

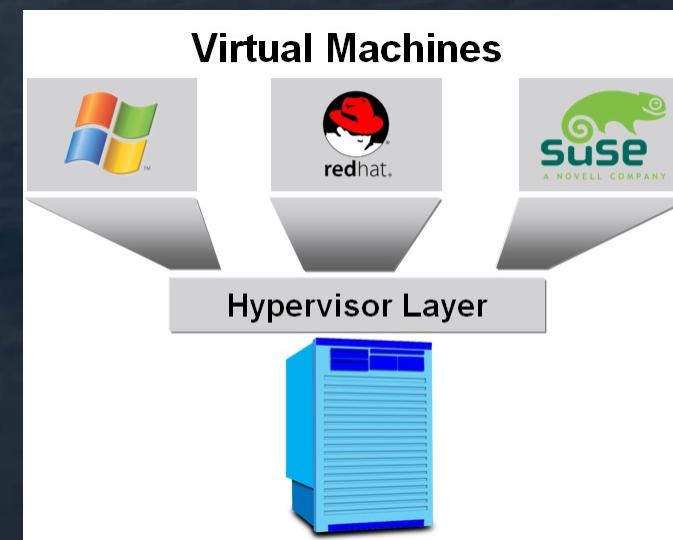
The background of the slide features a dramatic, dark sky filled with heavy, grey clouds. A bright, circular light source, resembling the sun or moon, is positioned in the upper center, casting a soft glow through the clouds.

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.

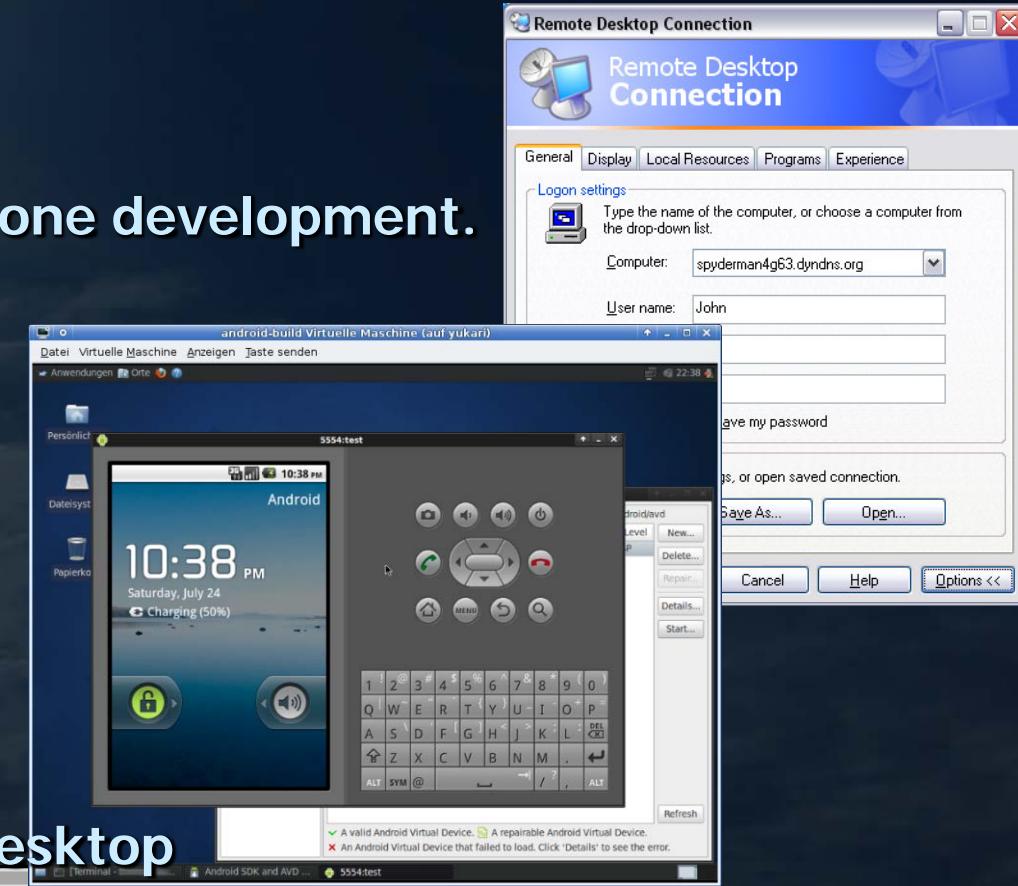
## Desktop

- ↪ 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.