

# VIRTUALBOX

Oracle VM VirtualBox, or simply VirtualBox, was originally developed by German software company Innotek, which was acquired by Sun Microsystems in 2008. Sun, in turn, was acquired by Oracle in January 2010. VirtualBox supports most common virtualisation features extremely well, and some uncommon ones as well.

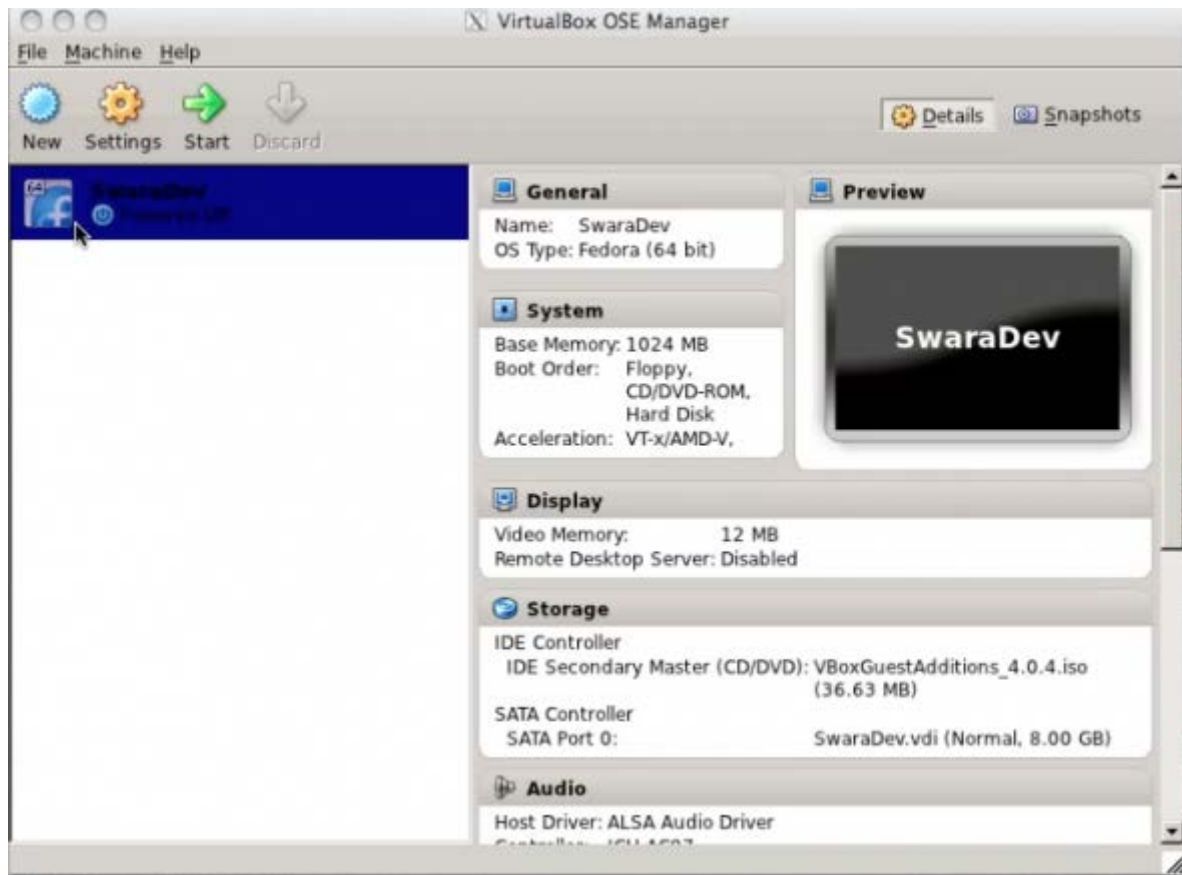


Figure 5: VirtualBox Manager

## Creating, editing and managing VMs

Creating VMs on VirtualBox is at least as easy as on VMWare Player. The edge that VirtualBox has over VMWare Player in this regard is a wider range of options to choose from, with regard to virtual hardware. For example, you can choose what model of network card should be emulated (PCNet PC II and III, Intel PRO/1000 and virt-io), as well as the disk type (SCSI, SAS or IDE).

VirtualBox allows the addition of virtual hard disks after creation, a feature missing on VMWare Player. VirtualBox also supports several disk formats, including the VMWare VMDK, which makes it easy for users to migrate to it. You could simply boot your VMWare disk on VirtualBox (some

limitations on the VMDK type do apply) and test out the functionality for yourself before porting over, if at all required.

VirtualBox provides the same networking modes as VMWare Player (Bridged, NAT and Host Only), but without network connectivity between the guest and the host in NAT mode. To reach the guest from the host, or vice-versa, you need to set up a second interface with host-only or bridged networking.

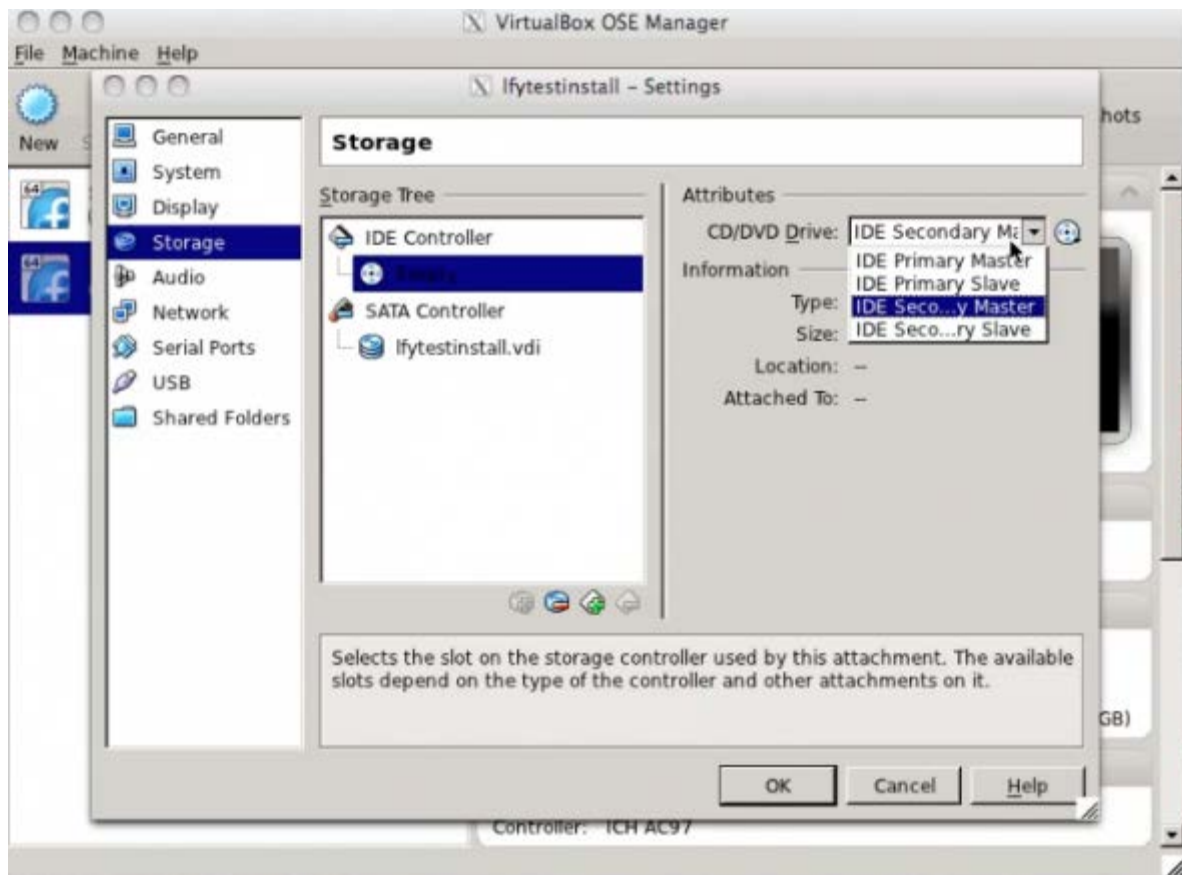


Figure 6: VM Hardware Settings on VirtualBox

## Device support

In this department, VirtualBox lags somewhat behind VMWare Player. USB 2.0 support is only included as a closed source extension. VirtualBox also doesn't have the same class of printer support as VMWare does, which means you have to install drivers for all your printers in the guest OS.

## Other features

VirtualBox fully supports snapshots, including multiple snapshots and branching of snapshots. This means you can use VirtualBox to maintain several versions of the same VM. The shared folders

work extremely well, as does the clipboard integration, making VirtualBox all the more desirable as a desktop virtualisation solution.

Live migration is supported between non-homogeneous hosts, something that even VMWare and Citrix enterprise hypervisors struggle with. While this may not be something the average home user would use, from a systems design standpoint, this is definitely interesting.

VirtualBox also officially (albeit experimentally) supports Mac OSX guests — and that too, without any hacks on the OSX DVD!

## Installation

VirtualBox is installable from official software repositories of most common Linux distros, which means that it's downloaded from the closest mirror, making for a relatively quick download. Once the default distro installer is done with the installation (which is usually running a single command), there are no additional steps required to get the software up and running.

## Administration

VirtualBox comes with a great administration interface that allows users to create, modify and manage VMs. Command-line intervention is usually only required for very advanced experiments. Most operations that an administrator would need are available and easy to access. Some of the settings, like the hard-disk-management page, are somewhat hard to find — but overall, the platform is extremely easy to run and manage.

## Look and feel

The look and feel of VirtualBox is comparable to VMWare's in terms of the smoothness of the experience. Mouse-pointer integration is smooth, and VirtualBox is fairly verbose about what it is going to do with regard to the mouse, even without the guest additions installed in the VM. Things like scaling and resizing of the VM display to fit the application window are adequate, even if not in the same league as VMWare.

## Performance

One of the major distinguishing features of VirtualBox is its claim that it does no para-virtualisation. In fact, VirtualBox and KVM seem to be at loggerheads over the subject. VirtualBox' site says: "VirtualBox is [also] different from so-called 'para-virtualisation' solutions [such as Xen], which require that the guest operating system be modified." On the other hand, KVM says: "So-called 'full virtualisation' is a nice feature because it allows you to run any operating system virtualised. However, it's slow because the hypervisor has to emulate actual physical devices such as RTL8139 network cards. This emulation is both complicated and inefficient."

Religious debates aside, while libvirt (KVM's almost-but-not-quite para-virtualisation library) provides phenomenal performance (see Table 1 for comparison), VirtualBox is not too far behind. Moreover, despite the comments about para-virtualisation on the site, VirtualBox also supports the KVM virt-io standard for the virtual network adapter, which allows it to provide almost comparable transfer speeds to KVM. However, virt-io requires the guest to be virtualisation-aware. So while this works out-of-the-box for newer Linux distros with libvirt included, Windows systems will require an installation of the virt-io driver.

## Licensing and support

VirtualBox comes as an open source core system supplemented by proprietary, pre-compiled extension packs for additional functionality, such as RDP, PXE boot and USB 2.0 support. The extension packs are released under the Oracle PUEL (Personal Use and Evaluation License), while the core is released under GPLv2. All of the components are free of cost, with the proviso that the extension packs will be used under the guidelines of the PUEL. Most of VirtualBox's features are available in the open source version. The only notable absentee is USB 2.0 support.

The VirtualBox community is extremely vibrant and responsive, and solutions for most user issues are merely a Google search away.

Source : <http://www.opensourceforu.com/2011/09/vmware-player-virtualbox-kvm-virtualization-comparative-review/>