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Contents

[Purpose 2](#_Toc392504326)

[Starting Point 2](#_Toc392504327)

[Building Virtual Machine 2](#_Toc392504328)

[Start VMware Workstation 2](#_Toc392504329)

[Use ISO file as Installation Disk 4](#_Toc392504330)

[Virtual Machine Configuration 7](#_Toc392504331)

[Define Number of Virtual Processors 7](#_Toc392504332)

[Define Virtual Memory Configuration 8](#_Toc392504333)

[Define Virtual Networking Configuration 9](#_Toc392504334)

[Define Virtual Disk Configuration 10](#_Toc392504335)

[Creating Virtual Machine 13](#_Toc392504336)

[Installing Windows 15](#_Toc392504337)

[Installing VMware Tools 18](#_Toc392504338)

[Running Windows Update 18](#_Toc392504339)

[Shared Folders 19](#_Toc392504340)

[Windows 7 Virtual Machine Configuration 21](#_Toc392504341)

[Folder Options 21](#_Toc392504342)

[Virus Detection 22](#_Toc392504343)

[Utility programs 22](#_Toc392504344)

[Anaconda Python 22](#_Toc392504345)

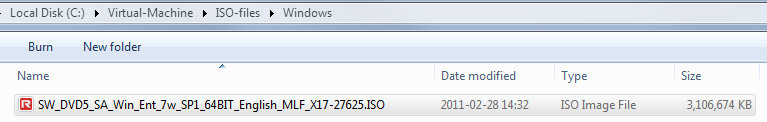
[Periodic Windows Updates 24](#_Toc392504346)

# Purpose

These instructions describe how to build a Windows 7 VMware virtual machine for use in various software experiments.

# Starting Point

1. **Windows 7** (64-bit operating system)
2. **VMware Workstation 10** for Windows or later should be installed. [VMware products are free to UMKC Faculty/Staff through this link: [www.med.umkc.edu/vmware](http://www.med.umkc.edu/vmware) . Fill out the form to order VMware Workstation for $0 and to receive a download link.]
3. **Windows 7 ISO file** (~3 GB, from Christopher Boyce on 2014-01-10):

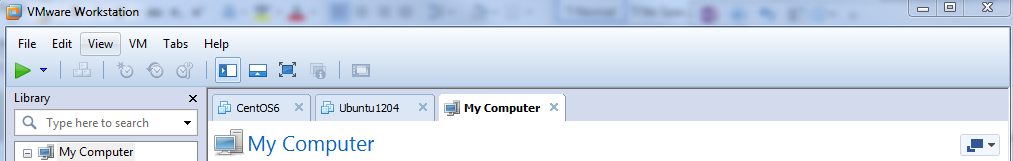


Note: Students can use the VMware software under the existing licenses, but cannot use the Windows license on a virtual machine on a PC not owned by UMKC.

# Building Virtual Machine

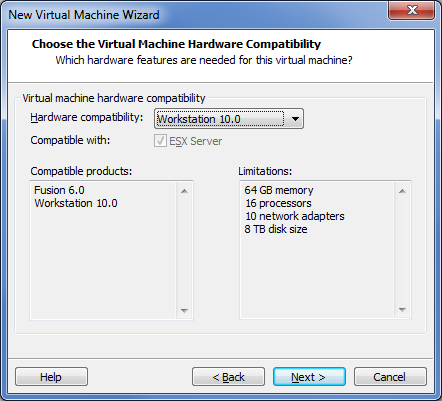
**2014-01-13**

## Start VMware Workstation

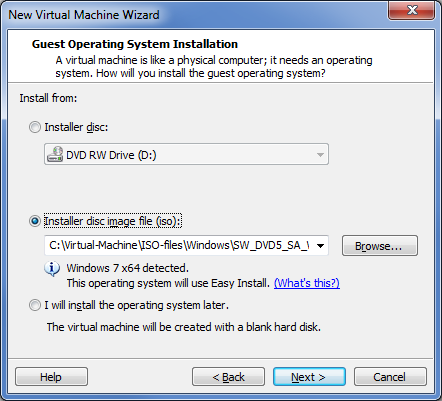


File | New Virtual Machine

  
Next

  
Next

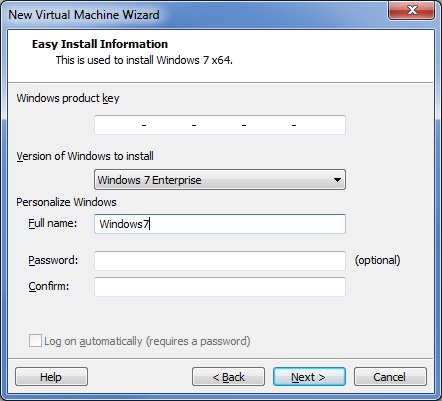
## Use ISO file as Installation Disk



ISO file (from Christopher Boyce) is stored here:

C:\Virtual-Machine\ISO-files\Windows\**SW\_DVD5\_SA\_Win\_Ent\_7w\_SP1\_64BIT\_English\_MLF\_X17-27625.ISO**

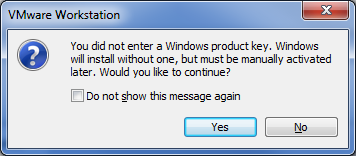
Next



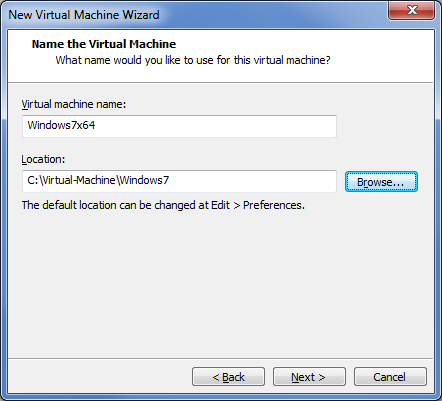
Leave Windows product key blank.

According to Christopher Boyce (2014-01-10): "There is no license key, it will activate automatically once it is on the network and finds our MAK key server."

Next



Yes



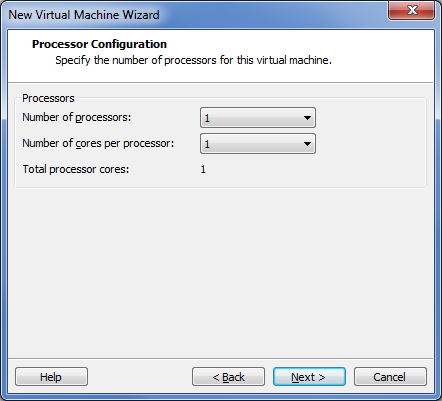
Use **C:\Virtual-Machine** folder for location of various virtual machines.

Let's put this new one in **C:\Virtual-Machine\Windows7**.

Next

## Virtual Machine Configuration

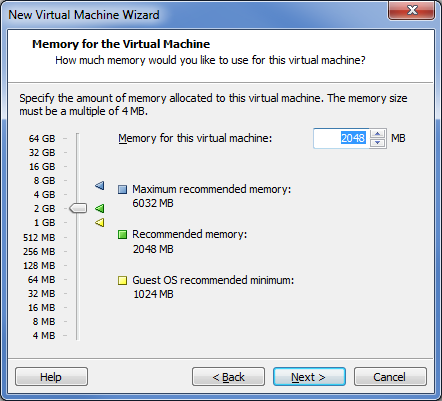
### Define Number of Virtual Processors



For now only use a single processor.

Next

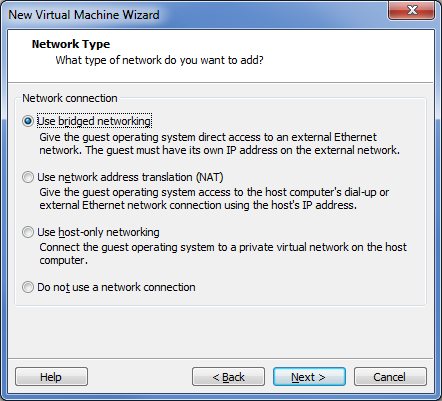
### Define Virtual Memory Configuration



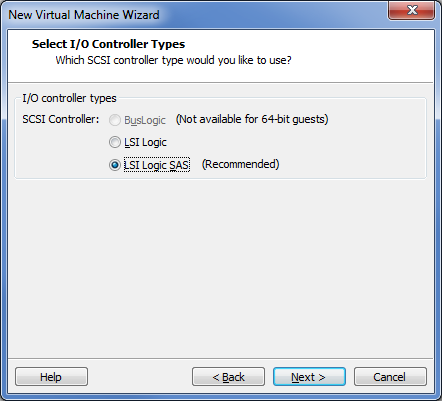
Let's assign about 25% of total memory to this virtual machine.

Next

### Define Virtual Networking Configuration

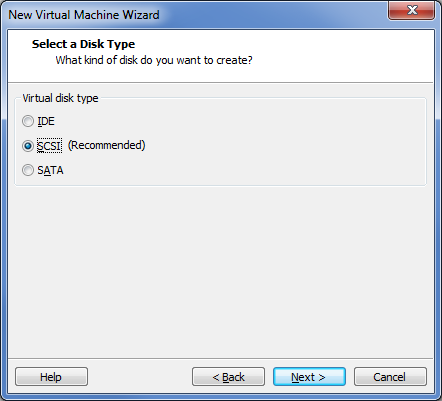


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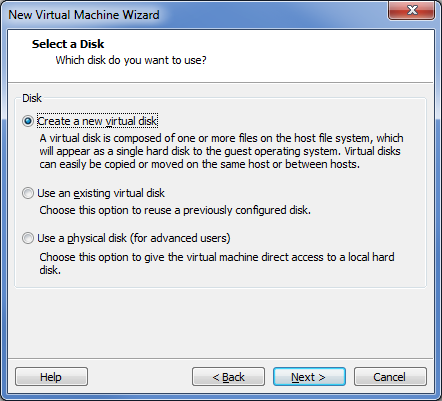


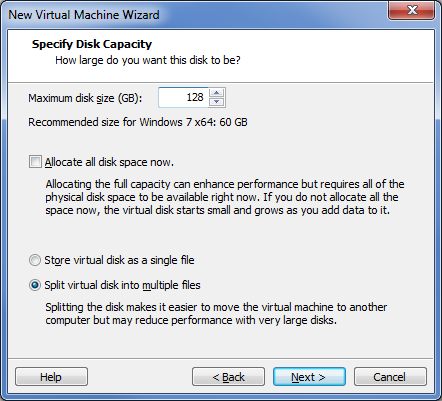
Use default for now. [Unclear why there is a different default for Windows than Linux.]

### Define Virtual Disk Configuration



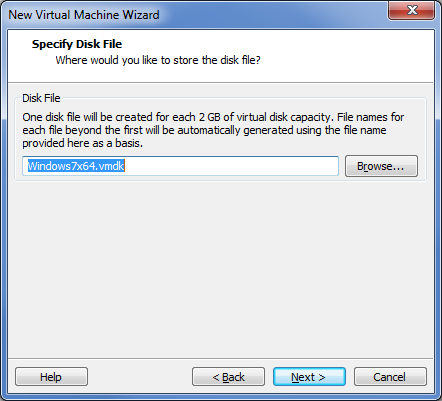
Next





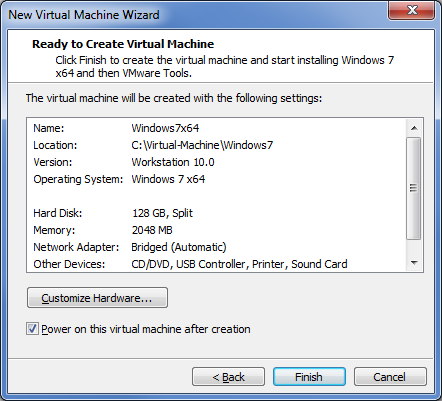
The 128 GB virtual disk is fairly large to accommodate possible software experiments. The needed space is nearly 30 GB.

Next

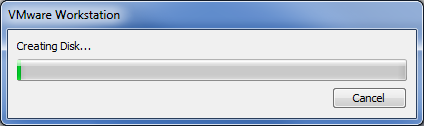


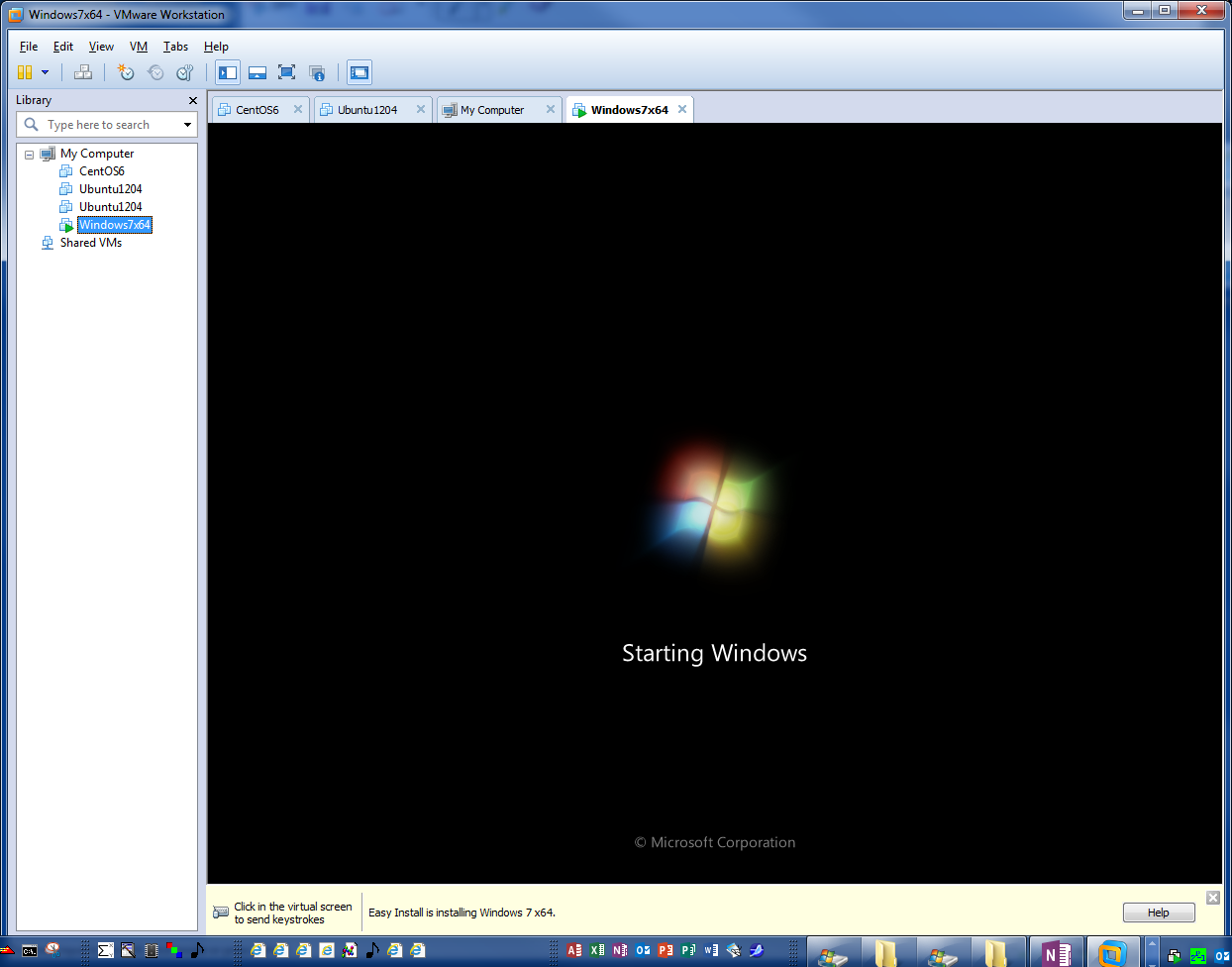
Next

## Creating Virtual Machine



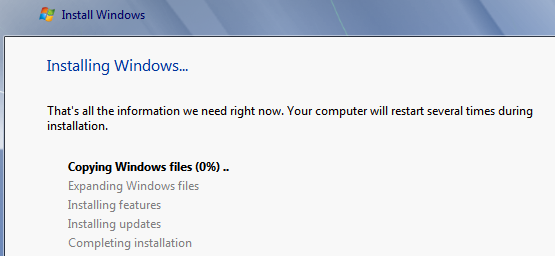
Finish

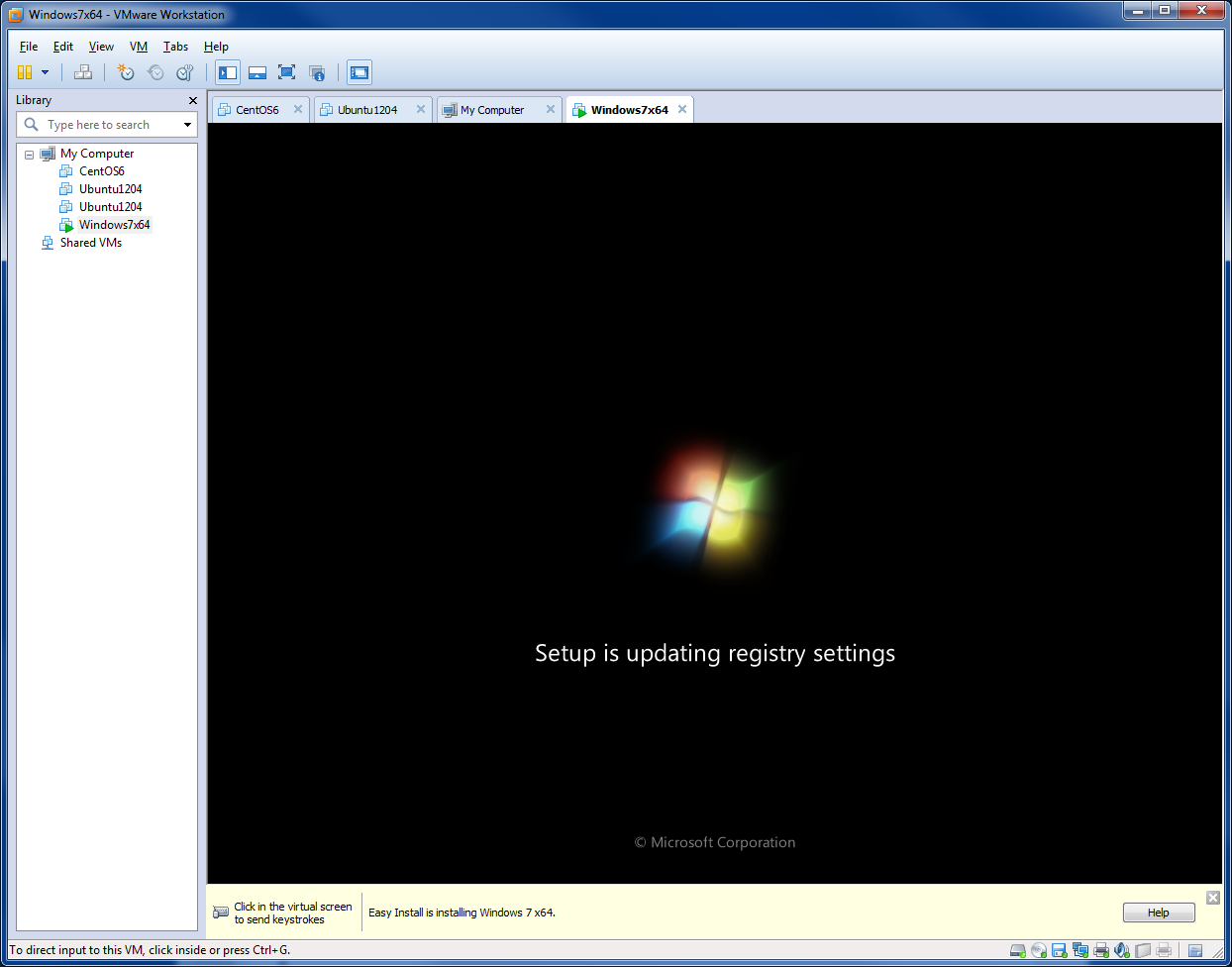


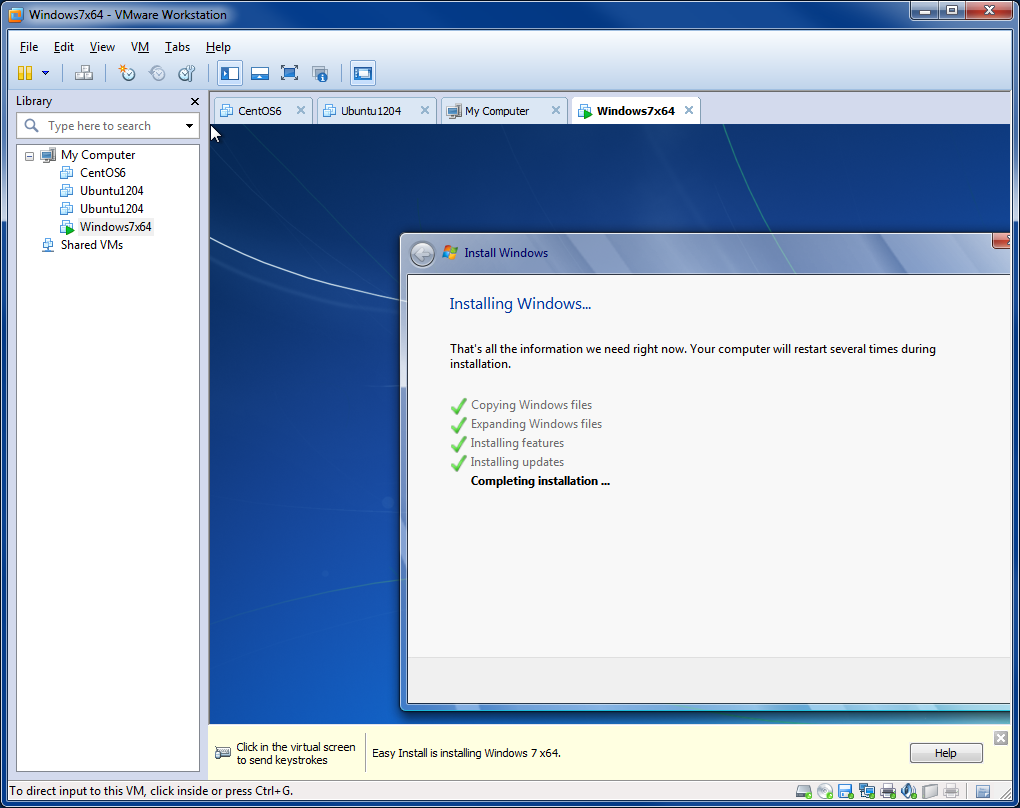


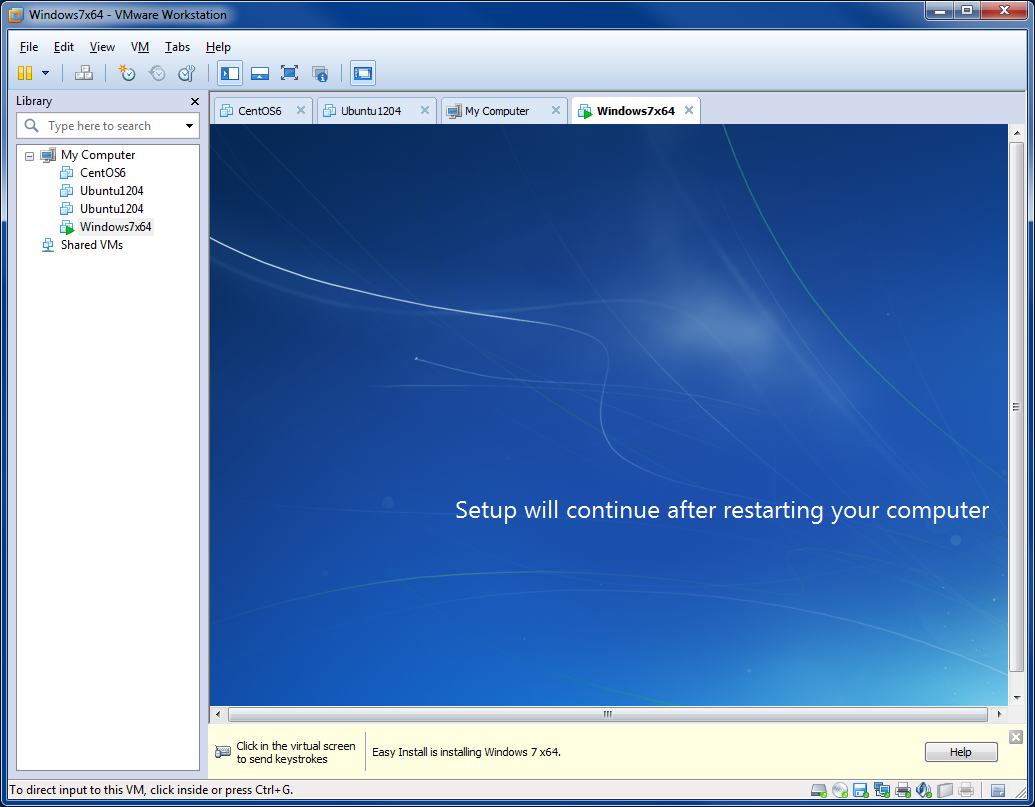


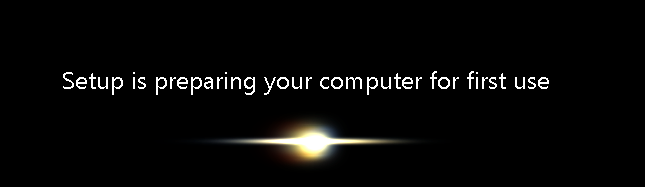
## Installing Windows



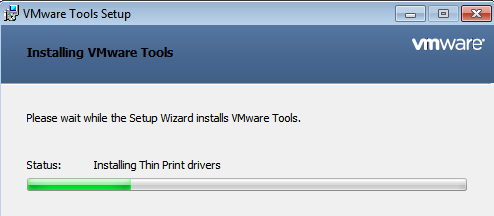




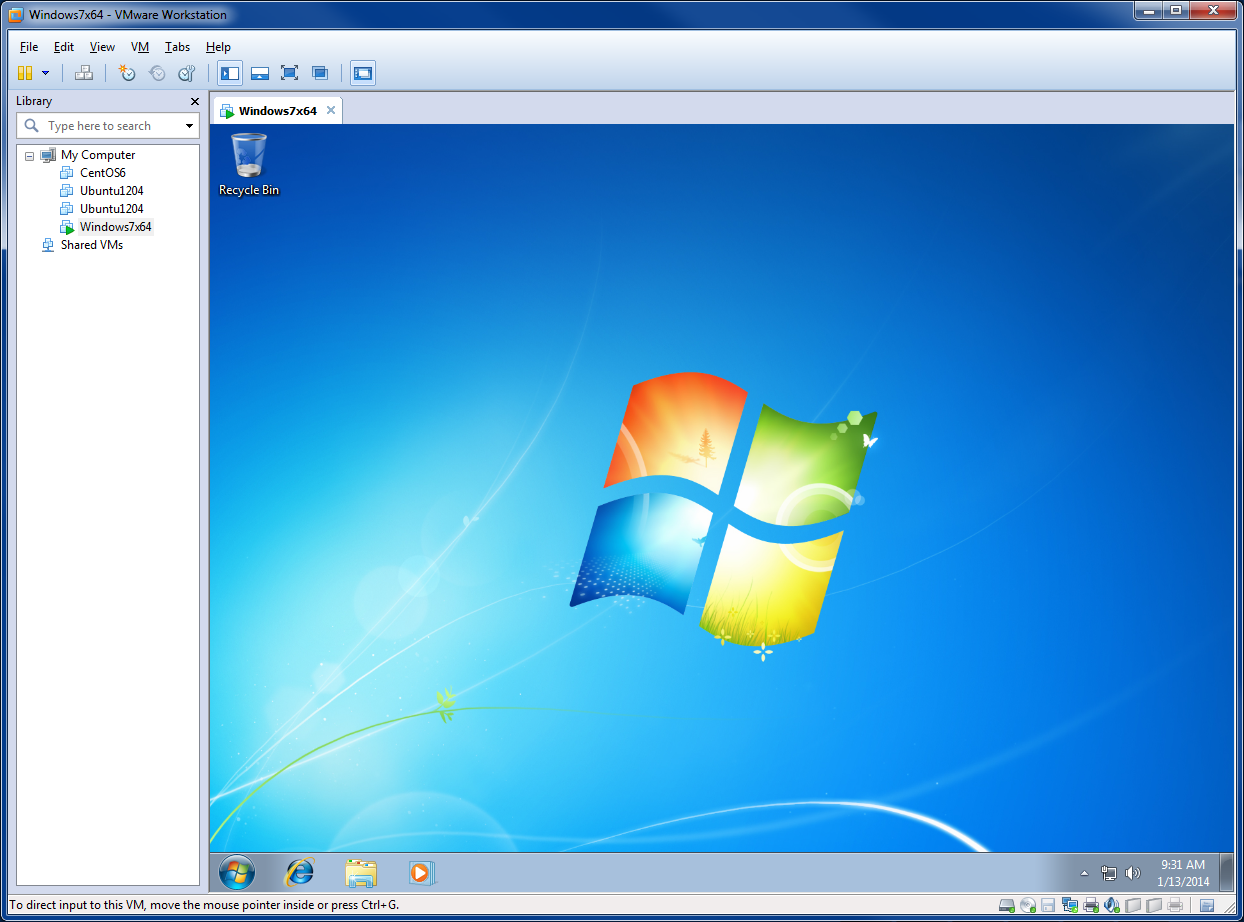




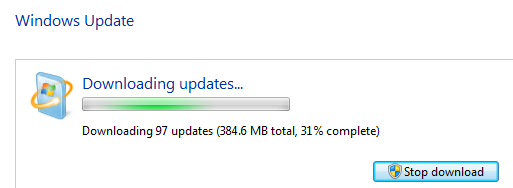
## Installing VMware Tools

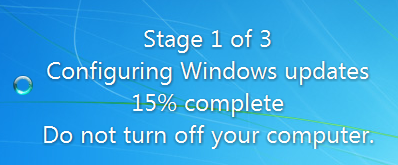


## Running Windows Update

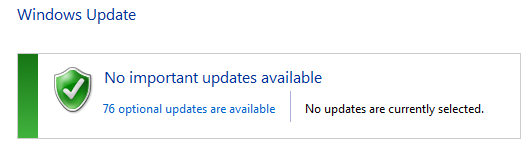


Start | Control Panel | search for Windows Update | Check for Updates





Repeat Windows Update until no updates are made.



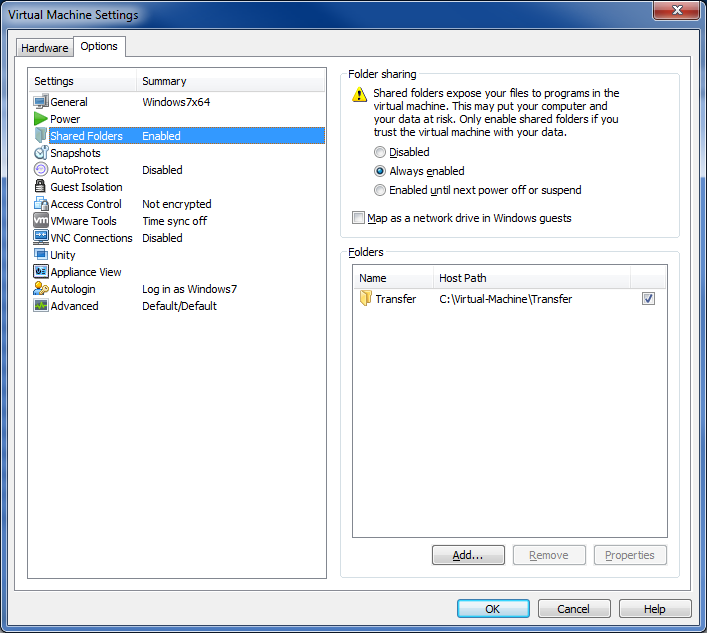
Shutdown virtual machine after updates are complete.

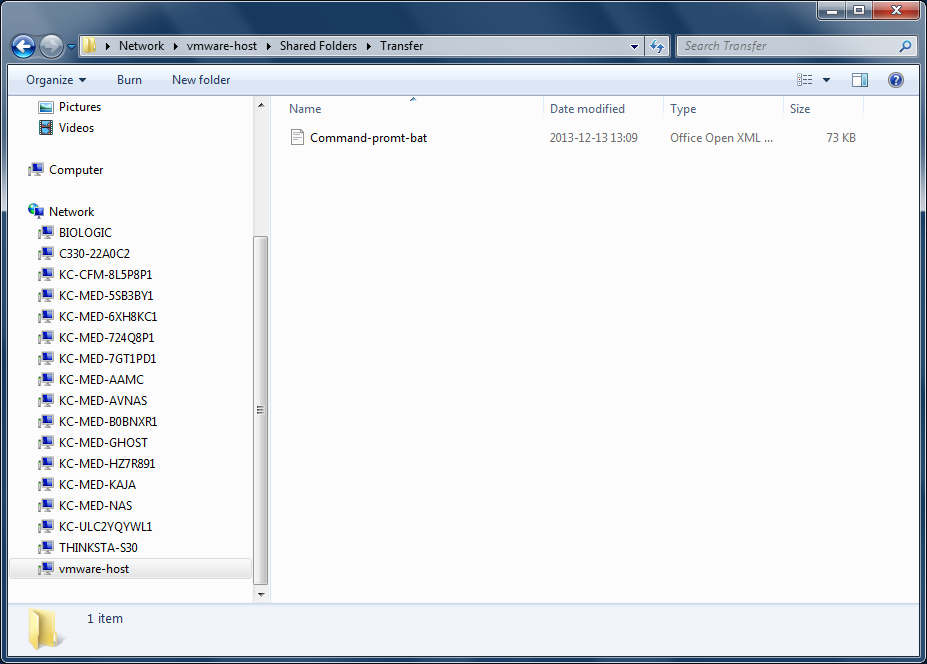
Save this as the base machine

# Shared Folders

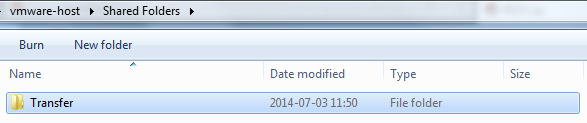
Shared folders are an easy way to transfer files between the virtual machine and the host. Instead of exposing the whole host machine to the virtual machine, I normally specify only a single directory that is shared,

C:\Virtual-Machine\Transfer.





The vmware-host under network is where the shared folders can be found in the VM:



# Windows 7 Virtual Machine Configuration

## Folder Options

Search for "Folder Options" in Control Panel. On the "View" tab, make sure file extensions are always shown by unchecking:



## Virus Detection

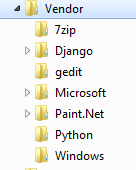
While a virtual machine can be "thrown away" easily and re-created by copying files, having some virus detection software is still a good idea.

Install Microsoft Security Essentials: <http://windows.microsoft.com/en-us/windows/security-essentials-download>

## Utility programs

A number of utility programs may be useful for software experiments using a virtual machine.

Install these programs to create new baseline machine



Install these applications:

* gedit
* Paint.Net
* 7zip

### Anaconda Python

The Anaconda Python distribution includes SciPy/Numpy/MatPlotLib, which is quite useful for a variety of computations. [Delete 342 MB installation file when complete.]

Because some Python packages have not been converted to Python 3, let's use Python 2 for now.

<http://docs.continuum.io/anaconda/index.html#packages-included-in-anaconda>

After Anaconda installation:

>echo %Path%

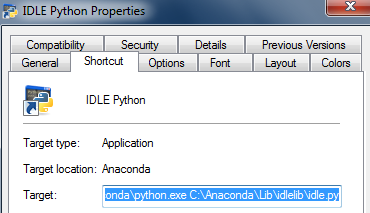
C:\Windows\system32;C:\Windows;C:\Windows\System32\Wbem;C:\Windows\System32\WindowsPowerShell\v1.0\;C:\Anaconda;C:\Anaconda\Scripts

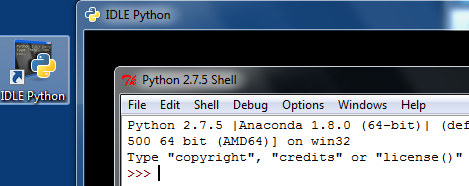
>python

Python 2.7.5 |Anaconda 1.8.0 (64-bit)| (default, Jul 1 2013, 12:37:52) [MSC v.1500 64 bit (AMD64)] on win32

Type "help", "copyright", "credits" or "license" for more information.

Setup link to IDLE Integrated Development Environment:





# Periodic Windows Updates

Don't let the virtual machine get too out of date, so periodically run Windows Update (sometimes multiple times) to install all recent updates.

2014-07-01

1. Control Panel | Windows Update (twice)
2. Control Panel | User Account Control Settings | Never notify

Additional applications:

1. Install Firefox browser
2. Install Chrome browser