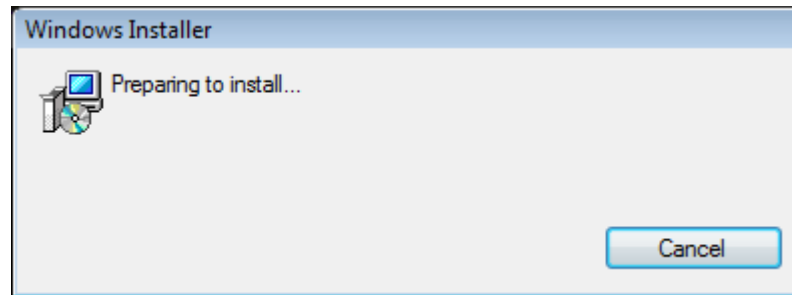
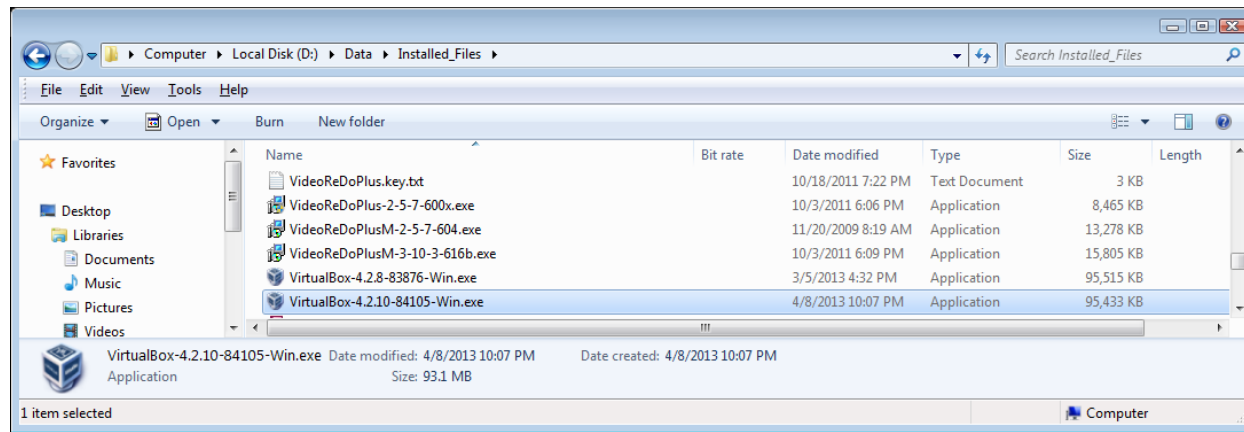


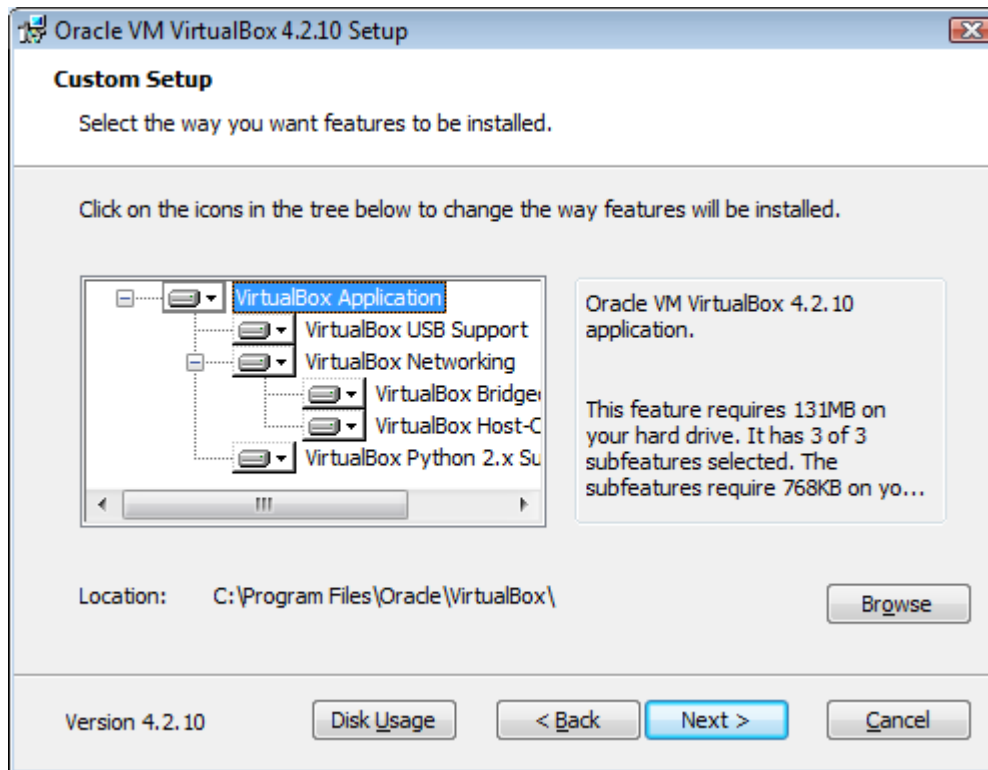
I hate using screen shots. This is a major failure IMHO.

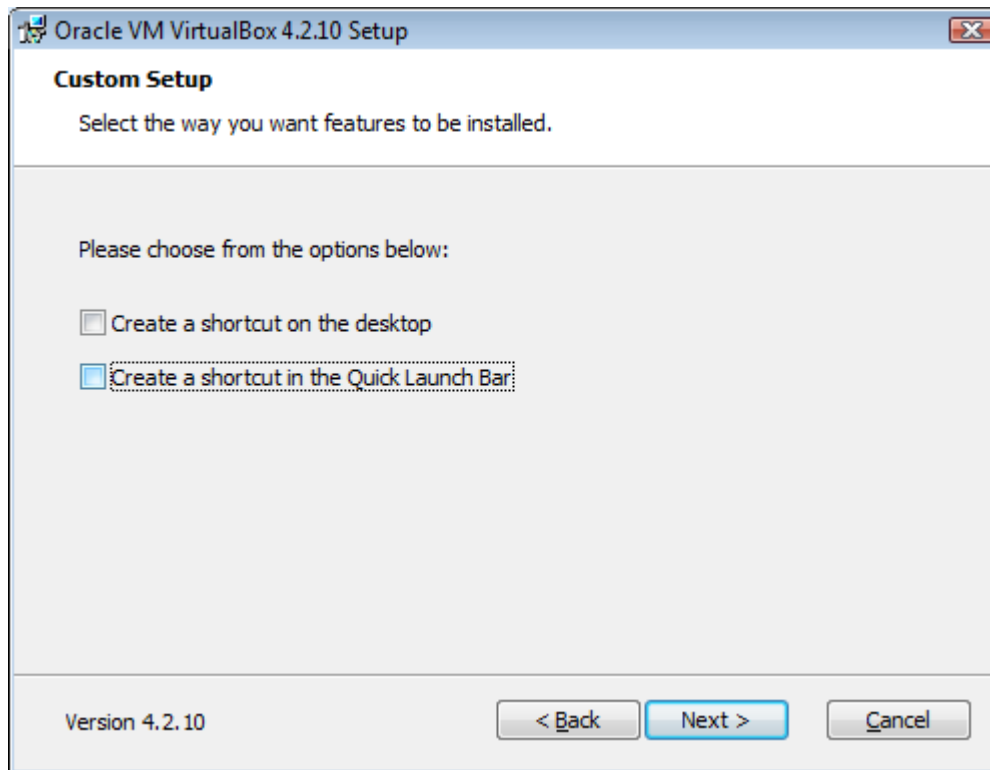
Settings should be easily controlled via an easily reproduceable CLI interface - almost always.

Still, this is the easiest way to share this specific knowledge.

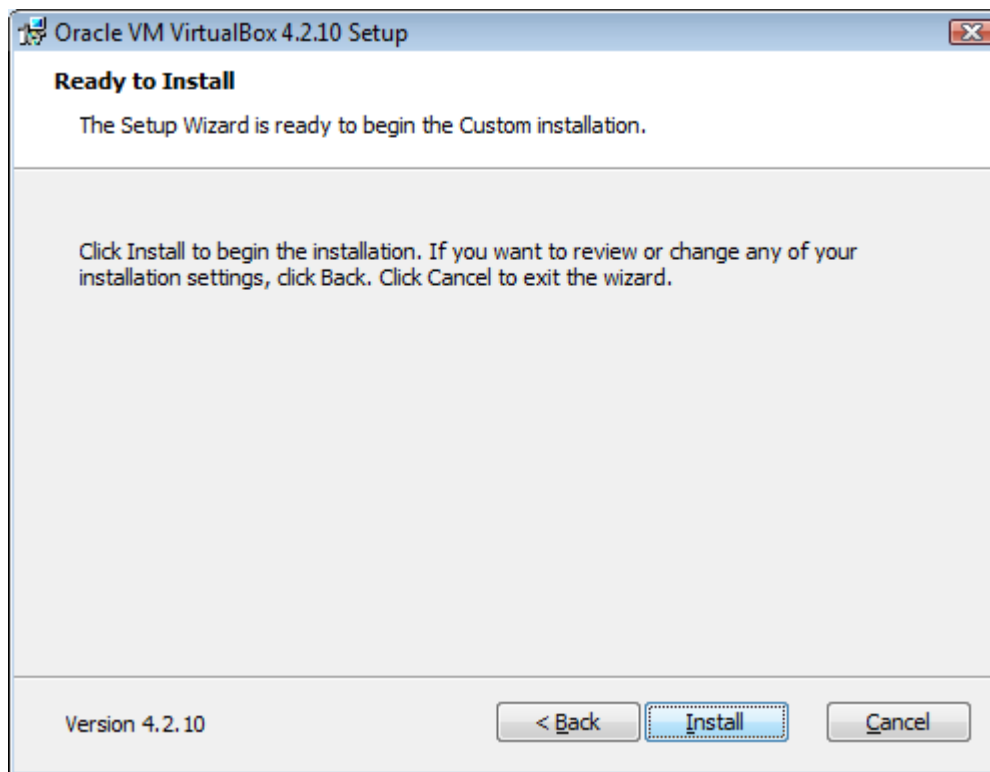


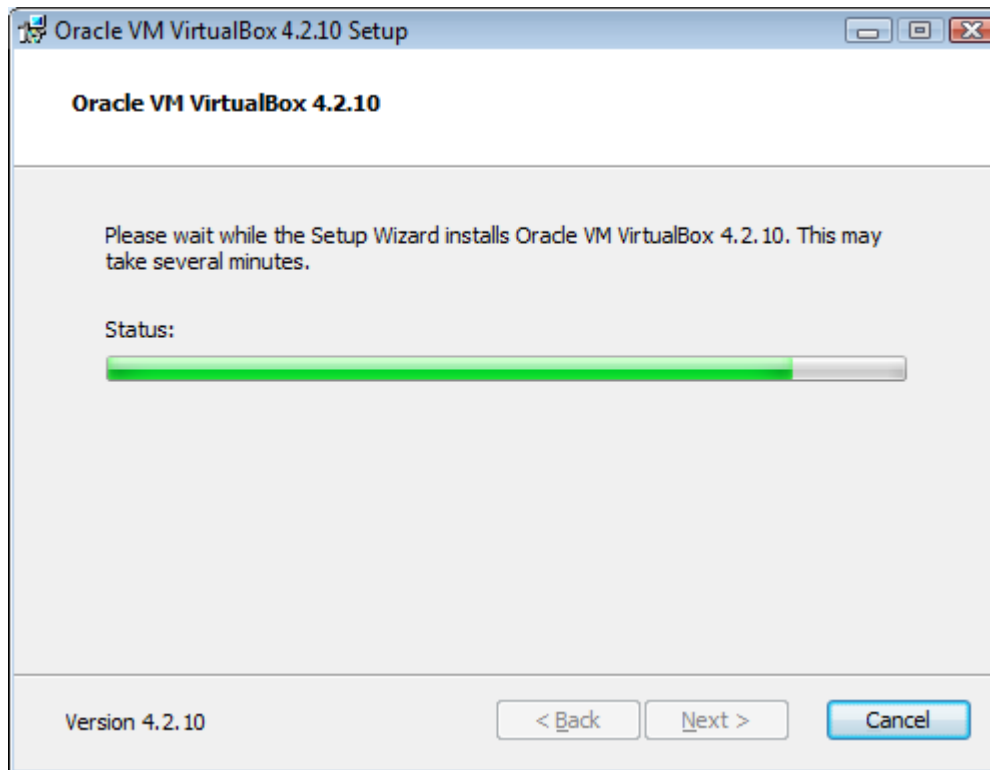


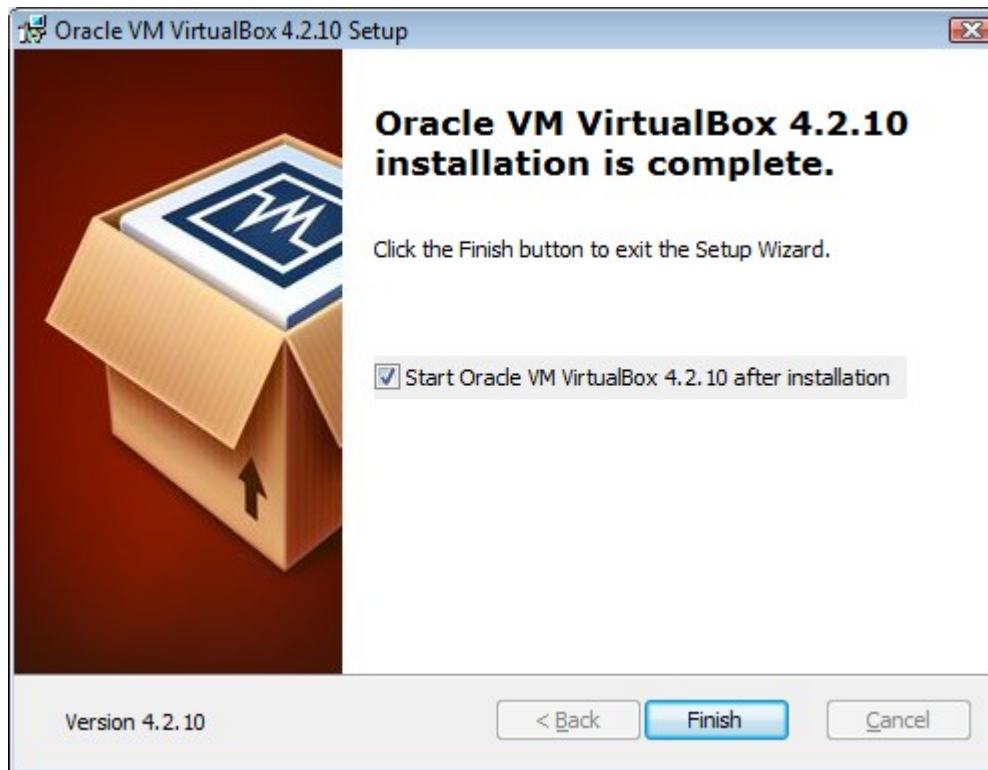


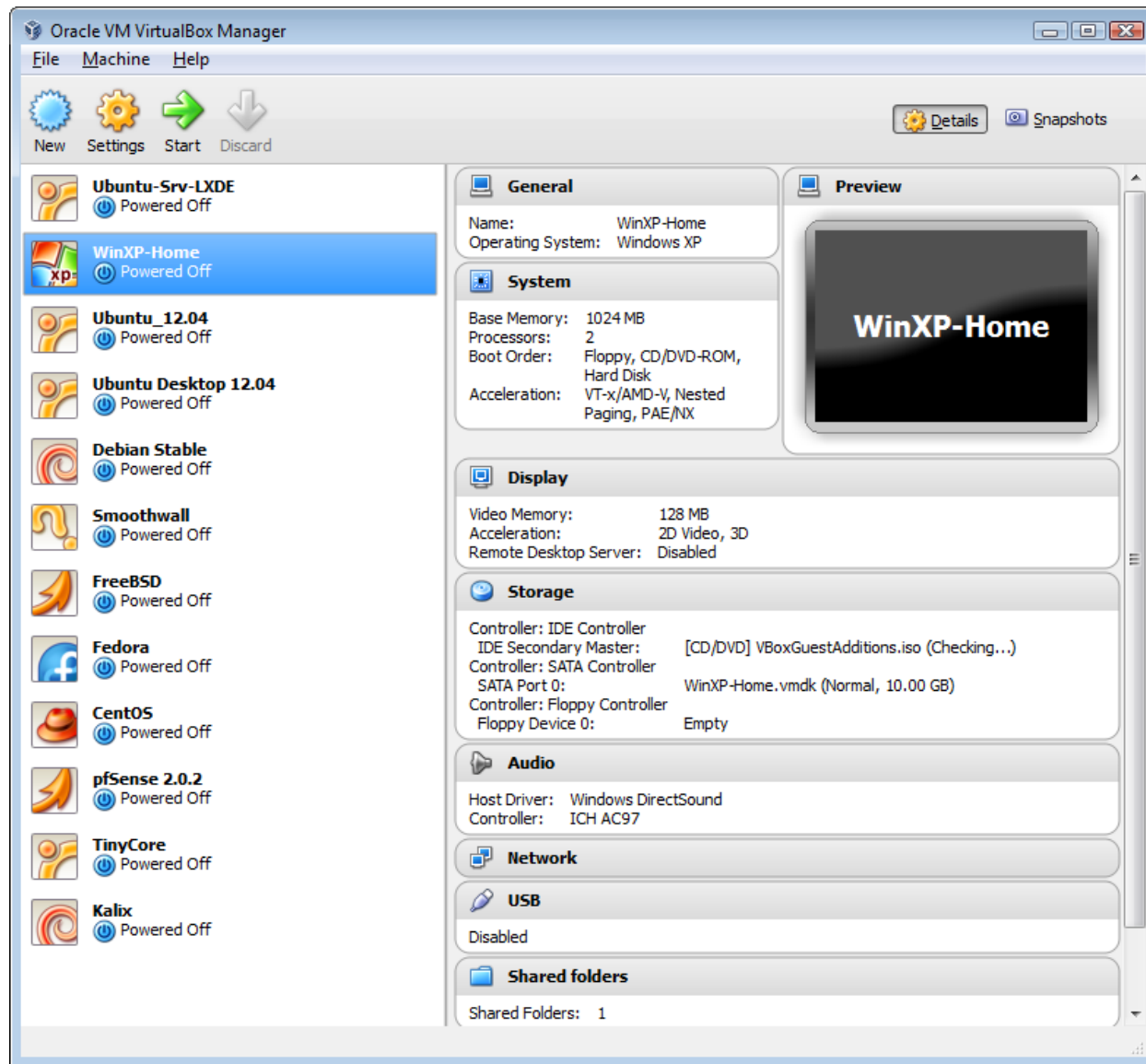




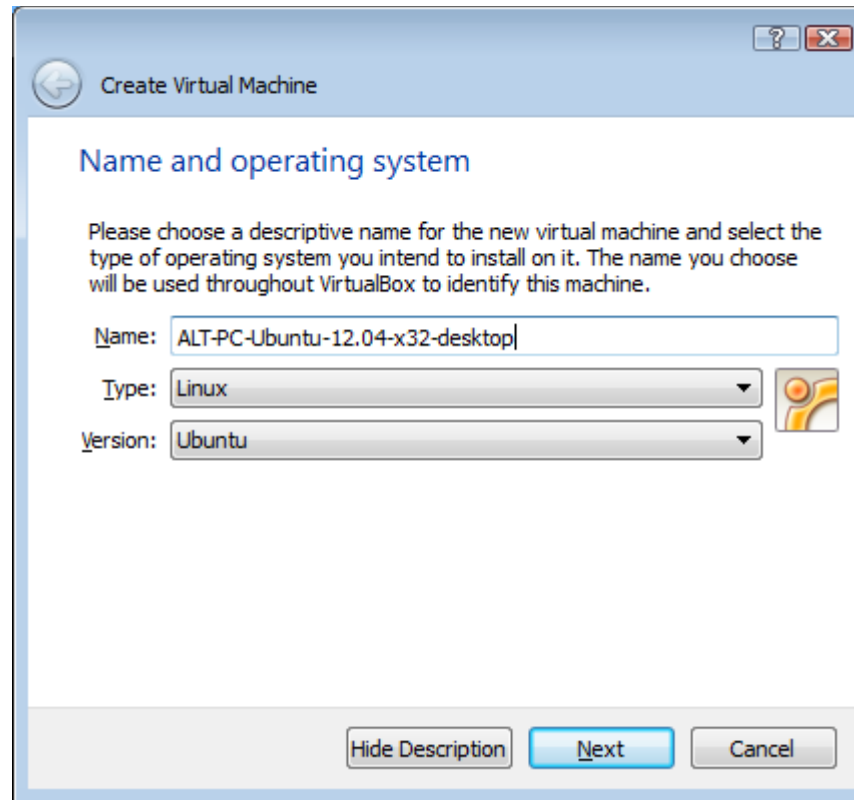








**Next we create a new virtual machine ClientOS
for our Ubuntu desktop install.**

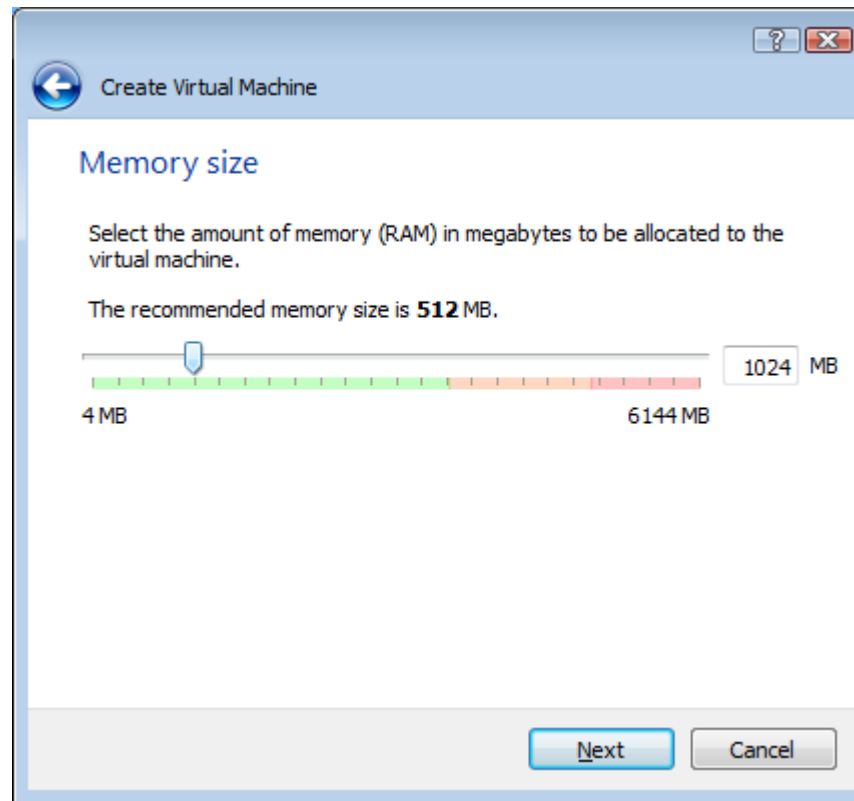


File -> New

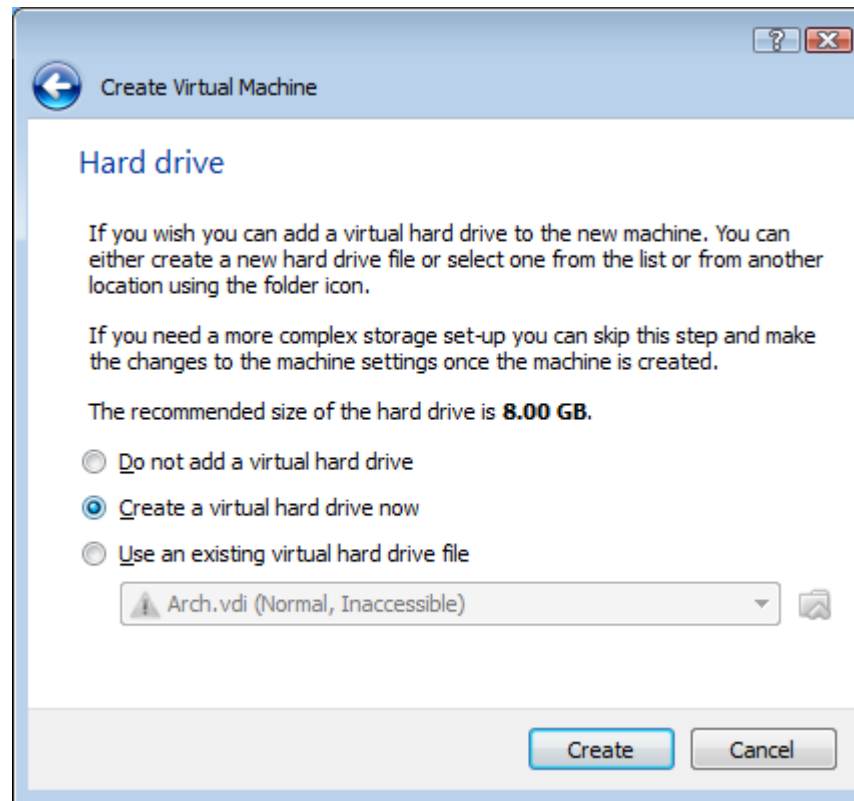
Dyslexic s/ALT/ATL/

Use Descriptive Names – avoid spaces in all filenames.

New Linux users should stay with LTS releases - 12.04 (Mint/Ubuntu)



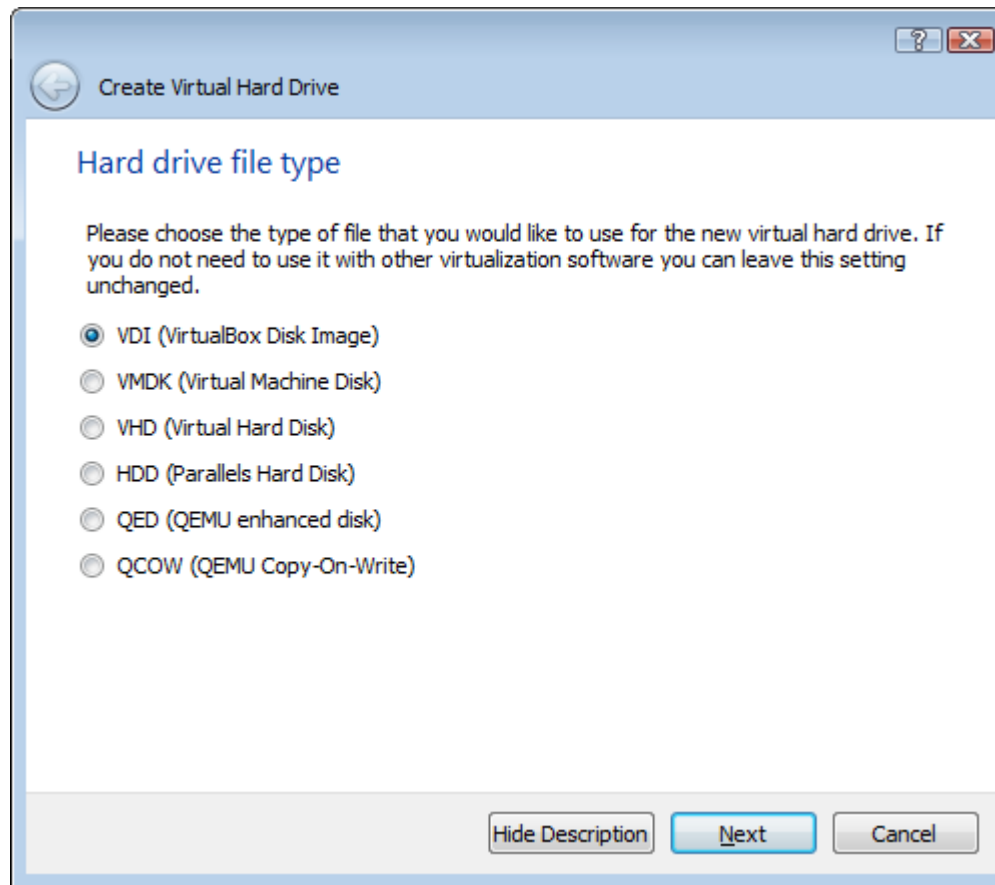
Allocate only what you need.
Do not waste.



New HDD - for a NEW OS install.

Do not add a vHDD for a LiveCD install - suitable for online banking where you want to boot off a known, unchanged, OS.

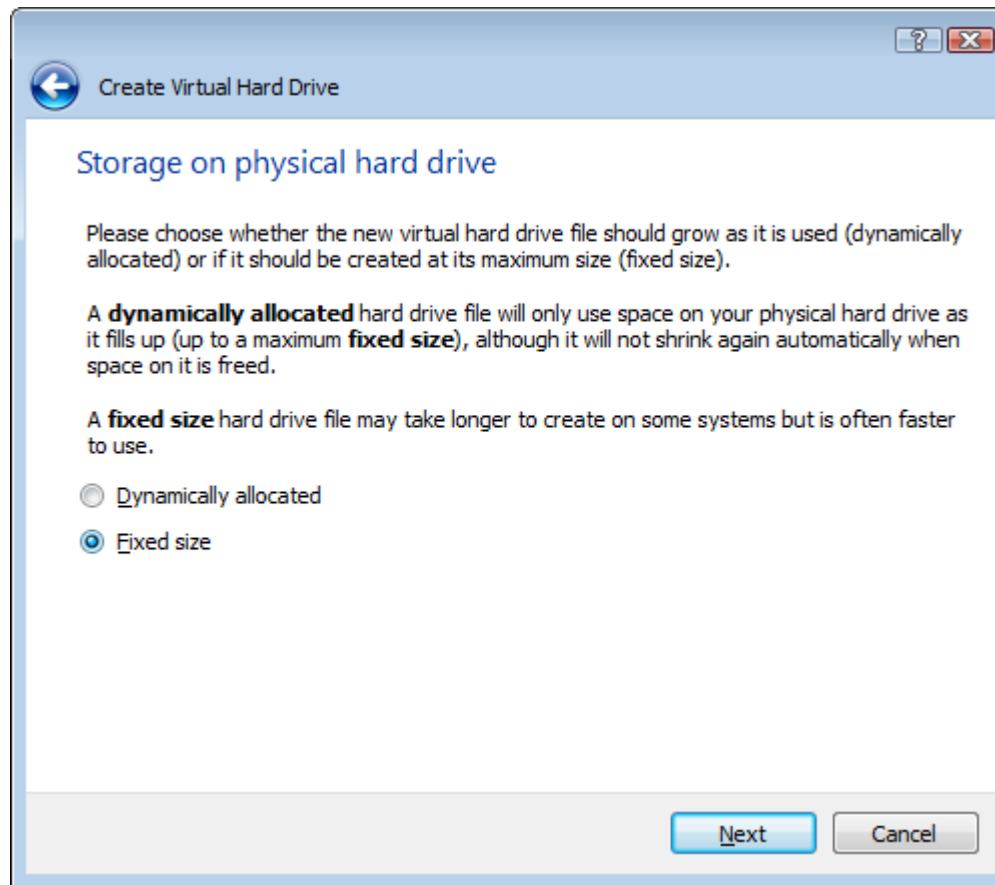
TinyCore Linux is perfect for this.



VDI is the native VirtualBox format.

I use it unless I have a good reason not to.

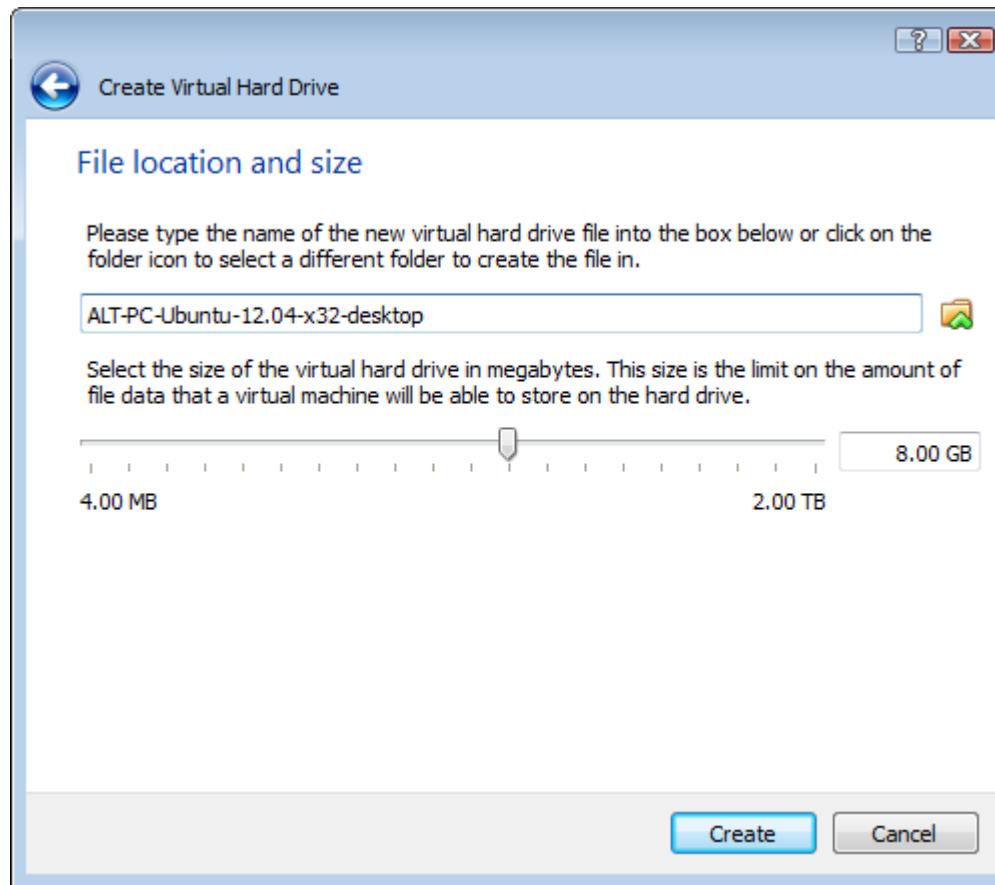
Can convert between these later using **VBoxManage CLI** program.



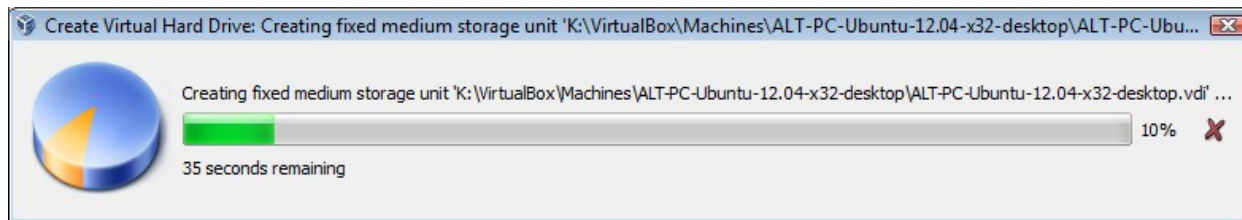
Dynamic will save storage, but is at least 100% slower on spinning HDDs.

Really only useful for play areas or SSDs.

I always, always, always use **Fixed - completely reallocated virtual HDDs**.
Extremely important to get good performance from a VM.

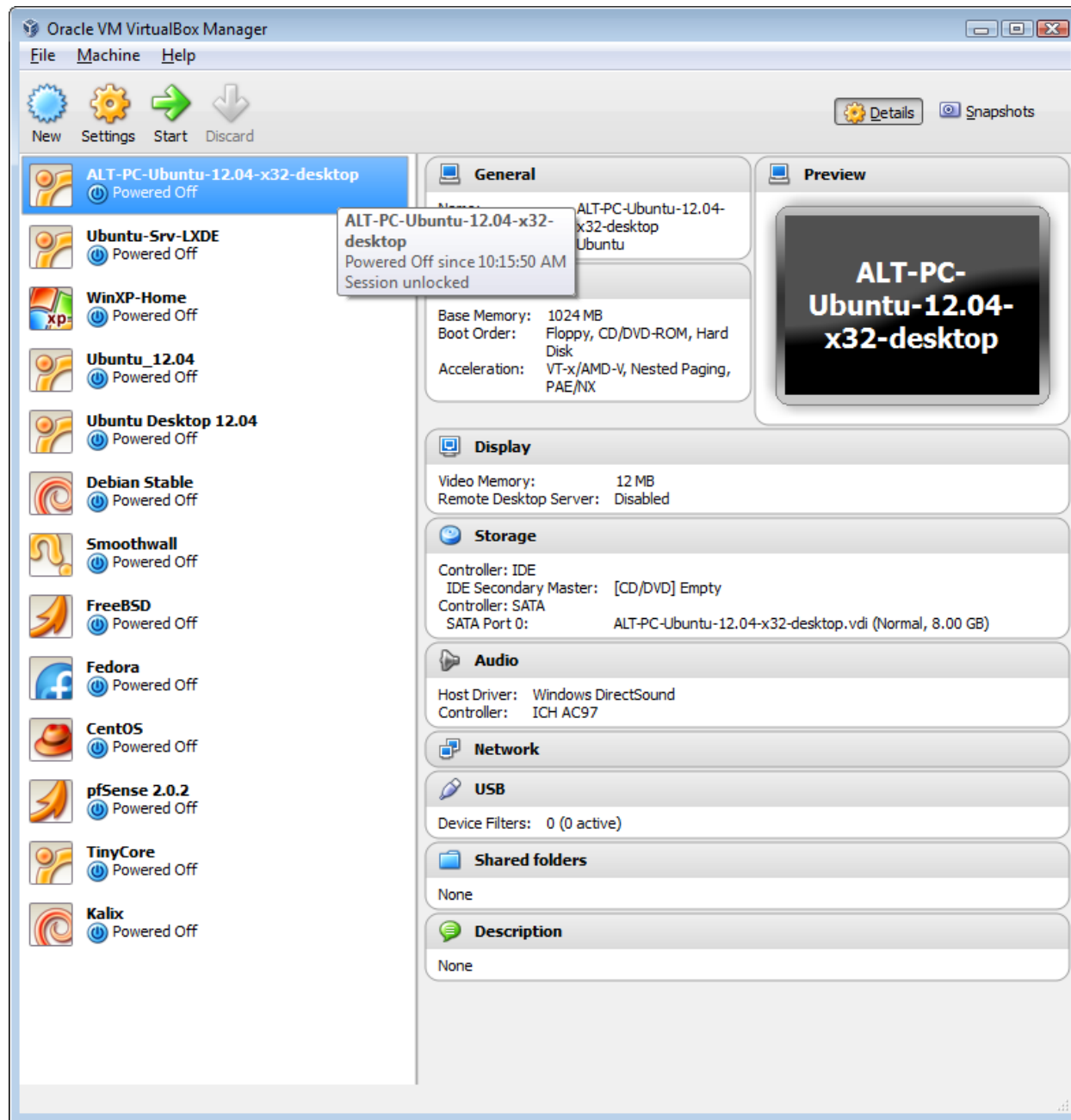


8GB is fine when just starting.
My daily use Linux/Ubuntu desktop is just 14GB in size.
Keep large files elsewhere ... on the network or hostOS.
Backups are smaller plus lots of other reasons.



Creating a fully allocated virtual HDD takes a few to 20 minutes depending on your system speed.

This took 2 minutes on my Core i5 laptop with a **WD Blue HDD**.

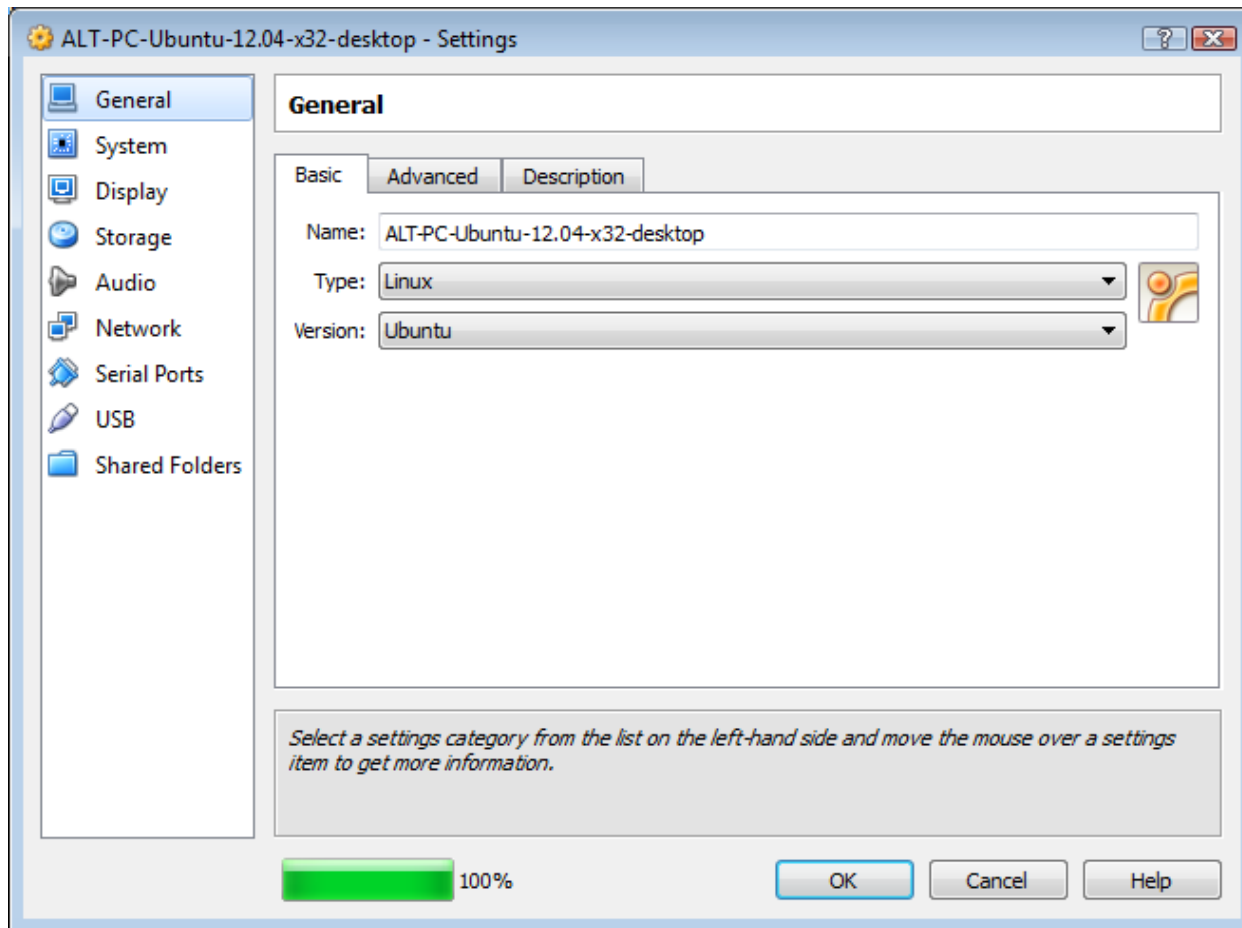


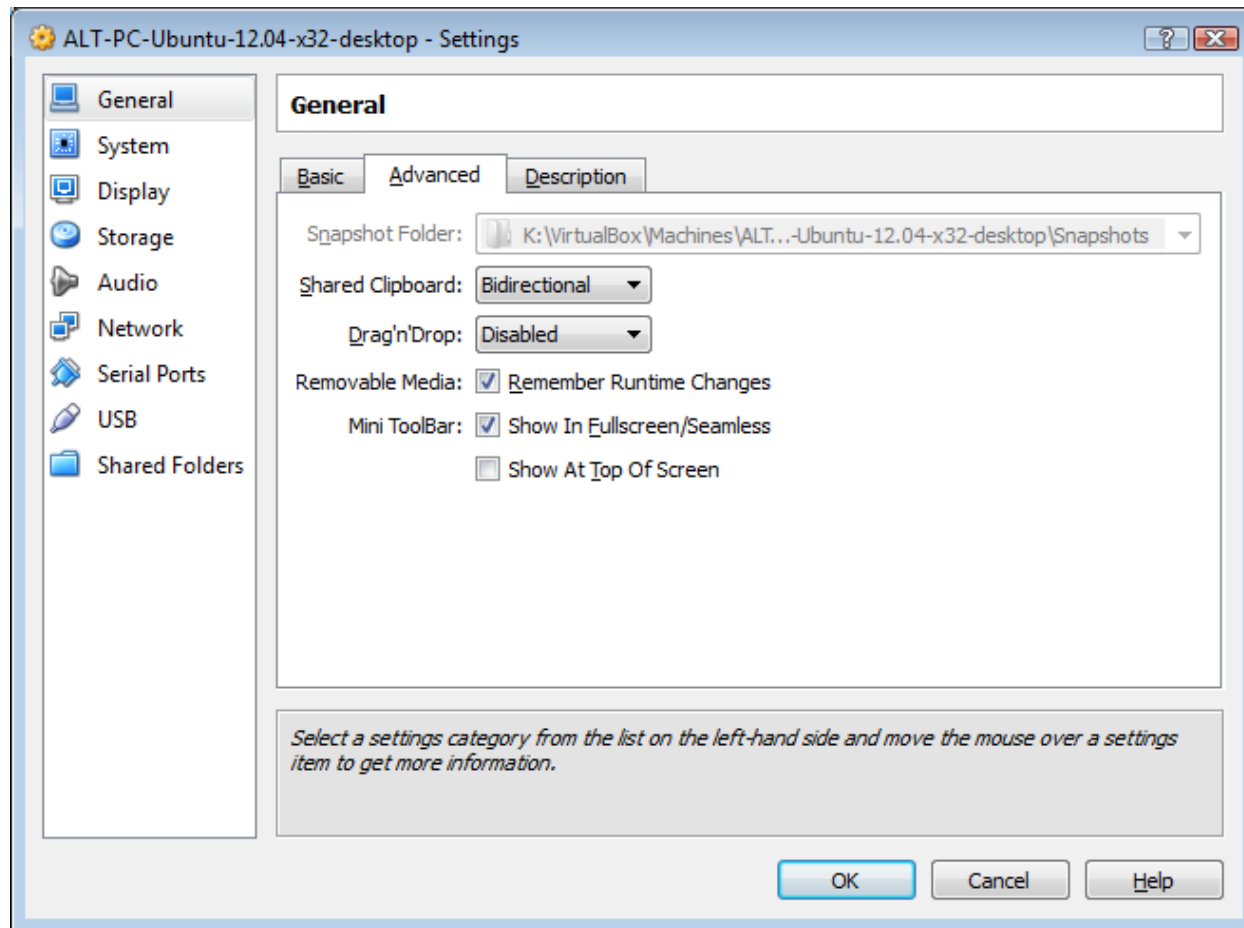
Base VM ready to hold OS install is ready, but needs some tweaks first.

Google "***slow virtualbox jdpu***" to find written details for all the settings. I may miss a few here.

URL is: <http://www.jdpu.com/2012/09/14/solution-for-slow-ubuntu-in-virtualbox>

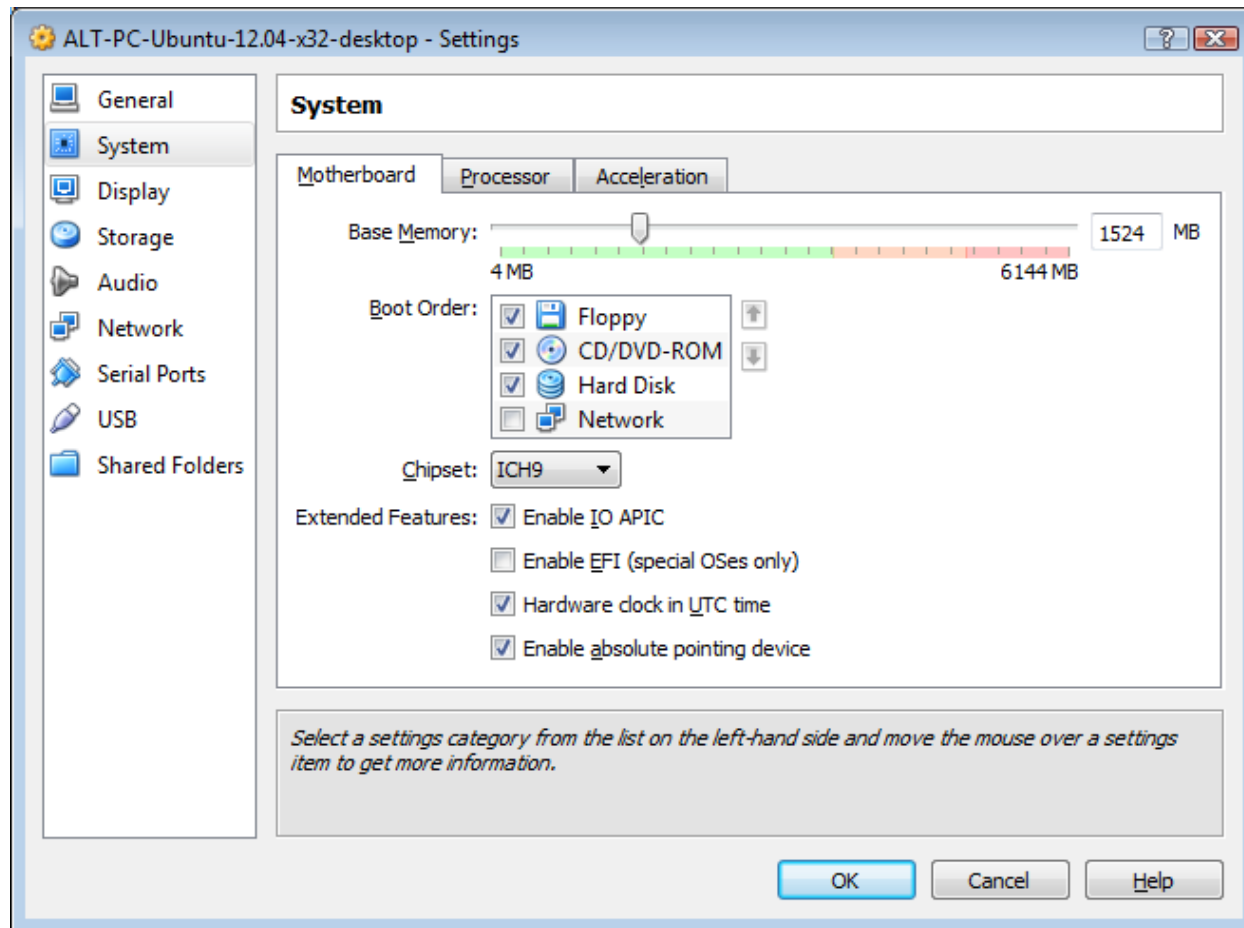
All settings below are the default, unless I point them out. Of course, since I've been using VBox for 5 yrs, some of my defaults may not reflect what the current program defaults are.





Share the clipboard.

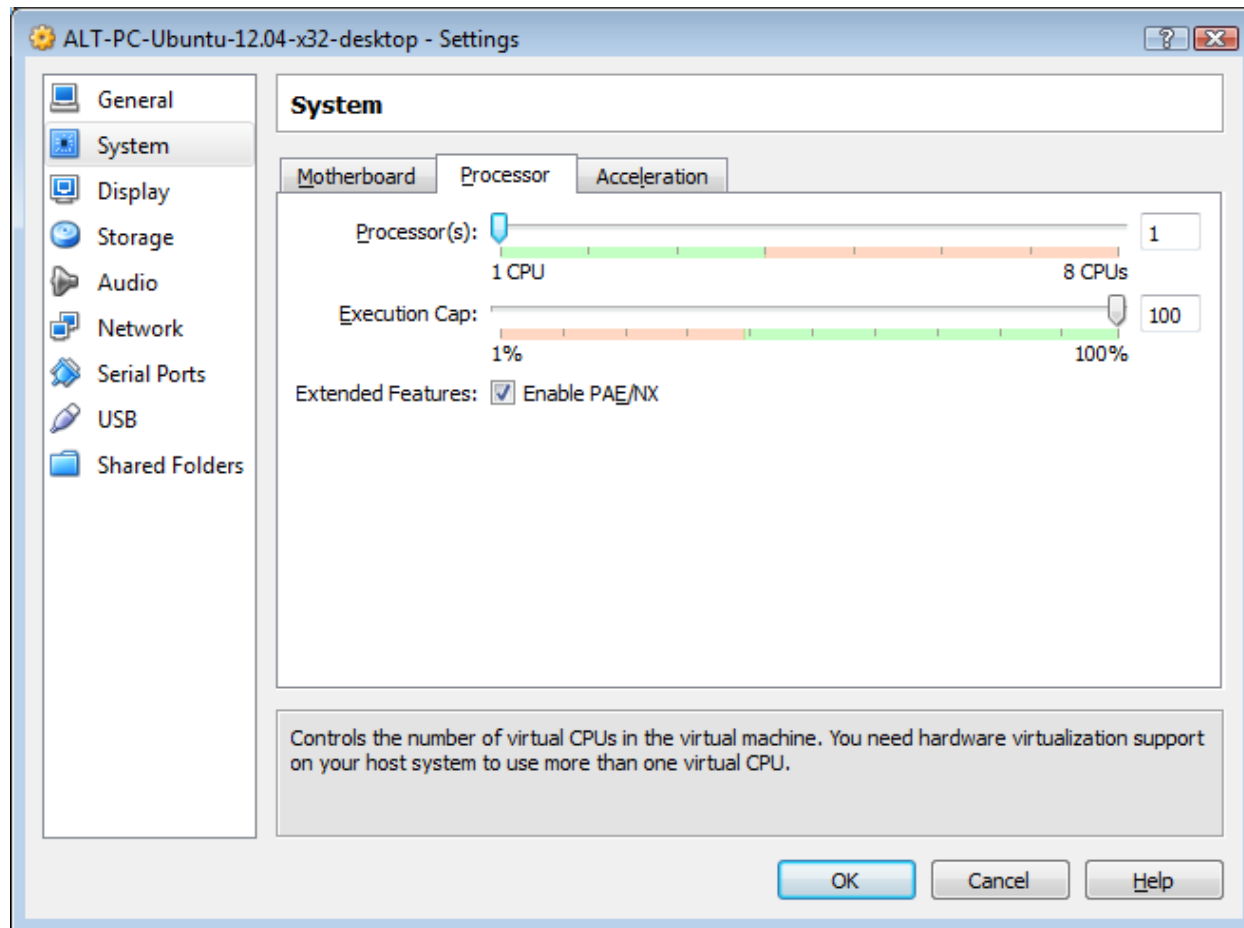
You'll thank me later.



Chipset: **ICH9** - better performance

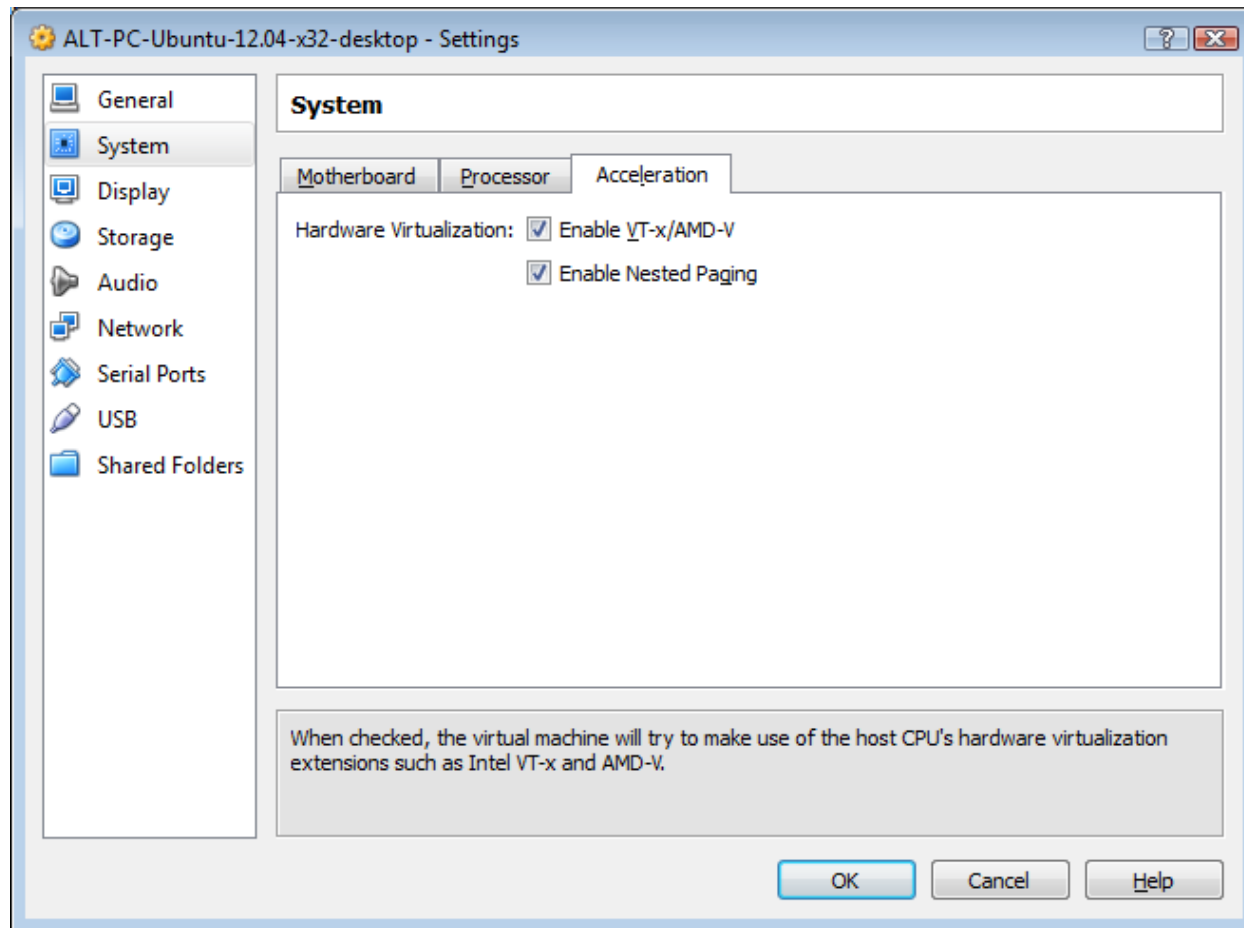
Enable **IO APIC** (critical when multiple VMs run simultaneously)

Consider removing the Floppy Disk

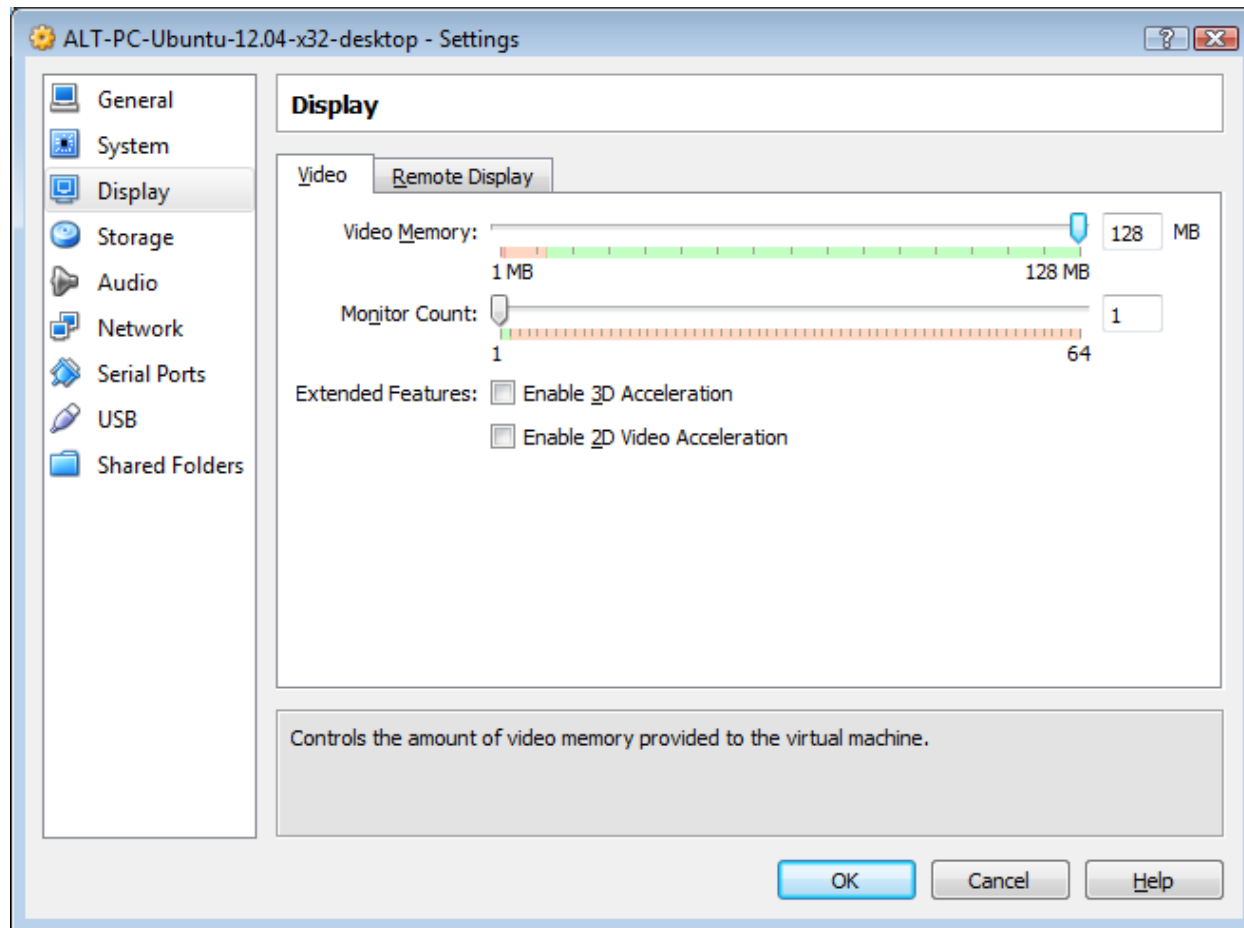


1 vCPU - more is not needed, but for Linux systems, changing it later is trivial.

Try 2 if you like, later.



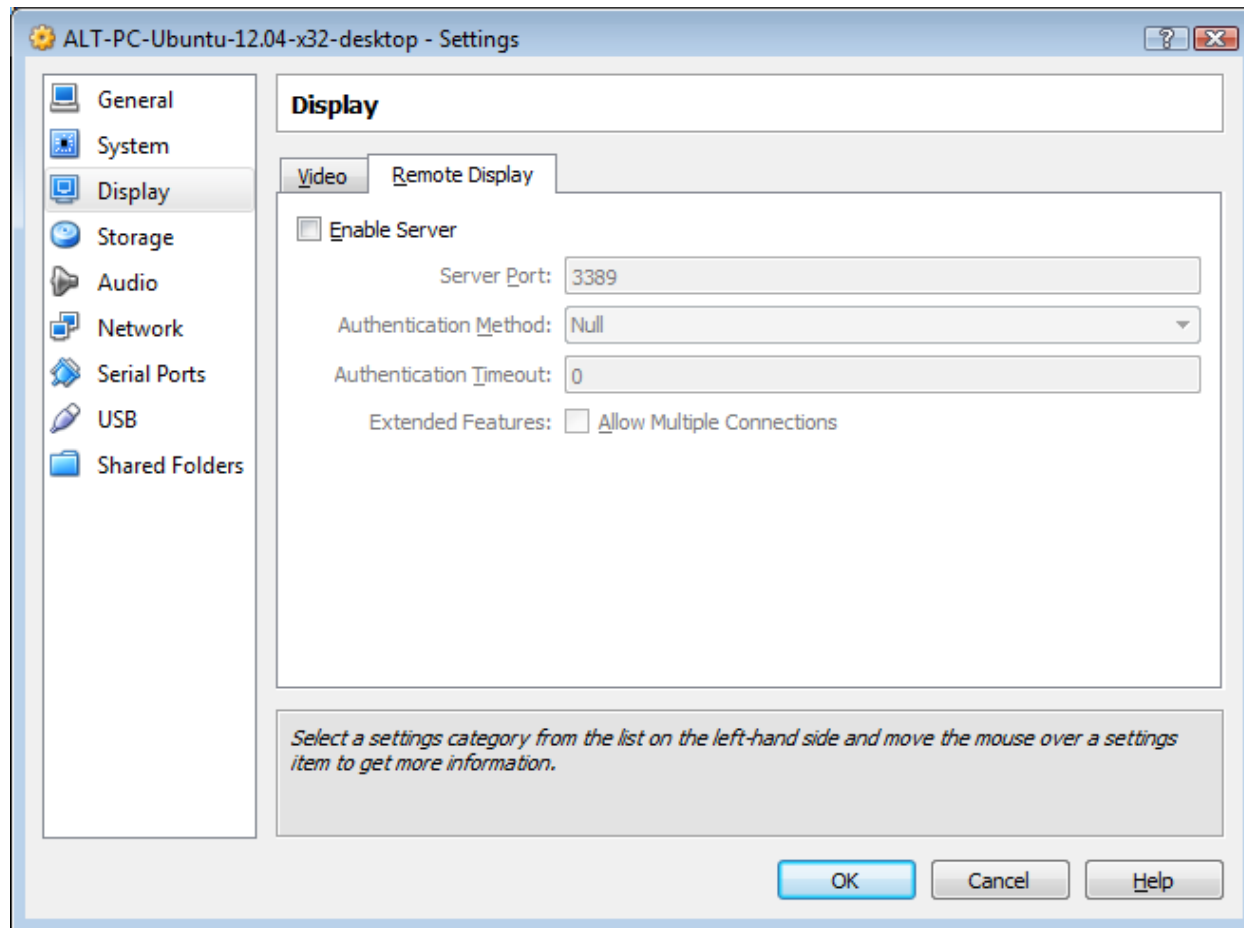
Defaults for VT-x capable hardware. May need to enable this in your BIOS.
Cheaper machines do not support VT-x/AMD-v features.
Vbox will use excellent software-based VM if it isn't available.



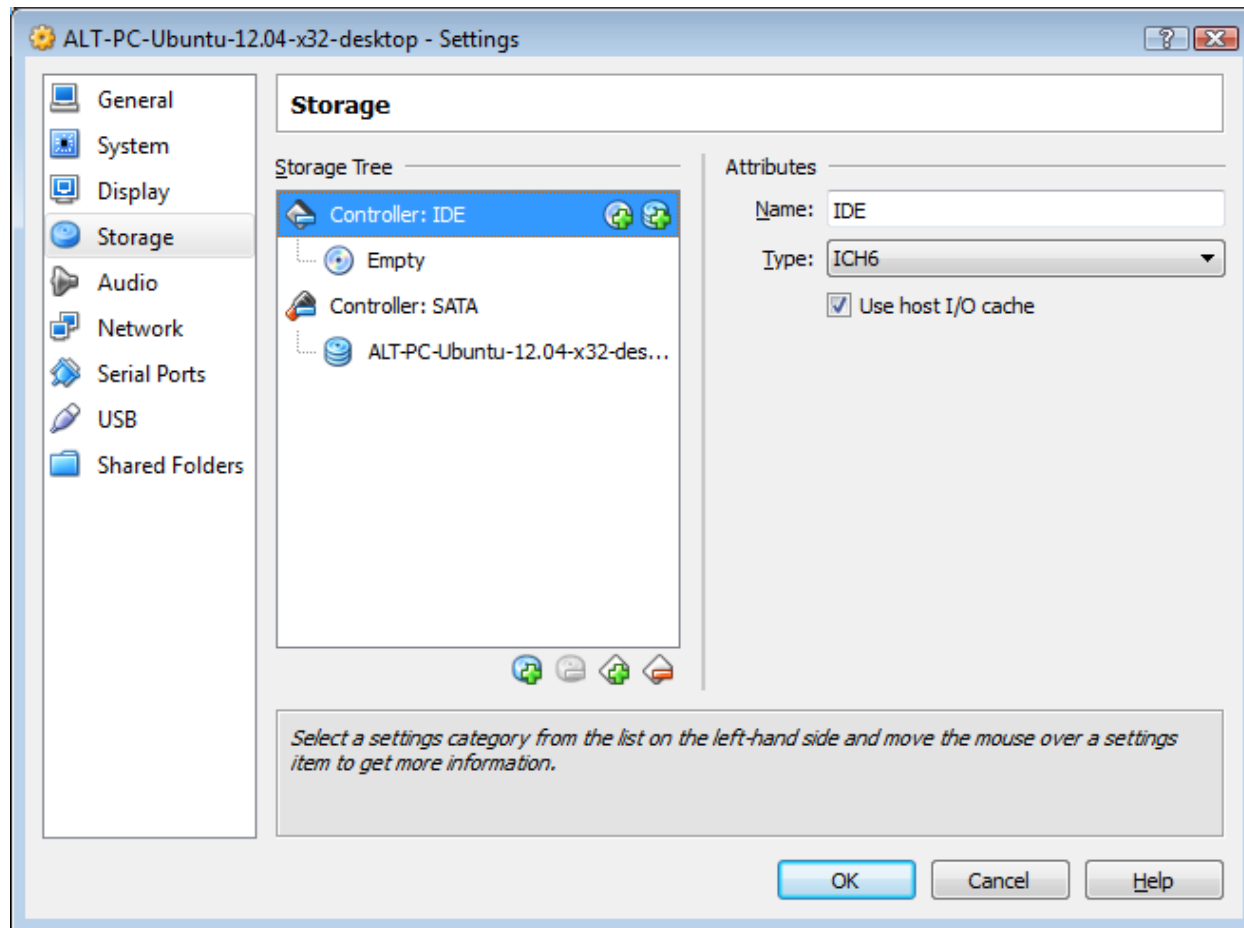
Desktops need more vVRAM.

DO NOT ENABLE 2D or 3D accelteration at this point.

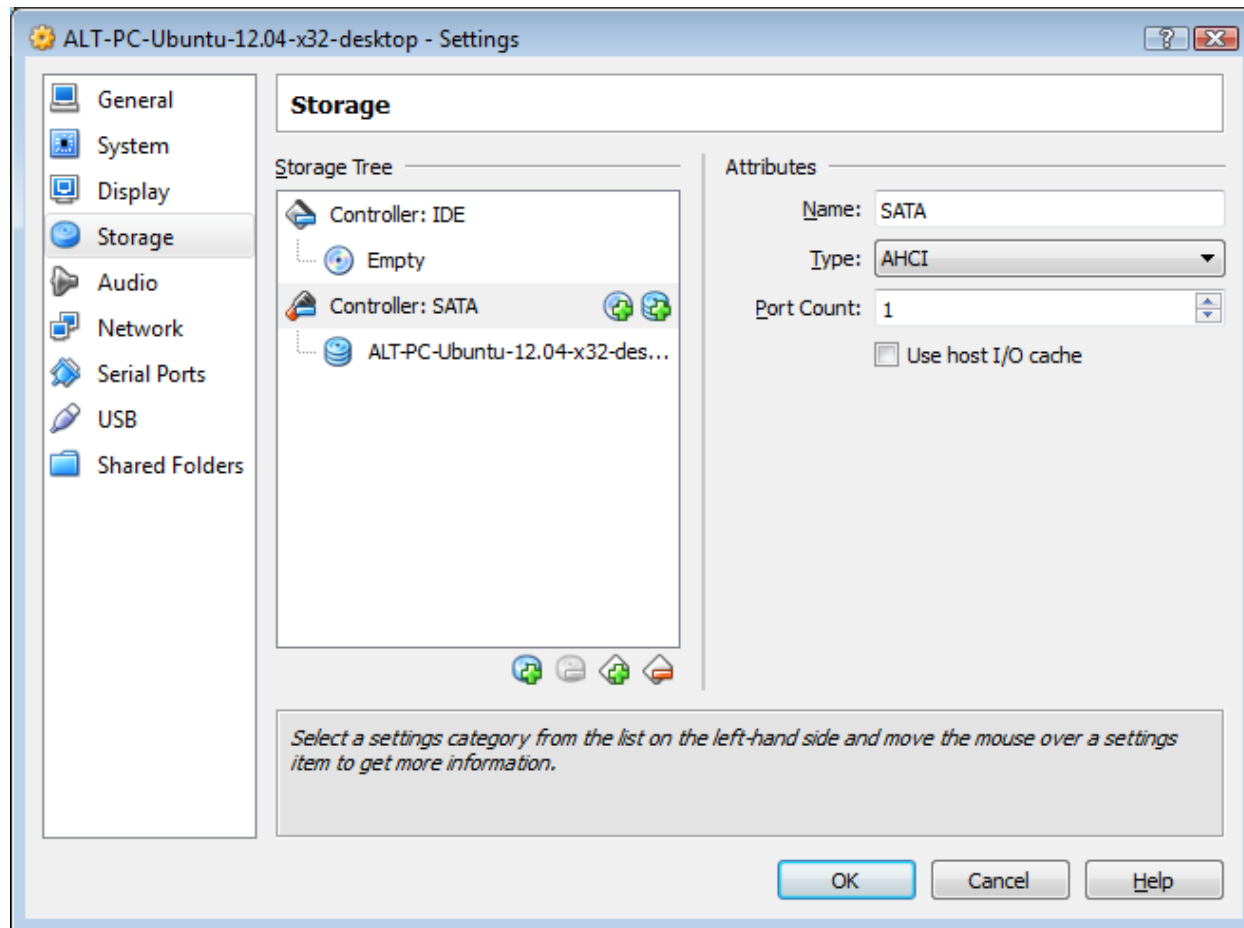
Unity sucks, IMHO.



No remote RDP needed .. unless you **know** you want it.
I prefer to use internal remote access/desktop tools, like NX,
which are 3x faster.

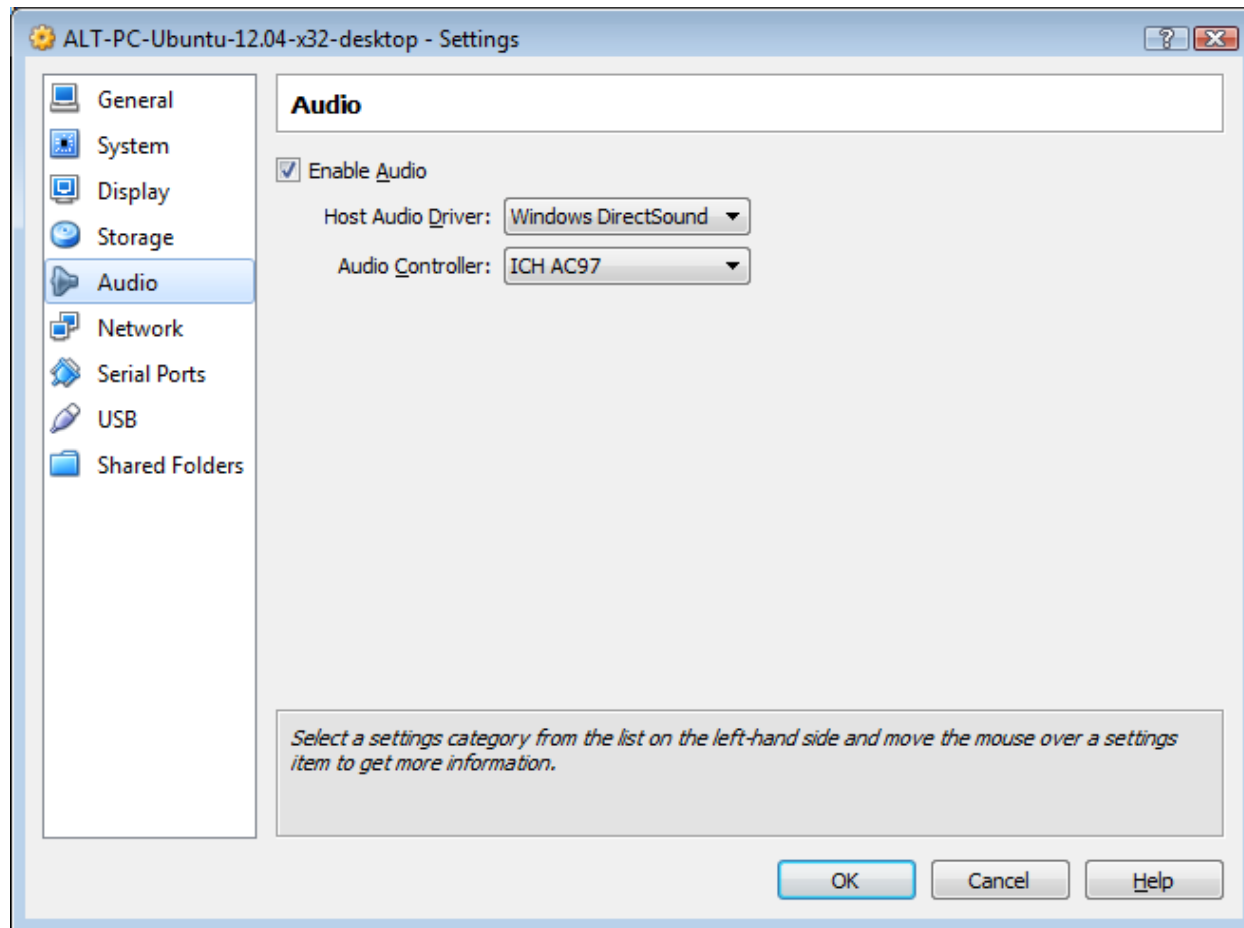


Use ICH? controllers for better performance.
Not too important for virtual optical devices. Also, some BSD releases do not support ICH on all distros, so PII4 is the only viable choice.

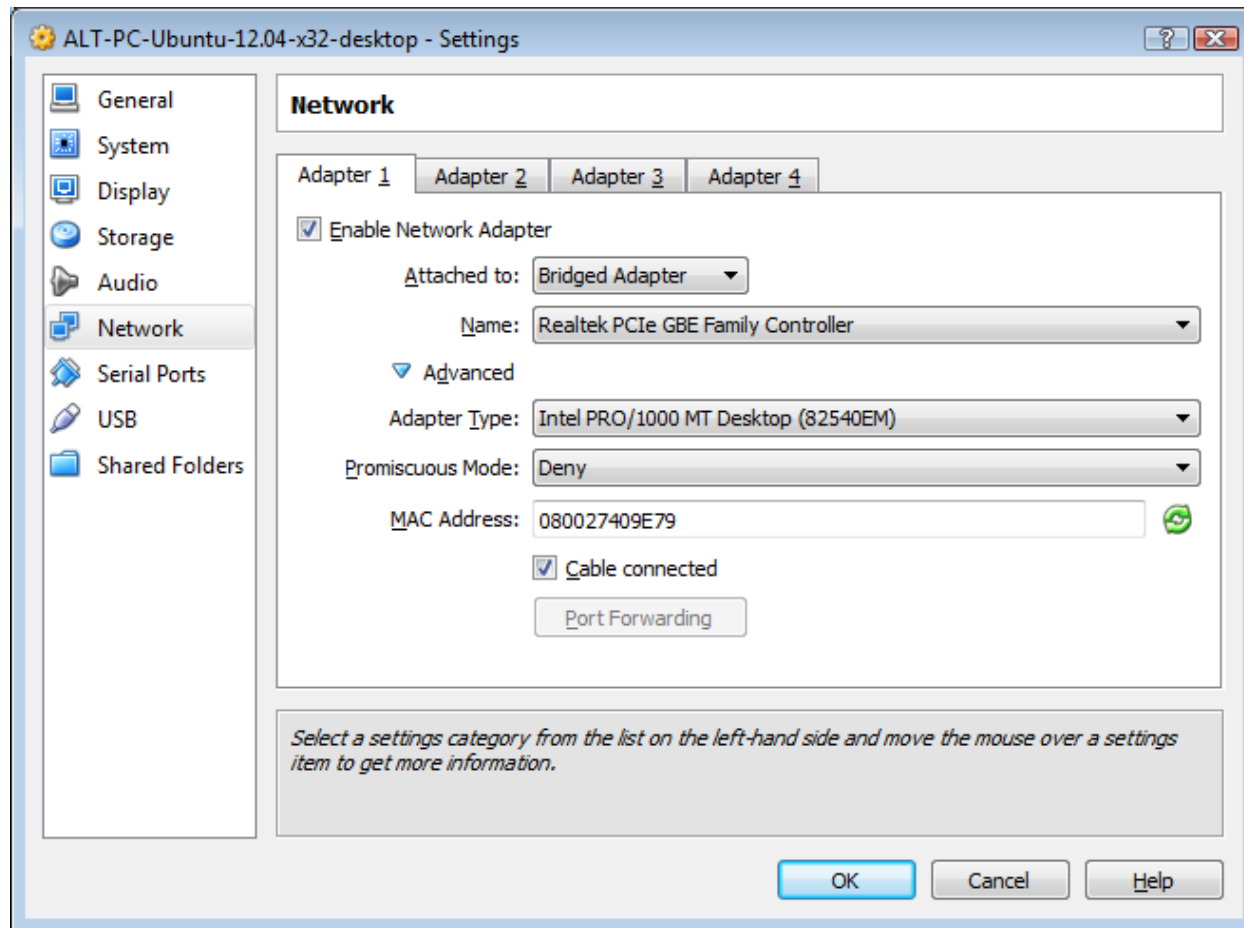


SATA is best for Windows-based client OSES or if you aren't certain. WinXP doesn't provide SATA drivers with the install, so IDE is the only real choice.

With non-VirtualBox hypervisors, you might be able to select VirtIO as the controllers. This would be vastly preferred over emulated hardware from a performance standpoint. **Common Linux installs support VirtIO drivers by default.**



Audio - defaults are fine for desktop-on-desktop VMs.



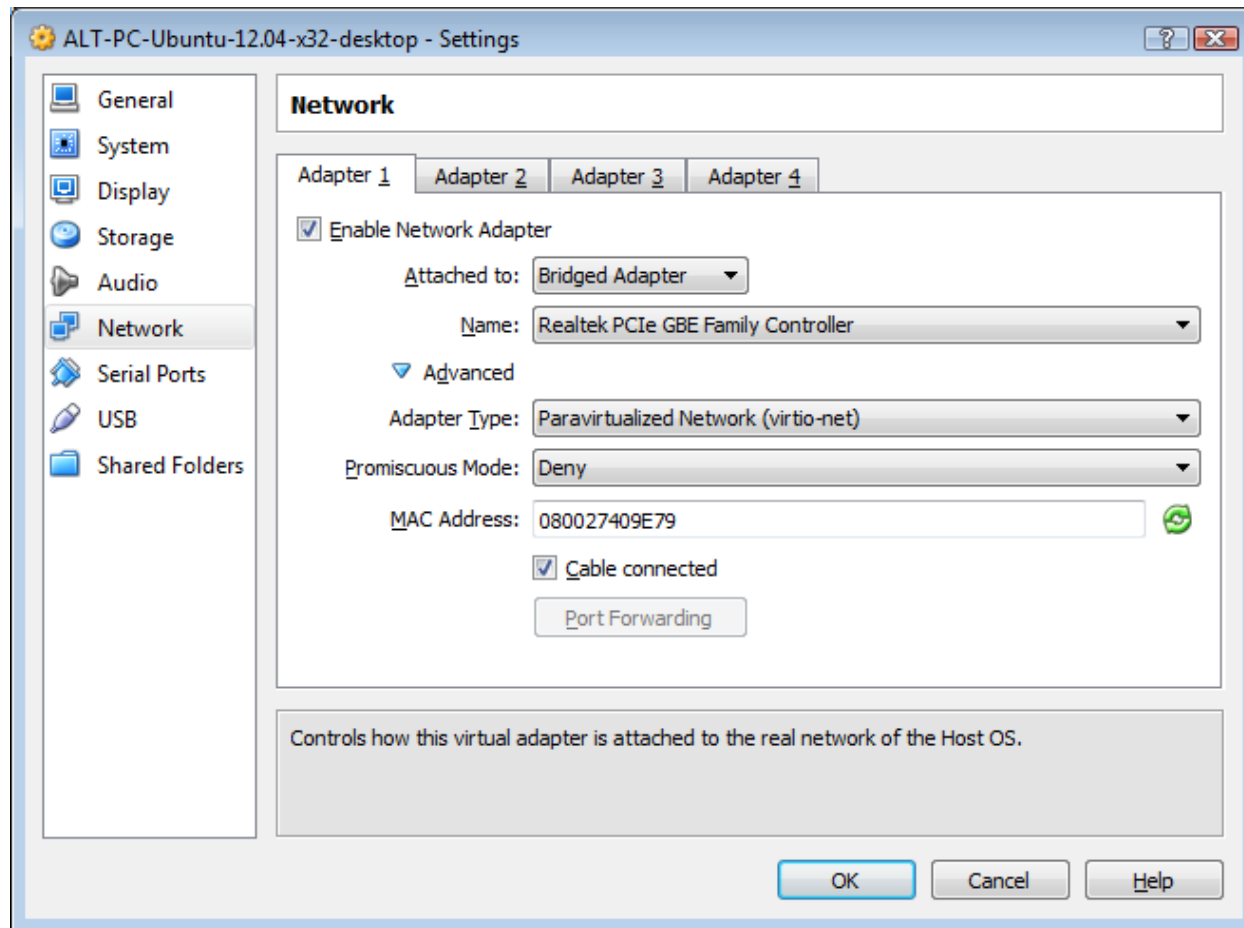
For non-Linux VMs, use the **Intel PRO/1000** NIC.

Bridged, NAT, Host-only, internal network are the choices.

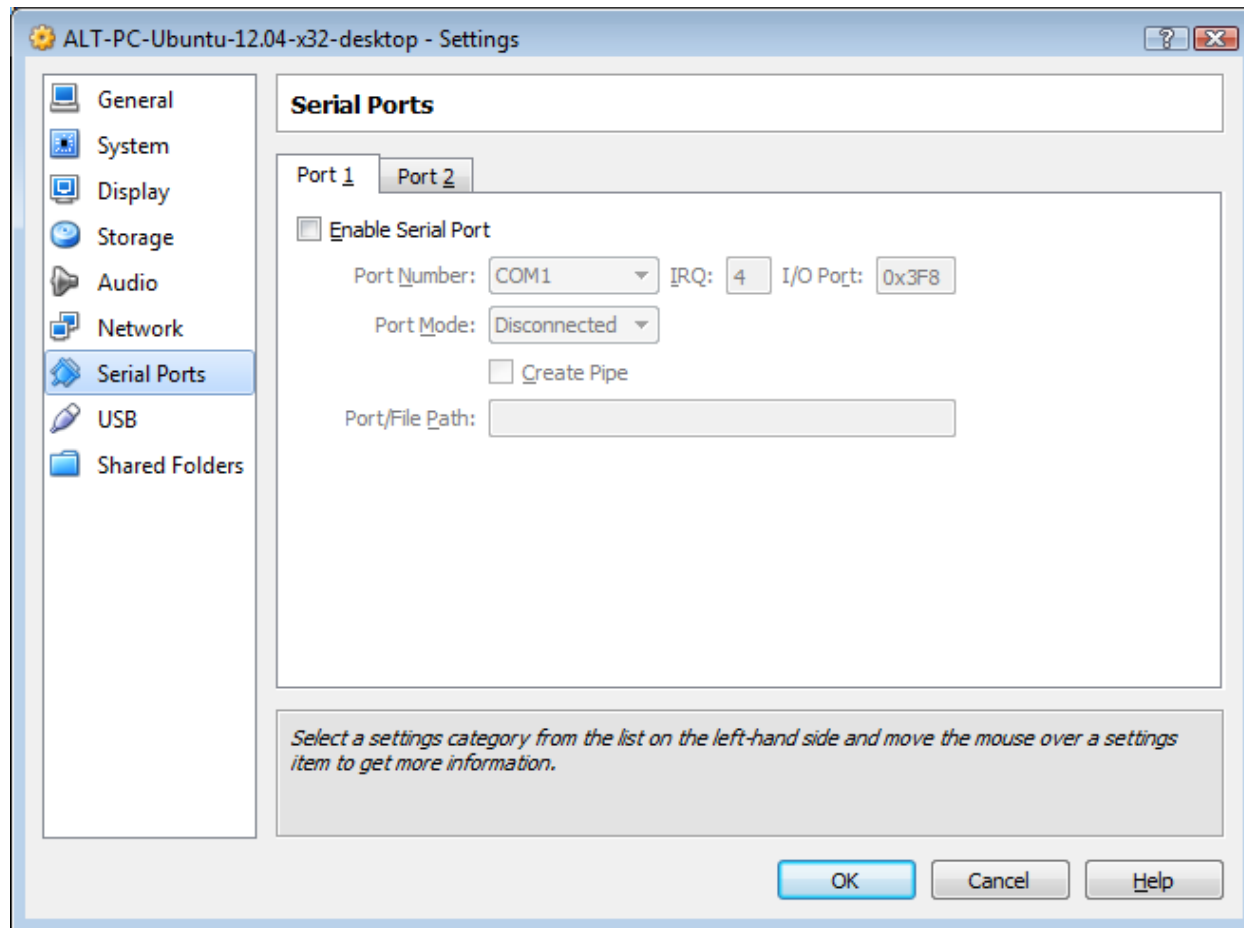
Bridged - VMs are full citizens on the network.

Could connect a wifi adapter as a PRO/1000 inside any VM.

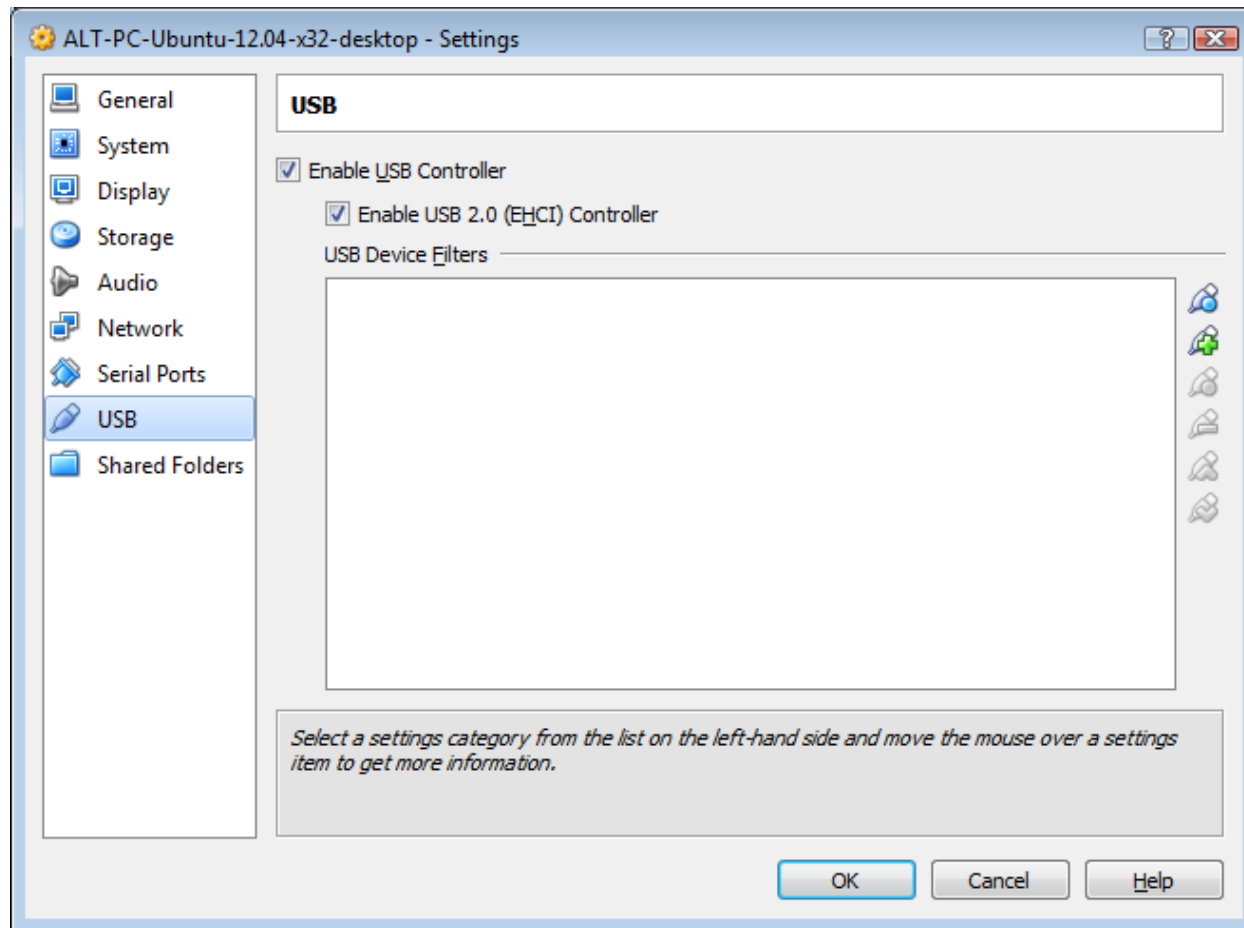
VM only sees virtual hardware.



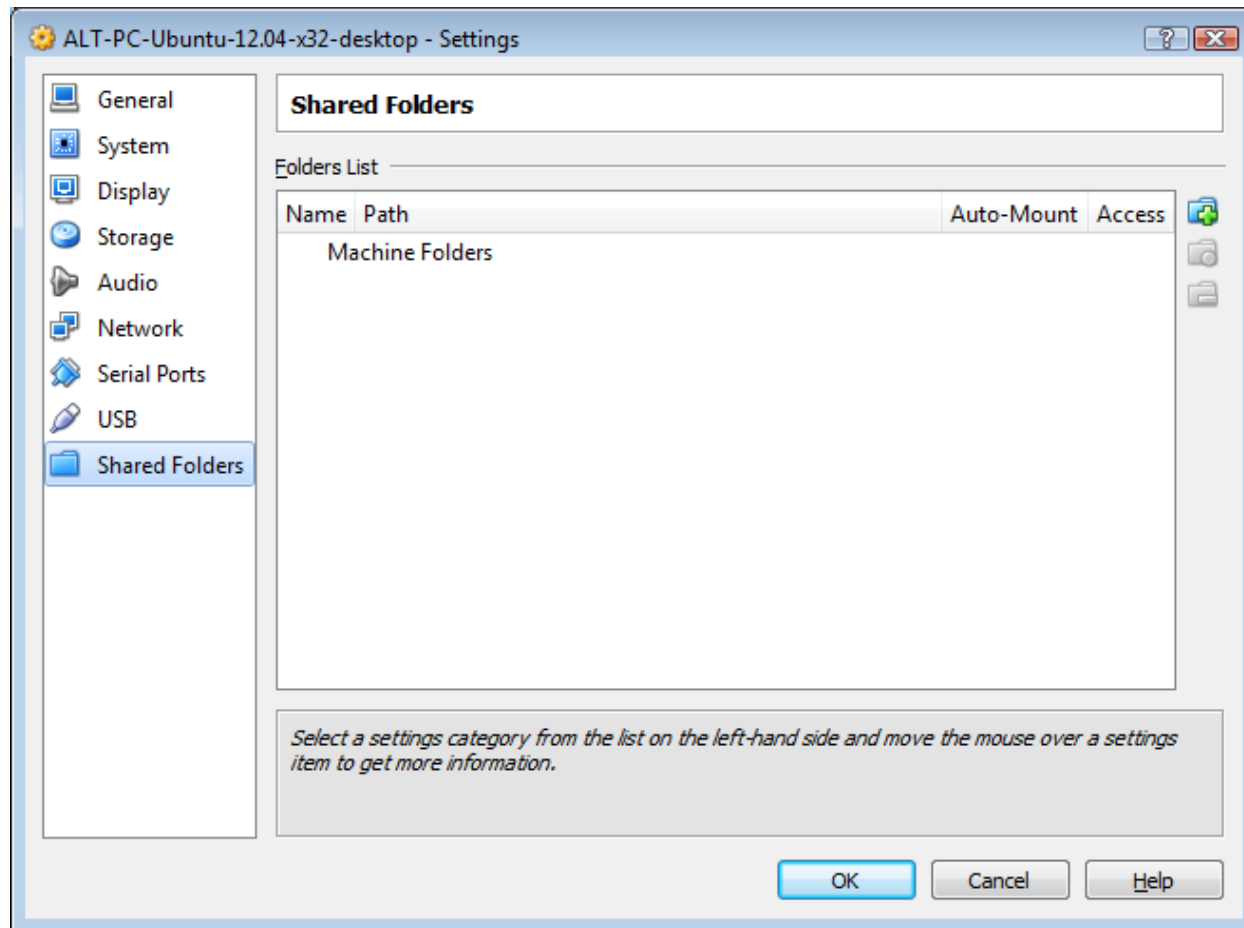
However, we're installing Ubuntu, so **VirtIO** is the best choice for a network vNIC.



Defaults.



Defaults.



Defaults for now.

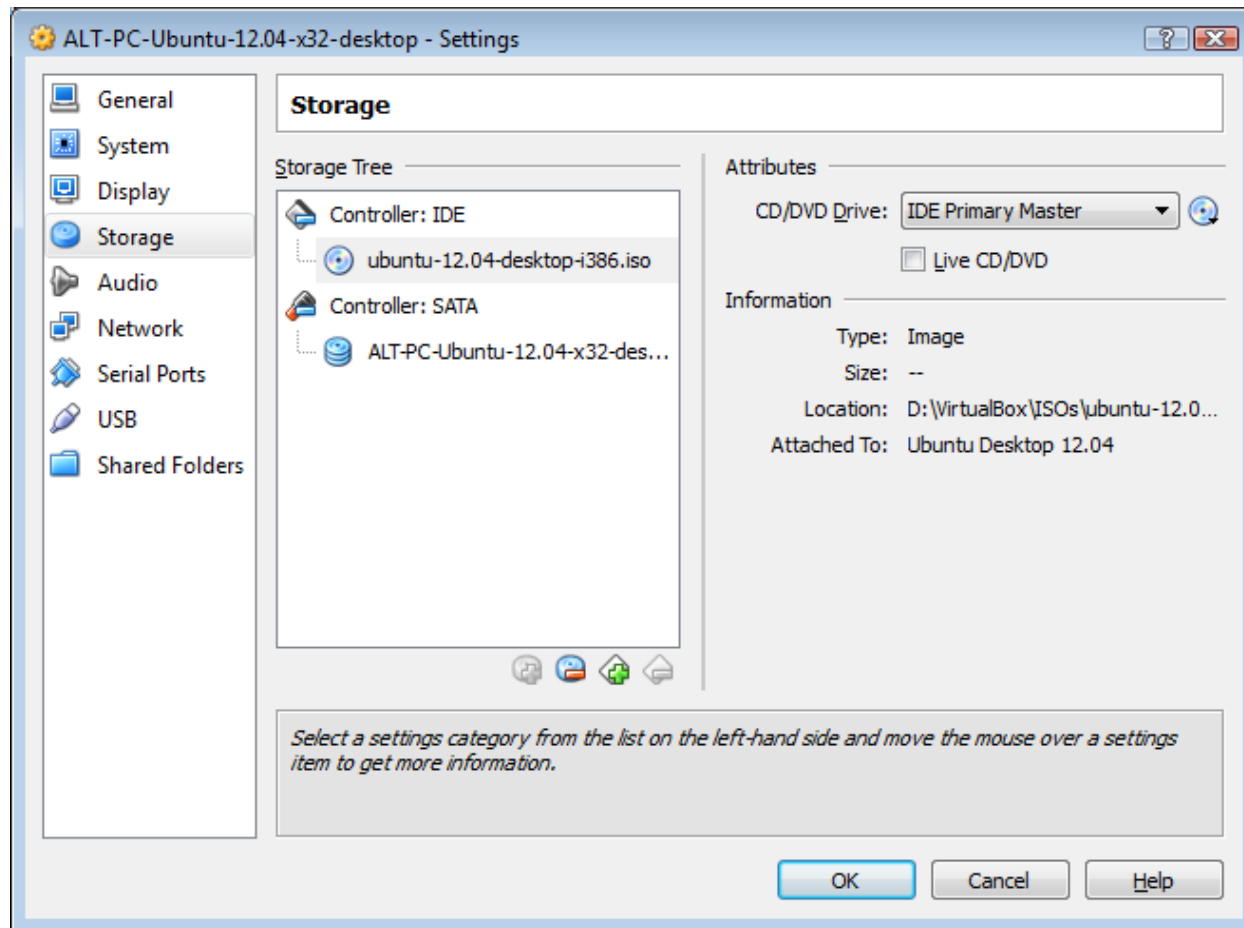
This is where you can make certain file areas of the hostOS available to VMs. Perhaps a good place to keep large files and audio collections to be shared between the HostOS and multiple clientOSes?

All these settings can be changed later.

None really matter **except the fully allocated vHDD.**

Linux looks at the available hardware during boot and configures appropriately. No license crap to deal with.

Change the vRAM, vCPUs, NICs, Audio between reboots - no problem.



Now we need to **attach** an **Ubuntu x32 12.04 LTS Desktop ISO** to the optical device and boot.

Start that baby up!

Install Ubuntu

Erase disk - this will be writing to a vHDD, not any real HDD

"Something Else" is for complex installs to hardware or when you want to control partitioning.

Canonical learned from others how to fill the time during an installation. Billboards showing features that I never use - cloud, music, social media.

A few very useful programs will be highlighted - **LibreOffice** - replacement for MS-Office for 95% of the world.

We told the install to download updates during the installation.

If you don't do this, the install will be a little quicker,
but you'll want to patch immediately after the install,
just like with every other OS.





Install

Preparing to install Ubuntu

For best results, please ensure that this computer:

✓ has at least 4.4 GB available drive space

✓ is plugged in to a power source

✓ is connected to the Internet

☒ Download updates while installing

Ubuntu uses third-party software to display Flash, MP3 and other media, and to work with some wireless hardware. Some of this software is closed-source. The software is subject to the license terms included with the software's documentation.

☒ Install this third-party software

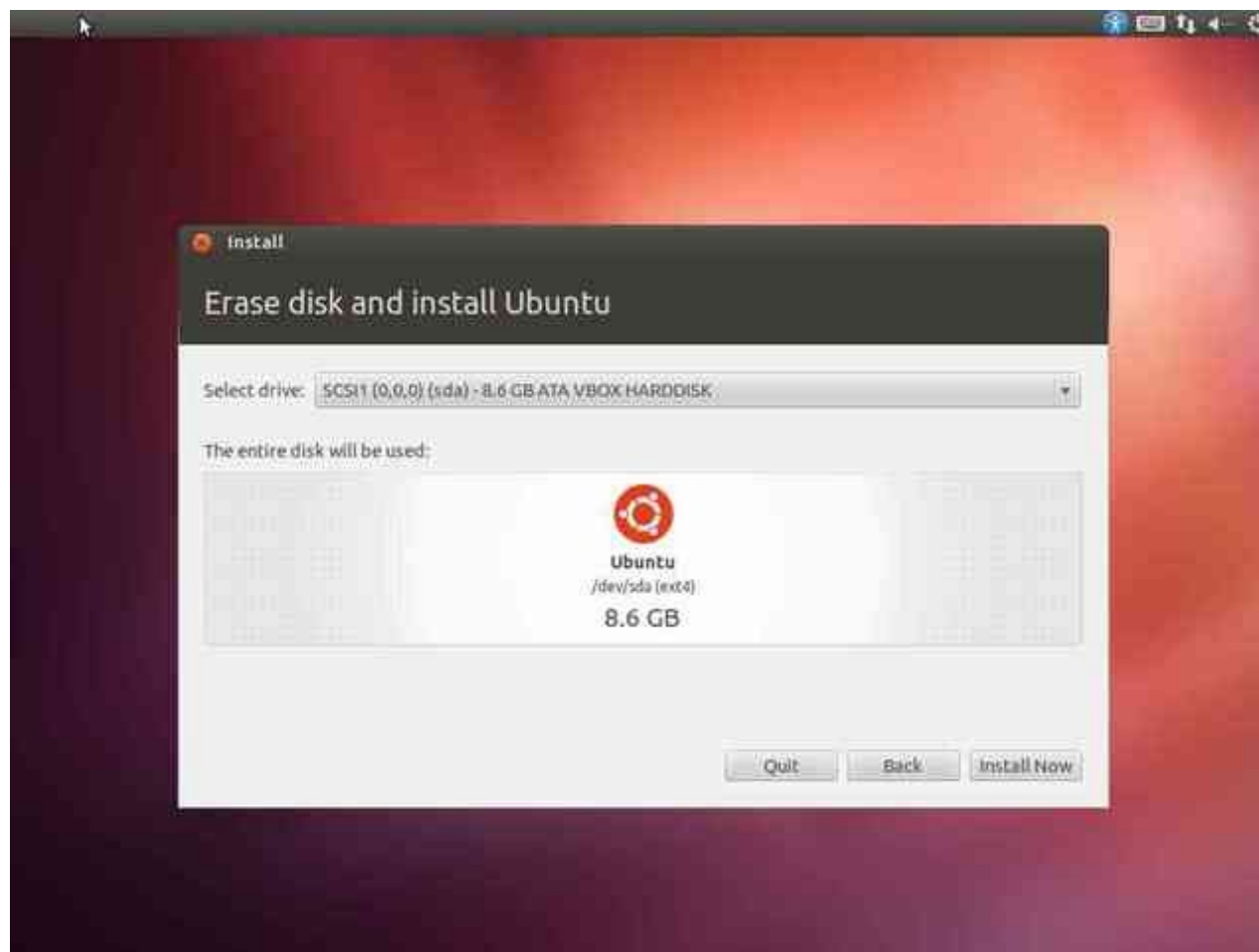
Fluendo MP3 plugin includes MPEG Layer-3 audio decoding technology licensed from Fraunhofer IIS and Technicolor SA.

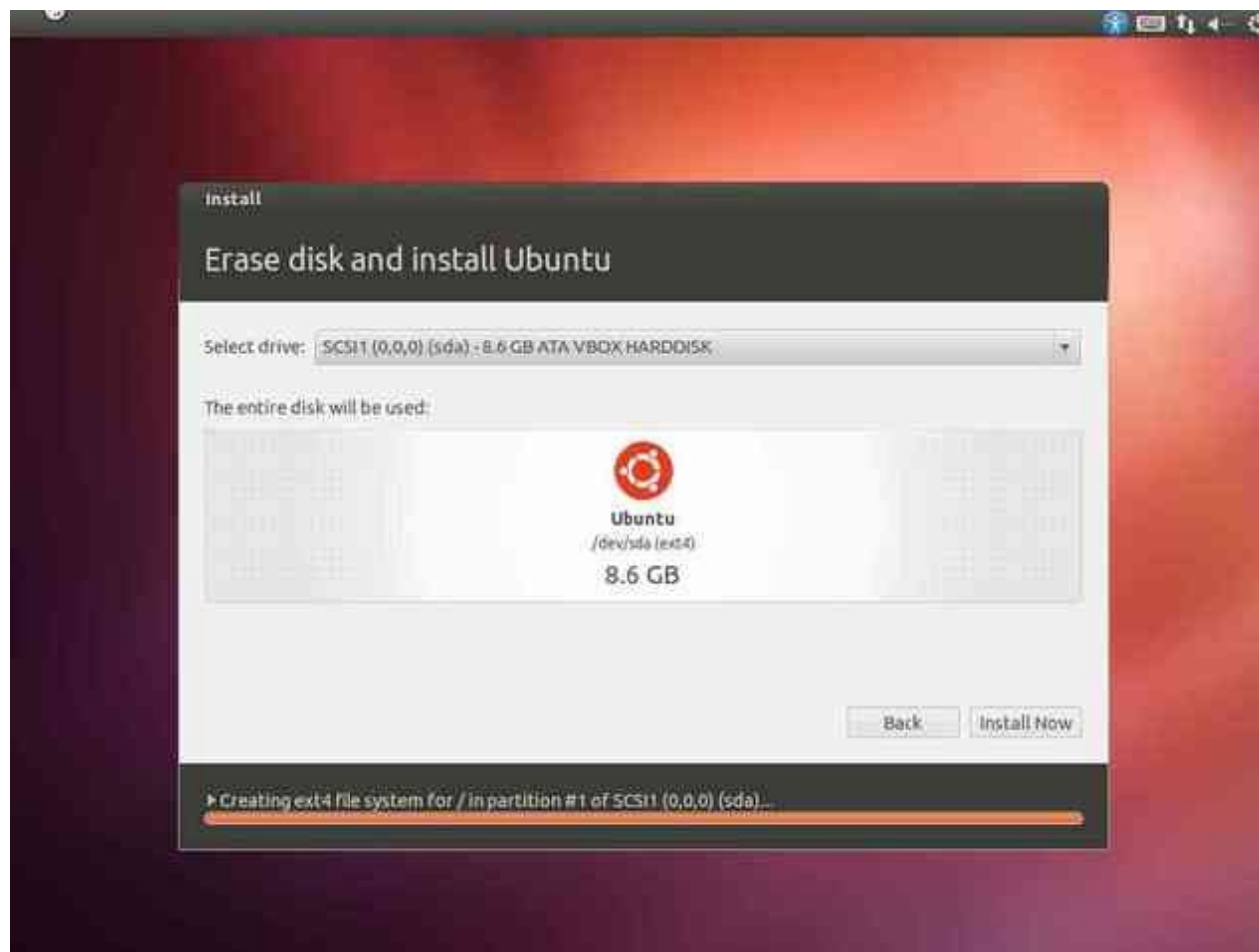
Quit

Back

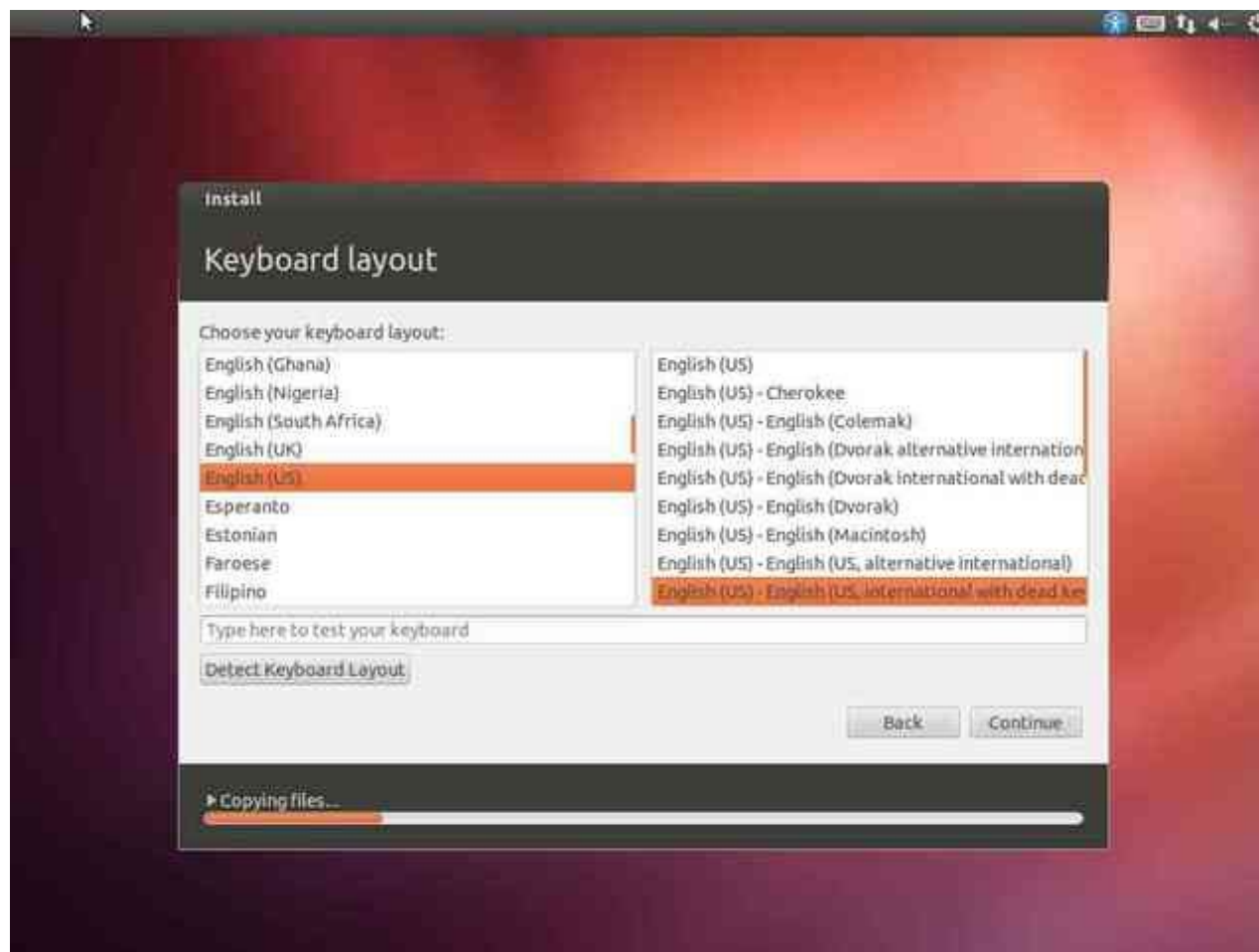
Continue















Install

Find even more software

The Ubuntu Software Center has thousands of new applications ready for your computer. Just type what you want or explore the categories like games, science, and education. It is easy to download new stuff and write reviews to share your experiences.



► Installing system

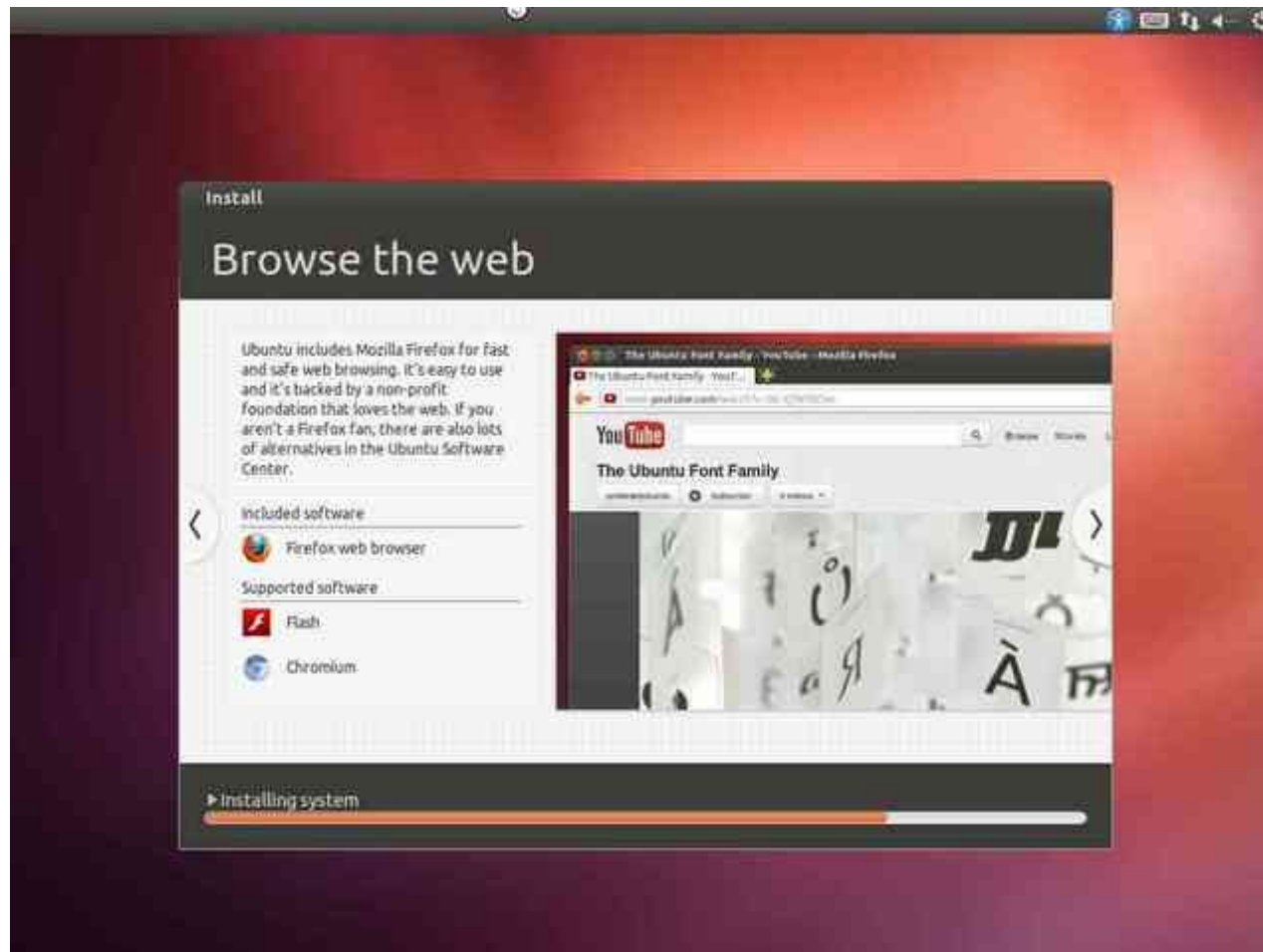
Install

Your own personal cloud

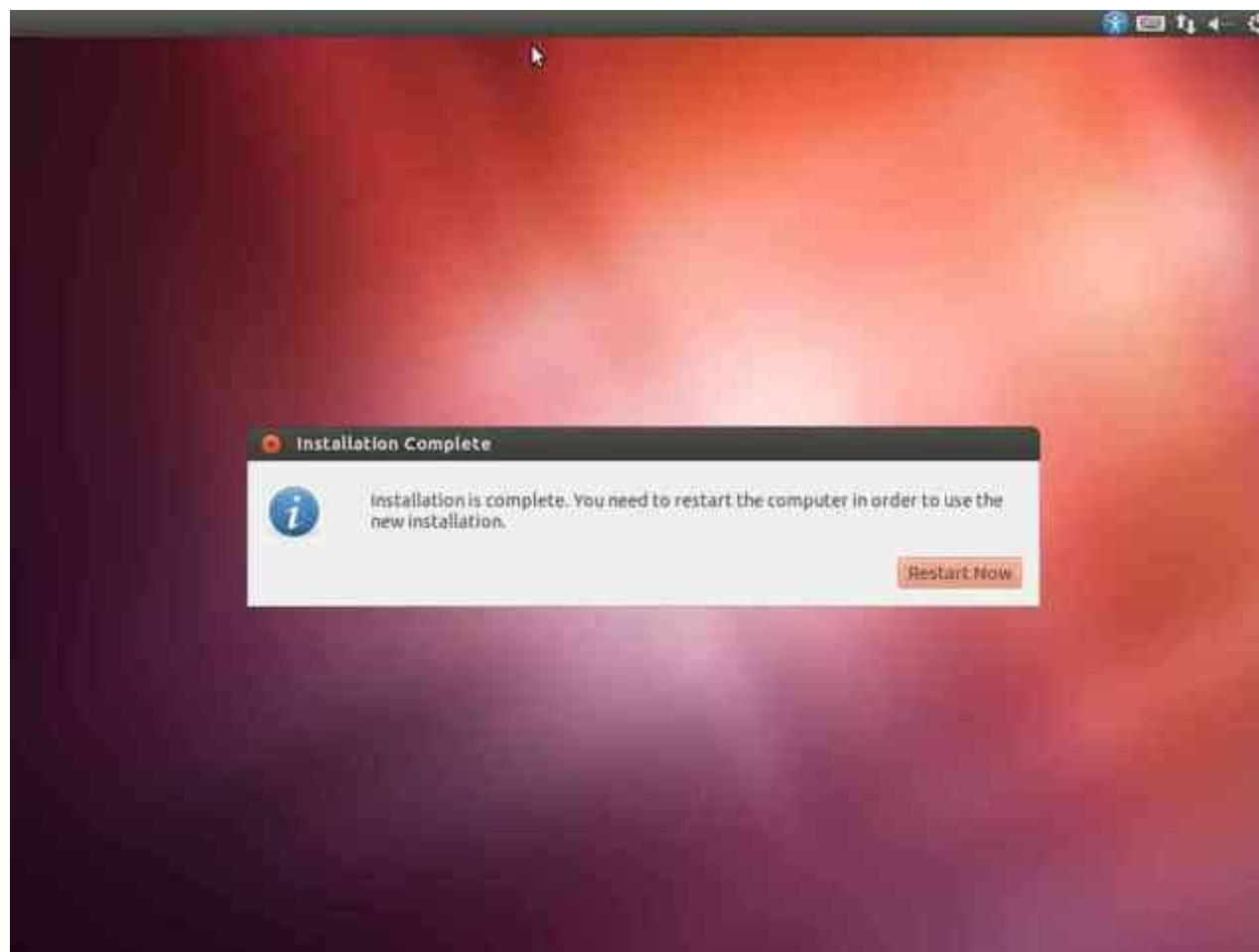
An **Ubuntu One Free** account gives you 5GB of cloud storage, so you can store and sync your files and photos across devices and access them wherever you are in the world. Easily share them with friends, family and colleagues. Take a photo on your mobile phone and immediately see it on your desktop, or add **Music Streaming** for mobile to enjoy your music on the move.



► Installing language packs







Welcome to Ubuntu 12.04.1 LTS (GNU/Linux 3.2.0-29-generic-pae i686)

* Documentation: <https://help.ubuntu.com/>

ubuntu@ubuntu:~\$

Broadcast message from root@ubuntu
(unknown) at 11:01 ...

The system is going down for reboot NOW!

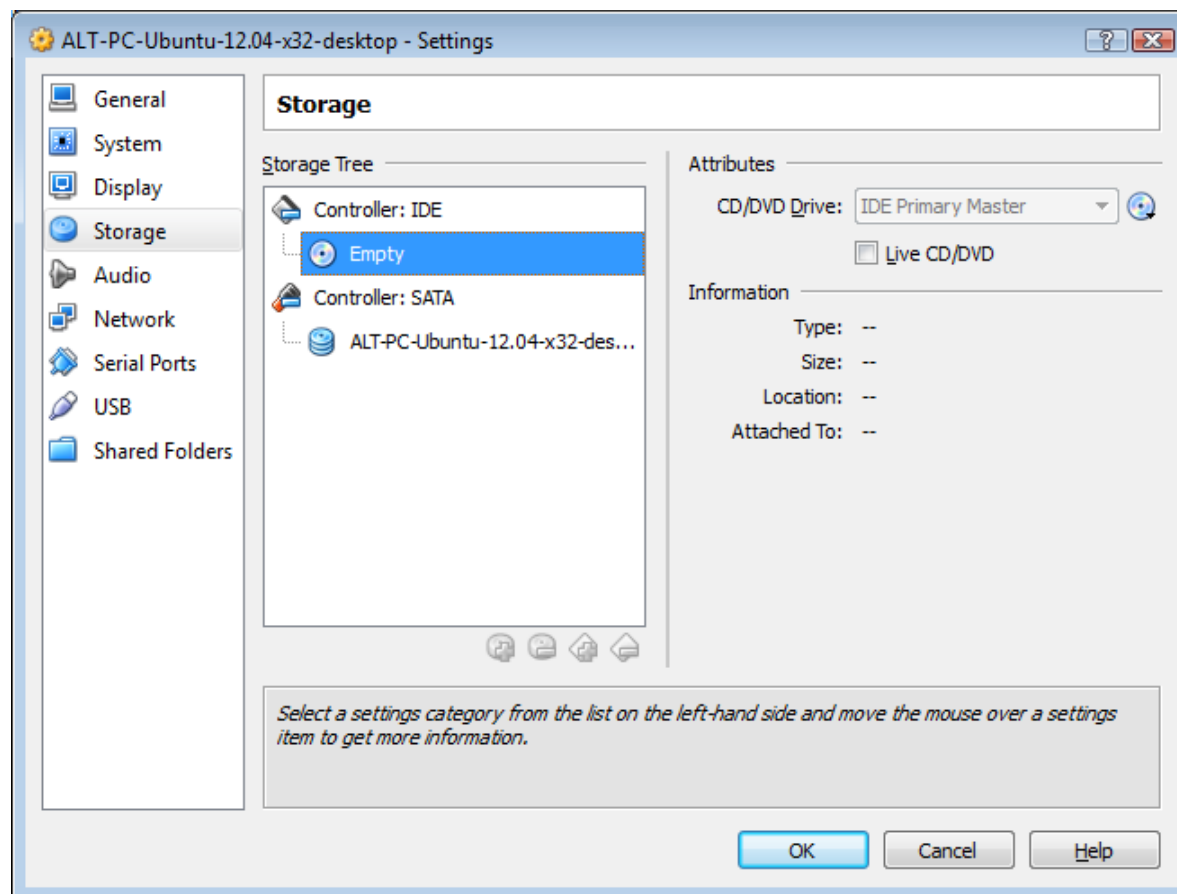
modem-manager[1364]: <info> Caught signal 15, shutting down...

Please remove installation media and close the tray (if any) then press ENTER:

—

After the install finishes ... remove media and restart.
VirtualBox automatically removes the media for us - at least it did for me.











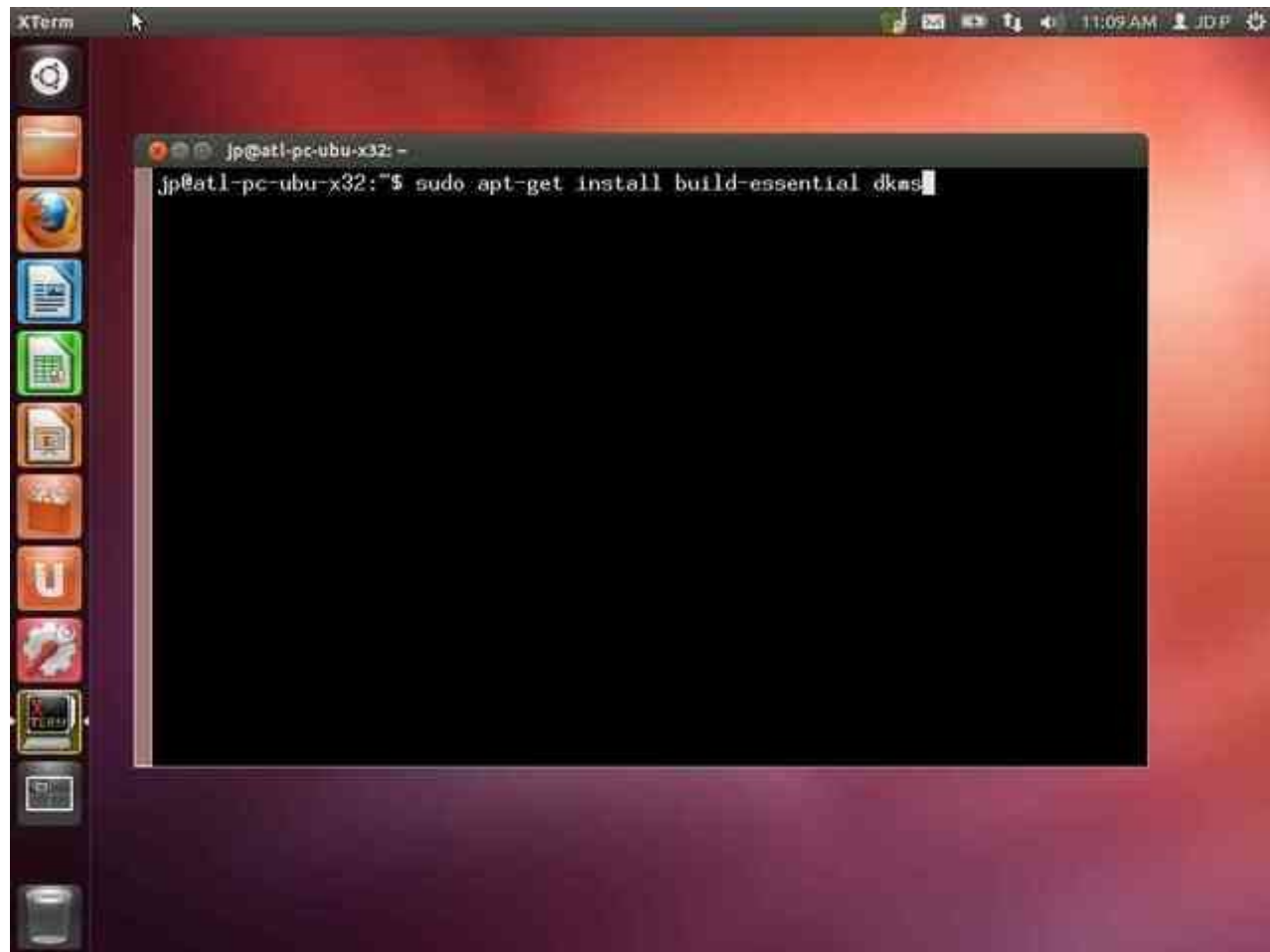
After login, time to install the Guest Additions.

Google for "jdpfu guest additions"

Dependencies to install **Guest Additions** are documented here: <http://www.jdpfu.com/2012/09/14/solution-for-slow-ubuntu-in-virtualbox>

-
- **\$ sudo apt-get install build-essential dkms**
- **\$ uname -r**
-
- {}-generic-**pae** = apt-get install linux-headers-generic-**pae**
{}-generic = apt-get install linux-headers-generic
{}-**server** = apt-get install linux-headers-**server**

Select **Devices --> Install Guest Additions** from the virtualbox menu. This just mounts the storage (an ISO).



```
XTerm
jp@atl-pc-ubu-x32: ~
ild2_1386.deb) ...
Selecting previously unselected package libalgorithm-merge-perl.
Unpacking libalgorithm-merge-perl (from .../libalgorithm-merge-perl_0.08-2_all.d
eb) ...
Processing triggers for man-db ...
Setting up libtimedate-perl (1.2000-1) ...
Setting up libdpkg-perl (1.16.1.2ubuntu7.1) ...
Setting up dpkg-dev (1.16.1.2ubuntu7.1) ...
Setting up dkms (2.2.0.3-1ubuntu3.1) ...
Setting up fakeroot (1.18.2-1) ...
update-alternatives: using /usr/bin/fakeroot-sysv to provide /usr/bin/fakeroot (
fakeroot) in auto mode.
Setting up libalgorithm-diff-perl (1.19.02-2) ...
Setting up libalgorithm-diff-xs-perl (0.04-2build2) ...
Setting up libalgorithm-merge-perl (0.08-2) ...
Setting up libstdc++6-4.6-dev (4.6.3-1ubuntu5) ...
Setting up g++-4.6 (4.6.3-1ubuntu5) ...
Setting up g++ (4:4.6.3-1ubuntu5) ...
update-alternatives: using /usr/bin/g++ to provide /usr/bin/c++ (c++) in auto mo
de.
Setting up build-essential (11.5ubuntu2.1) ...
jp@atl-pc-ubu-x32:~$ uname -r
3.2.0-29-generic-pae
jp@atl-pc-ubu-x32:~$
```



```
XTerm
jp@atl-pc-ubu-x32: ~
ild2_1386.deb) ...
Selecting previously unselected package libalgorithm-merge-perl.
Unpacking libalgorithm-merge-perl (from .../libalgorithm-merge-perl_0.08-2_all.d
eb) ...
Processing triggers for man-db ...
Setting up libtimedate-perl (1.2000-1) ...
Setting up libdpkg-perl (1.16.1.2ubuntu7.1) ...
Setting up dpkg-dev (1.16.1.2ubuntu7.1) ...
Setting up dkms (2.2.0.3-1ubuntu3.1) ...
Setting up fakeroot (1.18.2-1) ...
update-alternatives: using /usr/bin/fakeroot-sysv to provide /usr/bin/fakeroot (
fakeroot) in auto mode.
Setting up libalgorithm-diff-perl (1.19.02-2) ...
Setting up libalgorithm-diff-xs-perl (0.04-2build2) ...
Setting up libalgorithm-merge-perl (0.08-2) ...
Setting up libstdc++6-4.6-dev (4.6.3-1ubuntu5) ...
Setting up g++-4.6 (4.6.3-1ubuntu5) ...
Setting up g++ (4:4.6.3-1ubuntu5) ...
update-alternatives: using /usr/bin/g++ to provide /usr/bin/c++ (c++) in auto mo
de.
Setting up build-essential (11.5ubuntu2.1) ...
jp@atl-pc-ubu-x32:~$ uname -r
3.2.0-29-generic-pae
jp@atl-pc-ubu-x32:~$ sudo apt-get install linux-headers-generic-pae
```

```
XTerm
jp@atl-pc-ubu-x32: ~
Get:1 http://us.archive.ubuntu.com/ubuntu/ precise-updates/main linux-headers-3.2.0-40 all 3.2.0-40.64 [11.7 MB]
Get:2 http://us.archive.ubuntu.com/ubuntu/ precise-updates/main linux-headers-3.2.0-40-generic-pae i386 3.2.0-40.64 [979 kB]
Get:3 http://us.archive.ubuntu.com/ubuntu/ precise-updates/main linux-headers-generic-pae i386 3.2.0.40.48 [2,574 B]
Fetched 12.7 MB in 5s (2.184 kB/s)
Selecting previously unselected package linux-headers-3.2.0-40.
(Reading database ... 143745 files and directories currently installed.)
Unpacking linux-headers-3.2.0-40 (from .../linux-headers-3.2.0-40_3.2.0-40.64_all.deb) ...
Selecting previously unselected package linux-headers-3.2.0-40-generic-pae.
Unpacking linux-headers-3.2.0-40-generic-pae (from .../linux-headers-3.2.0-40-generic-pae_3.2.0-40.64_i386.deb) ...
Preparing to replace linux-headers-generic-pae 3.2.0.29.31 (using .../linux-headers-generic-pae_3.2.0.40.48_i386.deb) ...
Unpacking replacement linux-headers-generic-pae ...
Setting up linux-headers-3.2.0-40 (3.2.0-40.64) ...
Setting up linux-headers-3.2.0-40-generic-pae (3.2.0-40.64) ...
Examining /etc/kernel/header_postinst.d.
run-parts: executing /etc/kernel/header_postinst.d/dkms 3.2.0-40-generic-pae /boot/vmlinuz-3.2.0-40-generic-pae
Setting up linux-headers-generic-pae (3.2.0.40.48) ...
jp@atl-pc-ubu-x32:~$
```







XTerm

jp@atl-pc-ubu-x32: /media/VBOXADDITIONS_4.2.10_84104

on your system which was installed from a different source or using a different type of installer. If you installed it from a package from your Linux distribution or if it is a default part of the system then we strongly recommend that you cancel this installation and remove it properly before installing this version. If this is simply an older or a damaged installation you may safely proceed.

Do you wish to continue anyway? [yes or no]

yes

Removing existing VirtualBox DKMS kernel modules ...done.

Removing existing VirtualBox non-DKMS kernel modules ...done.

Removing existing VirtualBox DKMS kernel modules ...done.

Removing existing VirtualBox non-DKMS kernel modules ...done.

Building the VirtualBox Guest Additions kernel modules ...done.

Doing non-kernel setup of the Guest Additions ...done.

Starting the VirtualBox Guest Additions ...done.

Installing the Window System drivers

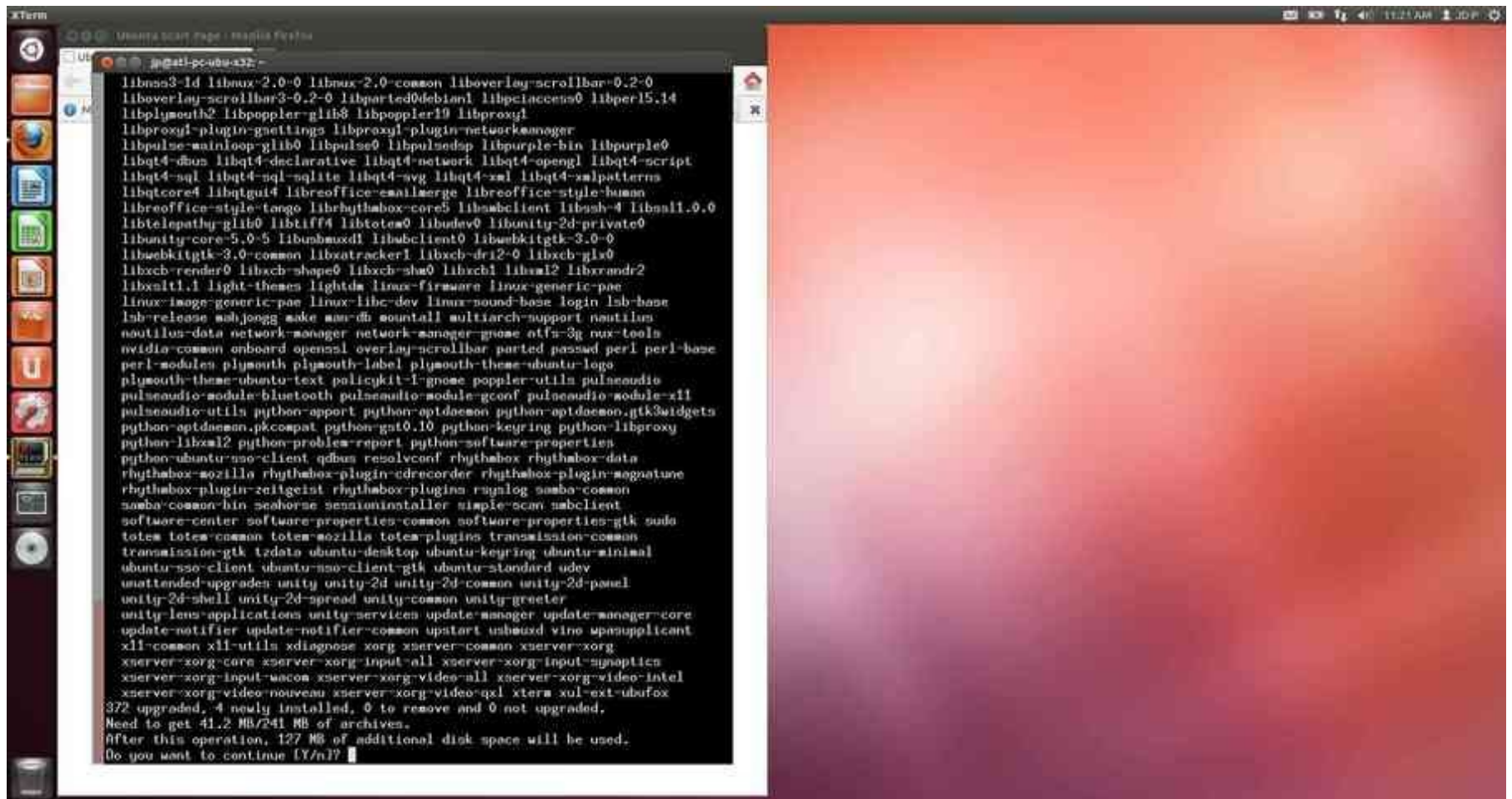
Installing X.Org Server 1.11 modules ...done.

Setting up the Window System to use the Guest Additions ...done.

You may need to restart the hal service and the Window System (or just restart the guest system) to enable the Guest Additions.

Installing graphics libraries and desktop services components ...done.

jp@atl-pc-ubu-x32:/media/VBOXADDITIONS_4.2.10_84104\$

A screenshot of an Ubuntu desktop environment. On the left is a vertical dock with various application icons. The main window is a terminal titled 'xTerm' with a black background and white text. The terminal shows the output of the 'sudo apt-get update' command, listing a large number of packages that are to be upgraded or newly installed. At the bottom of the terminal, it states '372 upgraded, 4 newly installed, 0 to remove and 0 not upgraded. Need to get 41.2 MB/241 MB of archives. After this operation, 127 MB of additional disk space will be used. Do you want to continue [Y/n]?'.

```
libnss3-ld libnux-2.0-0 libnux-2.0-common liboverlay-scrollbar-0.2-0
liboverlay-scrollbar3-0.2-0 libparted0debian1 libpciaccess0 libperl5.14
libplymouth2 libpoppler-glib8 libpoppler19 libproxyl
libproxyl-plugin-gsettings libproxyl-plugin-networkmanager
libpulse-mainloop-glib0 libpulse0 libpulse0 libpurple-bin libpurple0
libqt4-dbus libqt4-declarative libqt4-network libqt4-opengl libqt4-script
libqt4-sql libqt4-sql-sqlite libqt4-avg libqt4-xml libqt4-xmlpatterns
libqtcore4 libqtgui4 libreoffice-emailmerge libreoffice-style-human
libreoffice-style-tango librhythmbox-core5 libasbclient libssh-4 libssl1.0.0
libtelepathy-glib0 libtiff4 libtotem0 libudev0 libunity-2d-private0
libunity-core-5.0-5 libunibaudxdl libubclient0 libubkkitgtk-3.0-0
libubkkitgtk-3.0-common libxatracker1 libxcb-dri2-0 libxcb-glx0
libxcb-render0 libxcb-shape0 libxcb-shm0 libxcb1 libxml2 libxrandr2
libxml1.1 light-themes lightdm linux-firmware linux-generic-pae
linux-image-generic-pae linux-libc-dev linux-sound-base login lsb-base
lsb-release subversion make mmio mountall multiarch-support nautilus
nautilus-data network-manager network-manager-gnome ntpu-3g nux-tools
nvidia-common onboard openssh overlay-scrollbar parted passwd perl-base
perl-modules plymouth plymouth-label plymouth-theme-ubuntu-logo
plymouth-theme-ubuntu-text policykit-1-gnome poppler-utils pulseaudio
pulseaudio-module-bluetooth pulseaudio-module-gconf pulseaudio-module-xfi
pulseaudio-utils python-appport python-aptdaemon python-aptdaemon.gtk3widgets
python-aptdaemon.pkcompat python-gst0.10 python-keyring python-libproxy
python-libxml2 python-problem-report python-software-properties
python-ubuntu-ss-client qdbus resolvconf rhythmbox rhythmbox-data
rhythmbox-mozilla rhythmbox-plugin-cdrrecorder rhythmbox-plugin-magnatune
rhythmbox-plugin-zc1geint rhythmbox-plugins rsynclog samba-common
samba-common-bin seahorse seahorse-installer simple-scan smbclient
software-center software-properties-common software-properties-gtk sudo
totem totem-common totem-mozilla totem-plugins transmission-common
transmission-gtk tzdata ubuntu-desktop ubuntu-keyring ubuntu-minimal
ubuntu-ss-client ubuntu-ss-client-gtk ubuntu-standard udev
unattended-upgrades unity unity-2d unity-2d-common unity-2d-panel
unity-2d-shell unity-2d-spread unity-common unity-greeter
unity-lens-applications unity-services update-manager update-manager-core
update-notifier update-notifier-common upstart usbmuxd vino wpa supplicant
x11-common x11-utils xdiagnose xorg xserver-common xserver-xorg
xserver-xorg-core xserver-xorg-input-all xserver-xorg-input-synaptics
xserver-xorg-input-wacom xserver-xorg-video-all xserver-xorg-video-intel
xserver-xorg-video-nouveau xserver-xorg-video-qxl xterm xul-ext-ubufox
372 upgraded, 4 newly installed, 0 to remove and 0 not upgraded.
Need to get 41.2 MB/241 MB of archives.
After this operation, 127 MB of additional disk space will be used.
Do you want to continue [Y/n]?
```

Get completely patched - OS, apps, everything:

\$ sudo apt-get update

\$ sudo apt-get dist-upgrade

To enable Guest Addition features like vGPU acceleration, Shared Folders with the HostOS, desktop resizing, NTP, we need to reboot.

\$ sudo reboot

**At this point, you have a stock, Ubuntu 12.04 LTS install running
Ubuntu 12.04.2 LTS. Supported until April 2017.**

Congratulations.

When running on current hardware doing non-GUI tasks,
I see 95% of native performance.

When running full-screen, I forget that I'm in a VM.

Honestly, I don't use stock Ubuntu. I install a server release, then add the specific GUI that I prefer - LXDE or fvwm. these are both light-weight compared to Unity, which is a hog styled after Microsoft and OSX GUIs.

In total, about 45 minutes is needed to perform this install.

Try alternative GUIs:

\$ sudo apt-get install fvwm lxde

then select the alternative GUI on the main login screen. Linux is the base OS, not the GUI. GUIs can be swapped in and out as you like. I don't understand why people dump Ubuntu for Mint. They are the SAME OS, just a with a slightly different GUI.

The Mint GUI is available under Ubuntu.

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