Difference between LAN, MAN and WAN

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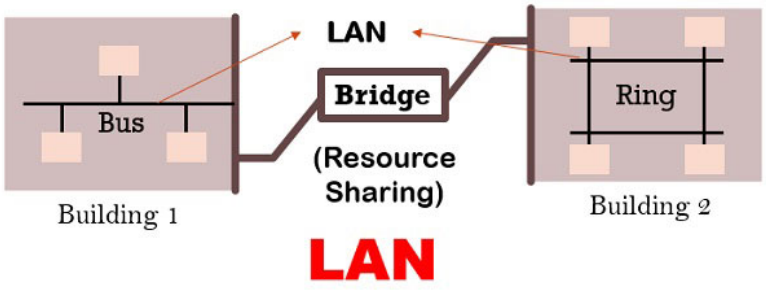
One of the significant differences is in the geographic area they are in. LAN covers the smallest area; MAN has a larger area than LAN and WAN has the largest range.

In addition, LANs depend on the hardware and communication devices they own to transmit signals. In contrast, this is not possible in the case of MAN and WAN, where two networks are required to use shared, private or leased communication hardware.



LAN

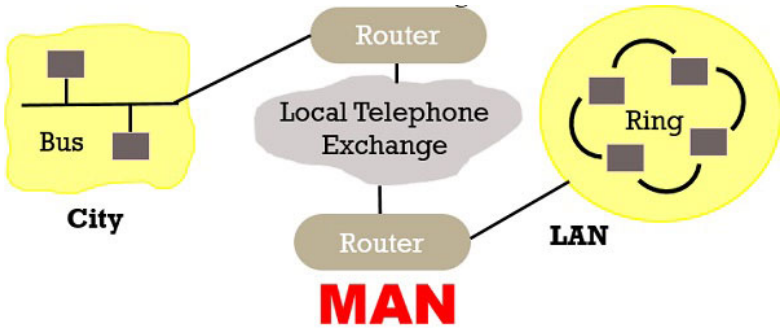
Basis of comparison LANMANWAN Full name Local Area Network Metropolitan Area Network Wide Area Network Meaning Network connects a group of computers in a small geographical area. The network covers relatively large areas such as cities and towns. It expands large regions and connects nations together. Internet example. Private network ownership Private or public Private or shared Design and maintenance Easy Difficult Difficulty Delay on the line Short Medium Long High Speed ??Medium Low Low Fault Tolerance (ability to continue operating when one or many components have a problem) Better Less Poor Less Blocked Less Occur More Occur More Occur Used for Schools, Hospitals. Small town, City. Country / Continent. Allows a single pair of devices to communicate. Multiple computers can simultaneously interact. A large number of computers communicate at the same time.

Defines LAN, MAN and WAN

LAN and WAN have been mentioned in previous articles. The concept of MAN network sounds a bit strange.

MAN network or **Metropolitan area Network** has a larger operating area than the LAN and is smaller than the WAN. It connects two or more computers that are far apart, located in the same or in different cities. The MAN network covers a wide geographic area and can serve as an ISP (Internet Service Provider).

It is difficult to design and maintain a MAN network. This network is very expensive and may or may not be owned by an organization. The data transfer rate of MAN is medium.



MAN network

MAN can be classified into two categories: DQDB and SMDS.

1. **DQDB** (Distributed Queue Dual Bus): Considered a dual bus configuration that refers to each server in the network being linked to two backbone network links.
2. **SMDS** (Switched Multimegabit Data Services): SMDS connects to different LANs and allows data packets to be transferred to any other LAN on SMDS. This is a high-speed MAN network that uses packet switching as a datagram service (the mode in which the network routes each datagram without regard to any datagram that comes before or after it).

The main difference between LAN, MAN and WAN

1. The geographical area covered by a LAN is very small, while MAN covers a relatively large area and the LAN has the largest range.

2. LAN is limited to schools, hospitals or buildings, while MAN connects small towns or cities, while LANs cover a country or a group of countries.

3. The devices used for data transmission are:

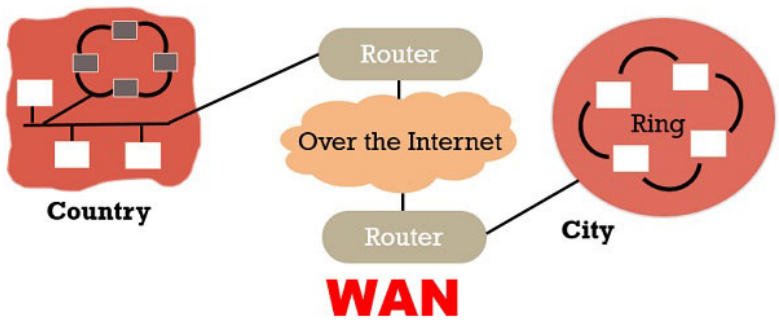
1. **LAN:** WiFi, Ethernet cable.
2. **MAN:** Modem and wire / cable
3. **WAN:** Fiber optic, microwave, satellite.

4. LAN transfers data at a faster rate than MAN and WAN.

5. LAN maintenance is easier than MAN and WAN.

6. The available bandwidth for transmission in LAN is higher than for MAN and WAN.

7. Data transmission error and interference occur at least in LAN, moderate in MAN and very much in WAN.



WAN

LAN has many advantages compared to MAN and WAN, such as LAN provides excellent reliability, high data transfer rate, can easily manage and share peripherals.

LANs cannot cover cities or towns, while MAN networks can connect cities or groups of cities. In addition, to connect a country or a group of countries, we need a WAN.