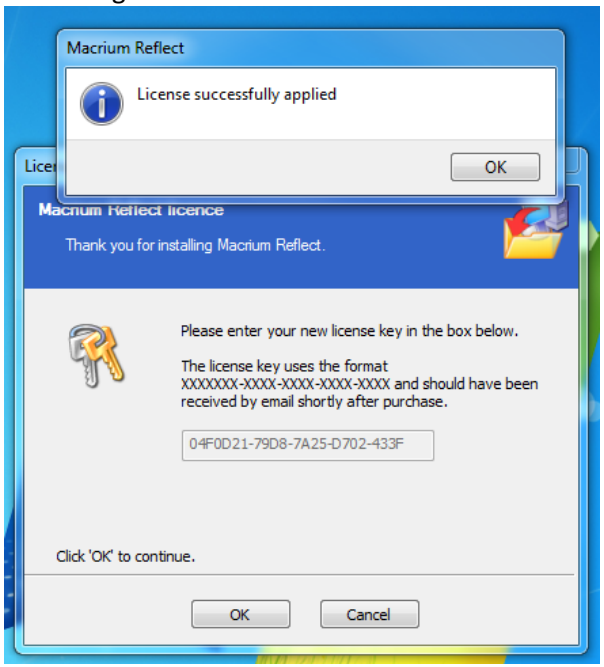
How To Create a Full System Image

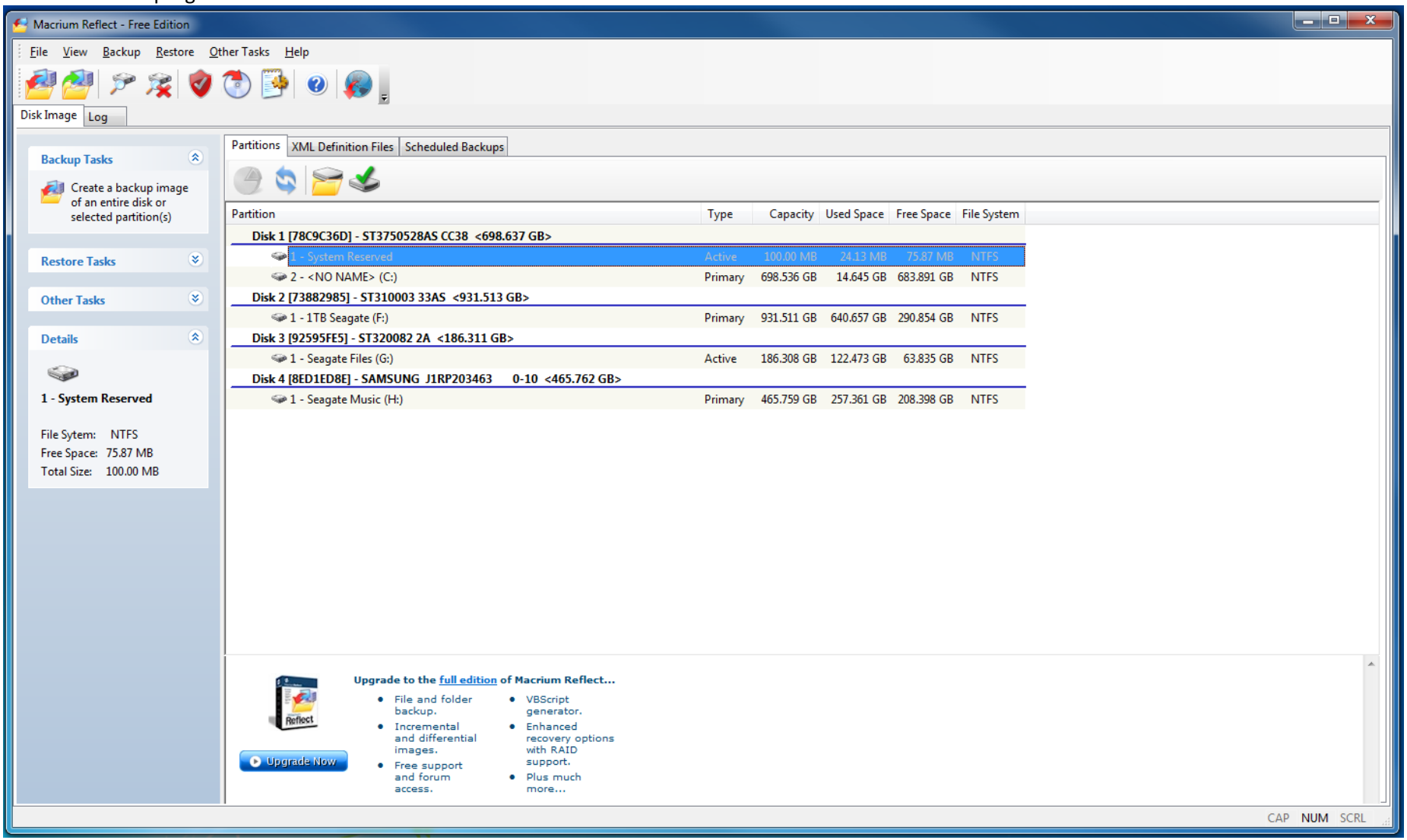
What and why?
A full system image is basically copying the entire system: the operating system, programs, and everything.
Why would you want to do this? Incase you have a system crash, or get virus infection, malware, or just like to reinstall your operating system regularly, you have a quick way to bypass getting out that Windows CD and going through the pain, and time, of reinstalling all the programs.

Tutorial written backing up Windows 7 Ultimate 64-bit.
Back-up software used: Macrium Reflect Free 4.2 build 4209 http://download.cnet.com/Macrium-Reflect-Free/3000-2242_4-10845728.html
The software installer used works with both 32 and 64-bit Windows products. I installed it on Windows XP Pro 32-bit, as well as Windows 7 Ultimate 64-bit.
When restoring from a back-up, the drive you restore to must be the same size, or larger, as the drive the system was originally installed on. (For example, if you originally installed Windows on a 750GB hard drive, even thought the back-up file might only be 16GB, the drive you restore to must be at least 750GB)

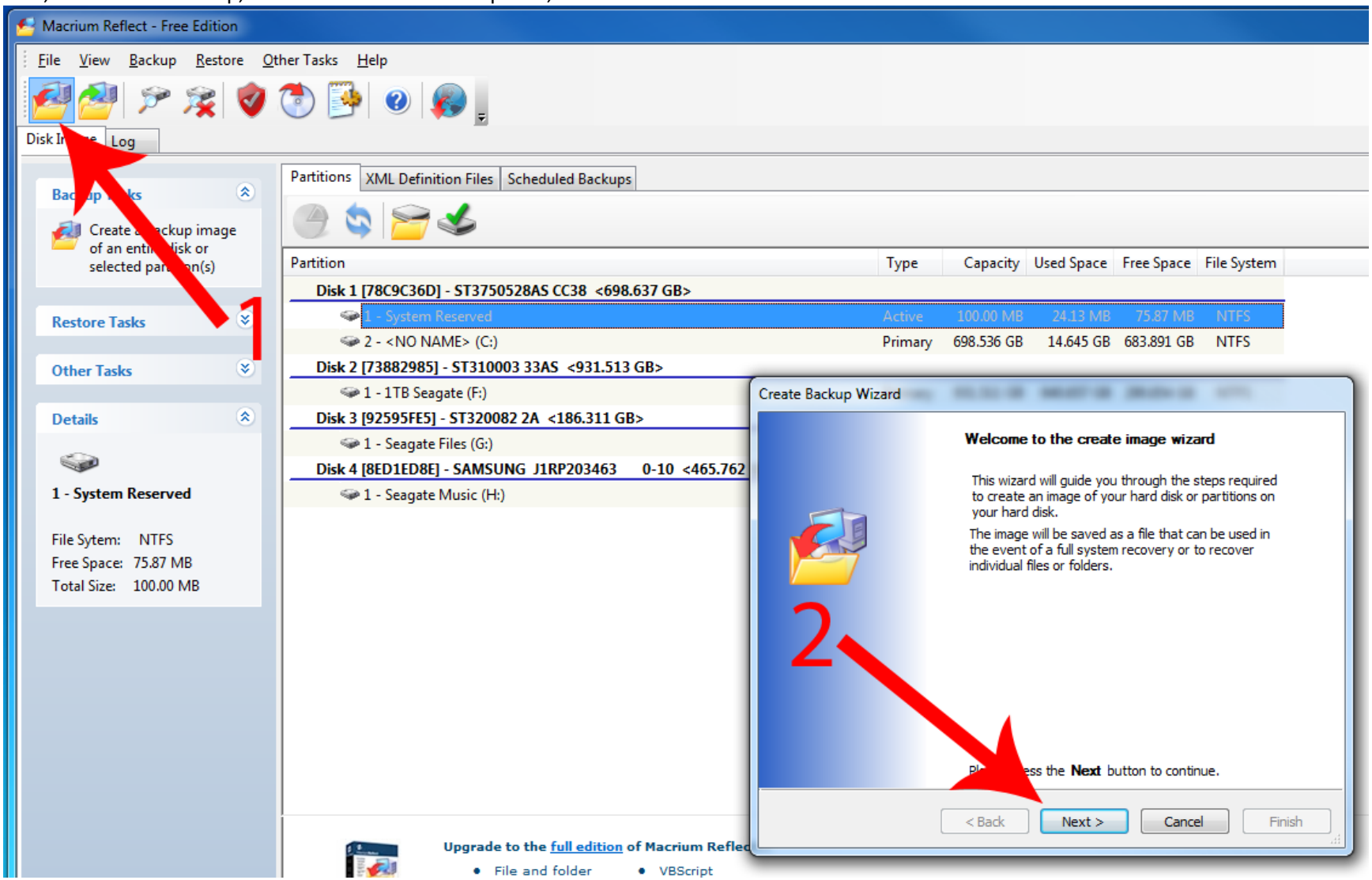
Download and install the software. As you install it, it will ask you for a license key, but it will automatically give you one. Press OK. It will also say something about an internet connection needed for activation, but this is not the case.



Here is what the programs main screen looks like:



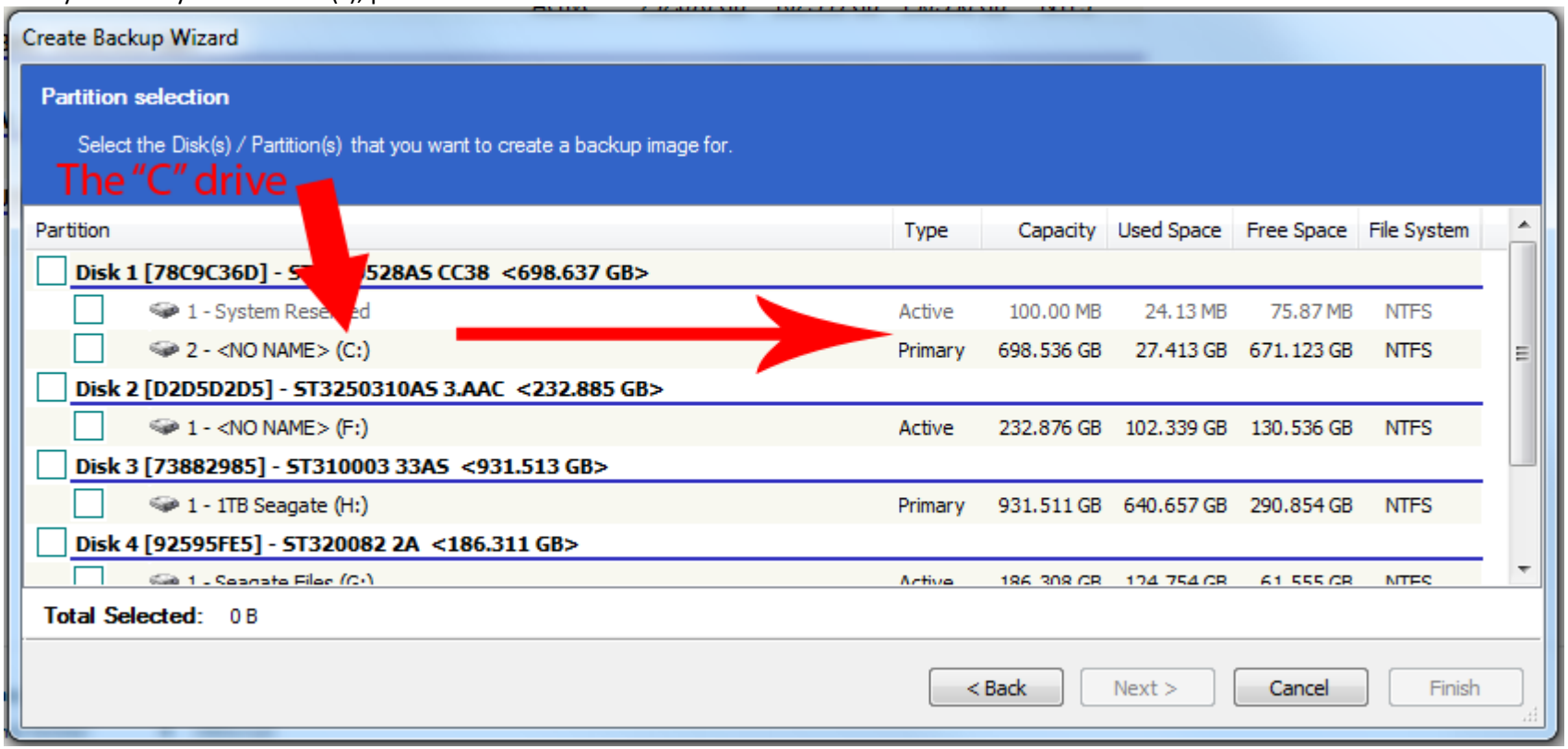
Now, to start the back up, click on the create back-up icon, and click “Next”.



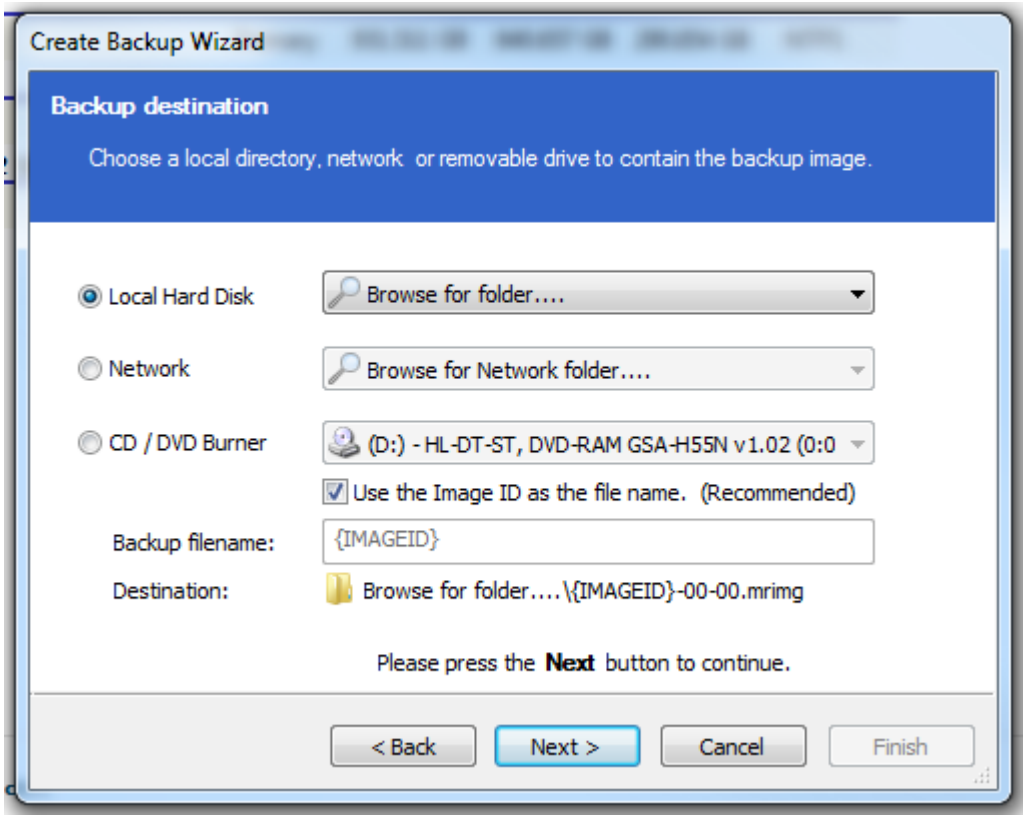
This will bring you to the Partition Selection screen. Since this tutorial is on how to back-up your whole system (operating system)-- in addition to backing up the “C” drive (see arrow marked as so), **you MUST also back up what partition is “Active”.** In this case, I would just select the box next to “Disk 1.”

If you do not back-up the “Active” partition of the drive (assuming the “C” drive is not the active partition), you will not be able to boot into Windows. For instance, I backed up just the C drive (and not also the “Active” System Reserved partition), and got an error in my computers BIOS that “BOOTMGR is missing”. I was unable to get into Windows.

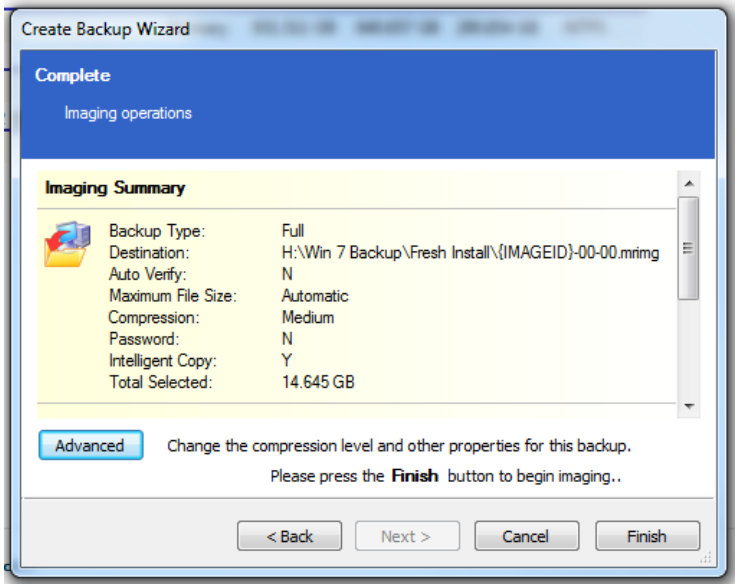
After you make your selection(s), press next.

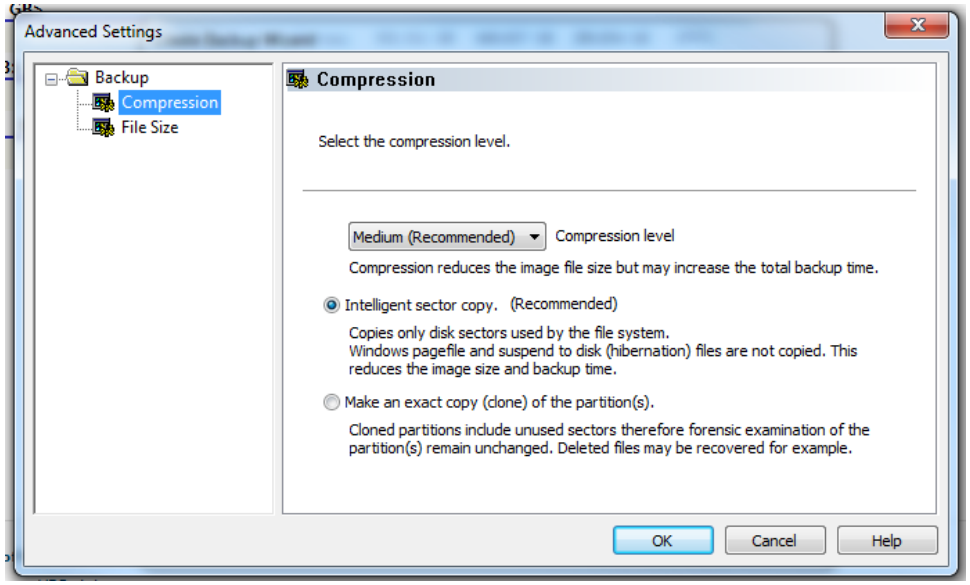


This will bring you to the Backup Destination screen. If backing up to another local hard drive (one connected directly to your computer), click where it says “Browse for folder” and select the drive/folder where you want the disk image stored. Othewise, select the network location, or CD/DVD burner. Than click next.

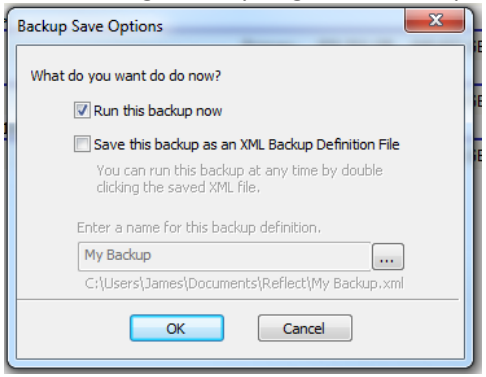


That will bring you to the “Complete” screen (left picture). Here you can select advanced options, and finish. With advanced options (picture on the right), you can select compression, as well as if you want an intelligent copy (only copies disk sectors used by the system), or an exact copy (including unused space). I personally chose no compression (medium compression is the default), and intelligent copy.

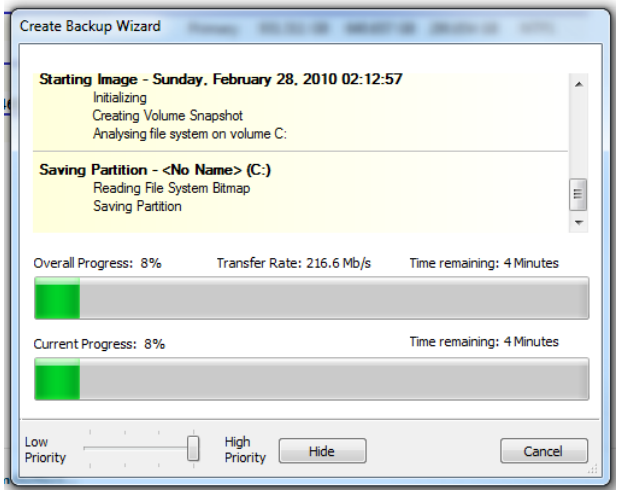




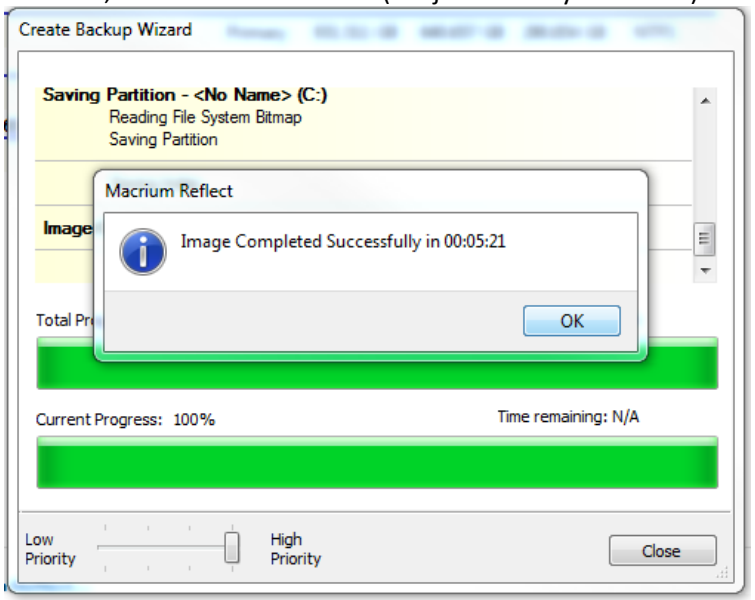
After clicking finish, you get the Backup Save Option box. I chose to run the back-up right then, and not save a definition file. Click ok.



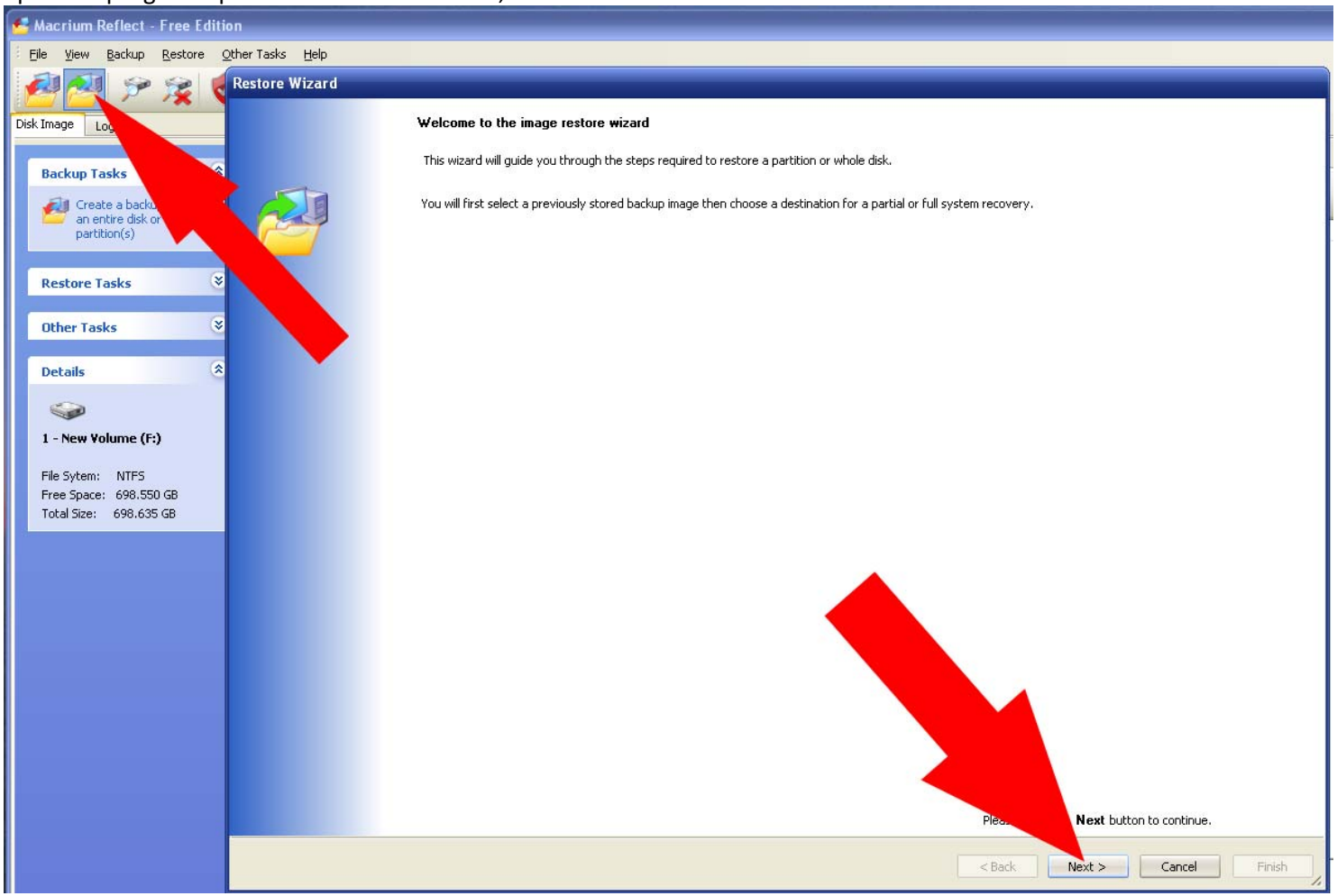
After clicking OK, your back-up will start. You will see the box below, showing progress. It actually backs up fairly fast.



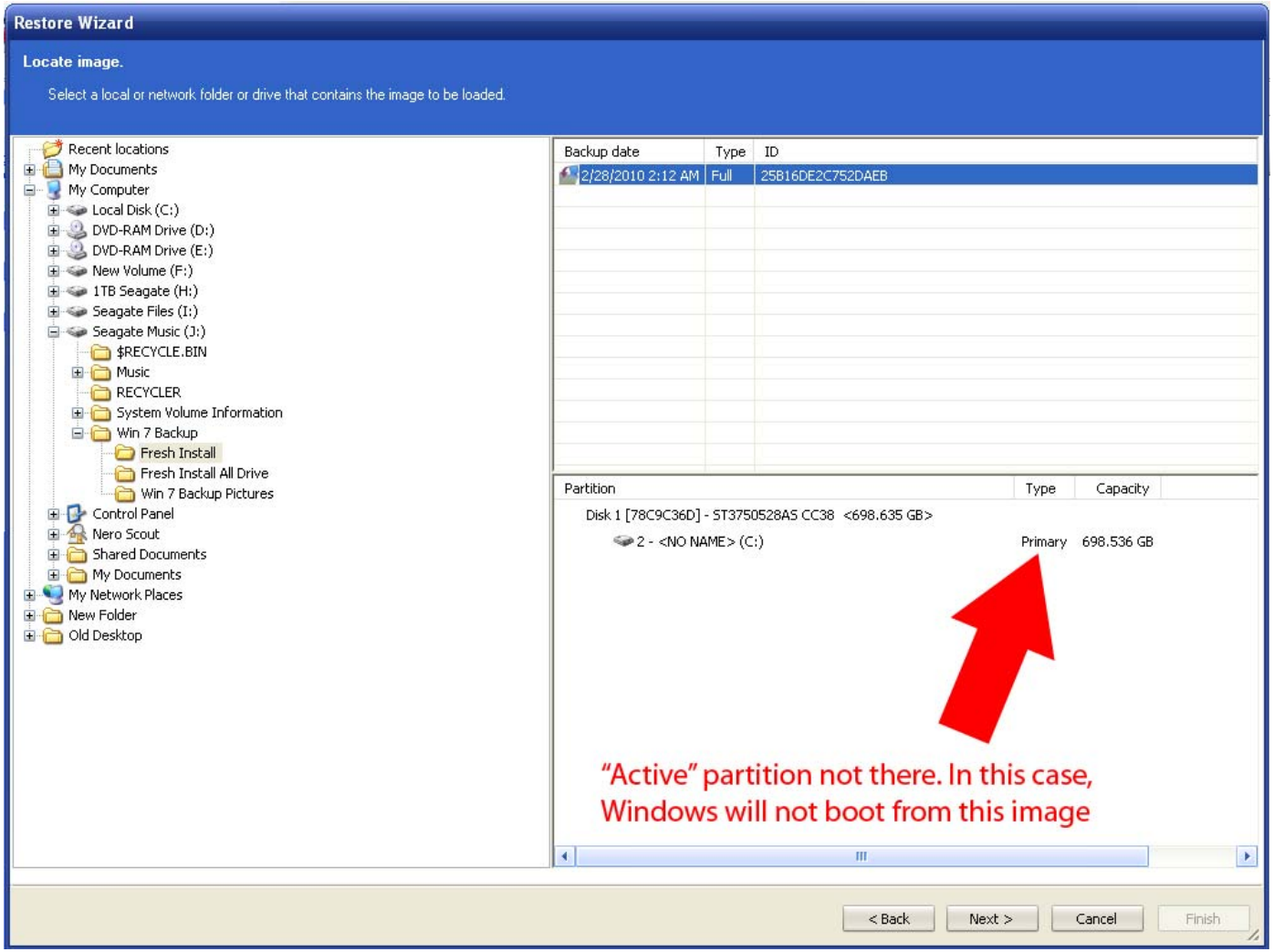
After your backup is done, it will tell you so. Remember where you had the program save the image (back-up) to, and don't delete it! You can, however, move the file around. (It's just like any other file)



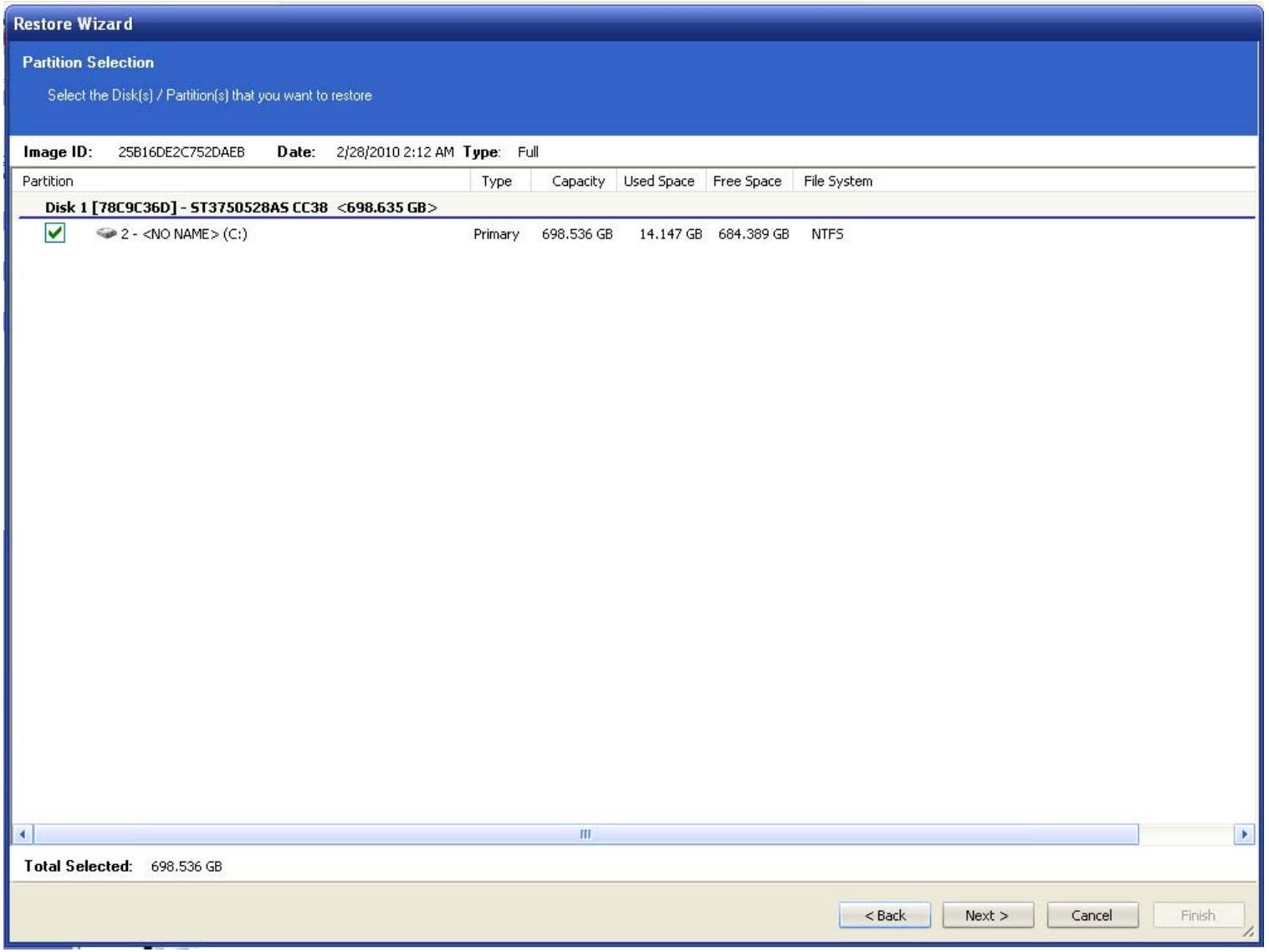
OK, so now you need to RESTORE the image you made. (For instance, your system is infected with malware, a virus, etc)
Simple. There are ways to create a boot-disk and go that route, but I chose to just use another computer. (Actually, the same computer, just a hard drive with Windows XP on it).
What you need to do is take the image file (back-up file you created), and the hard drive you want to restore this to; take this to a second computer. On this second computer, you need to install Macrium Reflect as well.
Open the program up. Click the “Restore” icon, and click next.



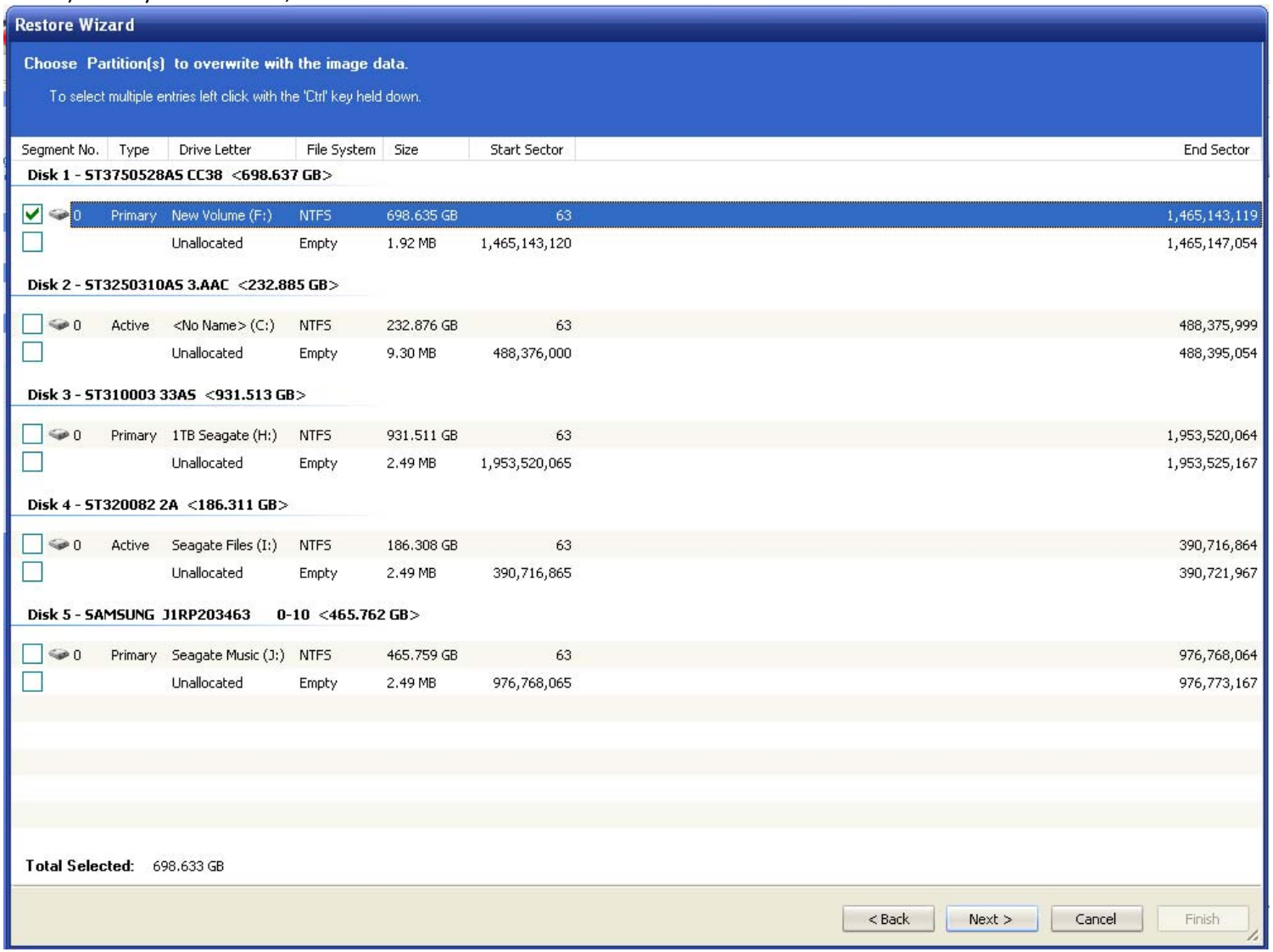
This takes you to the “Locate image” screen. Here you just find the back-up file you want to restore from.
In my case, I put my backup file in the “J:\Win 7 Backup\Fresh Install” directory. Note that this particular back-up file is missing an “Active” partition – I screwed up.
Click “Next”



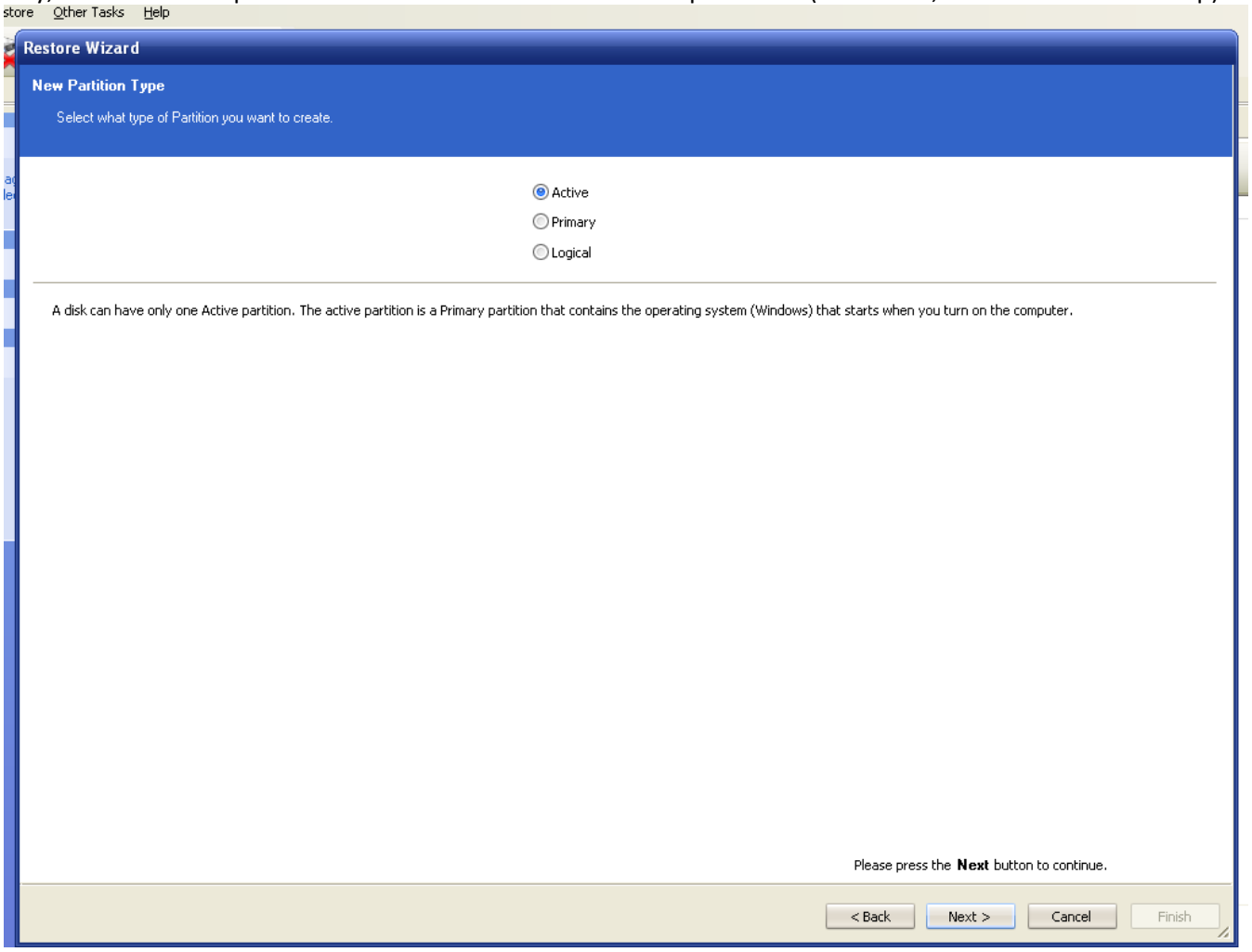
This takes you to the Partition Selection screen. Here you can select the partitions you want to restore from within the back-up. Make your selection/deselection, and click next.



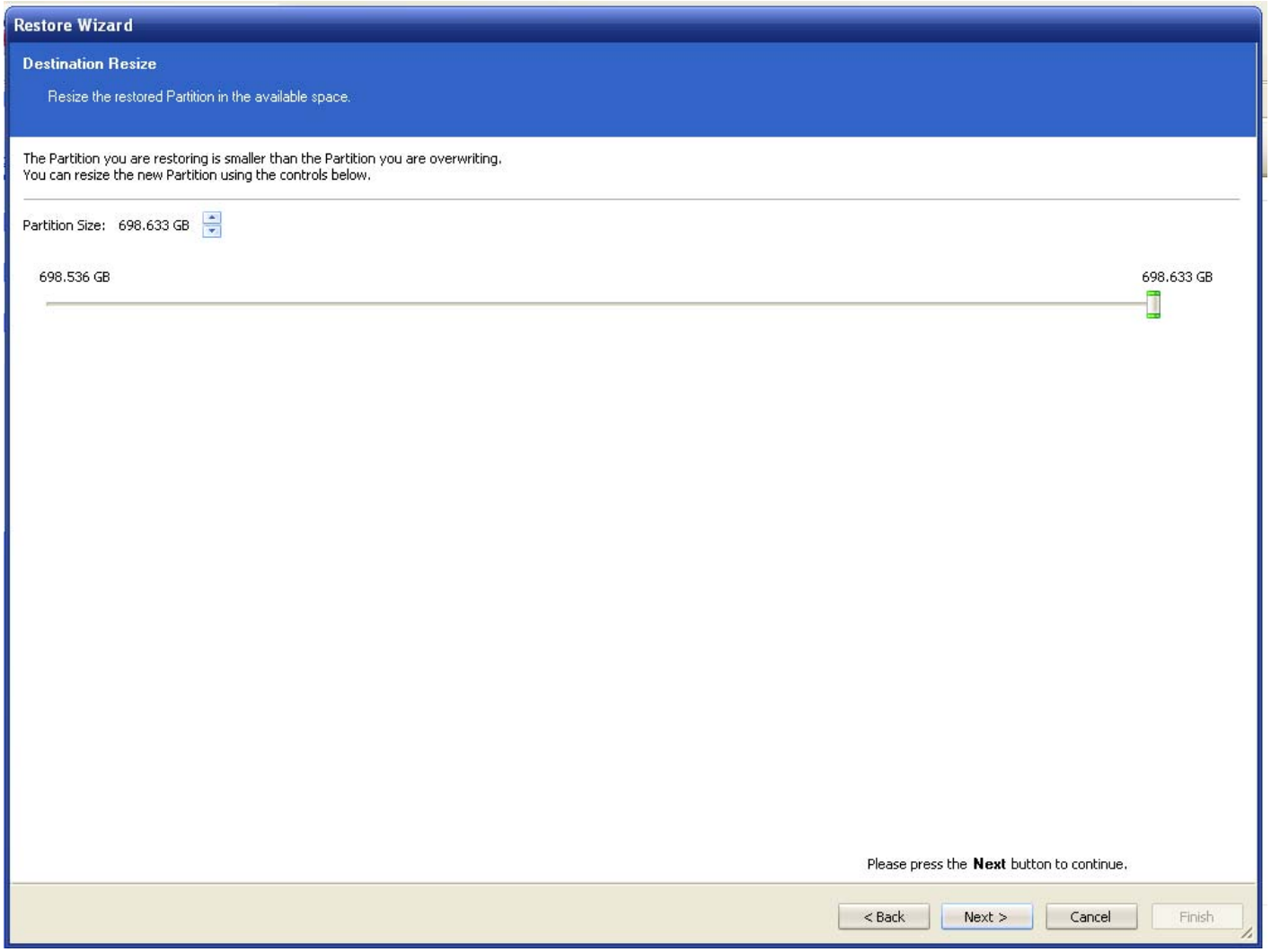
The next screen let's you chose where you want to restore to. **Remember: where you are restoring to needs to be at least as large as the drive it was backed up from**. (Even if you only backed up a 16GB image from a 750GB hard drive, you need to restore to a hard drive of at least 750GB) Make your selection, and click next.



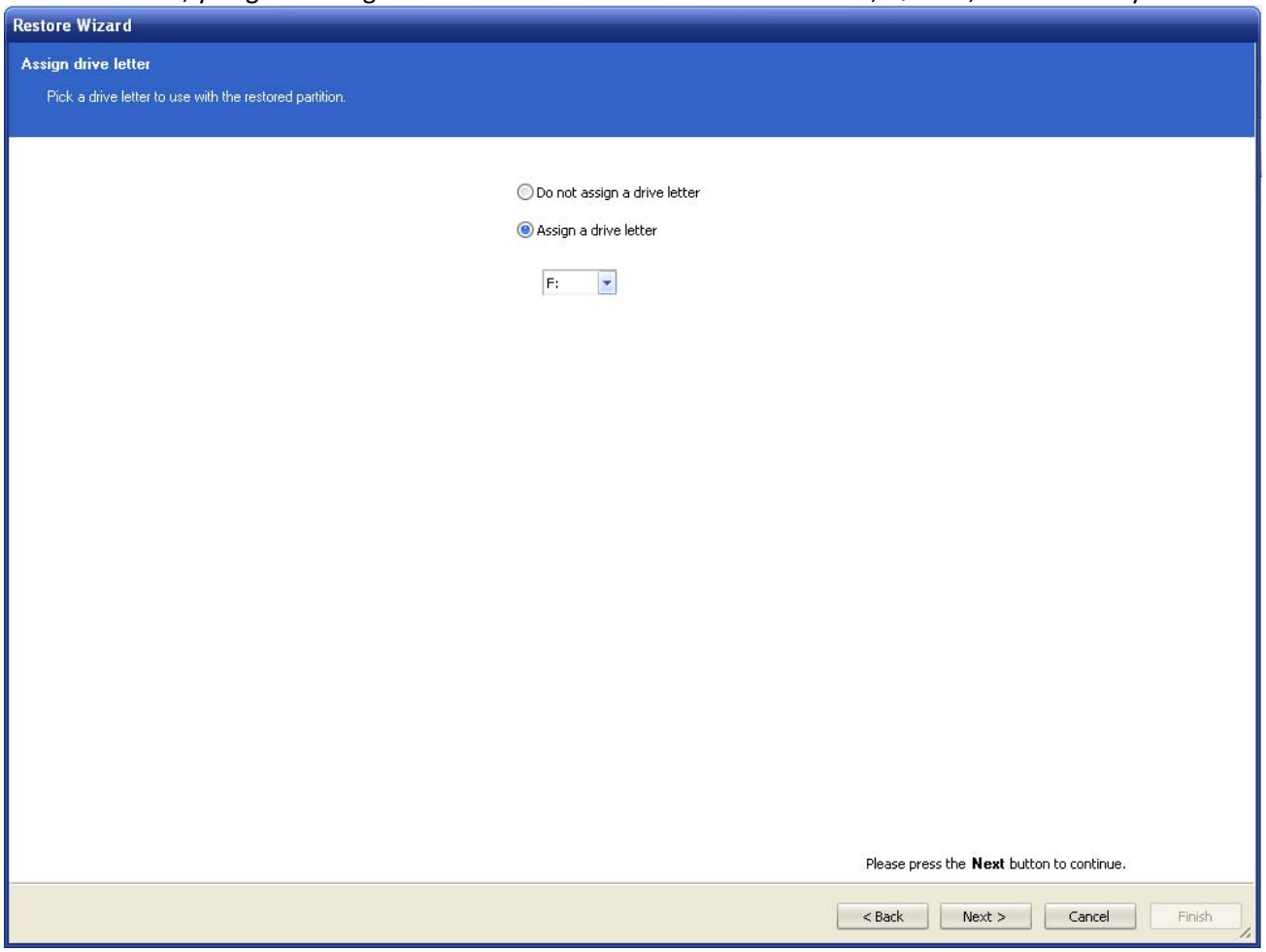
This brings you to a screen where you select what type of partition the new partition will be. Remember, Windows boots from Active partitions only, and new active partitions needs to come from old active partitions. (Otherwise, Windows won't start up)



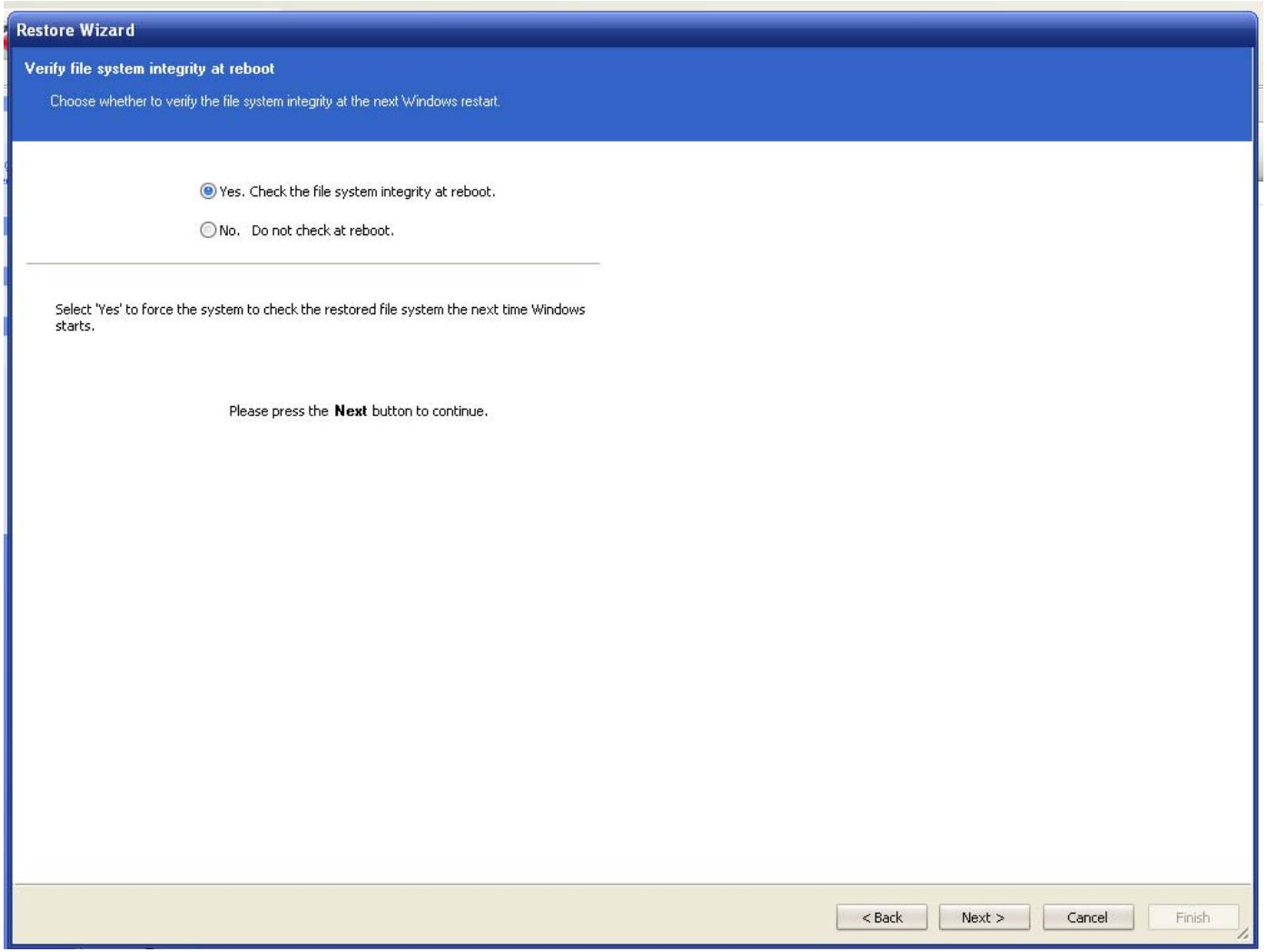
If there is more space available on the new drive than the back-up had you can “add” that space to the partition that will be made. Choose what you want, and click next.



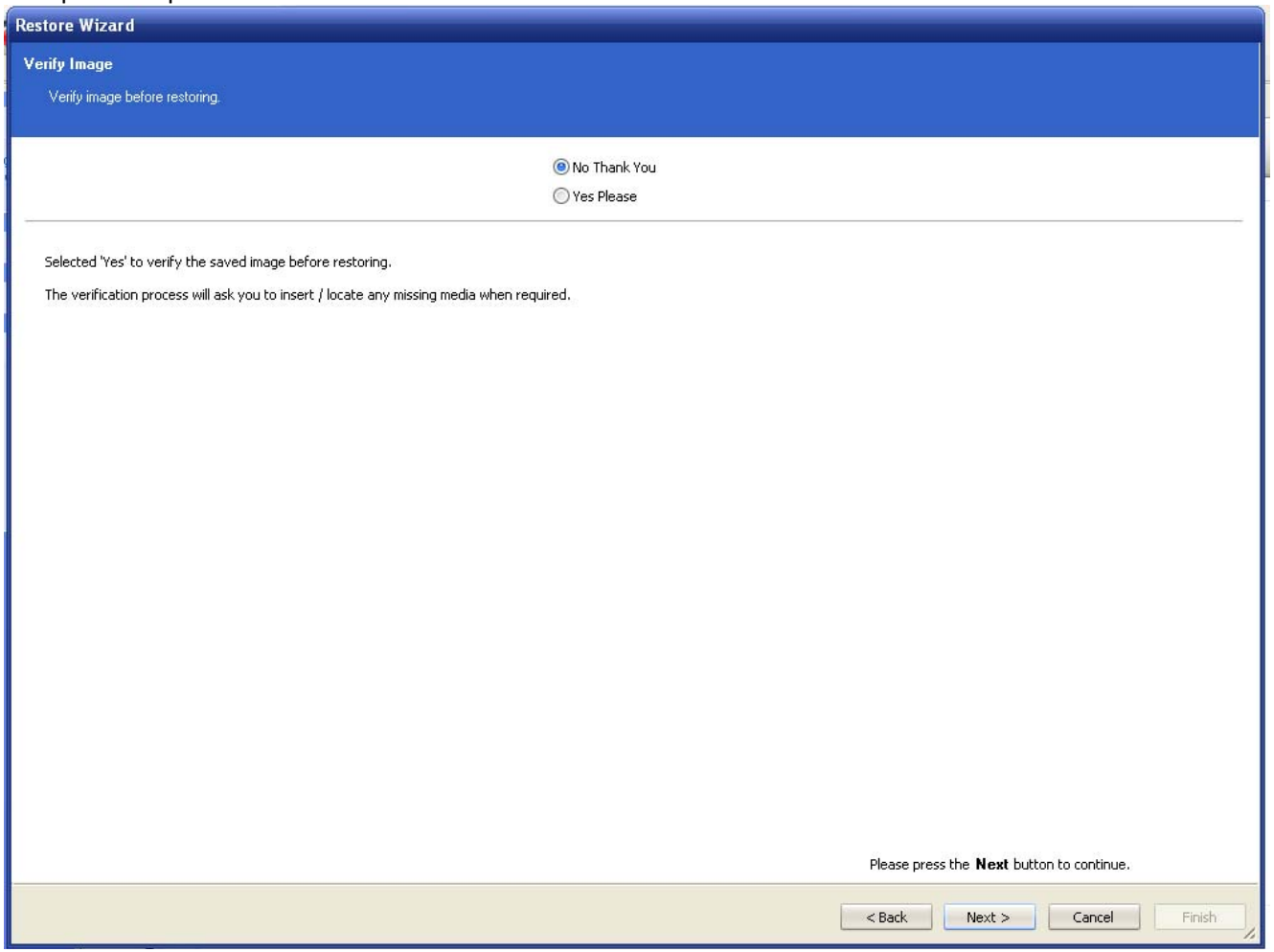
The next screen, you get to assign a drive letter to the drive. Choose Z drive, Q drive, or whatever your heart desires. Than click next.



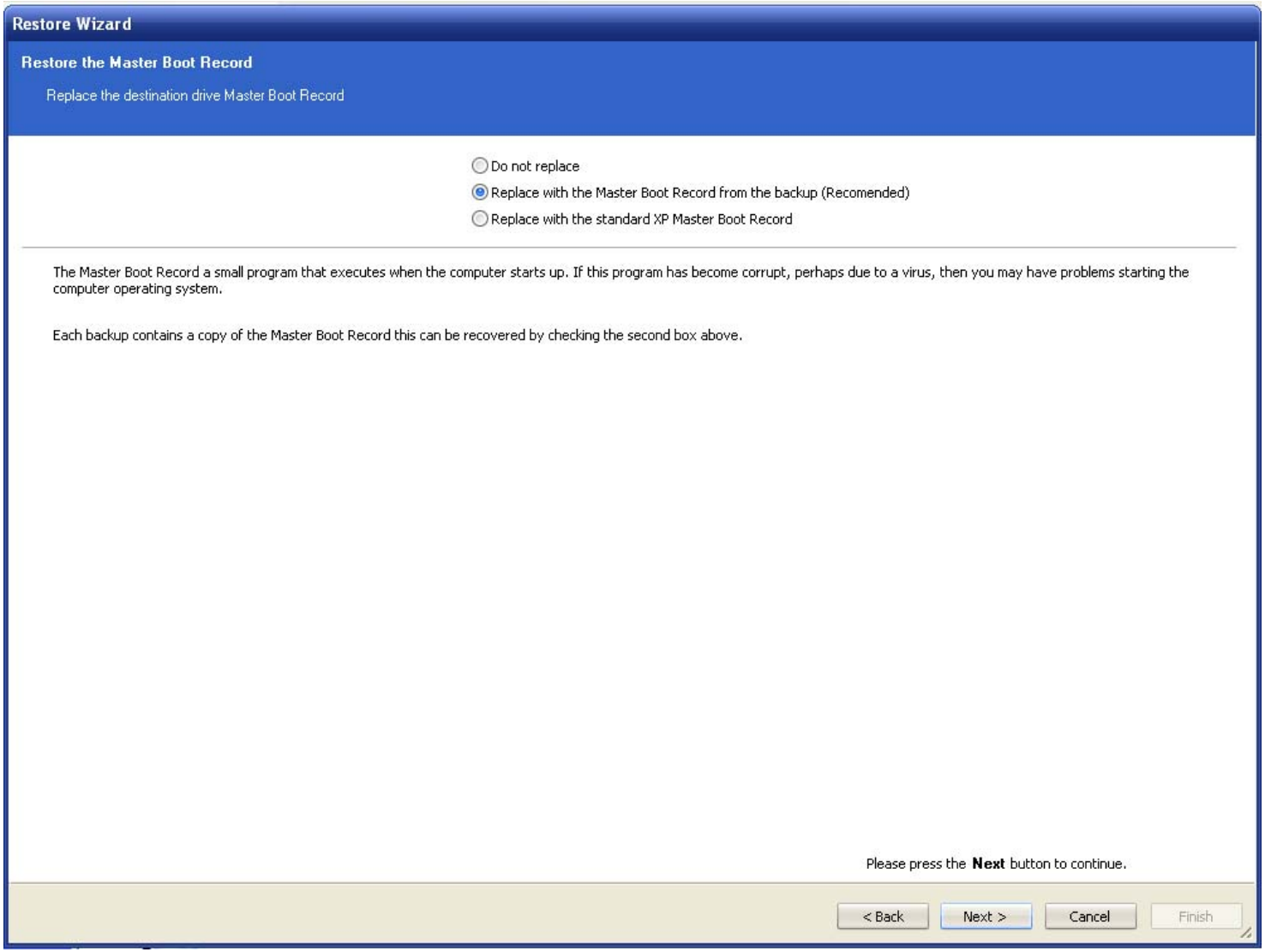
This brings you to the “check at reboot” screen. I, personally, selected No.
Than click… the next button.



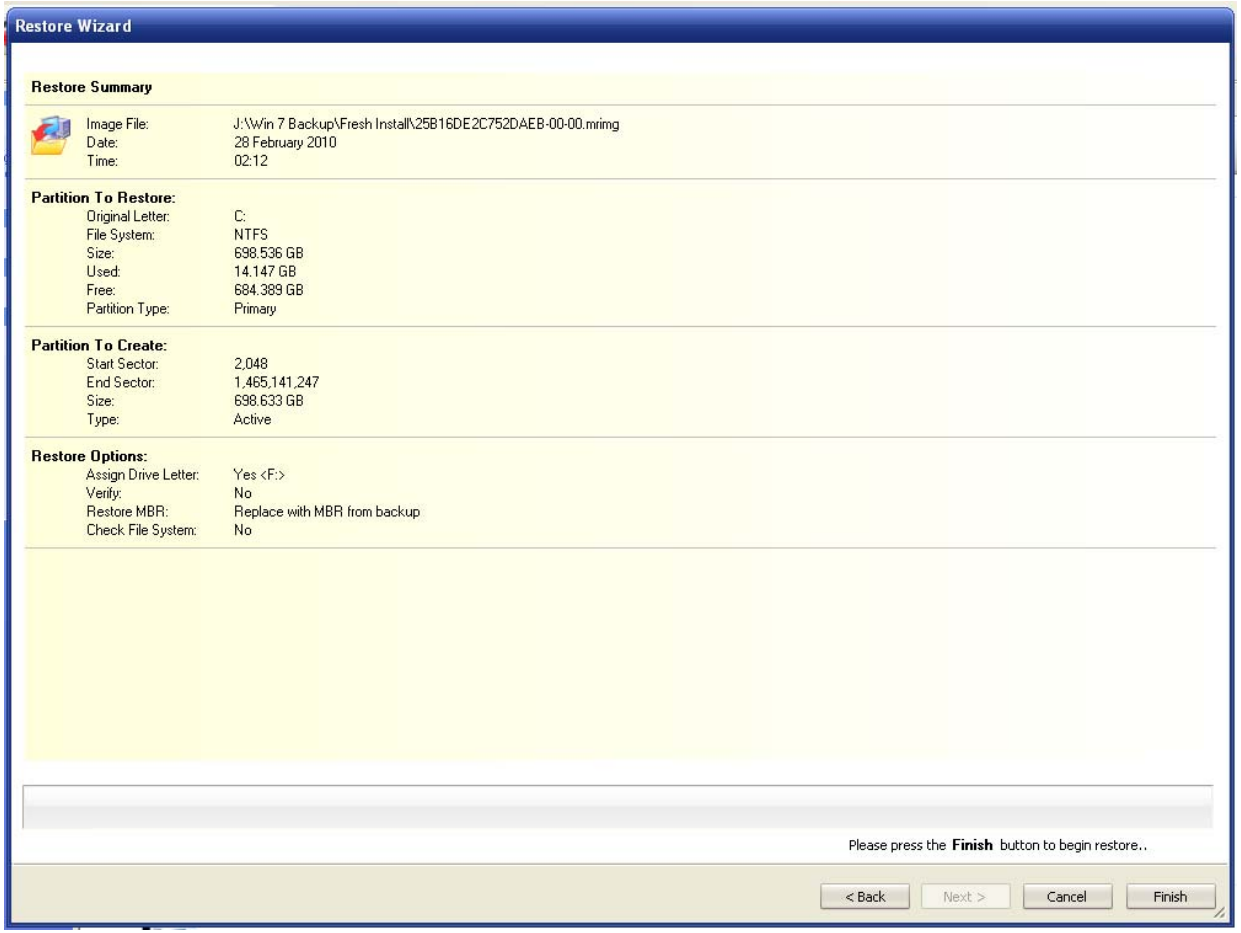
This screen asks you if you want to verify the image (the back-up file) before restoring. It's a way to make sure the file you are using is not corrupted. I kept the default "No Thank You". And than click next.



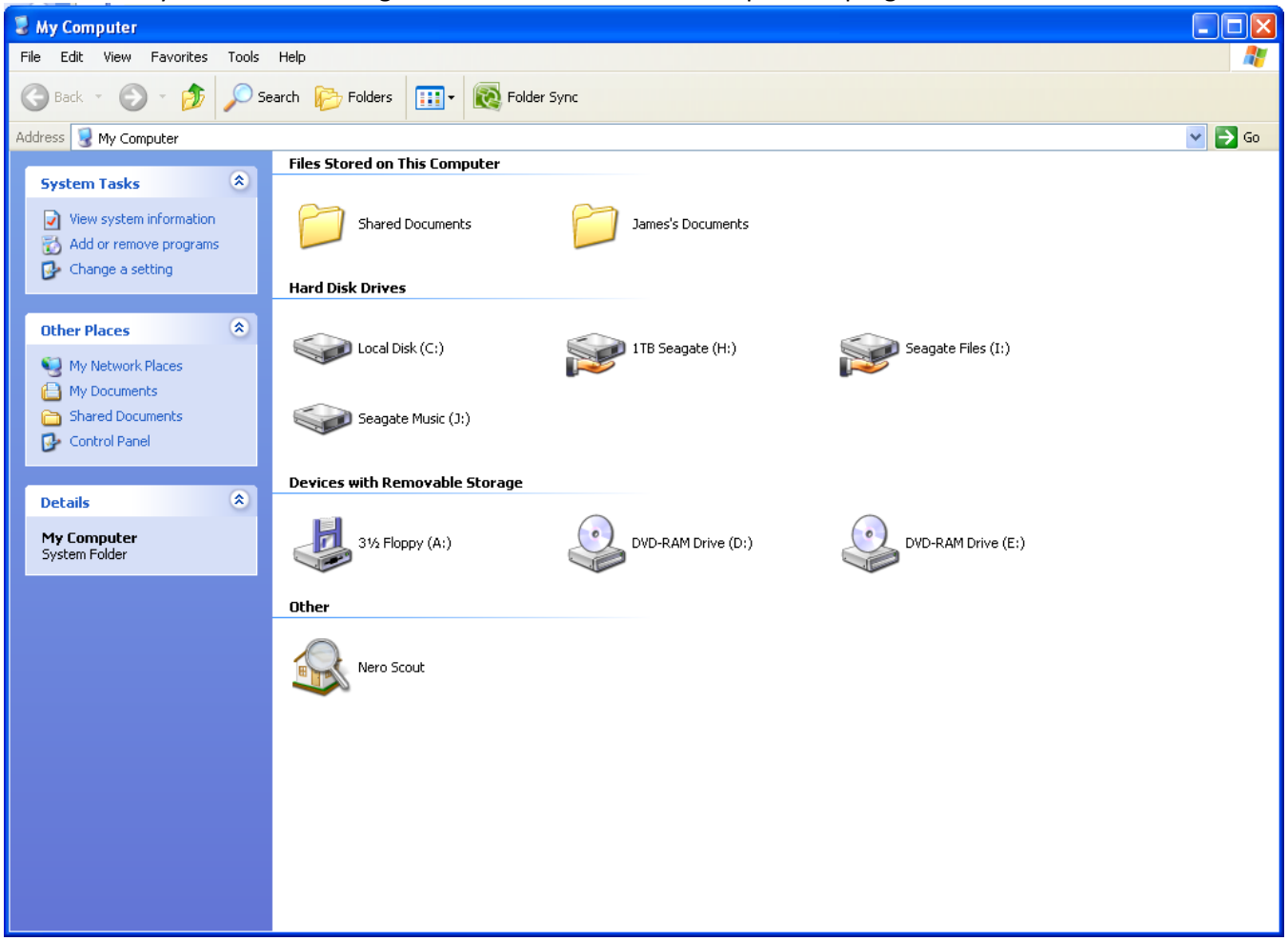
Brings you to the “Restore the Master Boot Record” screen. I just want with the recommended selection. And than I clicked next.



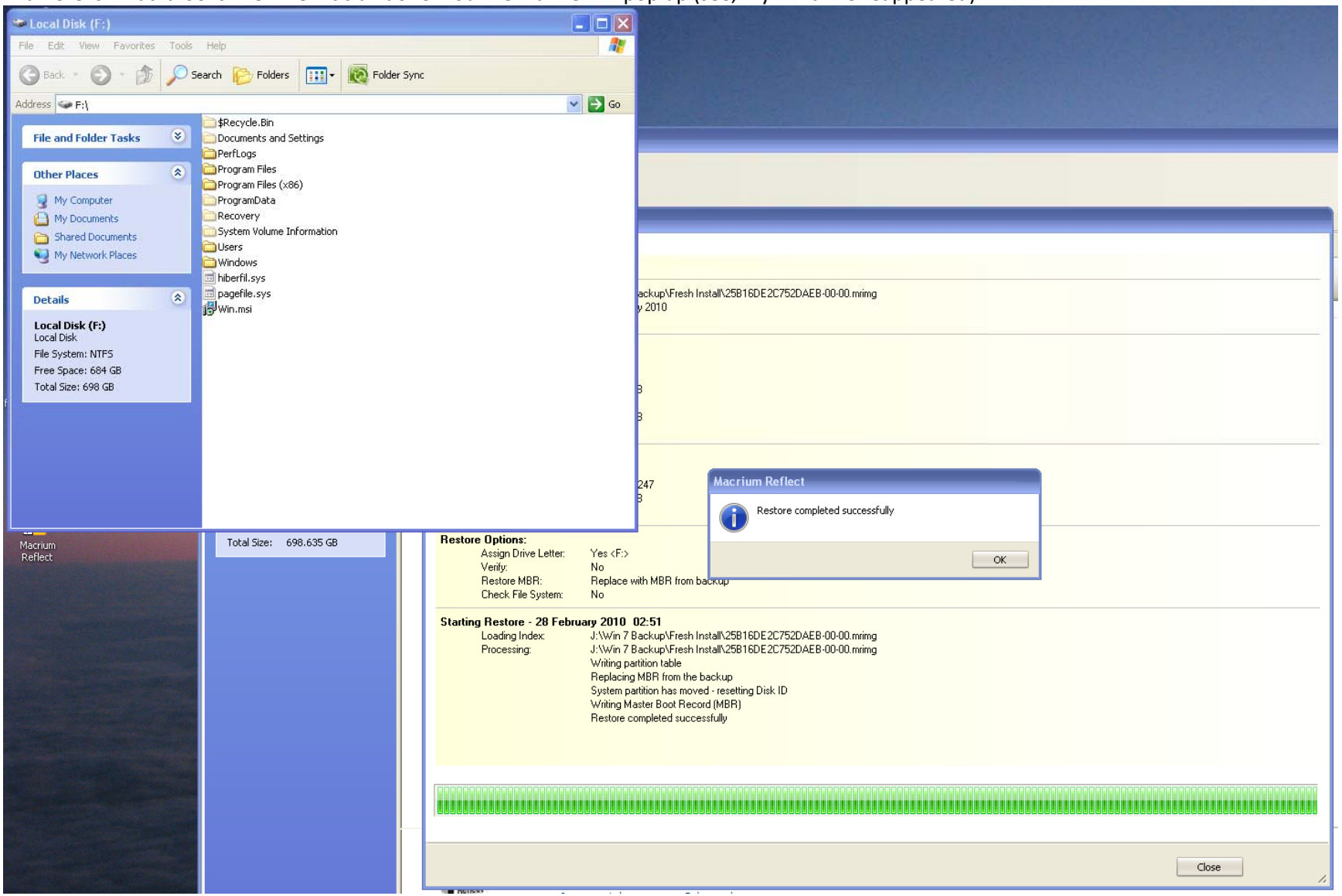
And at the Restore Summary page, you click Finish.



During the restore procedure, the drive you are restoring to will probably disappear. This is normal, and it will reappear as whatever drive letter you specified at the “assign drive letter” screen.
Notice how my “F” drive is missing? It was there before the backup was in progress!



And here is what it looks like when it's all done. Your new drive will pop up (see, my "F" drive reappeared)



Now, just take your fresh drive to the original computer, and enjoy.
It’s as good as having a reformatted, fresh hard drive without the hours spent manually reinstalling everything.