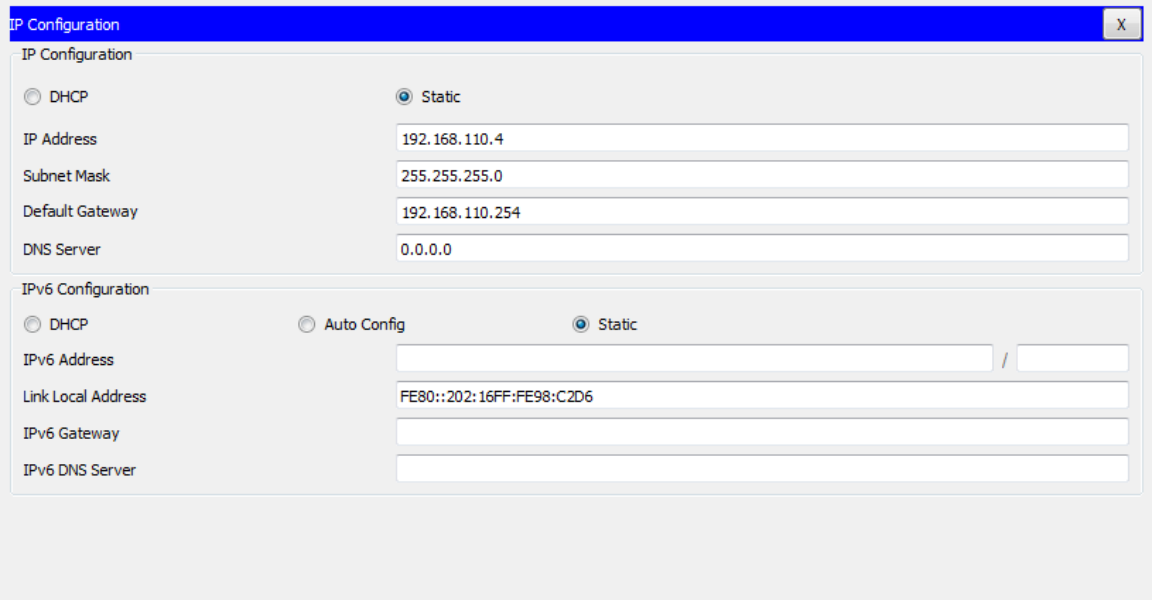
```
Switch>en
Switch#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#int vlan 1
Switch(config-if)#ip address 192.168.120.250 255.255.255.0
Switch(config-if)#no shut

Switch(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up

Switch(config-if)#exit
```

4. Memberikan IP Address, Subnet Mask, dan Default Gateway pada masing-masing komputer.

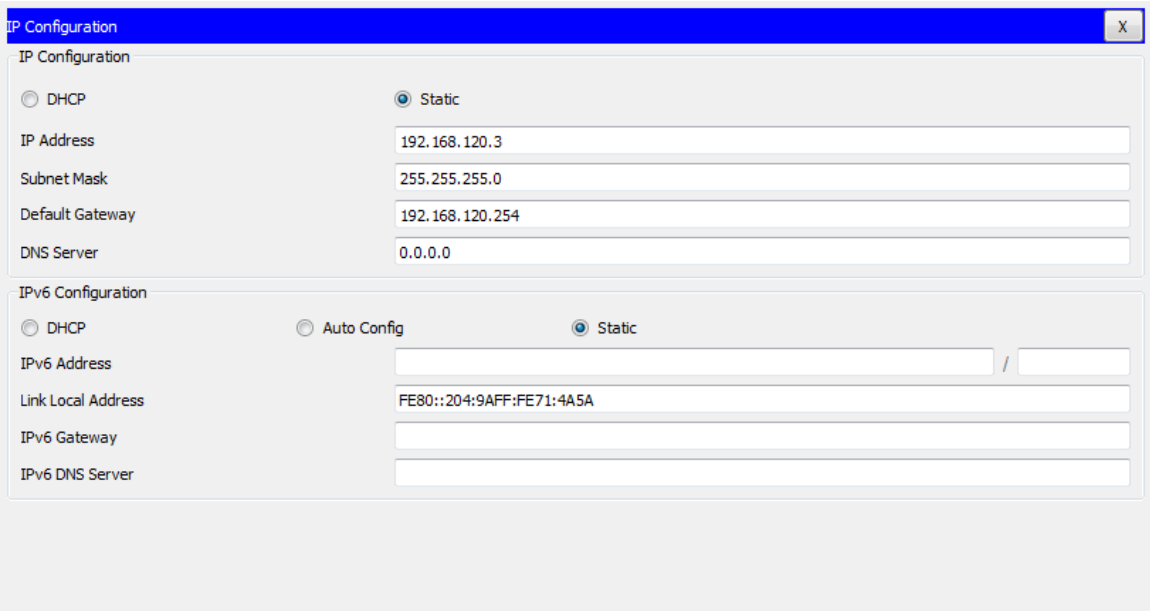
a. PC 1



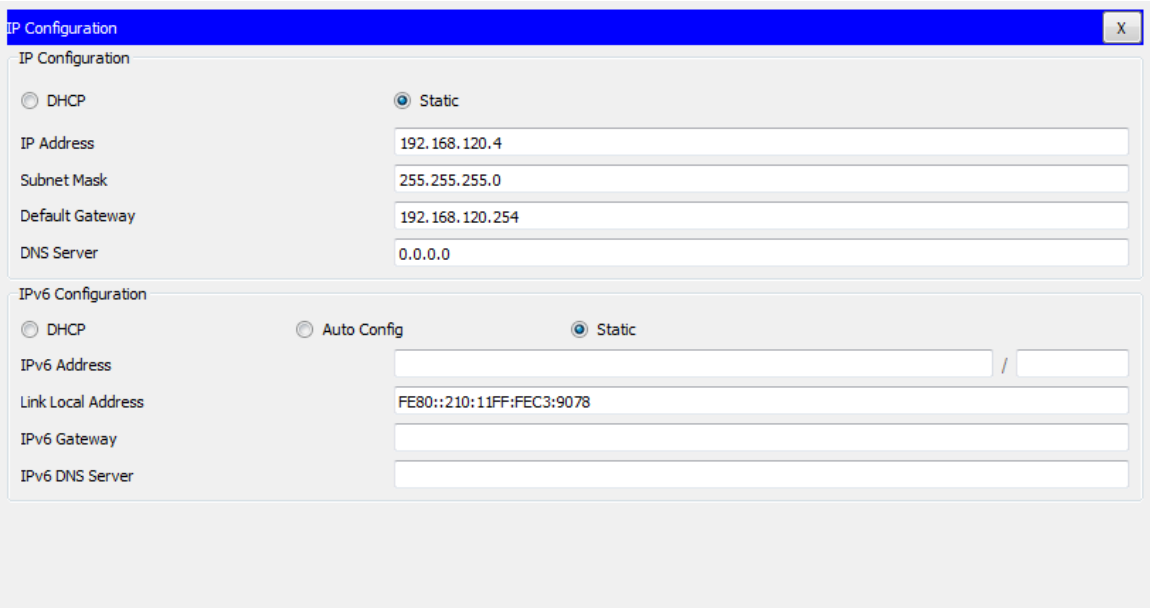
b. PC 2



c. PC 3


IP Configuration
X
IP Configuration
DHCP
Static
IP Address
192.168.120.3
Subnet Mask
255.255.255.0
Default Gateway
192.168.120.254
DNS Server
0.0.0.0
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
/
Link Local Address
FE80::204:9AFF:FE71:4A5A
IPv6 Gateway
IPv6 DNS Server

d. PC 4


IP Configuration
X
IP Configuration
DHCP
Static
IP Address
192.168.120.4
Subnet Mask
255.255.255.0
Default Gateway
192.168.120.254
DNS Server
0.0.0.0
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
/
Link Local Address
FE80::210:11FF:FEC3:9078
IPv6 Gateway
IPv6 DNS Server

5. Melakukan routing dengan protokol RIP pada kedua jaringan.

a. Router 1.

```
Router>en
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 192.168.110.0
Router(config-router)#network 192.168.10.0
Router(config-router)#^Z
                     ^
% Invalid input detected at '^' marker.

Router(config-router)#^Z
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

b. Router 2.

```
Router>en
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 192.168.120.0
Router(config-router)#network 192.168.10.0
Router(config-router)#^Z
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

6. Melakukan pengecekan tabel routing pada kedua router.

a. Router 1.

```
Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

C    192.168.10.0/24 is directly connected, FastEthernet0/1
C    192.168.110.0/24 is directly connected, FastEthernet0/0
R    192.168.120.0/24 [120/1] via 192.168.10.2, 00:00:02, FastEthernet0/1
```

b. Router 2.

```
Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

C    192.168.10.0/24 is directly connected, FastEthernet0/1
R    192.168.110.0/24 [120/1] via 192.168.10.1, 00:00:22, FastEthernet0/1
C    192.168.120.0/24 is directly connected, FastEthernet0/0
```

7. Ping dari PC 1 ke PC 4.

```
C:\>ping 192.168.120.4

Pinging 192.168.120.4 with 32 bytes of data:

Reply from 192.168.120.4: bytes=32 time=1ms TTL=126
Reply from 192.168.120.4: bytes=32 time<1ms TTL=126
Reply from 192.168.120.4: bytes=32 time<1ms TTL=126
Reply from 192.168.120.4: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.120.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

8. Menentukan Access List yang akan diterapkan dalam jaringan.

a. Router 1.

```
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#access-list 10 permit 192.168.120.0 0.0.255.255
Router(config)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

b. Router 2.

```
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#access-list 10 permit 192.168.110.0 0.0.255.255
Router(config)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

9. Menerapkan Access List tersebut ke interface e1 (Router 1) yang mengarah ke jaringan 192.168.110.0.

```
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#ip access-group 10 out
Router(config-if)#^Z
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

10. Melihat konfigurasi Access List pada Router 1.

```
Router#show access-lists
Standard IP access list 10
    10 permit 192.168.0.0 0.0.255.255
```

11. Memperhatikan konfigurasi Access List pada Ethernet 1.

```
Router#show running-config
Building configuration...

Current configuration : 710 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Router
!
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
!
```

12. Melakukan Ping pada PC 3 ke PC 1.

```
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.110.3

Pinging 192.168.110.3 with 32 bytes of data:

Reply from 192.168.110.3: bytes=32 time=12ms TTL=126
Reply from 192.168.110.3: bytes=32 time<1ms TTL=126
Reply from 192.168.110.3: bytes=32 time<1ms TTL=126
Reply from 192.168.110.3: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.110.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 12ms, Average = 3ms
```

13. Memberi akses pada host PC 4 dengan IP Address **192.168.120.4** agar dapat mengakses ke jaringan **192.168.110.0**.

a. Access List untuk 192.168.120.4

```
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#access-list 20 permit 192.168.120.4 0.0.0.0
Router(config)#^Z
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

b. Access List pada Ethernet 1.

```
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#ip access-group 20 out
Router(config-if)#^Z
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

14. Melakukan Ping dari PC 3 ke PC 1 dan PC 2.

a. PC 3 ke PC 1.

```
C:\>ping 192.168.110.3

Pinging 192.168.110.3 with 32 bytes of data:

Reply from 192.168.10.1: Destination host unreachable.
Reply from 192.168.10.1: Destination host unreachable.
Reply from 192.168.10.1: Destination host unreachable.
Reply from 192.168.10.1: Destination host unreachable.

Ping statistics for 192.168.110.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

b. PC 3 ke PC 2.

```
C:\>ping 192.168.110.4

Pinging 192.168.110.4 with 32 bytes of data:

Reply from 192.168.10.1: Destination host unreachable.
Reply from 192.168.10.1: Destination host unreachable.
Reply from 192.168.10.1: Destination host unreachable.
Reply from 192.168.10.1: Destination host unreachable.

Ping statistics for 192.168.110.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

15. Melakukan Ping dari PC 4 ke PC 1 dan PC 2.

a. PC 4 ke PC 1.

```
C:\>ping 192.168.110.3

Pinging 192.168.110.3 with 32 bytes of data:

Reply from 192.168.110.3: bytes=32 time=1ms TTL=126
Reply from 192.168.110.3: bytes=32 time=1ms TTL=126
Reply from 192.168.110.3: bytes=32 time=1ms TTL=126
Reply from 192.168.110.3: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.110.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

b. PC 4 ke PC 2.

```
C:\>ping 192.168.110.4

Pinging 192.168.110.4 with 32 bytes of data:

Request timed out.
Reply from 192.168.110.4: bytes=32 time=1ms TTL=126
Reply from 192.168.110.4: bytes=32 time<1ms TTL=126
Reply from 192.168.110.4: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.110.4:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

Kegiatan 2. Konfigurasi Extended Access List.

1. Melakukan konfigurasi Extended Access List dengan mengijinkan (permit) paket telnet dari semua host yang ada di jaringan **192.168.120.0** ke host **192.168.110.3**.

```
Router>en
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#access-list 100 permit tcp 192.168.120.0 0.0.0.255 192.168.110.3 0.0.0.0 eq telnet
Router(config)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

2. Menerapkan Access List ke interface router.

```
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int fa0/1
Router(config-if)#ip access-group 100 in
Router(config-if)#^Z
Router#
%SYS-5-CONFIG_I: Configured from console by console
```