



DEPARTMENT OF

COMPUTER SCIENCE & ENGINEERING

Discover. Learn. Empower.

WORKSHEET 3

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Section/Group: 606 "A"

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Subject Name: Computer Networks

Subject Code: 21CSH-256

Aim:

Configure and Understand working of network devices Hub, Switch, Routers

Objective: Students will understand working of network devices

S/W Requirement: Packet Tracer

H/W Requirement:

- Processor – Any suitable Processor e.g. Celeron
- Main Memory - 128 MB RAM
- Hard Disk – minimum 20 GB IDE Hard Disk
- Removable Drives–1.44 MB Floppy Disk Drive –52X IDE CD-ROM Drive
- PS/2 HCL Keyboard and Mouse

Method:

Hub: A hub is a physical layer networking device which is used to connect multiple devices in a network. They are generally used to connect computers in a LAN.

A hub has many ports in it. A computer which intends to be connected to the network is plugged in to one of these ports. When a data frame arrives at a port, it is broadcast to every other port, without considering whether it is destined for a particular destination or not.

Switch:

Switches are networking devices operating at layer 2 or a data link layer of the OSI model. They connect devices in a network and use packet switching to send, receive or forward data packets or data frames over the network.

A switch has many ports, to which computers are plugged in. When a data frame arrives at any port of a network switch, it examines the destination address, performs necessary checks and sends the frame to the corresponding device(s). It supports unicast, multicast as well as broadcast communications.

Routers:

Routers are networking devices operating at layer 3 or a network layer of the OSI model. They are responsible for receiving, analysing, and forwarding data packets among the connected computer networks. When a data packet arrives, the router inspects the destination address, consults its routing tables to decide the optimal route and then transfers the packet along this route.

Process:

1. First of all select devices like Hub, Switch, Router.
2. Assign IP address to devices.
3. Choose your source and destination, then drop the packet from one to the other.
4. Go to Simulation mode and click capture/Play.
5. The simulation will begin, and only the destination will accept packets.

Result:

