### **1. NETWORKING DEVICES**

#### **What is a Network?**

A computer network is a digital telecommunications system that enables NODES to share RESOURCES.

* A **CLIENT** is a device that uses a service provided by a **SERVER**.
* A **SERVER** is a device that offers functions or services to CLIENTS.
  + *Note:* A single device can act as both a CLIENT and a SERVER depending on the situation. For example, in a Peer-to-Peer network.

#### **SWITCHES (Layer 2)**

* Provide connectivity to devices within the same LAN (Local Area Network).
* Have multiple network interfaces/ports for End Hosts to connect to.
* DO NOT facilitate connectivity between LANs or across the Internet.

#### **ROUTERS (Layer 3)**

* Typically have fewer network interfaces compared to switches.
* Enable connectivity BETWEEN different LANs.
* Facilitate the transmission of data over the Internet.

#### **FIREWALL (Can operate at Layers 3, 4, and 7)**

* Specialized hardware devices for network security that regulate traffic entering and leaving your network.
* Can be positioned either "inside" or "outside" of the network.
* Manage and filter network traffic according to defined rules.
* Referred to as "Next-Generation Firewalls" when equipped with advanced filtering features.
* Host-based firewalls are software programs that manage traffic entering and leaving a specific host machine, such as a personal computer.