Computer Networks

Lab_2 Assignment Documentation

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Lab 3: Router Configuration (Creating Passwords, Configuring Interfaces)

Router Configuration with Cisco Packet Tracer

Experiment Overview:

In this experiment, you will configure a router and two PCs using Cisco Packet Tracer. The computers are connected to the router using copper straight-through cables. After setting up the network, you will test the connectivity by sending a simple PDU from PC0 to PC1. The successful simulation will demonstrate the router's capability to handle data transfers between multiple devices.

Procedure:

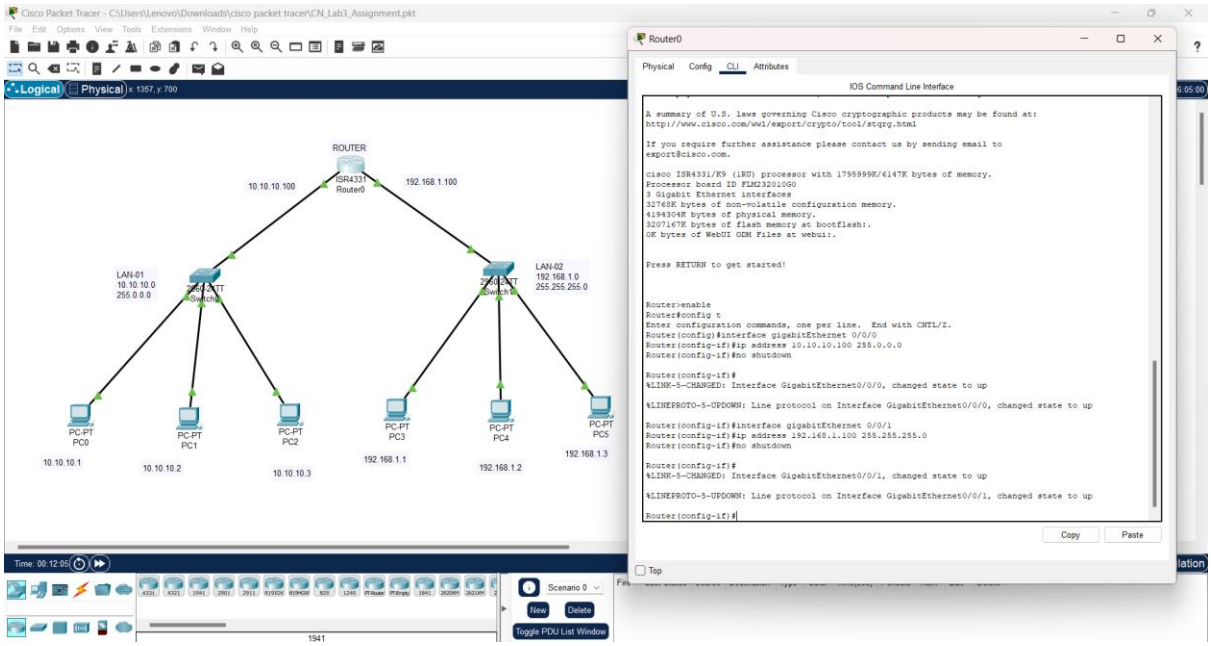
Step 1: Configuring Router1

1. Select the router and open CLI.
2. Press ENTER to start configuring Router1.
3. Activate privileged mode:
   - Type enable
4. Access the configuration menu:
   - Type config t (configure terminal)
5. Configure interfaces of Router1:
   - FastEthernet0/0:
     - Type interface FastEthernet0/0
     - Configure with the IP address 192.168.10.1 and Subnet mask 255.255.255.0
   - FastEthernet0/1:
     - Type interface FastEthernet0/1

- Configure with the IP address 192.168.20.1 and Subnet mask 255.255.255.0

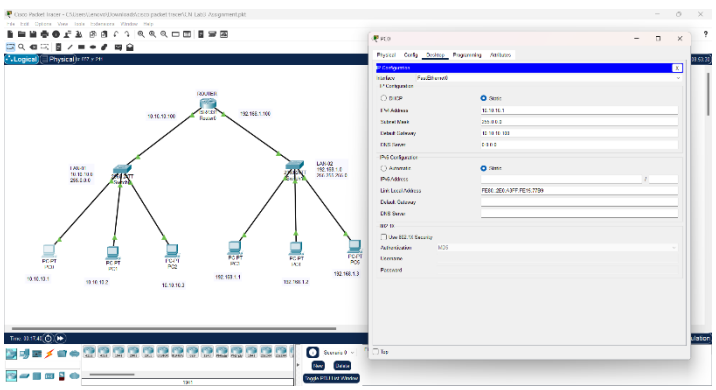
6. Finish configuration:
   - Type no shutdown to activate the interfaces

ROUTER1 Command Line Interface:



Step 2: Configuring PCs

1. Assign IP addresses to each PC:
   - PC0:
     - Go to the desktop, select IP Configuration, and assign the following:
     - IP address: 10.10.10.1
     - Subnet Mask: 255.0.0.0
     - Default Gateway: 10.10.10.100



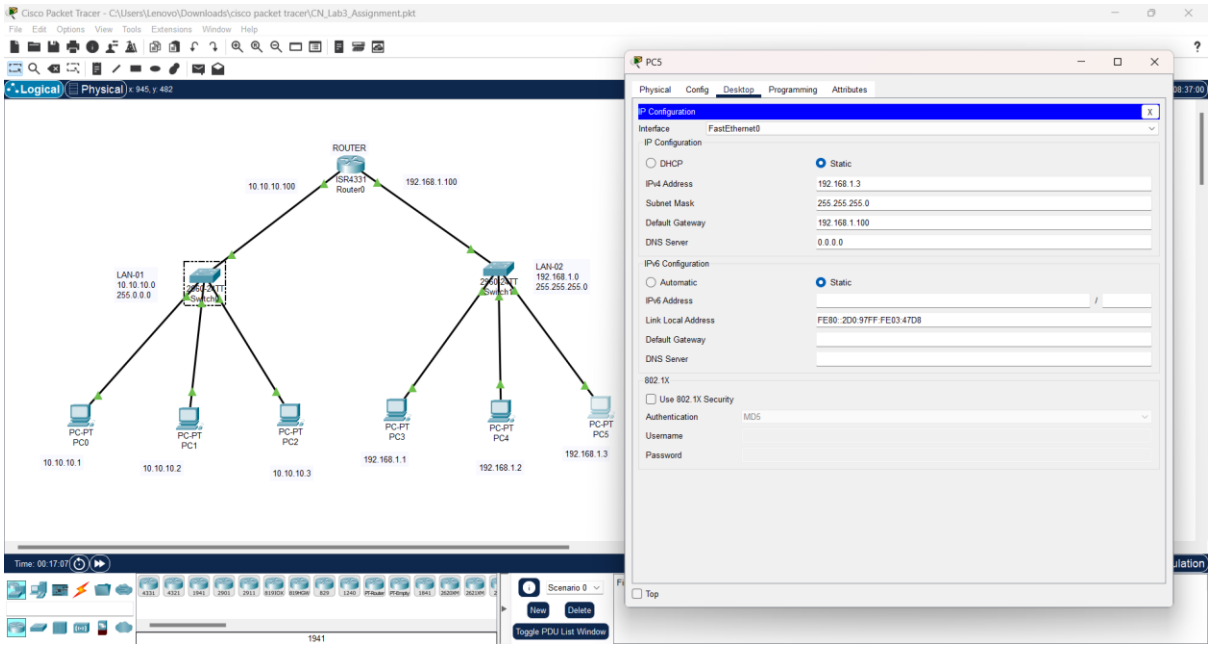
○ PC5:

■ Go to the desktop, select IP Configuration, and assign the following:

■ IP address: 192.168.1.3

■ Subnet Mask: 255.255.255.0

■ Default Gateway: 192.168.1.100



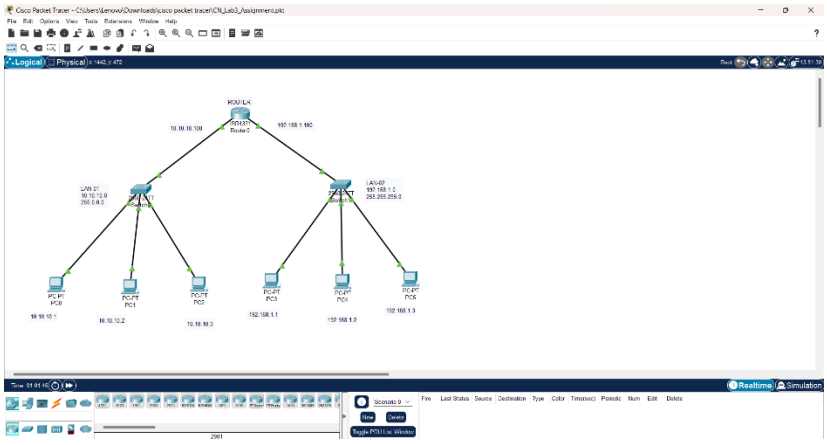
Step 3: Connecting PCs with Router

1. Connect the devices using copper straight-through cables:

   ○ Connect FastEthernet0 port of switch0 to gigabitEthernet0/0/0 port of Router1

   ○ Connect FastEthernet0 port of switch1 to gigabitEthernet0/0/1 port of Router1

Network Topology Design:



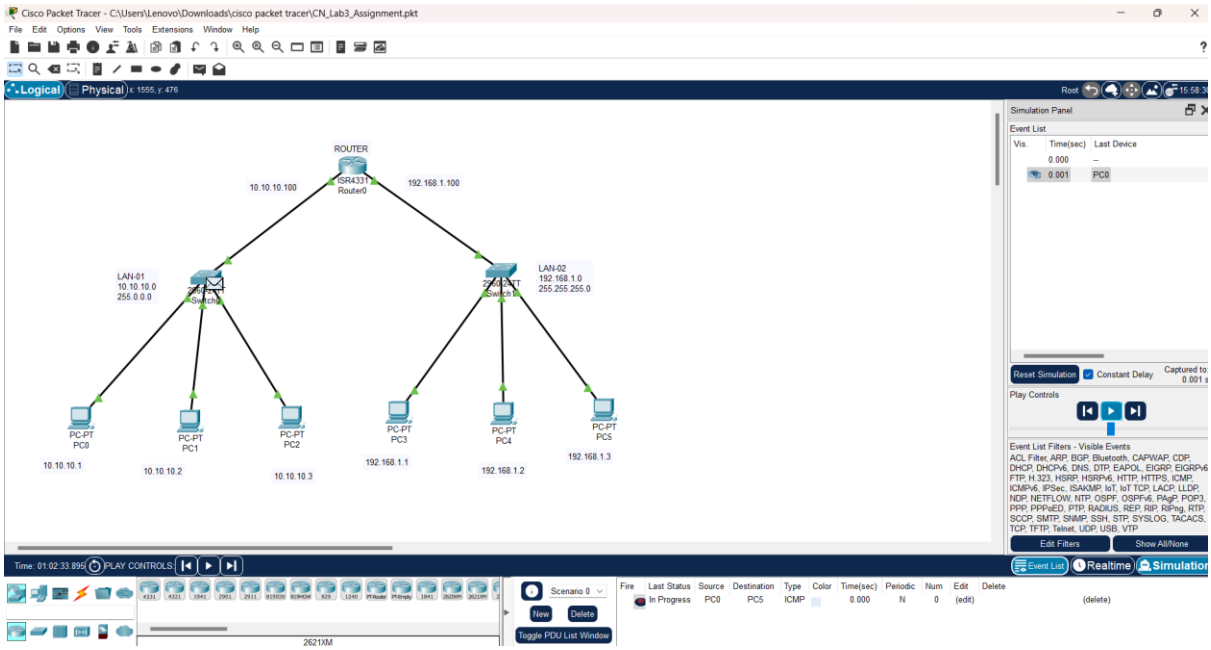
Simulation of Designed Network Topology

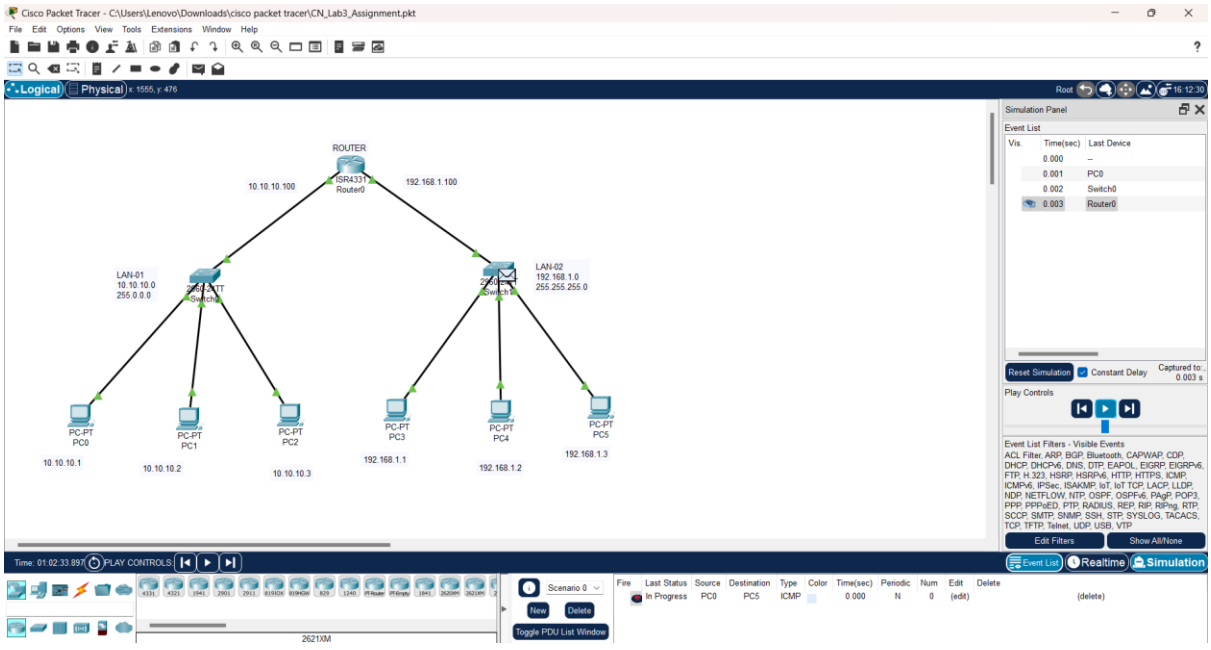
Sending a PDU from PC0 to PC5

1. Open the simulation mode in Packet Tracer.

2. Send a PDU from PC0 to PC5:

○ Observe the packet traveling from PC0 to the router and then to PC5.

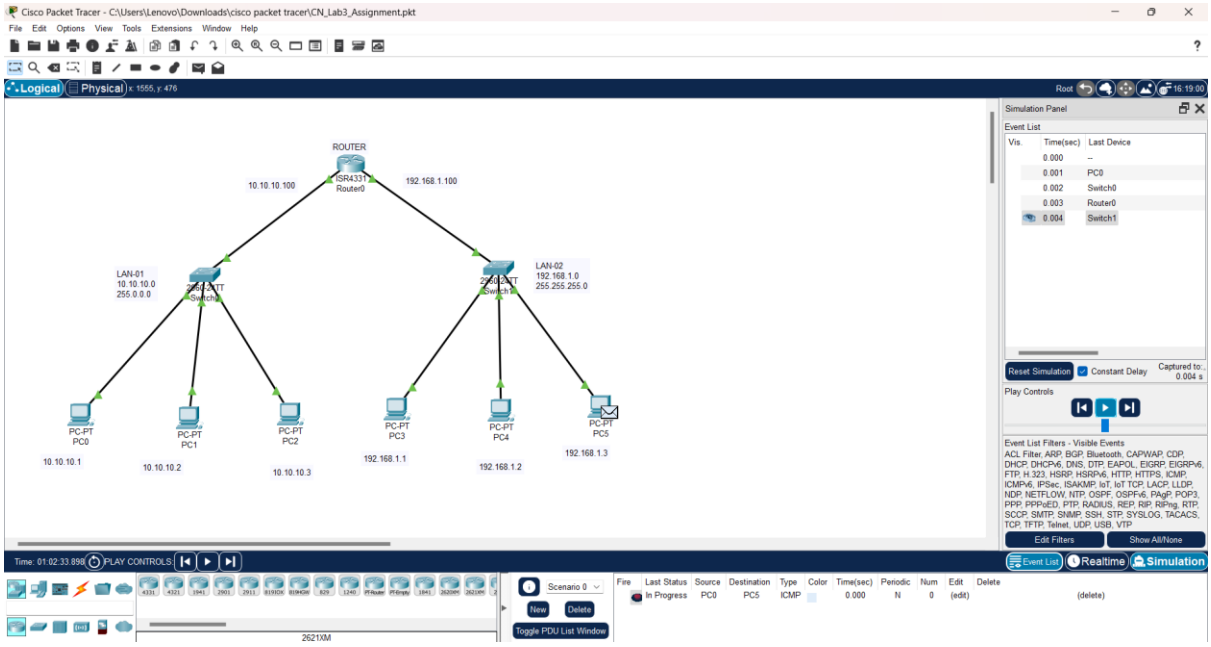


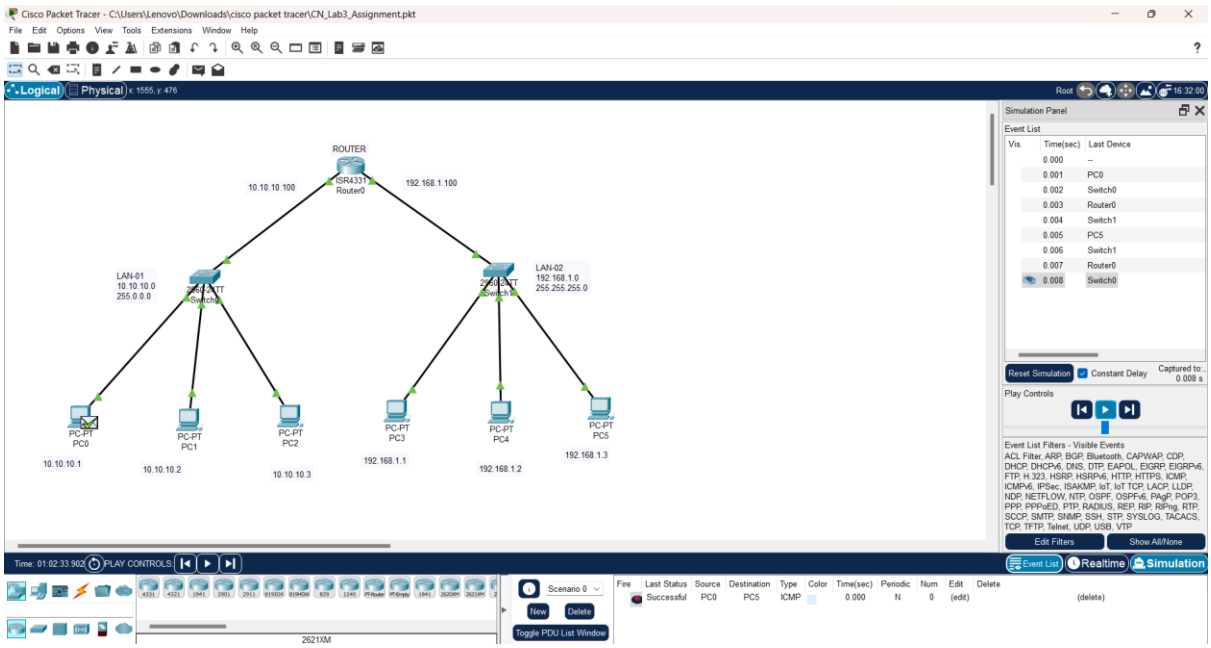


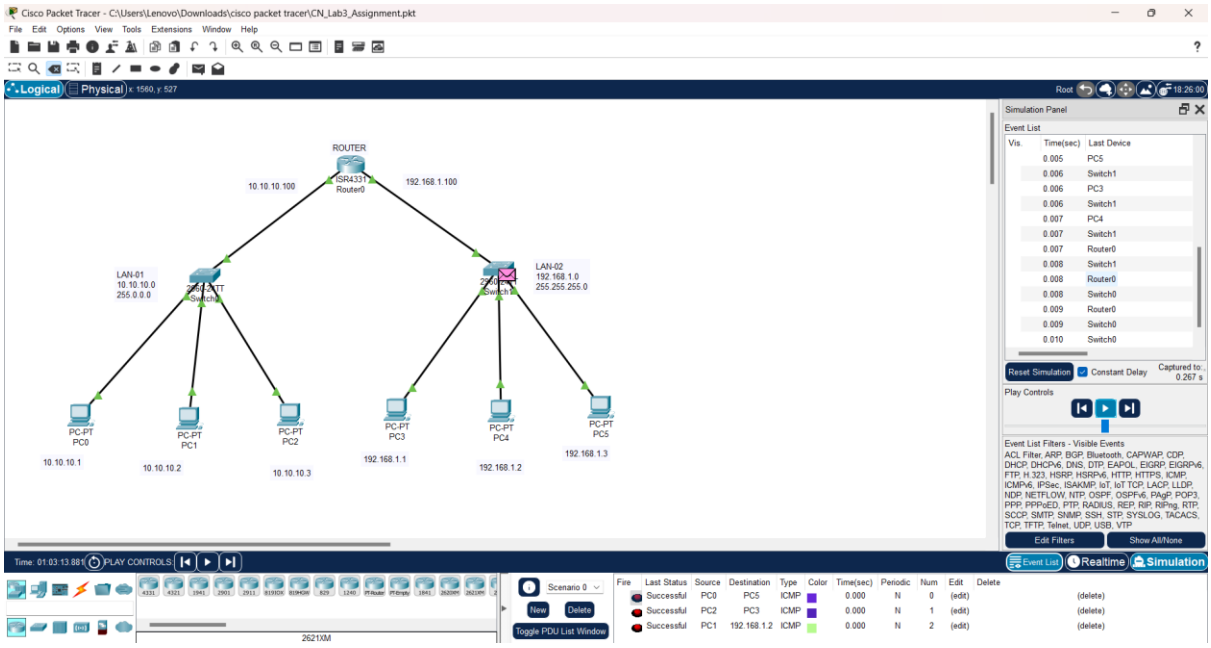
Acknowledgment from PC5 to PC0

1. Observe the acknowledgment packet:

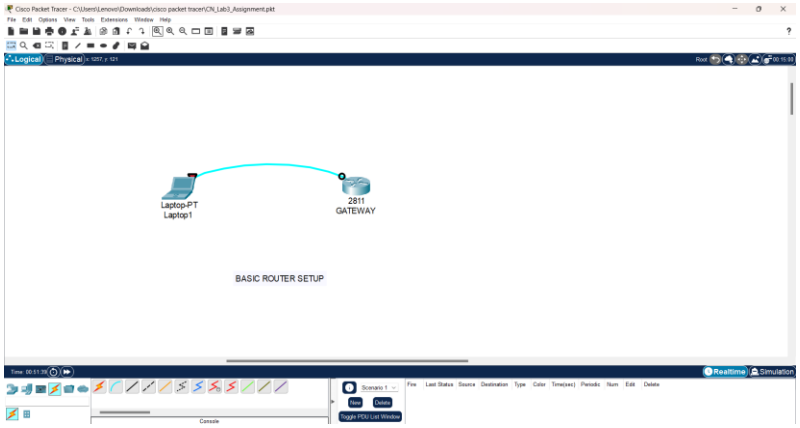
    ○ Ensure that the acknowledgment packet travels back from PC5 to PC0, confirming successful communication.







Basic router setup:



Basic router setup

Lab instructions

The aim of this lab is to test your ability to perform a basic router setup. You have 15 minutes to complete this simulation.

1. Configure the LAPTOP terminal software with the right console parameters.

2. Configure the router hostname to "GATEWAY"

3. Configure the enable password and secret to "cisco"

4. Configure password encryption on the router to secure stored passwords

5. Configure the console access :

- Login : yes

- Password : "cisco"

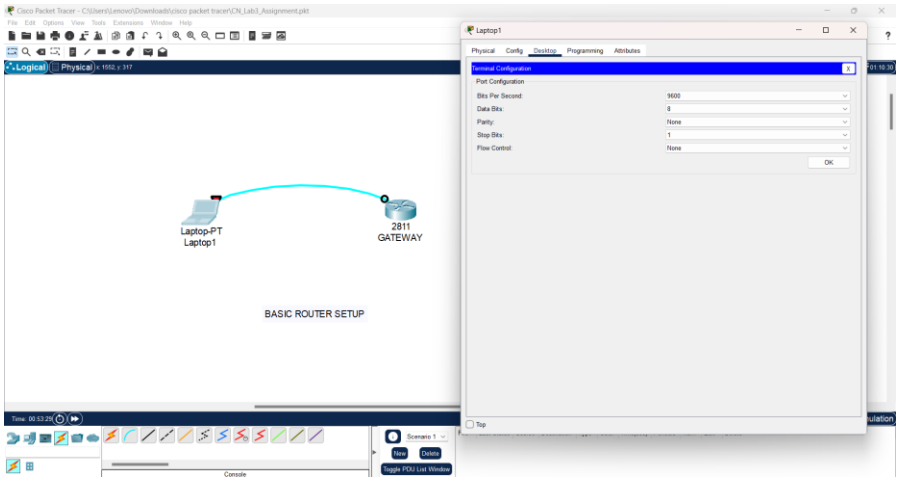
- History : 10 commands

- Logging synchronous

- Timeout : 2 minutes 45 seconds.

PROCEDURE:

1. Configure the laptop terminal software



2.Configure the router's name

3. Configure the enable password and secret to "cisco"

4. Configure password encryption for this router

5. Configure the console access