



## How to install Windows 7 Professional using VMware Workstation 8.0

Intended Audience This document is designed to help an entry level student install Windows 7 Professional as a virtual PC within VMware Workstation 8.0 (hereafter referred to as VMWare). Students that are taking Principles of Information Security will likely be the biggest audience.

Introduction: Throughout your course work you will be using the Windows operating systems, especially Windows 7 Professional. Most of the CIT Networking/Unified Communication Specialist classes, including the core course Principles of Information Security, will require you to perform hands-on lab activities using the Windows 7 Professional operating system within a virtual PC environment running under VMware. This document will help you install Windows 7 Professional in such an environment.

Prerequisites: The installation of Windows 7 Professional as a virtual PC requires that you have VMware installed. The procedures detailed in this document also require that you have a software serial number for Windows 7 Professional. NTC will provide you with this serial number, which has no expiration date. These instructions will assume that you do not have this serial number, so there will be instructions on getting it.

You are also required to have a properly formatted, external, USB hard drive.

Instructions: This is a step-by-step guide. You are advised to perform the exercises precisely as indicated. Please read and follow the following installation steps closely.

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### SECTION 1: OBTAIN THE WINDOWS 7 PROFESSIONAL SERIAL NUMBER.

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**Please follow the procedures detailed below in the given sequence:**

1. Visit your NTC Student e-mail and look for a message from **Northcentral Technical College - Computer and Information Technology - DreamSpark**. It should look like the image below.

An account has been created for you

Inbox x

Northcentral Technical College - Comput 9:05 PM (0 minutes ago) ★ to me ↗

\*\* This is an automated message -- please do not reply as you will not receive a response. \*\*

Welcome [grey.husband@gmail.com](mailto:grey.husband@gmail.com) to your DreamSpark WebStore:  
Northcentral Technical College - Computer and Information Technology - DreamSpark

You'll be excited to know a user account was just created for you at your school's DreamSpark WebStore. With it, you can download and access a wide range of Microsoft developer tools, servers, and platforms for free!

Get Started Now

To complete the registration process, you need to follow just 1 step! Clicking the registration link below will send you to a page where you'll be asked to create a unique password for your account. Once that's complete, you're done!

Complete Your Registration:  
<http://e5.onthehub.com/d.ashx?s=rtiluq2ex&u=2278f654-4a42-e111-a1f4-f04da23e67f6>

If you experience problems clicking the link above, please try copying and pasting the entire link into a browser.

Technical Support

Note: If you do not receive this e-mail contact your instructor and skip to section 2 - you can come back to this section after receiving the above mentioned e-mail.

2. From within this e-mail click on the first **e5.onthehub.com** link provided. This link will allow you to complete your registration and login to the MSDN web site. See image below.

**DREAM** today. Create tomorrow. →

Microsoft DreamSpark

Software Mail Order

Account Registration

Last Name\* First Name\*  
Husband Grey

Username (email address)\*  
grey.husband@gmail.com

Email Address\*  
grey.husband@gmail.com

I would like to subscribe to receive information on the latest Microsoft events, updates, special offers, and more!

Choose a Password\*  
••••••••  
Password must be at least six characters long.

Confirm Password\*  
••••••••  
Must match the password above.

Complete this registration document and then click Register.

Back Register

3. After you click **Register** you will be logged on to the MSDN web site, which is called Microsoft DreamSpark. See image below.

The screenshot shows the Microsoft DreamSpark website. At the top, it says "Welcome grey.husband@gmail.com" with "Sign Out" and "English" options. The main header is "DREAM today. Create tomorrow." with a green arrow icon. Below the header, there are social sharing buttons for Twitter, Facebook, and a "Sign Up to see what your friends like." link. A "Announcements" box lists two items: "Announcing the new DreamSpark Program" (2012-01-16) and "New Secure Download Manager" (2012-01-13). A navigation bar has "Software" and "Mail Order" tabs. A yellow banner at the bottom says "Thank you for registering." On the left, a sidebar titled "Categories" lists "Popular (17)" categories: Operating Systems (20), Developer Tools (59), Servers (46), Applications (32), Other (4), and All (157). The main content area is titled "Microsoft Corporation" and shows icons for Microsoft Windows 7, Microsoft Visual Studio 2010, Microsoft Visio 2010, Microsoft Project 2010, Microsoft Expression Studio 4, and Microsoft XNA Game Studio 4.

4. In the Microsoft Corporation window you will notice the popular downloads, including Windows 7. Click on the Microsoft Windows 7 icon. If you do not see the Microsoft Windows 7 option shown in the image above, click on Operating Systems and look for it there.
5. After clicking the Microsoft Windows 7 icon you will get a list of different downloads for Microsoft Windows 7 Professional. Click the **Add to Cart** link next to the 32 bit edition of Microsoft Windows 7 Professional with Service Pack 1. See image below.

# DreamSpark: Microsoft software for learning, teaching and research

Product Search 

DreamSpark Premium

Mail Order

Special Offers

[Microsoft Windows 7 Professional](#)

[Microsoft Windows 7 with Service Pack 1 Debug/Checked Build](#)

## Microsoft Windows 7 Professional



Simplify everyday tasks: find something instantly, compare documents side-by-side, or easily back-up your complete system over a network.  
Enjoy a PC that works the way you want it to; supports 64-bit technologies and offers XP Mode for your business productivity applications.  
Make new things possible: watch Internet TV, pause, rewind, and record TV or use Touch to interact with your PC in new ways.

### Download

[Microsoft Windows 7 Professional with Service Pack 1 32/64-bit \(English\) - DreamSpark](#)

Available to: Students/Faculty/Staff

Free

Quantity:

 [Add To Cart](#)

6. After clicking **Add to Cart**, you will be prompted with the Your Cart window shown below. Click **Check Out**.

DreamSpark: Microsoft software for learning, teaching and research

Product Search 

DreamSpark Premium Mail Order Special Offers

**Your Cart**

	Quantity	Unit Price	Price
 Microsoft Windows 7 Professional with Service Pack 1 32/64-bit (English) - DreamSpark - Download Date Added: 2013-01-31 12:29 PM	1	Free	Free
 <b>Extended Access Guarantee (24 months) - Included</b> 24 months of access to your download and/or key. This <b>does not extend</b> the duration of time-limited licenses (if applicable).			
<input type="button" value="Update Cart"/> <b>Subtotal: \$0.00</b>			

 [Continue Shopping](#)  [Check Out](#)

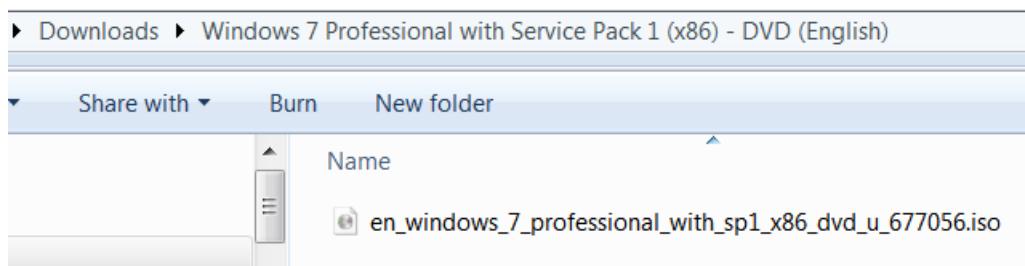
7. In the **DreamSpark EULA** window agree to the terms listed.
8. In the **Windows 7 Upgrade Considerations** window, click **Continue**.
9. In the **Order** window click **Proceed with Order**.
10. In the **Receipt** window you will find the Product Key that you will need to activate your Windows 7 Professional. Leave this window open for section 2. See image below

**Messages**   **Order**   **Receipt**

1 Your order has been placed and a confirmation email will be sent to you shortly. You may want to print this page for your records. Detailed information about all of your orders can be found under Your Account.

<p><b>Order Summary</b></p> <p>Order Date: 2013-01-31 12:31 PM Central Standard Time</p> <p>Order Number: 100162131005</p>	<p><b>Order Information</b></p> <p>Name: gregg husband Email: husband@ntc.edu</p>															
<p><b>Items</b>   All prices are in US Dollars</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%;"></th> <th style="width: 40%;"></th> <th style="width: 10%; text-align: center;">Quantity</th> <th style="width: 10%; text-align: center;">Unit Price</th> <th style="width: 10%; text-align: center;">Amount</th> </tr> <tr> <td></td> <td>             Microsoft Windows 7 Professional (English) - DreamSpark - Download   <b>Extended Access</b>            24 months of access to your download and/or key. This <b>does not extend</b> the duration of time-limited licenses (if applicable).            Expires 2015-01-31         </td> <td style="text-align: center;">\$0.00</td> <td style="text-align: center;">\$0.00</td> <td></td> </tr> <tr> <td colspan="5" style="text-align: right; padding-top: 10px;"> <b>Start Download</b> </td> </tr> </table> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>Product code shows here.</p>  </div>				Quantity	Unit Price	Amount		 Microsoft Windows 7 Professional (English) - DreamSpark - Download  <b>Extended Access</b> 24 months of access to your download and/or key. This <b>does not extend</b> the duration of time-limited licenses (if applicable). Expires 2015-01-31	\$0.00	\$0.00		<b>Start Download</b>				
		Quantity	Unit Price	Amount												
	 Microsoft Windows 7 Professional (English) - DreamSpark - Download  <b>Extended Access</b> 24 months of access to your download and/or key. This <b>does not extend</b> the duration of time-limited licenses (if applicable). Expires 2015-01-31	\$0.00	\$0.00													
<b>Start Download</b>																

11. If you are working from a Windows box you can download the Windows 7 Professional installation image by clicking **Start Download**. Follow the instructions that you will be given. After the download is complete, you will have the installation image that you will need for Section 2. See images below.



If you have difficulty downloading the .iso image shown above, please download the file from the following directory on NTC's network drive.

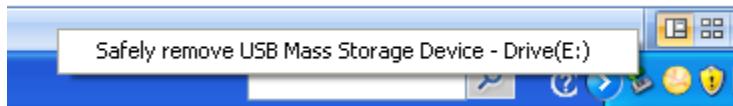
g:\cit\husband gregg\class information\misc-isos

Proceed to Section 2.

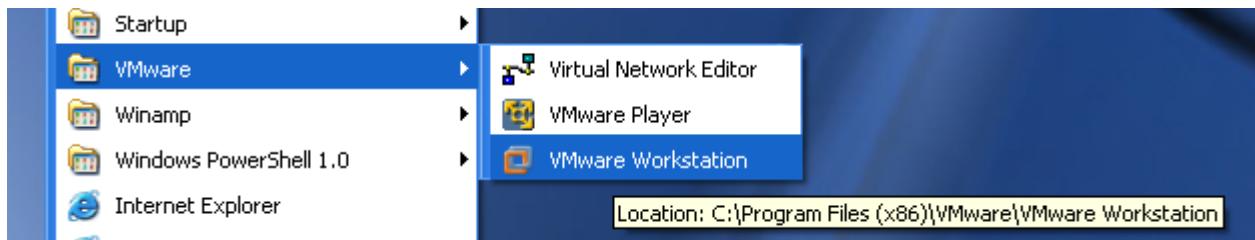
## SECTION 2: INSTALL THE WINDOWS 7 PROFESSIONAL WITHIN VMWARE.

**Please follow the procedures detailed below in the given sequence:**

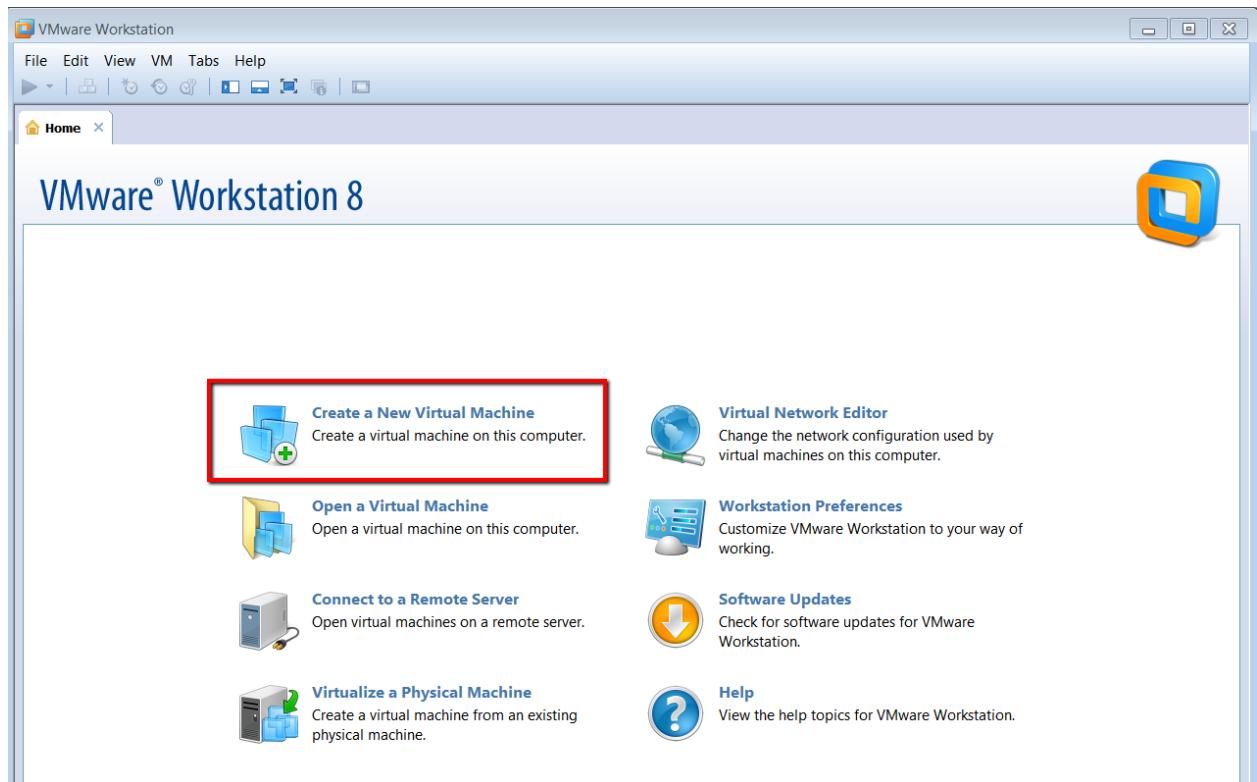
1. Hook up your USB hard drive to your USB port on your computer and plug it into the power supply if necessary. Some USB hard drives do not have a power supply and will get the power needed from the USB connection. If you have a cable with two USB connectors, one will be for power (usually the thinner of the two cables) while the other will be used for data transfer. The USB hard drive should automatically be recognized and given a drive letter. When this happens, you will see a green arrow in your tool bar on the bottom right. If you place your cursor over this green arrow it will show you that this is how you properly dismount the hard drive. If you click on the arrow it will show you the drive letter. If you click on the drive letter you will dismount the hard drive. See image below.



2. Startup your VMware Workstation software. If you do not have this software installed, please read How to install VMware Workstation 8.0. If you are working from a lab computer, the software should have already been installed. See image below.



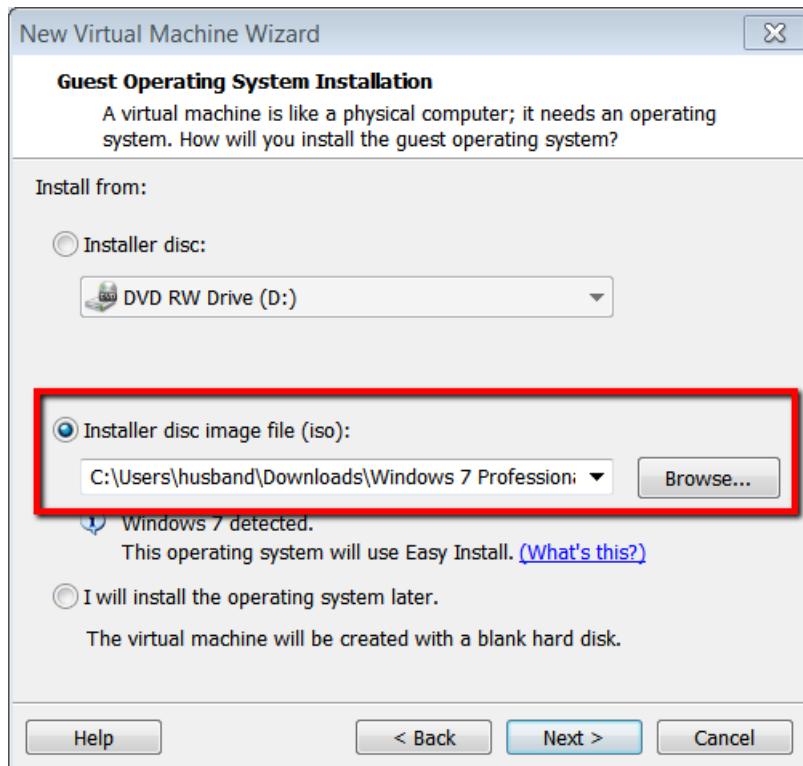
3. Click on **Create a New Virtual Machine** to build the container that will hold your virtual operating system. This will only have to be done once per virtual operating system that you build. For now, you will only be building only one virtual operating system. See image below.



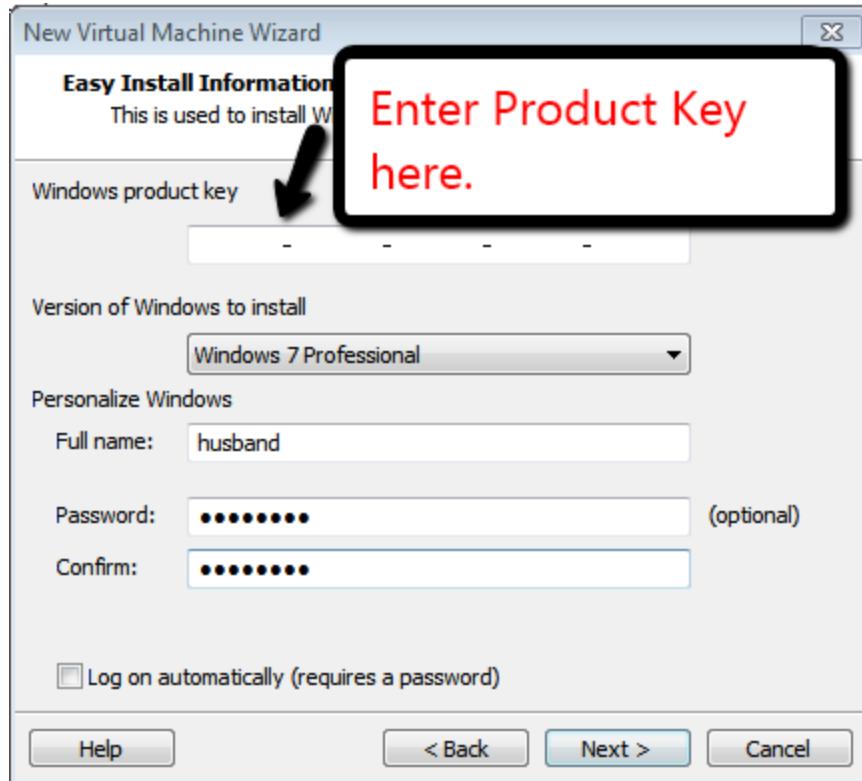
4. In the Welcome to the New Virtual Machine Wizard window, click **Typical** and then click **Next**. See image below.



5. In the Guest Operating System Installation window, click the radio button next to Installer disc image file (iso). Click the Browse button, locate and select the Windows 7 Professional image file (.iso) that you had either downloaded from the MSDN web site or that you had downloaded from NTC's G: drive. This .iso should be named with a prefix of **en\_windows\_7\_professional\_with\_sp1\_x86\_dvd**. If you do not have this file, contact your instructor immediately. You cannot continue without this file! Once selected, click **Next**. See image below.



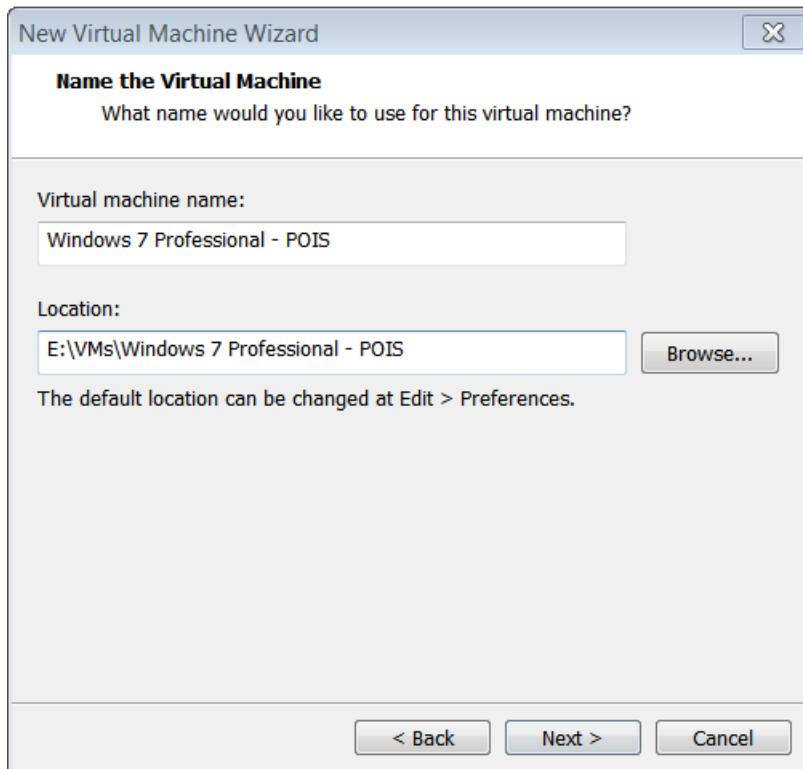
6. In the Easy Install Information window, enter the product key that you obtained from the MSDN web site (see Section 1). If you still have the Receipt window open listing the Windows 7 Professional product key, you may copy and paste it, otherwise simply type it in. While in the Easy Install Information window change the version to be **Windows 7 Professional** (this is important!). Enter a user name, such as your last name, and a password of **p@ssw0rd** (0=zero). Click **Next**. See image below.



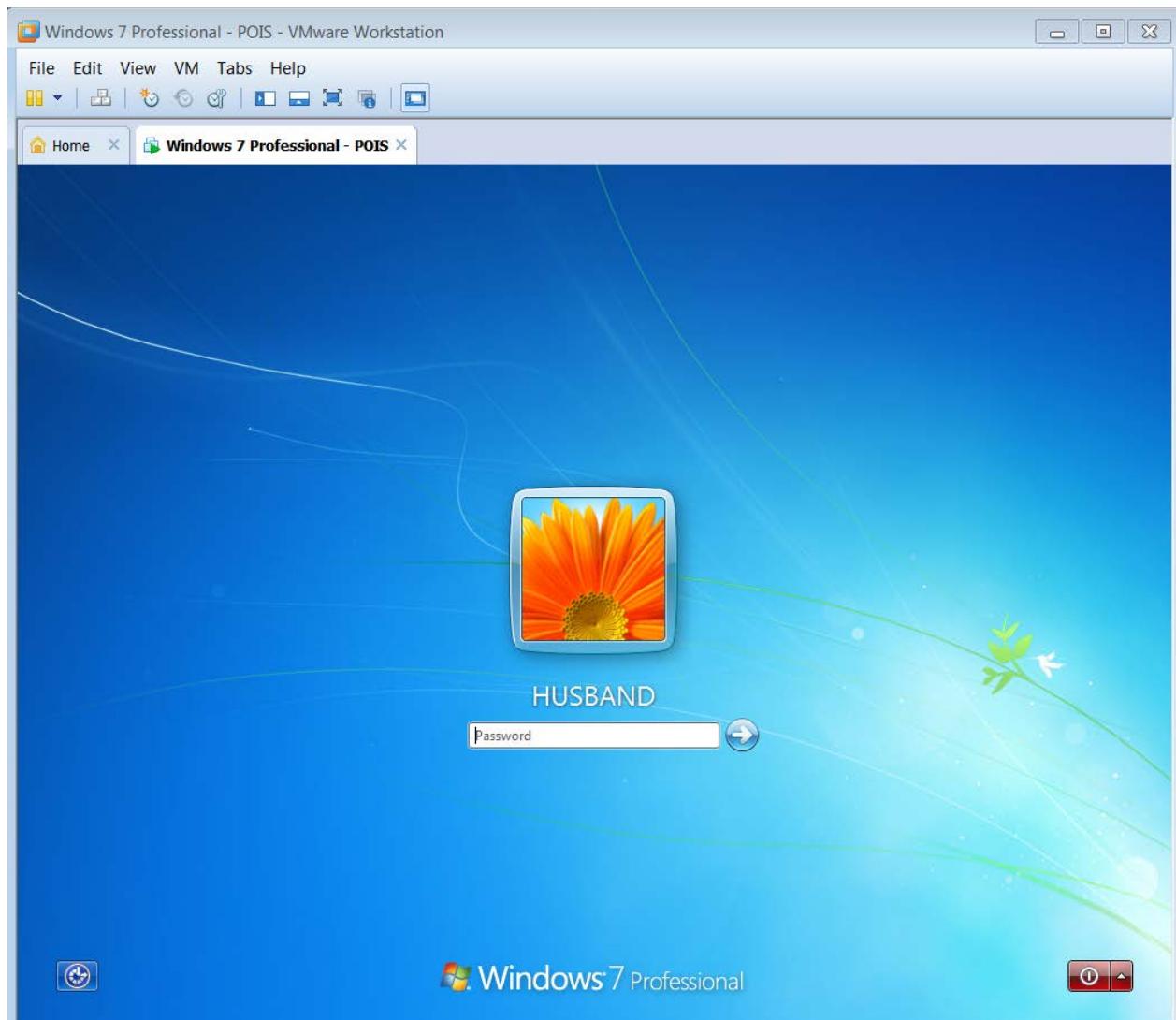
**Note:** if you do not have the product key at this time, you can still continue, you will just have to enter it manually when you activate the operating system. Your operating system will still function normally without activation for up to 30 days. **Also, be sure that you select Windows 7 Professional as the version of Windows to install!**

7. In the Name Virtual Machine window, either keep the default virtual machine name or change it to your liking. Change the Location to be where you would like to store the virtual machine files using the following guidelines:
  - The drive letter should be the drive letter that represents your USB hard drive (see step 1).
  - The directory structure where the virtual machine files will be stored should have a parent directory called “Virtual Machines” or “VMs” and have a subdirectory named after the virtual machine’s name. You may wish to include multiple subdirectory names to identify the semester and the class. See the example shown below.

**WARNING: DO NOT TAKE THE DEFAULT LOCATION.**

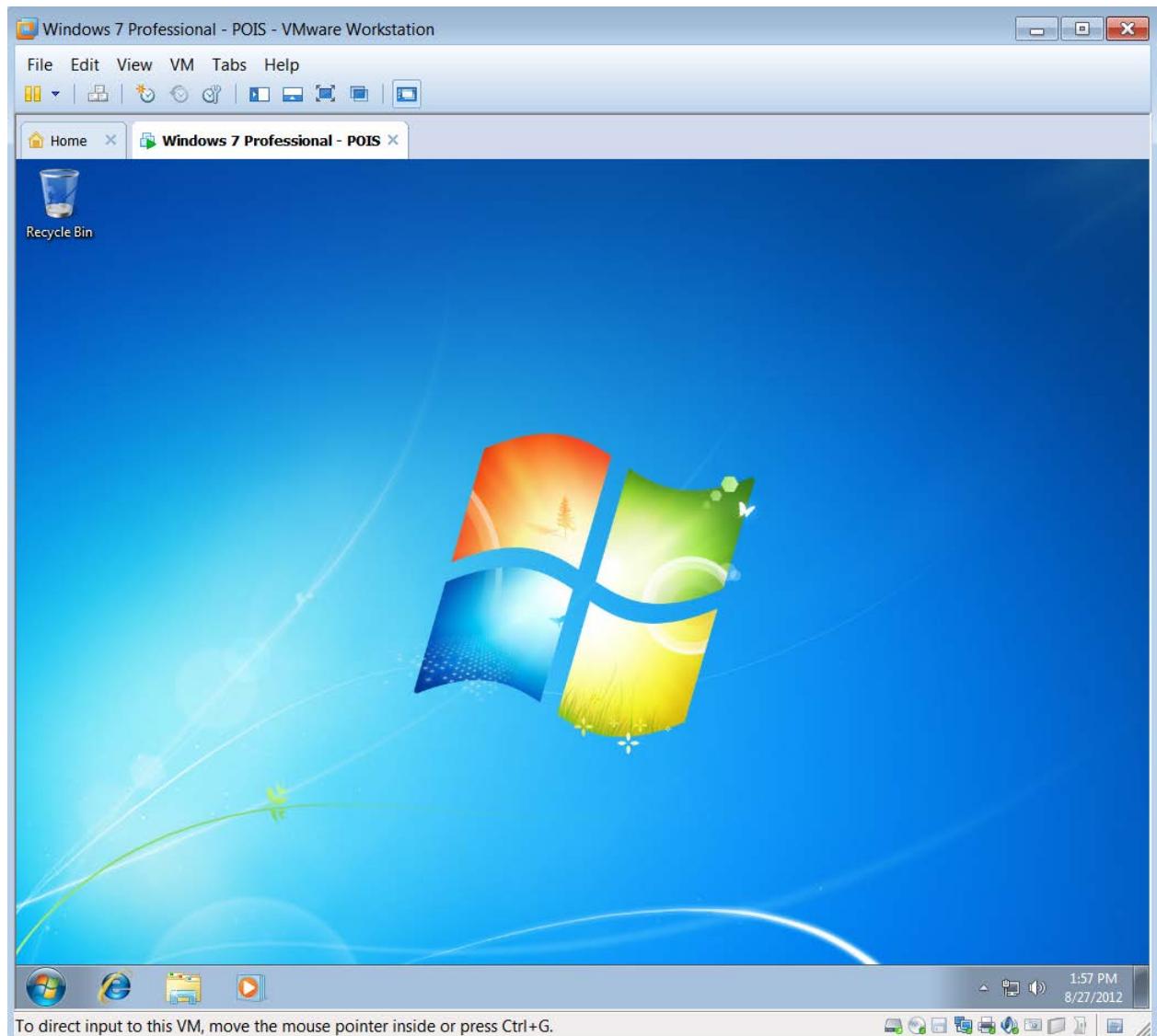


8. Click **Next**.
9. In the Specify Disk Capacity window, change the default of 60 GB Maximum disk size to 30 GB and take the default method of storing the virtual disk file. Click **Next**.
10. In the Ready to Create Virtual Machine window, review your settings and then click **Finish**.  
After you click Finish, the install process will start and continue automatically.
11. After the installation is complete, your virtual Windows 7 Professional computer will restart and then prompt you to login as your user name. See image below.



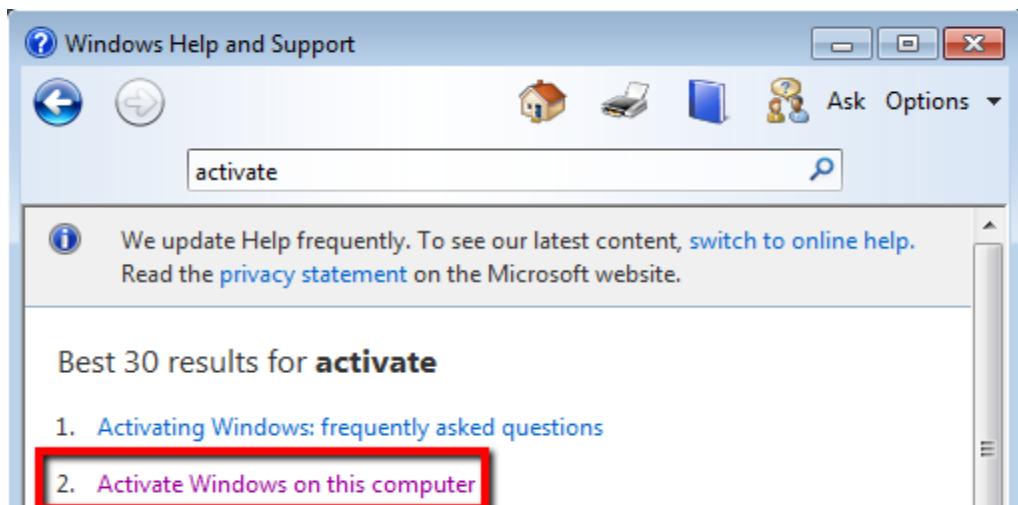
12. To login you must first click inside the Windows 7 Professional virtual PC window, enter the password that you had established earlier (p@ssw0rd) and then click the blue arrow. You should successfully get logged in and your screen will look like the image below.

**Note:** If during the login process you will likely be prompted to define a network type, select Work. Also, you will notice that VMware tools will automatically get installed, this is OK.

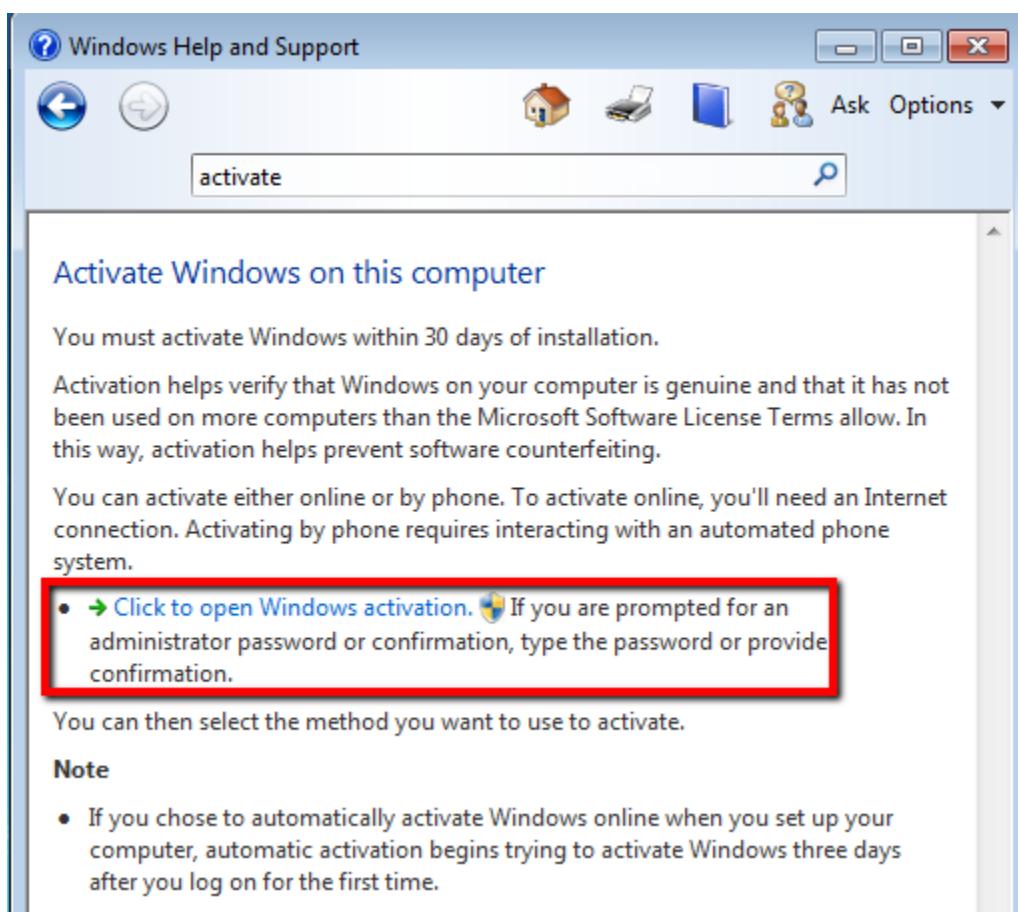


13. Now activate you're your operating system by performing the following steps:

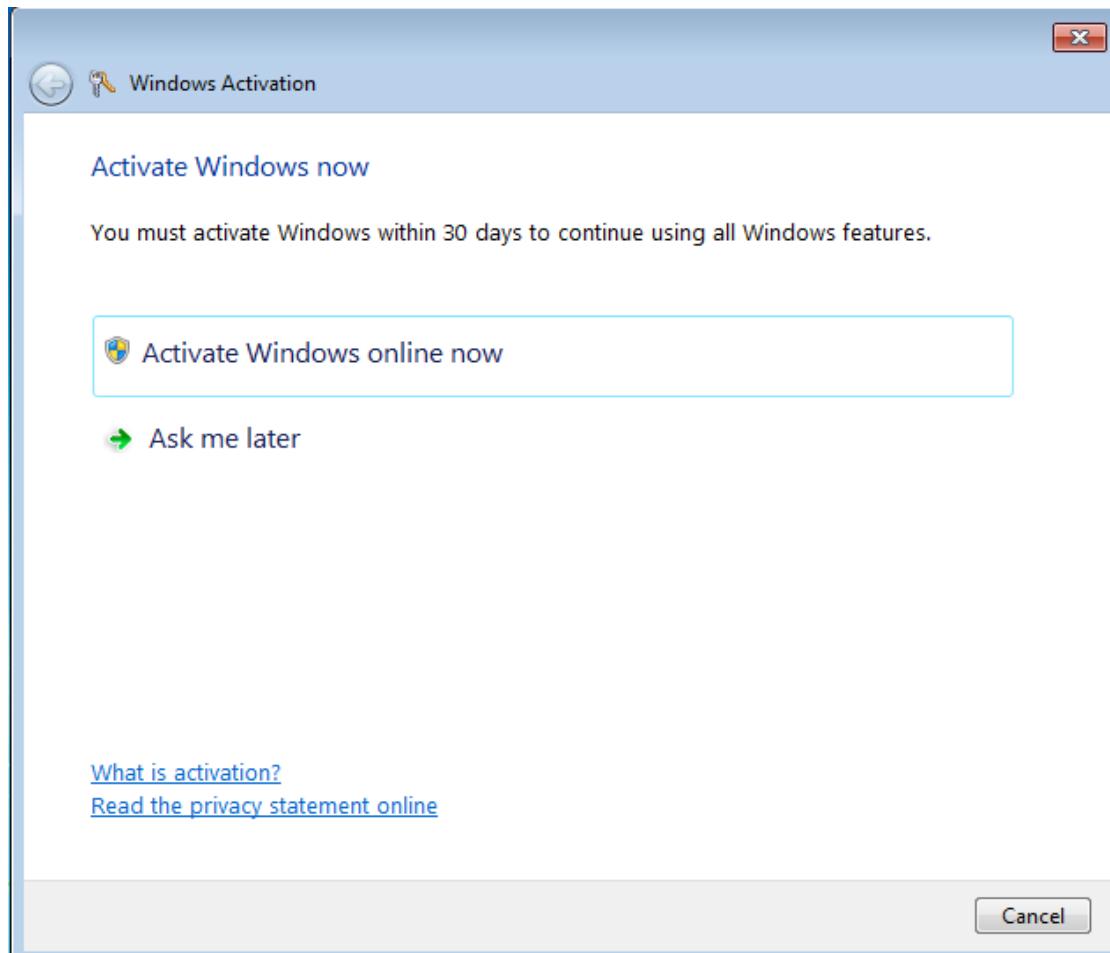
- Click **Start -> Help and Support**.
- Type **Activate** in the search help box and press **<Enter>**
- Click **Activate Windows on this computer**. See image below.



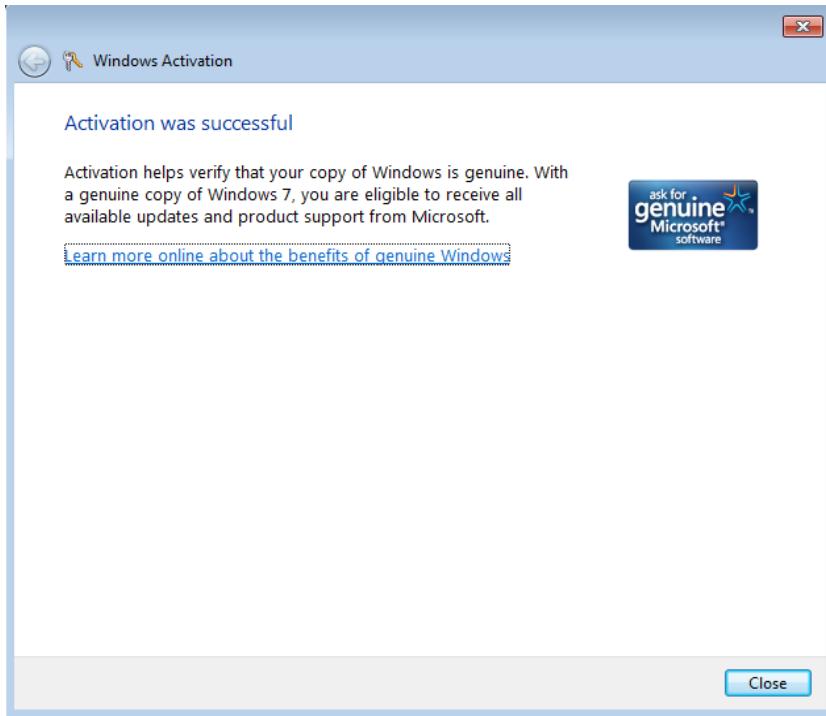
d. Read the information about activation and then click **Click to open Windows activation**. See image below.



e. If prompted, click **Activate Windows online now**. See image below.



- f. If you did not enter a product key when the installation of Windows 7 Professional was first initiated, you will be prompted for one now. If so, copy and paste (or manually enter) the product key in the appropriate box. Your product key will be verified and if the product key is valid, your operating system will become activated.
- g. Close the **Windows Activation** window shown in the image below.



14. At this point you can shut down your virtual PC. Click **Start -> Shutdown**.
15. Continue to Section 3.

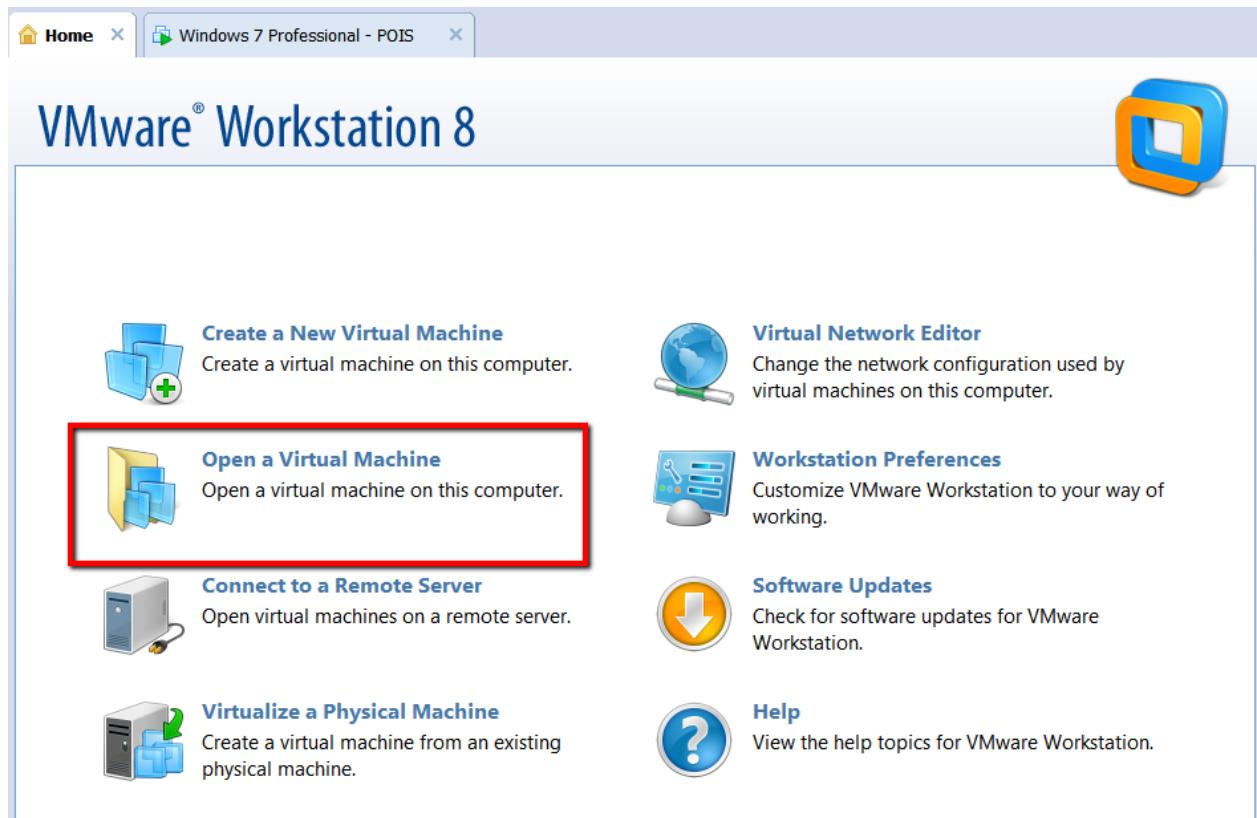
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### SECTION 3: STARTING AN EXISTING WINDOWS 7 PROFESSIONAL VIRTUAL COMPUTER.

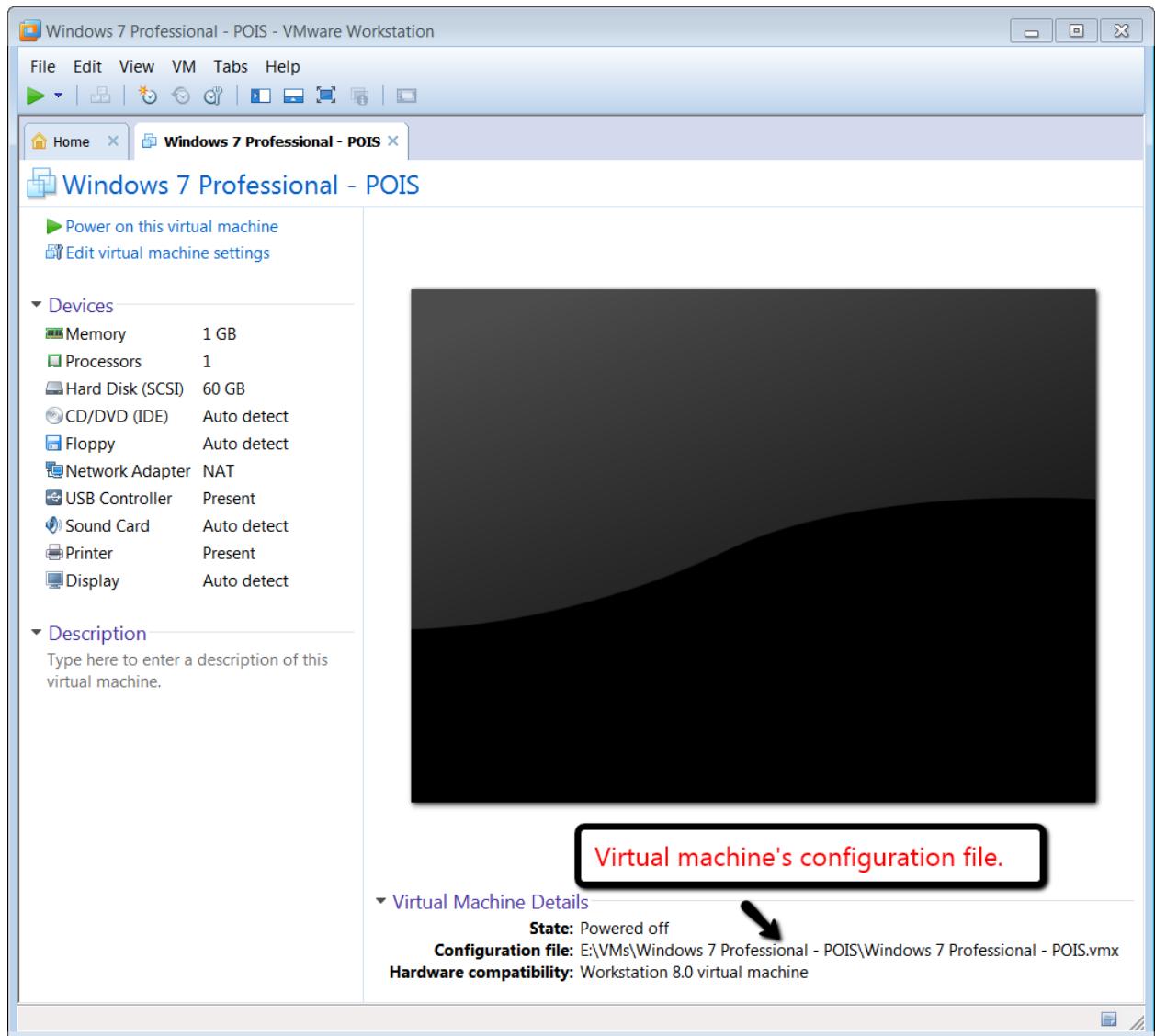
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You will continually have to reconnect to the virtual PC that you just created. To do so follow these procedures:

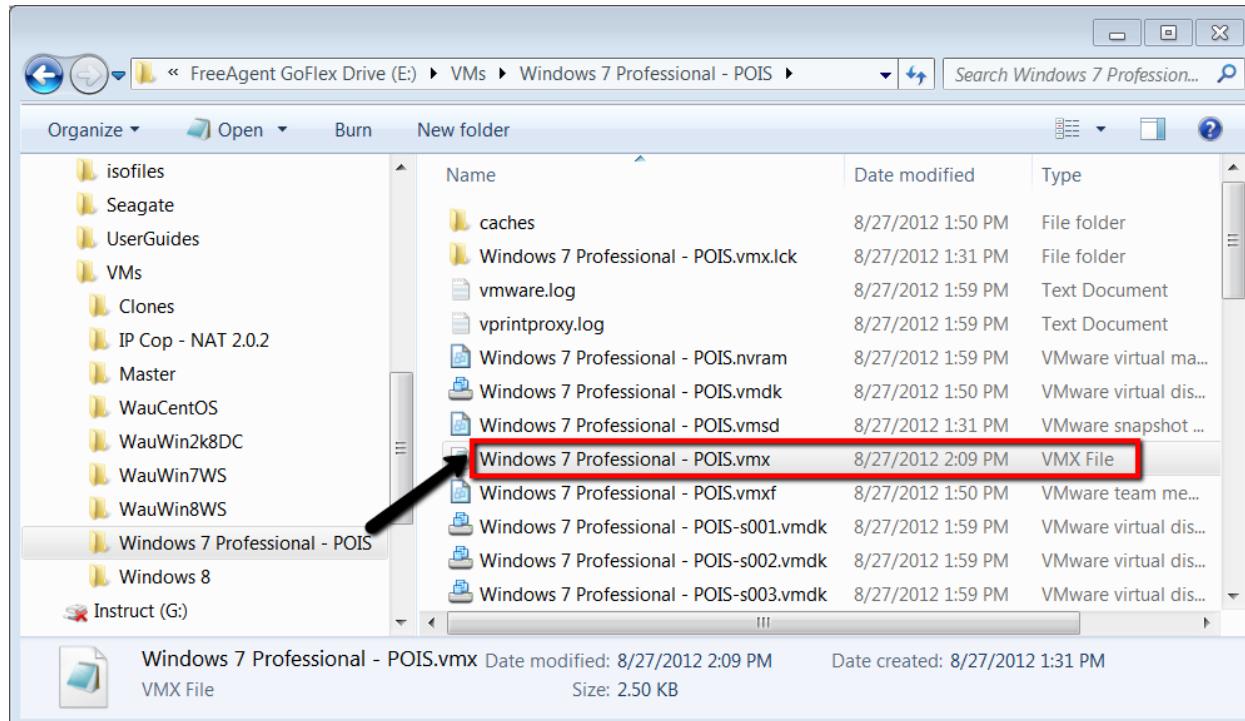
1. Start your VMware Workstation software.
2. When you start your VMware workstation software you may not see a tab showing your Windows 7 Professional virtual operating system. You will have to click **Open a Virtual Machine**. See image below.



3. When prompted to locate the virtual operating system's configuration file on your USB hard drive, select the **Windows 7 Professional.vmx** located in the Virtual Machines\Windows 7 Professional folder where you created your virtual machine. You should then get a Windows 7 Professional tab shown in the image below.



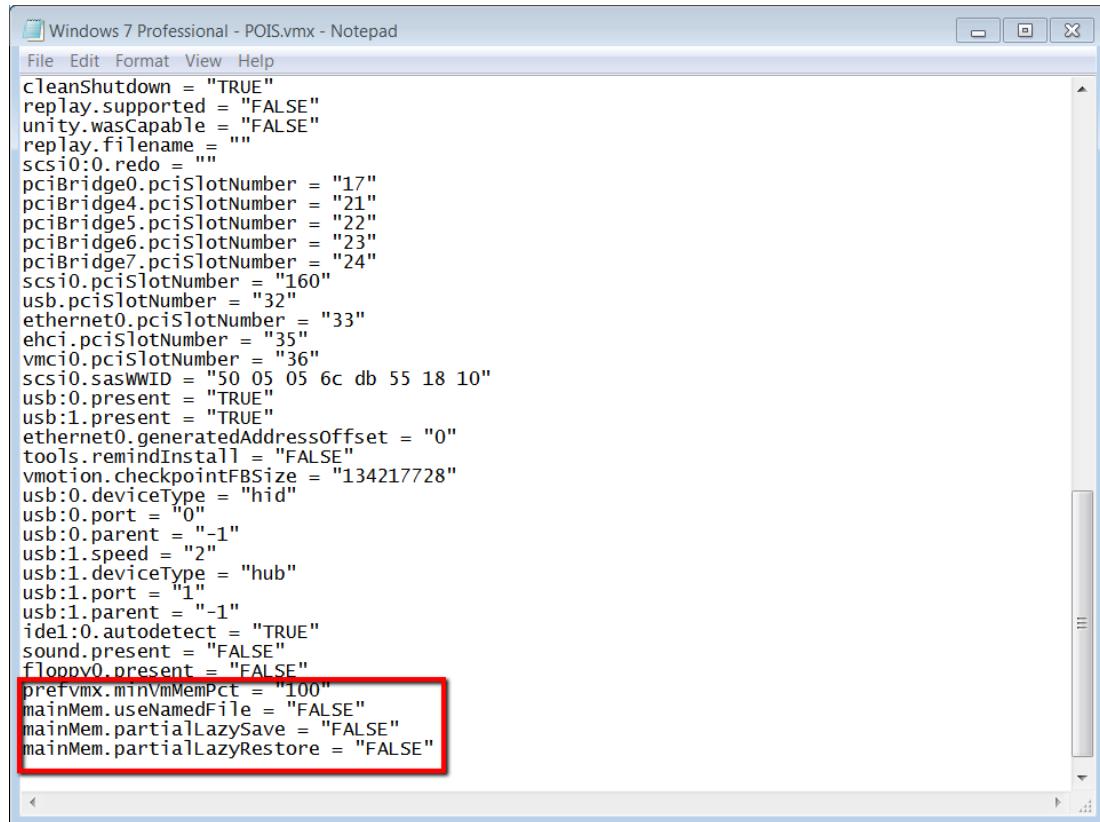
4. While your virtual machine is SHUTDOWN and POWERED OFF, improve the performance of your virtual machine by modifying the virtual machine's configuration as follows:
  - a. Select **Edit virtual machine settings** (the link below the power on link in the upper left hand corner).
  - b. Select the Floppy device and then select **Remove**.
  - c. Select the Sound Card device and then select **Remove**.
  - d. Click **OK**.
  - e. Open your Windows Explorer and then locate the .vmx file shown in your VMware startup page. See image below.



- f. Right-click this file and then select **Open with -> Notepad**.
- g. Scroll to the bottom of that file and then copy and paste the following code to the bottom:

```
prefvmx.minVmMemPct = "100"  
mainMem.useNamedFile = "FALSE"  
mainMem.partialLazySave = "FALSE"  
mainMem.partialLazyRestore = "FALSE"
```

Your modified configuration file should look like the image below.



```
Windows 7 Professional - POIS.vmx - Notepad
File Edit Format View Help
cleanShutdown = "TRUE"
replay.supported = "FALSE"
unity.wasCapable = "FALSE"
replay.filename = ""
scsi0:0.redo = ""
pcibridge0.pcislotNumber = "17"
pcibridge4.pcislotNumber = "21"
pcibridge5.pcislotNumber = "22"
pcibridge6.pcislotNumber = "23"
pcibridge7.pcislotNumber = "24"
scsi0.pcislotNumber = "160"
usb.pcislotNumber = "32"
ethernet0.pcislotNumber = "33"
ehci.pcislotNumber = "35"
vmci0.pcislotNumber = "36"
scsi0.sasWWID = "50 05 05 6c db 55 18 10"
usb:0.present = "TRUE"
usb:1.present = "TRUE"
ethernet0.generatedAddressOffset = "0"
tools.remindInstall = "FALSE"
vmotion.checkpointFBSIZE = "134217728"
usb:0.deviceType = "hid"
usb:0.port = "0"
usb:0.parent = "-1"
usb:1.speed = "2"
usb:1.deviceType = "hub"
usb:1.port = "1"
usb:1.parent = "-1"
ide1:0.autodetect = "TRUE"
sound.present = "FALSE"
floppy0.present = "FALSE"
prefvmx.mtrrVmMemPct = "100"
mainMem.useNamedFile = "FALSE"
mainMem.partialLazySave = "FALSE"
mainMem.partialLazyRestore = "FALSE"
```

h. While in Notepad, click **File -> Save** and then click **File -> Exit**.

5. To start your virtual machine click the Power on this virtual machine option listed in the Commands section in the upper left hand corner. Your virtual machine will then boot up, thus enabling you to login.
6. After you are done using the virtual PC, always shut down the virtual machine from the virtual machine's operating system as instructed in section 2, step 14. DO NOT JUST CLOSE VMWARE!