**ITNET01**

**NIC** – Network Interface Card / Expansion Card installed in computers to connect, interface to the network and to have **Internet Protocol (IP)** Address

**IP** - IP’s main functions are: “data transmission, packet addressing, packet routing, fragmentation, detection of errors”

**Two versions of IP:**

**IPv4** - has a 32-bit node address

**IPv6** - has a 128-bit node address

**LAN** – Local Area Network / 185m / 600ft. – 30 computers / Network in a limited area

**WAN** – Wide Area Network / Uses routers / Spans a wide geographical area

**Router** – Dissimilar Network Topology / Different Network addresses / Multiple Functions

**Gateway** – Hardware and Software combinations / Translates data between different network protocols

**Hub** – No chipsets / can’t connect all devices of their MAC / Connect all the segments of the network together

**Common Network Devices**

NIC, Hub, Switch, Bridge, Router, Gateway

Other devices:

Fortinet Firewall / Repeater

**Workstation** - a device is considered to be a workstation if it has its own central processing unit (CPU) and an operating system that can provide support to common applications, and firm wares

**Client** - refers to a computer that request permission to access files from another network of computer. **Host** is the computer it wants to access

**Host** – A generic term for any device connected to a network

**MAC** – Media Access Network / Unique hardware address for network devices

**CAN** – Campus Area Network / falls under the *MAN sub-category*. It can link multiple LAN and can cover the same range as a MAN can reach.

**EAN** – Enterprise Area Network / A network within a single organization

**Bridge** – Similar Network Topology / Connects and filters traffic between two network segments

**Physical Mediums**

Wired and Wireless

**Public Network Links Ex.**

DITO, Globe, Smart, TNT, Star Link etc.

**ISP** – Internet Service Provider

**Captive Portal**

**Topology** – Like Blueprint / Map of a Network / Topology are collective of logical and physical network components

**The network topology layout may be classified as:**

**Decentralized** - has a cable that runs from one node to another through a straight line (usually)

**Centralized** - has a “central network device” where workstations connect

**Common Types of Topologies**

* BUS
* RING
* STAR
* MESS

**Servers** - a server acts as repository software for other workstations / *“To serve”*

**Network** – Two or more computers connected to each other, can share data “Upload and Download or Upstream and Downstream”

**2 Common Network Types**

**Peer-to-peer** - No Rules / devices communicate directly with each other without a central server

**Client/Server Architecture** - Has a server and clients / Have much tighter security / Where clients (devices) request services or resources from a central server

**Protocol** – Rule to govern the network / Refers to set of rules or standards one must abide

**MAN** – Metropolitan Area Network / can cover a greater range than a LAN / Covers a city or large campus

**PAN** – Personal Area Network / smaller than a LAN and has two forms, *Cabled PAN* and *Wireless PAN (WPAN)*.