

Task-7

7a). Configure and implementation of a Router within a Network using Packet Tracer.

Step 1: Set Up the Network Topology

1. **Open Packet Tracer:** Launch Cisco Packet Tracer.
2. **Add Devices:**
 - Drag and drop a router (PT router) onto the workspace.
 - Add a couple of PCs (end devices) for testing connectivity.
 - Optionally, you can add switches if you need to connect multiple PCs.
 - Need to provide Default Gateway(i.e. Router interface IP address)

(The **default gateway** is the node that forwards the packet from the source to other **networks**)

PC0

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 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

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::203:E4FF:FE12:BE8C

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

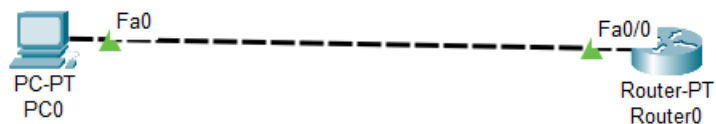
Authentication MD5

Username

Password

3. Connect Devices:

- Use the connection tool (cable icon) to connect the devices. For example, connect the PCs to a switch and the switch to the router.
- Use appropriate cables



Step 2: Configure the Router

1. Access the Router CLI:

- Click on the router and go to the "CLI" tab.

2. Enter Configuration Mode:

Configure ip address of pc□192.168.10.2

```
Router>en
```

```
Router#conf t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Router(config)#int Fa0/0
```

```
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#en
```

```
Router#conf t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Router(config)#enable secret griet1234
```

```
Router(config)#login
```

```
Router(config)#no ip domain-lookup
```

```
Router(config)#exit
```

```
Router#
```

%SYS-5-CONFIG_I: Configured from console by console

```
Router#conf t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Router(config)#line console 0
```

```
Router(config-line)#password 1234
```

```
Router(config-line)#login
```

```
Router(config-line)#exit
```

```
Router(config)#line vty 0 4
```

```
Router(config-line)#password g1234
```

```
Router(config-line)#login
```

```
Router(config-line)#exit
```

```
Router(config)#
```

```
Router(config)#exit
```

```
Router#
```

%SYS-5-CONFIG_I: Configured from console by console

```
Router#exit
```

Router con0 is now available

Press RETURN to get started.

Step 3: To test the console and enable secret passwords

User Access Verification

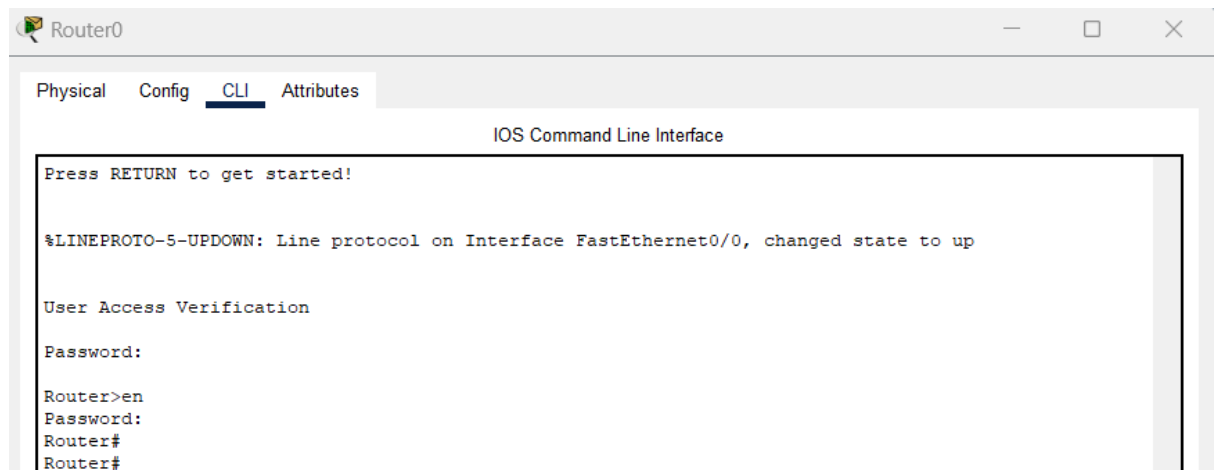
Password: 1234

Router>en

Password: griet1234

Router#exit

Note: To verify password, need to exit from all commands and enter into user mode

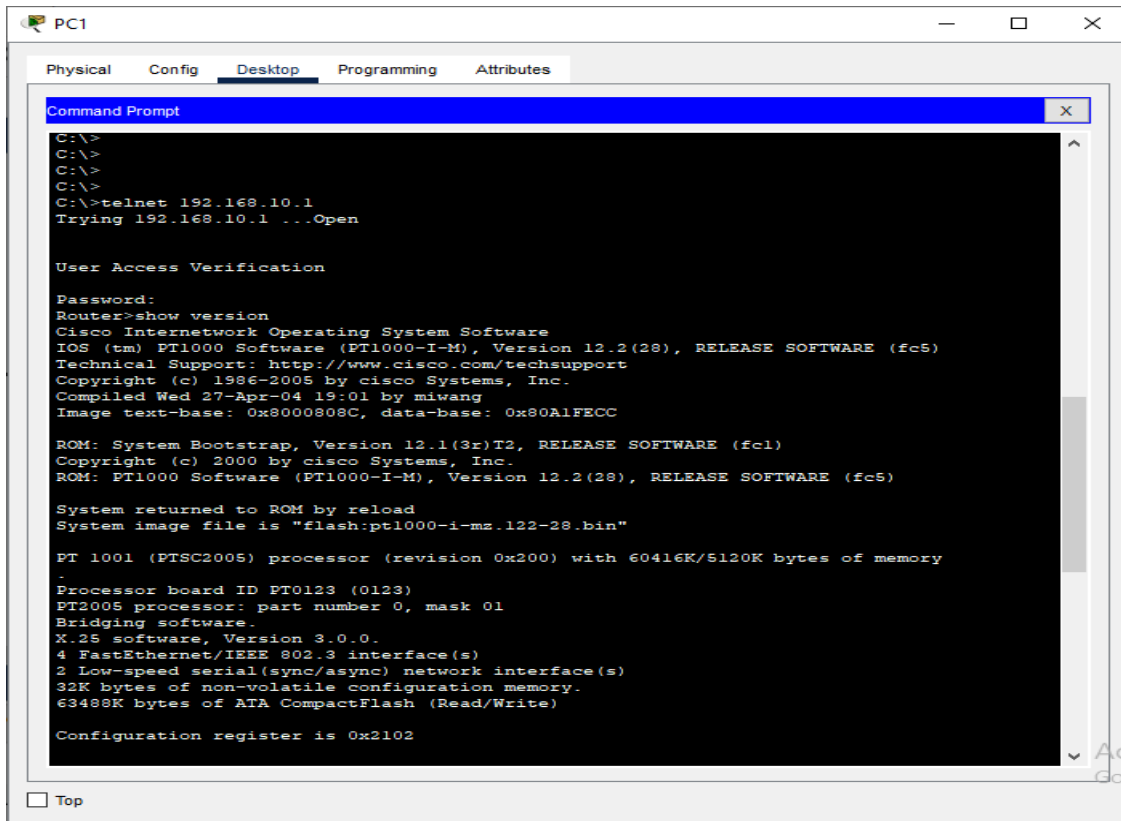


Step 4: To test vty password

Goto pc ->command prompt

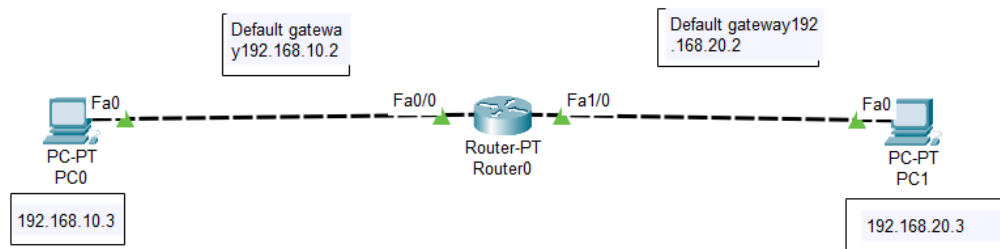
Need to give password of Vty

telnet 192.168.10.1(this is router ip)



Sub-task:

Same as above to implement PC to PC communication using Router



Configure ip address of pc 192.168.10.2

Configure router below steps

Router>en

Router#conf t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#int Fa0/0

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

[optional to add]

PC1

Physical Config **Desktop** Programming Attributes

IP Configuration [X]

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.20.5

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.20.4

DNS Server: 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::20A:41FF:FE65:C47E

Default Gateway:

DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

```
Router(config-if)#exit
Router(config)#int Fa1/0
Router(config-if)#ip address 192.168.20.2 255.255.255.0
Router(config-if)#no shutdown
```

```
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up
```

```
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

```
Router#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed
state to up
|
```

```
Router#en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#enable secret griet1234
Router(config)#login
Router(config)#no ip domain-lookup
```

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

```
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#line console 0
Router(config-line)#password 1234
Router(config-line)#login
Router(config-line)#exit
Router(config)#line vty 0 4
Router(config-line)#password g1234
Router(config-line)#login
Router(config-line)#exit
Router(config)#
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

```
Router#exit
```

Router con0 is now available

Press RETURN to get started.

To test the console and enable secret passwords

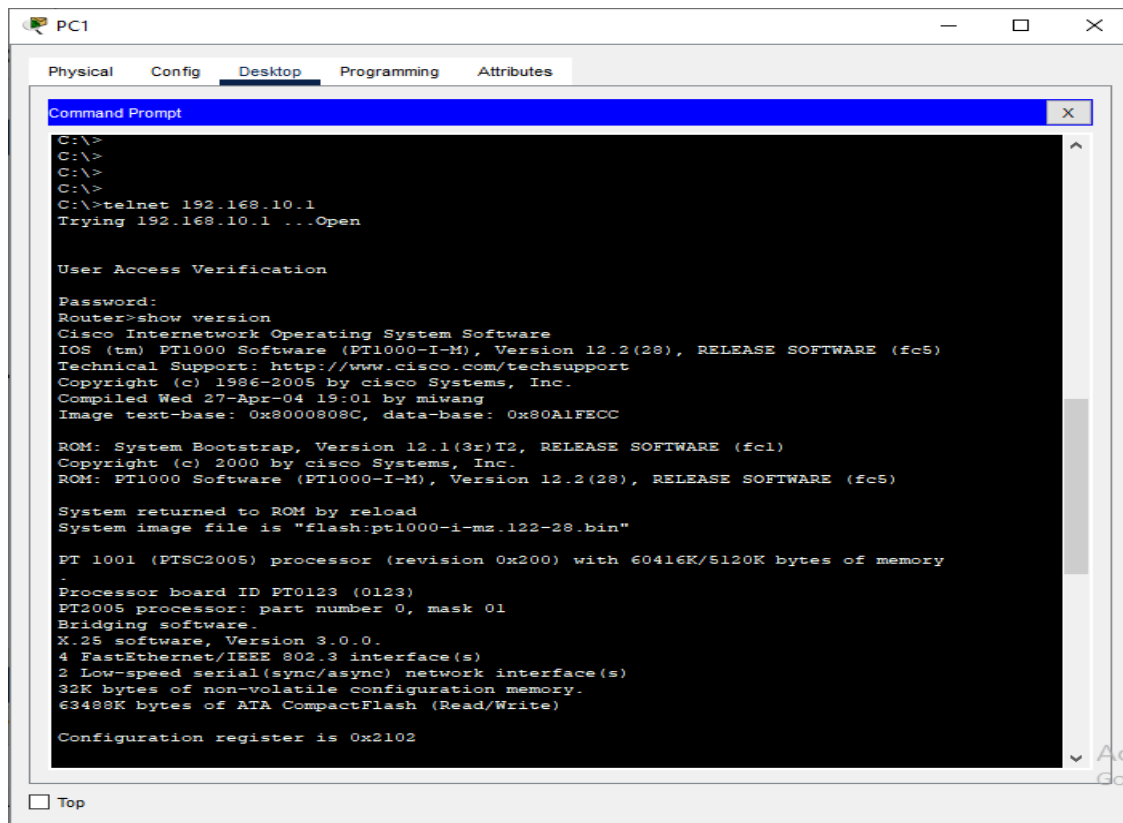


User Access Verification

Password: 1234

```
Router>en
Password: griet1234
Router#exit
```

To test vty password



Goto pc ->command prompt

telnet 192.168.10.1(this is router ip)

Test Connectivity

- **Ping** from one PC to another (e.g., from **PC0** to **PC1**) to ensure static routing is functioning properly.

