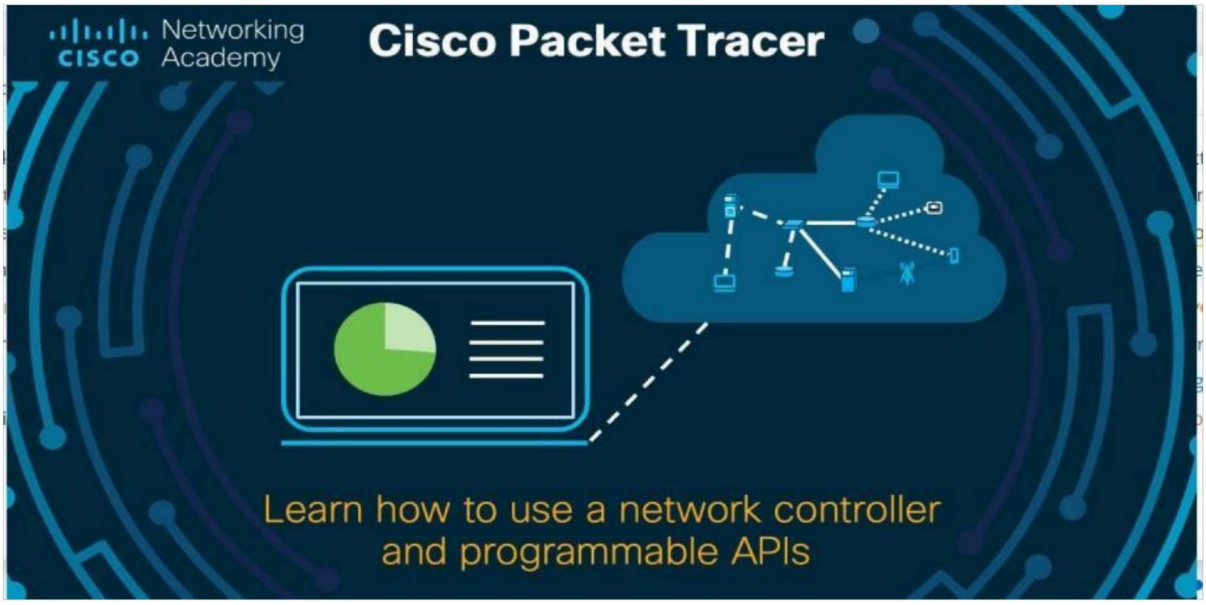
EXERCISE 1

1. A) INTRODUCTION TO PACKET TRACER

Cisco Packet Tracer is a free application that enables you to practice network configuration and troubleshooting on your desktop or laptop computer. It enables you to mimic networks without having physical access to the underlying hardware. Along with networking, you may improve your Internet of Things (IoT) and cybersecurity skills through education and practice. You have the option of creating a network from scratch, using a pre-built sample network, or completing lab projects. While Packet Tracer is not a substitute for practising on physical routers, switches, firewalls, and servers, it does offer a number of advantages.

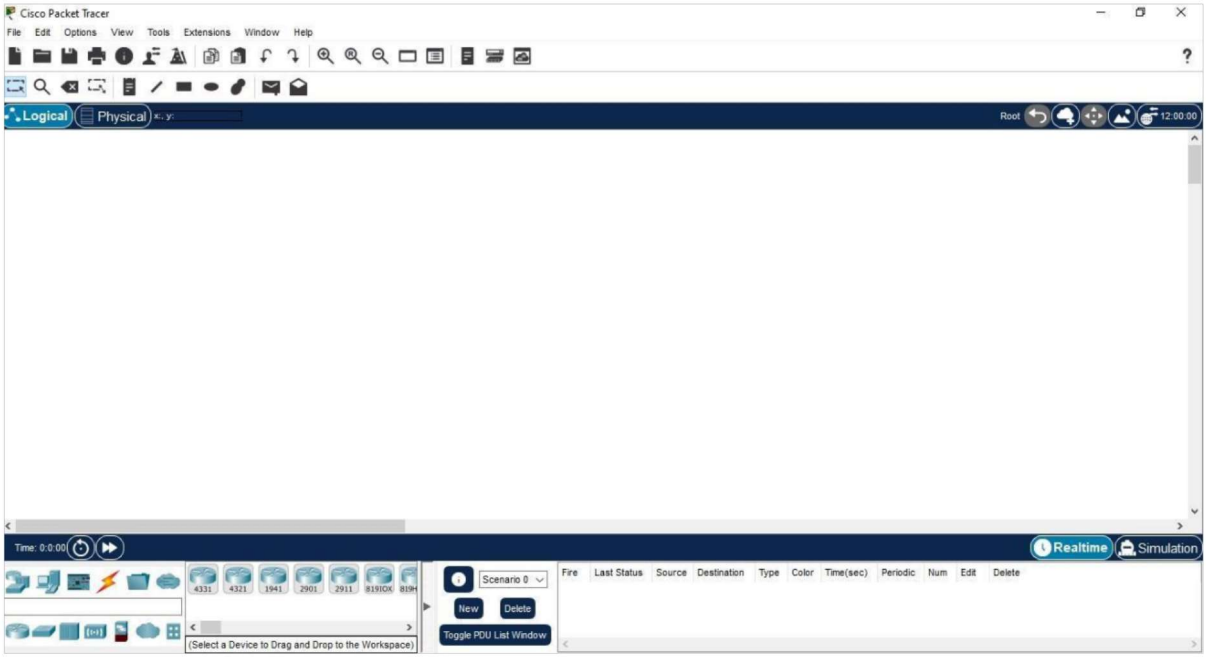


1.a What are the Benefits of Using Packet Tracer?

Imagine being able to peer inside a small business network or the internet. Have you ever wished to create an Internet of Things system that would notify you through the phone if there was an issue in your home environment? Welcome to Cisco Packet Tracer, the simulation environment that may assist you in doing all of these tasks and more. It is intended to familiarize you with the Cisco Packet Tracer network simulation and visualization tool.

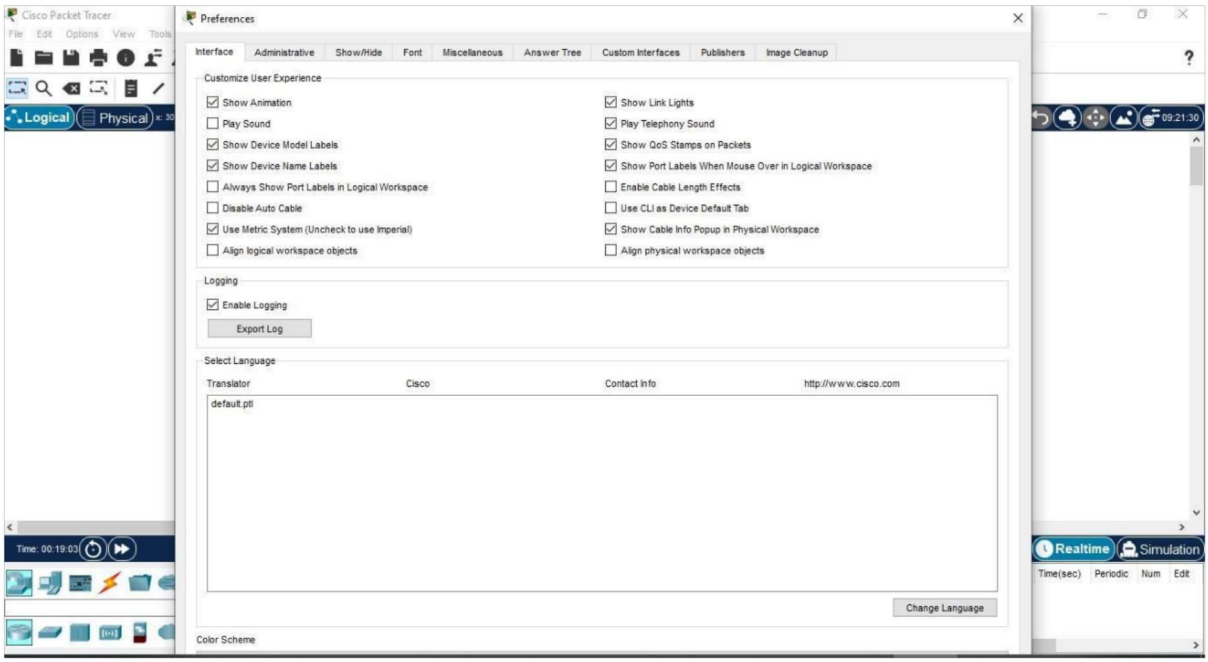
In Packet Tracer, you will design your own network (PT). Additionally, you will learn about the many sorts of PT files.

1.b Packet Tracer UI:



Packet Tracer is a tool that allows you to simulate real networks. It provides three main menus that you can use for the following:

- Add devices and connect them via cables or wireless.
- Select, delete, inspect, label, and group components within your network.
- Manage your network.



The network management menu lets you do the following:

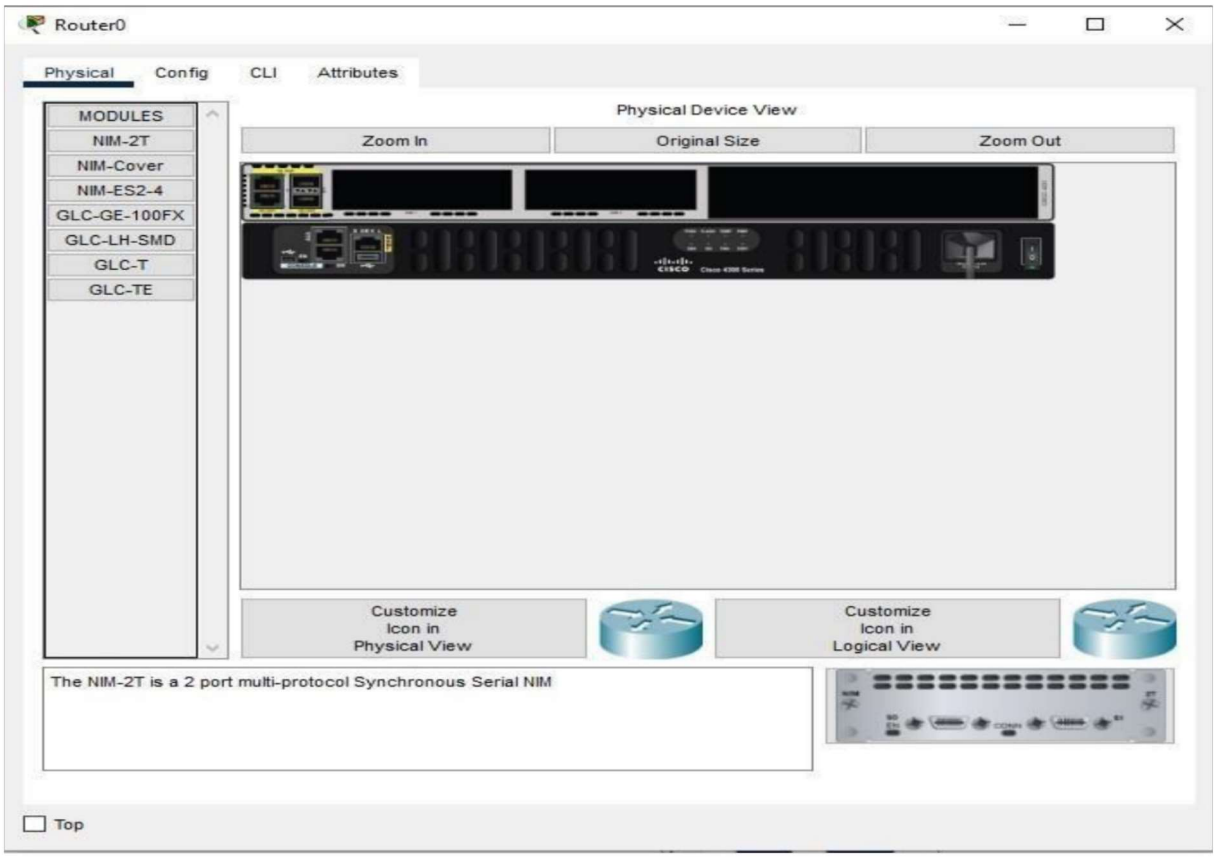
- Open an existing/sample network.
- Save your current network.
- Modify your user profile or your preferences.

Packet Tracer also provides a variety of tabs for device configuration including the following:

- Physical
- Config
- CLI
- Desktop
- Services

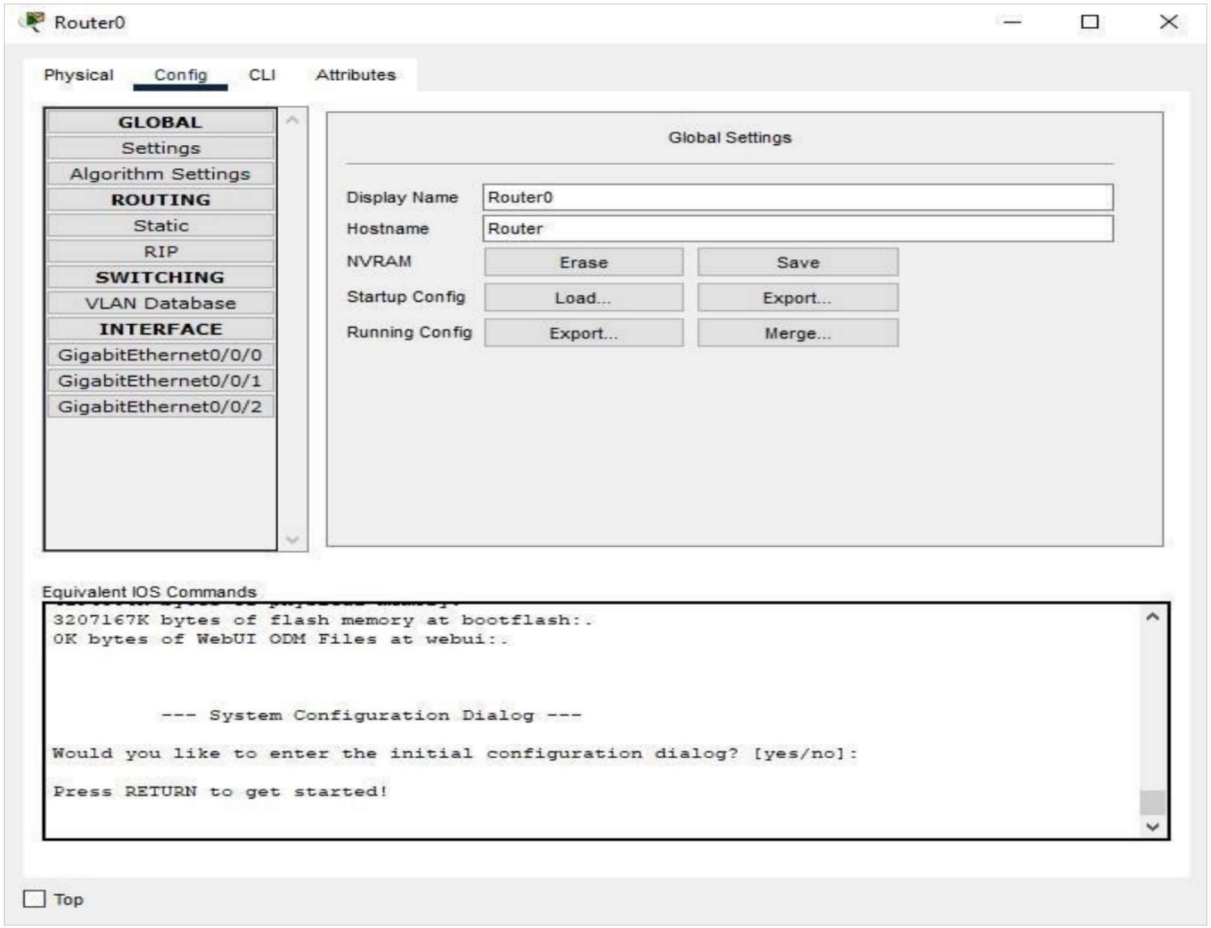
The tabs that are shown depend on the device you are currently configuring.

Physical Tab



The Physical tab provides an interface for interacting with the device including powering it on or off or installing different modules, such as a wireless network interface card (NIC).

Config Tab

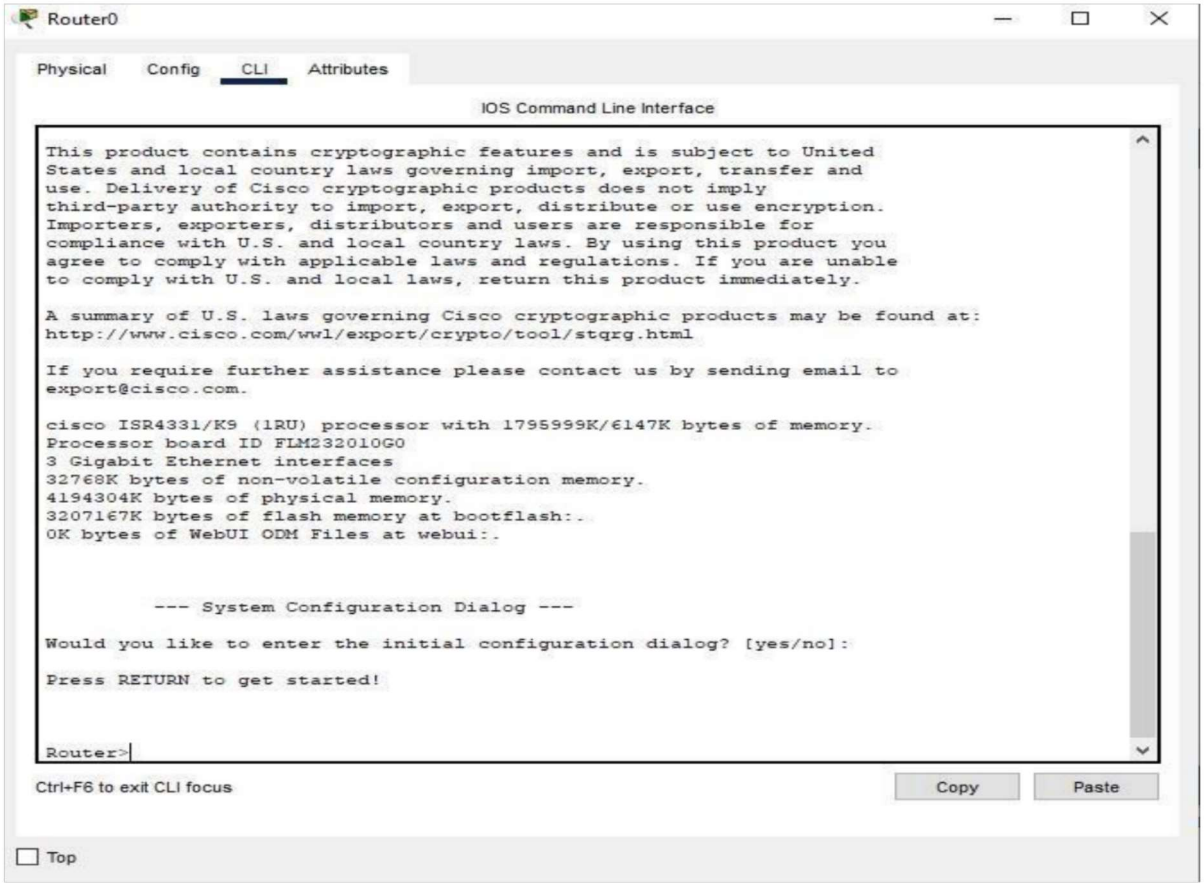


For intermediate devices such as routers and switches, there are two ways to access device configurations. Configurations can be accessed via a Config tab, which is a Graphical User Interface (GUI). Configurations can also be accessed using a command line interface (CLI).

The Config tab does not simulate the functionality of a device. This tab is unique to Packet Tracer. If you don't know how to use the command line interface, this tab provides a way to use a Packet Tracer-only GUI to configure basic settings. As settings are changed in the GUI, the equivalent CLI commands appear in the Equivalent IOS Commands window. This helps you to learn the CLI commands and the Cisco Internetwork Operating System (IOS) while you are using the Config tab.

For example, in the figure, the user has configured MyRouter as the name of the device. The Equivalent IOS Commands window shows the IOS command that achieves the same results in the CLI. In addition, device configuration files can be saved, loaded, erased, and exported here.

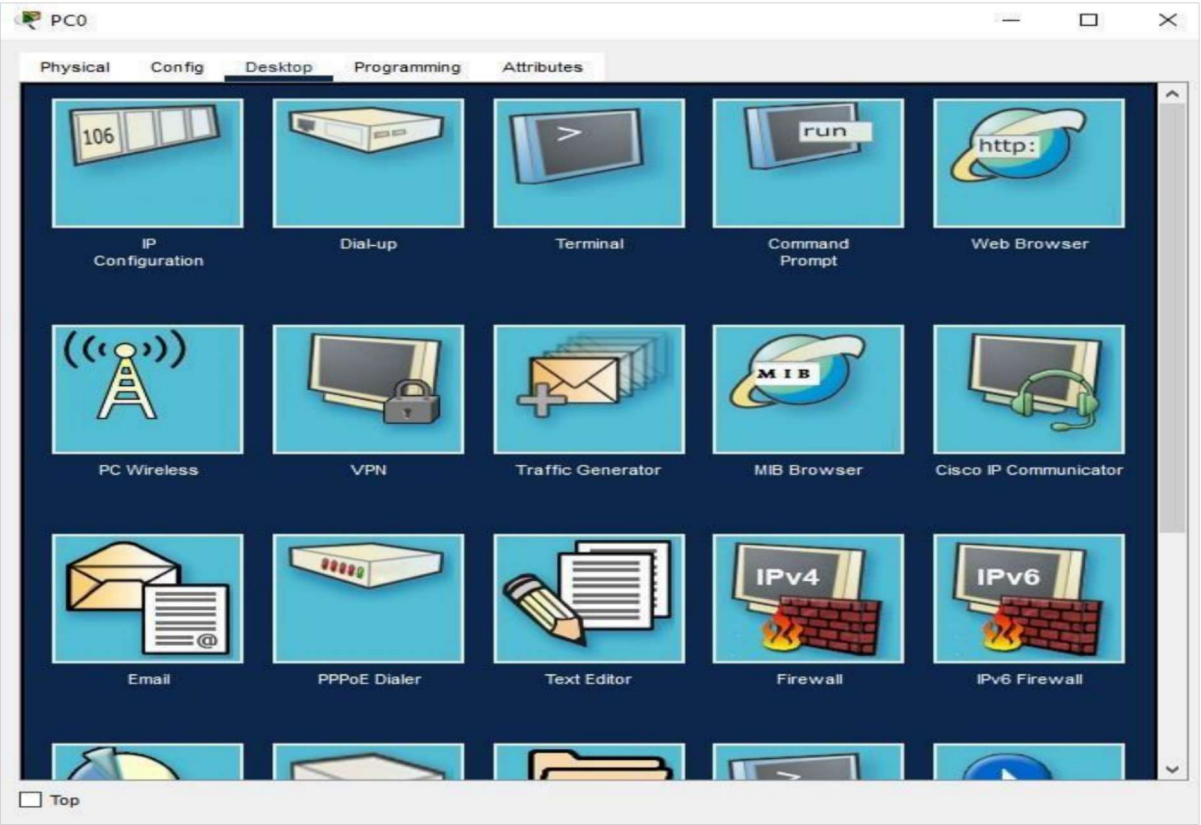
CLI Tab



The CLI tab provides access to the command line interface of a Cisco device. Using the CLI tab requires knowledge of device configuration with IOS. Here, you can practice configuring Cisco devices at the command line. CLI configuration is a necessary skill for more advanced networking implementations.

Note: Any commands that were entered from the Config tab are also shown in the CLI tab.

Desktop Tab



For some end devices, such as PCs and laptops, Packet Tracer provides a desktop interface that gives you access to IP configuration, wireless configuration, a command prompt, a web browser, and other applications.