

Types of Networks: Different Scales and Purposes of Networks

1. Introduction

This lesson outlines the different types of computer networks, categorized by their size and geographical reach. From a small office connection to the global Internet, each type of network serves a specific purpose. Understanding these classifications is fundamental to grasping how data is transmitted across various scales, from a single building to the entire world.

2. Local Area Network (LAN)

A **Local Area Network (LAN)** is a network that connects devices within a limited geographical area, such as a home, a school, or a small office building. The defining characteristic of a LAN is its confinement to a single physical location. LANs are typically used to share resources like printers, files, and internet access among a small group of users. They are often built using Ethernet cables or Wi-Fi technology.

3. Wide Area Network (WAN)

A **Wide Area Network (WAN)** connects devices over a vast geographical area, spanning cities, countries, or even continents. The most prominent example of a WAN is the **Internet** itself. WANs are used to connect multiple LANs, allowing businesses with offices in different locations to communicate and share data. Telecommunication companies often provide the infrastructure for WANs, using technologies like fiber-optic cables, satellite links, and cellular networks to bridge large distances.

4. Metropolitan Area Network (MAN)

A **Metropolitan Area Network (MAN)** is a network that covers a larger area than a LAN but is smaller than a WAN. It typically connects a city, a large campus, or multiple buildings within a limited region. A MAN is often owned and operated by a single entity, such as a city government or a large university. For example, a MAN could connect all the government buildings within a city to share resources.

5. Personal Area Network (PAN)

A **Personal Area Network (PAN)** is the smallest type of network, used to connect personal devices within a short range, usually a few meters. Bluetooth technology is a common example of a PAN, used to connect devices like a smartphone, wireless headphones, and a smartwatch. A PAN is designed for an individual's personal use and doesn't require complex infrastructure.