Lab no: 3 ***Date:2024/09/23***

Title: Introduction to Packet Tracer Simulation Tools

Objectives:

- To become familiar with packet tracing
- To understand how to use and operate the packet tracer in its working environment

Background Theory:

Cisco Packet Tracer is a powerful network simulation software designed for educational purposes, allowing users to create and simulate complex network environments without needing physical equipment. It is widely used by students and professionals to practice networking concepts, including router and switch configuration, subnetting, and troubleshooting.

With support for protocols like OSPF, EIGRP, and BGP, the software offers a virtual environment for designing network topologies with a variety of Cisco devices, including routers, switches, and PCs.

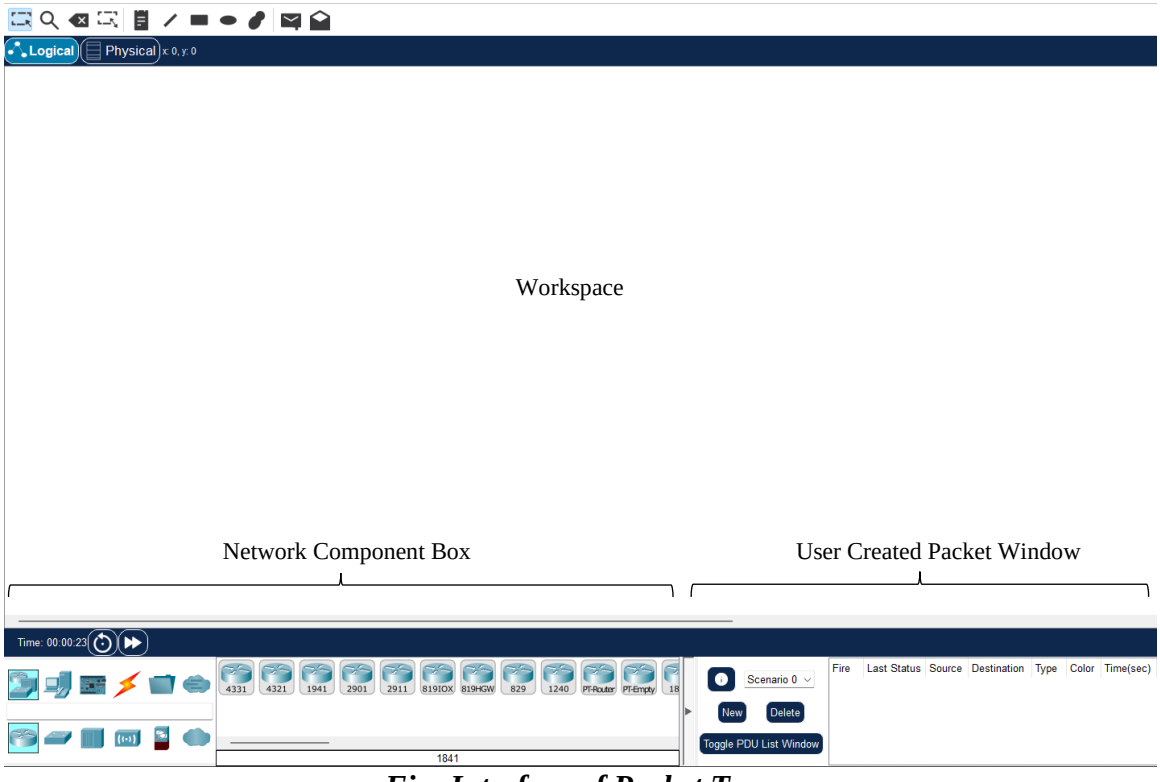

Fig: Interface of Packet Tracer

Observation and Findings:

Connecting to and checking the connectivity of a PC, laptop, router, switch, and server.

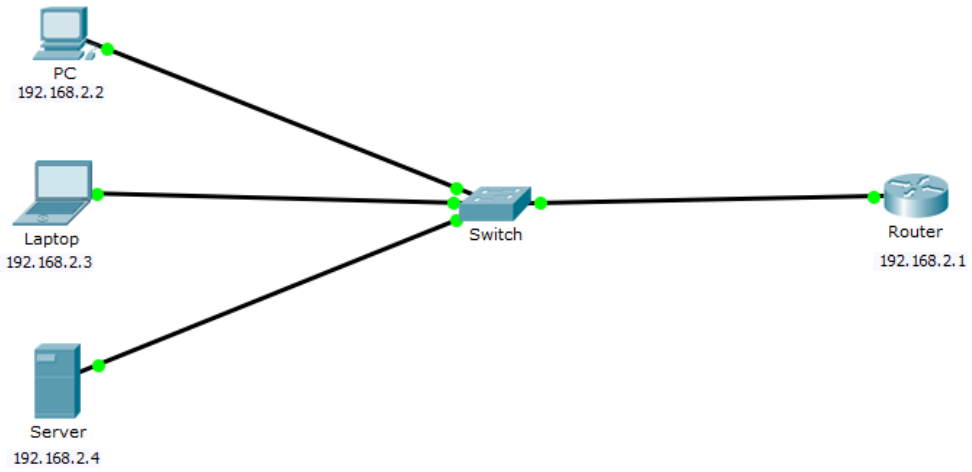

Fig: Connection between different devices

Output:

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Packet Tracer PC Command Line 1.0
PC>ping 192.168.2.3

Pinging 192.168.2.3 with 32 bytes of data:

Reply from 192.168.2.3: bytes=32 time=3ms TTL=128
Reply from 192.168.2.3: bytes=32 time=6ms TTL=128
Reply from 192.168.2.3: bytes=32 time=1ms TTL=128
Reply from 192.168.2.3: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.2.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 6ms, Average = 2ms

PC>
```

Discussions:

In this demonstration, Cisco Packet Tracer is used to create a virtual network by connecting devices like routers, PCs, servers, laptops, and switches. Each device is assigned an IP address, allowing them to communicate and simulate a real-world network environment.

Conclusion:

Using Packet Tracer simulation tools allowed for the successful design and testing of network configurations. The simulation verified that network devices were correctly set up and functioning as expected, providing a practical way to understand networking concepts.