SERVER

In the networking, a device is used to handle network resources, which is known as a Server. Such as a file server, is simply a computer intended to store the files, to where the users on the network can store files. The dedicated servers are used to perform only those tasks that are previously defined for the server. Unlike the general computer, the dedicated server cannot execute several programs at once.

In simpler terms, we can define a server as a connected network providing data to more than one client simultaneously. The World Wide Web employs the client/server model which permits numerous users to access websites all over the world. There are various types of servers: application servers, web servers, mail servers, proxy servers, FTP servers, etc.

Types of server

A computer may need many services to work. As such, there are different types of servers available.

Application servers

Application servers run applications in lieu of client computers running applications locally. Application servers often run resource-intensive applications that are shared by a large number of users. Doing so removes the need for each client to have sufficient resources to run the applications. It also removes the need to install and maintain software on many machines as opposed to only one.

Mail servers

Mail servers are a very common type of application server. Mail servers receive emails sent to a user and store them until requested by a client on behalf of said user. Having an email server, allows for a single machine to be properly configured and attached to the network at all times. It is then ready to send and receive messages rather than requiring every client machine to have its own email subsystem continuously running.

Database servers

The amount of data used by companies, users, and other services is staggering. Much of that data is stored in databases. Databases need to be accessible to multiple clients at any given time and can require extraordinary amounts of disk space. Both of these needs lend themselves well to locating such databases on servers. Database servers run database applications and respond to numerous requests from clients. Common database server applications include Oracle, Microsoft SQL Server, DB2, and Informix.

Web servers

One of the most abundant types of servers in today's market is a web server. A web server is a special kind of application server that hosts programs and data requested by users across the Internet or an intranet. Web servers respond to requests from browsers running on client computers for web pages, or other web-based services. Common web servers include Apache web servers, Microsoft Internet Information Services (IIS) servers and Nginx servers.

But our major concern in this topic is file server.
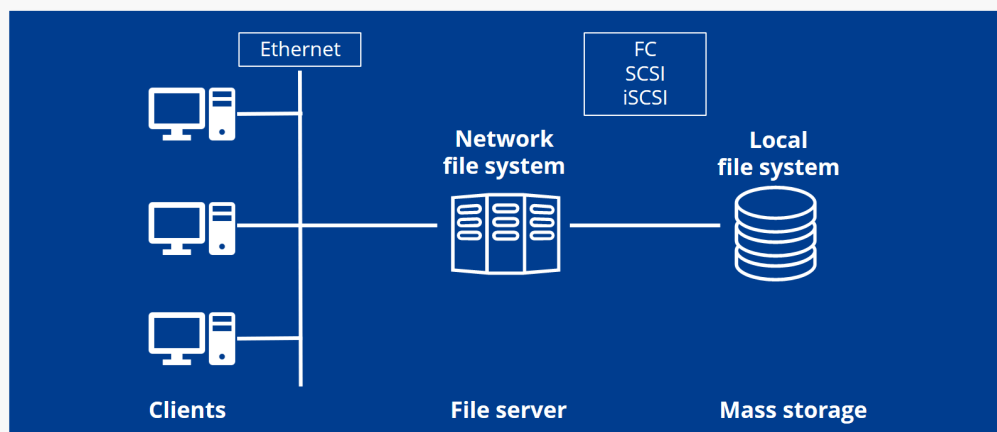
A file server is a central server instance in a computer network that enables connected clients to access the server's storage capacities. The term encompasses both the hardware and software needed to implement such a server. As long as they have received the corresponding authorizations, accessing users can open, read, change, and delete files and folders on a file server as well as even upload their own files to the server.

Working mechanism of file servers

The right hardware is the foundation for a reliable file server. Most importantly, of course, this includes the hard drive which needs to offer sufficient space for the files and necessary programs, as well as the respective operating system, and the software for using the clients. The server also needs enough working memory and processing power to process file and program accesses for various users as quickly and faultlessly as possible. Whether the hardware requirements can be fulfilled by a standard PC or whether a special server setup is required primarily depends on the number of users.

File server advantages:

- Easy organization of the entire file inventory
- High degree of clarity
- Convenient file sharing
- Collaboration without version conflicts
- Relief of client computers (almost unlimited storage possible)
- Data protection and security in your own hands

WORKSTATION

The workstation is a computer works as a stand-alone system. Previously, these were meant for the individual users similar to a personal computer but are more capable and faster than it. It was developed for the same set of the audience as UNIX Operating system. Furthermore, the UNIX operating system is also known as the workstation operating system. The main application of workstation is in the business and professional field instead of personal or home use. Initially, Hewlett Packard, Sun Microsystems, IBM and DEC are the companies developed the workstations.

The concept of workstations is mainly implemented in small engineering, graphics designing and architecture companies and organization where the faster microprocessor, huge RAM, moderate computing power and high-speed graphics are necessarily required.

In recent technology, the corporate environment involves the attachment of the workstations to the local area network to share the resources to other connected computers.

Key Differences between Server and Workstation

1. A server is a device or a computer resides within a network which stores the data and manages the network resources. As against, a workstation is a computer provides an immensely fast and accurate type of graphics, higher performance, more scalability along with featuring ISV certification.
2. The server performs internet related applications such as communicating with the clients, responding back to their requests and providing the required content to the clients. On the contrary, the workstations are used in business extensive application such as digital content creation, mechanical computer-aided design, architectural designs and detailed analysis.
3. There are various forms of server like FTP, web, application, mail, proxy, telnet servers, etcetera. Conversely, workstations are assigned a specific task. For example, there can be video, audio, CAD/CAM workstations which are specially designed for that particular task.
4. Servers work on Linux, Windows, Solaris operating system while workstations operate on Unix, Linux, Windows NT operating systems. Workstations also employ the special type of softwares developed by ISV (Independent Software Vendors) that are specifically developed for workstations.
5. The workstations are mandatorily enabled with the Graphics User Interface (GUI) whereas in a server the GUI is optional.

CONCLUSION

A server functions several tasks at the same time and needs to hold multiple connections simultaneously while workstation need not to do that, it just performs the application-specific task and can also be used as a stand-alone device.

Answer the following questions:

1. Define the term server.

Ans : A server is a computer or system that provides resources, data, services, or programs to other computers, known as clients, over a network. In theory, whenever computers share resources with client machines they are considered servers.

2. Mention various types of server.

Ans : There are various types of servers:
- application servers,
- web servers,
- mail servers,
- proxy servers,
- FTP servers, etc.

3. **Explain the File server working mechanism.**

   Ans: File servers offer users a **central storage place** for files on internal data media, which is **accessible to all authorized clients**. Here, the server administrator defines strict rules regarding which users have which **access rights.** File servers are not only used for file storage and management. They are also often used as a **repository for programs** that have to be accessible to multiple network participants, and as a **backup server**.

4. **Write few advantages of file server.**

   Ans: Advantages of file server are as follows:

   - Easy organization of the entire file inventory
   - High degree of clarity
   - Convenient file sharing
   - Collaboration without version conflicts
   - Relief of client computers (almost unlimited storage possible)

5. **Write a short note on workstation.**

   Ans: The **workstation** is a computer works as a stand-alone system. Previously, these were meant for the individual users similar to a personal computer but are more capable and faster than it. The main application of workstation is in the business and professional field instead of personal or home use. Initially, Hewlett Packard, Sun Microsystems, IBM and DEC are the companies developed the workstations.

6. **Differentiate between server and workstation.**

   Ans:

Sr. No.	Key	Workstation	Server
1	Purpose	A computer to perform required tasks and to access internet or LAN.	Server is a software which provides Services when requested by workstations.
2	Operations	Operations on workstations are like Business process, engineering etc.	Server operations are mostly network or internet based.
3	Example	FTP Server, Web Server.	Kiosks, Video workstations, Audio workstations.
4	Operating System	Workstations are mostly linux, Unix or Window NT based.	Servers are normally installed on Linux, Solaris, Unix or Windows.
5	GUI	On Workstations, GUI is generally present.	On Server, GUI is optional.