

By Erik Eckel

Data backups aren't as exciting as dual-core Intel chips that dual-boot Mac OS X and Windows XP, but maintaining a sound backup strategy can prevent excitement of a different kind (the kind you don't want). Although technology professionals can choose from a confusing array of OEM, proprietary, and third-party solutions, Windows' native backup program often proves adequate for meeting the data backup and recovery requirements of most small and medium-size businesses. The trick is in knowing Windows Backup's benefits and drawbacks. By playing to the utility's strengths, you can eliminate unwanted excitement and keep your workday low key.

## 1 It's proven (i.e., no one ever got fired for buying IBM...)

No one in their right mind wants to explain to a client or director why a backup or recovery operation failed. Losing data is among the greatest technology sins, so it's only appropriate that the job be entrusted to a reliable solution. The old saying reminds that "no one ever got fired for buying IBM." The same holds for technology professionals in small or medium-size businesses who opt for using Microsoft tools.

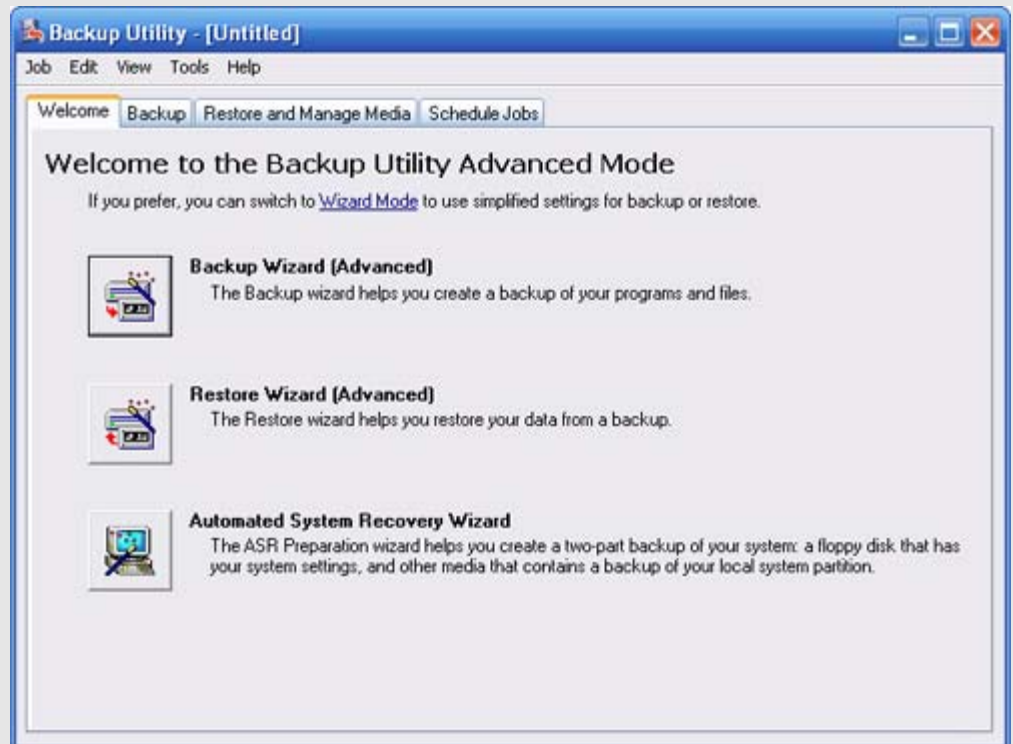
Although many criticize Microsoft's native Backup tool for its lack of sophistication and flexibility, the Windows utility's lack of complexity is its greatest strength. Windows Backup provides a simple and proven method for safeguarding data. Further, it's a capable tool for backing up data to a medium that's easily stored offsite.

## 2 The wizard is your friend

Sure, you can elect to work in Backup's Advanced mode (**Figure A**), but wizards simplify complex tasks. More important, they help ensure that you don't forget a step. And let's face it, when the phone's ringing and you're downloading a service pack, applying a patch, and configuring a backup, it's easy to overlook a setting.

There's a reason wizards dominate Windows Small Business Server administration: They work. When creating a critical backup, take a few extra moments to allow the wizard (**Figure B**) to walk you through the process.

The Backup Or Restore Wizard first asks whether you want to back up or restore files and settings. Assuming you specify a backup operation, the next step involves specifying the data you want to back up. You can elect to back up local files and folders as well as network shares, of course.



**Figure A: Windows Backup's Advanced Mode let's you specify all backup configuration details manually.**

After you configure the data to be backed up, you'll have to select the backup location. I've encountered clients who back up data to the same hard disk, believing it's a second disk (due to its being partitioned and possessing a different drive letter). Backups always work best when a copy is stored offsite, thereby protecting against fire/smoke/water damage that might occur at the central place of business.

Next, the wizard will prompt you to provide a name for the backup. It will then provide a summary screen (Figure C). But you're not through yet.

Click Advanced to configure the type of Backup:

- **Normal** backs up all files and marks each as backed up.
- **Copy** backs up files but does not mark them as backed up.
- **Incremental** backs up files only if they were created or modified since the last backup operation completed and marks them as backed up.
- **Differential** backs up only those files created since the last backup completed, but unlike Incremental backups, a Differential backup doesn't mark the files as backed up.
- **Daily** backs up only files created or modified that day (without changing files' archive bits).

Once you've specified the backup type, the wizard presents two options: Verify Data After Backup and Disable Volume Shadow Copy. A third option, Use Hardware Compression If Available, will appear if the system has the appropriate equipment. Make your selections and specify whether to append or replace the backup, select a time for the



Figure B: The Windows Backup Or Restore Wizard simplifies backup creation and helps ensure that you don't miss critical configuration settings (such as scheduling the backup to occur daily or configuring an Incremental versus a Normal backup).



Figure C: The wizard's summary screen leads you to believe you're just about finished configuring the new backup; you're not. You still need to configure advanced settings.

backup to run, and enter a backup name (this name identifies the backup operation, not the .BKF file the backup creates). Enter a user account with the appropriate permissions to run the backup operation and then provide the password.

Before clicking Next to finish creating the backup routine, click Set Schedule. Use the Schedule tab to specify how often and when the backup runs. Use the Settings tab to configure additional options, such as the length of time the backup has to complete the process and whether the backup should run even if the power fails and the system's battery power kicks in.

Once those settings are configured, you're finished with the wizard. You can rest assured all important steps have been considered (even if you're interrupted mid-process by a telephone call).

### 3 You must watch names when creating new backups

When creating backups using Windows Backup Or Restore Wizard, you need to provide a name for the backup routine. In fact, you must enter two names, one to identify the backup operation itself (the job name) and another for the actual .BKF file that Backup creates (the backup name). They're easy to confuse, and worse, Windows Backup remembers the last names you used and displays them by default; it's easy to overwrite an existing routine or backup file when creating a second backup operation. Take care to ensure you don't accidentally overwrite an old backup file or mistakenly alter an existing backup operation when configuring new backups.

When using the Backup Or Restore Wizard, the first name you specify is for the backup file itself. This is the data file the backup operation creates. It's entered on the wizard's Backup Type, Destination, And Name screen.

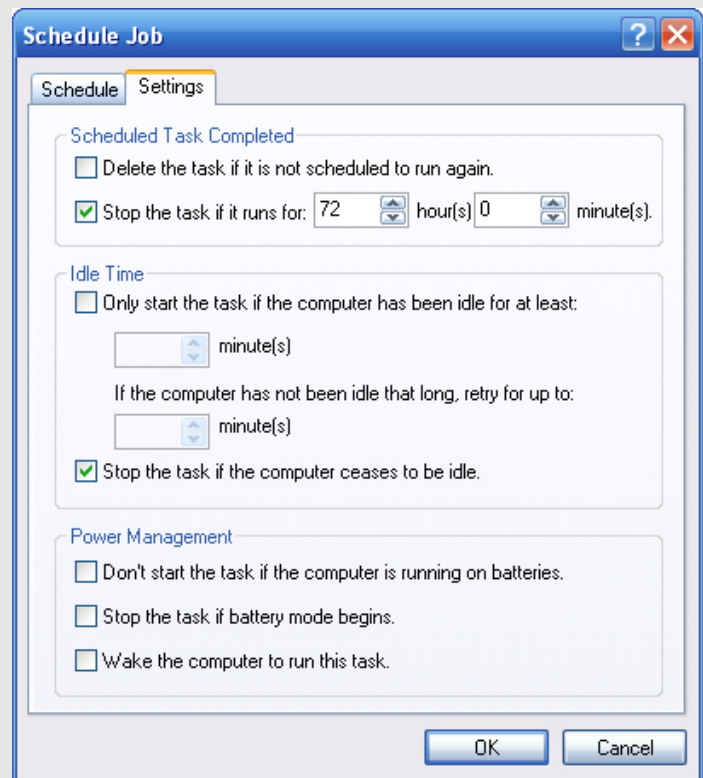
Scheduling a backup triggers the Job Name box, found on the wizard's When To Back Up menu. The name you enter there determines the job name used to administer the backup operation.

### 4 Advanced options are key

Advanced Options, accessed using the Advanced button found on the Backup Or Restore Wizard's summary screen (shown in Figure C) provides access to critical settings. In addition to configuring the backup type as described above, you use Advanced options to specify whether backups append or replace older backups and whether a backup is scheduled to run regularly.

When scheduling backup routines, the Set Schedule button provides access to yet another set of tabs. The Schedule tab enables configuring the backup's frequency, while the Settings tab (**Figure D**) permits customizing Scheduled Task completion parameters, how the system should manage idle time, and power management.

**Figure D: Critical power management and idle time settings are configured using the Settings tab reached by clicking the Set Schedule button from within Advanced options.**



## 5 You needn't overcomplicate schedules/types

Microsoft exams and practice test companies love quizzing you on how you best recover from a disk failure if you've got a six-day-old Normal backup and five days of Incremental or Differential backups. Although such practices work well in theory, they're more difficult to complete as intended in the real world. Office managers forget to replace the tapes or Rev Disks in a system and copy a Tuesday Differential over a Monday Differential. Disks get lost; tapes fail over time.

I recommend simply talking with clients or reviewing with corporate staff how much data you can afford to lose. Can you get by without a week's worth of data? Then configure weekly Normal backups, ensure they complete properly and get them offsite. Regularly recover backups to ensure all necessary data is being properly protected.

However, some organizations need data backed up every day. In those cases, I recommend setting Windows Backup to complete Normal backups daily. Just be sure to keep several copies (at least a week's worth, if not more) and rotate them. That way, if a user accidentally deletes a needed customer file on Monday and you don't discover the problem until Friday, you still have a week-old backup from which you can obtain the file.

Still other companies can't afford to lose even a half-day's data. Microsoft Backup isn't the solution for them. That's when it's time to turn to high-availability data provisioning services (such as RAID arrays and online backups).

## 6 You likely need to replace—not append—backups

In most small and medium businesses, there's no need to obtain more than a week or two's worth of backups. Although for some it makes sense to keep master quarterly backup copies forever, typically just replacing Normal backups works well as part of a regular rotation. Thus, many will elect to use the Windows Replace feature rather than the Append feature when configuring scheduled backups.

If circumstances require, you can append backups or add them to your media as opposed to replacing an existing backup. But more often than not, you'll run out of storage space quickly. Most midsize businesses and many small businesses will be best served by maintaining fresh sets of operative Normal backups. Therefore, these organizations can simply replace existing backups.

Larger organizations requiring more complex data backup regimens will be best served using a more sophisticated backup system. Because of Windows Backup's simplicity, it quickly becomes unwieldy when trying to manage multiple backup sets in small organizations. And trying to scale appending Incremental or Differential backups in addition to weekly Normal backups simply isn't worth the effort in large enterprises, where more sophisticated systems help ease the tediousness of the process.

## 7 Data compression is weak, so plan accordingly

If you need to back up 30GB daily, as I often do for everyone from one- or two physician-practice health care providers (due to patient records and x-ray images) to realty firms wishing to retain copies of various blueprints, contracts, and show house images, your backup requires a lot of storage space. Windows Backup works well for these businesses, but don't expect the backup to compress data effectively.

Third-party tools typically outperform the compression capacities Windows Backup boasts. In larger backups I've configured for clients, I see little data compression result from Windows Backup (using standard removal hard drives, Rev Disks, and the like). Using tape technologies, additional compression benefits emerge.

When calculating media storage required to manage backup routines, I recommend planning at least 12 months ahead. Thus, if you're using Windows Backup and you must back up 12GB worth of data weekly, and the organization adds 500MB of new data a month, I'd recommend working with at least a 20GB tape or disk.



## 8 Data verification can take forever

Windows Backup offers a data verification feature, which helps confirm backups complete properly. Almost everyone advises that you use it. The option should be selected with care when creating larger backups, however, as the confirmation process can add an inordinate amount of time to the backup operation.

In one example I've seen in the field, a 32GB backup regularly and consistently failed to complete in eight hours due to the verification feature taking too long. When data verification was turned off, the backup completed much more quickly.

If you're completing smaller (5GB or less) backups, consider selecting data verification (the Verify Data After Backup check box) from the Backup Or Restore Wizard's How To Back Up screen. For larger backups, I recommend periodically verifying backups complete properly firsthand instead, by opening a backup and checking its uniformity.

## 9 When scheduling backups, once is the default

It's important to note that the default setting for the Schedule is Once. This is true even though you can set the backup to begin a week or months in advance. As a result, it's easy to configure a Normal backup to occur on Friday at 11:00 p.m. and forget to select Weekly from the Scheduled Task drop-down box. If you don't confirm that you've selected the appropriate frequency, you'll wind up configuring a scheduled backup to run only once. When you create a new backup routine using Windows backup, always be sure you specify that it run Later and click Set Schedule.

## 10 You need to limit Backups' default runtime

Backups can easily suck up a system's resources, not to mention network bandwidth (when backing up files from network shares). Add in the fact users are constantly making changes to files during regular business hours, and it's easy to see why backups are traditionally programmed to occur during off hours.

When configuring Windows Backup, be sure to review the timeframe Windows allots the routine to complete. The default setting (reached by selecting Set Schedule and clicking the Settings tab from Advanced options) is 72 hours. That's an incredibly long time, especially in the event that a backup routine becomes stuck, confused, or locked in an endless access, read, or write cycle. You don't want users rendered unable to access the server, network data, or the network. Configure reasonable run times and make it a habit to review backups and confirm that they're completing within the allotted time.



Erik Eckel is president of two privately held technology consulting companies. He previously served as executive editor at TechRepublic. He earned his Bachelor's Degree in English from the University of Louisville and received Microsoft Engineer accreditation from Sullivan University. He's earned Network+, Windows NT 4.0 MCP+I and MCSE, and Windows 2000 Professional MCP accreditations.

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- "[Design and troubleshoot a comprehensive data backup and recovery solution in Windows](#)" (TechRepublic download)
- "[Easily create date-based folder names in Windows XP](#)" (TechRepublic article)

## Version history

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