

# Resizing Virtual Disks With Step by Step Instructions

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**BEFORE YOU PERFORM ANY DISK RESIZE OPERATION, I HIGHLY RECOMMEND YOU MAKE A BACKUP COPY OF YOUR VIRTUAL MACHINE IN CASE YOU ENCOUNTER PROBLEMS AT ANY STEP!**

Feedback, suggestions, and edits are welcome.

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When you run out of disk space in your virtual disks, you have two choices to add more disk space to your virtual machines.

- Add a second virtual disk to your virtual machine
- Resize your existing virtual disk to be larger

There are a number of advantages of adding a second virtual disk to your virtual machine when you need more disk space.

1. It is very simple to add a second virtual disk and it doesn't require using third party tools make the disk space available. Just shut down the virtual machine, go to Settings, click on plus button and select "Add Hard Disk". Select the hard disk size you want and the interface type and click OK. You then to go into Windows Disk Management and format the second virtual hard drive.
2. You can move all your user data to the second virtual disk, separating your data from the Windows operating system. Separating user data onto a separate disk makes it easier to only protect only the data you care about.

While it is easy to add a second virtual hard disk, many users would rather expand their existing virtual disk so they don't have to change application or data locations.

VMware Fusion 2 includes tools that resize your existing virtual disk hardware to a larger size. VMware Fusion increases the size of the virtual hard disk, which effectively adds more "virtual spindles" to make the disk larger.

The challenge is that most users expect the increased virtual disk size to mean that Windows (or other operating systems) sees the increased disk size immediately.

However, Windows (and operating systems) work with partitions on a hard disk. You need Windows (or other operating system) specific disk management tools to increase the existing partition size to match the larger virtual hard disk size.

Most modern operating systems including Windows Vista, Mac OS X Leopard Server, and some versions of Linux provide built-in disk management tools that can resize live partitions to use additional hard disk space.

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# How to Resize A Virtual Disk With VMware Fusion 2 Disk Management Tools

- 1) Shut down your Windows (or other) virtual machine so that it is powered off.
- 2) Bring up the Settings dialog for your virtual machine and click Hard Disks
- 3) Select the slider or enter the new virtual disk size you prefer and click Apply.
- 4) After a few short time and a brief flash, your virtual disk will now be resized to the new size.

## Resizing Partitions To Use Larger Virtual Disk

As we stated above, you now need to use operating system specific tools to resize the existing file system/partitions to use that new space. So, below are steps for Windows XP, Windows Vista, and Mac OS X Leopard Server.

### Resizing Windows XP Partitions

Unlike Windows Vista or Mac OS X Leopard Server, Windows XP does not include disk management tools to resize a live partition, so you need to use third party partition management tools such as Symantec's Partition Magic, EASEUS Partition Master, Acronis Disk Director, or open source projects like GParted to resize an existing partition to take advantage of the added virtual hard disk space.

Below are options with step-by-step tutorials for resizing partitions with two different tools: EASEUS Partition Master and GParted.

### Option 1 - Resizing A Windows XP Startup Partition With EASEUS Partition Master

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Lifehacker recently ran an article about a free personal edition of EASEUS Partition Master, which is a Windows utility that provides disk and partition management tools that Windows XP that is free for home use. This is exciting for VMware Fusion personal users who want to resize a Windows XP partition.

See Lifehacker article at:

<http://lifehacker.com/399871/easeus-creates-and-manages-hard-drive-partitions-for-free>

### Download the Software

- 1) Download the latest EASEUS Partition Master

<http://www.partition-tool.com/personal.htm>

## Resizing A Windows XP Startup Partition Has Two Distinct Parts

- 1) Use VMware Fusion to resize the virtual disk (See above)
- 2) Use EASEUS Partition Master to resize partition

### Part 1 - Use VMware Fusion 2 to resize the virtual disk

See "How to Resize A Virtual Disk With VMware Fusion 2 Disk Management Tools" above

### Part 2 - Use EASEUS Partition Master to resize partition

- 1) Install EASEUS Partition Master in Windows XP
- 2) Start EASEUS Partition Master from Windows XP Start menu
- 3) When EASEUS Partition Master launches, it takes over the full screen and shows your virtual hard disk with partitions and unallocated space on the disk
- 4) To resize your partition to take up the existing space, grab the separator between your "C:" drive and Unallocated and slowly drag the separator to the right to take over all Unallocated space
- 5) In the Partition Operations pane on the left, click Apply to save this change
- 6) In the Apply Changes confirmation dialog, click Yes
- 7) EASEUS requires that you restart to finalize the partition resize, so click Yes in the confirmation dialog to restart the virtual machine
- 8) When EASEUS reboots the VM, do NOT touch the keyboard as EASEUS needs to run at boot time to resize the partition and mouse or keyboard at boot will cancel the operation
- 9) After 10 seconds, EASEUS will finalize the resize of the partition in text mode and then restart the virtual machine when complete
- 10) Windows will boot to the desktop and after a short period Windows will recognize the newly configured hard drive as new hardware, the larger hard drive, is now available. You need to restart Windows for the resized disk to be available.
- 11) When Windows XP reboots, go the Start Menu and select My Computer. Select your updated hard drive and notice that the size is now updated to your desired size.

## Option 2 - Resizing A Windows XP Startup Partition With GParted

**BEFORE YOU PERFORM ANY RESIZE OPERATION, I HIGHLY RECOMMEND YOU MAKE A BACKUP COPY OF THE VIRTUAL MACHINE IN CASE THE OPERATION FAILS!**

This solution will use two free tools to help resize the Windows XP startup partition/file system after you resize the virtual disk with VMware Fusion's included disk management tools.

VMX Extras - A tool by Eric Tung. We will use this to make it easier to access the BIOS.

Gparted Live CD - An open source tool that provides partition management. We will use this to resize the partition on the expanded disk so Windows can recognize the additional space.

## Download the Software

1) Download the latest VMX Extras

<http://www.vmware.com/community/thread.jspa?messageID=687564&#>

2) Download the latest Gparted Live CD disk image (ISO)

<http://gparted.sourceforge.net/livecd.php>

## Resizing A Windows XP Startup Partition Has Five Distinct Parts

1) Use VMware Fusion to resize the virtual disk (DONE AT THIS POINT)

2) Changing the BIOS boot order to boot from the Gparted Live ISO

3) Use GParted to resize the partition to use larger virtual disk

4) Restore the prior BIOS boot order

5) Boot into Windows to complete the resize operation

### Part 1 - Use VMware Fusion 2 to resize the virtual disk

See "How to Resize A Virtual Disk With VMware Fusion 2 Disk Management Tools" above

### Part 2 - Changing the BIOS boot order to use Gparted

Since the VMware Fusion BIOS flashes by very quickly, we are going to use VMX Extras to add a 5 second delay to the BIOS boot to make it easier to change the boot order.

1) Launch VMX Extras and select Open from the File menu

2) Navigate to the virtual machine package for the virtual machine in question and select the VMX file, which contains all the virtual machine settings, and click Open.

3) Click on the VMX Extras Preconfigured Options tab:

4) Click on BIOS Delay and change setting to 5 seconds and click Change. Quit VMX Extras and you will be presented with a save changes dialog. Click Save.

5) Launch VMware Fusion, select the virtual machine, and click the Settings button or type Command-E to bring up the Virtual Machine settings dialog.

6) Click on CD/DVD. Make sure "Connected" is selected, and choose the "Use disk image" option and click "Choose..."

7) Select the Gparted Live CD ISO and click Choose.

8) Click the Start button in the VM to power on the VM and click into the Window and type F2 (or Fn-F2 on laptops) to bring up the VMware BIOS.

9) Before proceeding, make a note of the boot device order so you can restore to the defaults after resizing your virtual hard disk. Next, use the arrow keys on the keyboard to navigate to the Boot menu of the BIOS. With the Hard Drive selected, use the minus key '-' on the keyboard multiple times to move Hard Drive and Removable Devices so that CD-ROM Drive becomes the top item in the boot order.

10) Type F10 (or Fn-F10 on laptops) to save changes to the BIOS and continue booting the virtual machine.

### **Part 3 - Use GParted to resize the partition to use larger virtual disk**

1) VMware Fusion will proceed to boot off the GParted Live CD. Click Enter to select the default "auto-configuration" settings to proceed.

2) You will need answer two separate questions by hitting enter to make GParted proceed with the default keyboard settings for English.

3) The virtual machine then boots directly into GParted

4) Select your existing virtual disk partition and click Resize/Move. GParted will put up the resize dialog.

5) Select your existing partition at the right arrow and drag it completely to the right to take up the newly added virtual hard disk size.

6) Click on the Resize/Move button.

7) With your newly updated partition selected, click the Apply button.

8) Click Apply to the GParted Confirmation dialog.

9) GParted will proceed to repartition the virtual disk and at the completion will put up a confirmation dialog. Click Close to proceed.

10) Now that the partition resizing is complete, click on the Exit button in the upper left hand corner to exit GParted.

11) Select Shutdown from the GParted confirmation dialog and click OK.

12) Once GParted exits the UI, it will finish the Shutdown in text mode.

### **Part 4 - Restore the BIOS boot order and delay time**

1) In VMware Fusion, select the powered off virtual machine, and click the Settings button or type Command-E to bring up the Virtual Machine settings dialog.

2) Click on CD/DVD and change the option back to your previous CD/DVD settings from "Use disk image" and click OK.

3) Now we should restore the boot order to the default or your previous settings. Click the Start button in the VM to power on the VM and click into the window and type F2 (or Fn-F2 on laptops) to bring up the VMware BIOS.

4) Use the arrow keys on the keyboard to navigate to the Boot menu of the BIOS. Then, use the minus key '-' on the keyboard multiple times to restore the boot order to the previous settings you recorded in step 10.

5) Type F10 (or Fn-F10 on laptops) to save changes to the BIOS and continue booting the virtual machine. Once the VM starts booting again, select Shut Down Guest from the Virtual Machine Menu

6) Launch VMX Extras and select Open from the File menu.

- 7) Navigate to the virtual machine package for the virtual machine in question and select the VMX file, which contains all the virtual machine settings, and click Open.
- 8) Click on the VMX Extras Preconfigured Options tab:
- 9) Click on BIOS Delay and change setting from 5 seconds to No BIOS Delay and click Change. Close VMX Extras and you will be presented with a save changes dialog. Click Save.

## **Part 5 - Boot into Windows to complete the disk resize operation**

- 1) In VMware Fusion, click Run to power on the virtual machine. When Windows begins to boot, it will start with a disk check for consistency. This is expected, as this is the default setting of GParted to ensure that the partition operation was completed successfully.
- 2) Once the Windows disk check is complete, Windows will boot to the desktop and after a short period Windows will recognize that new hardware, the larger hard drive, is now available. You need to restart Windows for the resized disk to be available.
- 3) When Windows XP reboots, go the Start Menu and select My Computer. Select your updated hard drive and notice that the size is now updated to your desired size.

## **Resizing Windows Vista and Windows 7 Partitions**

- 1) Click on the Start menu in your Windows Vista virtual machine
- 2) Right click on Computer and select Manage
- 3) Windows Vista requires your permission to open the Computer Management application. Click Continue.
- 4) Open up the Storage category and click Disk Management
- 5) Your existing virtual hard disks and their partitions will be listed in the Disk Management pane
- 6) Right click on the existing partition you'd like to expand and select Extend Volume
- 7) Windows Vista will present it's all so intuitive "Extend Volume Wizard" and Click Next to begin
- 8) The Extend Volume Wizard automatically selects the newly added disk space, click Next to continue
- 9) Click Finish to complete the "Extend Volume Wizard" and expand your existing partition
- 10) Close the Computer Management application
- 11) Click on the Start menu and select Computer
- 12) The C: drive will now have the increase size you expect