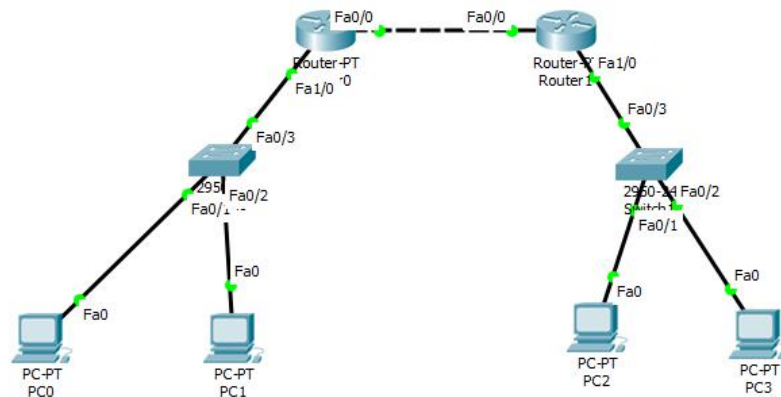


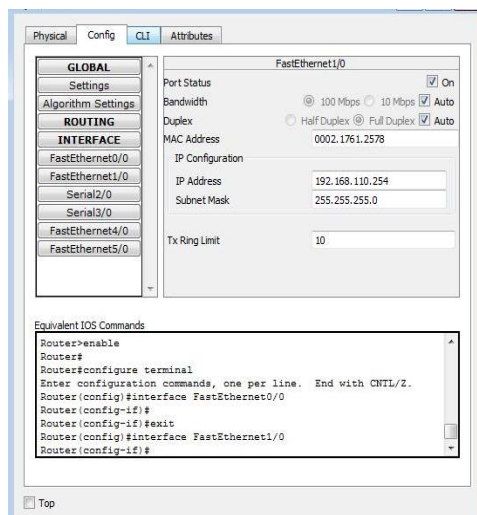
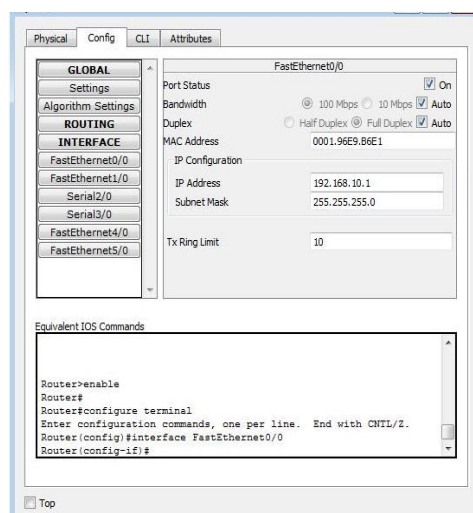
NAMA : Muhammad Vicky Al H.
NIM : L200170065
KELAS : B
MODUL : BAB VIII



Kegiatan 1. Konfigurasi Access List

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

1. Desain jaringan tersebut menggunakan Cisco Packet Tracer. Semua router menggunakan seri generik sedangkan semua switch menggunakan seri generik. Tambahkan 4 buah PC yang terbagi ke dalam 2 switch tersebut
2. Berikan identitas untuk semua sumber daya (router, switch, dan komputer) yang telah anda desain tersebut



Physical Config CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

INTERFACE

FastEthernet0/0

FastEthernet1/0

Serial2/0

Serial3/0

FastEthernet4/0

FastEthernet5/0

Port Status: ☒ On

Bandwidth: ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex: ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address: 00E0.F7AE.1C76

IP Configuration

IP Address: 192.168.10.2

Subnet Mask: 255.255.255.0

Tx Ring Limit: 10

Equivalent IOS Commands

```

Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#
  
```

Top

Physical Config CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

INTERFACE

FastEthernet0/0

FastEthernet1/0

Serial2/0

Serial3/0

FastEthernet4/0

FastEthernet5/0

Port Status: ☒ On

Bandwidth: ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex: ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address: 0001.63BD.81E1

IP Configuration

IP Address: 192.168.120.254

Subnet Mask: 255.255.255.0

Tx Ring Limit: 10

Equivalent IOS Commands

```

Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#
  
```

Top

3. Berikutnya berikan alamat IP, subnet mask, dan default gateway pada masing - masing komputer

Physical Config Desktop Programming Attributes

☐ 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: FE80:230:A3FF:FE79:A74C

IPv6 Gateway:

IPv6 DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

Top

Physical Config Desktop Programming Attributes

☐ 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: FE80:202:17FF:FE8B:71B7

IPv6 Gateway:

IPv6 DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

Physical Config Desktop Programming Attributes

☐ 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:CFF:FE89:7A9B

IPv6 Gateway:

IPv6 DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

Top

Physical Config Desktop Programming Attributes

☐ 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: FE80:200:CFF:FE9C:8510

IPv6 Gateway:

IPv6 DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

4. Gunakan perintah tersebut untuk memberikan identitas untuk komputer yang lain
5. Setelah semua sumber daya telah mempunyai identitas, lakukan routing untuk kedua jaringan tersebut
6. Gunakan routing dengan protokol RIP pada kedua jaringan tersebut

```

Router>enable
Router#conf
Configuring from terminal, memory, or network [terminal]?
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
Router#
%SYS-5-CONFIG_I: Configured from console by console

```

7. Pada [Router0] diberikan nnetwork 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.

```

Router>enable
Router#conf
Configuring from terminal, memory, or network [terminal]?
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

```

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

```

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, 00:00:23,
FastEthernet0/0
C     192.168.120.0/24 is directly connected, FastEthernet1/0

```

9. Selanjutnya lakukan tes koneksi dari [PC0] ke [PC3] dengan menggunakan perintah [Ping]. kedua PC tersebut berada pada jaringan yang berbeda, jika koneksi berhasil maka routing anada berhasil

```

Packet Tracer PC Command Line 1.0
C:\>ping 192.168.120.4

Pinging 192.168.120.4 with 32 bytes of data:

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

Ping statistics for 192.168.120.4:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>|

```

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

```
Router>enable
Router#conf
Configuring from terminal, memory, or network [terminal]?
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
```

11. Selanjutnya terapkan Access List tersebut ke interface [Router0] dalam hal ini interface [e1] yang mengarah ke dalam jaringan 192.168.110.0

```
Router#conf
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa 1/0
Router(config-if)#ip access-group 10 out
Router(config-if)#^Z
Router#
```

12. Opsi [out] pada bagian akhir perintah tersebut dimaksudkan untuk melewati paket keluar dari [Router 0]
13. Kemudian lihat konfigurasi Access List tersebut pada [Router 0]

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

14. Lakukan tes koneksi dua arah antara [PC 2] dengan [PC 0] yang berada pada jaringan berbeda dengan perintah [ping]. Apakah masih terjadi koneksi ? 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=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

C:\>|
```

Terjadi koneksi karena dari [Router 0] mengizinkan semua host dari jaringan 192.168.120.0 dapat mengakses jaringan 192.168.110.0

15. Memberikan akses hanya pada 1 host (PC 3) dengan alamat IP 192.168.120.4 agar dapat mengakses ke jaringan 192.168.110.0

```

Router#conf
Configuring from terminal, memory, or network [terminal]?
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

Router#conf
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa 1/0
Router(config-if)#ip access-group 20 out
Router(config-if)#^Z

```

16. Tes koneksi dari [PC 2] yang berada pada jaringan 192.168.120.0 ke [PC 0] dan [PC 1] yang ada pada 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),

```

17. Lakukan juga tes koneksi dari [PC 3] yang berada pada jaringan 192.168.120.0 ke [PC 0] dan [PC 1] 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=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

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

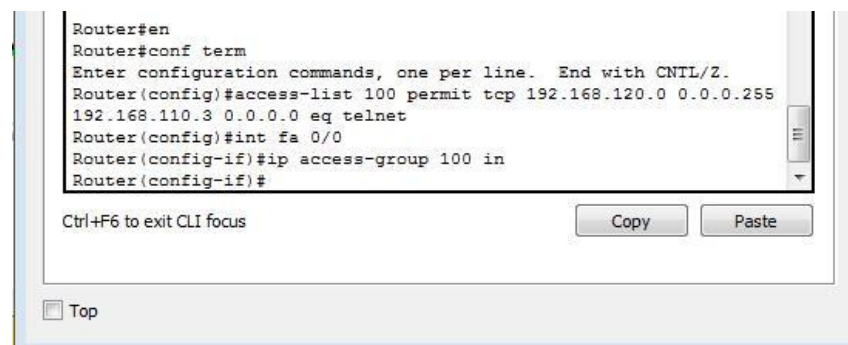
Ping statistics for 192.168.110.4:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:

```

[Router 0] kita memberikan hak akses pada PC 3 dengan alamat IP 192.168.120.4 agar dapat mengakses ke jaringan 192.168.110.0 sehingga pada saat dilakukan ping antara PC 3 ke PC 1 dan PC 0 berhasil

Kegiatan 2. Konfigurasi Extended Access List

Untuk mengkonfigurasi Extended Access List sebenarnya tidak terlalu beda jauh dengan cara mengkonfigurasi Standart Access List. Perintah yang digunakan ada penambahan informasi tentang paket yang diijinkan atau ditolak.



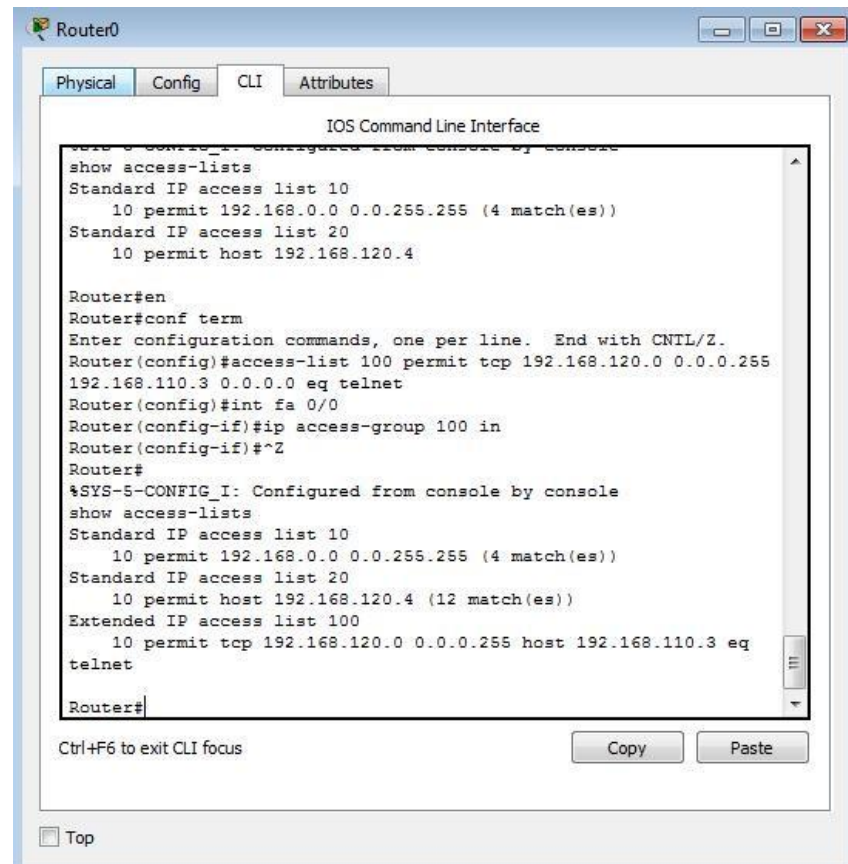
```
Router#en
Router#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#access-list 100 permit tcp 192.168.120.0 0.0.0.255
192.168.110.3 0.0.0.0 eq telnet
Router(config)#int fa 0/0
Router(config-if)#ip access-group 100 in
Router(config-if)#
```

Ctrl+F6 to exit CLI focus

Copy Paste

Top

Pada contoh perintah diatas, kita mengijinkan (permit) paket telnet dari semua host yang ada di jaringan 192.168.120.0 ke host 192.168.110.3. Angka [100] setelah perintah [access-list] merupakan pengenalan bagi Extended Access List. Cara menerapkan Access List tersebut ke interface router juga tidak berbeda dengan penerapan Standart Access List.



```
Router0
Physical Config CLI Attributes
IOS Command Line Interface
show access-lists
Standard IP access list 10
  10 permit 192.168.0.0 0.0.255.255 (4 match(es))
Standard IP access list 20
  10 permit host 192.168.120.4

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)#int fa 0/0
Router(config-if)#ip access-group 100 in
Router(config-if)#^Z
Router#
%SYS-5-CONFIG_I: Configured from console by console
show access-lists
Standard IP access list 10
  10 permit 192.168.0.0 0.0.255.255 (4 match(es))
Standard IP access list 20
  10 permit host 192.168.120.4 (12 match(es))
Extended IP access list 100
  10 permit tcp 192.168.120.0 0.0.0.255 host 192.168.110.3 eq
telnet

Router#
```

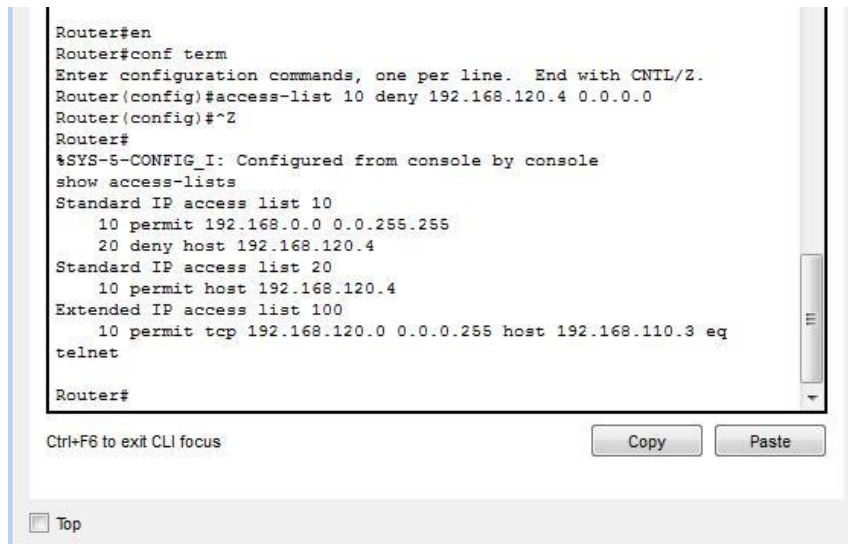
Ctrl+F6 to exit CLI focus

Copy Paste

Top

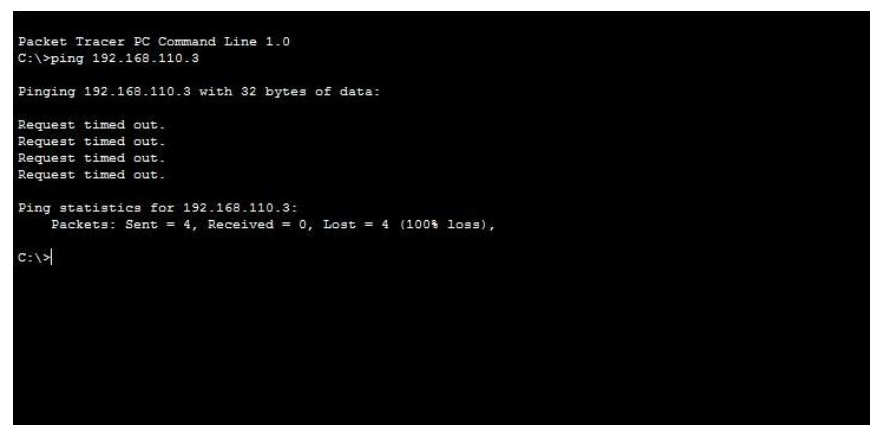
Catatan :

Berikan “deny” pada 1 PC yaitu host (PC 3) dengan alamat IP 192.168.120.4 sehingga tidak dapat mengakses ke jaringan 192.168.110.0



```
Router#en
Router#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#access-list 10 deny 192.168.120.4 0.0.0.0
Router(config)#^Z
Router#
%SYS-5-CONFIG_I: Configured from console by console
show access-lists
Standard IP access list 10
  10 permit 192.168.0.0 0.0.255.255
  20 deny host 192.168.120.4
Standard IP access list 20
  10 permit host 192.168.120.4
Extended IP access list 100
  10 permit tcp 192.168.120.0 0.0.0.255 host 192.168.110.3 eq
telnet
Router#
```

Pada saat di lakukan ping antara PC 3 dengan PC 0 maka akan terjadi time out



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

Pinging 192.168.110.3 with 32 bytes of data:

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

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