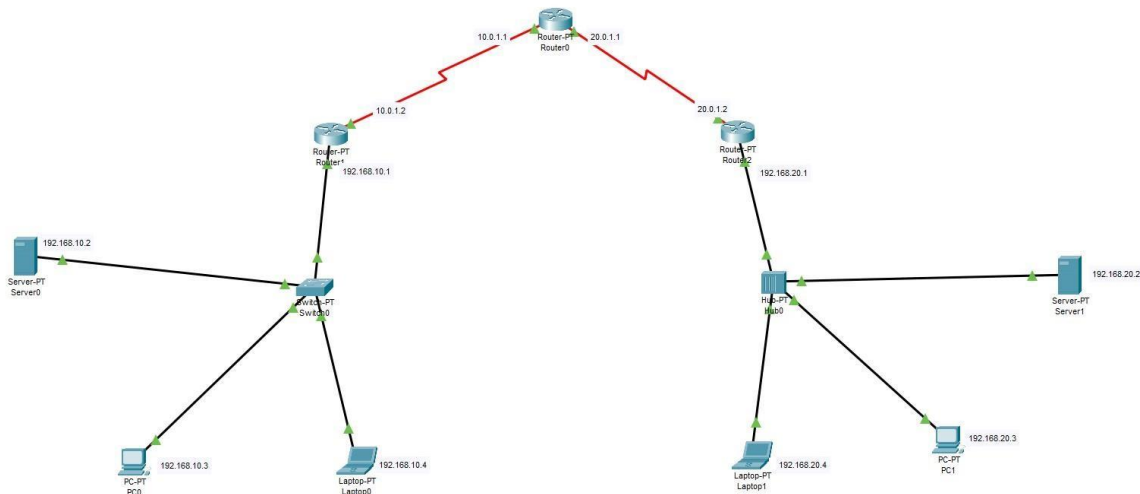


# Cyber Security and Digital Forensics

## Practical 3: Exploring Router and VLAN security, setting up access lists using cisco packet tracer



```

Router(config-if)#ip address 10.0.1.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#ip address
% Incomplete command.
Router(config-if)#ip address 20.0.1.1 255.0.0.0
Router(config-if)#ip address 20.0.1.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

%LINK-5-CHANGED: Interface Serial3/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up

Router(config-if)#exit
Router(config)#router rip
Router(config-router)#network 10.0.0.0
Router(config-router)#network 20.0.0.0
Router(config-router)#
Router(config-router)#end
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface Serial2/0
Router(config-if)#
%SYS-5-CONFIG_I: Configured from console by console
  
```

---

System Configuration Dialog

---

Would you like to enter the initial configuration dialog? [yes/no]: n

Press RETURN to get started!

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface Serial2/0
Router(config-if)#ip address 10.0.1.2 255.0.0.0
Router(config-if)#ip address 10.0.1.2 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 192.168.10.1 255.255.255.0
Router(config-if)#ip address 192.168.10.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#router rip
Router(config-router)#network 10.0.0.0
Router(config-router)#network 192.168.10.0
Router(config-router)#
Router(config-router)#end
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router rip
Router(config-router)#
%SYS-5-CONFIG_I: Configured from console by console
no network 10.0.0.0
Router(config-router)#network 10.0.0.0
Router(config-router)#
Router(config-router)#end
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface Serial2/0
Router(config-if)#
%SYS-5-CONFIG_I: Configured from console by console

Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
```

Would you like to enter the initial configuration dialog? [yes/no]: n

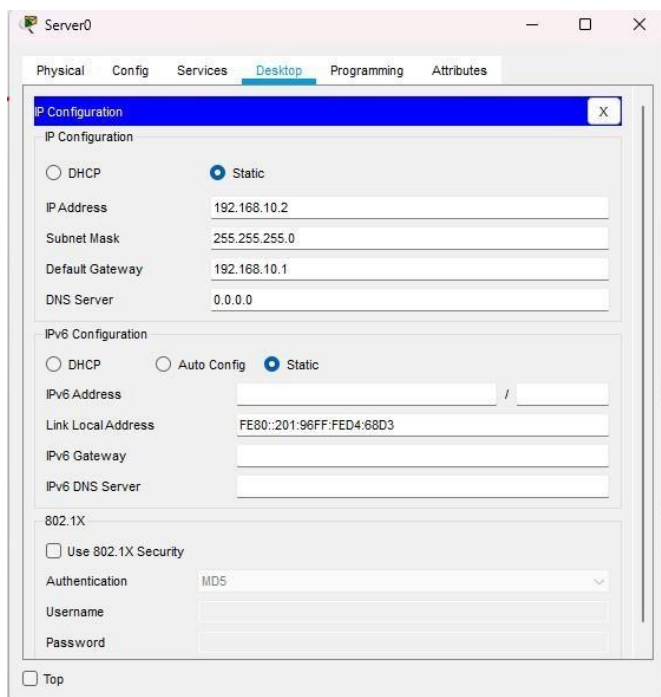
Press RETURN to get started!

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface Serial2/0
Router(config-if)#ip address 20.0.1.2 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

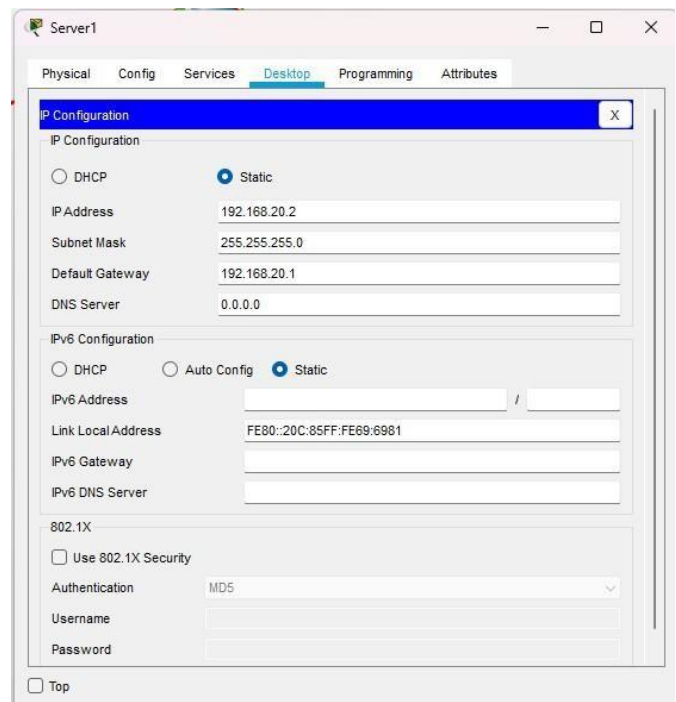
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 192.168.20.1 255.255.255.0
Router(config-if)#ip address 192.168.20.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
|
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#router rip
Router(config-router)#network 20.0.0.0
Router(config-router)#network 192.168.20.0
Router(config-router)#
```



Server0 IP Configuration window showing Static IP settings:

- IP Configuration: ☐ DHCP, ☒ Static
- IP Address: 192.168.10.2
- Subnet Mask: 255.255.255.0
- Default Gateway: 192.168.10.1
- DNS Server: 0.0.0.0
- IPv6 Configuration: ☐ DHCP, ☐ Auto Config, ☒ Static
- IPv6 Address: /
- Link Local Address: FE80::201:96FF:FED4:68D3
- IPv6 Gateway:
- IPv6 DNS Server:
- 802.1X: ☐ Use 802.1X Security
- Authentication: MD5
- Username:
- Password:



Server1 IP Configuration window showing Static IP settings:

- IP Configuration: ☐ DHCP, ☒ Static
- IP Address: 192.168.20.2
- Subnet Mask: 255.255.255.0
- Default Gateway: 192.168.20.1
- DNS Server: 0.0.0.0
- IPv6 Configuration: ☐ DHCP, ☐ Auto Config, ☒ Static
- IPv6 Address: /
- Link Local Address: FE80::20C:85FF:FE69:6981
- IPv6 Gateway:
- IPv6 DNS Server:
- 802.1X: ☐ Use 802.1X Security
- Authentication: MD5
- Username:
- Password:

Aneeza Fatima F014

MSc CS Sem 1

PC0

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IP Address 192.168.10.3

Subnet Mask 255.255.255.0

Default Gateway 192.168.10.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::201:43FF:FE98:6CA3

IPv6 Gateway

IPv6 DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

☐ Top

PC1

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IP Address 192.168.20.3

Subnet Mask 255.255.255.0

Default Gateway 192.168.20.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::201:42FF:FECE:3CC6

IPv6 Gateway

IPv6 DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

☐ Top

Laptop0

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IP Address 192.168.10.4

Subnet Mask 255.255.255.0

Default Gateway 192.168.10.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::201:43FF:FE12:B1B8

IPv6 Gateway

IPv6 DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

☐ Top

Laptop1

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IP Address 192.168.20.4

Subnet Mask 255.255.255.0

Default Gateway 192.168.20.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::260:3EFF:FED4:E17

IPv6 Gateway

IPv6 DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

☐ Top



```

PC0
Physical Config Desktop Programming Attributes

Command Prompt

C:\>ping 192.168.10.1

Pinging 192.168.10.1 with 32 bytes of data:

Reply from 192.168.10.1: bytes=32 time<1ms TTL=255
Reply from 192.168.10.1: bytes=32 time=1ms TTL=255
Reply from 192.168.10.1: bytes=32 time=1ms TTL=255
Reply from 192.168.10.1: bytes=32 time=1ms TTL=255

Ping statistics for 192.168.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 10.0.1.1

Pinging 10.0.1.1 with 32 bytes of data:

Reply from 10.0.1.1: bytes=32 time=2ms TTL=254
Reply from 10.0.1.1: bytes=32 time=5ms TTL=254
Reply from 10.0.1.1: bytes=32 time=2ms TTL=254
Reply from 10.0.1.1: bytes=32 time=2ms TTL=254

Ping statistics for 10.0.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 5ms, Average = 2ms

C:\>ping 20.0.1.1

Pinging 20.0.1.1 with 32 bytes of data:

Reply from 20.0.1.1: bytes=32 time=5ms TTL=254
Reply from 20.0.1.1: bytes=32 time=2ms TTL=254
Reply from 20.0.1.1: bytes=32 time=2ms TTL=254
Reply from 20.0.1.1: bytes=32 time=1ms TTL=254

Ping statistics for 20.0.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 5ms, Average = 2ms

```

```

PC0
Physical Config Desktop Programming Attributes

Command Prompt

Ping statistics for 192.168.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 10.0.1.1

Pinging 10.0.1.1 with 32 bytes of data:

Reply from 10.0.1.1: bytes=32 time=2ms TTL=254
Reply from 10.0.1.1: bytes=32 time=5ms TTL=254
Reply from 10.0.1.1: bytes=32 time=2ms TTL=254
Reply from 10.0.1.1: bytes=32 time=2ms TTL=254

Ping statistics for 10.0.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 5ms, Average = 2ms

C:\>ping 20.0.1.1

Pinging 20.0.1.1 with 32 bytes of data:

Reply from 20.0.1.1: bytes=32 time=5ms TTL=254
Reply from 20.0.1.1: bytes=32 time=2ms TTL=254
Reply from 20.0.1.1: bytes=32 time=2ms TTL=254
Reply from 20.0.1.1: bytes=32 time=1ms TTL=254

Ping statistics for 20.0.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 5ms, Average = 2ms

C:\>ping 192.168.20.1

Pinging 192.168.20.1 with 32 bytes of data:

Reply from 192.168.20.1: bytes=32 time=15ms TTL=253
Reply from 192.168.20.1: bytes=32 time=6ms TTL=253
Reply from 192.168.20.1: bytes=32 time=2ms TTL=253
Reply from 192.168.20.1: bytes=32 time=11ms TTL=253

Ping statistics for 192.168.20.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 18ms, Average = 5ms

C:\>ping 192.168.20.3

Pinging 192.168.20.3 with 32 bytes of data:

Request timed out.
Reply from 192.168.20.3: bytes=32 time=14ms TTL=125
Reply from 192.168.20.3: bytes=32 time=6ms TTL=125
Reply from 192.168.20.3: bytes=32 time=2ms TTL=125

Ping statistics for 192.168.20.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 14ms, Average = 7ms

C:\>

```

```

Router>en
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#access-list?
access-list
Router(config)#access-list
% Incomplete command.
Router(config)#access-list?
access-list
Router(config)#access-list
% Incomplete command.
Router(config)#access-list?
access-list
Router(config)#access-list ?
    <1-99>      IP standard access list
    <100-199>   IP extended access list
Router(config)#access-list
% Incomplete command.
Router(config)#interface FastEthernet0/0
Router(config-if)#access-list 10 deny 192.168.10.2 0.0.0.0
Router(config)#access-list 10 permit any
Router(config)#access-list 10 deny 192.168.10.2 0.0.0.0
Router(config)#interface s0
^
% Invalid input detected at '^' marker.

Router(config)#interface FastEthernet0/0
Router(config-if)#interface Se
Router(config-if)#interface Serial2/0
Router(config-if)#ip access-group 10 out
Router(config-if)#exit
Router(config)#

```

