

Lab no: 7

Date: 2024/09/23

Title: Router Configuration using Command Line Interface

Objectives:

- Understanding router configuration
- Acquiring knowledge of the command utilized for router configuration

Background Theory:

Router Configuration using Command Line Interface (CLI) is a process where network administrators use text-based commands to configure a router for managing network traffic. Through the CLI, you can set up IP addresses, routing protocols, and various network settings, giving you full control over the router's operation. This method allows for precise configuration and troubleshooting in real-time. By using specific commands, network parameters can be defined, secured, and tested to ensure proper communication between connected devices.

Process for Router Configuration using CLI:

Step 1: Enable router using command ***"en"*** to enter privileged EXEC mode.

Step 2: Enter the global configuration mode with command ***"config t"***.

Step 3: Access console line configuration by entering the command ***"line console 0"***.

Step 4: Set a password for router access by using the ***"password"*** command followed by the desired password.

Step 5: Enable login for console access using the ***"login"*** command.

Step 6: Save the configuration with the command ***"do wr"*** (write memory).

Step 7: Use the ***"exit"*** command to leave the console configuration mode.

Step 8: Re-enable the router using the password you recently set.

Step 9: Enter the terminal using ***"config t"*** command to return to configuration mode.

Step 10: Configure the IP address and subnet mask for the router's Fast Ethernet interface entering ***"int fa0/0"***, followed by ***"ip add [IP Address] [Subnet Mask]"***.

Step 11: Enable the router's Fast Ethernet port ***"no shut"*** command.

Step 12: Save the configuration again with the command ***"do wr"***

Step 13: Manually configure IP addresses on the connected devices.

```

Router>en
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#line console 0
Router(config-line)#password Ghimire
Router(config-line)#login
Router(config-line)#do wr
Building configuration...
[OK]
Router(config-line)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
exit

```

Fig: Setting up password of router using CLI

```

User Access Verification

Password:

Router>en
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Subodh
Subodh(config)#int fa0/0
Subodh(config-if)#ip add 192.168.1.1 255.255.255.0
Subodh(config-if)#
Subodh(config-if)#no shut

Subodh(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

Subodh(config-if)#do wr
Building configuration...
[OK]
Subodh(config-if)#

```

Fig: Setting up IP address of router using CLI

Observation and Findings:

Configuring a router using a router, switch and two end devices

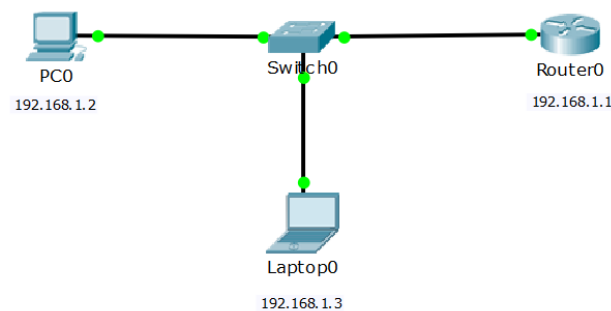


Fig: Router Configuration

Output:

```
Packet Tracer PC Command Line 1.0
PC>ping 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:

Reply from 192.168.1.3: bytes=32 time=0ms TTL=128
Reply from 192.168.1.3: bytes=32 time=1ms TTL=128
Reply from 192.168.1.3: bytes=32 time=0ms TTL=128
Reply from 192.168.1.3: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>|
```

Discussions:

The router was configured using CLI commands to handle network traffic between different subnets. The configuration involved setting IP addresses on interfaces and defining routing protocols to ensure effective data flow. The successful ping tests between devices confirmed that the router's settings were correctly applied and that traffic was properly routed between the networks. This demonstrates the CLI's effectiveness in providing precise control over network configurations.

Conclusion:

Configuring the router via CLI enabled successful management of network traffic between subnets. The connectivity tests verified that the router was correctly routing data as intended.