COMPUTER COMMUNICATION NETWORKS

LAB EXPERIMENT 10

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Aim: Refer to the articles / videos available on the internet and enlist different network components that are commonly used. Write a paragraph on each network component clearly indicating its usage along with a picture. (youtube videos attached for reference).

i. Endpoint: The endpoint is a device or node that is connected to the LAN or WAN and accepts communications back and forth across the network. In a traditional sense, an endpoint can be a modem, hub, bridge, or switch. It also could be data terminal equipment (such as a digital telephone handset, router, or printer) or a host computer (such as a workstation or a server). An endpoint is any device that is physically an end point on a network. Laptops, desktops, mobile phones, tablets, servers, and virtual environments can all be considered endpoints.

ii. Server: A server is a computer that provides data to other computers. It may serve data to systems on a local area network (LAN) or a wide area network (WAN) over the Internet. For example, a Web server may run Apache HTTP Server or Microsoft IIS, which both provide access to websites over the

Internet. A server stores all the data associated with the websites that are hosted by it and shares that info with all computers and mobile devices (like yours) that need to access them.

iii. Switches: 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.

iv. 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.

v. Cloud Networking: Cloud networking, or cloud-based networking, gives users access to networking resources through a centralized third-party provider operating inter-connected servers. This involves connecting to a Wide Area Network (WAN) or other internet-based technology, and helps to distribute content quickly and securely.

vi. Firewall: A firewall is a network security device that monitors incoming and outgoing network traffic and permits or blocks data packets based on a set of security rules. Its purpose is to establish a barrier between your internal network and incoming traffic from external sources (such as the internet) in order to block malicious traffic like viruses and hackers.

Conclusion: From this experiment we got a key understanding of the basics of Networks and it's components.