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# Windows 2000 Offline Files And Folders

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*With client-side caching enabled, files and folders available on the network are cached locally. Thus, files can be accessed even when users are disconnected from the network.*

**By Dave Cook**

**M**obile users tend to work in the strangest places. One day the "office" might be a relatively comfortable hotel lobby, the next day it could be a seat on a bus, train, or even the cabin of ship sailing the seven seas in the middle of a force nine gale. The fact is, more users than ever now find it necessary to take their work with them - wherever they roam.

But mobile users have enough to put up with without having to worry about how they are going to get their files safely synchronized on big daddy computer back at headquarters. Which is where the Windows 2000 offline files and folders feature proves invaluable. Though similar in functionality to the Briefcase utility of Windows NT 4.0 and Windows 98, the offline files and folders tool - otherwise known as client-side caching - is considerably more powerful and intuitive to use.

With client-side caching enabled, files and folders available on the network are cached locally so that users can still access these files when they are disconnected from the network. For example, an administrator could mark a network folder to be available offline, and then grant certain users the right to gain access to the contents of the folder while on the road.

This is all well and good, of course, but it does not end there. While disconnected from the network the same users can add, modify and delete any or all of the files in that folder. Then, when the users return to the office, Windows 2000 can automatically synchronize the modified files with the network share.

If, during synchronization, it is discovered that both versions of a file have changed, users can choose whether to preserve the network version of the file or the local version. If a user wishes to retain both versions, however, the operating system will prompt the user to rename the local version. Renaming allows each version to appear in both the network folder and the local folder.

Although client-side caching is primarily designed for mobile users, opening it up to desktop users could also prove worthwhile. For example, many users habitually copy large files to the local drive for faster access but sometimes forget to transfer the files back to the server later. Typically client-side caching is used to copy these files back to the server at the end of the working day.

## **Shared Folders**

The first step in managing client-side caching is to create a shared folder. Normally the share would reside on a server, though it could equally be situated on a workstation. There are several ways to create a share. The easiest method is to use Windows Explorer, but the task could also be accomplished from the Computer Management Console (for remote computers) or the command line. Rather than simply sharing a folder or subfolders, the whole disk could be shared; but that would not be advisable since exposing the whole operating system to remote users is best avoided. In cases where several users need to work offline, each user should be assigned their own folder - possibly based on their logon name.

To create a shared folder at the server, log on at the console using an account with administrator privileges. Then open Windows Explorer, highlight a drive letter and click File, New, and Folder. Provide the folder with a name, right-click the folder icon, and select Sharing from the fly-out menu. The folder properties window opens with the Sharing tab selected.

Alternatively, to establish a network share on an existing folder, right-click the folder and select either Properties or Sharing from the menu. It does not matter which one because the end result is the same. Note, however, that it is nearly always preferable to use NTFS permissions to control access rather than the Permissions option available from the Share tab.

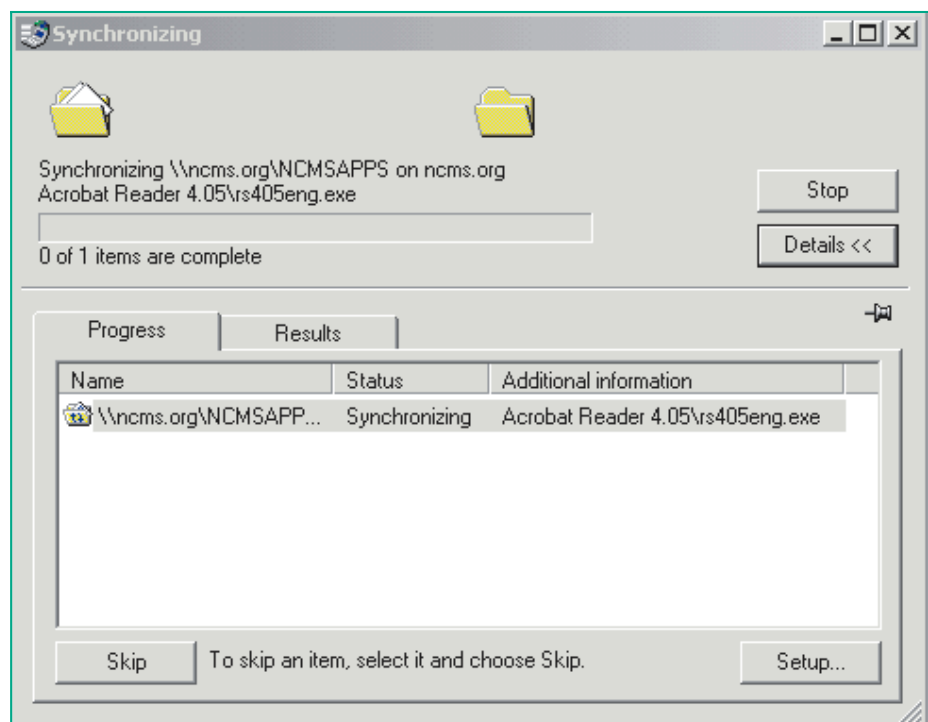
From the Sharing tab, select the Share This Folder radio button and insert the folder name as the shared name, if Windows 2000 has not automatically done so. Remember that a share name can have up to 255 characters and that adding a \$ symbol at the end of the name stops users from being able to see the share, in which case a suitably mapped drive or shortcut would have to be created.

A comment can also be included at this point, to explain what the share is about. It is also possible to restrict the number of users allowed to access the folder simultaneously, and this can be achieved by deselecting the Maximum Allowed radio button. Limiting the numbers to a set amount is useful as it enables organisations to meet licensing restrictions for executables inside the shared folder.

By clicking OK or Apply at this stage the server would have a shared folder that is, by default, fully accessible to the group Everyone. In other words, all users with access to the server would be able to read, write, and generally manage the shared folder with what is referred to as Full Control access rights. We need to change that setting since it is generally not a good idea to use client-side caching for files accessed by multiple users.

Click Apply to create the share and then click the Security tab (NTFS only). To change the default setting, deselect the Allow Inheritable Permissions option and a message will appear with the option to copy or remove inherited permissions for this object. When removing inherited permissions, be aware that it is often a good idea to ensure that the Administrator group - or some other group used for administrative purposes - also has access to the folder. This enables administrators to help users with their files should they get into difficulty.

Click Remove and the Everyone group will disappear. Click Add. From the Select Computers, Users, or Groups access list, select the user and the Administrator group (if applicable) to be allowed access to the share. Click Add, click the appropriate check box (for example, Full Control), and click OK to return to the Security tab. Note that further access control settings can be applied via the Advanced button. Click Apply and return to the Sharing tab.



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## Caching Options

Now we need to specify if and how files contained within the shared folder are cached locally when accessed by users. Click Caching to open the Caching Settings window and notice that client-side caching is already enabled. To disable client-side caching at any time in the future, simply deselect the Allow Caching Of Files In This Folder option.

The Settings window reveals the three different caching options available for a shared folder. The Manual Caching For Documents is the option set by default. Although some synchronization is possible with this setting, folders or files are only cached when explicitly marked by the user. When set to this option, the server version of the file is opened. Manual Caching For Documents supports local caching of any file type, including executables.

The second option, Automatic Caching For Documents is often the preferred setting. This option does not wait for the user to request a local copy. Opened files are automatically downloaded and made available when working offline. Older copies of files are automatically deleted to make way for newer and more recently accessed files. Setting this option is convenient, but use it with care. Local copies should be considered volatile. If a user inadvertently takes an important document offline, there is a danger that it could be removed and lost forever.

Automatic Caching For Programs is the final option and is recommended for automatically downloading program executables. For example, users can start a program installed in a shared network folder and continue to use the program even when disconnected from the share. With this option enabled, it is important to restrict permissions on the files contained in the shared folder to read-only. As with the Automatic Caching For Documents option, older copies of files are automatically deleted to make way for newer and more recently accessed files.

Having selected a caching option, click OK and then click OK again to close the Properties window. Note that if any users are connected to the shared folder while changes are made to the cache settings, the new settings will not apply until the next time those users log on.

## The Client

We are now ready to configure offline files and folders at the Windows 2000 client. First, though, it is a good idea to map a drive to the new share: open Windows Explorer at the client, select Tools, Map Network Drive, and specify the drive letter and the folder for the connection. For the latter, type in the network path to the shared folder or click Browse and select the remote computer, drive, and folder. Ensure the Reconnect At Logon box is checked, and then click Finish to map the drive/folder.

With Windows Explorer still open, select Tools, Folder Options. From the Folder Options window, select the Offline Files tab and select the Enable Offline Files option (if it is not already enabled). Although this enables caching at the client, be aware that the settings contained within are not user specific and neither do they take priority over the caching settings assigned to the shared folder at the server.

Both the Enable Reminders and the Synchronize All Offline Folders Before Logging Off options should remain selected. The former allows reminder balloons to appear over the system tray when the computer goes offline, while the latter ensures that the offline files are the latest versions when the user logs off. Selecting the option, Place Shortcut To Offline Folders On The Desktop is also recommended as it offers users a quick way to find their locally held copies of offline folders.

Click OK to save the settings and close the Folder Options window. Then to view the contents of the shared folder, open the mapped network drive/folder from either Windows Explorer or My Computer. Depending on preference, note that some or all of the contents can be added to the offline files list: for example, to make the entire contents of the shared folder available offline simply right-click the folder and select Make Available Offline.

The Offline Files wizard opens. This wizard offers the same general options as those provided by the Offline Folders window, only it is user specific. Click Next and the

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wizard provides the option to automatically synchronize the offline files whenever the user logs on and logs off the computer. Leaving this enabled will most likely be the preferred option for most users.

Click Next and ensure that the Enable Reminders option and the Place Shortcut To Offline Files Folder On The Desktop are both selected. The amount of disk space available for storing temporary offline files may also be assigned from here. Moving the slider bar to the left decreases the reserved amount of space, while moving the slider to the right increases it. As a point of interest it is worth noting that cached files are saved on the local drive under \WINNT\CSC. Should this drive crash while files are cached locally, the network files will remain unharmed. If circumstances change later, it is possible to stop caching files by right-clicking the file or folder icon and deselecting the Make Available Offline option from the fly out menu.

It is important that users remember to synchronize prior to deleting files. Users should also be advised not to carry out file maintenance while the system is offline. The reason for this is simple: deleting offline files while the computer is itself offline could result in network files being deleted when the system is resynchronized. Basically, if a user deletes a file from an offline folder and no one else has made changes to the file, then the local computer could remove the file from the network folder when it next synchronizes with that folder.

The easiest way to delete online files is to open Windows Explorer and select Tools, Folder Options, and select the Offline Files tab. Click Delete Files, and the Confirm Delete Files window opens. Here, the user has two options: Delete Only Temporary Offline Versions and Delete Both Temporary And The Versions That Are Always Available Offline. Selecting the former removes the local files associated with the automatic caching options set at the server; selecting the latter option also removes any local copies that have been selected by the user.

### Going Offline

When the local computer goes offline, the operating system notifies the user by displaying a ScreenTip next to the Offline Files icon in the taskbar. This ScreenTip alerts the user that, although they are no longer connected to the network, they can continue to work while offline. The ScreenTip is set to display this information every 60 minutes, though the period can be changed to suit the individual user. To glean further information such as current settings and which files are available offline, the user can open the Offline Files Status dialog box by clicking the relevant icon on the taskbar.

If a client reconnects to the network, the ScreenTip reminds the user that the changes made offline have not been synchronized. One way to perform the task is to place a check next to the remote computer in the Offline Files Status dialog box, and then click OK. Among the items that users can synchronize are individual files, folders, and even offline Web pages. In fact, users can work with Web pages offline almost as easily as they can work with offline files and folders.

By default, Windows 2000 synchronizes offline files and folders each time users log on and log off a network connection. But to fully manage their offline files and folders, users should use the Synchronization Manager tool. To access the Synchronization Manager, open Windows Explorer and from the menu, click Tools, Synchronize.

The Synchronization Manager provides a single location where users go to synchronize any shared files that have been made available offline, regardless of the type of file or program that was used to make the file available offline. Synchronization is highly configurable, and users can set various preferences that determine when synchronization occurs: for example, when the user connects to or disconnects from the network, when the user logs off, at a scheduled time, or when the computer is idle.

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