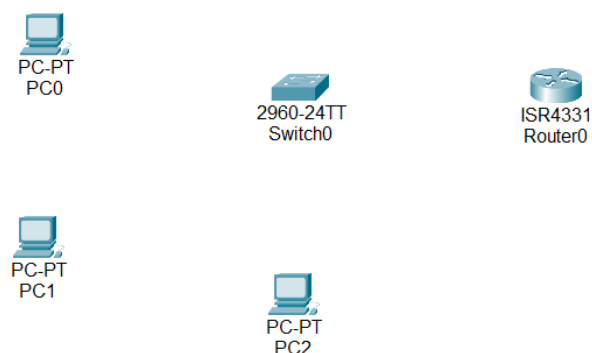
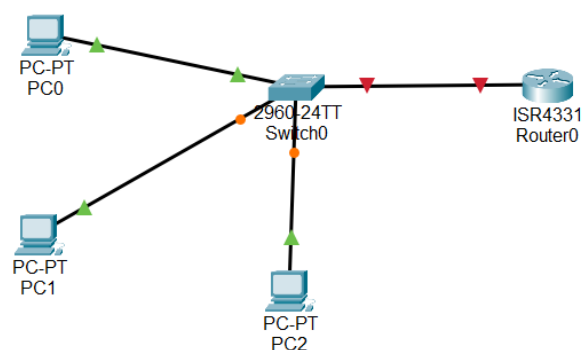
 Marwadi University Marwadi Chandarana Group	Marwadi University Faculty of Engineering and Technology Department of Information and Communication Technology	
Subject: Computer Networks (01CT0503)	Aim: Configure the router to secure the port and Telnet from unauthorized users. Analyze enable secret and password login commands in detail.	
Experiment No: 04	Date: 14-08-2023	Enrolment No: 92200133021


Aim: Configure the router to secure the port and Telnet from unauthorized users. Analyze enable secret and password login commands in detail.

Step – 1: Take PC , Switch and Router.



Step – 2 : Connect all the PCs to the switch and switch to the Router via cable.



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Step – 3 : Give the IP add to the router.

Use the command `ip addr add <IP_address>/<subnet_mask> dev <interface_name>` to assign an IP address to a router's network interface.

```

--- System Configuration Dialog ---

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

Press RETURN to get started!

Router>enable
Router#
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#int g0/0/0
Router(config-if)#ip add 10.0.0.1 255.0.0.0
Router(config-if)#
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up

```

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Top

Step – 4 : Give the IP address to all PCs.

PC0

Physical Config Desktop Programming Attributes

IP Configuration

Interface FastEthernet0

IP Configuration

☐ DHCP
☒ Static

IPv4 Address 10.0.0.2

Subnet Mask 255.0.0.0

Default Gateway 10.0.0.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ Automatic
☒ Static

IPv6 Address /

Link Local Address FE80::201:63FF:FE17:65B8

Default Gateway

DNS Server


802.1X

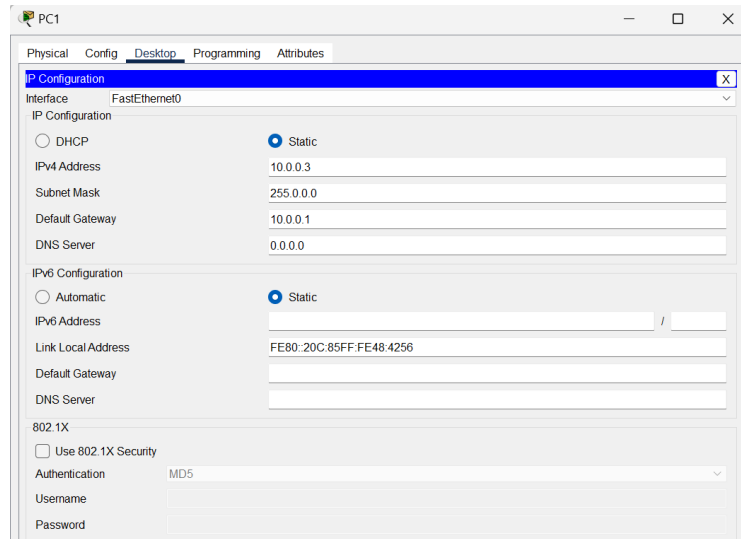
☐ Use 802.1X Security

Authentication MD5

Username

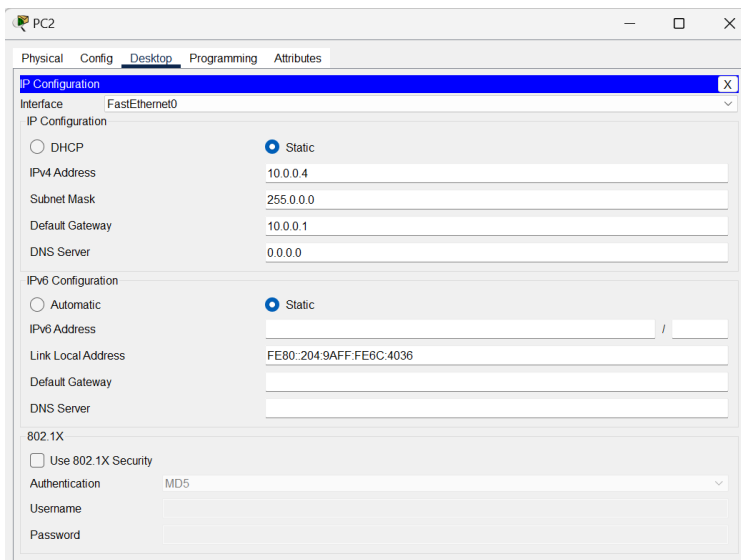
Password

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PC1 Configuration Window (Desktop tab):

- Interface: FastEthernet0
- IP Configuration:
 - ☐ DHCP
 - ☒ Static
 - IPv4 Address: 10.0.0.3
 - Subnet Mask: 255.0.0.0
 - Default Gateway: 10.0.0.1
 - DNS Server: 0.0.0.0
- IPv6 Configuration:
 - ☐ Automatic
 - ☒ Static
 - IPv6 Address: [Empty]
 - Link Local Address: FE80::20C:85FF:FE48:4256
 - Default Gateway: [Empty]
 - DNS Server: [Empty]
- 802.1X:
 - ☐ Use 802.1X Security
 - Authentication: MD5
 - Username: [Empty]
 - Password: [Empty]



PC2 Configuration Window (Desktop tab):

- Interface: FastEthernet0
- IP Configuration:
 - ☐ DHCP
 - ☒ Static
 - IPv4 Address: 10.0.0.4
 - Subnet Mask: 255.0.0.0
 - Default Gateway: 10.0.0.1
 - DNS Server: 0.0.0.0
- IPv6 Configuration:
 - ☐ Automatic
 - ☒ Static
 - IPv6 Address: [Empty]
 - Link Local Address: FE80::204:9AFF:FE6C:4036
 - Default Gateway: [Empty]
 - DNS Server: [Empty]
- 802.1X:
 - ☐ Use 802.1X Security
 - Authentication: MD5
 - Username: [Empty]
 - Password: [Empty]

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Step-5: Set the permissions or visibility of the command to restrict access for this use enable secret <password> command

Router0

Physical

Config

CLI

Attributes

IOS Command Line Interface

```

Processor board ID FLM232010G0
3 Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
4194304K bytes of physical memory.
3207167K bytes of flash memory at bootflash:.
0K bytes of WebUI ODM Files at webui:.

--- System Configuration Dialog ---

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

Press RETURN to get started!

Router>enable
Router#
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#
Router(config)#int g0/0/0
Router(config-if)#ip add 10.0.0.1 255.0.0.0
Router(config-if)#
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up

Router(config-if)#config t
%Invalid hex value
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console


Router#enable
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#
Router(config)#enable secret 111
Router(config)#
Router(config)#

```

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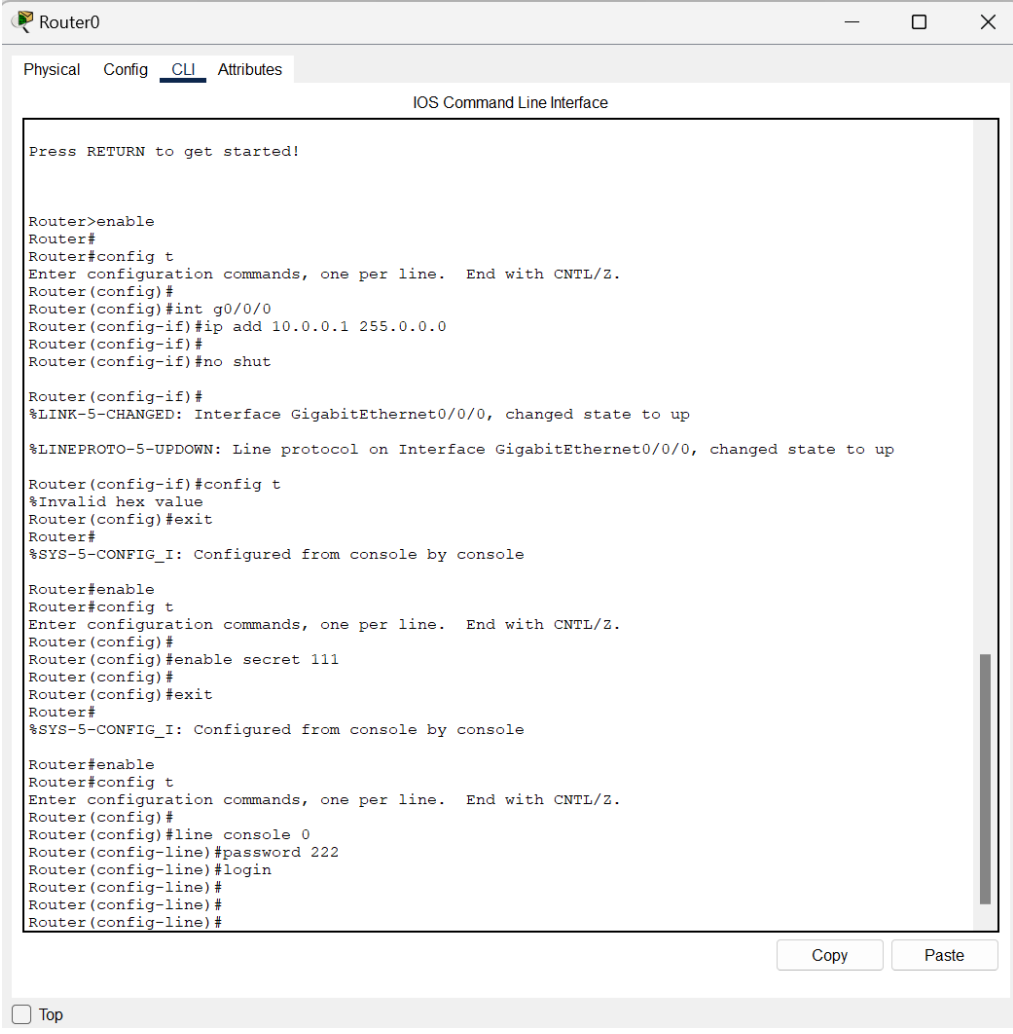
Step-6: Now we give the another command to set the password

line console 0

Password <password>

login

It don't able to go at the user mode also if we try to go it will immediately ask for password



```

Router0
Physical Config CLI Attributes
IOS Command Line Interface

Press RETURN to get started!

Router>enable
Router#
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#int g0/0/0
Router(config-if)#ip add 10.0.0.1 255.0.0.0
Router(config-if)#
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up


Router(config-if)#config t
%Invalid hex value
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#enable secret 111
Router(config)#
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#line console 0
Router(config-line)#password 222
Router(config-line)#login
Router(config-line)#
Router(config-line)#
Router(config-line)#
  
```

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☐ Top

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Step-7: To make virtual line control give following command

line vty 0 4

Password <password>

Login

By giving this up to 5 user can control the device virtually


```

Router#enable
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#
Router(config)#line console 0
Router(config-line)#password 222
Router(config-line)#login
Router(config-line)#
Router(config-line)#
Router(config-line)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

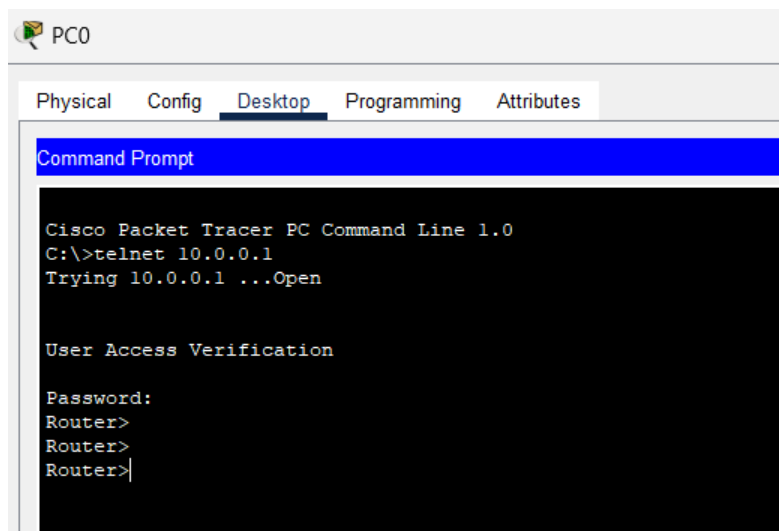
Router#telnet
Host: vidya
Translating "vidya"...domain server (255.255.255.255)
% Unknown command or computer name, or unable to find computer address

Router#enable
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#line vty 0 4
Router(config-line)#password 333
Router(config-line)#login
Router(config-line)#
Router(config-line)#exit
Router(config)#
Router(config)#

```

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Step-8: For checking the telnet protocol use following command
telnet <destination Ip add>



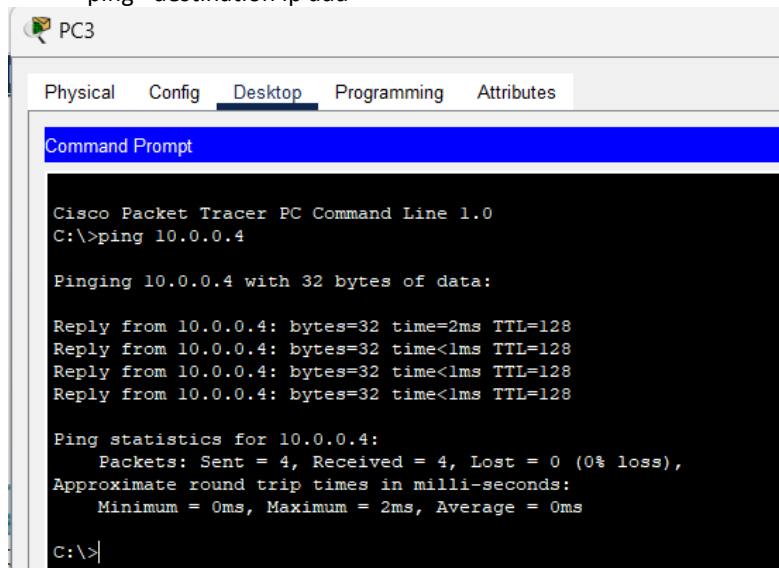
```

Cisco Packet Tracer PC Command Line 1.0
C:\>telnet 10.0.0.1
Trying 10.0.0.1 ...Open

User Access Verification

Password:
Router>
Router>
Router>
  
```

Step-9: Now after this we check for the connectivity between devices
For this we use following command
ping <destination Ip add>



```

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.0.0.4

Pinging 10.0.0.4 with 32 bytes of data:

Reply from 10.0.0.4: bytes=32 time=2ms TTL=128
Reply from 10.0.0.4: bytes=32 time<1ms TTL=128
Reply from 10.0.0.4: bytes=32 time<1ms TTL=128
Reply from 10.0.0.4: bytes=32 time<1ms TTL=128

Ping statistics for 10.0.0.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 0ms

C:\>
  
```

Conclusion: In this experiment, we configuring the router with the enable secret command secures privileged (administrator) access by using an encrypted password, while the password login command protects remote access, such as Telnet, by requiring users to enter a password before they can interact with the router. These measures help prevent unauthorized access and enhance overall router security.



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Analyze enable secret and password login commands in detail.**

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