

NAMA = CORRY LUQMA ZUNIRA

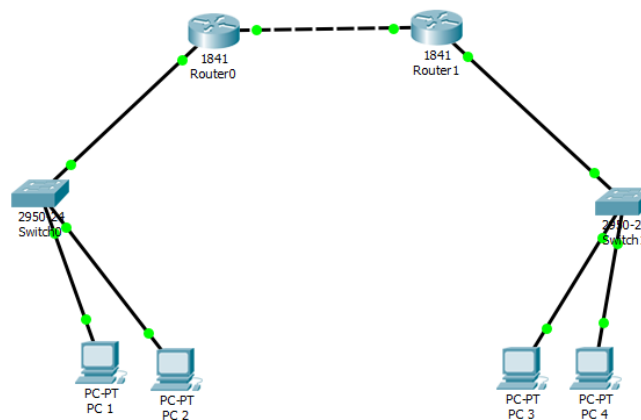
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MODUL 8

PACKET FILTERING DENGAN ACCESS LIST

Kegiatan 1. Konfigurasi Access List.



Ikuti langkah-langkah ini mengkonfigurasi Access List pada ilustrasi tersebut:

1. Desain jaringan tersebut menggunakan Boson Simulator. Semua router menggunakan seri 2514 sedangkan semua switch menggunakan seri 2950 tambahkan 4 (empat) buah PC yang terbagi ke dalam 2 (dua) switch tersebut, untuk lebih jelas perhatikan gambar diatas dengan seksama.
2. Berikan identitas semua sumber daya (router, switch dan komputer) yang telah Anda desain tersebut, perhatikan gambar agar Anda tidak binung. Petunjuk pemberian identitas pada sumber daya dapat Anda lihat pada modul – modul sebelumnya.
3. Khusus [Switch1] dan [Switch2] berikan alamat IP untuk digunakan sebagai default gateway bagi semua komputer. Untuk memberikan alamat IP pada switch perhatikan gambar berikut.

Switch0

```
Switch>en
Switch#con t
% Ambiguous command: "con t"
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
```

Switch1

```
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

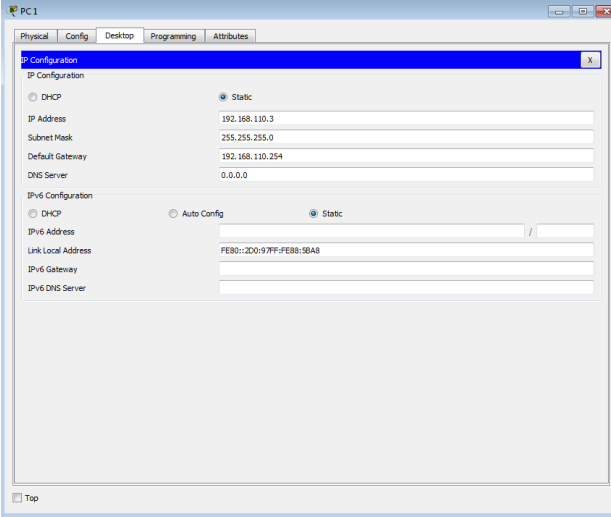
Switch(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up

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

Switch(config-if)#exit
```

4. Berikutnya berikan alamat IP, subnet mask, dan default gateway pada masing masing komputer, perhatikan gambar berikut ini.

PC1

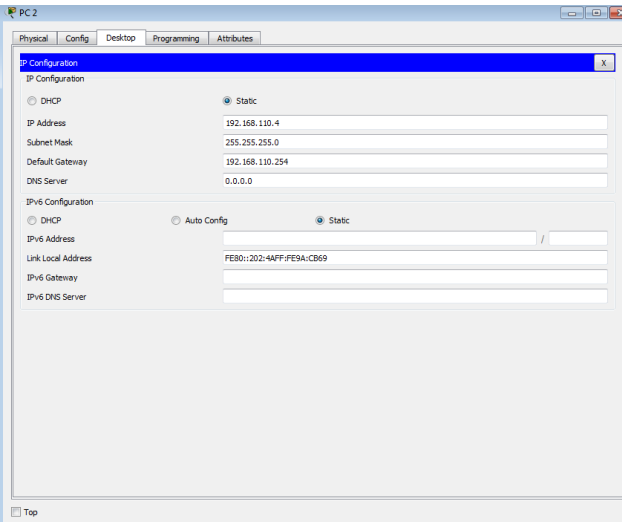


PC1 Configuration Window (Config tab):

- IP Configuration:**
 - ☐ DHCP
 - ☒ Static
 - IP Address: 192.168.110.3
 - Subnet Mask: 255.255.255.0
 - Default Gateway: 192.168.110.254
 - DNS Server: 0.0.0.0
- IPv6 Configuration:**
 - ☐ DHCP
 - ☐ Auto Config
 - ☒ Static
 - IPv6 Address: /
 - Link Local Address: FE80::2D0:97FF:FE8B:5B4B
 - IPv6 Gateway:
 - IPv6 DNS Server:

Top button: ☐ Top

PC2

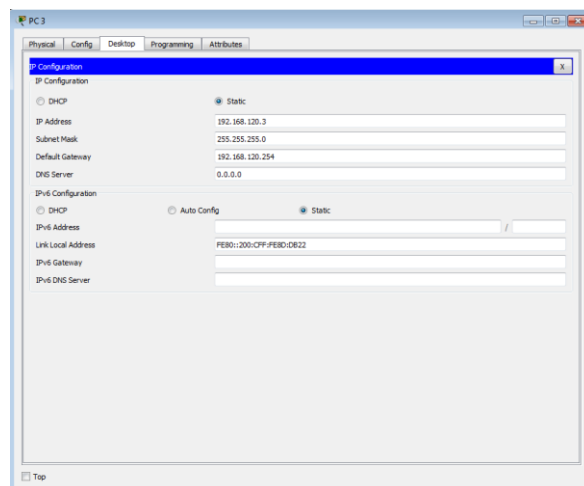


PC2 Configuration Window (Config tab):

- IP Configuration:**
 - ☐ DHCP
 - ☒ Static
 - IP Address: 192.168.110.4
 - Subnet Mask: 255.255.255.0
 - Default Gateway: 192.168.110.254
 - DNS Server: 0.0.0.0
- IPv6 Configuration:**
 - ☐ DHCP
 - ☐ Auto Config
 - ☒ Static
 - IPv6 Address: /
 - Link Local Address: FE80::202:4AFF:FE9A:CB69
 - IPv6 Gateway:
 - IPv6 DNS Server:

Top button: ☐ Top

PC3

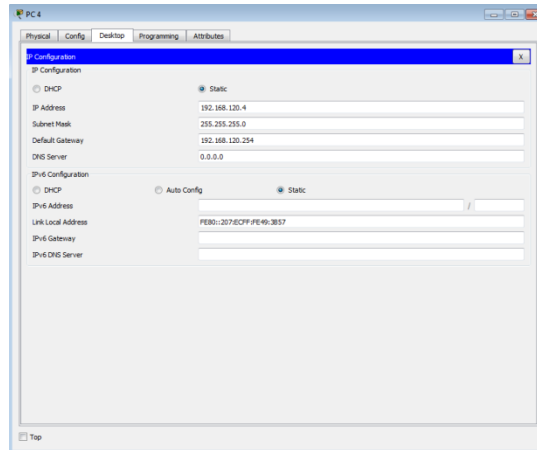


PC3 Configuration Window (Config tab):

- 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::200:CFE:FE8D:DE22
 - IPv6 Gateway:
 - IPv6 DNS Server:

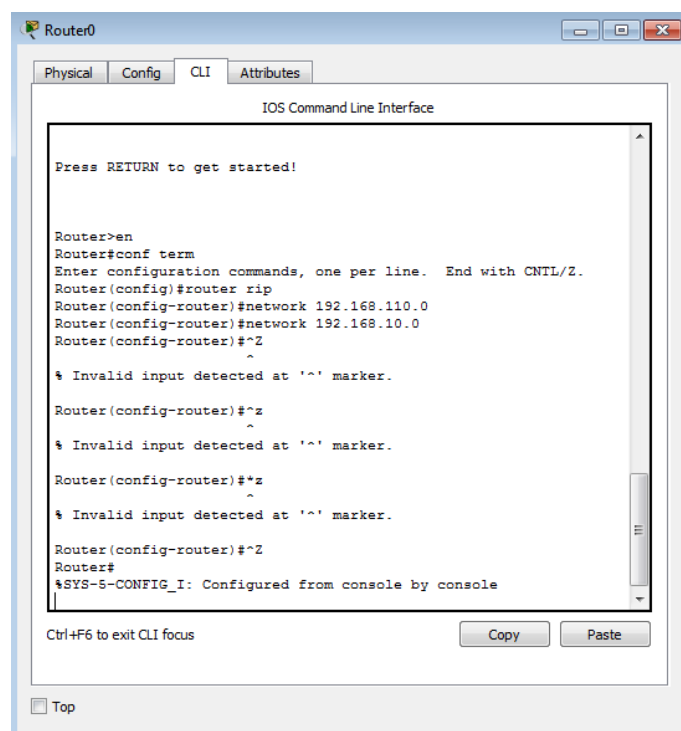
Top button: ☐ Top

PC4

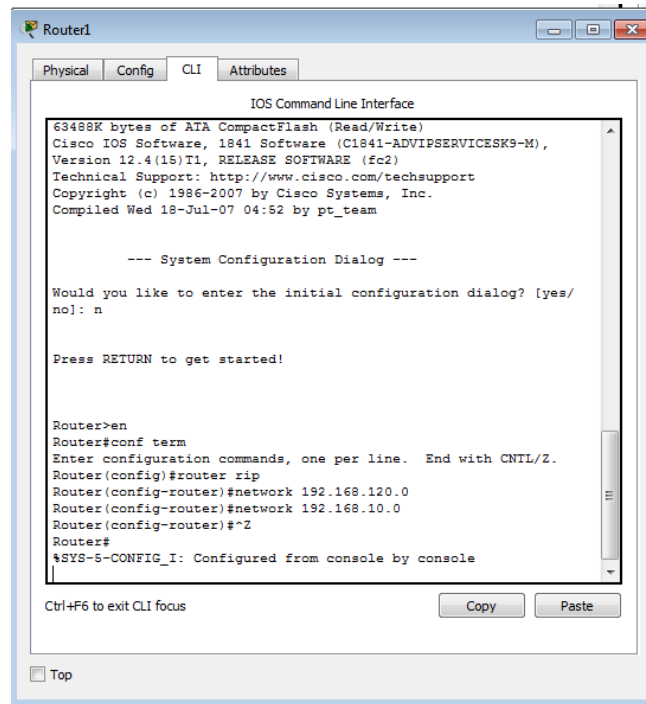


5. Gunakan perintah tersebut untuk memberikan identitas untuk komputer yang lain.
6. Setelah semua sumber daya telah mempunyai identitas, lakukan routing untuk kedua jaringan tersebut.
7. Gunakan routing dengan protokol RIP pada kedua jaringan tersebut, perintah untuk pembuatan routing tersebut dapat Anda lihat pada gambar-gambar berikut ini
8. Pada [Router0] diberikan network ID 192.168.110.0 dan 192.168.10.0 untuk digunakan sebagai jalur routing. Sedangkan pada [Router1] diberikan network ID 192.168.120.0 dan 192.168.10.0 untuk digunakan sebagai jalur routing.

Router0



Router1



9. Lakukan pengecekan tabel routing pada kedua router tersebut dengan perintah [show ip route]

Router0

```
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, 00:00:20,
FastEthernet0/1
```

Router1

```
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, FastEthernet0/0
R    192.168.110.0/24 [120/1] via 192.168.10.1, 00:00:11,
FastEthernet0/0
C    192.168.120.0/24 is directly connected, FastEthernet0/1
```

10. Selanjutnya lakukan tes koneksi dari [PC1] ke [PC4] dengan menggunakan perintah [ping]. Kedua PC tersebut pada jaringan yang berbeda, jika koneksi berhasil maka routing anda berhasil.

```
C:\>ping 192.168.120.4

Pinging 192.168.120.4 with 32 bytes of data:

Request timed out.
Request timed out.
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 = 2, Lost = 2 (50% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

11. Berikutnya tentukan Access List yang akan diterapkan dalam jaringan tersebut. Sebagai contoh dari [Router0] kita akan mengijinkan semua host dari jaringan 192.168.120.0 dapat mengakses jaringan 192.168.100.0 maka perintahnya adalah :

```
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
```

12. Selanjutnya terapkan Access List tersebut ke interface [Router0] dalam hal ini interface [e1] yang mengarah ke dalam jaringan 192.168.110.0 , perintahnya adalah :

```

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

Router#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int e1
^
% Invalid input detected at '^' marker.

Router(config)#
Router(config)#interface FastEthernet0/1
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#ip access-group 10 out
Router(config-if)#^Z
Router#
%SYS-5-CONFIG_I: Configured from console by console
|

```

13. Opsi [out] pada bagian akhir perintah tersebut dimaksudkan Untuk melewati paket keluar dari [Router0]

14. Kemudian lihat konfigurasi Access List tersebut pada [Router0]

```

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

```

15. Selanjutnya perhatikan juga konfigurasi Access List tersebut pada [Ethernet1] dengan perintah [show running-config]

```

interface FastEthernet0/0
ip address 192.168.110.254 255.255.255.0
duplex auto
speed auto
!
interface FastEthernet0/1
ip address 192.168.10.1 255.255.255.0
ip access-group 10 out
duplex auto
speed auto
!
interface Vlan1
no ip address
shutdown
!
router rip
network 192.168.10.0
network 192.168.110.0
!
ip classless
!
ip flow-export version 9
!
!
access-list 10 permit 192.168.0.0 0.0.255.255

```

```

line con 0
!
line aux 0
!
line vty 0 4
  login
!
!
!
end

```

16. Lakukan tes koneksi dua arah antara [PC3] dengan [PC1] yang berada pada jaringan berbeda menggunakan perintah [ping]. Apakah masih terjadi koneksi? buat kesimpulan.

```

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=14ms 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 = 14ms, Average = 3ms

C:\>ping 192.168.110.3

```

17. Sekarang kita akan memberikan akses hanya pada 1(satu) host (PC4) dengan alamat IP 192.168.120.4 agar dapat mengakses ke jaringan 192.168.110.0

18. Perintah yang anda gunakan adalah :

```

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

Router(config)#
Router(config)#interface FastEthernet0/1
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#ip access-group 20 out
Router(config-if)#^Z
Router#
%SYS-5-CONFIG_I: Configured from console by console

```

19. Kemudian terapkan Access List 20 tersebut ke interface [Ethernet1] pada [Router0]

20. Selanjutnya coba lakukan tes koneksi dari [PC3] yang berada pada jaringan 192.168.120.0 ke [PC1] dan [PC2] yang ada jaringan 192.168.110.0, apakah tes tersebut berhasil?

```
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),

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),
```

21. Lakukan juga tes koneksi dari [PC4] yang berada pada jaringan 192.168.120.0 ke [PC1] dan [PC2] yang berada pada jaringan 192.168.110.0, apakah tes koneksi tersebut berhasil? buatlah kesimpulan.

```
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=5ms TTL=126
Reply from 192.168.110.3: bytes=32 time=11ms TTL=126
Reply from 192.168.110.3: bytes=32 time=15ms 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 = 15ms, Average = 7ms

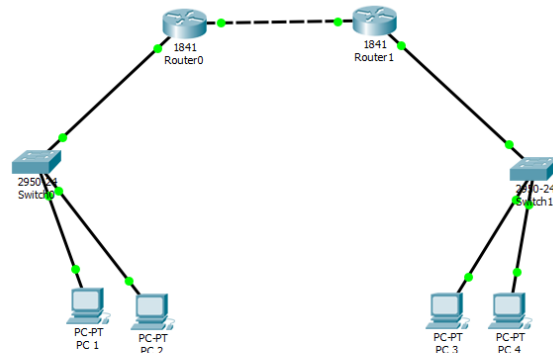
C:\>ping 192.168.110.4

Pinging 192.168.110.4 with 32 bytes of data:

Reply from 192.168.110.4: bytes=32 time<1ms TTL=126
Reply from 192.168.110.4: bytes=32 time=12ms TTL=126
Reply from 192.168.110.4: bytes=32 time<1ms TTL=126
Reply from 192.168.110.4: bytes=32 time=2ms TTL=126

Ping statistics for 192.168.110.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 12ms, Average = 3ms
```

Kegiatan 2. Konfigurasi Extended Access List.



Router1

Physical Config CLI Attributes

IOS Command Line Interface

```
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa0/1
Router(config-if)#ip access-group 20 out
Router(config-if)#^Z
Router#
%SYS-5-CONFIG_I: Configured from console by console

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 any
^
% Invalid input detected at '^' marker.

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)#int fa0/1
Router(config-if)#ip access-group 100 in
Router(config-if)#exit
Router(config)#
```

Ctrl+F6 to exit CLI focus

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