

Topic 21 Networks – Summary

Vocabulary

network (n): an arrangement of computers and other devices connected together to share resource and data.

server (n): a computer that provides the network with *services*.

network service (n): an application running on a server which provides facilities or operations such as data storage, printing, or communications.

Concepts

Network Hierarchy

Although the network size hierarchy is often taught with definitions based on geographic size, their distinction is more administrative and technical, and the geographic size is a consequence of the administrative and technical choices, not the primary definition. Here are the geographic definitions – the ones used by Pearson (although Pearson does not include MAN in its list).

personal area network (PAN): network for the immediate vicinity around a person or the device. This connects together devices such as your smart watch, phone, ear buds, etc.

local area network (LAN): a network that covers a relatively small geographical area, often a single site.

wide area network (WAN): a network that covers a large geographical area. It connects together two or more LANs and is usually under shared ownership. The largest WAN is the Internet.

metropolitan area network (MAN): a WAN optimized for a specific geographic region, perhaps a city; so this is an intermediate between LAN and WAN, generally for a single company or organization.

The more delineated and technical definitions are:

personal area network (PAN): network for the immediate vicinity around a person or the device characterized by *short-range, ad hoc wireless* connectivity.

local area network (LAN): a single layer 2 broadcast domain, and usually a single IP subnet. It will be controlled and managed by a single organization (your company or school, or just you with your home router). The boundary of a LAN is typically a layer 3 router as that is where the broadcast domain is terminated.

wide area network (WAN): layer 3 (routed) connectivity, interconnecting multiple LANs or other networks. Administration involves multiple entities, or if it is a corporate WAN, then the company may lease circuits or services from another service provider.

metropolitan area network (MAN): a WAN that connects multiple LANs that usually belong to a single organization that is distributed over multiple geographical areas; for example multiple campuses of a school or different branches of a company.