



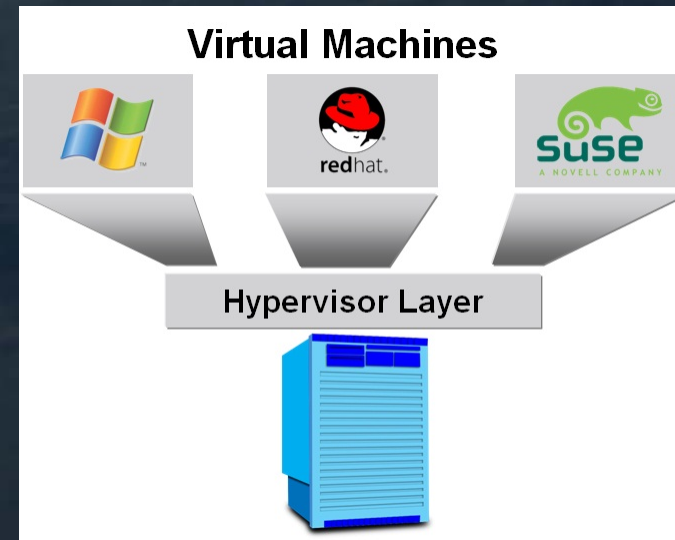
Operating Systems

Virtualisation

What is Virtualisation?

💻 The act of creating a virtual (rather than actual) version of a computer, including, but not limited to :

- 🖱️ virtual hardware platform
- 🖱️ operating system (OS)
- 🖱️ storage device
- 🖱️ network resources



Why Virtualise?

Biz viewpoint

- 🖥️ **Maximise hardware usage**
 - 🖱️ **Example: Improve CPU utilisation rate**
- 🖥️ **Streamline hardware requirements**
- 🖥️ **Save cost and energy**
- 🖥️ **Reduce office space usage**
- 🖥️ **Improve disaster recovery**
- 🖥️ **Extend life of older applications**
- 🖥️ **Simplify installation, testing,**
- 🖥️ **Increase availability and uptime**



Supercomputers are in action

Why Virtualise?

Consumer's viewpoint

OS+Apps on the Go

- ☞ Bring your own environment, profiles, apps.
- ☞ Boot up from any compatible computer.

Safe Surfing

- ☞ VMs are easily replicated and are dispensable.
- ☞ Surf the internet, test software within a VM.
- ☞ Virus/Malware/Spyware attacks only the VM, not host machine.

Familiarisation / Training

- ☞ When you need to learn another OS+Apps.

Testing / Demo

- ☞ Hardware/Software/Driver testing or demonstrations.

Preserve Legacy Apps

- ☞ Run older Apps in older OSes.

It's fun to try,
spoilt also
never mind!

Types of Virtualisation

 Hardware

 Desktop (remote)

 OS / Application / Workspace

 Memory

 Service

 OS / App

 Data/Database

 Storage

 Network

Examples of Virtualisation

Hardware

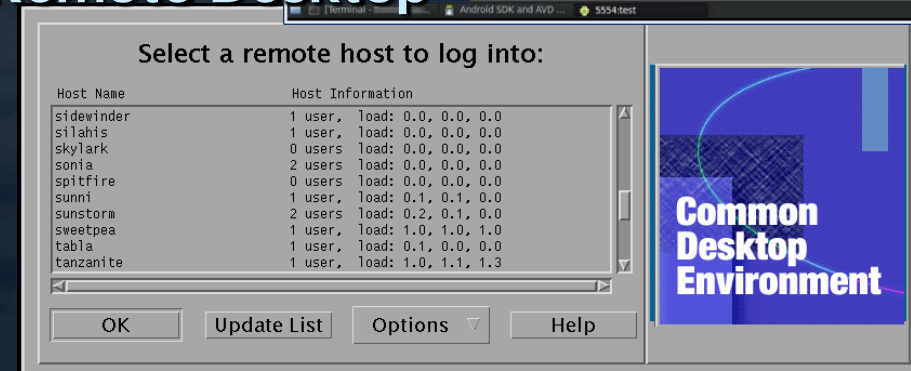
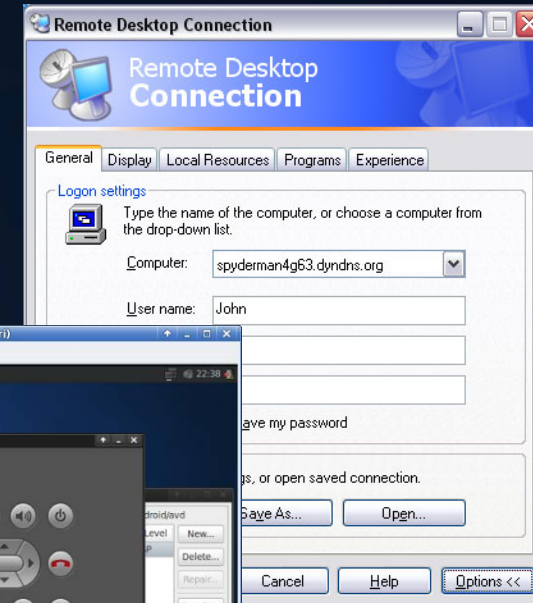
- 🖱️ Emulators for Android/Windows Phone development.
- 🖱️ Virtual computers for OS+Apps.

Memory

- 🖱️ OS virtual memory
 - 💾 Windows pagefiles.
 - 💾 Linux swap.
- 🖱️ LiveCD/LiveDVD RAMdrive.




Desktop

- 🖱️ Windows/Apple/Chrome Remote Desktop
- 🖱️ Linux KRDC
- 🖱️ Splashtop
- 🖱️ VNC



Virtualisation Software

VMware

-  **Player**
-  **Workstation**
-  **Fusion (Mac)**

Oracle

-  **VirtualBox**




Microsoft

-  **VirtualPC**
-  **Xpmode**




Parallels

-  **Desktop (Mac)**
-  **Access (Ipad)**

Types of OS supported by VM

-  **All MS Windows (3.1 up)**
-  **Linux (9 brands)**
-  **Solaris**

Requirements for best performance

-  **2GB RAM or more**
-  **Pentium and above processor**
-  **CPU + vt**

Hardware Virtualisation



HOST MACHINE

Real physical computer
running an OS (**host** OS).

VIRTUAL/GUEST MACHINES

Virtual computers.
Each running an OS (**guest** OS).

How to Virtualise?

Host Machine (physical) used:

- 🖱️ Wintel = Windows + Intel compatibles.
- 🖱️ Meets min. hardware requirements.
- 🖱️ 8GB RAM or more

Choose and install a Hypervisor

- 🖱️ Example: VMware Player / Fusion
- 🖱️ Others like Virtualbox or VMware Workstation (paid).

Need to install guest OS?

- 🖱️ Yes – need installer disk
 - 💾 Example: Windows 7 installer disk or ISO image.
- 🖱️ No – need LiveCDs/LiveDVDs
 - 💾 Example: Ubuntu, Fedora, Puppy etc.

Enable Integration features if available

- 🖱️ Example: shared folders, seamless mouse etc.