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Refreshing,
Resetting, and
Restoring:
A Guide to Recovery
Options in Windows

Refreshing, Resetting, and Restoring: A Guide to Recovery Options in Windows 8

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Introduction

It is strangely true that current IT departments are witnessing the decline of good troubleshooting skills at the desktop level, which is not necessarily a bad thing. Time that was previously spent delving into application misconfigurations, blue screens of death, and incompatible drivers—is being used more effectively. We now have at our disposal tools and techniques that simply return a PC to a healthy state as opposed to forcing us to dig through logs and error codes to find the root cause of a problem. This efficiency has continued to improve with each consecutive version of Microsoft's Desktop OS line. Windows 8 takes another giant step forward by introducing a few new options for recovering from software failures with little to no skill required to use them.

Tools such as *System Restore*, *Last Known Good Configuration*, and *System State* backups began to appear as far back as Windows 2000 and continue to be useful. Windows 8 takes an additional step in that same direction by introducing built-in features that allow technicians (or even home users) to reset or refresh their PCs. Let's be clear that these are specific terms. *Resetting* reverts a machine back to a base image of the initial installation; removing all user applications and data. It is an extreme measure, but very effective. *Refreshing* a machine is a little less drastic in that it keeps some applications, and, more importantly, keeps all user data safe while still fully cleansing a PC of many troublesome issues.

Some of you may question the benefit of tools that remove the need for troubleshooting skills. These tools are not the only way to approach a PC problem. When the help desk receives a call informing them that a PC is having problems, a good technician can usually find the answer in short order. Experience and skill will never be completely replaced. Sometimes, however, troubleshooting indicates a problem that is difficult to fix or even to find. There comes a point where that technician's time would be better spent on other problems instead of poking around hoping to find the core issue.

Accessing the Tools

When you find yourself in need of a reset or refresh, there are a number of different ways to access them. If you don't have a functioning PC, you can access it by booting from the Windows 8 installation DVD, selecting your language and keyboard, and then looking to the bottom left for the REPAIR option. If you have a working PC, however, there are easier options available which do not require you to look around for a DVD.

Accessing these tools during the boot process is the route which most technicians will be tempted to use. You have the option of calling these abilities from within the boot menu by utilizing the familiar option of pressing F8 while the computer is starting. Having said that, you will find that Windows 8 boots very quickly, making F8 an unreliable option for opening these screens. The only time this screen pops up reliably is when your PC fails to start properly or has shut down improperly multiple times. If that's the case, you are greeted with the screen as seen in Figure 1.

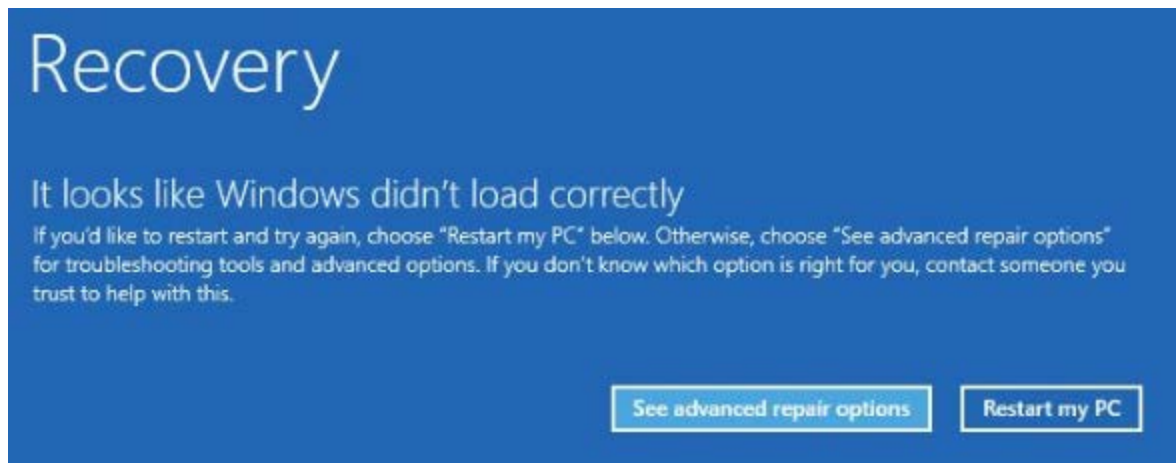


Figure 1

Clicking the "See advanced repair options" button will take you to the screen in Figure 2. If you'd like to get there on your own, however, it is much easier just to hold down the shift key while selecting restart from any of the available power icons in a running Windows 8 OS. This will automatically and immediately bring up the same screen.

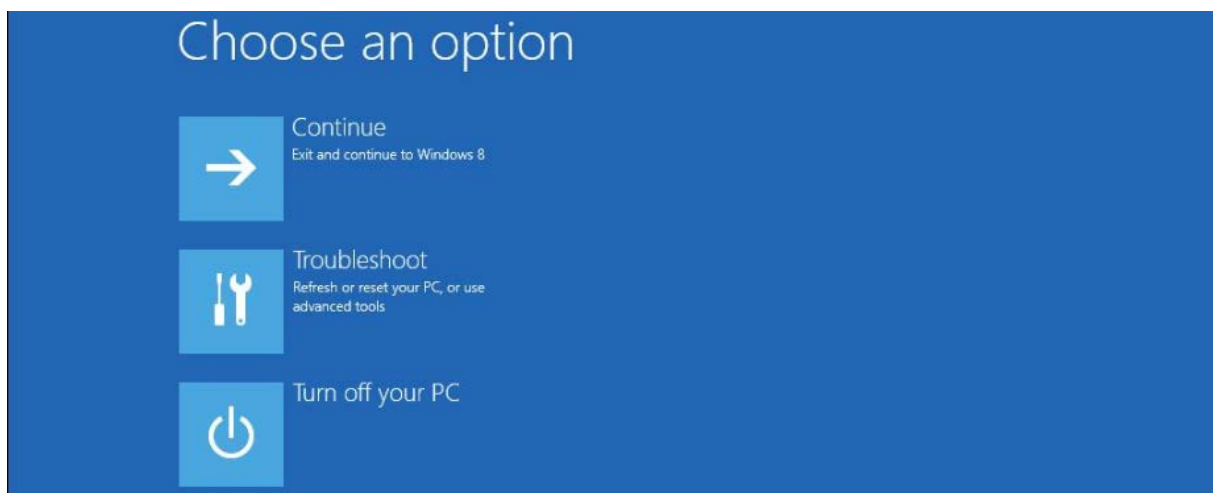
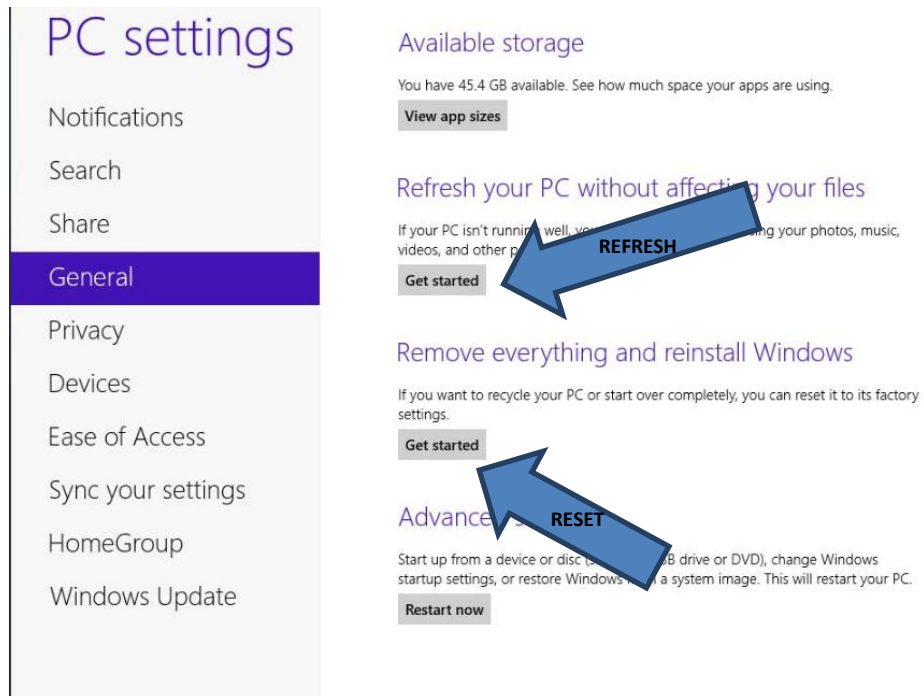


Figure 2

To provide you with even more options, these tools are also available from within the OS.

In Windows 8, click:

- Charms bar → Settings → Change PC Settings → General



NOTE: For Windows 8.1, the path is slightly different:

- Charms bar → Settings → Change PC Settings → Update and Recovery → Recovery

Regardless of how you finally get to these tools, let's now take a look at what they each truly do to help you get your PC back in working order.

System Reset

The option to reset a PC boils down to a complete reinstallation of Windows 8, so you should think twice before jumping to use it. You will find that a Windows 8 reset is normally going to be used when preparing a computer for donation or resale. Along the same lines, a friend had a desktop PC that his child had used for high-school work. His son was heading off to college and had received a new laptop to take with him, so this PC was being repurposed for family use. But the computer was so laden with toolbars, chat programs, and file sharing tools, that it was nearly unusable. Instead of scouring the house for the installation disk to begin a clean start, he took the system reset route to start over clean. He ended up with a freshly installed PC, and never even had to reenter the product key (a side-benefit of using this option).

Figure 3 shows how Microsoft describes what will happen during a system reset:

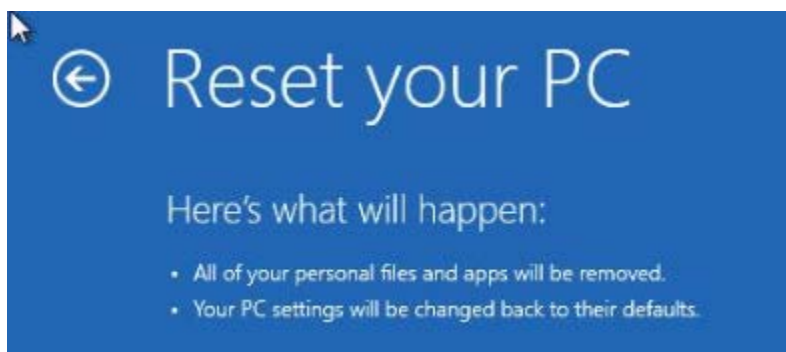


Figure 3

Obviously, the major consideration is that all of your data and applications are removed. You are truly starting over from scratch. The idea is that many PC problems stem from software. This will remove those issues entirely. The lack of need for any sort of backup beyond the included recovery partition or even needing to know the product key is also a major benefit here.

If you continue the reset process, your next choice is dependent upon whether you have created multiple partitions on your PC. If you have created a C: drive for the OS and applications and a D: drive for data, you can choose only to wipe the OS drive or wipe the entire PC clean.

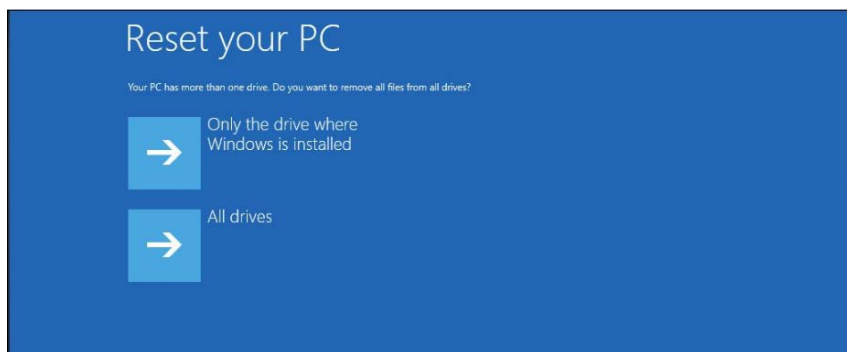


Figure 4

Regardless of which option you choose or where you chose to install them, all of your applications (both regular and Metro style) will still be absent in the newly reset OS since they will no longer be present in the registry.

The next screen in the process (Figure 5) allows you to decide just how careful you want to be before handing this PC off to someone else. Either option will remove your files. The full cleaning will perform multiple passes and greatly reduce the chance that any type of recovery software would be able to recover your data. If your computer contains confidential data or a true scrubbing is required by government or in house regulation, then you have the option to "Fully clean the drive." Most people think they would like to be safe and perform a full cleaning (until they wait for hours for the process to complete). Choosing the option to "Just remove my files" is normally fine for the average user and takes drastically less time.

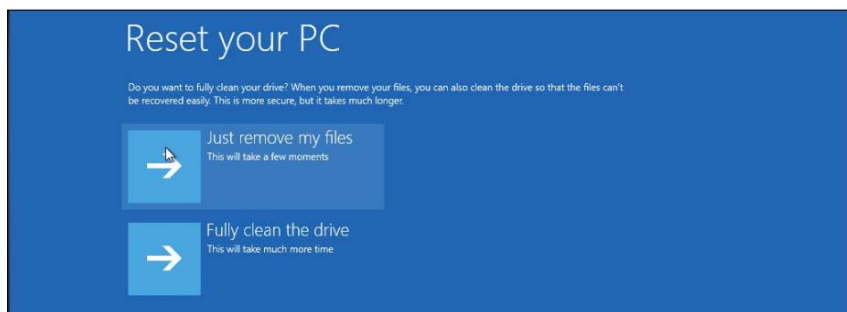


Figure 5

After working your way through the options, you are rewarded with a percentage-based progress indicator. The biggest factor is whether you chose to fully clean the drive. That option is being reported at an average of at least six to nine hours and as long as 48. The "just remove my files" option takes less than an hour in my own experience.

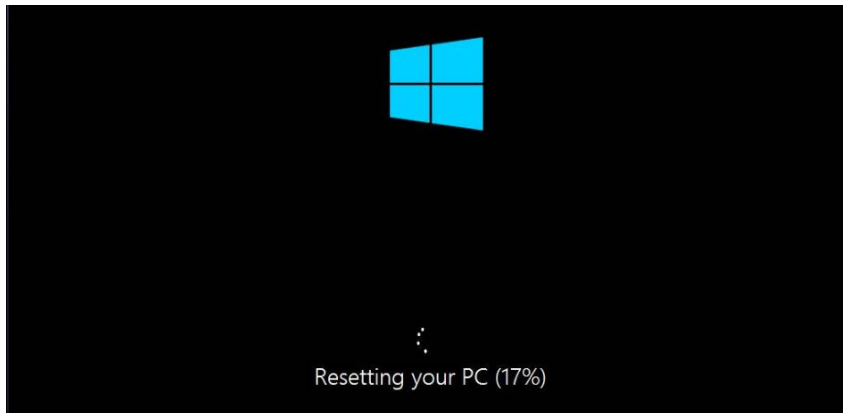


Figure 6

When it finishes, accept the end user license agreement (EULA) and personalize the newly reset PC with a name and color scheme. At this point you can choose to accept the Express Settings to choose defaults for the remaining settings or customize them yourself.

The idea is that your PC is back to what is thought of as “Factory Fresh.” This sounds great in that you will end up with a pc clean of all problems. Unfortunately, this factory fresh can be modified. It was a surprise after using this for the first time that I found all the bloatware from the original installation was there instead of a truly pristine OS when using a recovery partition. Not the end of the world, but annoying nonetheless. This can be avoided by doing your own clean install of Windows 8 with a retail edition or by taking advantage of the Microsoft Store’s Signature line of PCs and which come with all the extra software removed.

System Refresh

A system reset is a pretty hardcore decision; it’s more a last resort than a recovery option. Choosing to use System Refresh, at the very least, allows you to retain your data and most of your settings even though you still get a new copy of the OS. Once you’ve accessed the troubleshooting menu and chosen to refresh your PC, here’s how Microsoft describes the process:

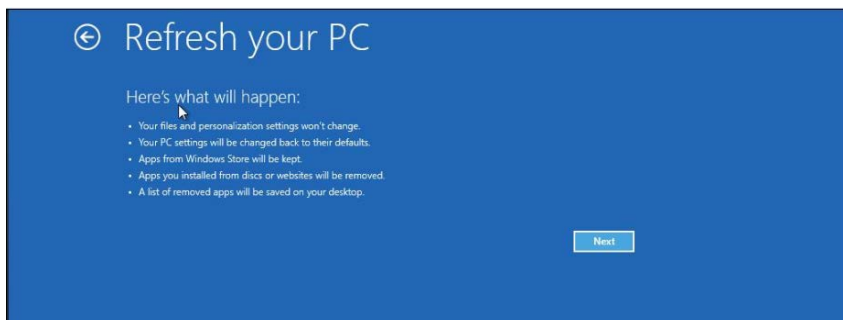


Figure 7

My first reaction was to think that this is very similar to the system restore procedure that we’ve seen in many previous Windows operating systems. That would simply return your registry and system settings to a previous state marked by a system restore point. System refresh is an entirely different process with specific advantages and disadvantages over the old system restore points.

One major difference is that while Metro style apps (from the Windows Store) will remain, all desktop applications will be removed. That’s a big deal. The reason for this is that your OS will be reinstalled entirely just like it is with a system reset. The variance is that your PC will be scanned for settings, drivers, and data files

that are contained within the user profiles. These will be retained. Metro style apps are not truly retained, they are simply reinstalled. The .appx installer packages are copied along with the profile data to a temporary folder during this process and then reinstalled as part of the refresh.

My original thought was that losing all of your desktop apps was a huge mistake on Microsoft's part. If you have ever had to replace a bad hard drive, you know what I mean. It is wonderful that you have remembered to back up your data, but you still spend the better part of a day or more digging around for program installation disks and product keys to get your system back to where it was. So, yes, you do spend more time reinstalling programs, but your system will certainly work better after a full refresh of this sort. It is helpful that you are greeted with a comprehensive list of removed applications that appears on your desktop after the refresh completes.

When I first tried this, I was annoyed at the thought of having to reinstall all of my apps. Realistically, applications are the main reason that people use an OS in the first place. After I thought about it for a bit, though, I was pleasantly surprised at the relatively small number of programs that I felt I truly needed to reinstall. So many issues are caused by the interaction of different applications. Being forced to re-examine which ones you do or don't need may not be such a bad thing.

In addition to applications, Microsoft seems to have thought long and hard on which settings to keep and which settings to discard during a refresh. The following list gives some examples of which things will be kept and which will be dropped:

Preserved

- Documents and data in profiles
- Wireless network connections
- BitLocker and BitLocker To Go settings
- Drive letter assignments
- Desktop wallpaper
- Metro apps

Lost

- File type associations
- Display settings
- Windows firewall settings
- Some drivers (*mixed results*)
- All desktop applications

With the exception of the lost applications, the items being dropped seem mostly trivial. When I looked at this through the eyes of an average end user, however, these could turn out to be extremely frustrating. Little things like having iTunes open an MP3 instead of Windows Media Player, can drive users crazy. Display settings come into play quite often with the proliferation of multiple monitors in the workplace. While they may still be small items, each one of these of them will end up as an additional entry on your to do list.

There are a few things that need further mention before attempting a refresh. First, you have to know the password of an administrator account that has logged on to the machine at least once in order to refresh a PC (see Figure 8). Resetting does not require administrator privileges since no data will be retained. Someone could certainly erase your machine with a system reset, but that could be accomplished just as easily with an install disc.



Figure 8

Second is the fact that you may need an install disc after all.



Figure 9

If your PC did not come with a recovery partition, you will most likely be prompted to insert whatever DVD or USB drive you used to install the OS. If you do have a recovery partition, it will be detected and used automatically, eliminating the need for any media.

Customization

While these tools take an enormous step forward in allowing individual users to “fix” their own PCs, they still are not a replacement for a good, bare metal backup image. The only frustration I had with the refresh/reset process was the need to reinstall all of my applications when finished. Admittedly, the idea is that with no forethought or preparation, you can use the reset or refresh to get your PC back in perfect working order. But, if you ARE willing to put in some prep time, you can end up with a newly refreshed machine that includes all of your applications.

The key is that the refresh process uses a Windows Image file (.wim) to reinstall windows during the refresh process. All we have to do is replace the standard install.wim (the default installation image for Windows 8) with our own customized copy. Normally, this would be a somewhat complex process requiring the use of ImageX or some other imaging tool. Instead, we can use a relatively simple tool that Microsoft graciously includes with Windows 8: recimg.exe (see Figure 10).

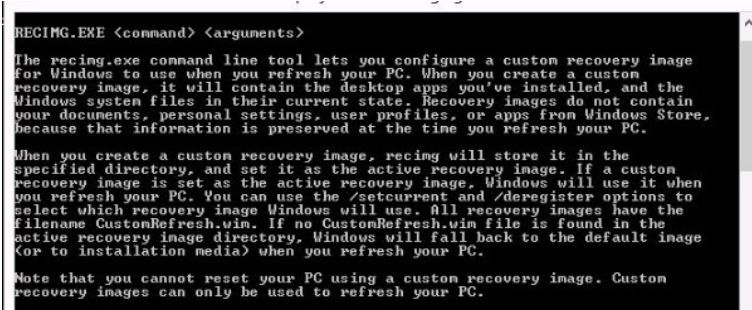


Figure 10

This tool will allow you to establish your own baseline image for use during a system refresh. In detail, this image will be a snapshot of your computer at the time it was created; containing all desktop applications and all system files. It will not contain any of your documents or settings since those will be already retained by the system refresh normally and you most likely would not want to replace them with older versions (i.e., your documents as they were at the time of the image's creation).

The switches for using recimg.exe are straightforward (see Figure 11). Creation of a new image is accomplished as simply as running the following command from an elevated command prompt:

RECIMG /CREATEIMAGE C:\FOLDER_YOU_CHOOSE

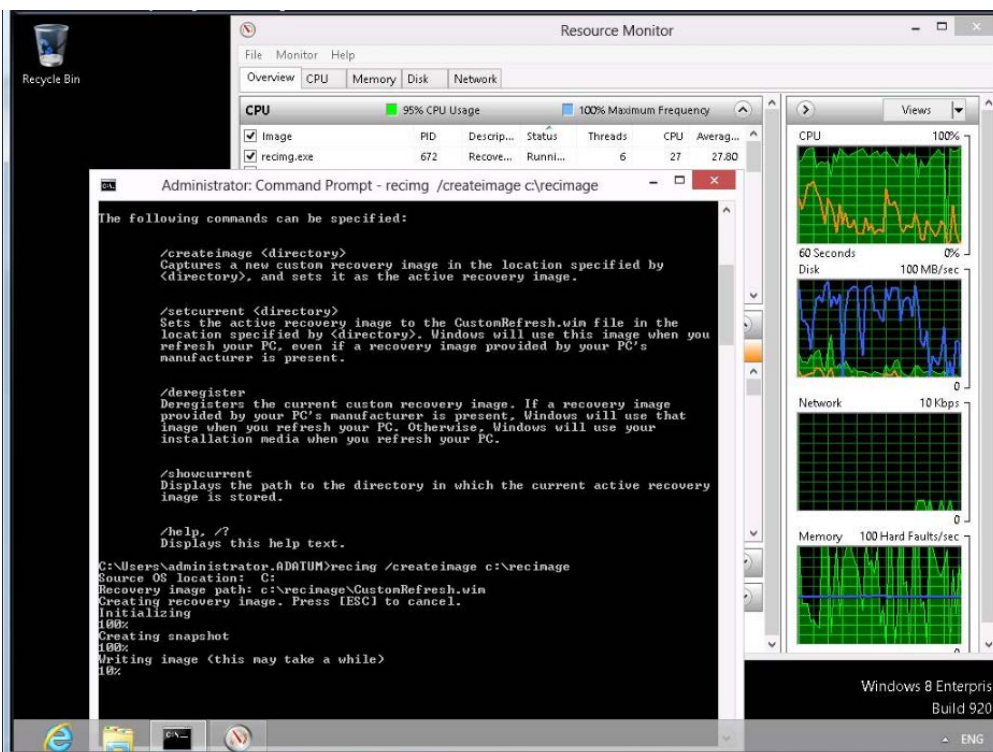


Figure 11

The image will be named "customrefresh.wim" and there can be only one copy in a particular folder location. If you would like to use these images as snapshots by creating new .wim files at regular intervals, just be sure to designate different locations each time you execute recimg. If you need to change the current image to an older one, just use the /setcurrent switch and identify the corresponding directory. Whichever image is currently set as current will be used during the refresh process.

Many people have asked if this has replaced the extremely popular Windows 7 backup tool that allowed you to create a system image backup. That tool is actually still contained in Windows 8, but it has been hidden. Search for the "Windows 7 File Recovery" link in Windows 8 and you will find it. From there, you will be able to create your own system image. These images are not interchangeable with those made by recimg.exe, but they do have the benefit of being able to be stored on an external drive.

Conclusion

Refresh and reset are powerful additions to the arsenal of recovery tools found in Windows 8. The ability for the end user to recover from anything short of a hardware failure is a true step forward in this department. Add in the ability to customize your own recovery image, and you have a big winner in terms of usability. Whether you are resetting a PC so that you can pass it on without worry about previous content or refreshing your PC to recover from a problem while still retaining your files—these new features deliver a much improved experience.

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