


What is Virtualization

Counterpart of hardware to imitate a virtual machine within a physical machine. Virtualization uses software to generate an synopsis layer on computer hardware that make a single computers hardware component processors and more to be sever into multiple virtual machine. 

Types of virtualization

server-side virtualization

Server side virtualization software serves up virtual machines.

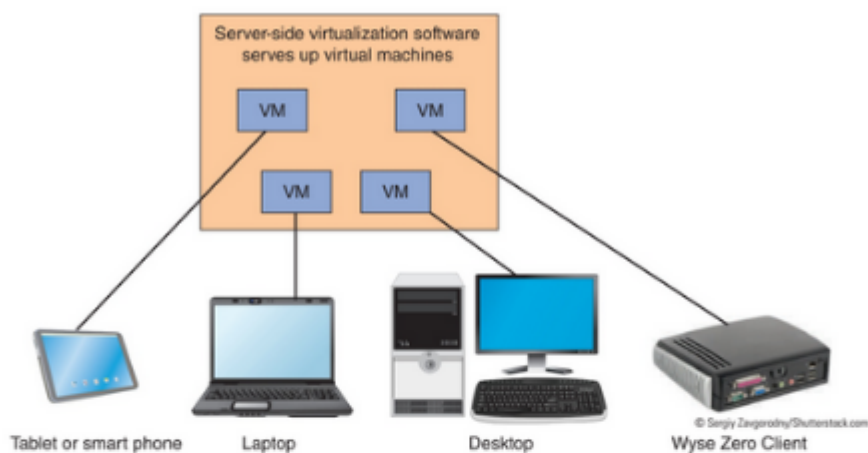


Figure 20-1 Server-side virtualization provides a virtual desktop to each user



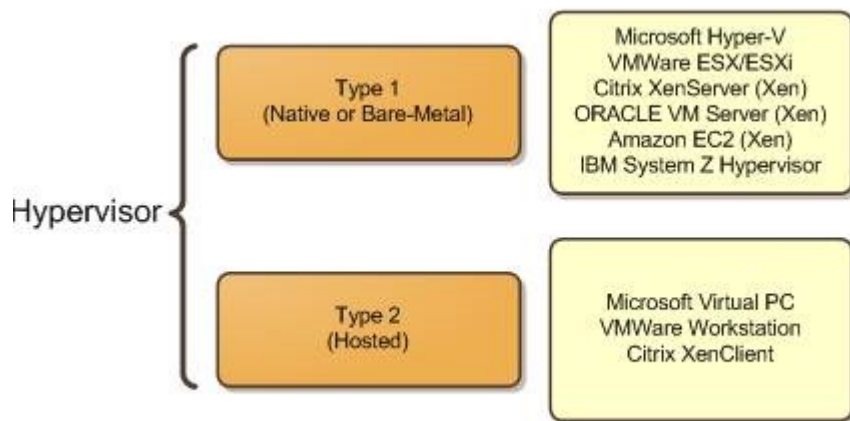
client-side virtualization

- software installed on a computer to manage virtual machine.
- Each VM has its own operating system installed.

Hypervisor:

- A hypervisor that allows the management of virtual machines.
- Hardware support
- capable CPU
- Enough storage

Two types of hypervisors



Virtualbox

- Is a powerful type 2 virtualization product for enterprise as well as home
- Open source software under GPL version 2
- Runs on windows, Linux, Macintosh, solaris



How to install virtualbox in windows 10

1. Download installer from [virtualbox.org](https://www.virtualbox.org).
2. Start installer

3. once installer is done,install extention pack
4. select the amount of ram
5. create virtual hard drive
6. select ISO
7. finish installing
8. turn on the start menu
- 9.

Installing Ubuntu server

ubuntu 20.04

Updating Ubuntu

• To update any Debian distro:

Update is used to download package information from all configured sources.

By terminating every command with a ; you can run multiple commands in a single line.

The -y option passes a yes answer to any question. Without this option apt will ask you if you want to install the upgrade. Using -y is optional and you should use it only if you are 100% sure about the upgrade.

Managing software and updates requires root privileges. Sudo allows you to run any command as the root user.

Apt is the program that we are using to manage software and updates.

upgrade is used to install available upgrades of all packages currently installed on the system from the sources configured via sources.list

```

19:57:51 (adrian@6752VL2 ~)
sudo apt update; sudo apt upgrade -y

```

- using ubuntu software update
-

Installing software

- Installation command examples
- Searching for software
- Deleting software
 - `sudo apt remove + package name`
 - Example:
 - `sudo apt remove vlc` will remove the vlc package. searching
- install option installs the specified package formula `sudo + apt + install + package name` some useful program
- install several single command
- remove several programs in a single command
- install and remove programs in a single command
- remove programs and all remaining traces

- search for all programs that matches the text quotes
- search aal programs about given a package
- search package only

Install several programs in a single command

```
sudo apt install firefox flameshot caffeine -y
```

Remove several programs in a single command

```
sudo apt remove firefox flameshot caffeine -y
```

Install and remove programs in a single command

```
sudo apt install firefox+ flameshot- caffeine- vlc+
```

Remove programs and all remaining traces

```
sudo apt purge firefox+ flameshot- caffeine- vlc+
```

Search for all programs that matches the text in quotes

```
apt search "web browser"
```

Search for information about a given package including dependencies.

```
apt-cache search firefox
```

Search a package name only.

```
apt search -n firefox
```

- Apt works using the list of repositories in the `/etc/apt/sources.list`
- You can add more repositories (or remove them) using the command `sudo apt edit-sources`
- **Edit-sources** opens the `sources.list` file using your default text editor. If more than one CLI text editor is available, edit-sources allows you to choose.

Basic linux commands

Commands to move around the filesystem

- ★ The **pwd** command – used for displaying the current working directory
- ★ The **cd** command – used for changing the current working directory. When no directory is given, **cd** changes the current working directory to the home directory of the current user.
- ★ The **ls** command – used for displaying all the files inside a given directory. When no directory is specified, **ls** displays the files in the current working directory
 - ★ **dir**, **tree**, and **exa** are commands similar to **ls**.

mkdir

- Description: used for creating directories
- Usage: `mkdir + option + new directory path`
- Examples:
 - create a directory in the present working directory
 - `mkdir Wallpaper/`
- Create a parent directory and child directory
 - `mkdir Wallpaper/cars/new`

Managing files and directories

Creating directories

The mkdir command

- **mkdir** is used for creating a single directory or multiple directories.
- To create a directory with **mkdir** type: **mkdir + the name of the directory.**
- To create multiple directories, separate each directory name with a space.
- You can create directories in the present working directory or in a different directory by using an absolute path or relative path.
- You can create a directory with a space in its name using the escape character (\) or by surrounding the name in quotation marks (' ' or " ").
- If you try to create a directory that already exists, you will get an error notifying you that the file already exists.

