

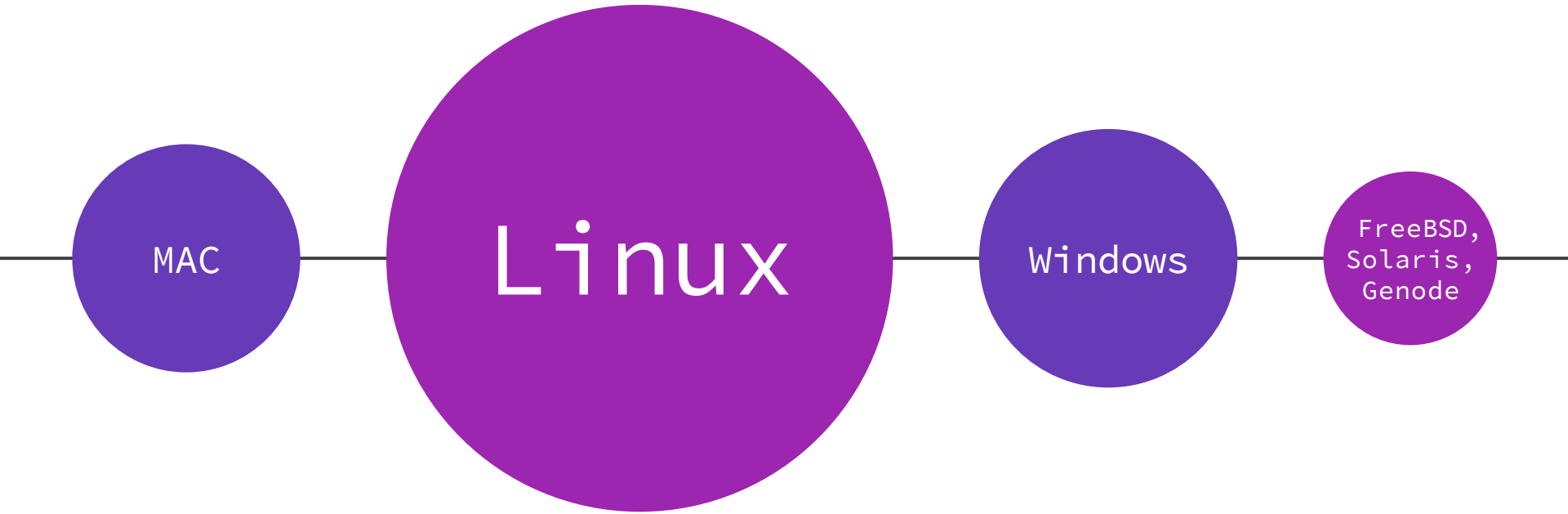
Oracle VirtualBox



Overview

VirtualBox is a **cross-platform virtualization application**. It installs on your existing Intel or AMD-based computers, whether they are running Windows, Mac, Linux or Solaris operating systems. Secondly, it extends the capabilities of your existing computer so that it can run multiple operating systems (inside multiple virtual machines) at the same time. So, for example, **you can run Windows and Linux on your Mac, run Windows Server 2008 on your Linux server, run Linux on your Windows PC, and so on**, all alongside your existing applications. You can install and run as many virtual machines as you like -- **the only practical limits are disk space and memory.**

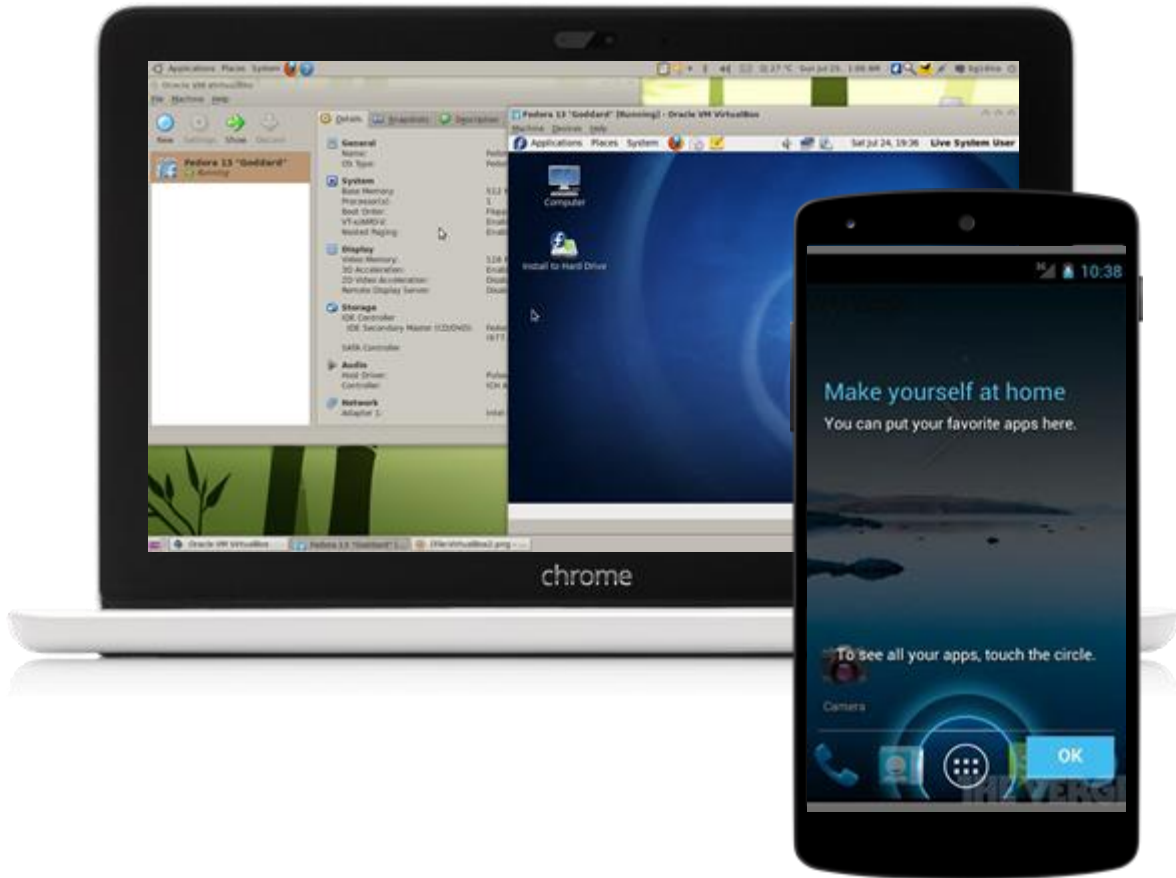
Supported OS's



Main Benefits

Running multiple operating systems simultaneously.

VirtualBox allows you to run more than one operating system at a time. This way, you can run software written for one operating system on another (for example, Windows software on Linux or a Mac) without having to reboot to use it. Since you can configure what kinds of "virtual" hardware should be presented to each such operating system, you can install an old operating system such as DOS or OS/2 even if your real computer's hardware is no longer supported by that operating system.



Installing Windows 10 on Linux

Requirements:

- Internet connection with good speed or already downloaded Windows 10 ISO
- At least 4GB of RAM. The more RAM you got, the better it is.
- Around 20 GB of free storage for installing Windows 10



DOWNLOAD

ISO

Windows 10

Step 1: Download Windows 10 ISO

The first and foremost step is to download Windows 10 ISO. You can download Windows 10 32 bit or 64 bit, depending upon your system.

Step 2: Install VirtualBox in Ubuntu and Linux Mint

VirtualBox is available by default in Ubuntu and Linux Mint. Install it is very easy. All you need to do is to use the command below:

```
sudo apt-get install virtualbox
```

Step 3: Install Windows 10 in VirtualBox

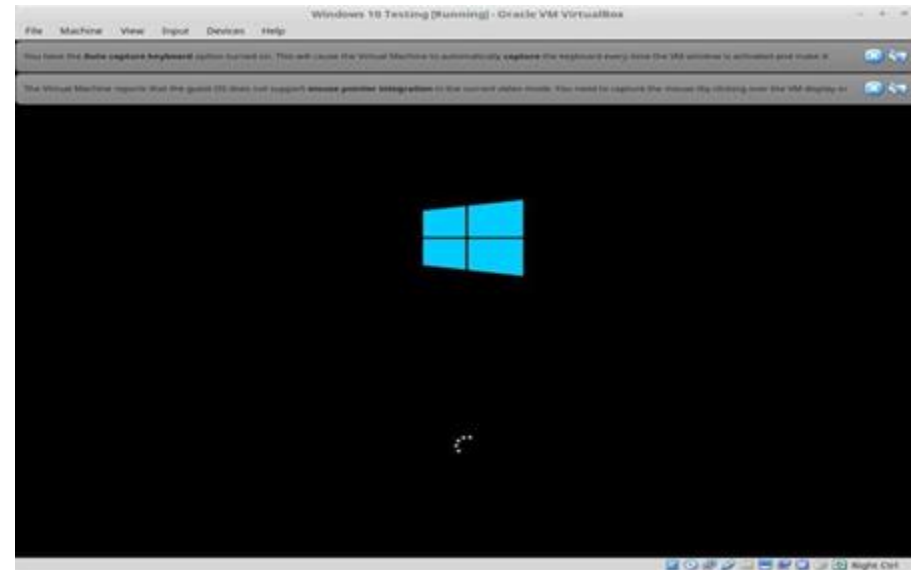
Start VirtualBox. Click on new:

Name the VM anything worth remembering. Also select the Operating System and version, in this case Windows 10 and 64 bit for me.

Choose RAM size. The recommended RAM size for 64 bit Windows 10 is 2 GB while for 32 bit Windows 10, it's 1 GB. But I suggest to have a little more than that for a smoother experience.

Next is the size for the virtual machine. If you are crunch on space, choose the recommend size else have it little more than the recommended size.

Finalize the things around the installation. You can choose where to create the virtual disk. Default location (Home directory) will work as well. Now you should see the Windows 10 ISO listed under the Storage. Press OK. You should be back to the main screen of Oracle VirtualBox. You have everything ready now. Next step is to install Windows 10. Click on Start from the main screen:



Terminology OF Virtualization

Host operating system (host OS).

This is the operating system of the physical computer on which VirtualBox was installed.

Guest operating system (guest OS).

This is the operating system that is running inside the virtual machine.

Virtual machine (VM).

This is the special environment that VirtualBox creates for your guest operating system while it is running.

Features & History

VirtualBox By Oracle

Features:

- **Portability.** VirtualBox runs on a large number of 32-bit and 64-bit host operating systems (again, see Section 1.4, "Supported host operating systems" for details).
- VirtualBox is a so-called "hosted" hypervisor (sometimes referred to as a "type 2" hypervisor). Whereas a "bare-metal" or "type 1" hypervisor would run directly on the hardware, VirtualBox requires an existing operating system to be installed. It can thus run alongside existing applications on that host.
- To a very large degree, VirtualBox is functionally identical on all of the host platforms, and the same file and image formats are used. This allows you to run virtual machines created on one host on another host with a different host operating system; for example, you can create a virtual machine on Windows and then run it under Linux.
- In addition, virtual machines can easily be imported and exported using the Open Virtualization Format (OVF, see Section 1.14, "Importing and exporting virtual machines"), an industry standard created for this purpose. You can even import OVF files that were created with a different virtualization software.
- **No hardware virtualization required.** For many scenarios, VirtualBox does not require the processor features built into newer hardware like Intel VT-x or AMD-V. As opposed to many other virtualization solutions, you can therefore use VirtualBox even on older hardware where these features are not present. The technical details are explained in Section 10.3, "Hardware vs. software virtualization".
- **Guest Additions: shared folders, seamless windows, 3D virtualization.** The VirtualBox Guest Additions are software packages which can be installed *inside* of supported guest systems to improve their performance and to provide additional integration and communication with the host system. After installing the Guest Additions, a virtual machine will support automatic adjustment of video resolutions, seamless windows, accelerated 3D graphics and more. The Guest Additions are described in detail in Chapter 4, *Guest Additions*.
- In particular, Guest Additions provide for "shared folders", which let you access files from the host system from within a guest machine.
- **Great hardware support.**

Limitations

- VirtualBox has a very low transfer rate from and to USB2 devices.
- Despite being an open source product, some of its features are available only in a [binary](#) form under a commercial license (see "VirtualBox Extension Pack" below).
- USB3 devices pass through is not supported by older guest OSes like Windows Vista and [Windows XP](#) due to the lack of drivers.
- Guest Additions for MacOS are unavailable at this time.
- Guest Additions for Windows 9x (Windows 95, [98](#) and ME) are not available. This results in poor performance due to the lack of graphics acceleration with the default 16-bit color mode (external third-party software is available to enable support for 32-bit color mode, resulting in better performance).
- EFI support for guest systems is limited (incomplete EFI is supported - full support for EFI or support for UEFI is unavailable).
- Only older versions of DirectX and OpenGL passthrough are supported (the feature can be enabled using the 3D Acceleration option for each VM individually).
- Video RAM is limited to 128 MiB (256 MiB with 2D Video Acceleration enabled) due to technical difficulties (merely changing the [GUI](#) to allow the user to allocate more video RAM to a [VM](#) or manually editing the configuration file of a [VM](#) wouldn't work and will result in a fatal error).

History

Oracle VM VirtualBox (formerly Sun VirtualBox, Sun xVM VirtualBox and Innotek VirtualBox) is a free and open-source hypervisor for x86 computers currently being developed by Oracle Corporation. Developed initially by Innotek GmbH, it was acquired by Sun Microsystems in 2008 which was in turn acquired by Oracle in 2010.

The End

Maryam Adel

VirtualBox Seminar

