

What is a Server and its many uses

A Server can be defined as the following; it is a physical computer (a Computer **Hardware** system) dedicated to running one or more such services (**Host Computer**) to serve the needs of users or other computers on the network. Depending on the computing service it offers a server can have many such roles as: Database Server, File Server, Mail Server, Print Server, Web Server, Gaming Server or Domain Controller.

The term Server is used quite broadly in Information Technology. Servers are used on a Network to complete computing services on behalf of “**Clients**” or user computers. A server on a Network also makes use of a Protocol called **IP (Internet Protocol)** where the Server operates as a Socket Listener. Servers often offer essential services across a network, either to private users inside an organisation or Domain or to Public users across the Internet.



A Server rack in a Data Centre connected to a KVM Switch

Despite the many variations of Server Software, Hardware and Operating System branded products; in theory any computerised process that shares a resource to one or more client processes is a server. To illustrate this, take the common example of **File Sharing**. While the existence of files on a machine does not classify it as a server, the mechanism which shares these files to clients by the operating system is the server.

In a Hardware sense the word “**Server**” typically designates computer models intended for Hosting software applications under heavy demand in a Network environment. In this **client-server** configuration one or more machines, either a computer or a computer appliance, share information with each other with one acting as the **Host** or Server for the others.

While nearly any personal computer has the capability of being a Server on a Network, a Dedicated Network Server will contain many features making it more suitable for Production environments. These features include a Faster **CPU**, increased High-Performance **RAM** and increased storage capacity in the forms of Larger or Multiple **Hard Disk Drives**. Servers also typically have fault tolerant features such as Redundancy in Power Supplies, storage (as in **RAID**) and network connections. Server became common in the early 1990’s as businesses increasingly began using personal computers to provide services formerly hosted on larger **Mainframes** or **minicomputers**. Between the 1990’s and 2000’s an increase in the use of **Dedicated Hardware** saw the advent of self-contained server applications. One well-known product is the Google Search Appliance. Simpler examples of such appliances include: **Switches**, **Routers**, **Gateways** and **Print Server**, all of which are available in a near **plug and play** configuration.

Types of Servers

Application Server: This type of Server is dedicated to running certain Software Applications.

Catalog Server: This type of Server is a central search point of Information across a Distributed Network.

Communications Server: This type of Server is the carrier-grade computing platform for communications networks.

Database Server: This type of Server Provides Database services to other computers or Programs.

Domain Control Server: This type of Server responds to security Authentication requests by clients.

Fax Server: This type of Server provides fax services to clients.

File Server: This type of Server provides remote access to files.

FTP Server: This type of Server allows clients to transfer files from one Host to another host over a TCP-Based Network, such as Internet.

Game Server: This type of Server allows users to connect to it to play Online Games together.

Multimedia Server: This type of Server allows streaming of multimedia, like video and audio files.

Name Server: This type of Server is responsible for Name Resolution (DNS)

Print Server: This type of Server provides printing services to clients.

Proxy Server: This type of Server acts as an intermediary for requests from clients seeking resources from other servers.

Web Server: This type of Server allows **HTTP** clients to connect to it in order to send commands and receive responses along with data clients.

Some of the words used explained

Some of the explanations are high level just to give you the reader a better understanding of the terms. Also so that you, the reader can formulate a clear picture.

Clients: In this context clients refer to desktop computers or users thereof.

CPU: This is the Central Processing Unit of a computer all functions of computing take place here within a computer.

File Sharing: File Sharing, just as the name implies is the sharing of Information on a central resource.

Gateways: It can also be referred to the **Default Gateway**, in a network it is a node equipped for interfacing with another network that uses different protocols.

Hard Disk Drives: They are also commonly known as Hard Drives are devices for storing and retrieving digital information, primarily computer information.

Hardware: This refers to a physical piece of equipment that is tangible.

Host Computer: This refers to a dedicated computer or Server.

Internet Protocol: The Internet Protocol suite is the set of communications protocols used for the Internet and similar networks.

Mainframe Computers: These computers are referred to as “**Big Iron**” computers that are powerful and used primarily by big corporate companies or Governmental institutions for critical applications, bulk processing such as census



information, industry and consumer statistics and transaction processing to name a few.

Minicomputer: This is a term that is usually used for smaller computers that evolved in the mid 1960's

Plug and Play: It refers to the easy discovery of new items or hardware on a physical computer without the need for user intervention or configuration thereof.

Protocol: It can be defined as customs or regulations.

RAM: Random Access Memory can typically be described as a temporary storage for data. It allows data to be accessed in any order and depending on the size it allows for fast collecting of this data.

RAID: Redundant Array of Independent Disks or originally known as Redundant Array of Inexpensive Disks is a storage technology that combines multiple disks or components into a logical unit.

Routers: It is a device that forwards data packets between computer networks. It is normally connected between two or more data lines from different networks.

Software: it is a collection of computer programs and related data that provides the instructions to the computer telling it what to do and how to do it.

Switches: It is a device that connects network segments together.