	Marwadi University Faculty of Engineering and Technology Department of Information and Communication Technology
Subject: Computer Networks (01CT0503)	**Aim: Perform** basic CLI commands to **configure** switch and router.
Experiment No: 02	**Date: 01-08-2024** **Enrolment No: 92200133029**

Aim: **Perform** basic CLI commands to **configure** switch and router.

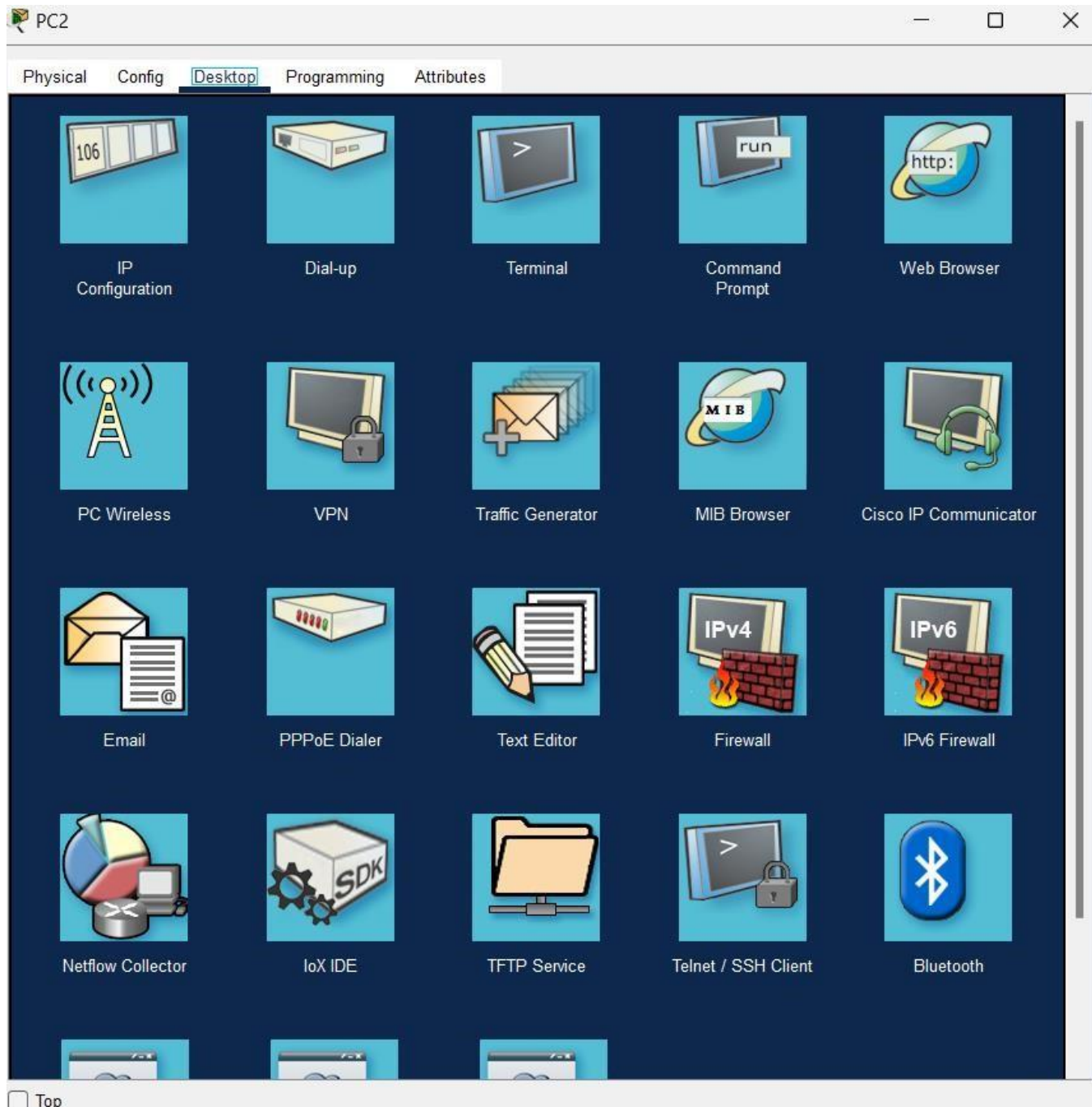Step – 1: Open up Cisco packet tracer put one router and pc

Step – 2 : Connect both router with PC using the console cable by connecting one end to Console port of Router and Other end of the cable to the RS232 port of PC.

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Step – 3 : After connecting the pc with router open pc and go to desktop

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– 4 : Click on terminal and click ok after that the Packet tracer's cli will open up and at the first load it will ask to load initial configuration kindly say no by entering 'n'. then press enter by default you will use the terminal in User mode.

```
This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
use. Delivery of Cisco cryptographic products does not imply
third-party authority to import, export, distribute or use encryption.
Importers, exporters, distributors and users are responsible for
compliance with U.S. and local country laws. By using this product you
agree to comply with applicable laws and regulations. If you are unable
to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html

If you require further assistance please contact us by sending email to
export@cisco.com.

cisco ISR4331/K9 (1RU) processor with 1795999K/6147K bytes of memory.
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:.


Press RETURN to get started!


Dhruvi>
```

To switch Roles :

There are 3 modes 1. User mode 2. Privileged mode 3. Global mode

The User mode is for the end user in this mode only the usage of the network device is allowed the user cannot see any configurations and neither can change them The Privileged mode is for showing the current configuration of the network device.
The Global mode is for setting the configuration of the network devices.
Note: - the command of the one mode can't be used in the other mode by default there are few exceptions we will see as we go

Each mode is represented by a symbol in the terminal.
">" is for User mode
"#" is for Privileged mode
"config(#)" is for Global config mode

By default we start up in the user mode
To switch to privileged mode, we can either write "enable" or "en" in terminal and hit enter we can see the role symbol change in the next line form ">" to "#" Output:

```
Dhruvi>enable
Dhruvi#
```

To Switch to Global config mode from prevailed mode we can either type "config terminal" or "config"

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```
Dhruvi>enable
Dhruvi#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Dhruvi(config)#
Dhruvi(config)#
```

Now to roll back to previous roll we can write exit

It will go back to previous privilege level that is from config to privilege and from there to the user

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

Dhruvi#en
Dhruvi#exit




Dhruvi con0 is now available



Press RETURN to get started.
```

To set hostname:

The string you see before the role symbol is the hostname it is used specify or modify the host name for the network server, use the **hostname** global configuration command. The host name is used in prompts and default configuration filenames. The **setup** command facility also prompts for a host name at startup.

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You can set up by typing the hostname and then name of the host after space

```
Dhruvi>en
Dhruvi#confi
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
Dhruvi(config)#hostname Dhruvi_29
Dhruvi_29(config)#
```

As I said before it a config command so it needs to be executed in the config mode

To see brief information about interfaces :

The other important command is "show ip internet brief" or "sh ip int br". This command shows brief information about all the available interfaces on the router or switch. This is the most common command used by network administrators to check and troubleshoot network issues. It is command that can be executed in both config and privileged mode

```
Dhruvi_29#sh ip int br
Interface              IP-Address      OK? Method Status                Protocol
GigabitEthernet0/0/0   unassigned      YES unset  administratively down down
GigabitEthernet0/0/1   unassigned      YES unset  administratively down down
GigabitEthernet0/0/2   unassigned      YES unset  administratively down down
Vlan1                  unassigned      YES unset  administratively down down
Dhruvi 29#
```

To set password:

Using this command "enable password" you can set up the password each time you enter privileged mode.

```
Dhruvi_29>enable
Dhruvi_29#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Dhruvi_29(config)#enable password 123
Dhruvi_29(config)#
Dhruvi 29(config)#exit

Dhruvi_29>en
Password:
Dhruvi_29#config t
Enter configuration commands, one per line.  End with CNTL/Z.
```

You'll have to write the password and I won't be shown in there after that you'll hit enter and if your password is right then it will show the privileged mode else the password prompt will be there again indicating you typed wrong password

To see running configurations :

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The command "show running-config" shows the current configuration of device.

```
Dhruvi_29(config)#do show running-config
Building configuration...

Current configuration : 669 bytes
!
version 15.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Dhruvi_29
!
!
!
enable password 123
!
!
!
!
!
!
ip cef
no ipv6 cef
 --More--
```

Here we can see the password is not hidden we can use other command to hide it or hash it

```
Dhruvi_29(config)#
Dhruvi_29(config)#
Dhruvi_29(config)#enable secret pass
Dhruvi_29(config)#do show running-config
Building configuration...

Current configuration : 716 bytes
!
version 15.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Dhruvi_29
!
!
!
enable secret 5 $1$mERr$WWYFDFflcd5FpJh6NNHr41
enable password 123
!
!
!
!
!
!
ip cef
 --More--
```

To relaod the the configurations :

It is used to reload the system

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```
Dhruvi_29(config)#
Dhruvi_29(config)#do reload
System configuration has been modified. Save? [yes/no]:y
Building configuration...
[OK]
Proceed with reload? [confirm]
Initializing Hardware ...

Checking for PCIe device presence...done
System integrity status: 0x610
Rom image verified correctly


System Bootstrap, Version 16.7(3r), RELEASE SOFTWARE
Copyright (c) 1994-2018  by cisco Systems, Inc.

Current image running: Boot ROM0

Last reset cause: LocalSoft
Cisco ISR4331/K9 platform with 4194304 Kbytes of main memory



no valid BOOT image found
Final autoboot attempt from default boot device...
Located isr4300-universalk9.16.06.04.SPA.bin
############################################################################
#########################
Package header rev 1 structure detected
IsoSize = 550114467
Calculating SHA-1 hash...Validate package: SHA-1 hash:
        calculated 444F4D02:44C58887:D9C8942B:C557D3CF:2A14247E
        expected   444F4D02:44C58887:D9C8942B:C557D3CF:2A14247E

RSA Signed RELEASE Image Signature Verification Successful.
Image validated


                Restricted Rights Legend
```

Conclusion:

This experiment was a great way to get familiar with Cisco Packet Tracer commands. It provided a helpful introduction to the CLI in computer networking and was very beginner-friendly. By simulating real-life networking processes, it offered a clear understanding of how networks function and how the commands play a role in managing the

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