

Assignment 1: Network Terminologies with Examples

IP Address

Definition: A unique address that identifies a device on the internet or a local network.

Example: 192.168.1.1 (IPv4), 2001:0db8:85a3:0000:0000:8a2e:0370:7334 (IPv6)

Bandwidth

Definition: The maximum rate of data transfer across a given path.

Example: A home internet connection with 100 Mbps download speed

MAC Address

Definition: A hardware identification number that uniquely identifies each device on a network.

Firewall

Definition: A network security device that monitors and filters incoming and outgoing network traffic based on predetermined security rules.

Example: Software firewalls like Windows Defender or hardware firewalls like Cisco ASA

Subnet Mask

Definition: A 32-bit number that masks an IP address and divides the IP address into network and host parts.

Example: 255.255.255.0

Default Gateway

Definition: A router that serves as an access point to pass information to and from the internet.

Example: 192.168.1.254

DNS (Domain Name System)

Definition: The phonebook of the internet that translates human-friendly domain names to IP addresses.

Example: Resolving www.google.com to 142.250.182.68

Router

Definition: A device that forwards data packets between computer networks.

Example: A home Wi-Fi router

Switch

Definition: A networking device that connects devices together on a computer network by using packet switching to forward data to the destination device.

Example: An Ethernet switch used in a local area network (LAN)

VPN (Virtual Private Network)

Definition: A service that encrypts your internet connection and hides your IP address to provide secure and private internet access.

Example: Using NordVPN to access a remote network securely

Modem

Definition: A device that modulates and demodulates signals for data transmission over phone lines or cable systems.

Example: A DSL modem for internet connectivity.