

By Greg Shultz

Windows XP's System Restore lets you restore your computer to a previous time if a problem occurs. To accomplish this feat, System Restore continuously monitors your system looking for significant changes to the operating system, such as an application or driver installation procedure, automatically creating a restore point when it detects an impending change. System Restore will also create restore points every 24 hours. Restore points are essentially snapshots of your system state, which comprises crucial system files including certain parts of the registry. System Restore maintains multiple restore points, which gives you the choice of restoring your computer to any number of previously saved states. Here are 10 things you should know about getting the most from Windows XP's System Restore tool.

1 Data files and System Restore

Because System Restore is described as a tool that allows you to restore your computer to a *previous time*, many people mistakenly assume that they will lose any data files they've created since the restore point was created. However, System Restore doesn't monitor or save the contents of the My Documents folder, any files that use common data filename extensions, such as .doc or .xls, e-mail message stores, browsing history, or even password files. Those files will remain intact when you restore your system.

However, keep in mind that the Desktop is not a protected folder, and any files that exist there could be lost during a restore operation. So before you perform a restore operation, you should move any crucial files you have saved on the Desktop to the My Documents folder.

2 Undoing a restore operation

If you perform a restore operation and then determine that the problem still exists, you can undo the operation. To do so, you must immediately run System Restore. When you see the Welcome To System Restore screen, select the Undo My Last Restoration option and click Next. On the Confirm Restoration Undo screen, click Next. System Restore will restore the previous system state and restart the computer. When the system restarts and you log on, you'll see System Restore's Undo Complete screen, which lets you know the operation was successful.

If you perform a restore operation and then determine that you selected the wrong restore point date, simply run System Restore again and select the restore point date you wanted.

If you perform a successful restore operation and discover that your computer won't boot Windows normally, you can still undo the restore operation. First, boot the system into Safe Mode. After you log on, a Warning dialog box will appear, allowing you to launch System Restore and select the Undo My Last Restoration option.

If the restore operations fails, the Restoration Was Unsuccessful screen will appear, and your computer will automatically return to the same state it was in when you activated the restore operation. In other words, no changes will be made to your computer.

3 Running System Restore from a command prompt

If your computer won't boot Windows normally and won't boot into the Safe Mode GUI, you can still access System Restore. Start by booting the system using the Safe Mode With Command Prompt option. After you log on, type the following command line at the command prompt:

```
%systemroot%\system32\restore\rstrui.exe
```

Press [Enter], and System Restore will run as it normally does. You can follow the steps in the wizard to perform a restore operation.

4 Purging restore points

System Restore by default claims a maximum of 12 percent of the available hard disk space to save the restore points. (The amount of storage space will depend on the size of your hard disk.) Once the 12 percent mark is reached, System Restore will purge the oldest restore points in its database to make room for new ones. However, there may be situations where you need or want to purge restore points to free up disk space. Fortunately, the Disk Cleanup utility will allow you to delete all but the most recent restore point.

You can launch Disk Cleanup from the Start | All Programs | Accessories | System Tools menu. Once Disk Cleanup is up and running, select the More Options tab and click the Cleanup button in the System Restore panel. You'll then be prompted to confirm the delete operation.

5 Reining in System Restore's disk space usage

To perform its operations, System Restore requires at least 200 MB of available hard disk space. However, if more disk space is available, System Restore will claim up to 12 percent of it to save the restore points. Although System Restore can use that full 12 percent if it's available, this chunk of disk space is not reserved. System Restore will yield disk space back to the system if it's needed. Furthermore, restore points more than 90 days old are automatically purged by default.

If you want to see how much hard disk space System Restore has potentially set aside on your system, press [Windows][Break] to bring up the System Properties dialog box and then choose the System Restore tab. Next, select your hard disk from the Available Drive list and click the Settings button. When the Drive Settings dialog box appears, you'll see a number in the Disk Space Usage panel that represents the amount of space in MB that System Restore is using to amass restore points.

For example, on a system with an 80GB hard disk, System Restore's 12% amounts to nearly 9 GB. If you feel that System Restore has the potential to take up too much disk space, move the slider to the left to specify a more reasonable amount of hard disk space for System Restore to store its multiple restore points.

6 Manually creating a restore point

System Restore will automatically create restore points, but you can manually create one anytime you want. To do so, launch System Restore and then follow along with the wizard. If want to save yourself a few steps, you can simplify the launching process by copying the System Restore shortcut from the Start | All Programs | Accessories | System Tools menu to the desktop

7 Bypassing the System Restore Wizard

If you want to be able to manually create a restore point without having to go through the wizard, you can create a simple two-line VBScript file that uses WMI (Windows Management Instrumentation) to instantly create a restore point. Just launch Notepad and type these two lines:

```
Set IRP = getobject("winmgmts:\\.\root\default:Systemrestore")
MYRP = IRP.createrestorepoint ("My Restore Point", 0, 100)
```

Then, save the file as MyRestorePoint.vbs. Now, you can easily create an restore point by double-clicking the script's icon. When you do, System Restore will run in the background without displaying its interface and will create a restore point called *My Restore Point*.

8 Steps to avoid restoring viruses

If you know that your system is infected by a virus, you should temporarily turn off System Restore. Otherwise, the virus could be saved along with other system files in a restore point and reintroduced to your system during a restore operation at a later date.

To turn off System Restore, press [Windows][Break] to bring up the System Properties dialog box. Then, choose the System Restore tab, select the Turn Off System Restore check box, and click OK. As soon as you do, you'll see a confirmation dialog box warning you that turning off System Restore will delete all existing restore points. Click Yes to continue.

You can now use your antivirus software to clean up your system. When the virus has been eradicated, access the System Restore tab again and clear the Turn Off System Restore check box. Click OK to re-enable System Restore.

9 Disabling System Restore for data drives

If you have additional hard disks connected to your computer, System Restore will automatically add them to its list of monitored drives. If these additional drives just store data or data backups, there's no reason to have System Restore monitor them.

To disable System Restore for data drives, press [Windows][Break] to bring up the System Properties dialog box. Then, choose the System Restore tab. Next, select your hard disk from the Available Drive list and click the Settings button. When the Drive Settings dialog box appears, select the Turn Off System Restore On This Drive check box and click OK. You'll see a confirmation dialog box warning that by turning off System Restore on this drive, you won't be able to track or undo harmful changes on it. Click Yes to continue. Then, click OK to close the System Properties dialog box.

10 Determining the actual amount of space System Restore is using

You can easily determine how much disk space System Restore can potentially use, but you may also want to determine how much disk space System Restore is actually using. If you're running Windows XP Professional and the hard disk is using NTFS, you can find out.

You'll begin by making a few configuration changes from an Administrator account that will allow you to investigate the hidden and protected folder called System Volume Information, located in the root directory of your hard disk. Keep in mind that this information is meant only for investigative purposes. Making any changes to the files in the System Volume Information folder will disrupt or otherwise damage System Restore's ability to do its job.

From within Windows Explorer, access the View tab of the Folder Options dialog box. Then, select the Show Hidden Files And Folders option, deselect the Hide Protected Operating System Files check box, and click Yes in the Warning dialog box. (If the system is in a workgroup, you'll need to deselect the Use Simple File Sharing check box as well.) Click OK to close the Folder Options dialog box.

Now, access the root directory of the hard disk, right-click on the System Volume Information folder, select Properties, and access the Security tab. Then, click the Add button, enter your user account name in the Select Users or Groups dialog box, and click OK twice to close both dialog boxes.

At this point, you can open the System Volume Information folder, right-click on the _restore folder, and select Properties. Once Windows XP finishes tallying, check the Size On Disk value to see the exact amount of space System Restore is using for restore points. To ensure the security of the restore point files, you should remove your user account from the System Volume Information folder once you finish your investigation.



Greg Shultz has been using PCs since 1986, when he acquired a Kaypro 16 "luggable" running MS-DOS 2.11 and began programming in Microsoft BASIC and Turbo Pascal. He began his career in the publishing industry as a technical editor for PCM magazine, a publication focused on Tandy computers. He later became a technical journal writer, specializing in the Windows operating system, at The Cobb Group (which later became ZD Journals and then Element K Journals). Greg is now a freelance technical writer who regularly writes articles for ZDNet and TechProGuild. You can visit his Web site at www.TheWinWiz.com.

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