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LAN, WAN, MAN, HAN and PAN.

Among the different Area networks that are used for devices to communicate between themselves, there are five principal networks, which are Local Area Network, Wide Area Network, Metropolitan Area Network, Home Area Network, and Personal Area Network. Most of these networks allow users to access the files and transfer files within the network and through the internet. There are some similarities and differences between them. One of the main differences is the geographical area they cover, that is, the smallest area covered by the LAN; the metropolitan area network covers an area larger than the local area network, and the wide-area network accounts for the largest. Thus, a lot of differences can be found between these kinds of networks that were mentioned.

Firstly, A local area network (LAN) is a computer network that spans a small area. Local area networks are usually confined to a room, building, or group of buildings. However, a local area network can be connected to other local area networks at any distance through telephone lines and radio waves. A LAN system connected in this way is called a wide-area network. Most LANs connect workstations and personal computers. Each computer in the local area network can access data and equipment anywhere in the local area network. Users can also use LAN to communicate with each other by sending emails or participating in chat sessions. A local area network can transmit data at a very high rate, which is much faster than transmitting data through a telephone line. However, the distance is limited, and the number of computers that can be connected to a single LAN is also limited

Secondly, A wide area network (WAN) is a network that exists in a larger geographic area than other network types, such as a local area network (LAN). The WAN connects different smaller networks, including local area networks (LAN) and metropolitan area networks (MAN), so that computers and users in one location can communicate with computers and users in other locations. In many ways, a WAN works in a similar fashion to a LAN, just on a larger scale. Typically, TCP/IP is the protocol used for a WAN, in combination with devices such as routers, switches, firewalls, and modems. Wide area networks use these individual LANs as nodes together through wider connectivity across a larger geographic.

Thirdly, compared with WAN, the metropolitan area network (MAN) has a larger coverage area than a local area network, and a local area network has a smaller coverage area. It connects two or more computers located in the same or different cities. It covers a large geographic area and can be used as an ISP (Internet Service Provider). The data transmission rate and propagation delay of MAN are moderate. The working mechanism of a metropolitan area network is similar to that of an Internet service provider (ISP), but the metropolitan area network does not belong to a single organization. Compared to WAN, MAN provides its users with shared network connections. Mainly works on the data link layer, which is the second layer of the OSI model.

Fourthly, A home area network HAN is a network deployed and operated in a small boundary where it can communicate and share resources between computers, mobile devices and other devices through network connections such as the Internet. HAN contains a broadband Internet connection that is shared among multiple users via a supplier/third-party wired or wireless modem. Thus, user host devices can be standard computers, laptops, mobile phones and tablet computers. A modem usually has a network switching function and can provide a wired LAN port or a wireless connection for the host user.

Lastly, A personal area network or PAN is a computer network that enables communication between nearby computer devices. It can be wired, such as USB, or wireless, such as infrared, Bluetooth, and ultra-wideband. The range of PAN is usually a few meters. Examples of wireless PAN or WPAN devices include mobile headsets, wireless keyboards, wireless mice, printers, barcode scanners, and game consoles.