NATIONAL UNIVERSITY OF COMPUTER & EMERGINGSCIENCE

Computer Network Lab (CL3001)

Lab Session 08

SSH, Telnet

Objective:

- Introduction to Telnet & configuration of Telnet in Cisco Packet Tracer
- Introduction to SSH & configuration of SSH in Cisco Packet Tracer

SSH and Telnet

Introduction to Telnet:

A terminal emulation program for TCP/IP networks such as the Internet. The Telnet program runs on your computer and connects your PC to a server on the network. You can then enter commands through the Telnet program and they will be executed as if you were entering them directly on the server console. This enables you to control the server and communicate with other servers on the network. To start a Telnet session, you must log in to a server by entering a valid username and password. Telnet is a common way to remotely control Web servers. To telnet means to establish connection with the Telnet protocol, either with commandline client or with a programmatic interface.

Configuration of Telnet:

Below are the steps for Telnet Protocol. Follow the figure 1 till figure 8 for the configuration of Telnet Protocol.

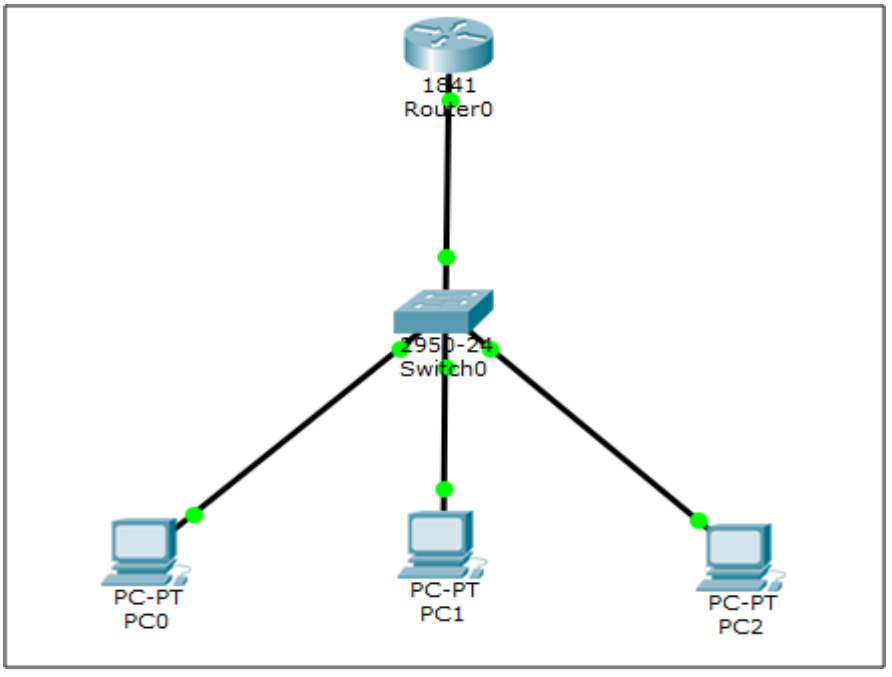

Fig-1: Network Topology

Take the topology as in the above diagram. Set IPs on the PCs. As, by default, all PCs are in VLAN. Wewill create a virtual interface on switch with VLAN 1 as follows.

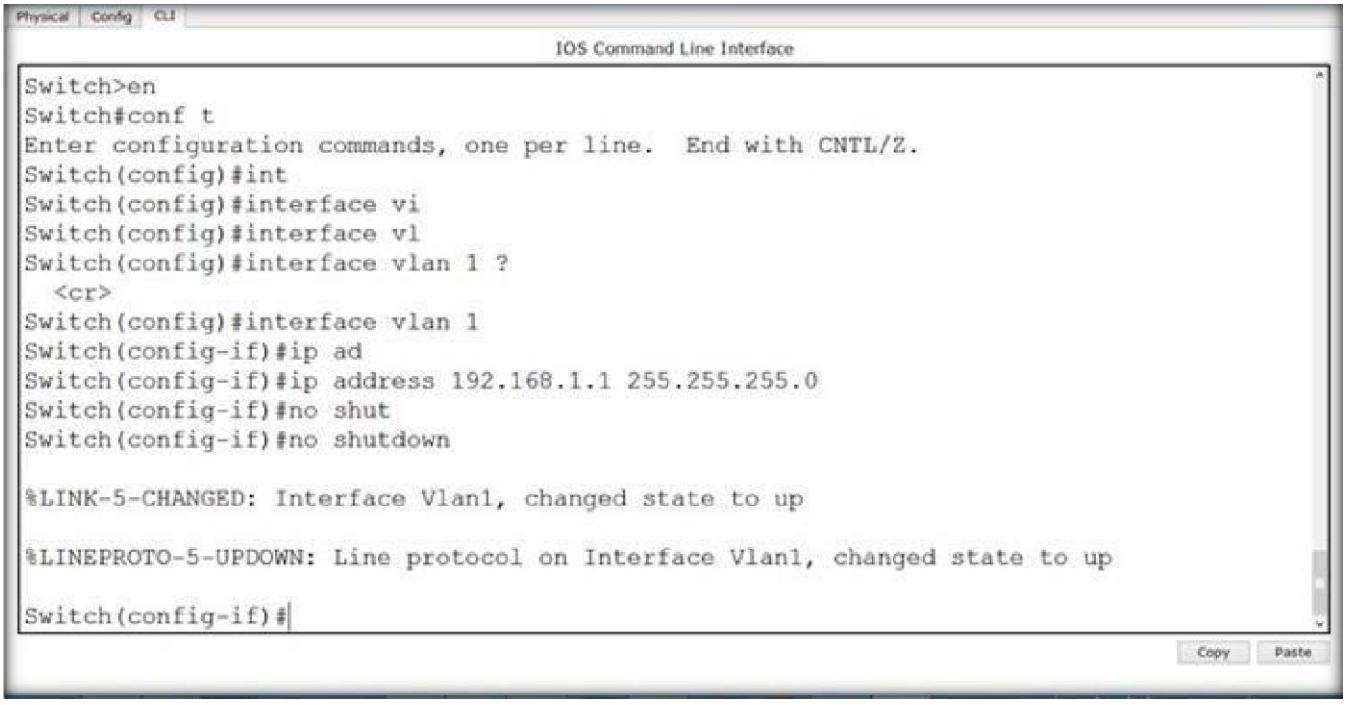

Fig-2: Configuring VLAN Connection

Now, try to telnet the switch from our PC, it refuses because we have not applied authentication on theswitch yet.

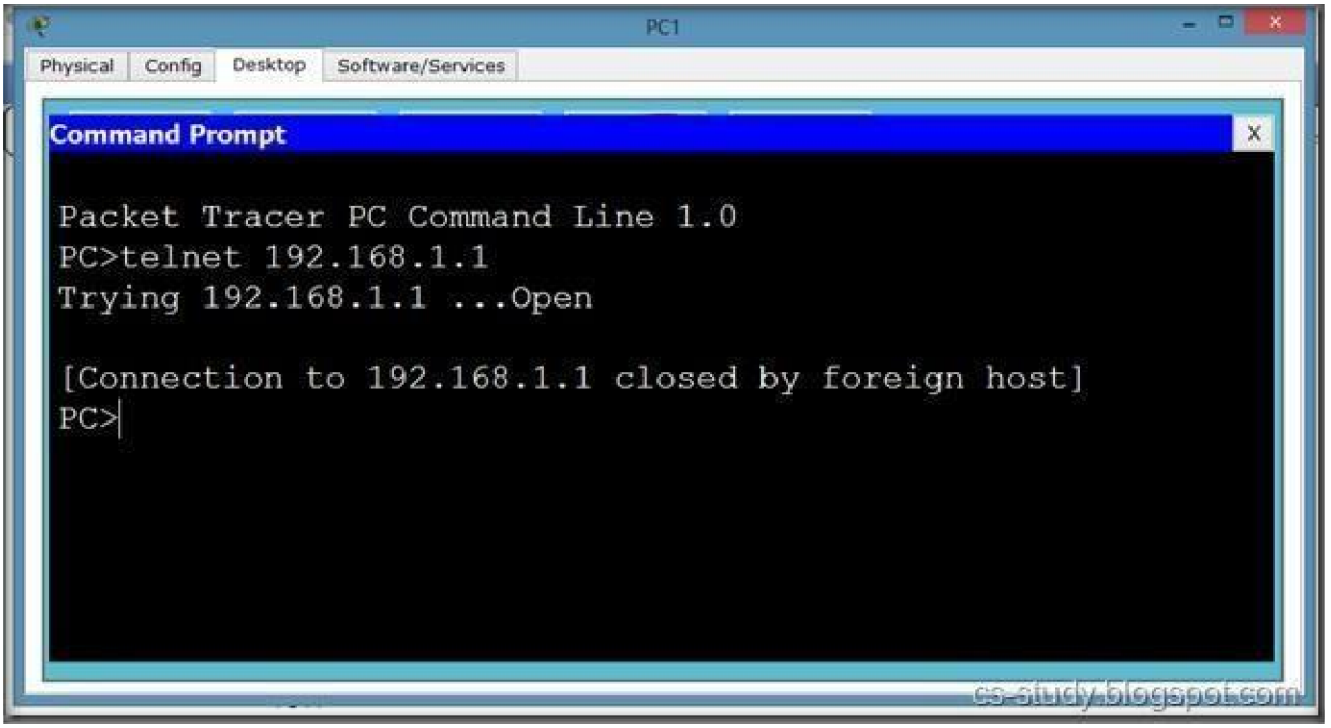

Fig-3: Initial Checking of VLAN

Secure Shell Server (SSH) and FTP services. Each Telnet, SSH, or FTP session requires one vty-line. You can add security to your system by configuring the software to validate login requests.

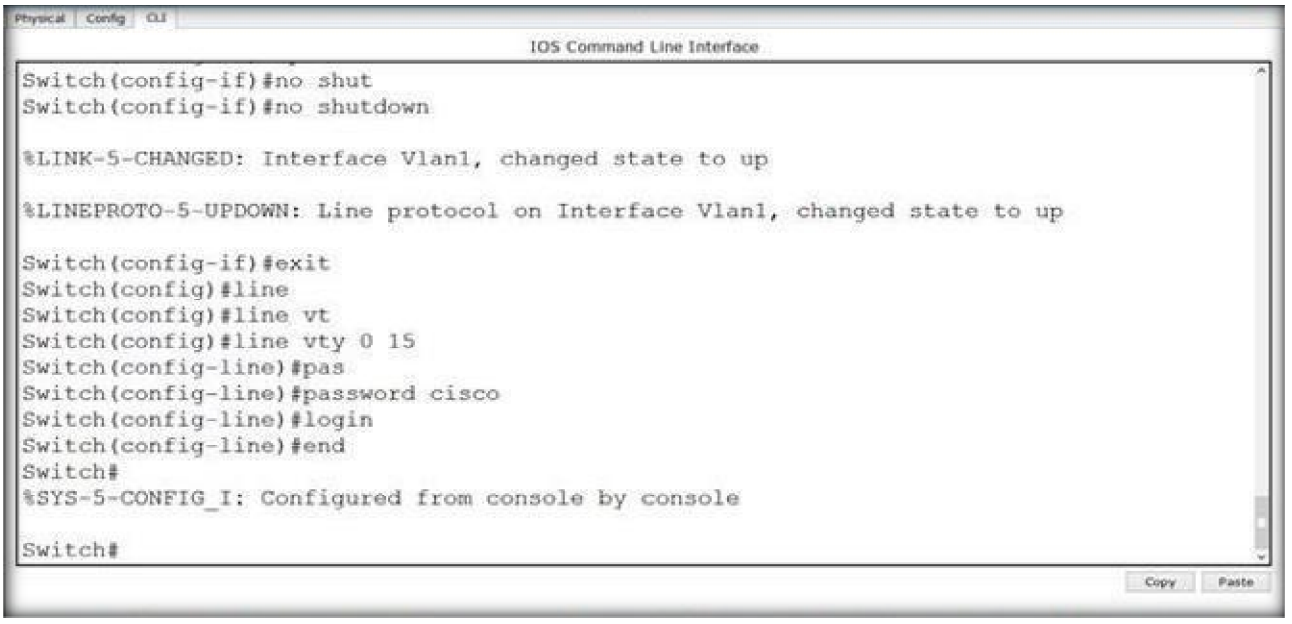

Fig-4: Creating Vty-line connection for Telnet

Now, we can easily telnet. But it does not let us go in the switch enabled mode because we have not setthe password on the switch yet.

Fig-5: Checking Vty-line connection for Telnet

Let’s apply password on the switch enabled mode.

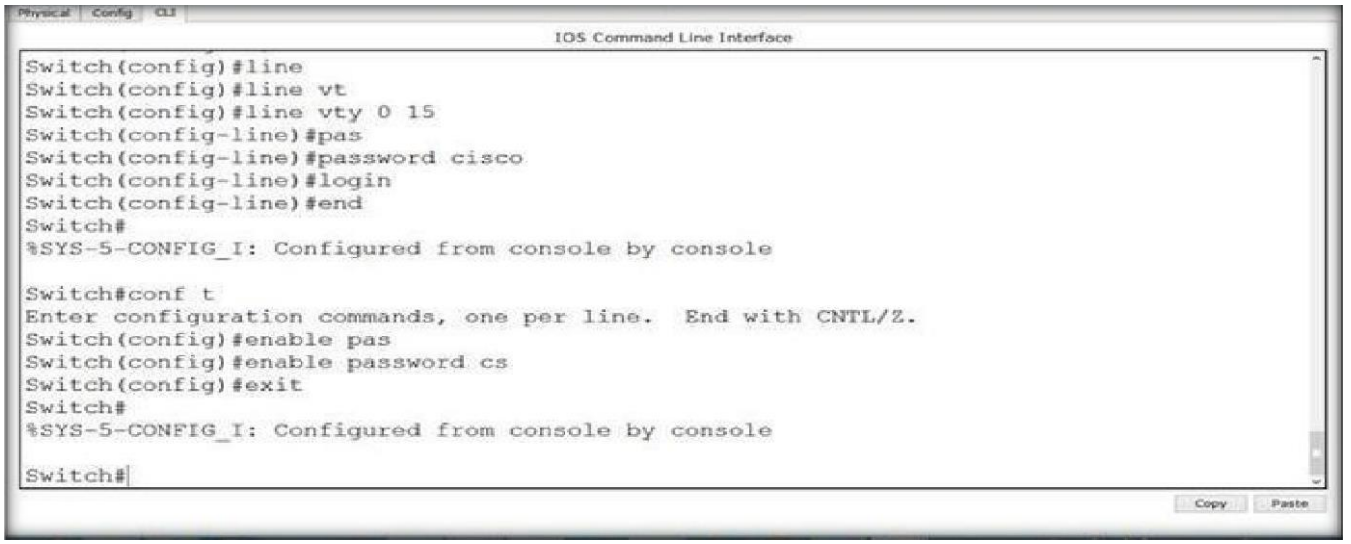

Fig-6: Adding password in enable mode

Now, we can go inside Switch configuration mode from our pc.

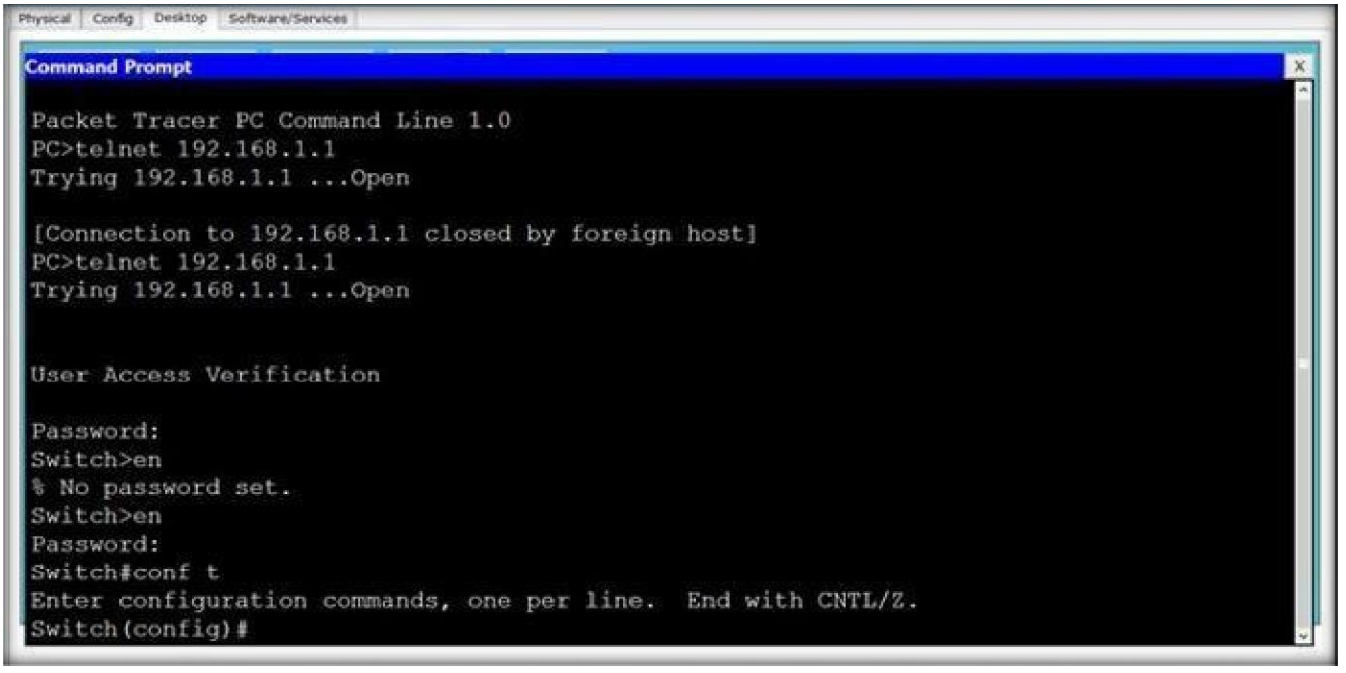

Fig-7: Checking by it using command

Introduction to SSH:

Secure Shell or Secure Socket Shell is a network protocol. It is an application layer protocol that is in the7th later of the Open Systems Interconnection (OSI) network model. It also refers to the suite of utilitiesthat implements the SSH protocol.

Secure Shell also supports both password and key-based authentication. Password-based authentication let users provide username and password to authenticate to the remote server. A key-based authenticationallows users to authenticate through a key-pair. The key pairs are two cryptographically secure keys for authenticating a client to a Secure Shell server.

Furthermore, the Secure Shell protocol also encrypts data communication between two computers. It is extensively used to communicate with a remote computer over the Internet.

Configuration of SSH:

Taking the same topology as mentioned in figure 1. Below are the steps for SSH Protocol. Follow thefigure 9 till figure 14 for the configuration of SSH Protocol.

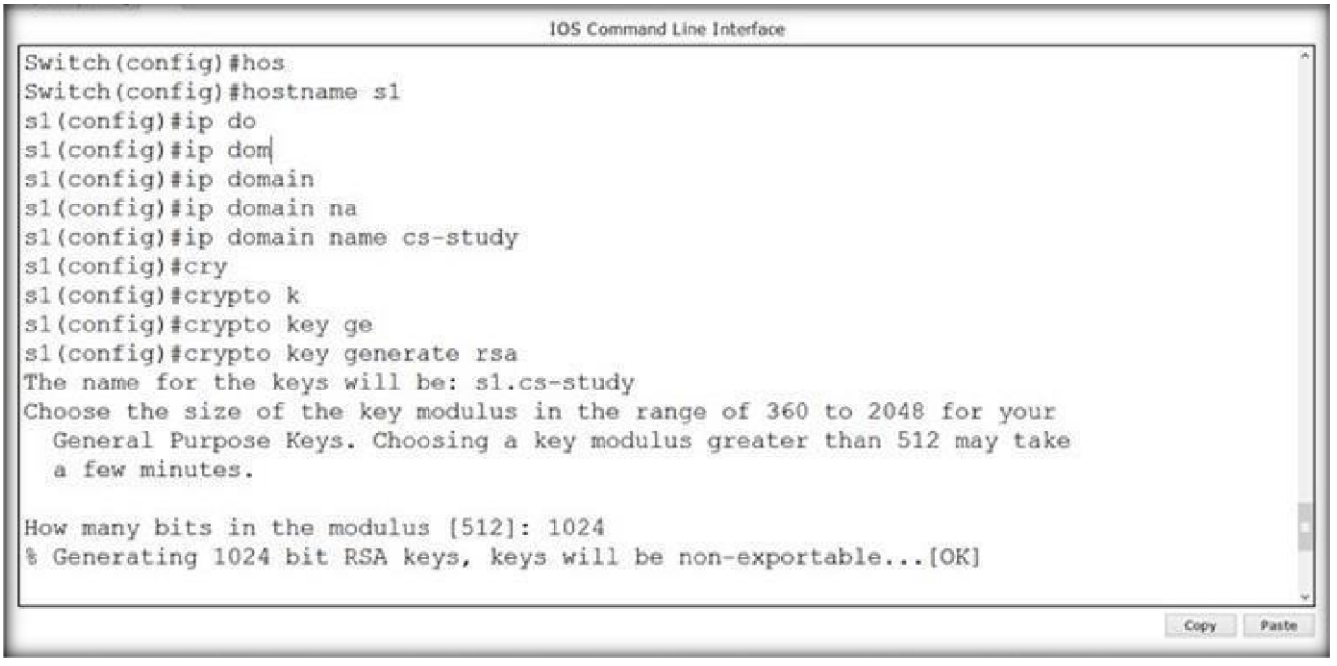

Fig-8: Creating Domain & RSA key

Commands continued.

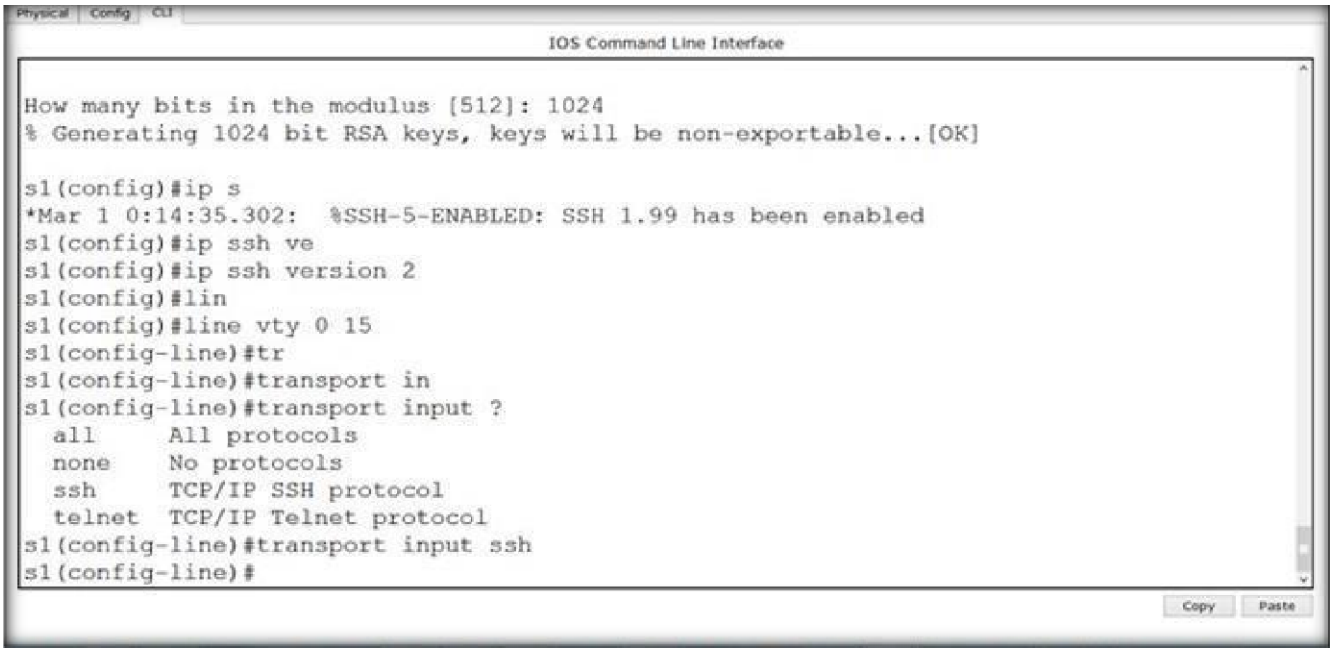

Fig-9: Creating SSH connection

Protocol working on it. By default, username is admin.

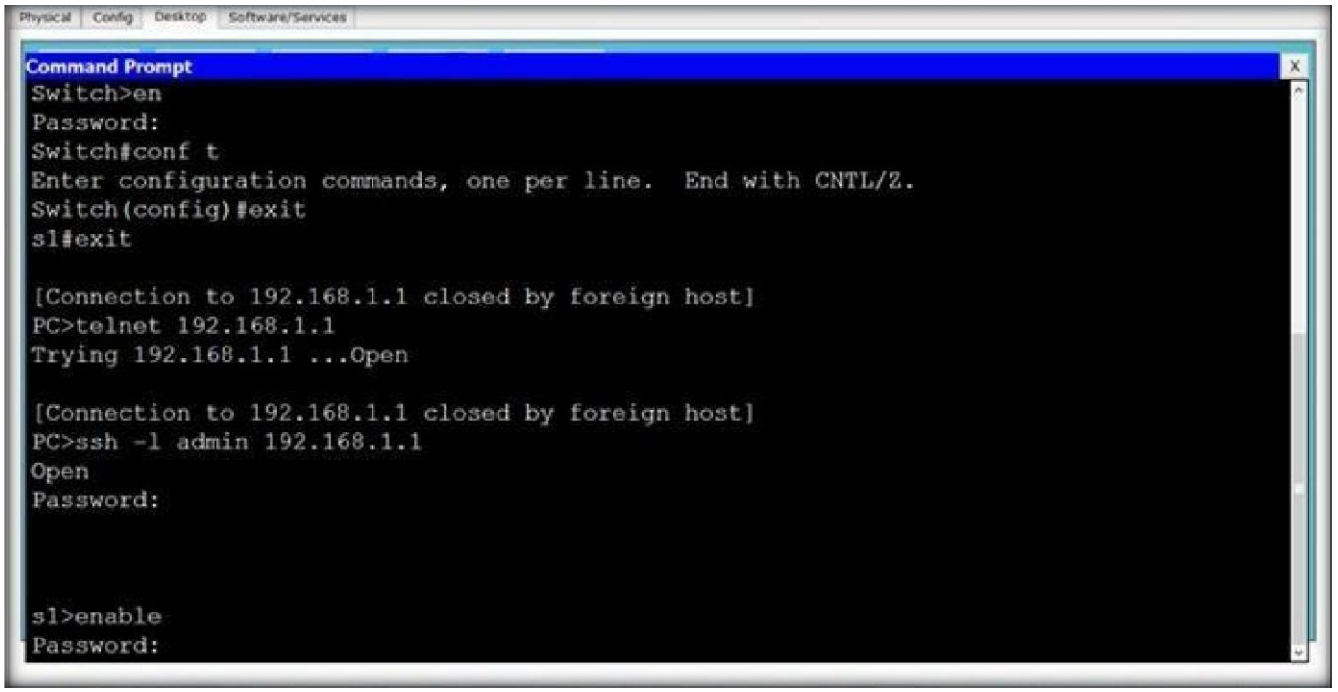

Fig-10: Checking SSH connection of Admin user

And we can apply any sort of configuration on our switch from out pc

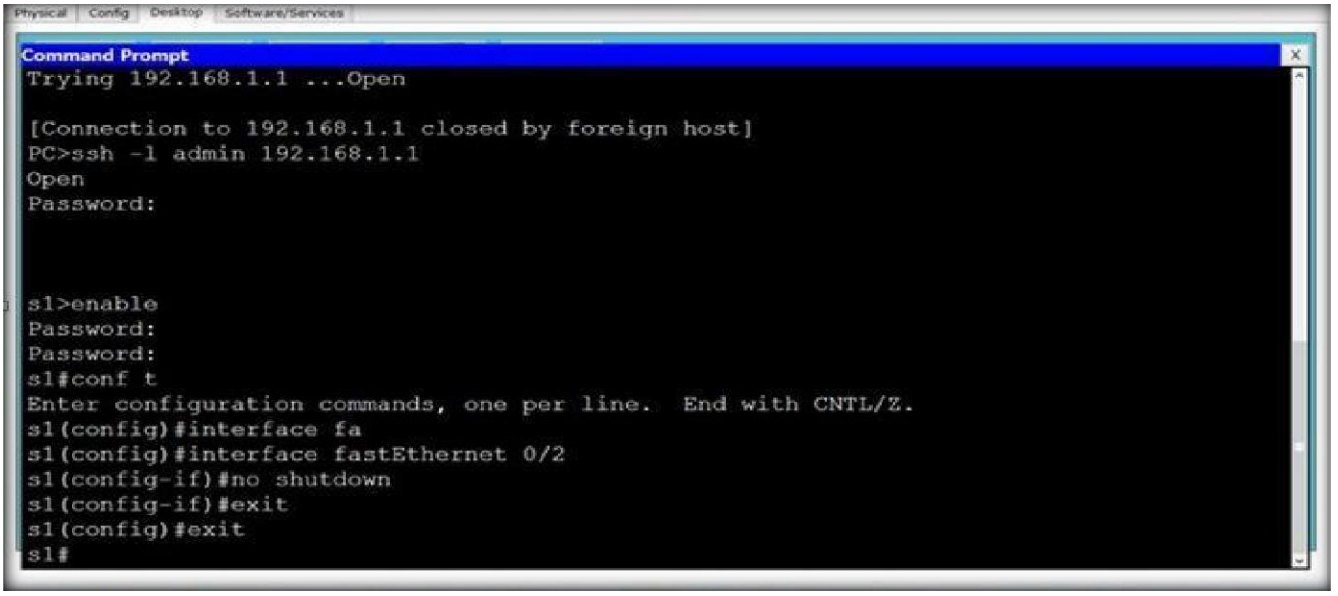

Fig-11: Moving to enable mode using specific computer

Now, if we want to change the username from admin to something else, we will do it as follows.

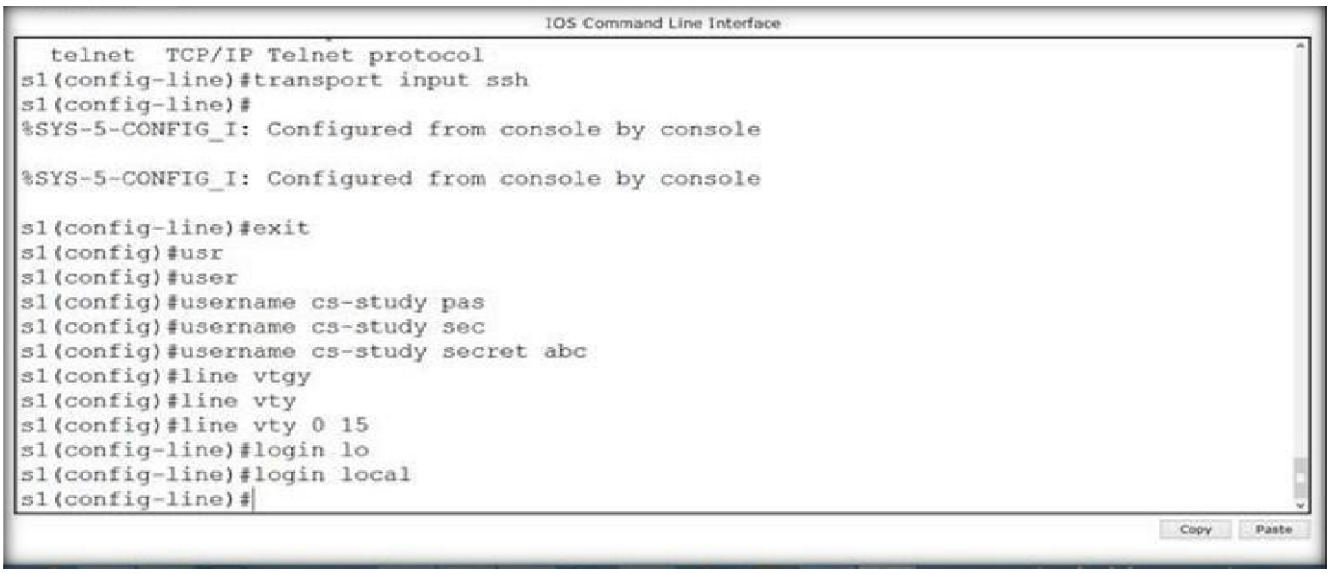

Fig-12: Creating Vty connection on specific domain

and from our pc as follows.

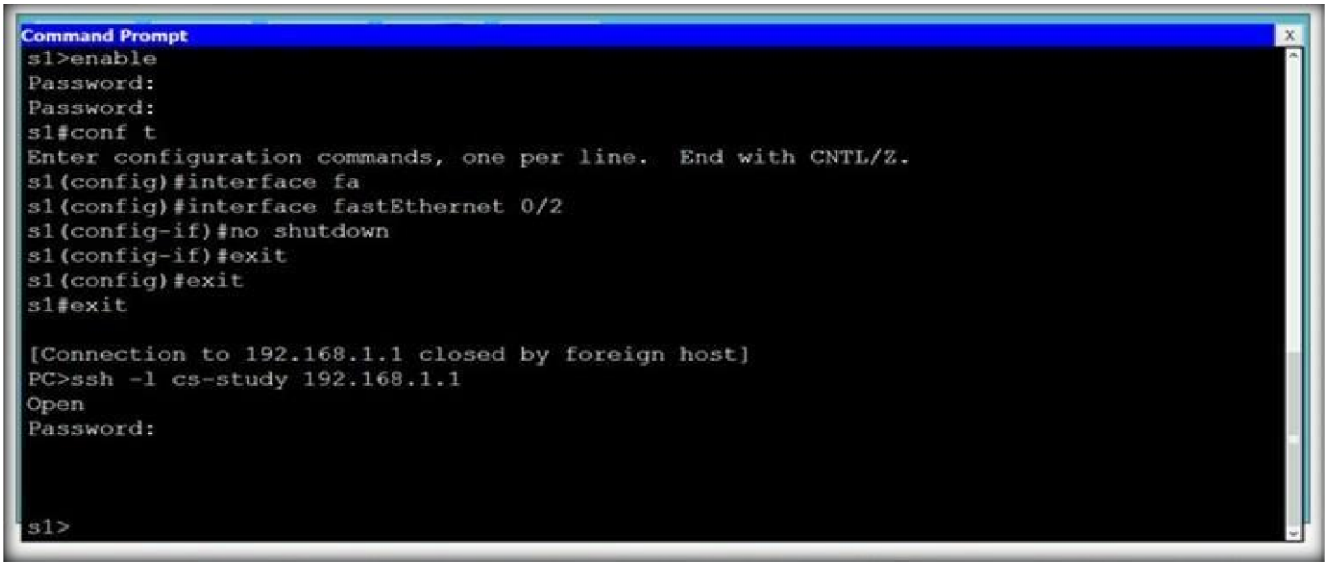

Fig-13: Checking the connection

Lab Exercise SSH & Telnet

Question # 1

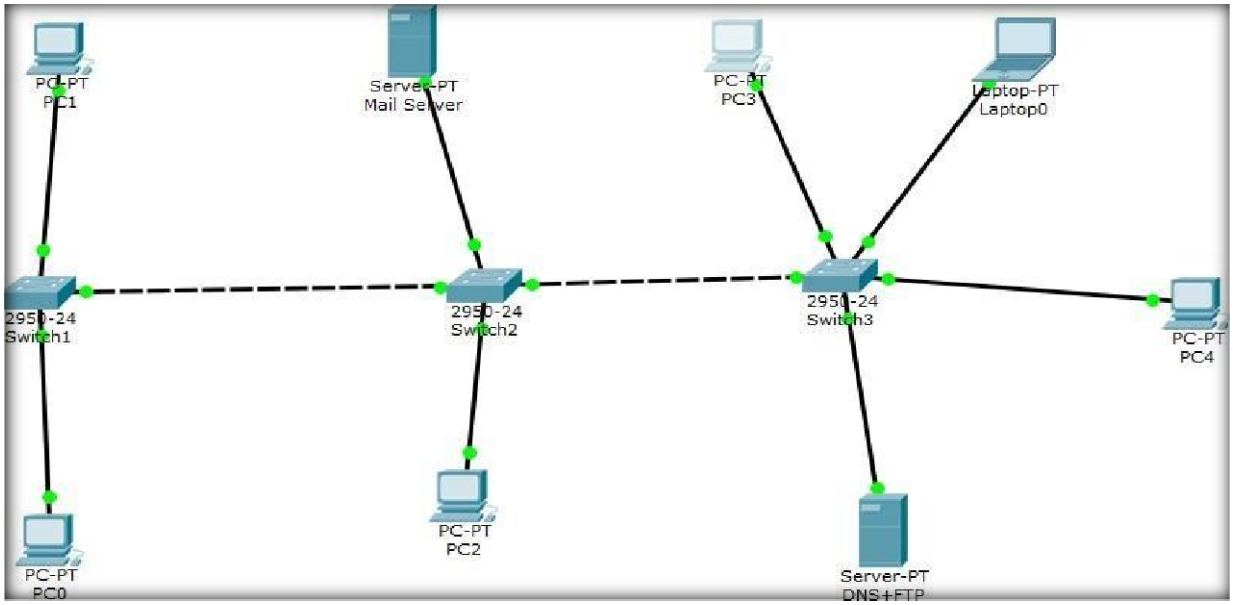

Fig-14a: Network Topology

1. Implement the topology given in figure A on cisco packet tracer.
2. Assign IP to the computers. The Network should like this XX.XX.0.0
   i.e. your roll number like 3479(34.79.0.0)
3. Ping the server from any computer.
4. Verify the telnet connection from all switches nearest to the computer.
5. Do change the IP of Switch2 from PC2 using its command prompt.

Question # 2

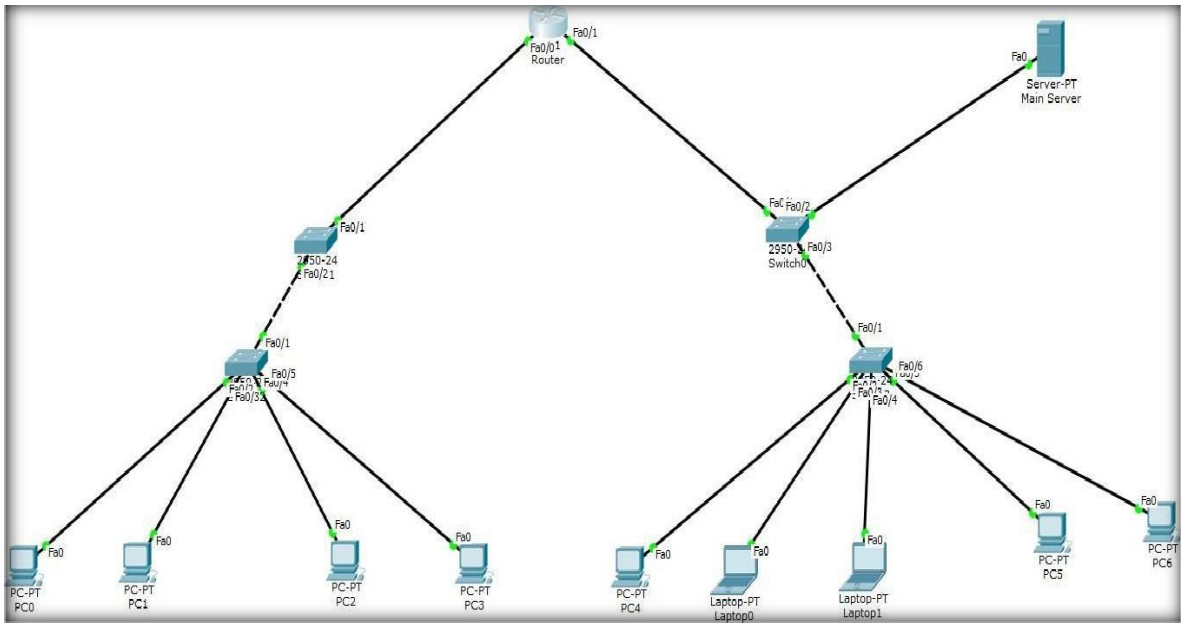

Fig-14b: Network Topology

1. Implement the figure B topology on cisco packet tracer.
2. The IP should assign to the computer using static method. The Network on one side of Fast Ethernet should like this XX.XX.0.0 i.e. your roll number like 4879(48.79.0.0) and on another side it shouldbe 4880(48.80.0.0).
3. Run command of show run on Switch0 and Switch0 and take screenshot of it.

   Verify SSH and do assign IP to another interface of Router. It should be done through laptop0.Takescreenshot of it.