

CISCO Packet Tracer

Summary:

Cisco Packet Tracer is an innovative network simulation and visualization tool. This free software helps you to practice your network configuration and troubleshooting skills via your desktop computer or an Android or iOS based mobile device. Packet Tracer is available for both the Linux and Windows desktop environments.

With Packet Tracer you can choose to build a network from scratch, use a pre-built sample network, or complete classroom lab assignments. Packet Tracer allows you to easily explore how data traverses your network. Packet Tracer provides an easy way to design and build networks of varying sizes without expensive lab equipment. While this software is not a replacement for practicing on physical routers, switches, firewalls, and servers, it provides too many benefits to ignore!

Packet Tracer is a tool that allows you to simulate real networks. It provides three main menus that allow you to:

- 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 allows you to:

- open an existing/sample network
- save your current network
- modify your user profile or your preferences

Once your network has been created, it is time to configure the devices and components. Packet Tracer has the capability to configure the different intermediate and end devices that make up your network.

For intermediate devices such as routers and switches, there are two methods of configuration available. Devices can be configured or investigated via a Config tab (a GUI interface) or a command line interface (CLI)

Packet Tracer provides a Simulation mode that allows you to create and capture PDUs to check several functions within your network, such as:

- Basic Connectivity – Can all devices communicate with each other?
- Security – Are access lists functioning as designed?

- Applications and Services – Are applications and services such as DNS, HTTP, and FTP functioning as designed?

The default mode for Packet Tracer is Realtime mode. In Realtime mode the time is continuously running as indicated by the clock in the lower right-hand corner of the worksheet. In Simulation mode, time can be stopped or slowed to allow users to view data traffic one packet at a time. Simulation mode is used to observe network traffic in detail with time controlled directly by the user.

Viewing the contents of the PDUs can be used to verify connectivity, verify functionality, and troubleshoot issues. It is also a great tool for studying or reviewing the contents of the OSI model layers and the mechanisms of communication.

If viewed in OSI Model mode, you see a summary of the addresses and contents of the headers at each layer. If you select Inbound or Outbound PDU Details, the exact format of the appropriate headers is displayed.

The default view for Packet Tracer is Logical, which is equivalent to creating a logical diagram for the network. The other type of diagram used in networking is the physical diagram which not only shows the relationships of the network devices but also applies building and distance factors in making the design.

Packet Tracer has the physical workspace that allows you to make your network more realistic by adding backgrounds, buildings, and wiring closets. These features are important for documentation, design, and visualization. You can see the actual layout of the network within a room or a building. This provides valuable information into the flow of traffic and the suitability and placement of equipment. The Physical view also has a great feature that shows the wireless coverage areas based on your equipment placement within buildings.

Packet Tracer has the ability to create three different types of files. These file types are used for different purposes and include: .pkt, .pkz, and .pka.

Packet Tracer is used in the Networking Academy to assist in the design, creation and testing of networks and network applications. Packet Tracer is also used for purposes of self-evaluation, practice, and formal assessment. This section will display and discuss PTSAs and PTMOs.

In simple terms the IoT is a connection of networked sensors, actuators, and smart devices that collect and share data. Packet Tracer contains many new features to support the IoT. This includes the addition of IoT devices that can be configured to react to certain environmental values such as sun, wind, rain, and humidity. These devices can be configured to take actions based on the changing environmental values, such as turning on lights or closing garage doors. The next few chapters include instructions to locate the IoT devices, to connect them to your network, to configure and modify scripts to make them function, and to control these devices remotely. Packet Tracer provides everything you need to create simulated smart homes, smart cities, and smart factories.

Certificate:



Certificate of Course Completion

Cisco Networking Academy

Introduction to Packet Tracer

For completing the Cisco Networking Academy® Introduction to Packet Tracer course.

A handwritten signature in black ink that reads "Laura Quintana".

Laura Quintana
VP & General Manager, Cisco Networking Academy

Suman Garai

Student
12 Aug 2021
Date