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Lab 1

Cisco Packet Tracer

Packet Tracer is a medium fidelity, network-capable, simulation-based learning environment for networking novices to design, configure, and troubleshoot computer networks at a CCNA-level of complexity.

Packet tracer is an integrated simulation, visualization, collaboration and assessment environment. Packet tracer supports student and instructor creation of simulations, visualizations, and animations of networking phenomena. It relies on a simplified model of networking devices and protocols. Packet traces was created to help address the digital divide in networking education, where many students and teachers lack access to equipment, bandwidth and interactive modes of learning networking.

Major features: Protocals, Logical and Physical workspace, Realtime Mode, Simulation mode, local authoring and sharing.

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Demonstration (Lab 1)

In the logical workspace and realtime mode from the device-type selection box select the end devices option. From device specific selection box select a generic device and place it onto the workspace. Now select another generic device and place it also on the workspace. Next click on connections from device type selection box. Select the default connection and connect the two devices on the workspace. Next left click on one end device and click on 'config' tab. Next select 'fastethernet0'. Now we need to specify an ip address to establish a connection. Give the address as 10.0.0.1 for this end device. Repeat the same steps for other end device. Next from the common tools bar select the option to add simple PDU and place it on each end device. Then finally in simulation mode click on auto capture/play to begin the simulation.

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Hub, Switch and Router

Hub: A hub is just a connector that connects the wires coming from different sides. There is no signal processing or regeneration. It is an electronic device that operates only on physical layers of the OSI model.

Switch: Switch is a point to point communication device. It operates at the data link layer of OSI model. It uses switching table to find out the correct destination.

Router: Routers are the multiport devices and more sophisticated as compared to repeaters and bridges. It contains a routing table that enables it to make decision about the route i.e., to determine which of the several possible paths between the source and destination is the best for a particular transmission.