Introduction to server Administration

CET 05202: SERVER ADMINISTRATION

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Definition of server computer

a server is a computer program (e.g Windows server 2012, Apache) or a device(Tower server, rack server and blade server) that provides functionality for called clients which are other programs or devices.

- Servers are dedicated computers for a specific purpose.

Functions of a Server :

- A server is made to provide services and functionality to other computers. The other computers which are using the server are called "clients" and this model of sharing is called "client-server" model.

Server computer

Servers are **capable to run on several types of computer systems**, but sufficient hardware should be supported as per demanding of your servers.

For example, web servers help to run large amount of web pages in the real time, but this server needs fastest processor and sufficient RAM to manage massive "Load" without getting slow down.

Server computer

Typically, every computer can be turned into a server using its OS features which allows it to do so.

But they won't be able to support many a huge number of connections due to their hardware limitations and also because of their OS limitations.

Server computers use the same parts as of the desktop PC but these parts are designed for durability and non-stop working conditions.

Example: You can convert your PC into a server with using of suitable software. For example, if you allow PC to make connection over the home network then it is designated as print server, file server or more.

Uses of Server Computer:

The servers can be used as: –

Application server: Mainly provides the access to the applications to the user, eliminating the need to install a copy of the app on their respective PC. Example: -Like a web application server, it can be a www server or a local server.

Catalog servers: It keeps and maintains an index or table of content of information which can be accessed by other computers throughout the World Wide Web. **Example:** directory servers and name servers are some of the examples.

Computing Server: This type of server shares its extensive amount of computing resources like CPU, Ram and storage with its clients over a network.

Database server: This type of servers maintains a specific type of database which can be accessed by a user if the user has access to it. Example: – the database can be of books, videos, pictures, music etc.

Server administration

Server administration comprehends **all tasks related to managing, optimizing and monitoring servers, networks and systems** in order to ensure they work properly and safely.

*** It requires 24/7 availability and monitoring to guarantee business operations at all times.

Server administration is essential to guarantee high performance and business continuity, as servers often host valuable data and mission-critical applications.

So, either internally or externally, it must be carefully addressed.

Server administrator

A server administrator is a professional responsible for managing and maintaining computer servers.

The role of server administrators is to install, manage, optimize, monitor and solve problems (if necessary) in the company's servers and related components.

Important aspects in server and system administration

1. Security
2. Updates
3. Monitoring
4. Backups

On-Premise and Off-Premise

The main difference between these two software types is who is responsible for hosting and supporting the software.

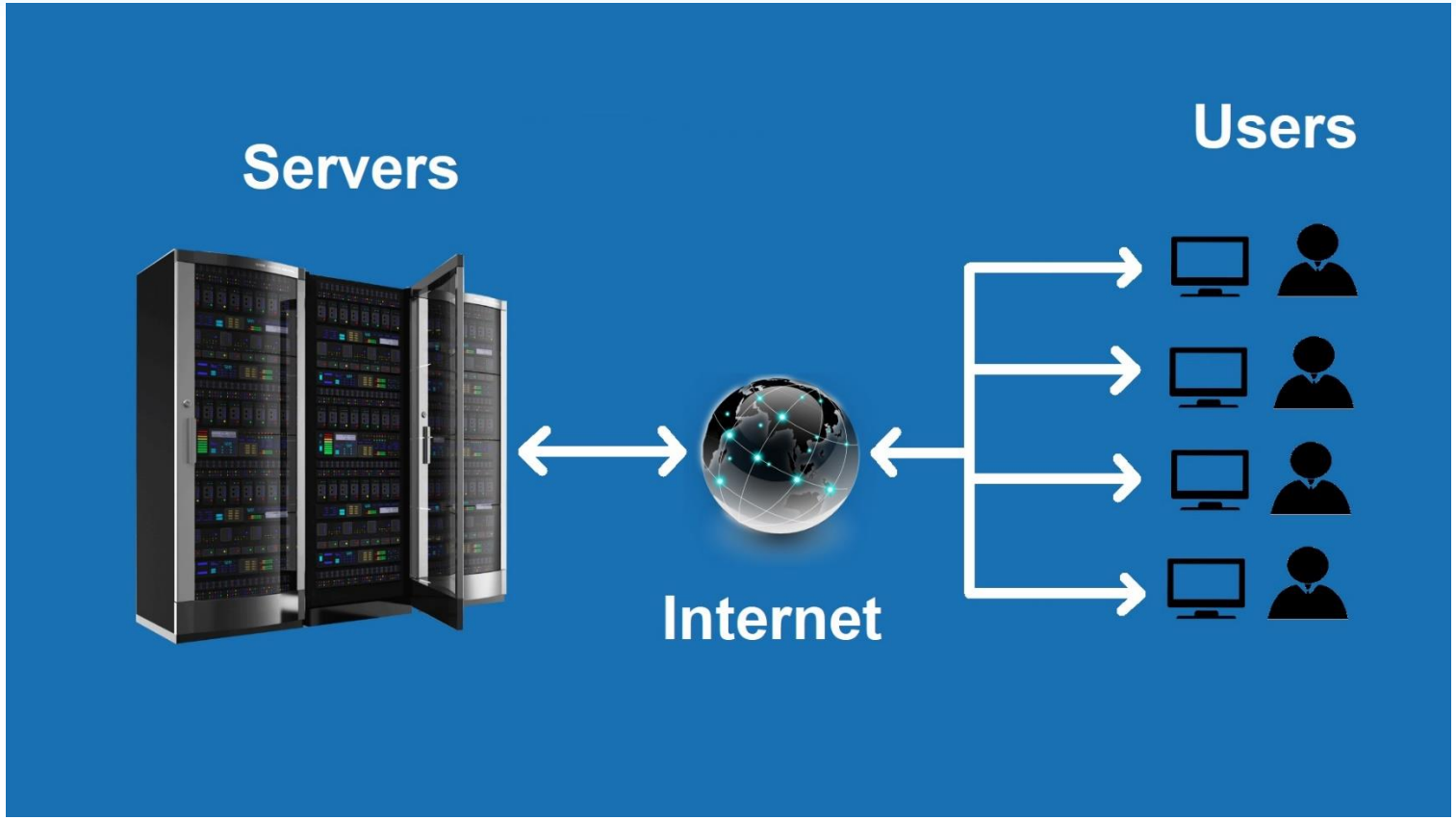
On-premise software is hosted in-house, while a third party hosts **off-premise** software.

On-premise software is installed and operated from the software customer's own data center, while off-premise software is delivered as a service by the provider and accessed via the internet.

Server Vs Personal Computer

Servers	Personal Computer
A server can either be hardware or software	PC is a collection of hardware
A server manages all network resources.	Run user-friendly operating system and desktop applications to facilitate desktop-oriented tasks
Multiple Processor	Often Single processor
It is designed for redundancy and non-stop working hours.	It is not designed for redundancy and longer working hours.
The hardware is expensive.	Hardware is not that expensive.
Uses specialized hardware only.	Does not use specialized hardware.
Large Storage with RAID mode	Less storage with single mode

Server Vs Personal Computer



Server as a hardware

Server as a Hardware

Hardware requirement for servers vary widely, depending on the server's purpose and its software

Servers' duties to provide service to many users over a network lead to different requirements such as fast network connections and high I/O throughout.

DIFFERENT SIZE OF SERVER:

- Rack server
- Tower server
- Miniature (home) servers
- Mini Rack server
- Blade server
- Mobile server

Types of Server



Blade Server



Rack Server



Tower Server

Server User Interface

Since servers are usually accessed over a network, they may run in headless mode without a monitor or input device, audio hardware and USB interfaces.

Server are configured and managed remotely. Remote management can be conducted via various methods including

- Microsoft Management Console (MMC),
- PowerShell,
- SSH and
- browser-based out-of-band management systems such as Dell's iDRAC or HP's iLo.

Server Operating systems

On the Internet, the dominant operating systems among servers are

- UNIX-like open-source distributions, such as those based on Linux and FreeBSD,
- Windows Server
- z/OS and macOS Server are also deployed, but in much smaller numbers.

Vs

Client OS	Server OS
• It is an OS that runs on desktop computers and other portable devices.	• It is an OS that is developed to be installed and utilized on a server.
• It is a simple and easy OS.	• It is a complex OS.
• It provides less security than the server OS.	• It provides more security than the client OS.
• It run on a client device, including mobile phones, desktops, tablets, and laptops.	• It run on a server.
• It may get services from a server.	• It may offer services to many clients or end-user devices.
• It is less stable than the server OS.	• It is more stable than client OS.
• It is less efficient than server OS.	• It is highly efficient than client OS.
• Some examples of client OSs are Android, Windows, Mac, etc.	• Some examples of server OSs are Mac OS X, Windows Server, Red Hat Enterprise Linux, etc.

The roles of computer server

- A server stores, sends, and receives data. In essence, it "serves" something else and exists to provide services.
- A computer, software program, or even a storage device may act as a server, and it may provide one service or several.

Roles and Features are the tools that you need to install or activate in order to complete your IT Administration duties, without their installation you cannot do anything.

Thank you!!

For listening