Network Types

Each network is structured differently and can be set up individually. For this reason, so-called types and topologies have been developed that can be used to categorize these networks. When reading about all the types of networks, it can be a bit of information overload as some network types include the geographical range. We rarely hear some of the terminologies in practice, so this section will be broken up into **Common Terms** and **Book Terms**.

Common Terminology

Network Type	Definition
Wide Area Network (WAN)	Internet
Local Area Network (LAN)	Internal Networks (Ex: Home or Office)
Wireless Local Area Network (WLAN)	Internal Networks accessible over Wi-Fi
Virtual Private Network (VPN)	Connects multiple network sites to one LAN

WAN

The WAN (Wide Area Network) is commonly referred to as **The Internet**. When dealing with networking equipment, we'll often have a WAN Address and LAN Address. The WAN one is the address that is generally accessed by the Internet. A WAN is just a large number of LANs joined together. Large companies or government agencies may also have an "Internal WAN" (aka Intranet, Airgap Network). A network is typically considered a WAN if:

- It uses WAN-specific routing protocols (e.g., BGP)
- The IP schema used is **not** within RFC 1918 ranges

LAN / WLAN

LANs and WLANs typically assign IP addresses within:

- `10.0.0.0/8`
- `172.16.0.0/12`
- `192.168.0.0/16`

WLANs are simply LANs with wireless capabilities. This primarily adds a **security designation**.

VPN

Virtual Private Networks (VPNs) make the user appear as if they are connected directly to a remote LAN.

Site-to-Site VPN

- Network devices (usually routers or firewalls) on both ends
- Joins entire network ranges

Remote Access VPN

- Creates a virtual interface (e.g., TUN Adapter via OpenVPN)
- Used by Hack The Box to access labs
- **Split-Tunnel VPNs** only route specific traffic through VPN
- Split tunneling is good for privacy (like in HTB) but **bad for corporate environments**

SSL VPN

- Browser-based VPN
- Streams applications or desktops
- Example: Hack The Box Pwnbox

Book Terms

Network Type	Definition
Global Area Network (GAN)	Global network (the Internet)
Metropolitan Area Network (MAN)	Regional network (multiple LANs)
Wireless Personal Area Network (WPAN)	Personal network (Bluetooth)

GAN (Global Area Network)

- Worldwide networks such as the Internet
- Also includes private international networks (e.g., corporate networks)
- Connects via undersea cables or satellites

MAN (Metropolitan Area Network)

- Broadband network connecting LANs in proximity
- Typically used to connect company branches via leased lines
- Uses high-performance routers and fiber
- Faster than the Internet

PAN / WPAN

- **PAN**: Personal Area Network via cable
- **WPAN**: Wireless Personal Area Network via Bluetooth, Wireless USB
- **Piconet**: Bluetooth-based WPAN

Used in:

- **IoT and Smart Home tech**

- **Protocols**: Insteon, Z-Wave, ZigBee

These network types help define the scope and security posture of communication between systems, ranging from personal devices to global-scale infrastructure.