

# USING A "PARTED MAGIC" LiveCD IN A VIRTUAL MACHINE TO REPAIR A REAL, CORRUPTED "NTFS" HARD DRIVE

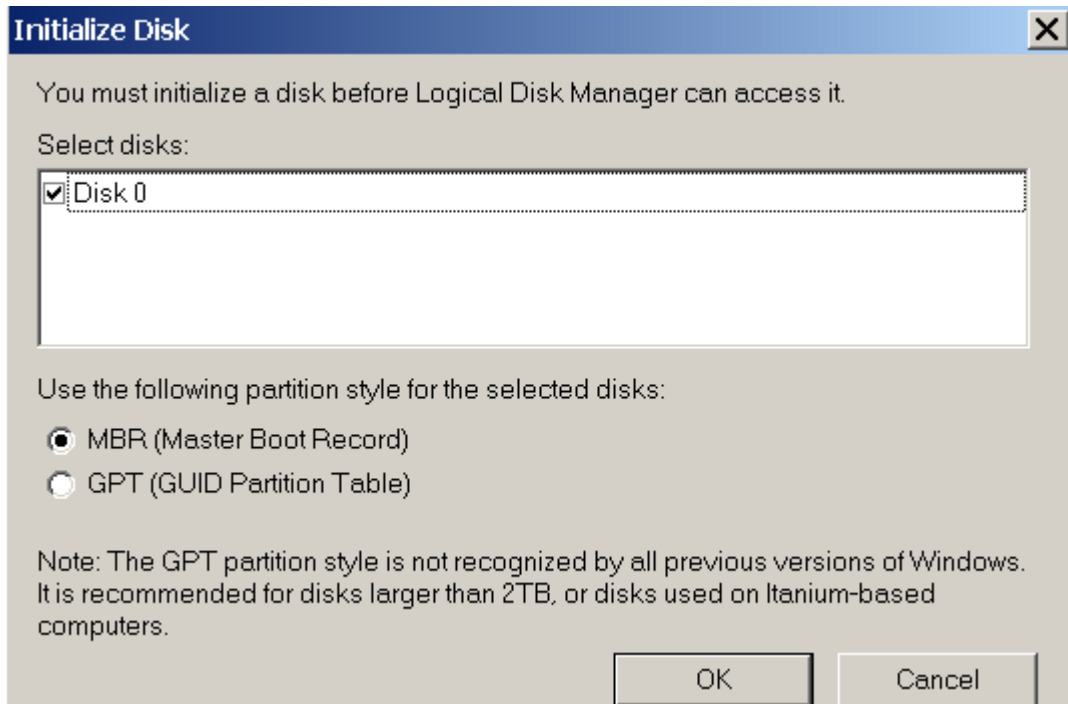
## **Summary:**

**You can use the "Parted Magic" LiveCD to make "soft repairs" to recover from hard drive failures. To minimize the probability of accidentally running repairs on the wrong hard drive, you can run the ".iso" file of the "Parted Magic" LiveCD in a "VMware Player" or "Oracle VM VirtualBox" virtual machine. Due to the hardware limitations of virtual machines, you will have to connect the failed hard drive to the virtual machine by means of a USB external drive box.**

## **BASIC STRATEGY**

You did not install any new internal or external hard drives into your "Windows" computer.

All of a sudden, "Windows" cannot "see" one of your NTFS hard drives and claims that it needs to be "initialized":



You should click on the "Cancel" button of the "Intialize Disk" box.

If you allow Windows to "initialize" and then format this hard drive, you will lose all programs and/or data files that are stored on this hard drive. In other words, do not allow "Windows" to "initialize" the failed hard drive. Instead, first run "Disk Management" from the Windows "Control Panel" to see if it can repair the failed hard drive.

If "Disk Management" fails to repair the failed hard disk, you can run the amazing "Parted Magic" LiveCD to attempt to repair the failed hard drive.

If you run the "Parted Magic LiveCD as a bootable .ISO file in a virtual machine and attach the problematic hard drive to this virtual machine, you will avoid the possibility of accidentally performing "repairs" on the wrong hard drive, since a virtual machine cannot access any hard drives that are attached by means of IDE, SATA, or eSATA to your computer.

## **STEP-BY-STEP PROCEDURE FOR REPAIRING A HARD DRIVE:**

**Step 0:**

If at any time "Window" claims that you have a hard drive that needs to be "Initialized", do not allow "Windows" to do this to your failed hard drive.

**Step 1:**

Start off by give "Windows" a chance to repair the failed hard drive:  
Go to the Windows "Control Panel".

**Step 2:**

Double-click on "Administrative Tools".

**Step 3:**

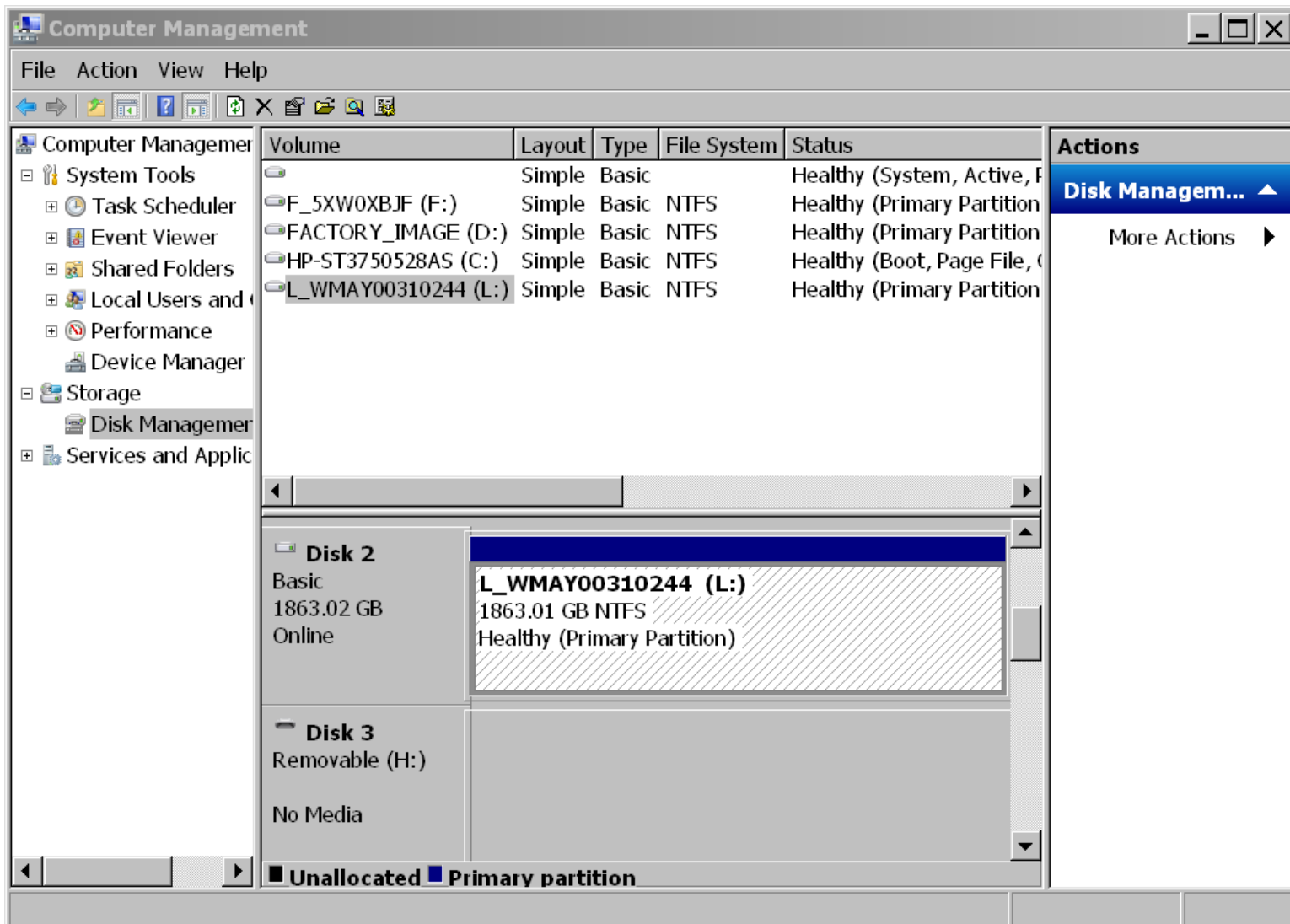
Double-click on "Computer Management".

**Step 4:**

Double-click on "Storage".

**Step 5:**

Double-click on "Disk Management":



### Step 6:

Scroll up and down in the bottom half of the middle section to locate the failed hard drive.

It will be the one that does not have a "drive letter" assigned to it:



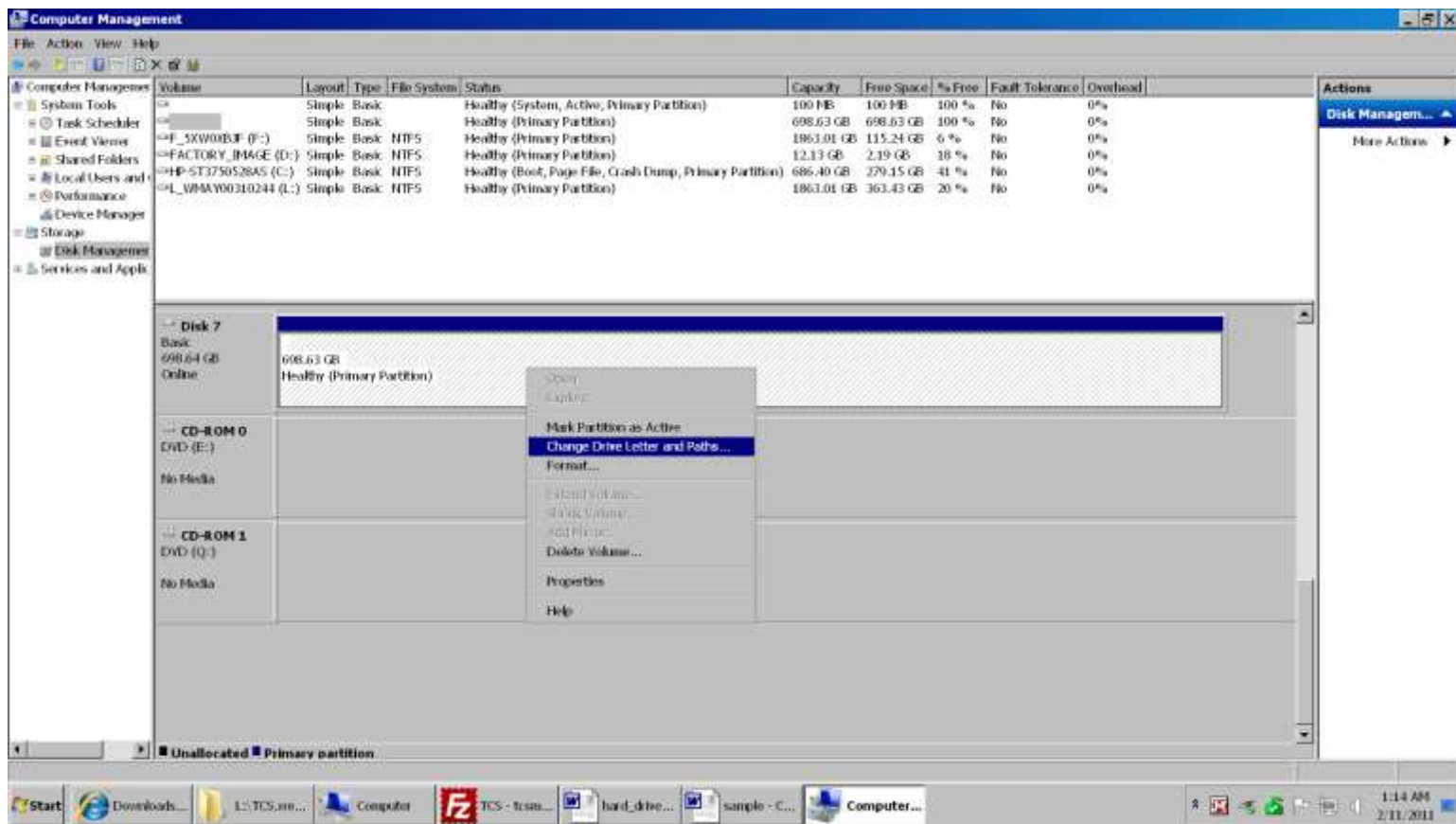
**Do not be fooled by the "Healthy" indication. At this point, if you expect it to have a "drive letter" assigned to it and it does not have a drive letter, then the hard drive has a problem.**

**Step 7:**

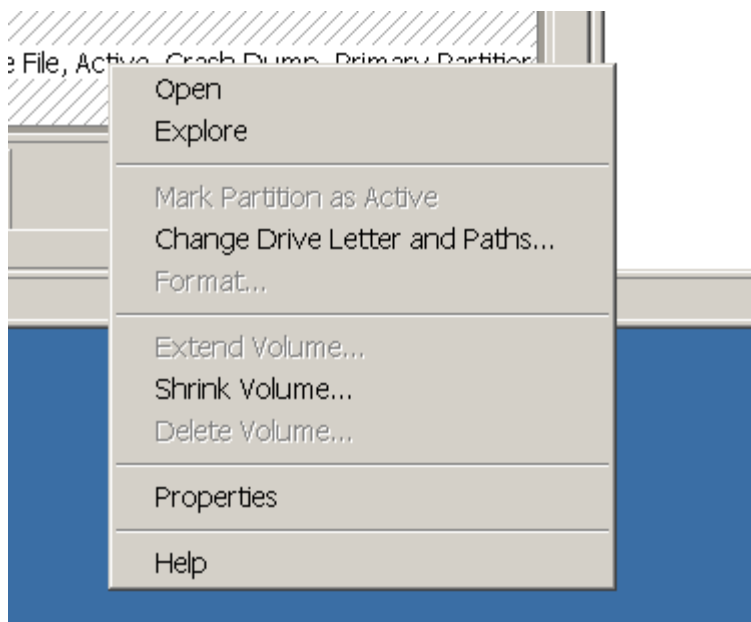
**Use the right mouse button to click on the failed hard drive.**

**Step 8:**

**A pop-up context menu will be displayed:**



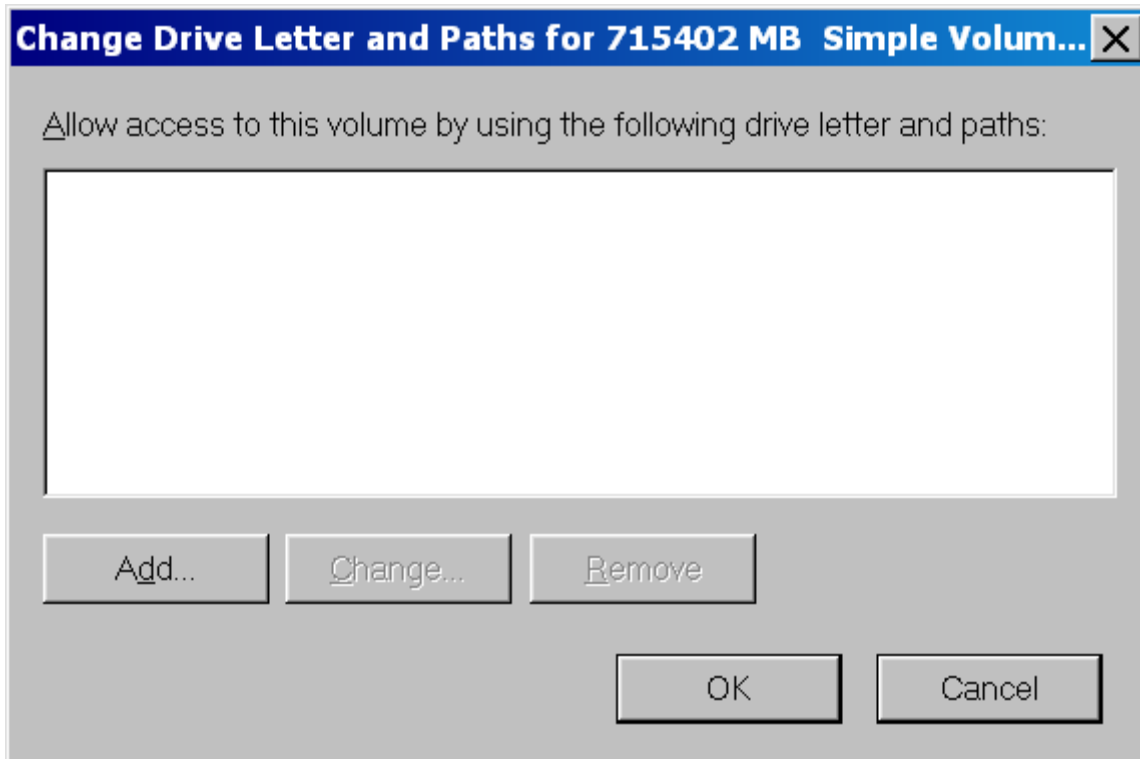
Here is a detail view of the pop-up context menu:



**Step 9:**  
Click on "Change Drive Letter And Paths...".

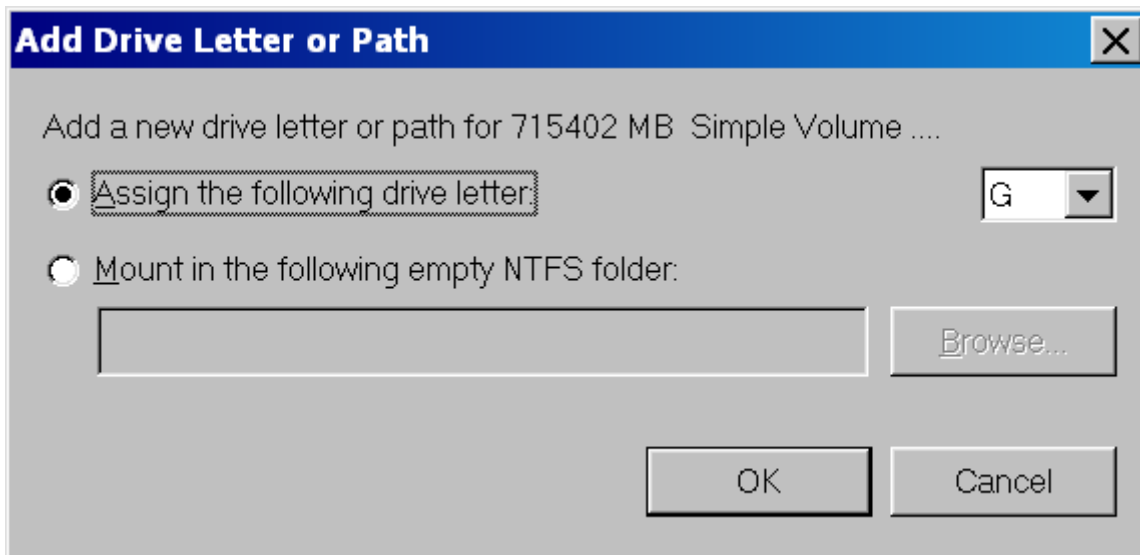
**Step 10:**

Click on the "Add" button of the "Change Drive Letter and Paths.." box:



**Step 11:**

An "Add Drive Letter or Path" box will be displayed:



**Step 12:**

**If you can assign a drive letter to the failed hard drive by clicking on the "Add" button, then the failed hard drive will be working again and you can skip the rest of the steps in this procedure!**

**Step 13:**

**If the failed hard drive is installed internally inside a computer, remove it from the computer, and install the failed hard drive into an external USB drive enclosure.**

**If the failed hard drive is installed externally inside a eSATA or Firewire drive enclosure, remove it from the enclosure and install the failed hard drive into an external USB drive enclosure.**

**(You cannot use an external eSATA drive enclosure or an external Firewire drive enclosure because "VMware Player" and "Oracle VM VirtualBox" virtual machines cannot recognize eSATA or Firewire drive enclosures.)**

**Step 14:**

**Use a USB cable to attach the USB drive enclosure to a working "Windows", "Linux", or "Macintosh" computer.**

**Step 15:**

**Provide a power supply connection for the external USB drive enclosure, if it needs one.**

**Step 16:**

**If you are using a "Windows.." or a "Linux" computer as your host computer for running virtual machines, download and install "VMware Player" (free) or "Oracle VM VirtualBox" (free) into your computer. If you are using a "Macintosh" computer as your host computer for running virtual machines, download and install "Oracle VM VirtualBox" (free), "VMware Fusion" (free 30-day full-functioning trial), or "Parallels" (free 14-day full-functioning trial).**



**Step 17:**

Go to [partedmagic.com](http://partedmagic.com) and download the download the pmagic...iso file for the "Parted Magic" LiveCD.

This .iso file should be stored on a hard drive of the your (working) host computer:



pmagic-5.7.iso

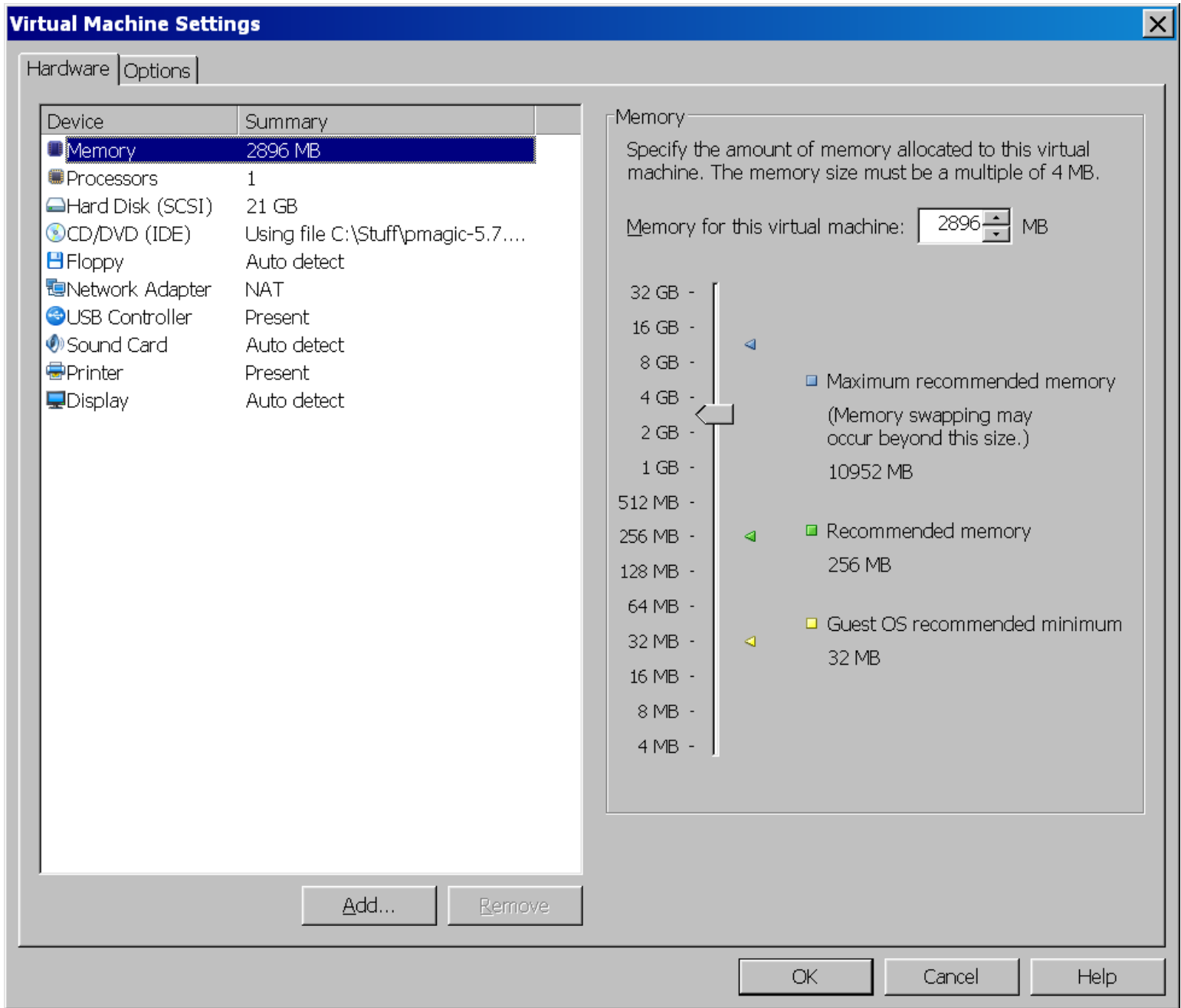
ISO File

145 MB

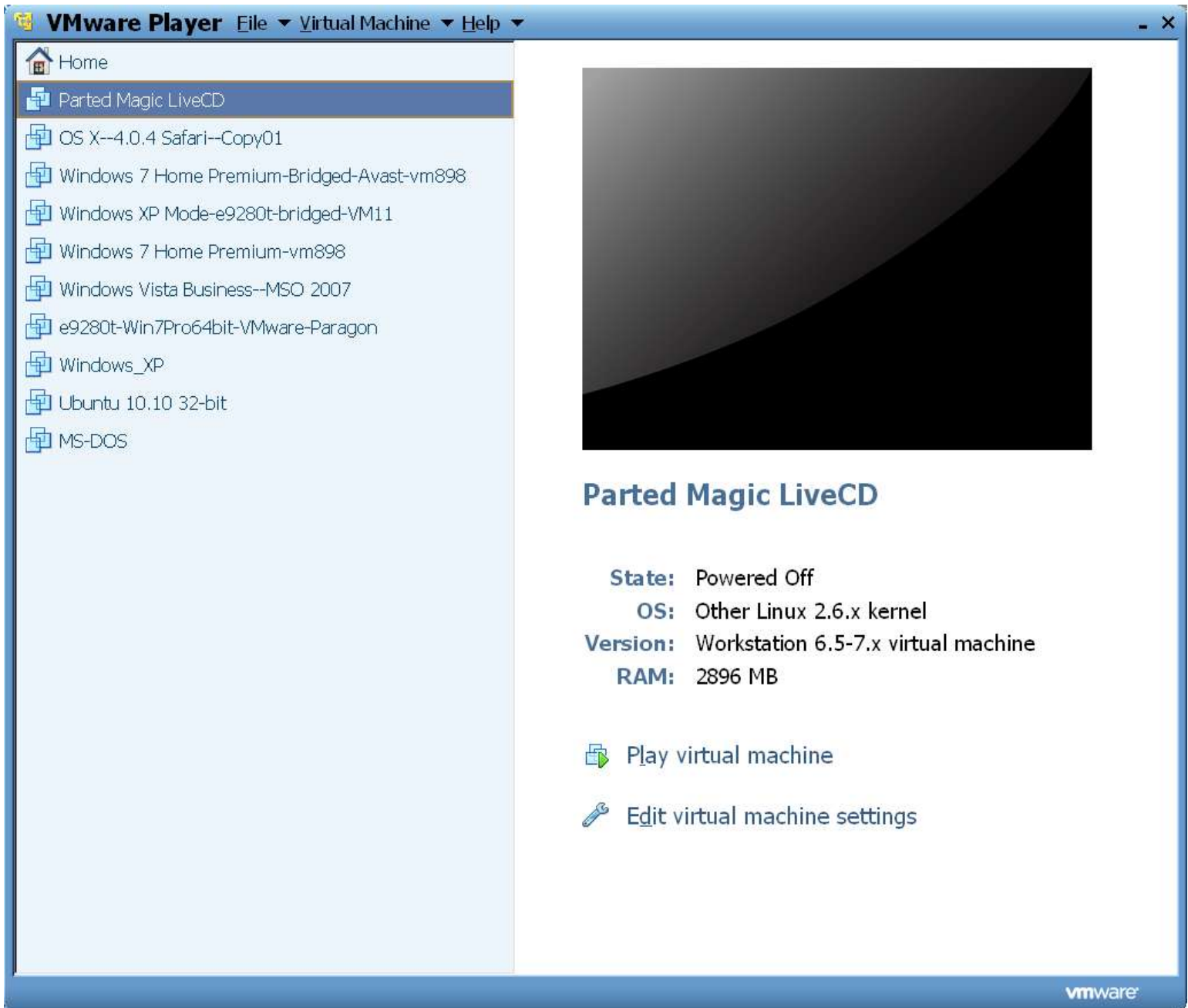
**Step 18:**

If you have not already done so, create a virtual machine that boots up from the "Parted Magic" .iso file.

You will probably have to create a new virtual hard drive as part of the process of creating this new virtual machine. This virtual hard drive is not needed for anything.



**Step 19:**  
**Start the "Parted Magic virtual machine."**



## Step 20:

Use the configuration menu of the virtual machine to attach the USB-connected hard drive to the virtual machine.

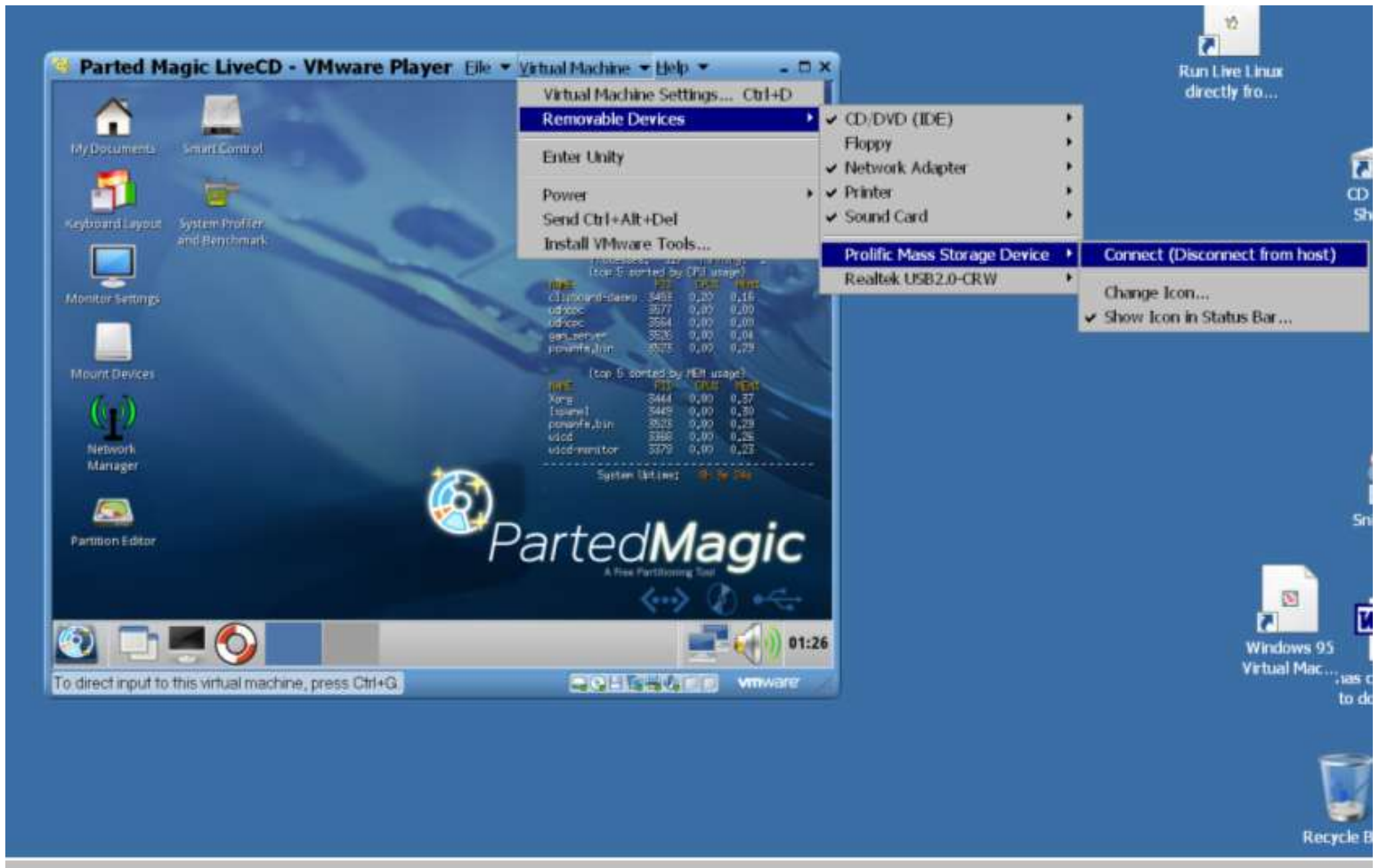
For example, if you are running a "VMware Player" virtual machine: Click on "Virtual Machine" in the top menu bar.

Click on "Removable Devices" in the pull-down menu.

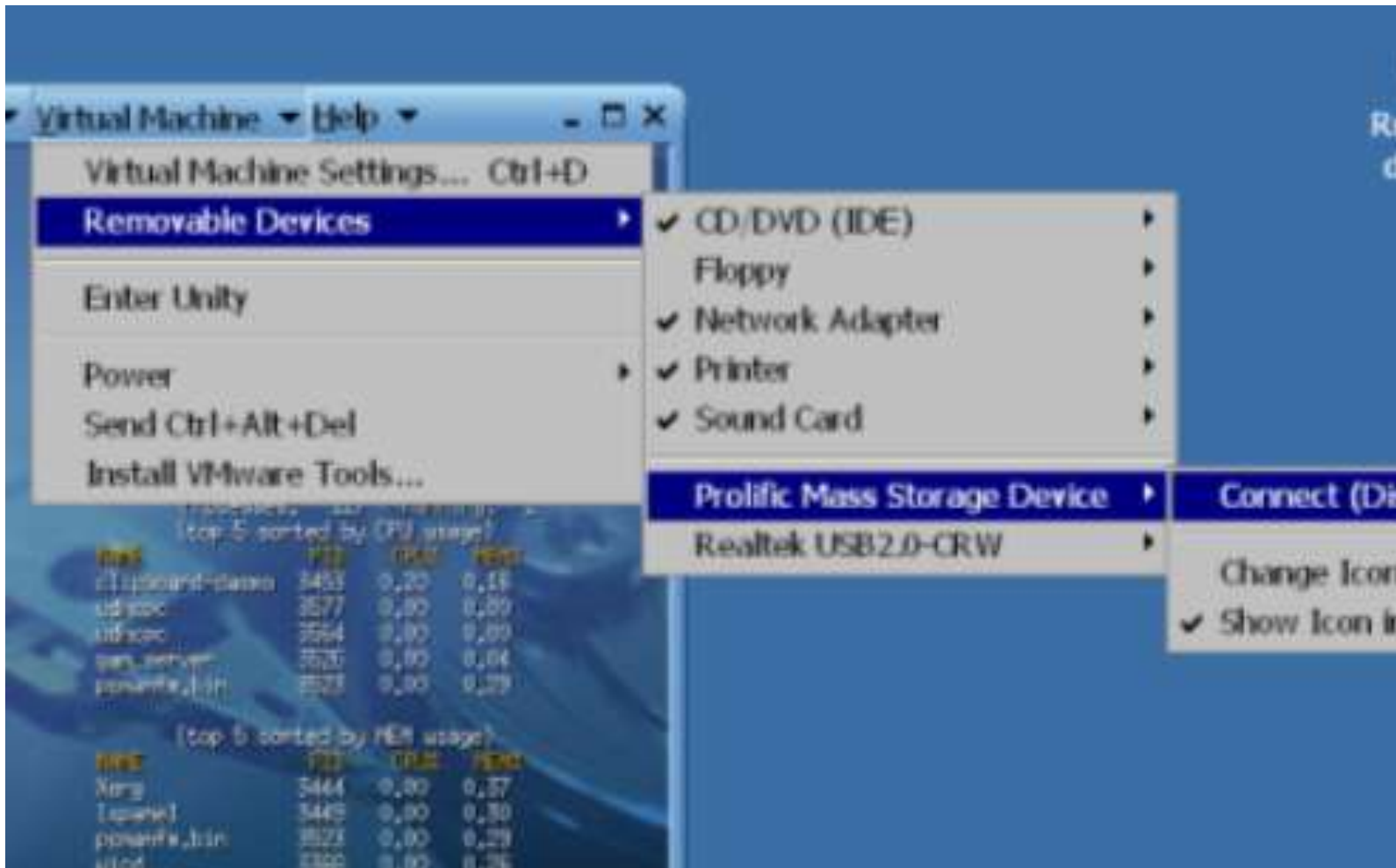
Click on the displayed name of the external hard drive enclosure.

(In this example, the external hard drive enclosure was shown as "Prolific Mass Storage Device".

**"Prolific" is a brand name that is used by the "Addonics" company. They make very reliable external hard drive enclosures.)  
Click on "Connect (Disconnect from host)":**



**Here is a detail view for connecting the external USB hard drive enclosure to the virtual machine:**

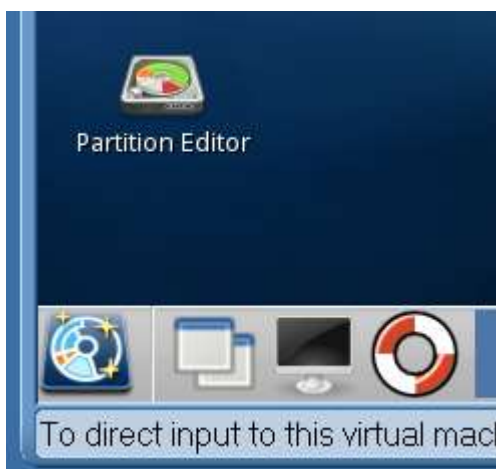


## Step 21:

Start "GParted":

Use your right mouse button to click on "Partition Edition".

Then click on "Execute" in the pop-up context menu:



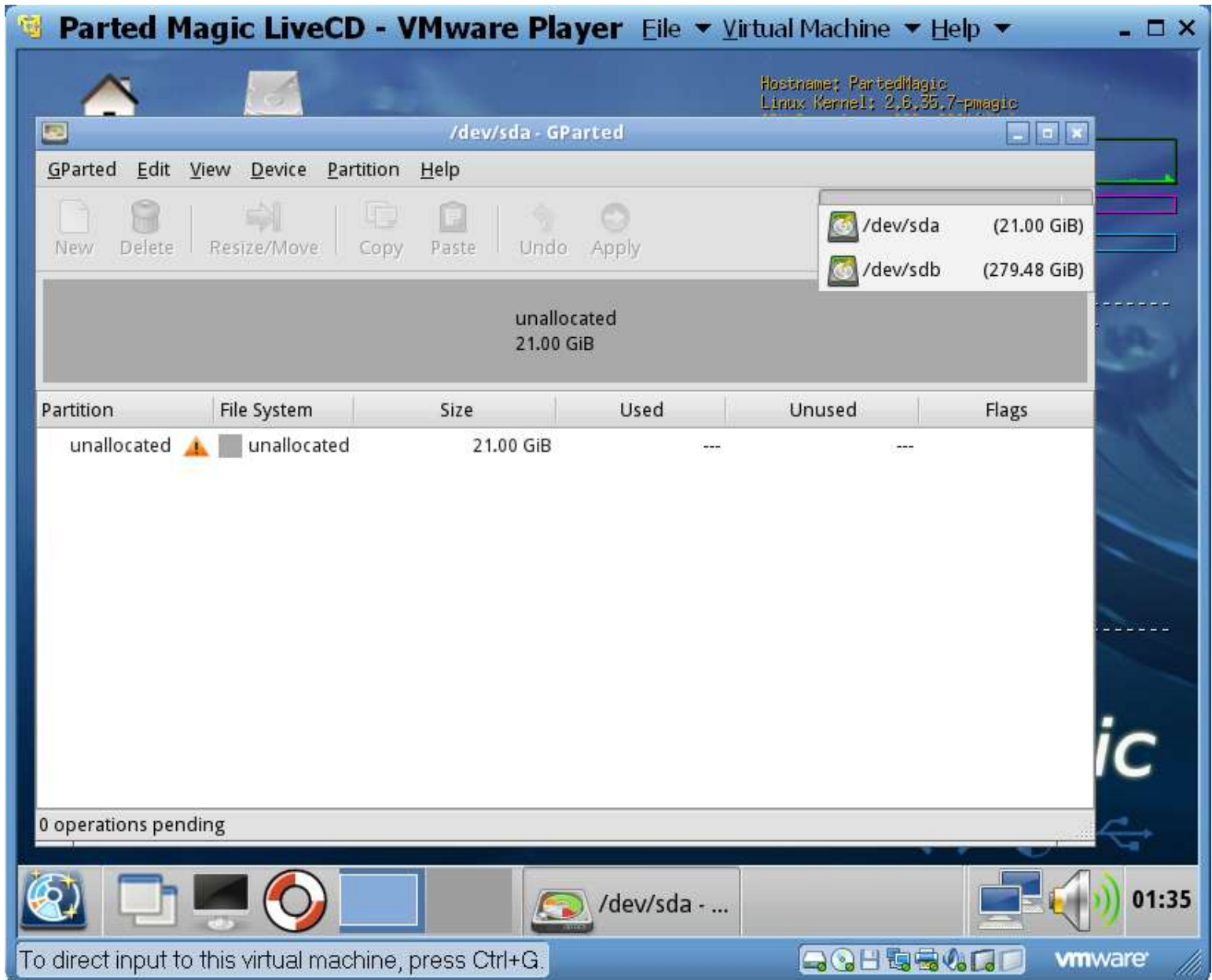
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## Step 22:

Use the drop-down list of "GParted" to select the USB-connected hard drive.

You should be able to tell which drive is the USB-connected hard drive by noting the size in Gigabytes that is shown in parentheses:

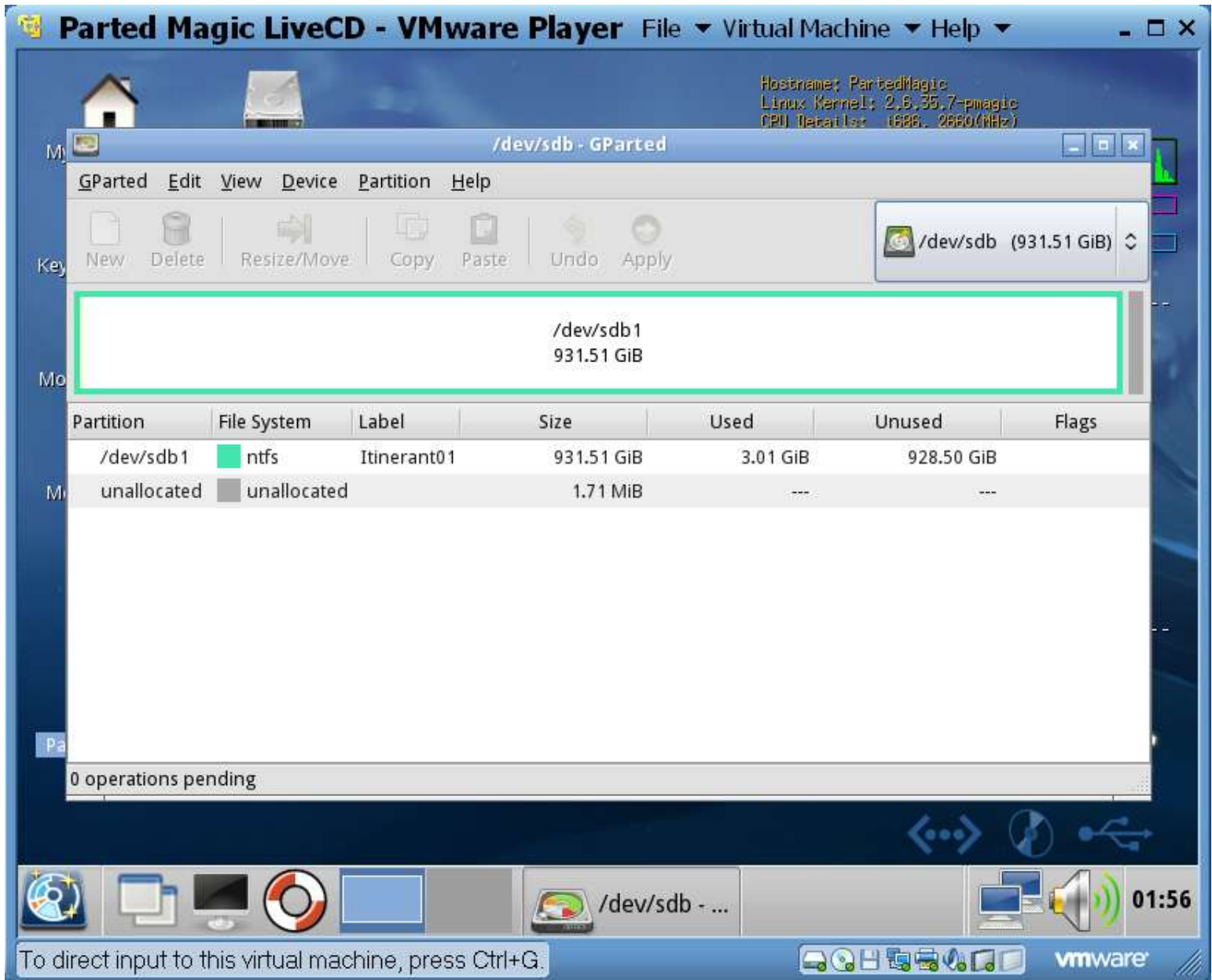


### Step 23:

At this point, with no further activity from you, "GParted" will attempt to repair the USB-connected hard drive.

### Step 24:

If "GParted" succeeds in repairing the hard drive, the partitions of the hard drive will be displayed as an green-bordered NTFS partition without any error message exclamation marks:



### Step 25:

If "GParted" fails to repair the hard drive, click on "Partition" on the Menu bar and then click on "Check" to start a second attempt at repairing the hard drive.

### Step 26:

Close "GParted" by clicking on the "X" button in the upper right-hand corner of the "GParted" window.

### Step 27:



Click on the "Menu" button that is in the lower left corner of the virtual machine:

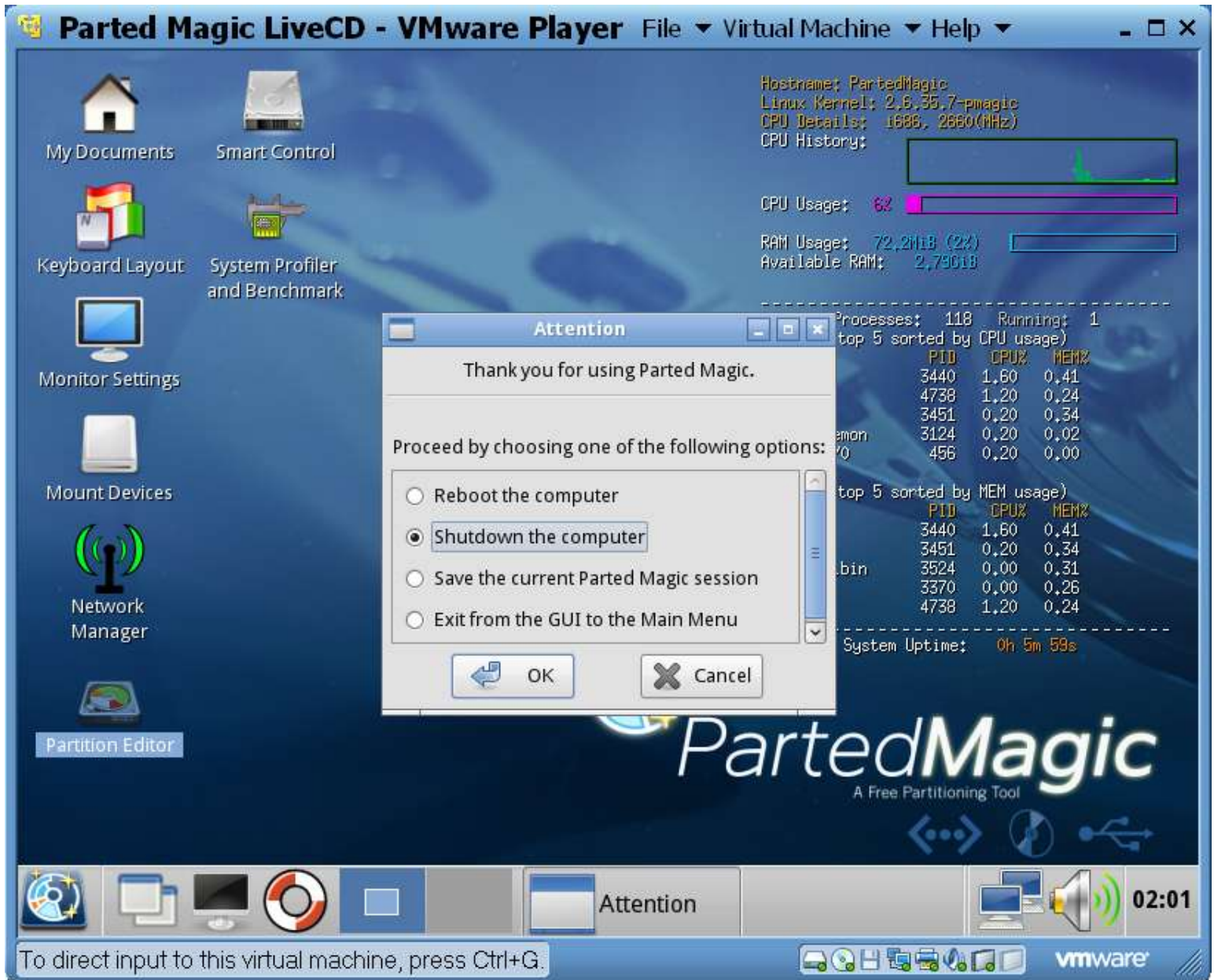


Step 28:  
Click on "Logout":

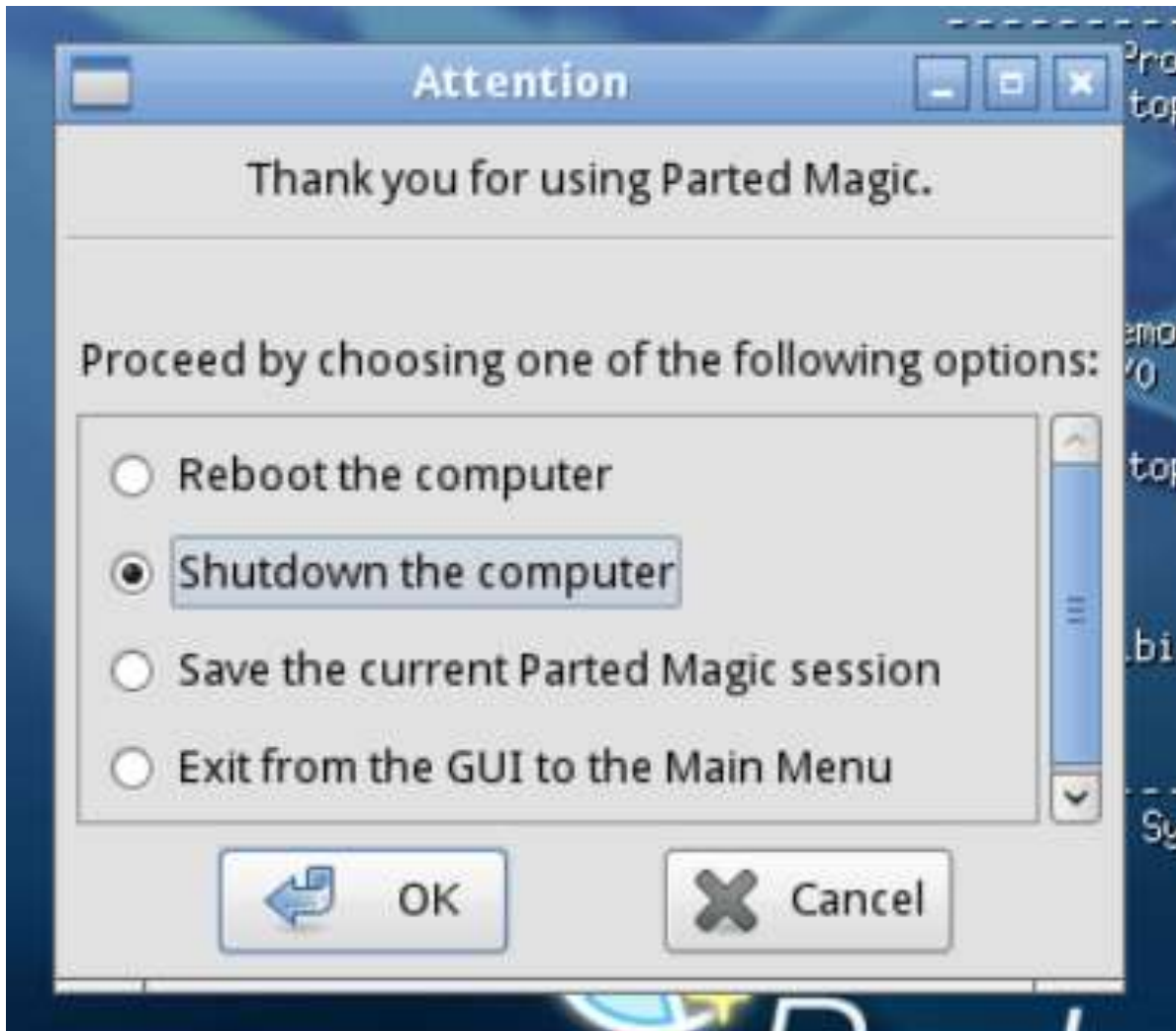


**Step 29:**

**Select the "Shutdown the computer" option button of the "Attention" box:**



Here is a detail view of the "Attention" box:



**Step 30:**  
Click on the "OK" button of the "Attention" box.

**Step 31:**  
After the virtual machine closes, "Windows" will automatically connect to the repaired hard drive.

**Step 32:**  
Click on the "Safely Remove Hardware and Eject Media" button in the Windows "Notification Area". It looks like a USB "A" connector with a white check mark in a green circle:

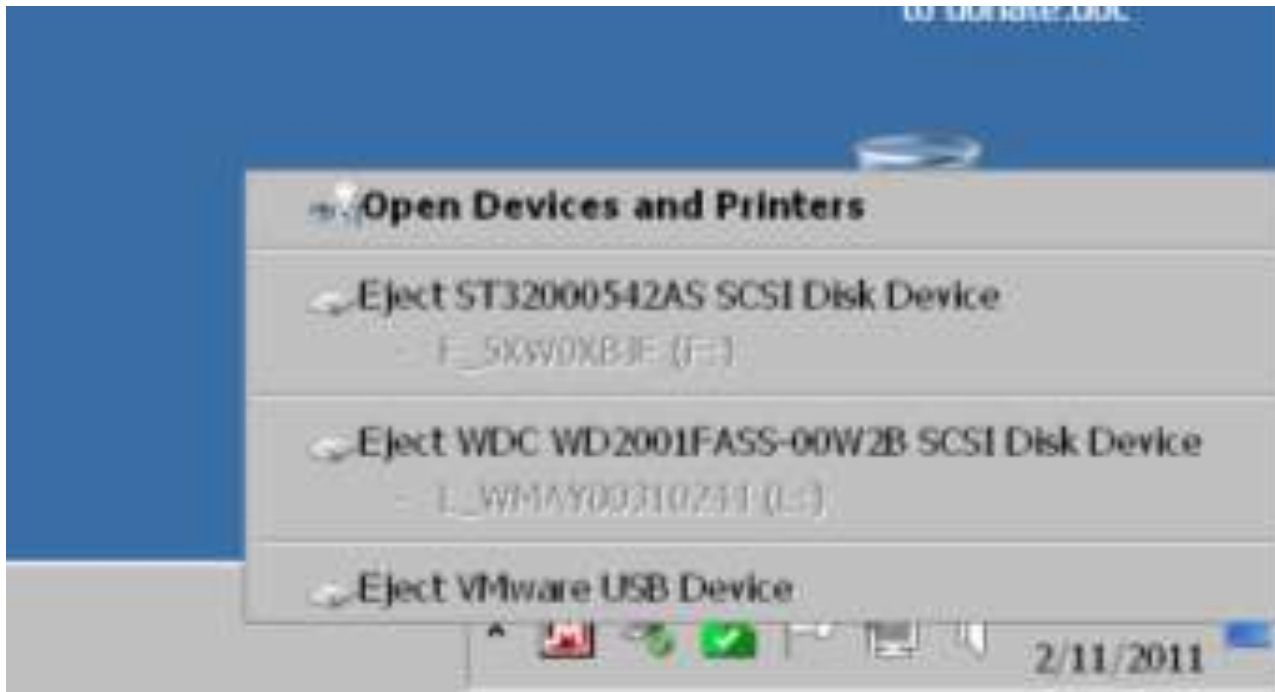


Here is a detail view of it:

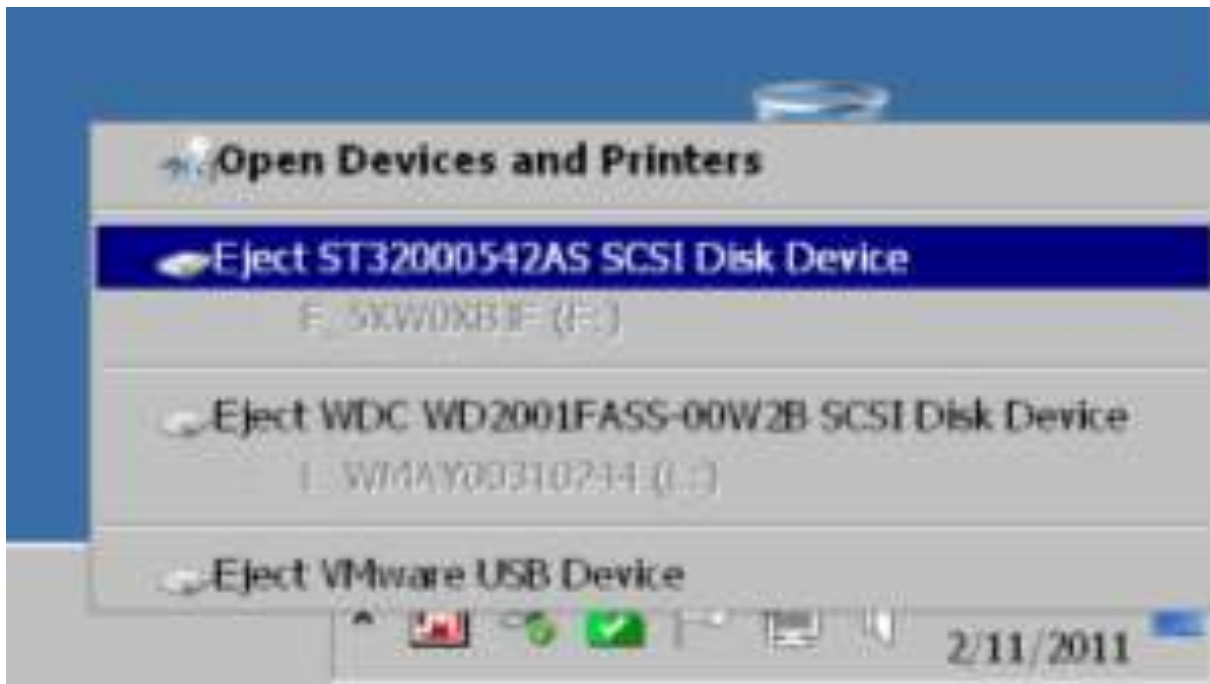


**Step 33:**

**Click on the description of the newly-repaired hard drive:**



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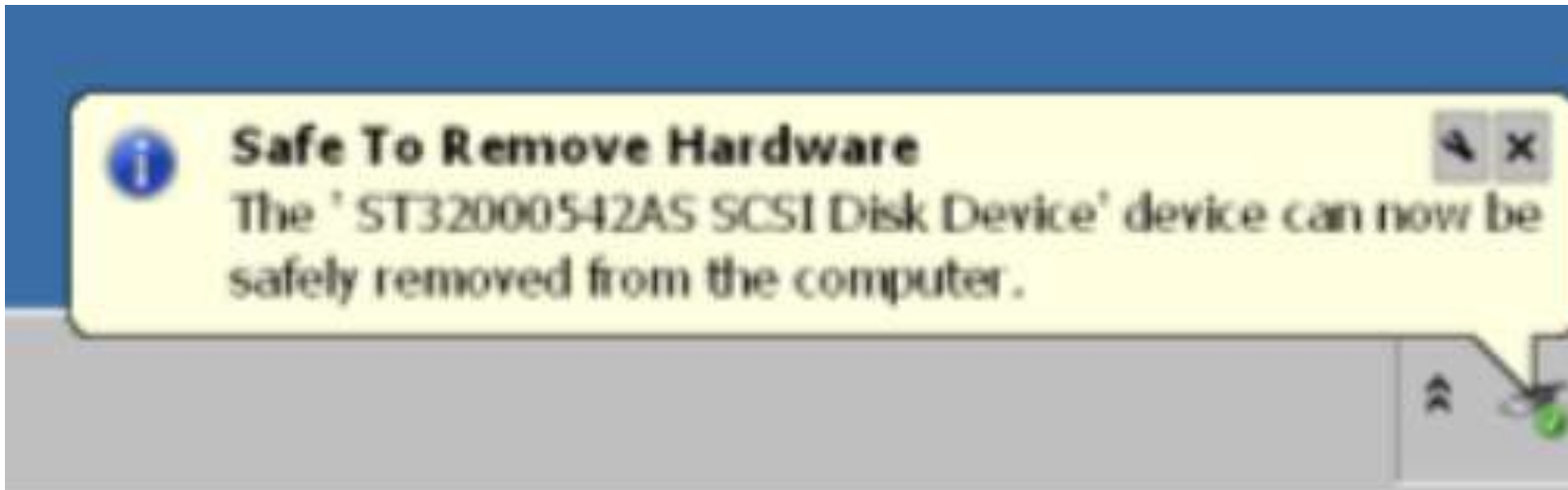


**Step 34:**

**Wait for the following notification:**



**Here is a detailed view of it:**



**Step 35:**

**Disconnect the power supply and the USB cable from the USB drive enclosure.**

**Step 36:**

**Remove power from the computer, the Firewire enclosure, or the eSATA enclosure that you originally removed the hard drive from.**

**Step 37:**



**Remove the repaired hard drive from the USB drive enclosure and re-install the repaired hard drive into the computer, the Firewire enclosure, or the eSATA enclosure where the hard drive originally resided.**