

1. Personal Area Network (PAN)

The smallest and most basic type of network, a PAN is made up of a wireless modem, a computer or two, phones, printers, tablets, etc., and revolves around one person in one building. These types of networks are typically found in small offices or residences, and are managed by one person or organization from a single device.

2. Local Area Network (LAN)

We're confident that you've heard of these types of networks before – LANs are the most frequently discussed networks, one of the most common, one of the most original and one of the simplest types of networks. [LANs](#) connect groups of computers and low-voltage devices together across short distances (within a building or between a group of two or three buildings in close proximity to each other) to share information and resources. Enterprises typically manage and maintain LANs.

Using routers, LANs can connect to wide area networks (WANs, explained below) to rapidly and safely transfer data.

3. Wireless Local Area Network (WLAN)

Functioning like a LAN, WLANs make use of [wireless network technology](#), such as Wi-Fi. Typically seen in the same types of applications as LANs, these types of networks don't require that devices rely on physical cables to connect to the network.

4. Campus Area Network (CAN)

Larger than LANs, but smaller than metropolitan area networks (MANs, explained below), these types of networks are typically seen in universities, large K-12 school districts or small businesses. They can be spread across several buildings that are fairly close to each other so users can share resources.

5. Metropolitan Area Network (MAN)

These types of networks are larger than LANs but smaller than WANs – and incorporate elements from both types of networks. MANs span an entire geographic area (typically a town or city, but sometimes a campus). Ownership and maintenance is handled by either a single person or company (a local council, a large company, etc.).

6. Wide Area Network (WAN)

Slightly more complex than a LAN, a [WAN](#) connects computers together across longer physical distances. This allows computers and low-voltage devices to be remotely connected to each other over one large network to communicate even when they're miles apart.

The Internet is the most basic example of a WAN, connecting all computers together around the world. Because of a WAN's vast reach, it is typically owned and maintained by multiple administrators or the public.

7. Storage-Area Network (SAN)

As a dedicated high-speed network that connects shared pools of storage devices to several servers, these types of networks don't rely on a LAN or WAN. Instead, they move storage resources away from the network and place them into their own high-performance network. SANs can be accessed in the same fashion as a drive attached to a server. Types of storage-area networks include converged, virtual and unified SANs.

8. System-Area Network (also known as SAN)

This term is fairly new within the past two decades. It is used to explain a relatively local network that is designed to provide high-speed connection in server-to-server applications (cluster environments), storage area networks (called "SANs" as well) and processor-to-processor applications. The computers connected on a SAN operate as a single system at very high speeds.

9. Passive Optical Local Area Network (POLAN)

As an alternative to traditional switch-based Ethernet LANs, [POLAN technology can be integrated into structured cabling](#) to overcome concerns about supporting traditional Ethernet protocols and network applications such as PoE (Power over Ethernet). A point-to-multipoint LAN architecture, POLAN uses optical splitters to split an optical signal from one strand of singlemode optical fiber into multiple signals to serve users and devices.

10. Enterprise Private Network (EPN)

These types of networks are built and owned by businesses that want to securely connect its various locations to share computer resources.

11. Virtual Private Network (VPN)

By extending a private network across the Internet, a VPN lets its users send and receive data as if their devices were connected to the private network – even if they’re not. Through a virtual point-to-point connection, users can access a private network remotely.

STP and UTP Cables

Shielded twisted pair cable (STP) has the individual pairs of wires wrapped in foil, which are then wrapped again for double protection. Unshielded twisted pair cable (UTP) has each pair of wires twisted together. Those wires are then wrapped in tubing without any other protection. UTP cables are less expensive, and a more popular type of cabling.

Key differences between baseband and broadband transmissions

<i>Baseband transmission</i>	<i>Broadband transmission</i>
<i>Transmit digital signals</i>	Transmit analog signals
<i>To boost signal strength, use repeaters</i>	To boost signal strength, use amplifiers
<i>Can transmit only a single data stream at a time</i>	Can transmit multiple signal waves at a time
<i>Support bidirectional communication simultaneously</i>	Support unidirectional communication only
<i>Support TDM based multiplexing</i>	Support FDM based multiplexing
<i>Use coaxial, twisted-pair, and fiber-optic cables</i>	Use radio waves, coaxial cables, and fiber optic cables
<i>Mainly used in Ethernet LAN networks</i>	Mainly used in cable and telephone networks

That’s all for this tutorial. If you like this tutorial, please don’t forget to share it with friends through your favorite social network.

Switch A switch is able to handle the data and knows the specific addresses to send the message. It can decide which computer is the message intended for and send the message directly to the right computer. The efficiency of switch has been greatly improved, thus providing a faster network speed.

Hub A hub is to sent out a message from one port to other ports. For example, if there are three computers of A, B, C, the message sent by a hub for computer A will also come to the other computers. But only computer A will respond and the response will also go out to every other port on the hub. Therefore, all the computers can receive the message and computers themselves need to decide whether to accept the message.

Router cRouter is actually a small computer that can be programmed to handle and route the network traffic. It usually connects at least two networks together, such as two LANs, two WANs or a LAN and its ISP network. Routers can calculate the best route for sending data and communicate with each other by protocols.

When you move the NIC cards from one PC to another PC, does the MAC address gets transferred as well?

Yes, that's because MAC addresses are hard-wired into the NIC circuitry, not the PC. This also means that a PC can have a different MAC address when another one replaced the NIC card.

When troubleshooting computer network problems, what common hardware-related problems can occur?

A large percentage of a network is made up of hardware. Problems in these areas can range from malfunctioning hard drives, broken NICs and even hardware startups. Incorrectly hardware configuration is also one of those culprits to look into.

In a network that contains two servers and twenty workstations, where is the best place to install an Anti-virus program?

The best solution is to install anti-virus on all the computers in the network. This will protect each device from the other in case some malicious user tries to insert a virus into the servers or legitimate users

What is the difference between a dynamic and static IP address?

When a device is assigned a *static* IP address, the address does not change. Most devices use *dynamic* IP addresses, which are assigned by the network when they connect and change over time.

TCP/IP Reference Model is a four-layered suite of communication protocols. It was developed by the DoD (Department of Defence) in the 1960s. It is named after the two main protocols that are used in the model, namely, TCP and IP. TCP stands for Transmission Control Protocol and IP stands for Internet Protocol.

The four layers in the TCP/IP protocol suite are –

- **Host-to- Network Layer** –It is the lowest layer that is concerned with the physical transmission of data. TCP/IP does not specifically define any protocol here but supports all the standard protocols.
- **Internet Layer** –It defines the protocols for logical transmission of data over the network. The main protocol in this layer is Internet Protocol (IP) and it is supported by the protocols ICMP, IGMP, RARP, and ARP.
- **Transport Layer** – It is responsible for error-free end-to-end delivery of data. The protocols defined here are Transmission Control Protocol (TCP) and User Datagram Protocol (UDP).
- **Application Layer** – This is the topmost layer and defines the interface of host programs with the transport layer services. This layer includes all high-level protocols like Telnet, DNS, HTTP, FTP, SMTP, etc.
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- A web browser, or simply "browser," is an [application](#) used to access and view [websites](#). Common web browsers include Microsoft Internet Explorer, Google Chrome, Mozilla Firefox, and Apple Safari.
- The primary function of a web browser is to render [HTML](#), the code used to design or "mark up" [webpages](#). Each time a browser loads a web page, it processes the HTML, which may include text, [links](#), and references to images and other items, such as [cascading style sheets](#) and [JavaScript](#) functions. The browser processes these items, then renders them in the browser window.

What is a search engine?

A search engine is a web-based tool that enables users to locate information on the World Wide Web. Popular examples of search engines are Google, Yahoo!, and MSN Search. Search engines utilize automated software applications (referred to as robots, bots, or spiders) that travel along the Web, following links from page to page, site to site. The information gathered by the spiders is used to create a searchable index of the Web.

- Today, the internet has become unavoidable in our daily life. Appropriate use of the internet makes our life easy, fast and simple. The [internet](#) helps us with facts and figures, information and knowledge for personal, social and economic development. There are many uses of the internet, however, the use of the internet in our daily life depends on individual requirements and goals.
- **1. [Uses of the Internet in Education](#)**
- The Internet is a great platform for students to learn throughout their lifetime. They can use the internet to learn new things and even acquire degrees through online education programs. Teachers can also use the internet to teach students around the world.
- **2. Internet Use to Speed Up Daily Tasks**
- The Internet is very much useful in our daily routine tasks. For example, it helps us to see our notifications and emails. Apart from this, people can use the internet for money transfers, shopping order online food, etc.
- **3. Use of the Internet for Shopping**
- With the help of the internet, anybody can order products online. The increase in online shopping has also resulted in companies offering a huge discount for their customers.
- **4. Internet for Research & Development**
- The Internet plays a pivotal role in research and development as it is propelled through internet research. The benefit of the internet is enjoyed by small businessmen to big universities.
- **5. Business Promotion and Innovation**
- The Internet is also used to sell products by using various e-Commerce solutions. The result is new services and businesses starting every day thereby creating job opportunities and reducing unemployment.
- **6. Communication**
- Without a doubt, the internet is the most powerful medium of communication at present. It connects people across different parts of the world free and fast.
- **7. Digital Transactions**
- The internet facilitates internet banking, mobile banking, and e-wallets. Since all digital transactions are stored in a database, it helps the government to track income tax details or income reports in the ITR.
- **8. Money Management**
- The internet can also be used to manage money. Now, there are many websites, applications, and other tools that help us in daily transactions, transfers, management, budget, etc.
- **9. Tour & Travel**
- During tour and travel, the use of the internet is highly effective as it serves as a guide. People browse the internet before they start visiting the places. Tour bookings can also be done using the internet.

- The influence of the internet in our daily life is huge. It has opened us a magical world of information and we would have never seen the world as it is without the internet. Considering its scope and importance, it would be hard to imagine a world without the internet.
- Today, all major browsers have functionality that allows you to quickly and easily view your Internet browser's history. However, as multiple devices contain browser history, there are multiple ways to view as well. To proceed, choose your devices from the section below and follow the instructions.

