Mastering Windows 8's backup/restore system

By Fred Langa on January 14, 2015 in

Windows 8 has easily the most comprehensive backup-and-recovery system ever seen on a personal computer.

With little user effort, and when applied correctly, Win8's built-in backup tools provide automatic, frequent, triple-data redundancy.

Inexplicably, however, Microsoft tends to describe each tool more or less in isolation. It doesn't provide a simple, comprehensive explanation of how the backup components work together — and do so extremely well.

This article rectifies that deficiency; it describes how to use File History, OneDrive, and other options as a complete system for near-bulletproof backups.

You'll also find numerous links to articles that provide detailed how-to information — and operational tips on backing up Windows 8 systems.

An overview: Win8's three-part backup system

Here are the main components:

- File History — Local backups of user data:

  Win8's File History tool makes continuous, near-real-time, incremental backups of selected user files. It then stores these backups on a networked or USB-attached external drive. If the primary copy (the working file) is damaged or accidentally erased, it can be quickly and easily restored from the local File History backups.

- OneDrive — remote user-data backup:

  Local backups are critical, but they have a potentially fatal flaw: any event that damages your PC or the drive containing your working files might also eliminate your local backups. Fires, floods, thefts, electrical surges, and similar catastrophes might result in the loss of *all* local copies. The answer for that possibility is cloud storage/backup, which maintains copies of your files on fully protected data servers, far removed from your PC.

Microsoft's cloud-based storage service started out as the relatively simple SkyDrive. But over the past few years, Microsoft has steadily improved the service's capabilities, including tightly integrating it with Office 2013 and building it into Windows 8. (In fact, one of the early complaints about Office 2013 was its preference for storing files in SkyDrive.) Because of a trademark dispute, the service was renamed OneDrive in early 2014.

There are, of course, many other cloud storage and backup services that will let you restore lost files. (A Nov. 20, 2014, Best Practices [paid content] discusses the differences between cloud-based synching and backup.) But — as is hardly discussed at all by Microsoft — OneDrive and File History can work cooperatively to provide automatic, double backups of all your important files.

With almost no effort on your part, files can be automatically saved to three separate locations — the primary data drive, the external File History drive, and the OneDrive cloud — in near-real time. It virtually guarantees that you'll never lose an important file again!

Why "important" files? By default, OneDrive users get 15GB of free online storage. Yes, you can put copies of *all* your data on OneDrive — but only if it amounts to fewer than 15GB or you're willing to pay for additional storage space. (Note: Office 365 subscribers get essentially unlimited storage [more info].)

- **OS backups and system imaging:** Windows 8 includes separate tools to back up and restore the operating system. **Refresh** lets you perform a nondestructive reinstall of the operating system while leaving most of your user files alone. However, not all user-installed, desktop applications will survive the process; you must use the **custom imaging** option to preserve your specific software setup. **Reset** does a full, clean-slate, factory restore.

With that foundation, we're ready to take a closer look.

How File History creates reliable local backups

As mentioned above, Win8's File History (Figure 1) is a highly automated, set-and-forget, near-real-time, archiving system. It does, however, *require* a drive other than the primary Windows (typically **C:**) drive. The backup drive can be a second internal disk, an external USB storage device, or a networked drive.
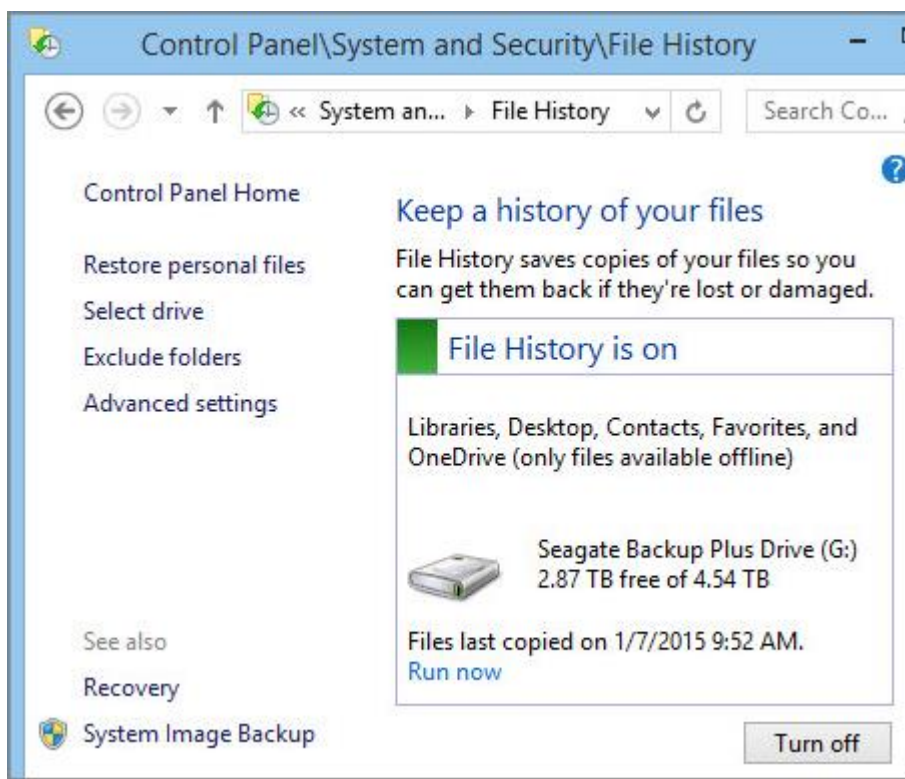
Figure 1. It's easy to access, configure, and fine-tune Win8's File History.

By default, File History automatically backs up everything in your Windows libraries — typically Documents, Music, Pictures, and Videos. But it can also back up other files and folders if you simply add them to a Windows Library. Likewise, you can exclude files and folders from File History by removing them from a library.

File History also automatically backs up four standard Windows user folders: Desktop, Favorites, Contacts, and anything stored in your local OneDrive folder (which I'll come back to in the next section).

To get up to speed quickly on File History's configuration, customization, and use, see the following:

- "Understanding Windows 8's File History" – July 11, 2013, Top Story
- "Windows 8: File History explained" – TechNet article
- "Set up a drive for File History" – MS how-to
- "Customize File History's backups with ease" – Oct. 9, 2014, LangaList Plus (paid content).

Keep in mind that File History makes incremental backups every hour, by default. But you can have it run as often as every 10 minutes. As a result, File History can consume a lot of disk space. The advanced settings (Figure 2) let you control how often File History runs and how long it should save backup files. For more on this, see the July 11, 2013, Top Story listed above and the Nov. 6, 2014, LangaList Plus column, "How to shrink huge File History backups."
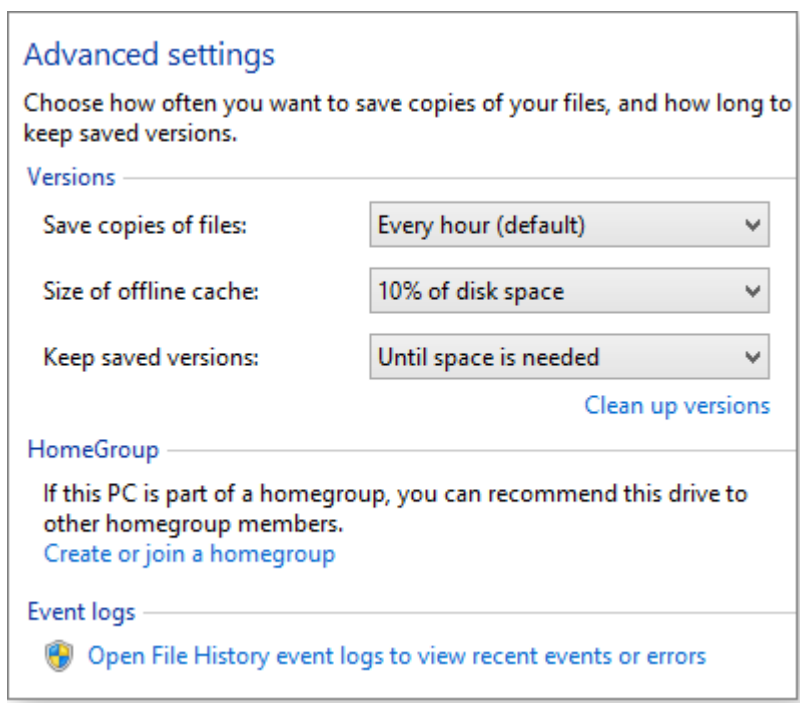
Figure 2. File History's advanced settings let you configure the frequency of backups, how much disk space they consume, and how long they're kept.

(A related article discusses how to work around a rare but annoying bug that can cause File History to back up every file, every time. See the Aug. 15, 2013, LangaList Plus column, "Solving File History's 'excessive saves' bug" [paid content].)

File History can also have connection issues with multiple external drives. If you routinely connect and disconnect various external drives, check out the March 6, 2014, LangaList Plus item, "How to make File History retain drive IDs." Your hard drive's sleep and suspend cycles can also interfere with File History's ability to make backups. See the Nov. 28, 2013, LangaList Plus, "A warning regarding Win8's File History."

With File History properly configured, Win8 will make reliable and automatic local backups of whatever files you've set it to maintain.

How OneDrive adds another layer of data security

All Windows 8 users should be familiar with Microsoft's OneDrive online service. Again, it's built into the operating system and automatically gives Win8 users 15GB of free, cloud-based storage. (Additional storage is surprisingly inexpensive; see MS info.)

But OneDrive does more than store copies of your data files. By default, Win8 automatically backs up seven types of personalization/customization settings to your associated OneDrive account: Start screen layout, color scheme, theme and background, language preference, browser history, browser favorites, and the settings for any apps you obtained from the Windows Store. (For more on this, see the Dec. 11, 2014, LangaList column, "Controlling Win8's auto-synching of settings.")

Anything you or your software saves or adds to OneDrive is automatically stored in the cloud on Microsoft servers. But OneDrive does much more — though Microsoft does a terrible job of explaining those capabilities.

For example, the local OneDrive folder on your **C:** drive normally stores only snippets and partial copies of any files you're working on; the full copies reside in the cloud. But OneDrive also offers a **Make available offline** option. Any files or folders to which you apply the option are fully available for offline access; OneDrive automatically stores a second complete copy of the file or folder on your hard drive.

That's the key to Win8's outstanding data redundancy. If you store your important files and folders in OneDrive and then use the **Make available offline** option, OneDrive makes two complete copies. When combined with File History, you end up with:

- A live copy in the OneDrive folder on your hard drive
- A backup copy stored in the cloud on the OneDrive servers
- A local backup saved by File History on a second (typically external) drive.

That's about as bulletproof and automatic as a backup system gets!

Moreover, because File History makes frequent, incremental backups, the **Make available offline** option provides a form of *versioning* for your OneDrive-based files. Your local OneDrive folder and the OneDrive servers will always contain the most recent copy of any included file, and File History will contain as many previous iterations of the file as you've configured it to capture.

The **Make available offline** option is easy to implement: in File Manager, open your OneDrive folder and right-click any included file or folder. Then select **Make available offline,** as shown in Figure 3. It's that simple.
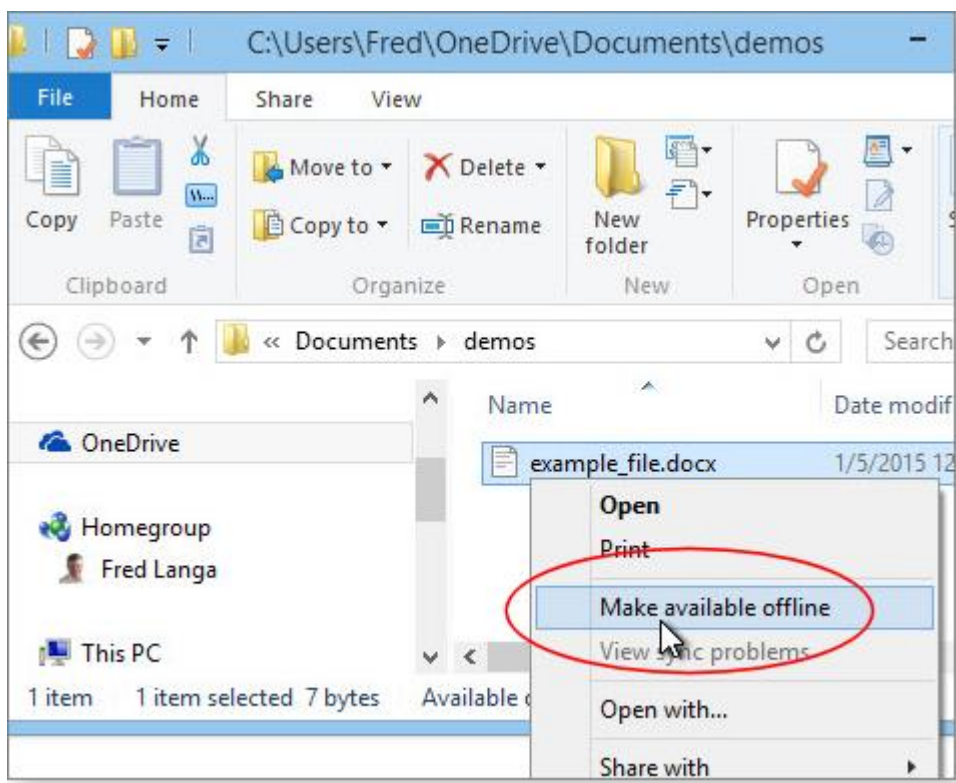
Figure 3. Selecting *Make available offline* gives any OneDrive file or folder three-way redundancy: hard drive, cloud, and File History.

For me, the "Make available offline" — combined with OneDrive in the cloud and local File History — is the best feature of the Win8 backup system. It should be enough to protect your data against almost any imaginable form of loss.

OneDrive is generally easy to access and use; but if you'd like more information, see these Microsoft sources:

Note: There's a potential OneDrive issue that Microsoft does not cover well. The service is linked to your Microsoft account, which you also use when signing in to Win8 systems. But Win8 also allows for other types of sign-ins — seven in all — and not all of them allow for automatic access to OneDrive.

If you have trouble accessing your OneDrive account — or for tips on how to prevent access trouble in the first place — see the Jan. 8 LangaList Plus column, "Taming Win8's seven-way sign-in hassles."

Security Note: It's always wise to encrypt your most sensitive folders or files to prevent snoops from being able to access them — especially if the data will be transmitted over the Internet or stored in a cloud-based server. I use 7-Zip (free; site) to apply 256-AES encryption to sensitive files and folders stored in my local OneDrive folder. The encrypted files are then automatically replicated to the cloud and to my File History backups.

A refresher on Win8 OS and software restorations

File History and OneDrive deal mostly with user files and data. But as mentioned above, Win8 provides separate mechanisms for backing up and restoring operating-system files and installed software.

Refresh: Windows 8's 'Refresh your PC without affecting your files' feature returns system files to their original condition while leaving the users' accounts, data, passwords, and personal files largely untouched. But there are limitations. For example, Refresh removes any non-native Windows 8 (typically, desktop) apps that you've installed. For full information, see the Aug. 15, 2013, Top Story, "A 'no-reformat reinstall' for Windows 8."

Reset: If a refresh doesn't work. Win8's 'Remove everything and reinstall' option wipes out your existing setup and rolls Windows back to its initial, out-of-the-box state. For details on this process, see the Sept. 12, 2013, Top Story, "A clean-slate reinstall for Windows 8."

Microsoft doesn't stress this, but I will:

Reset is designed to work with File History.

After a system reset, File History can automatically repopulate your Documents, Music, Pictures, Videos, Desktop, Favorites, Contacts, and any other folders or files you've added to File History — such as OneDrive items you've made available offline. Depending on how your system is set up, the post-Reset file-restoration process might be fully automatic, or it might require a few clicks to get started. (See the Win8 how-to, "Restore files or folders using File History.") Either way, it's an almost effortless way to get back all your user files and data after an operating system reset.

Customized system recovery images:

Win8's built-in **Recimg.exe** tool (Recimg, for short) is a command-line option that creates custom system images (see Figure 4). When needed, custom images can return Win8 to a user's specific configuration — including all applications installed when the custom image was made (not just native Win8 apps). For detailed instructions, see the Oct. 10, 2013, Top Story, "Creating customized recovery images for Win8."

Figure 4. A typical *Recimg* progress screen

Once Windows is fully restored from a custom system image, use File History to restore the latest copies of your files.

Note: If you use encryption products such as TrueCrypt, VeraCrypt, or Boxcryptor that create "containers" with assigned drive letters, you can't make custom system images. If you try it, **Recimg** will simply fail with a generic error message. For more information and a workaround, see the Dec. 11, 2014, LangaList Plus, "Why VeraCrypt won't work with Windows 8."

Make sure you can access your backups

Obviously, backups are worthless if you can't get to them. You should be able to access your backups regardless of the circumstances — even if Windows won't run or your PC won't boot from its hard drive. Be sure you have a working bootable emergency-repair disk or drive. These articles can help:

- "Emergency repair disks for Windows: Part 1″ – April 10, 2014, Top Story.
- "Emergency repair disks for Windows: Part 2″ – April 17, 2014, Top Story

If you have trouble booting your system from the emergency disc, see:

- "How to solve UEFI boot and startup problems" – Dec. 11, 2014, Top Story
- "Emergency access to your PC's UEFI [boot] settings"– in this issue's LangaList Plus section (paid content).

Third-party backup/restore alternatives

Nothing's perfect. Although Win8's backup/restore system works well in most circumstances, it might not be a good fit for your particular configuration. Or you might simply not want to trust your data to the cloud.

If that's the case, there are numerous third-party backup tools that can produce traditional backups and images of your Win8 system. Some of the more popular products include:

- Macrium Reflect – free and paid (with free trial) versions
- Paragon Backup & Recovery – 30-day demo and paid versions
- Acronis True Image – paid with 30-day free trial (site)
- EaseUS Todo Backup – free and paid versions.

For some Windows 8 setups, an automated cloud-based backup service might be more suitable. See Lincoln Spector's Nov. 20, 2014, Best Practices story, "Cloud data protection: Synching versus backup" [paid content]. You can find more alternatives by doing a Web search for "windows 8.1 local backup."

Win8 backups: Significantly different but arguably better.

Microsoft did a poor job of documenting backup and recovery in Win8, and getting used to the process does take some effort. But it's well worth taking some time to understand and implement Win8's built-in backup-and-restore tools.

Once configured, Win8's backup system offers automated, redundant, near-real-time data security that most traditional backups simply can't match.

Try the Windows 8 way — you'll probably never go back!