Prepare for the worst,
bounce back from the inevitable.

SAVED!

Backing Up With Macrium Reflect

Now
Version 6

LEO A. NOTENBOOM

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Backing Up with Macrium Reflect

Prepare for the worst
Bounce back from the inevitable

2nd Edition

by

Leo A. Notenboom

An Ask Leo!® book
https://askleo.com

The Ask Leo! Manifesto

I believe personal technology is essential to humanity's future.

It has an amazing potential to empower individuals,
but it can also frustrate and intimidate.

I want to make technology work for you.

I want to replace that *frustration* and *intimidation*
with the *amazement* and *wonder* that I feel every day.

I want it to be a *resource* rather than a *roadblock*;
a *valuable tool,* instead of a source of *irritation*.

I want personal technology to empower you,
so you can be a part of that amazing future.

That's why Ask Leo! exists.

Leo A. Notenboom
https://askleo.com

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Introduction

What We'll Cover

This book is all about backing up Windows using my recommended backup program: Macrium Reflect, version 6.x.

If you're about to embark on a process of cleaning up your machine, including making changes that will involve deleting files and programs, altering random configuration settings, and who knows what else, the absolute best thing to do before you start will be to save what you have, before you begin, with a backup—just in case.

And let's face it, even you're doing nothing of the sort—even if you're just using your computer every day to perform tasks ranging from the inconsequential to the critically important, you need to start backing up. Stuff happens.

Once you have backups in place, you'll be able to use them to keep your data safe from malware, hardware failure, and even accidental deletion.

As I've said before, having an up-to-date backup is nothing short of a silver bullet when it comes to computing. Nothing can save you from more different types of disasters.

Here, I'll give you step-by-step examples of how to:

- Back up

- Schedule automatic backups

- Test your backups

- Prepare for recovery

- Perform either full-system or specific-file recovery, in the event that it's needed.

First: A Freebie for You

Before we dive in, I have something for you: my Ask Leo! special report, "**10 Reasons Your Computer is Slow (and what to do about it)**". This report will help you identify why your computer is slowing down, and the steps you can take to fix it.

It's yours for free when you subscribe to my weekly Ask Leo! newsletter.

Each week, you'll find fixes to common problems, tips to keep your computer and online information safe and secure, commentary on technology issues of the day, and even the occasional explanation as to just why things are the way they are. It's educational and fun, and can help you be more effective and less frustrated as you use technology.

And it's completely FREE.

Visit https://go.askleo.com/macrium2news to learn more, browse the archives, and sign up, today!

Now, let's get on with backing up…
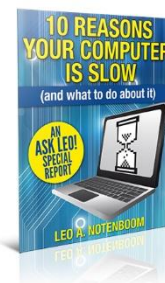
My Example Machine

The concepts, programs, steps, and tips in this book should apply to almost any machine running Windows XP[1] or subsequent versions.

However, I figured you might like a peek into what I'm using, which is what you'll see in the examples here.

The machine I'm using right now is a 2.7 gigahertz, 64-bit 12-core processor with 16 gigabytes of RAM, close to ten terabytes of hard disk space, and a 27-inch monitor.

Oh, and it's a Mac Pro.

Needless to say, that's *not* the machine you'll be seeing here.

On my Mac, I run software called Oracle VirtualBox. That software allows me to create a virtual machine—a complete computer-within-a-computer, or "machine in a window," if you like.

It's a virtual machine, or "VM", that I'll be using here for several reasons: it's easy to reset to an initial known state; it's configured to be more like your machine and less like mine; and it won't have all of the stuff on it that my machine does that might distract from what I'm trying to present. And it'll have a more manageable screen size.

If you're interested, you can learn a little more about Virtual Machines in "Virtual Machines: What Are They?"[2], a video segment from one of my webinars where I give a brief overview of what I think is a pretty darned cool technology.

The VM uses only two of the 2.7 Ghz processors, three gigabytes of RAM, and it runs the 32-bit version of Windows 8.1 Pro. It has a single hard disk of 100 gigabytes in size, and it has a single display at 1600x900 resolution.

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[1] I do expect that at some point Macrium will drop support for Windows XP, but at this writing XP is still supported.

[2] http://ask-leo.com/virtual_machines_what_are_they.html
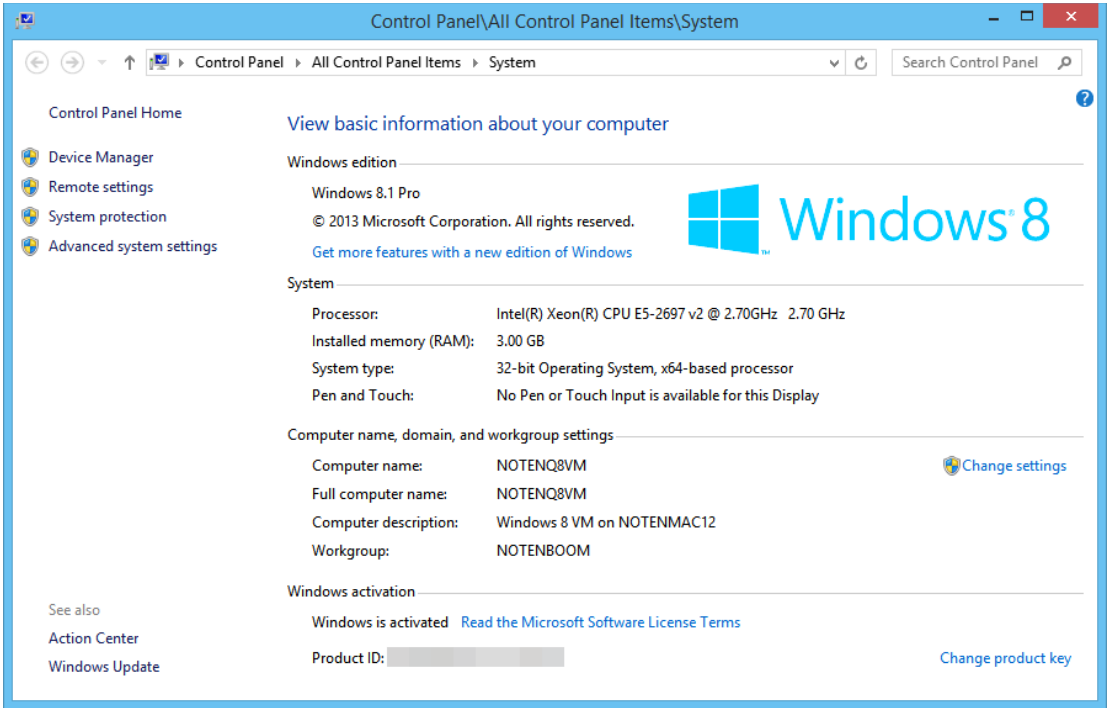
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- All available digital formats of the book as direct downloads, so that regardless of which version you purchase, you can enjoy this book on the digital device of your choice.

- All digital formats *and videos* accompanying the *previous* version of this book, which covered Macrium Reflect version 5.

- Updates, errata, and prioritized Q&A.

You'll find the information that you need to register in a chapter near the end of the book called "**Register Your Book**". Once you register, you'll have access to the owners-only web pages specifically for this book, which will contain all available bonuses.

Choosing a Backup Strategy

As I've said before, backing up is perhaps the single most important thing you can do not only to maintain your computer, but to save your behind in the face of inevitable, unexpected failure.

It's often been said that there's no such thing as too many backups. I don't disagree. However, there *is* such a thing as having the wrong backup.

The wrong backup is a backup that, when you need it, doesn't contain whatever it is that you're trying to recover. That's about as good as no backup at all.

Thus, the golden rule of backups:

> *If it's in only one place, it's not backed up.*

If you only remember one thing from this book, let it be that.

One thing that computers are great at is making copies.

But if you don't have another copy ... anywhere ... you're not backed up.

A Backup Inventory: Your Data

Let's look at what it is you have to back up. We'll start with the most obvious: your data.

The problem here is that the phrase "your data" or "my data" is *extremely* ambiguous. It can mean many different things to different people. Most commonly, when people hear "my data," they think of things like:

- Email

- Documents

- Ebooks

- Photos

- Music

- Videos

- ... and many more things that vary from person to person.

On top of that, "your data" could live in any of several different places:

- A computer.

- A mobile device.

- In "the cloud," as part of some online service.

- … somewhere else that hasn't even been invented yet.

Naturally, this book about backing up in Windows will focus on backing up what's stored on your computer, but I want you to begin thinking about all of your data, regardless of where it's kept.

Remember: if there's only one copy, it's not backed up.

A Backup Inventory: Your System

In addition to all of your data, you have a serious investment in something else as well, and that's your *system*. What that means is:

- Windows itself.

- All of the programs installed in Windows.

- All of the settings and customizations in all of those programs, as well as in Windows itself.

- All of the data by-products associated with those programs and Windows, including history, bookmarks, indexes, and more.

As we'll see, many backup approaches and solutions focus on saving your data, without giving much thought to this list of system components…. a list of things that, to put it bluntly, you'll really miss once they're gone.

Yes, *unlike* your data, most of the items on this list can be reconstructed: Windows and other programs can be reinstalled, settings and customizations reset, and so on. And there are times when that's exactly the right thing to do, or it's simply inevitable.

But it's often a very large and time-consuming pain in the you-know-where, particularly when an appropriate backup strategy can, for the most part, prevent that pain completely.

Image Backups

The foundation of our backup strategy will be what's called a full-image backup, which is nothing less than a copy of *everything* on your hard disk. It'll include Windows, all installed programs, all of your data files ... it'll even include all of the temporary and cache files on the disk at the time that you create the backup.

I'm going to show you how to create image backups of your machine.
I'll show you what you need to do should you ever need to use that backup.
Then, we'll move on to setting up regularly scheduled backups.
I'll also explain how you can easily restore just a single file or a few files from your backup.

Why image backups?

The reason is very simple. Since an image backup contains *everything,* we don't have to worry that we missed something. Regardless of what we need—a single file or a complete restore of the machine—an image backup has it all.

In other words, an image backup is our safety net. It's a complete snapshot of the machine that allows us to say, "No matter what we do now, it can't get any worse than this."

A Recommended Backup Strategy

I'll discuss some alternatives shortly, but I want to dive right in and tell you exactly what I think most people should do. This is the basic backup strategy I use myself.

Here's the short version:

- Get an external hard drive. It should have the capacity to hold *at least* twice the amount of data that you plan to back up, and ideally much more. Compared to data loss, external hard drives are incredibly inexpensive insurance.

- Perform a periodic "full" image backup which, by definition, includes both your data and your system. I suggest doing this monthly.

- Perform frequent "incremental" image backups of both your data and your system. These backups build on full and intervening incremental backups to capture only what has changed since the last backup was performed. The result is that you have an up-to-date backup of everything, system and data. I suggest doing this nightly.

- Consider performing even more frequent saves and copies of work in progress, potentially using an on-line tool like Dropbox[3].

This blend of backup types represents a compromise between disk space, speed, and backup completeness.

Alternately, you could take a full-image backup every day. Not only would that take some time, it would also fill up your backup media fairly quickly. You'd probably only end up keeping the last couple of days' worth of backups. While certainly better than no backup at all, taking full-image backups daily is really unnecessary.

Besides being quicker to perform, incremental backups are smaller. By keeping all of the preceding incremental backups since the most recent full back up, you can keep many days' worth of backups. I keep a month's worth; that means I can restore my machine to the state that it was in on any of the preceding 30 days. It also means I can restore any file that was backed up on any of those 30 days.

With the advent of tools like Dropbox, more-or-less constant backup is a reality for documents that you're actively working on. Dropbox is primarily a data-sharing and collaboration tool, but even when used with only one computer—yours—it automatically backs up files in your Dropbox folder to the Dropbox servers as the files change. As one

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[3] http://dropbox.com, but there are many, many alternatives.