

# Ghost Windows for Free with Macrium Reflect

Brian Bondari

A few years ago I wrote an article on Ghosting Windows XP for Free with DriveImage XML. It's proven to be one of the most popular articles on TipsFor.us. Back in 2007 I also wrote a complementary article on Ghosting Windows for Free using Open-Source Tools. I suppose you could say that finding free ways to "ghost" Windows is an obsession of mine.

One bit of criticism levied at these aforementioned methods is that they both require a fair amount of upfront work. A restoration using DriveImage XML requires the creation of a boot disc such as BartPE. Using open-source tools like ntfscdclone requires mucking around with the command line - an intimidating process for a newbie. Yes, I said "mucking."

Isn't there an easier way? One that requires far less prep time with an easy learning curve? The answer is a resounding YES!

Enter Macrium Reflect FREE Edition. While the free version is the little brother to the commercial version, it still packs a mighty punch. Feast your eyes on a feature comparison as of 17 October 2008.

Feature	Free Edition	Full Edition
Windows XP and Vista compatibility	✓	✓
Disk Imaging	✓	✓
Access images with Windows Explorer	✓	✓
Scheduler	✓	✓
XML backup definitions	✓	✓
Linux Rescue CD	✓	✓
BartPE Rescue CD plug-in	✓	✓
Network support	✓	✓
CD/DVD writing support	✓	✓
Windows Server 2003 compatibility		✓
File and Folder backup		✓
Differential disk images and backups		✓
Incremental disk images and backups		✓
VBScript Generator		✓
Email notifications		✓
Password Protection		✓
AES Encryption		✓
Auto Verify Images		✓
Run programs before or after backup		✓
Shut down PC after backup		✓
Windows system event log support		✓
Windows PE 2.0 Rescue CD with RAID support		✓
Windows boot menu		✓
Technical support by email and forum access		✓
Commercial/Business use		✓

# Ghost Windows for Free with Macrium Reflect

Brian Bondari

## Requirements

To successfully image and restore your system using Macrium Reflect, you will need the following:  
Windows XP or Vista (32 or 64-bit) - required to install the free version of Macrium Reflect, of course.  
CD or DVD burner - You need a place to store your backup image. Macrium allows you to burn it directly to CDs or DVDs.

Spare Hard Disk or Partition (Optional) - Instead of storing the backup image on optical media, you may choose to simply store it on a spare partition or hard disk.

Before we begin, allow me to remind you to BACK UP YOUR DATA! Working with disk imaging is a volatile process, and you should always have backups of your critical files. Burn everything to CDs or DVDs. Buy a spare hard disk, or maybe take a look at available online storage. Do whatever it takes to keep your data safe.

Ready? Let's get started!

## The Process

Here's an outline of the entire process:

1. Install Macrium Reflect FREE Edition
2. Configure Your System
3. Create the Disk Image
4. Verify the Disk Image
5. Create the Rescue CD
6. Restore the Disk Image
7. Final Thoughts

### 1. Install Macrium Reflect FREE Edition

This is the easiest step. Download and install the executable (Download.com link). The installer will automatically detect whether you are running a 32-bit or a 64-bit operating system. Curiously, the installation process requires Internet access to validate the automatically generated serial number. After the installation is complete, launch Macrium Reflect.

### 2. Configure Your System

At this point you should configure your operating system to the way you like it. Here are a few suggestions:

- Make sure Windows has the latest security patches and drivers.
- Scan for viruses and other malware.
- Run a Defrag.
- Remove any unnecessary applications.

Ideally, I like to create a couple different disk images. I prefer to have one image of a freshly installed state, and another image that includes all my main applications.

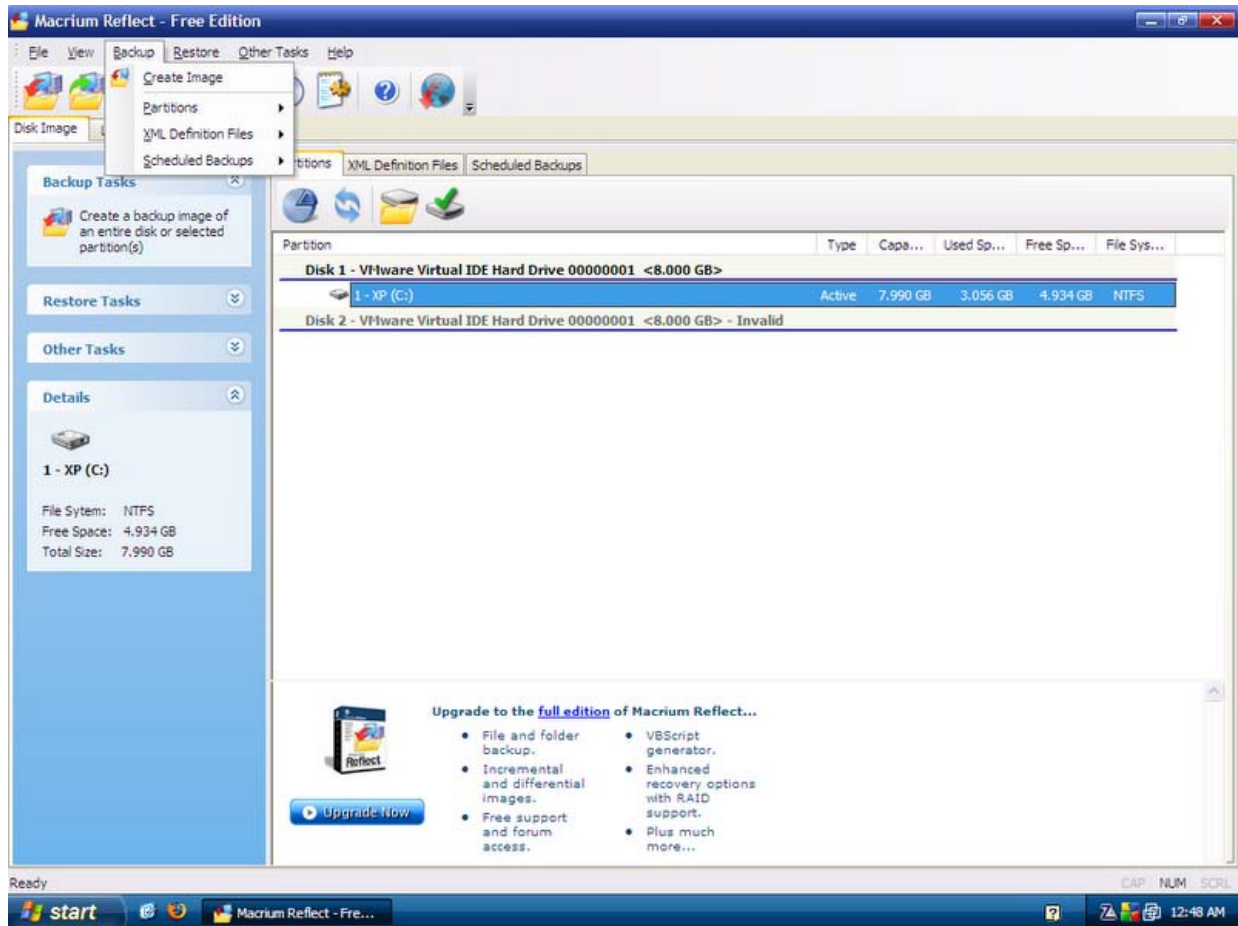
# Ghost Windows for Free with Macrium Reflect

Brian Bondari

### 3. Create the Disk Image

Now we're getting to the fun part. One quick note here: I used VMware for the purpose of convenient screenshots, but the process is no different than if it were a real machine. I also tested the process on a spare computer, and it worked flawlessly for me.

To get started, launch Macrium Reflect, select the disk that you wish to image, and from the Backup menu, choose Create Image.



### Macrium - Choose your partition

(Alternative - you could also open My Computer, right-click on the chosen disk, and select Create an Image of this partition...)



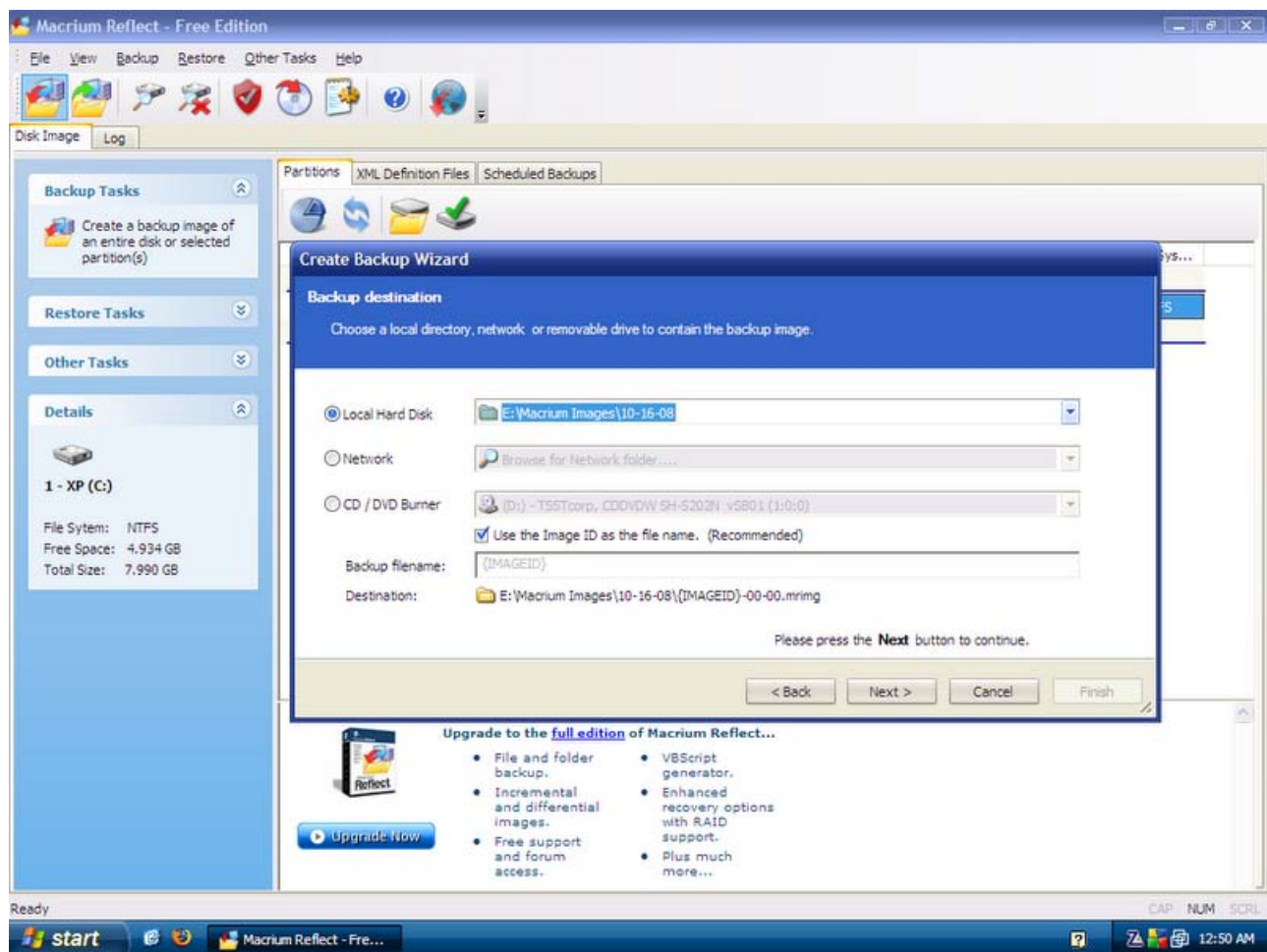
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## Brian Bondari

### Macrium - Create Backup Wizard

At this point you need to choose where you would like to store the disk image. Options include:

- On a spare partition or hard disk
- On a network share - Note: make sure your network share is using WORKGROUP as the Workgroup name.
- On blank CDs or DVDs

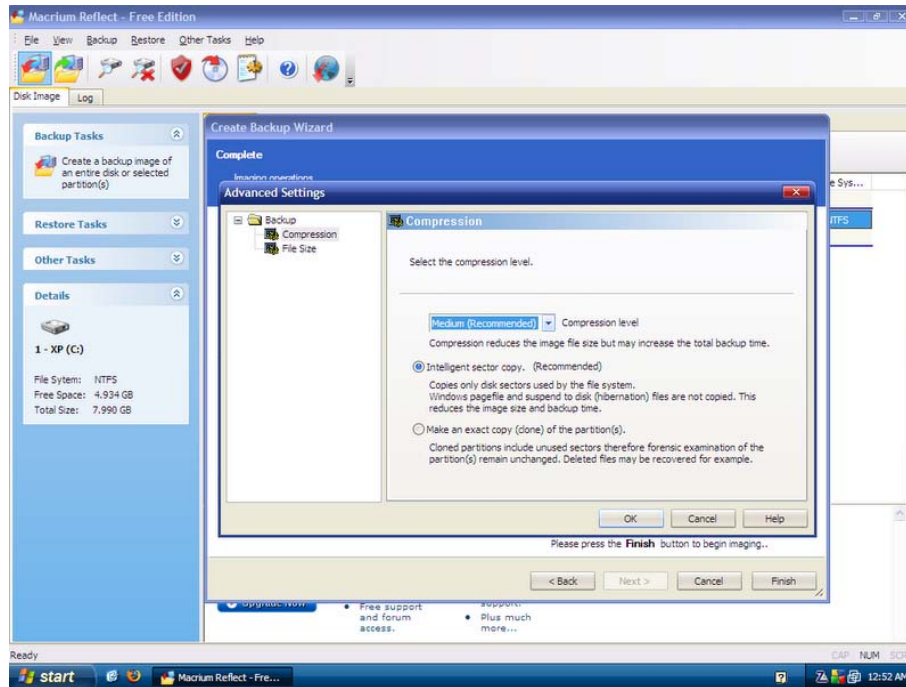


### Macrium - Choose where to store image

I suggest you also take a look at the Advanced Settings. Here you can choose the amount of compression and also set a maximum file size (for splitting purposes).

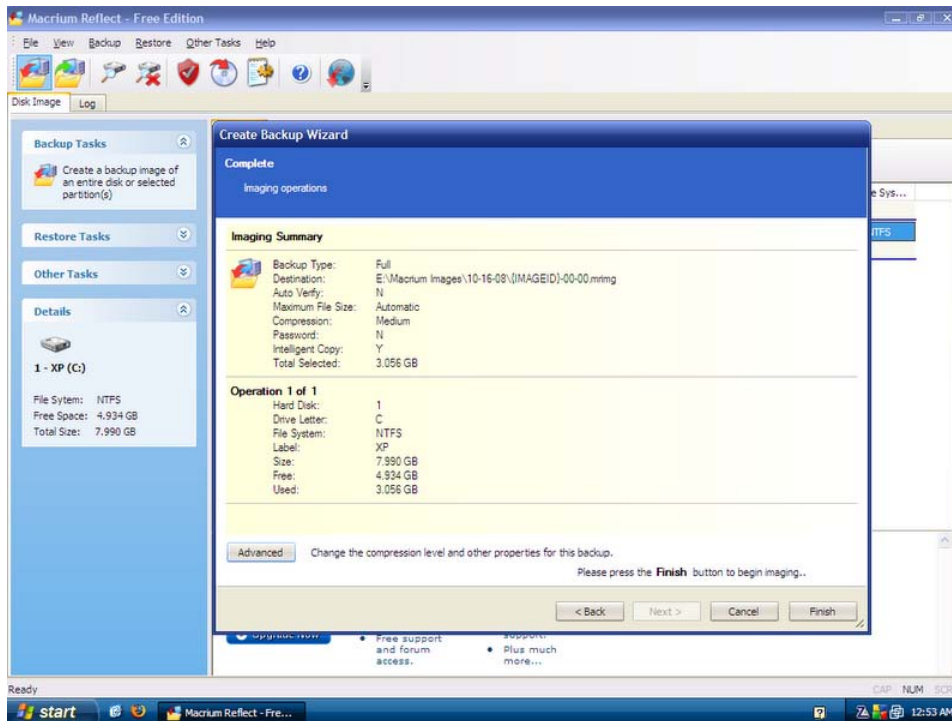
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Brian Bondari



## Macrium - Advanced Compression

When you are done with the Backup Wizard, take a last glance over your settings....

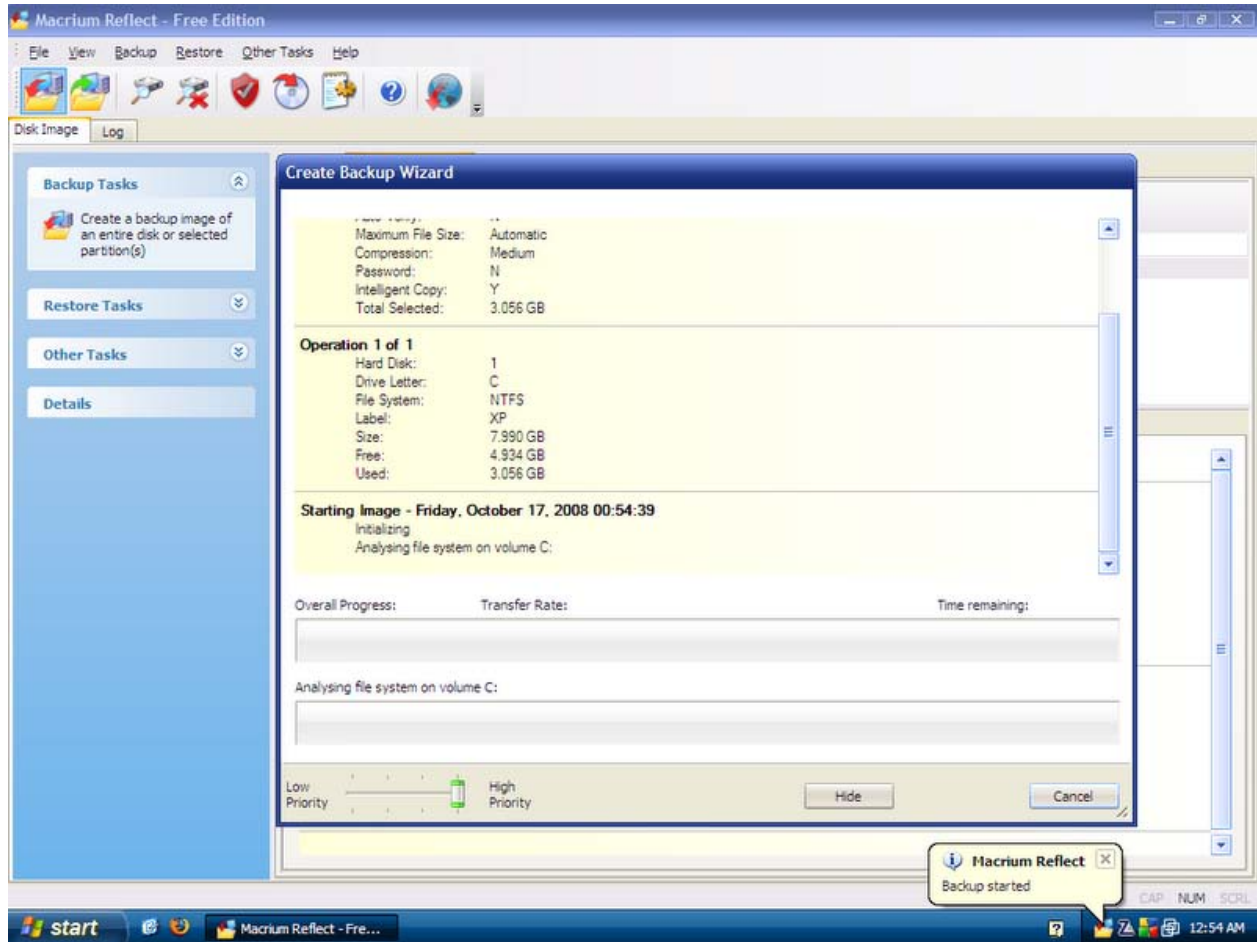


# Ghost Windows for Free with Macrium Reflect

Brian Bondari

## Macrium - End of Backup Wizard

Enter a name for the backup definition, and away we go!

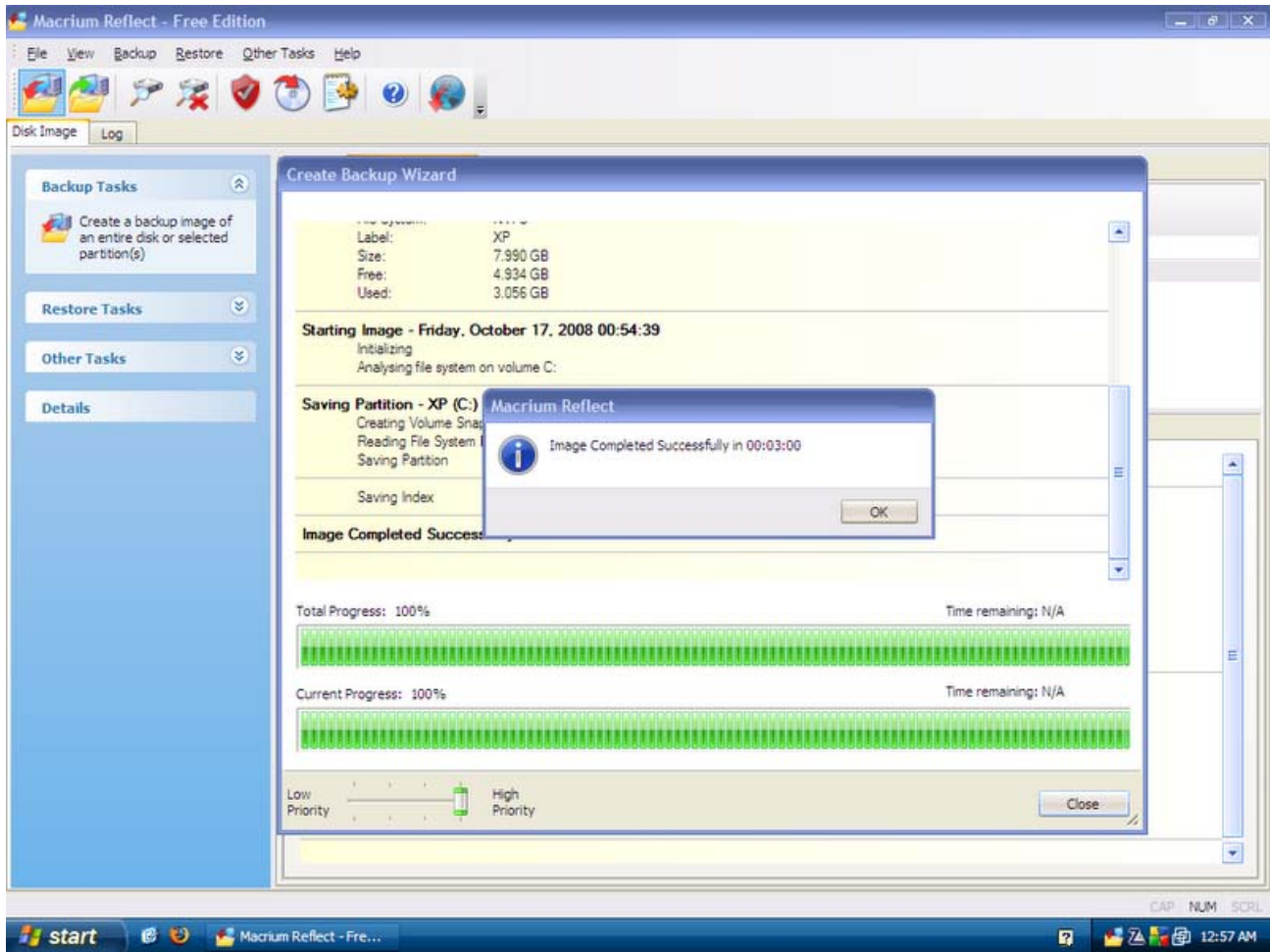


## Macrium - Backup started

It took me only 3 minutes to image my tiny VMware disk, so your mileage will vary. Go make a cup of coffee.

# Ghost Windows for Free with Macrium Reflect

Brian Bondari



## Macrium - Backup finished

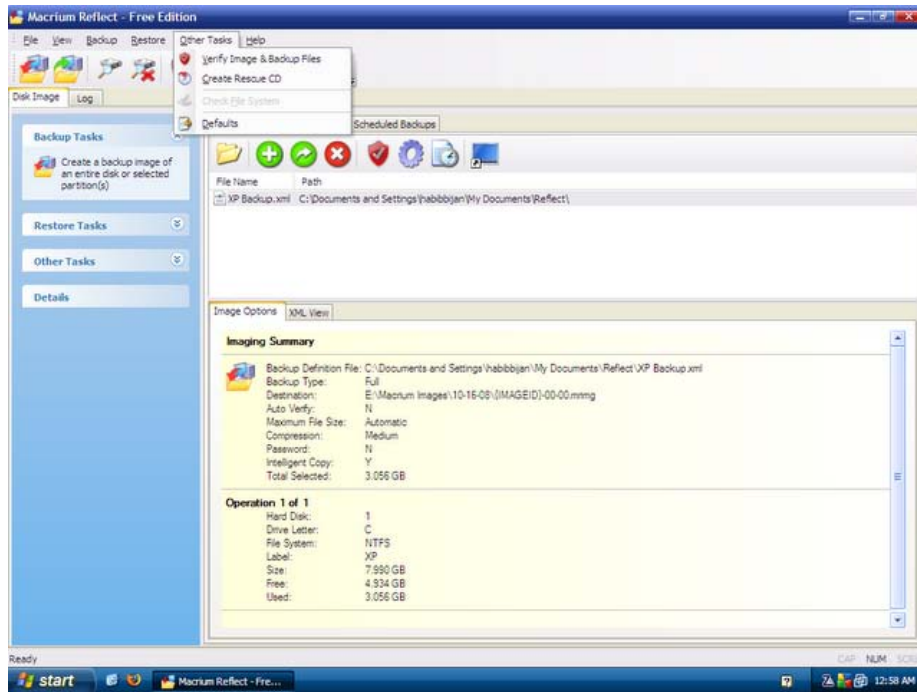
Now that your backup is complete, let's talk about how to restore it. Please continue to the next page.

### 4. Verify the Disk Image

At this point, I suggest that you verify the integrity of your newly created image. Make sure that your image file name is selected in the main window, and from the Other Tasks Menu, choose Verify Image & Backup Files.

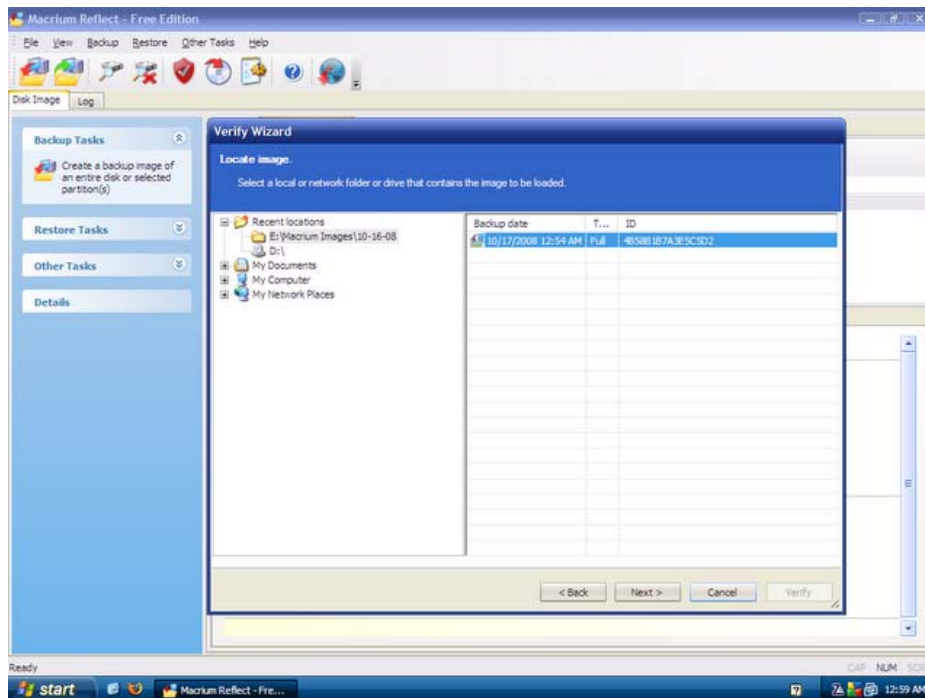
# Ghost Windows for Free with Macrium Reflect

Brian Bondari



## Macrium - Other tasks

The Verify Image Wizard will spawn. Choose the location of your newly created image and start the verification process.

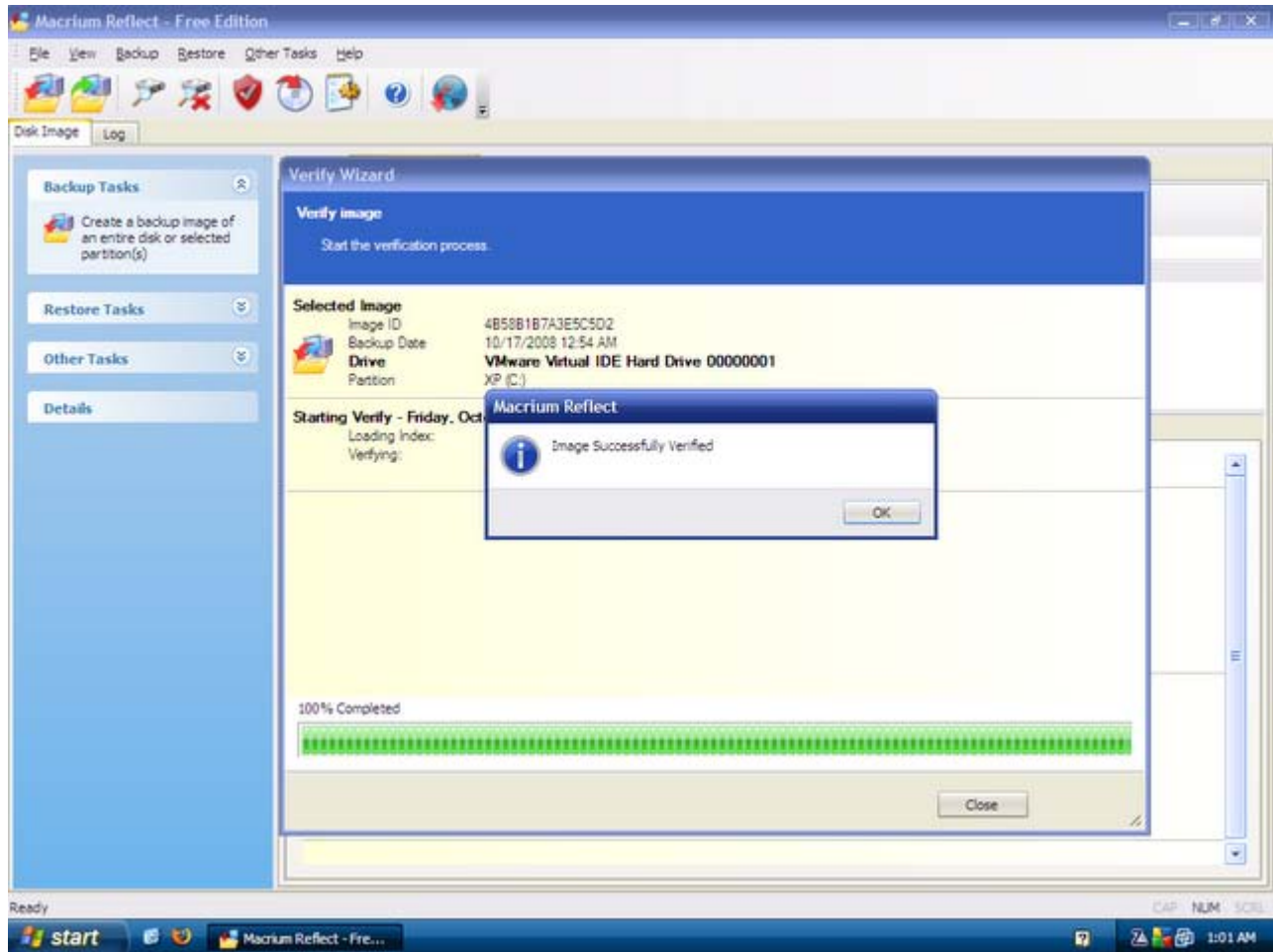


# Ghost Windows for Free with Macrium Reflect

Brian Bondari

## Macrium - Verify Wizard

Again, this may take several minutes depending on the size of your image. Go make another cup of coffee. If all is well, the image should verify successfully.



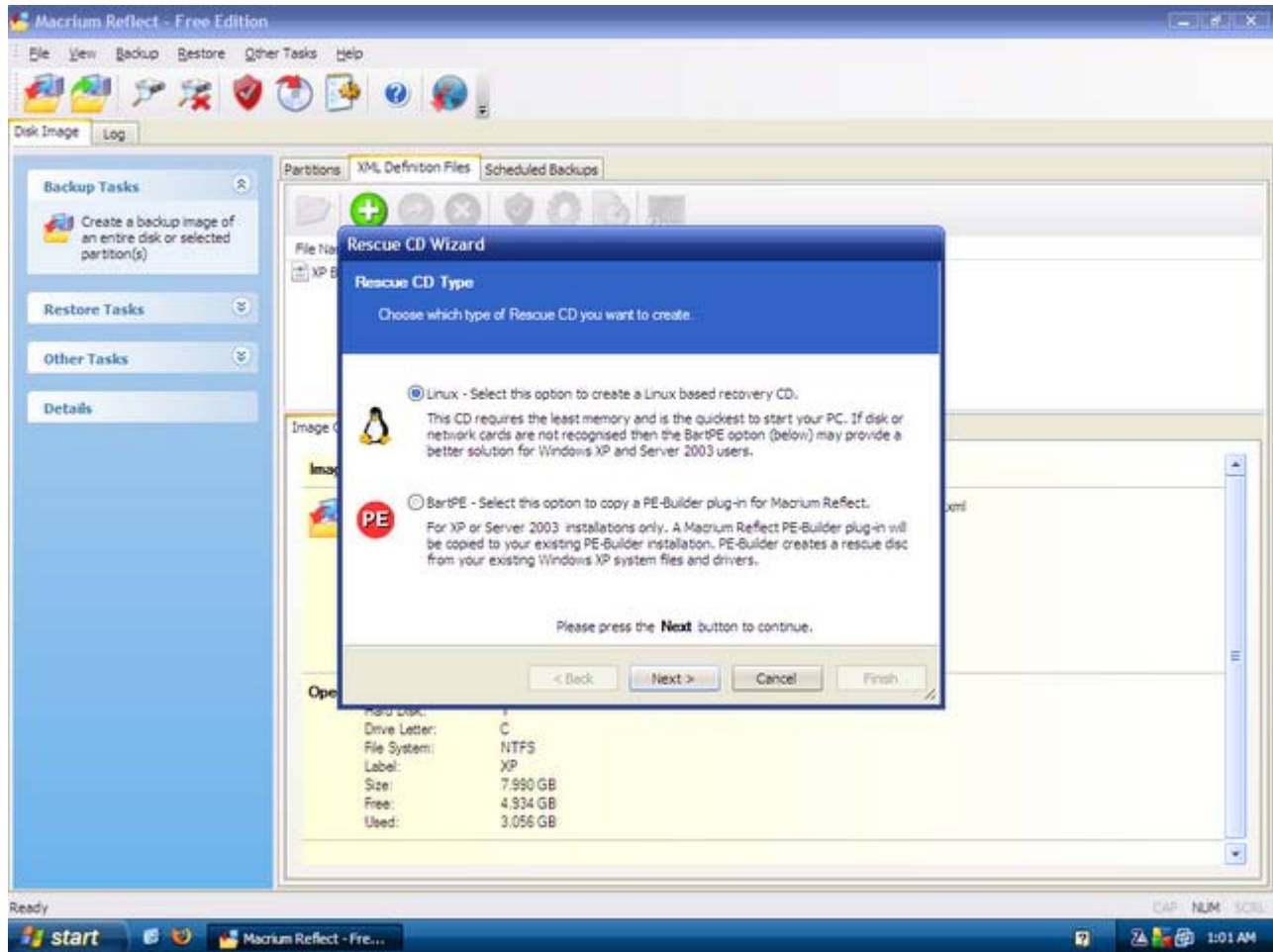
## Macrium - Image verified

### 5. Create the Rescue CD

The last thing to do before we restore the image is to create the Rescue CD. From the Other Tasks menu, choose Create Rescue CD. The Rescue CD Wizard will spawn.

# Ghost Windows for Free with Macrium Reflect

Brian Bondari



## Macrium - Rescue CD Wizard

You have 2 choices in the Free Edition of Macrium Reflect:

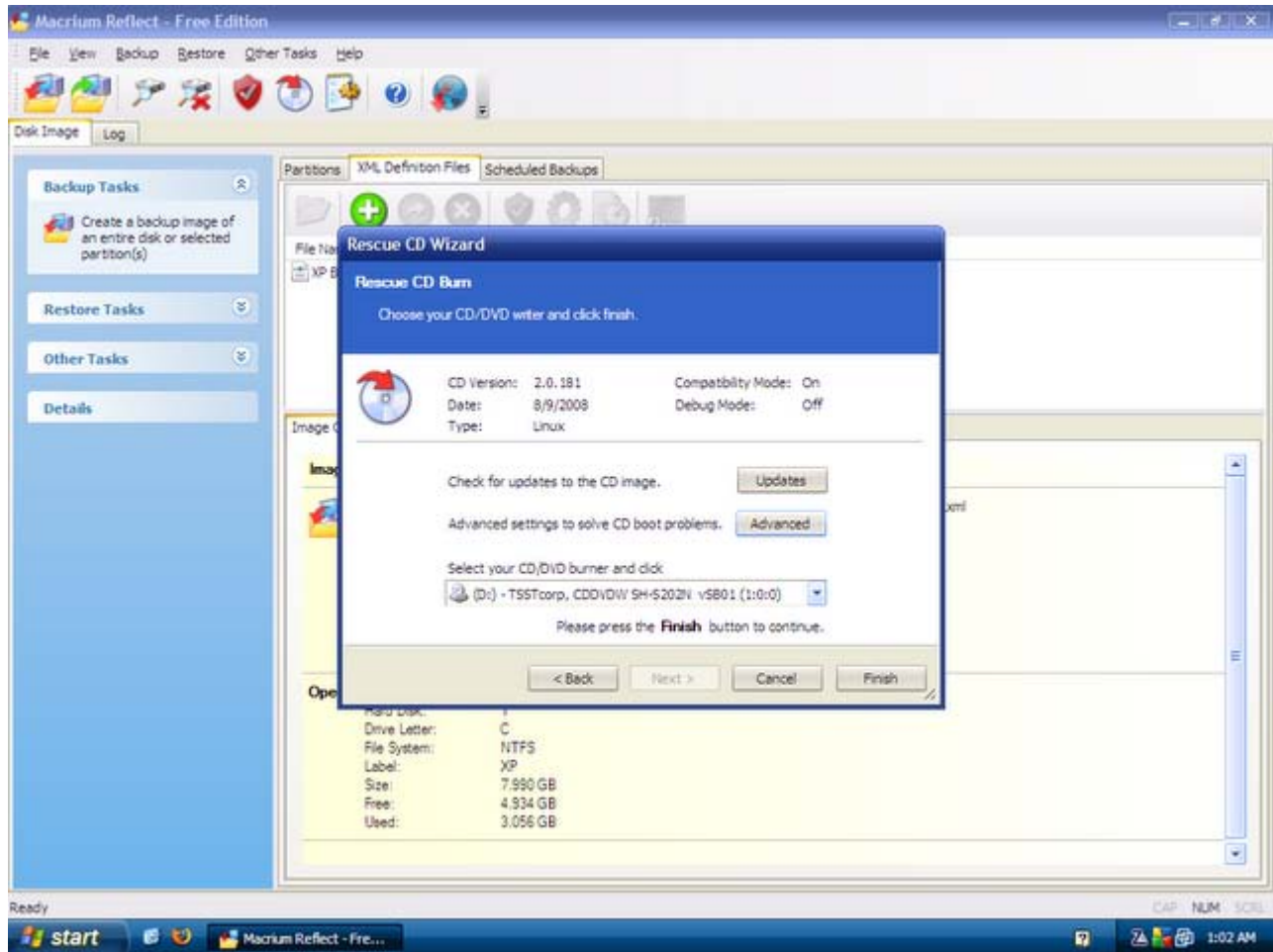
- The Linux-based recovery disc.
- A plug-in for BartPE.

If you do not already have an installation of BartPE, the far-easier choice is to use the Linux-based CD. The Linux recovery CD essentially just runs the kernel and a basic GUI to help with the restoration process. All of this fits onto just over 6 MB! That's six megabytes!

When creating the Rescue CD, you can choose to have Macrium Reflect burn it for you, or simply create an ISO image to burn with your favorite disc-burning program. I suggest the open-source InfraRecorder.

# Ghost Windows for Free with Macrium Reflect

Brian Bondari



## Macrium - Rescue CD Burn

Note: I suggest going into the Advanced options and enabling Compatibility Mode, which will ensure booting on a wider variety of devices.

Burn your Rescue CD either through Macrium Reflect or as an ISO, and then let's talk about restoring your image. Please continue to the next page.

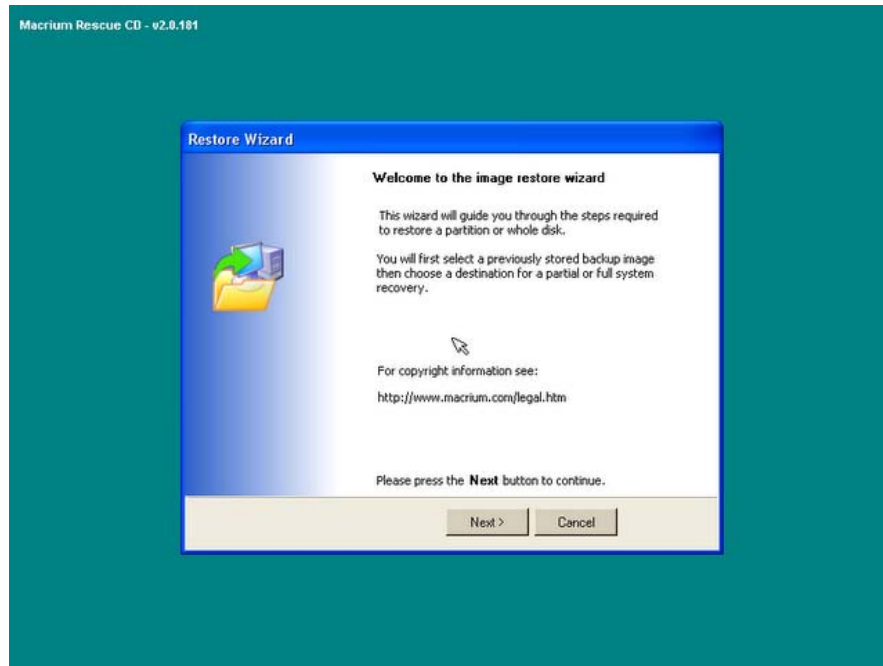
## 6. Restore the Disk Image

No backup solution is complete until you KNOW that you can successfully restore your images. Until you know that you can restore your files, your new image isn't worth a pitcher of warm spit. That's right - spit.

Make sure your motherboard bios is set to boot first from CD/DVD, and reboot your computer with the Linux Rescue CD in the drive. Within a few seconds, the Restore Wizard should start.

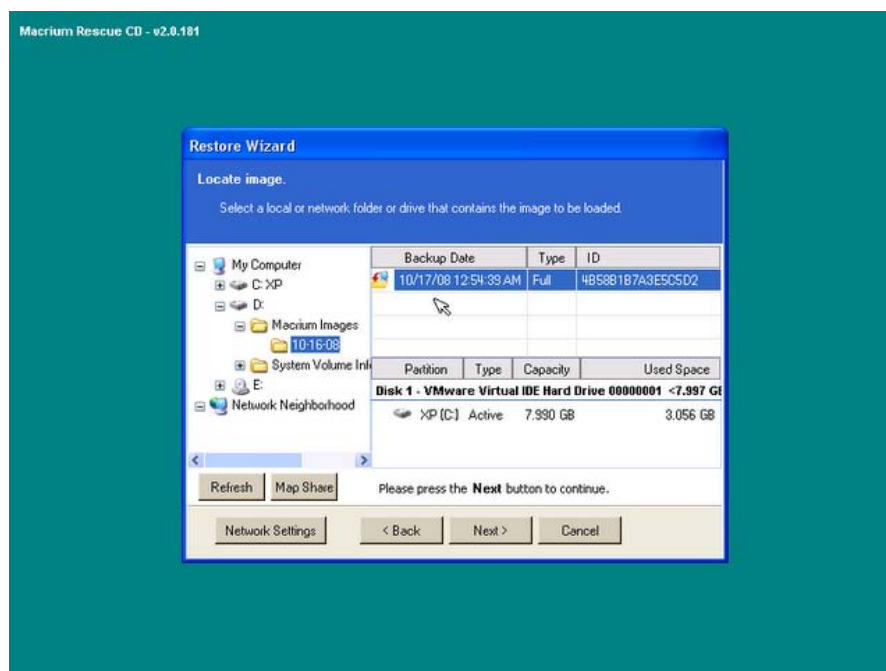
# Ghost Windows for Free with Macrium Reflect

Brian Bondari



## Macrium - Restore Wizard

The CD/DVD should eject automatically, allowing you to place any other discs into the drive. Browse to the location of your disk image that you plan to restore. Note: if you are restoring from multiple CDs/DVDs, you must place the last disc in the drive first since the final part contains the image index.

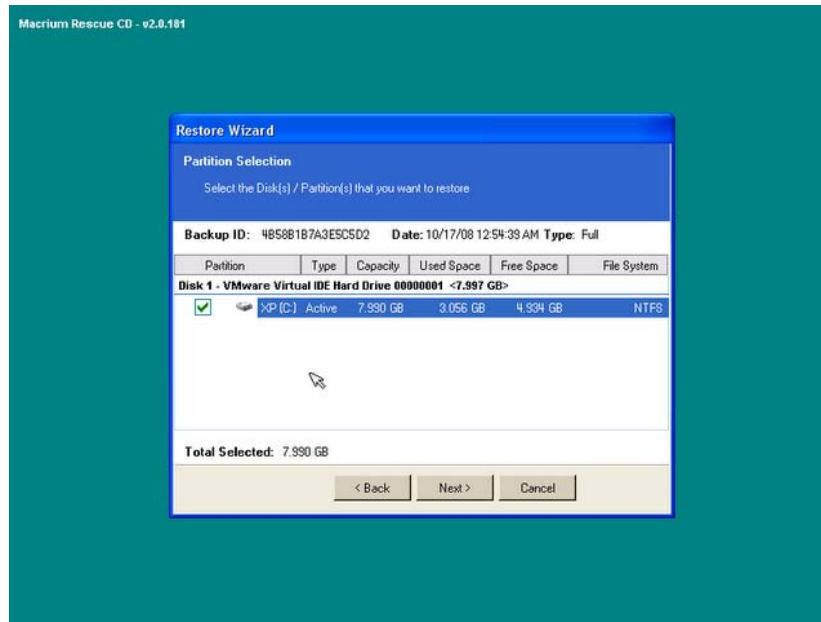


# Ghost Windows for Free with Macrium Reflect

Brian Bondari

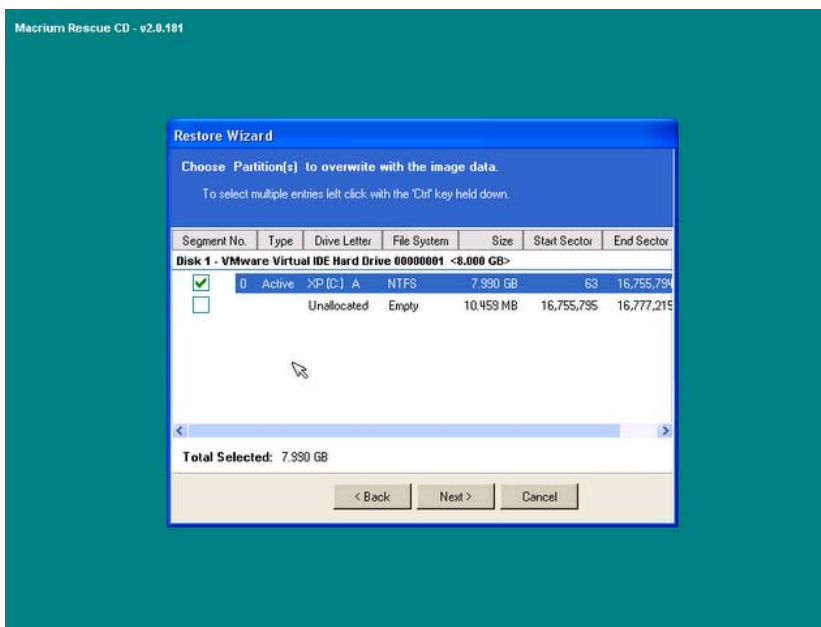
## Macrium - Choose image location

Once you have chosen the disk image, select the partition that you want to RESTORE:



## Macrium - Choose Partition to restore

Next, choose the appropriate partition to OVERWRITE:

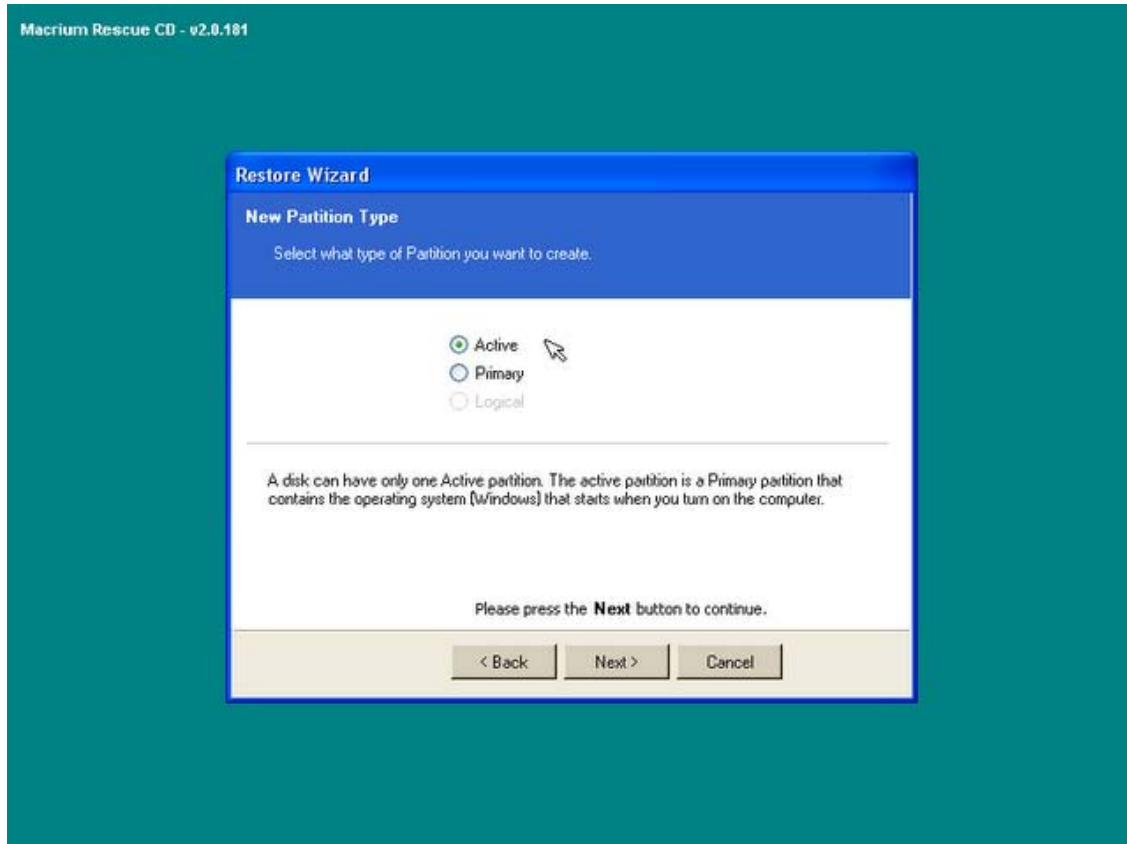


# Ghost Windows for Free with Macrium Reflect

Brian Bondari

## Macrium - Overwrite Partition

Select the partition type. If it is your primary boot partition, choose ACTIVE.



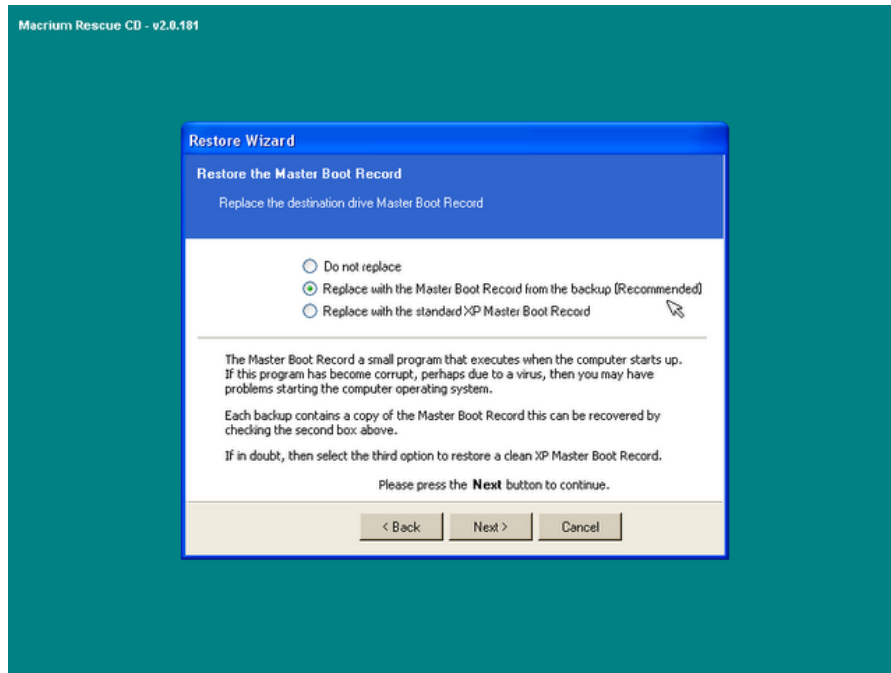
## Macrium - Partition Type

You can also choose whether or not to verify the image integrity, but you can safely skip this step if you did it previously.

We're almost done. One of the last steps is to choose whether or not to overwrite the Master Boot Record (MBR). This contains a listing of the operating systems currently booting on your PC. Most of the time, you can choose to replace with the MBR that's included in the backup image (the recommended option). If you've installed an additional OS since creating the image, don't replace the MBR.

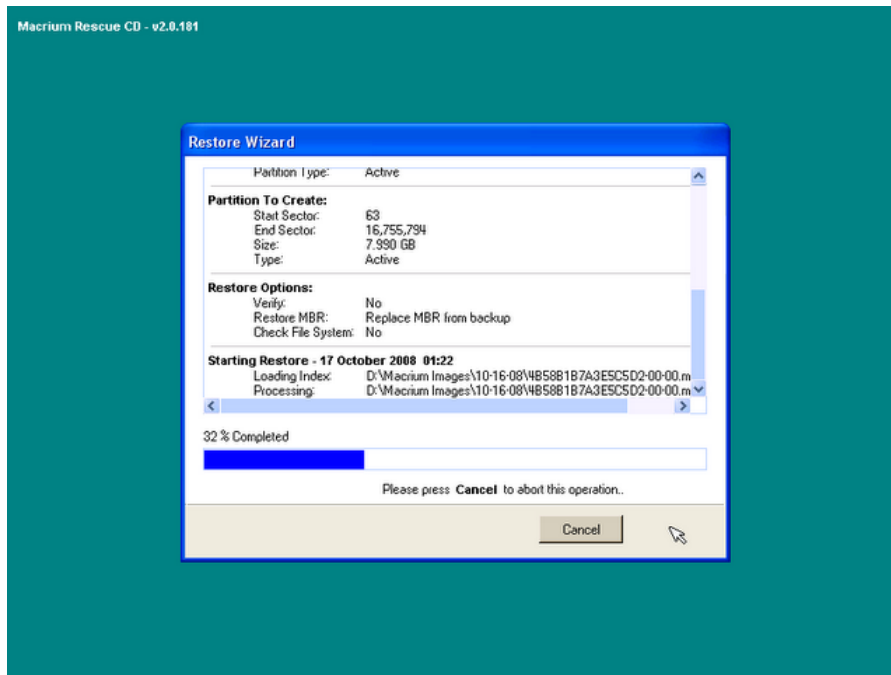
# Ghost Windows for Free with Macrium Reflect

Brian Bondari



## Macrium - MBR Settings

Take one final scrutinizing look over your restoration settings, and click Finish to begin the restore. Watch helplessly as all your files are erased... and hopefully restored with the files in your image!

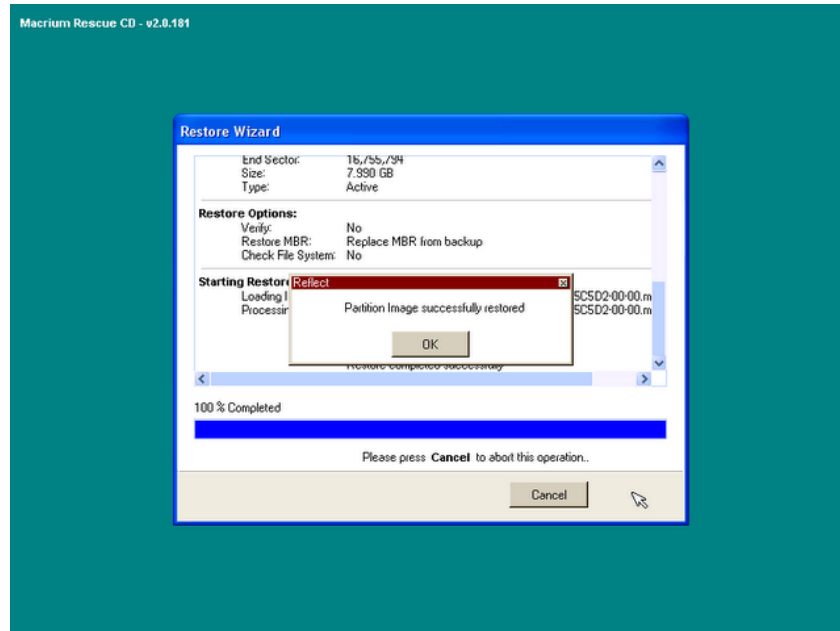


# Ghost Windows for Free with Macrium Reflect

Brian Bondari

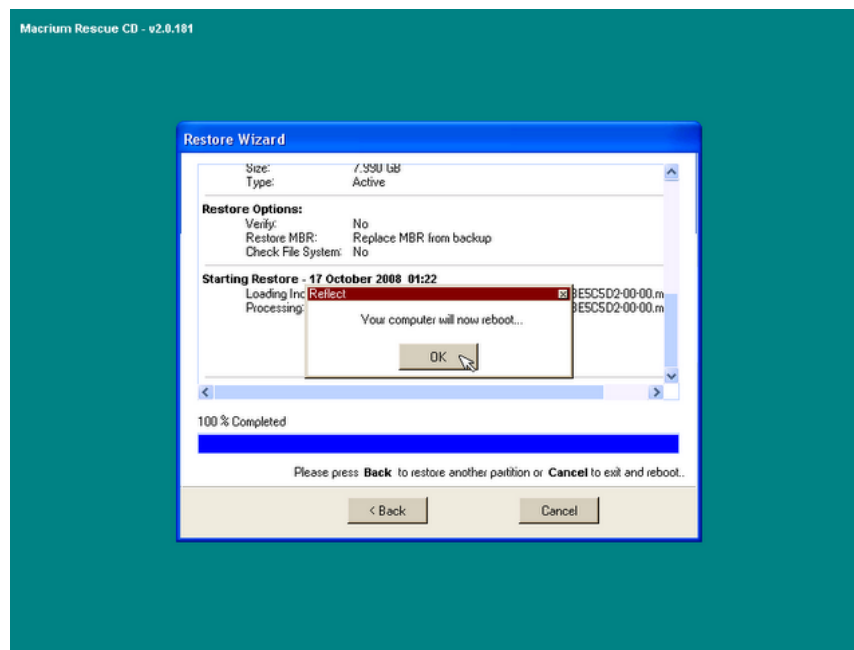
## Macrium - Restoring

Once again, this process may take several minutes. Go grab that third cup of coffee!



## Macrium - Image Restored

Hey, it looks like my image restored successfully. Yay! All that's left is to reboot.



# Ghost Windows for Free with Macrium Reflect

Brian Bondari

## Macrium - Reboot

If your system comes back to life, congratulations! You now have a system image/restore solution for FREE. If your computer exploded or drank all the pomegranate juice in your refrigerator, I offer my condolences. Read over the instructions again, and better luck next time. You DID have all your data backed up, right?

## 7. Final Thoughts

I like Macrium Reflect a lot. It's the simplest and fastest way that I've found so far to "ghost" Windows for free. As an ancillary benefit, it also supports EXT file systems, meaning that it can create images of dual-boot Linux installations (such as Ubuntu) from within Windows if you desire! Though there are limitations to the FREE Edition of Macrium Reflect, it still offers quite a lot of value. Specifically, the commercial version offers features such as:

- Incremental and differential disk imaging
- Password protection and encryption
- Windows PE 2.0 Rescue CD with RAID support
- License for Business and Commercial usage.

If all you need is a simple way to create and restore disk images, the free edition works with aplomb. Highly recommended.

Good luck, and happy backups!