Parts of a Network

A network consists of two or more connected computers that share resources, files, and services. Below are the key components of a basic network:

Network Devices

Router

- **Function**: Connects different networks and routes traffic between them using IP addresses.
- **Example**: Connects your home network to the internet.

Switch (Ethernet Switch)

- **Function**: Connects nodes (computers) on the same network and directs traffic to specific nodes. Uses MAC addresses to direct data to specific devices within the same network.
- **Example**: Used in offices to connect multiple computers on a LAN (Local Area Network).

Hub

- **Function**: Connects nodes on the same network but broadcasts data to all nodes (less efficient than a switch).
- **Note**: Mostly obsolete but useful for understanding networking basics.

Firewall

- **Function**: Filters traffic between networks to protect against threats like spam and viruses.
- **Example**: Protects your network from malicious internet traffic.

Server

- **Function**: A computer dedicated to providing specific services (e.g., web server, email server, print server).
- **Example**: Handles requests like sending emails or printing files.

Endpoint

- **Function**: Devices that end-users interact with, such as desktops, laptops, mobile phones, or printers.
- **Example**: Where data ends as it leaves the network and returns.

Quick Review of Network Terms

Term	Description
Hub	Broadcasts data to all connected nodes on the same network.
Switch	Connects nodes and directs traffic to specific nodes on the same network.

Term	Description
Router	Connects and routes traffic between different networks.
Endpoint	End-user devices like desktops, laptops, printers, or mobile phones.
Server	A computer providing specific services (e.g., email, printing).
Firewall	Filters traffic between networks to protect against threats.

Key Takeaways

- **Routers** connect different networks and route traffic using IP addresses.
- **Switches** connect devices on the same network and use MAC addresses to direct traffic.
- **Hubs** broadcast data to all connected devices (less efficient than switches).
- **Firewalls** protect networks by filtering incoming and outgoing traffic.
- **Servers** provide specific services (e.g., email, printing, web hosting).
- **Endpoints** are devices used by end-users (e.g., laptops, phones, printers).