

The Internet is a worldwide super-network used to access publicly available computers. The Internet is composed of thousands of smaller telecommunications and computer networks all around the world that have agreed to connect and communicate with each other and transfer data between each other.

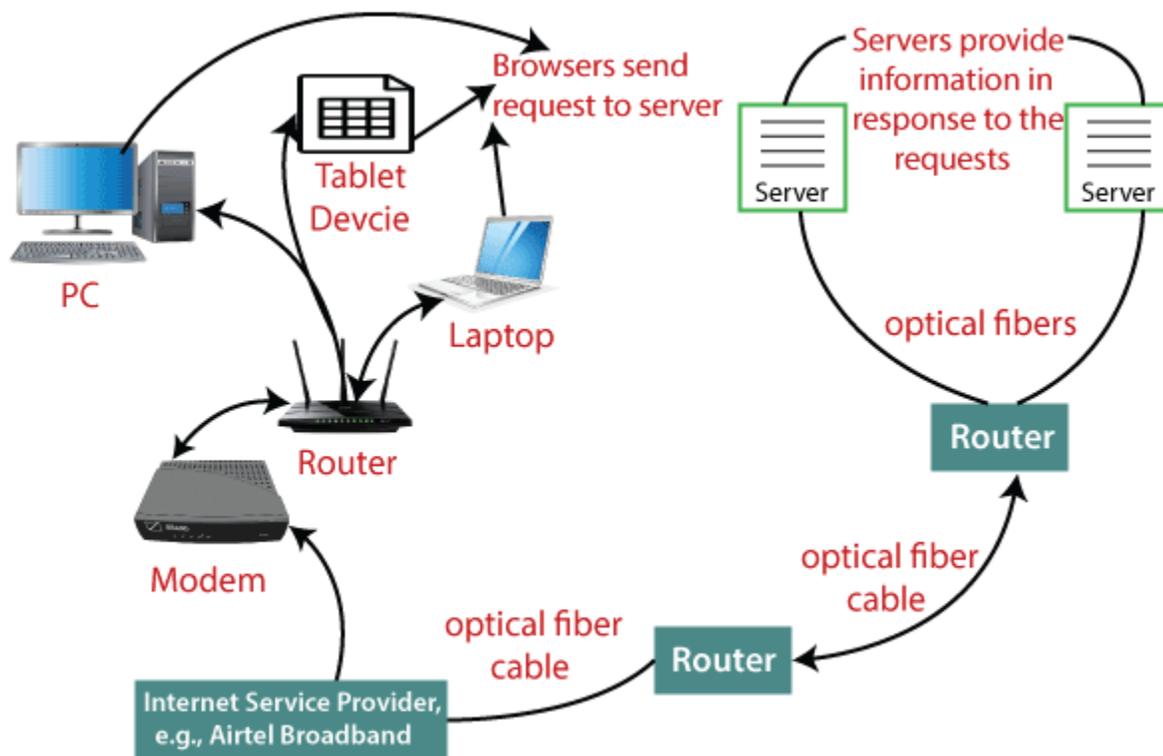
Internet is different from the [World Wide Web](#) as the World Wide Web is a network of computers and servers created by connecting them through the internet.

- Internet is a world-wide global system of interconnected computer networks.
- Internet uses the standard Internet Protocol (TCP/IP).
- Every computer in internet is identified by a unique IP address.
- IP Address is a unique set of numbers (such as 110.22.33.114) which identifies a computer location.
- A special computer DNS (Domain Name Server) is used to give name to the IP Address so that user can locate a computer by a name.

Why is the Internet Called a Network?

- Internet is called a network as it creates a network by connecting computers and servers across the world using routers, switches and telephone lines, and other communication devices and channels. So, it can be considered a global network of physical cables such as copper telephone wires, fiber optic cables, tv cables, etc.

How Internet Work.



Evolution

The concept of Internet was originated in 1969 and has undergone several technological & Infrastructural changes as discussed below:

- The origin of Internet devised from the concept of **Advanced Research Project Agency Network (ARPANET)**.
- **ARPANET** was developed by United States Department of Defense.
- Basic purpose of ARPANET was to provide communication among the various bodies of government.
- Initially, there were only four nodes, formally called **Hosts**.
- In 1972, the **ARPANET** spread over the globe with 23 nodes located at different countries and thus became known as **Internet**.

DARPANET: THE DEFENSE DEPARTMENT TAKEOVER

The [Internet](#) began as a military command and control systems research project. As the [network](#) was deployed and more government and research institutions were connected to it, the Defense Department took over the project ARPA. The Defense Department administered the [network](#) for several years, and so the name was changed to DARPAnet (Defense Advanced Research Projects Network) in the early to mid 70's.

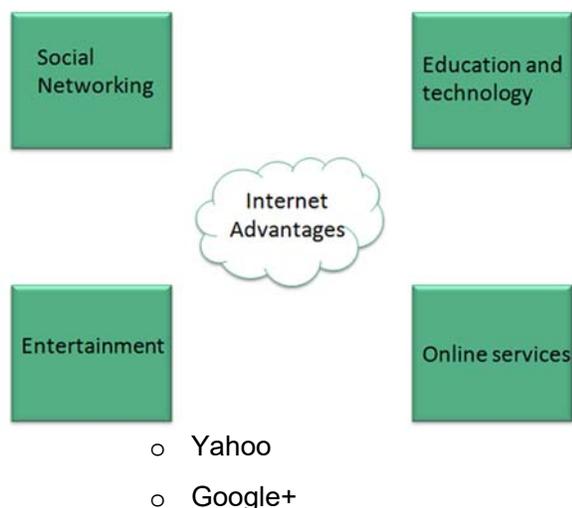
The DARPAnet eventually expanded beyond the Defense Department's willingness to sponsor it. More than half the connected sites were Universities receiving government research grants; however, the networks were in use by more than just the researchers.

BIRTH OF THE NSFNET

The [National Science Foundation \(NSF\)](#) was chartered to continue research and manage the [Internet](#). This expansion began by connecting colleges and universities using 56Kbps dedicated circuits from MCI in 1985. Later, the NSF contracted Merit to manage the NSFnet. Merit upgraded the NSFnet to 448Kbps MCI circuits and used IBM PC-RT's as routers. In 1987 Merit upgraded to [1.544Mbps T1's](#). In 1990 MCI, Merit, and IBM formed a non-profit corporation called American Network Services (ANS) to manage the NSFnet. ANS upgraded of the [network](#) infrastructure to DS3's (45Mbps).

- By the time, with invention of new technologies such as TCP/IP protocols, DNS, WWW, browsers, scripting languages etc., Internet provided a medium to publish and access information over the web.

Advantages



Internet covers almost every aspect of life, one can think of. Here, we will discuss some of the advantages of Internet:

- Internet allows us to communicate with the people sitting at remote locations. There are various apps available on the web that uses Internet as a medium for communication. One can find various social networking sites such as:

- Facebook
- Twitter
- Flickr
- Orkut

- One can surf for any kind of information over the internet. Information regarding various topics such as Technology, Health & Science, Social Studies, Geographical Information, Information Technology, Products etc can be surfed with help of a search engine.
- Apart from communication and source of information, internet also serves a medium for entertainment. Following are the various modes for entertainment over internet.
 - Online Television
 - Online Games
 - Social Networking Apps
 - Songs
 - Videos
- Internet allows us to use many services like:
 - Internet Banking
 - Matrimonial Services
 - Online Shopping
 - Online Ticket Booking
 - Online Bill Payment
 - Data Sharing
 - E-mail
- Internet provides concept of **electronic commerce**, that allows the business deals to be conducted on electronic systems

Intranet Definition

An intranet is a private network within an organization that only employees have access. This network can consist of systems connected local area (Local Area Networks, LAN) or sometimes, even extensive area networks (Wide Area Networks, WAN). Through a gateway, intranet users also have regular internet access, sometimes with certain restrictions.

Or

The intranet is a private network that belongs to a particular organization. It is designed for the exclusive use of an organization and its associates, such as employees, customers, and other authorized people. It offers a secure platform to convey information and share data with authorized users.

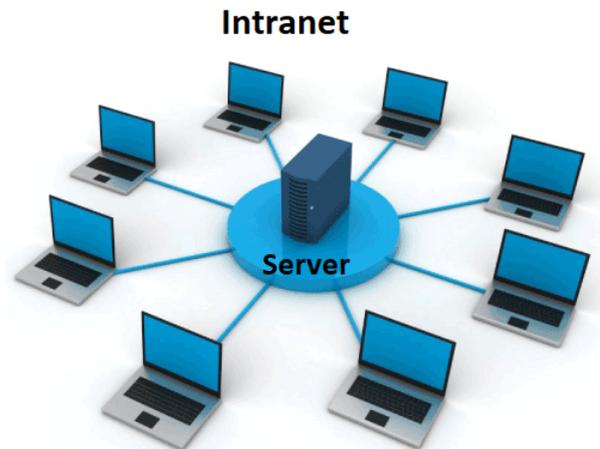
How is the Intranet Used?

An intranet is used within large companies to give all employees (sometimes even overseas branches) access to the information and services of the internal computer systems. All the different types of operations connect to the intranet. Thus, for example, integration with a document management system ensures that workers have a vision of company information. And also, can collaborate with documents. Also, communication platforms for projects or even for social events can configure during and after work.

Sharing intranet with external

In some cases, companies want to share their internal work networks (temporarily) with external ones. In this case, we no longer talk about intranet but extranet. The need to set up an extranet may arise. For example, when a company works on specific projects collaborating with external parties. For the external ones, the entire intranet will not be available, but the parts that are necessary for it to work.

Intranet Uses



Intranets are being used to deliver tools, For example, collaboration (to facilitate working in groups and teleconference) or sophisticated corporate directories, sales and other customer management tools, project management.

Corporate culture-change platforms use intranets. A large number of employees discussing key issues in the intranet forum application leads to new ideas in quality, management, productivity, and corporate matters.

In huge intranets, website traffic is often similar to public website traffic and can understand better by using [web](#) metrics [software](#) to track the overall activity. User surveys also improve intranet [website](#) effectiveness.

More substantial businesses allow the users to access their [intranet] within public internet through the firewall [servers](#). They can screen messages incoming and outgoing, keeping [security](#) intact. When a part of an intranet is made accessible to customers and others outside the business, it becomes part of an extranet.

Intranet Benefits

Productivity

Intranets help users to locate and view information fast and use similar applications to their roles and responsibilities. With the help of a browser interface, users can access [data](#) held in any database the organization wants to make available.

Time

Intranets allow organizations and employees to distribute information on an as-needed; Employees may link to similar information to their convenience, rather than they get distract indiscriminately by email.

Business operations and management

[Deploying applications](#) use [intranet] as a platform for developing to support business operations and decisions across the internet worked enterprise.

Built for the audience

Many higher companies dictate computer specifications in which, it allows [**Intranet developers**] to write [applications](#) that have to work on one browser (no cross-browser compatibility issues). Being able to address your “viewer” is explicitly a great advantage.

Immediate updates

When dealing with public incapacity, specifications, [laws](#), and parameters can change. Intranets make it possible to provide your audience with “live” changes so they are up-to-date, which can limit a company’s liability.

Some of the benefits of the intranet are:

- It is cheap and easy to implement and run, and is more safe than the internet and [extranet](#).
- It streamlines communication that enables the company to share its data, information, and other resources among employees without any delay. The entire staff can receive company's announcements, ask questions, and access internal documents.
- It provides a secure space to store and develop applications to support business operations.
- It improves the efficiency of the company by speeding up workflow and reducing errors. Thus, it helps achieve targets by completing the tasks on time.

- It offers a testing platform for new ideas before they are uploaded on the company's internet webpage. Thus, it helps maintain the credibility of the company
- Information is shared in real-time, or updates are reflected immediately to all the authorized users.
- Modern intranets also offer a mobile app that allows employees to stay connected on the go.
- It aids in project management and tracking workflow and teams' progress.
- It can work with mobile devices, which means it can provide information that exists on intranet directly to mobile devices of employees such as phones, tablets, etc.
- It can also be used to motivate employees, facilitate employee recognition, and to reward them for performing beyond expectations.

How the Intranet Works:

Intranet basically comprises three components: a web server, an intranet platform, and applications. The web server is hardware that contains all the intranet software and data. It manages all requests for files hosted over the server and finds the requested files and then delivers it to the user's computer.

The intranet platform, which is software, allows communication tools, collaboration apps, and databases to work seamlessly with each other. It is tailored to the specific needs of a business.

The applications are required to enable users to work smoothly. They are the computing tools that allow users to do their work, communicate, and coordinate with each other and retrieve and store information.

Furthermore, the user who wants to access the intranet is required to have a special network password and should be connected to the LAN. A user who is working remotely can gain access to the intranet through a virtual private network ([VPN](#)) that allows them to sign in to the intranet to access the information.

Disadvantages of Intranet:

- It may be costly to set up an Intranet due to hidden costs and complexity.
- If the firewall does not work properly or not installed, it can be hacked by someone
- High-security passwords are required, which cannot be guessed by outside users
- There is always a fear of losing control over the intranet
- Sometimes document duplication may happen which can cause confusion among employees
- You have to give access to multiple users, so you may find it hard to control this network.

Examples of Intranet:

Educational Intranet: It is generally found in a school, college, etc., For example, a school intranet is intended to allow teaching staff to communicate with each other and get information about upcoming updates such as exam dates, schools functions, holidays, etc.

Real Estate Intranet: The intranet of a real estate company allows its sales team to have access to all important brochures, templates, forms that they may need to close a sale. Employees also remain up to date with important events like meetings, training, sessions, etc. It can also be used to share motivational messages with the team.

Health Care Intranet: In the healthcare sector, in big hospitals, the Intranet helps health care professionals to work as a team to provide proper care and treatment to their patients. Doctors can share reports, treatment procedures, bills and claims can be settled easily without moving from one department to another department.

IT Sector Intranet: In the [IT](#) sector there is always a lot of information that needs to be shared with all the employees at one go. It may be related to a project that needs to be completed within the given time frame, such as guidelines, terms and conditions, and rules that are to be followed while working on a project.

What is Intranet? –

The intranet is a private network that belongs to a particular organization. It is designed for the exclusive use of an organization and its associates, such as employees, customers, and other authorized people. It offers a secure platform to convey information and share data with authorized users. Confidential information, database, links, forms, and applications can be made available to the staff through the intranet. So, it is like a private internet or an internal website that is operating within an organization to provide its employees access to its information and records. Each computer in intranet is identified by a unique IP Address.

It is based on internet protocols ([TCP/IP](#)) and is protected from unauthorized access with firewalls and other security systems. The firewall monitors the incoming and outgoing data packets to ensure they don't contain unauthorized requests. So, users on the intranet can access the [internet](#), but the internet users can't access the intranet if they are not authorized for it. Furthermore, to access the intranet, the authorized user is required to be connected to its [LAN](#) (Local Area Network).

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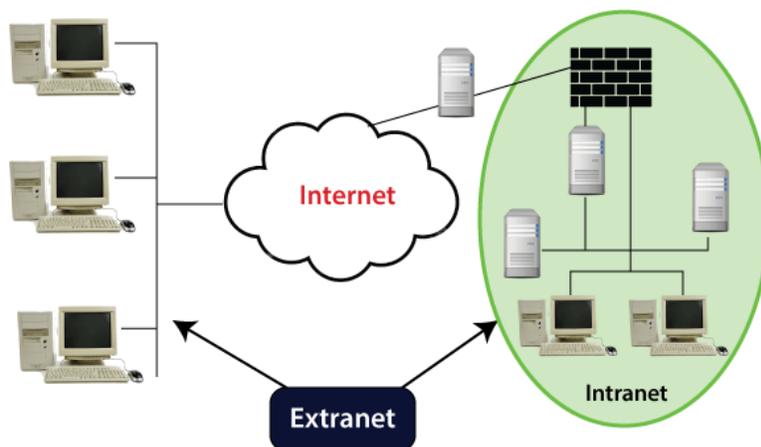
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Extranet

Extranet is a part of an organization's intranet. It is a communication network that is based on internet protocols (TCP/IP). It provides controlled access to firm's intranet to its trading partners, customers, and other businesses. So, it is a private network that securely shares internal information and operations of a firm with authorized people outside the firm without giving access to the company's entire network. The users are required to have IDs,

passwords, and other authentication mechanisms to access this network.



Some of the benefits of extranet:

- o It acts as a single interface between the company and its trading partners.
- o It automates the firm's processes like automatically places an order with suppliers when inventory drops.
- o It improves customer service by providing customers a platform to resolve their queries and complaints.

- It enables the firm to share information with trading partners without engaging in paper-based publishing processes.
- It streamlines business processes that are repetitive in nature, such as ordering from a vendor on a regular basis.

How is Extranet Established?

It is set up in the form of a Virtual Private Network as it is prone to security threats due to the use of the [internet](#) to connect outsiders to an organization's intranet. VPN can assure you a safe network in a public network such as the internet. The transmission control protocol (TCP) and internet protocol (IP) are used for the data transfer.

[VPN](#) assures secure transactions based on Internet Protocol Security Architecture (IPSEC) protocol as it provides an extra security layer to [TCP/IP](#) protocol, which is used for data transfer in the extranet. In this layer, the [IP](#) packet is encapsulated to form a new IP packet, as shown below:

Furthermore, to provide more security to Intranet, the following two measures are also taken by an organization:

- **Firewall:** It prevents unauthorized users from accessing the extranet.
- **Passwords:** It also prevents unauthorized users, including the company's employees from accessing the data stored on its server.

Limitations of Extranet:

- **Hosting:** If you host extranet pages on your own server, it requires a high bandwidth internet connection, which is may be very expensive.
- **Security:** You need extra firewall security if you host it on your own server. It increases the workload and makes security mechanism very complex.
- **Dependency:** It is dependent on the internet as outsiders cannot access information without using the internet.
- **Less Interaction:** It reduces the face to face interaction between customers, business partners, vendors, etc., which results in poor relationship building.