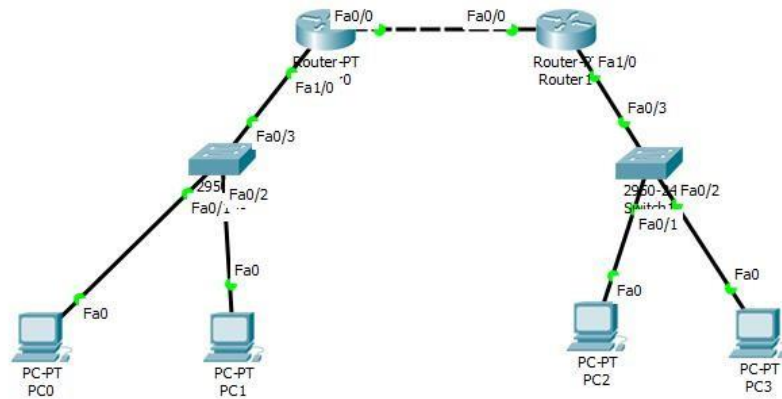


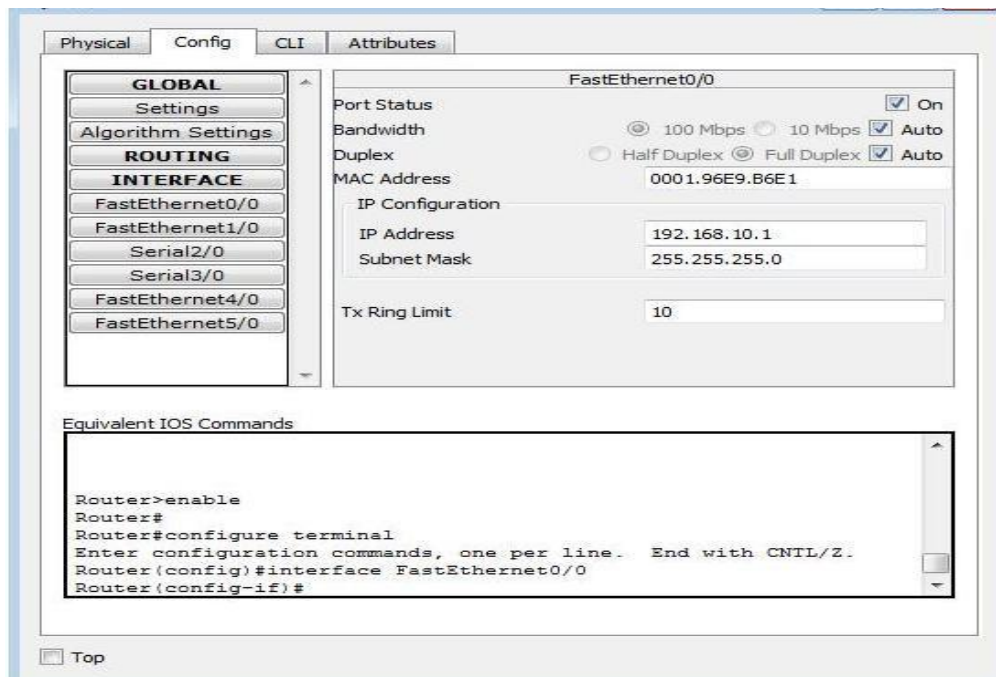
NAMA : Elvy Ramatillah Imami
NIM : L200170041
KELAS : A

MODUL 8



Kegiatan 1. Konfigurasi Access List

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
INTERFACE
 FastEthernet0/0
 FastEthernet1/0
 Serial2/0
 Serial3/0
 FastEthernet4/0
 FastEthernet5/0

FastEthernet1/0
 Port Status ☒ On
 Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto
 Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto
 MAC Address 0002.1761.2578
 IP Configuration
 IP Address 192.168.110.254
 Subnet Mask 255.255.255.0
 Tx Ring Limit 10

Equivalent IOS Commands

```

Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
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

FastEthernet0/0
 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)#
  
```

☐ 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

FastEthernet1/0
 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 computer.

The screenshot shows the 'Desktop' tab in a configuration window. The 'Static' radio button is selected under the IP Configuration section. The fields are filled with the following values:

Field	Value
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	<input type="radio"/>
Auto Config	<input type="radio"/>
Static	<input checked="" type="radio"/>
IPv6 Address	
Link Local Address	FE80::230:A3FF:FE79:A74C
IPv6 Gateway	
IPv6 DNS Server	
802.1X	
Use 802.1X Security	<input type="checkbox"/>
Authentication	MD5
Username	

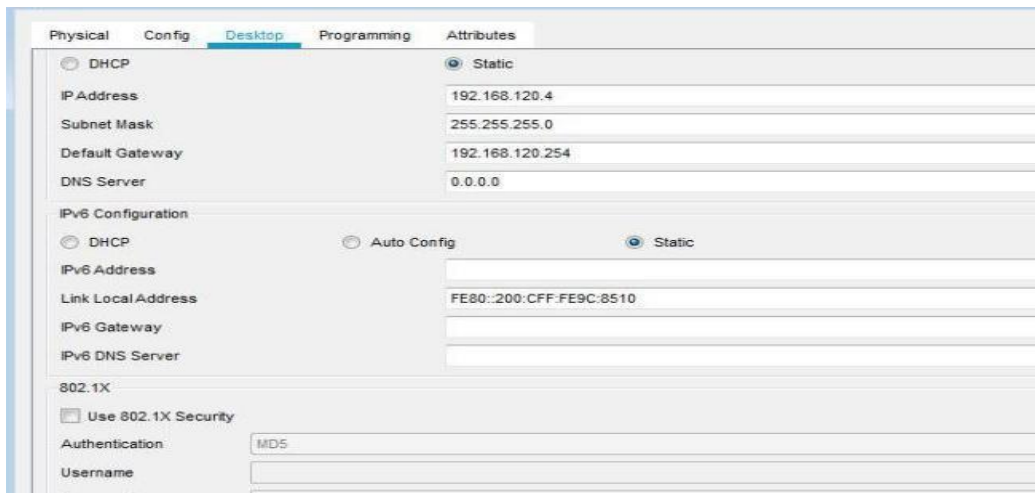
The screenshot shows the 'Desktop' tab in a configuration window. The 'Static' radio button is selected under the IP Configuration section. The fields are filled with the following values:

Field	Value
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	<input type="radio"/>
Auto Config	<input type="radio"/>
Static	<input checked="" type="radio"/>
IPv6 Address	
Link Local Address	FE80::202:17FF:FE88:71B7
IPv6 Gateway	
IPv6 DNS Server	
802.1X	
Use 802.1X Security	<input type="checkbox"/>
Authentication	MD5
Username	
Password	

The screenshot shows the 'Desktop' tab in a configuration window. The 'Static' radio button is selected under the IP Configuration section. The fields are filled with the following values:

Field	Value
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	<input type="radio"/>
Auto Config	<input type="radio"/>
Static	<input checked="" type="radio"/>
IPv6 Address	
Link Local Address	FE80::200:CFF:FE89:7A9B
IPv6 Gateway	
IPv6 DNS Server	
802.1X	
Use 802.1X Security	<input type="checkbox"/>
Authentication	MD5
Username	
Password	

☐ Top



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 anda 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 mengizinkan 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#

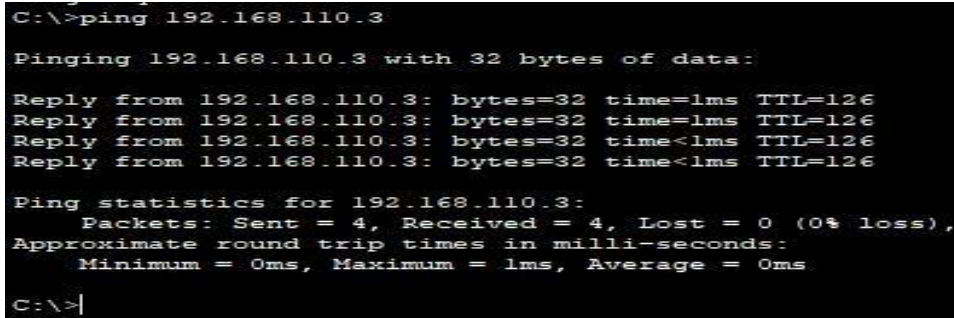
```

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:\>|
```

Dari PC2 dan PC0 terjadi koneksi dengan Router 0, karena dari [Router 0] mengijinkan semua host dari jaringan 192.168.120.0 dapat mengakses jaringan 192.1668.100.0

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),
```

Ping dari PC2 ke PC0 tidak berhasil karena Router hanya memberi akses ke satu PC yaitu PC3.

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:

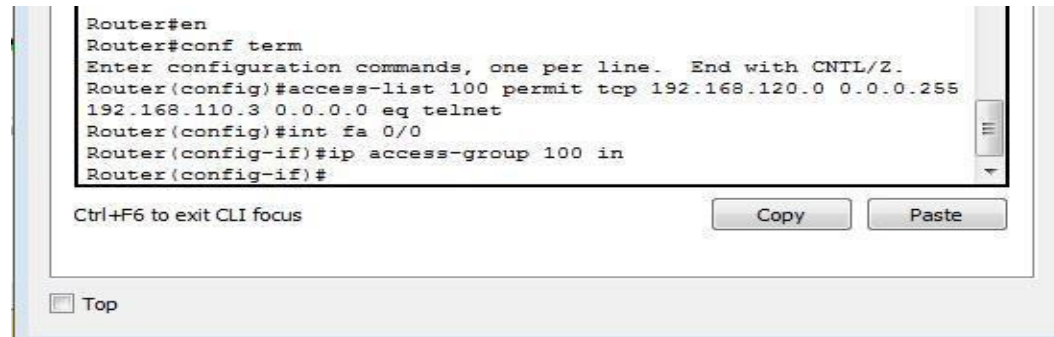
Request timed out.
Reply from 192.168.110.4: bytes=32 time<1ms TTL=126
Reply from 192.168.110.4: bytes=32 time=1ms TTL=126
Reply from 192.168.110.4: bytes=32 time<1ms TTL=126

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

Ping dari PC3 ke PC0 dan PC1 berhasil, dikarenakan Router 0 memberi hak akses kepada PC3 agar dapat mengakses jaringan.

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)#
```

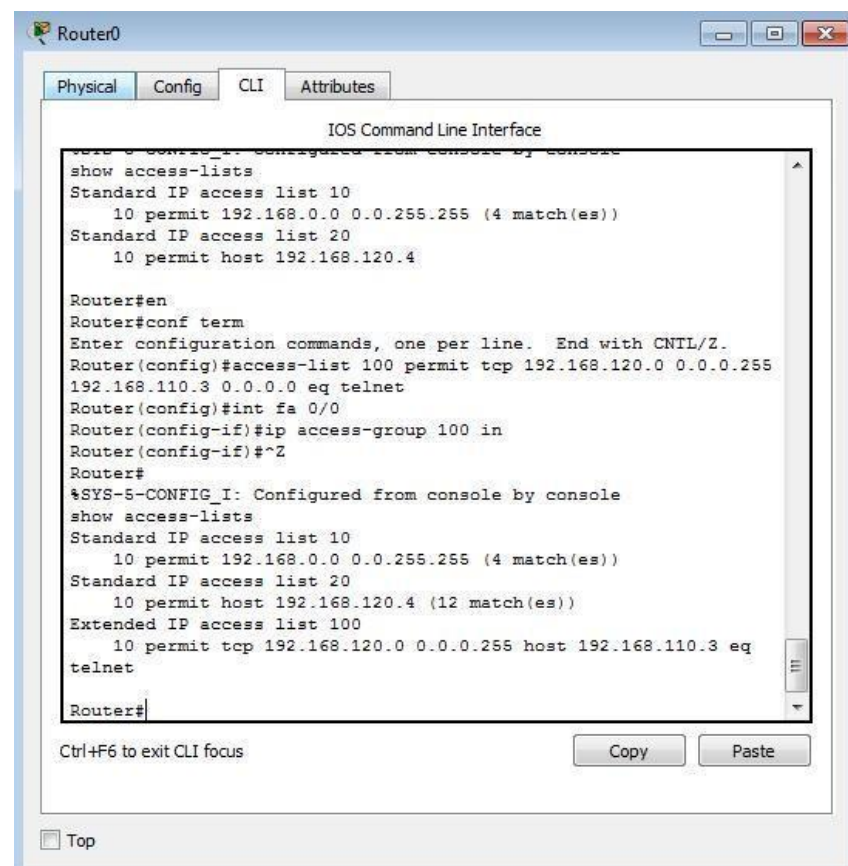
Ctrl+F6 to exit CLI focus

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

```
%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

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

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Top

NOTES :

Berikan “deny” pada satu 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#
```

Ctrl+F6 to exit CLI focus

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☐ Top

Setelah ditambah perintah “deny” ketika di lakukan ping antara PC 3 dengan PC 0 maka akan terjadi time out, karena PC3 tidak diizinkan untuk mengakses jaringan yang terdapat PC0.

```
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:\>
```