

FARONICS

DEEPFREEZE™

ABSOLUTE Workstation Integrity

Deep Freeze - Retaining User Data

TECHNICAL WHITEPAPER

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Introduction

This white paper explains the different options IT administrators have when saving user data on machines with Deep Freeze installed. It also explains several data retention scenarios to assist in configuring a machine to retain user data.

After reading this document, IT administrators should be able to configure a machine to retain data locally when Deep Freeze is in a Frozen state.

The Frozen Environment

Deep Freeze is a solution that ensures client workstations remain in a consistent state after every reboot. Deep Freeze consists of two states: Frozen and Thawed. In a Thawed state, any changes made to a machine are retained after a reboot. In a Frozen state, any changes can be made to a system, but after a reboot, these changes will disappear.

With Deep Freeze installed, it is very easy to set up a machine on which no changes are saved. However, there are some cases where data needs to be saved locally; perhaps the user needs to be able to save emails locally, or maybe an application requires data to be stored locally.

With the information in this document, a machine can be configured to allow certain changes to be retained after a reboot, even when the machine is in a Frozen state.

Storage Solutions

The following solutions describe different methods available to configure a Thawed area; any information saved into a Thawed area is retained after a reboot.

Network Drive

The first solution involves saving user data to a network folder. Deep Freeze does not put network drives into a Frozen state. By offering the user a place to save data off the local machine, nothing needs to be configured on the client machines themselves.

However, there are cases where this option is not viable. Sometimes, the machine is not connected to the network, or an application saves user data locally. In these cases, this solution does not work.

Thawed Partitions

A Thawed partition is a physical partition configured not to be Frozen. Using this solution, it is assumed the machine has at least two physical partitions. Using the Standard version of Deep Freeze, the option to select which physical partitions are to be Frozen appears during the install. Using the Professional or Enterprise versions of Deep Freeze, this option is configured before creating the workstation install file. The option to select which drives are frozen appears in the Configuration Administrator, under the *Configuration* tab, on the *Frozen Drives* sub-tab.

ThawSpace

In some cases, the client machine does not already have a separate physical partition configured. In this case, the Deep Freeze Workstation install file can be configured to use a ThawSpace. This option is not available in the Standard edition of Deep Freeze; it is only available in the Professional or Enterprise versions. When configuring a ThawSpace using the Configuration Administrator, select the drive letter (default is T:), the size, and the file system to be used.

ThawSpace is a virtual partition. When the workstation is installed, another drive letter appears in Windows Explorer. Any data saved to this virtual drive is retained when the machine is rebooted.

For more information about creating a ThawSpace, refer to the Deep Freeze Professional/Enterprise user guides.

Mounted Drives

A mounted drive is a folder that points to its own partition. This solution is more complex. The client machine must have some unpartitioned space before a mounted folder can be created. This option requires the Windows XP operating system and an NTFS file system.

Faronics Mapping Tool can be used to mount a volume to a folder. This tool can be downloaded from the following address: <http://www.faronics.com/html/dfmappt.asp>

For more information about Faronics Mapping Tool, read the user guide found at the following address: http://www.faronics.com/doc/FMT_Manual.pdf

For more information on creating a mounted drive, see Microsoft knowledge base article 307889 found at the following address: <http://support.microsoft.com/default.aspx?scid=kb;en-us;307889&sd=tech>

Data Retention Scenarios

This section describes general scenarios involved in retaining user data. One or more scenarios may be used depending on the user/software requirements. The employed scenarios use one or more of the Storage Solutions described earlier.

Mapping User Profiles

This scenario should be used in cases when all user information must be retained.

1. The user data must be allocated in a different partition so Deep Freeze does not touch those files. This can be accomplished using any of the Storage Solutions described earlier.
2. Load any applications and files that the users may require.
3. Open the Registry Editor; go to the *Start* menu, and choose *Run*.
4. Type `regedit` in the *Open* field and click *OK*. The *Registry Editor* appears.
5. Modify the following registry entry to read as follows:

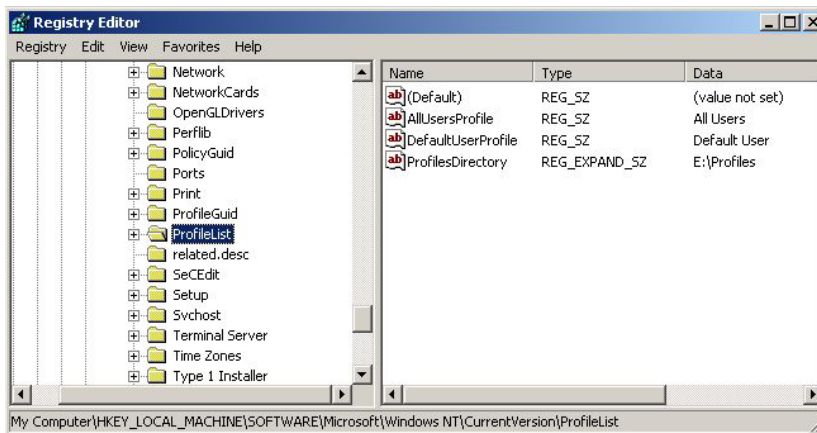
Hive: `HKEY_LOCAL_MACHINE`

Key: `Software\Microsoft\WindowsNT\CurrentVersion\ProfileList`

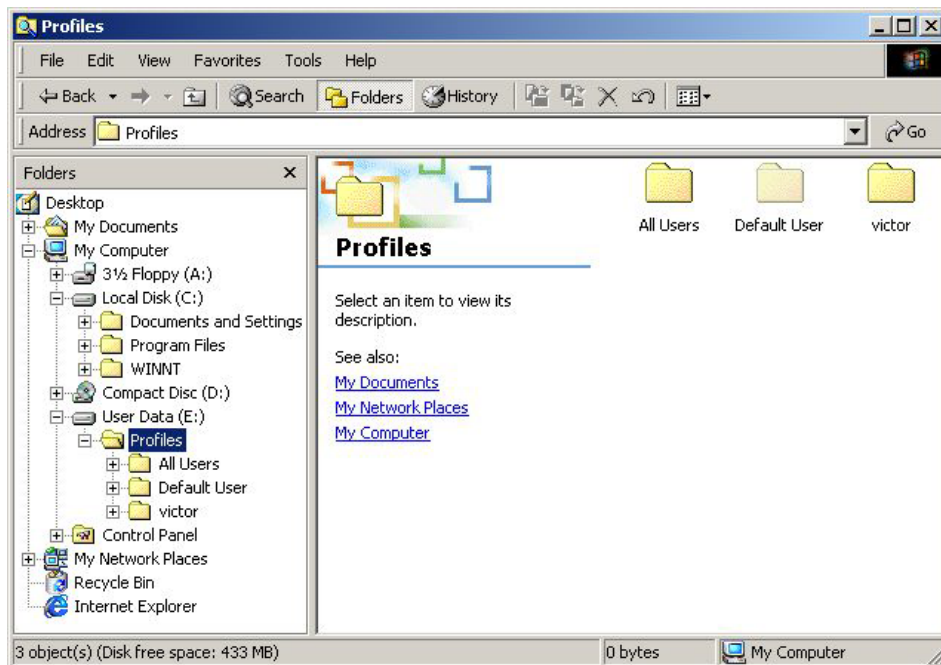
Name: `ProfilesDirectory`

Data Type: `REG_EXPAND_SZ`

Value: `path` (i.e. `E:\Profiles`)



The value for the registry entry should point to the location on the second partition where the profile is stored. If the profiles are being stored in `E:\Profiles`, the registry entry should be `E:\Profiles`.



6. Once the folders listed above are copied to the workstation, the system can be rebooted and Thawed users can log on to the computer. Ensure the new user profiles are being created in the correct location. Any user profiles already existing on the workstation are not removed automatically.
7. Once the appropriate users have logged in, and any additional required software is installed, activate Deep Freeze on the workstation.

Once the computer reboots, any changes made outside of the user profile (Desktop / My Documents / Favorites) are removed from the computer without affecting the data (email / documents).



It may be possible to create a Mapped folder by mounting a partition on the system drive to hold the user profiles. However, this can create an issue on some systems where folders cannot be deleted from the workstation in the user's profile. This happens due to the method Windows uses to move files to the Recycle Bin. The issue is discussed at the following link: <http://support.microsoft.com/default.aspx?scid=kb;en-us;319368>

This behavior has not been resolved at the time of this document's creation. It is therefore recommended that a separate physical drive letter be assigned to store the profiles on the workstation to prevent this type of issue from affecting users.

A Note on Roaming Profiles

When working with roaming profiles and a Frozen machine, the profile is created on the local machine every time the user logs on. By mapping the local profile to a Thawed partition, the data remains on the local machine and does not need to be downloaded from the network every time the user logs on. This is especially useful when working with very large profiles.

Mapping My Documents and Favorites

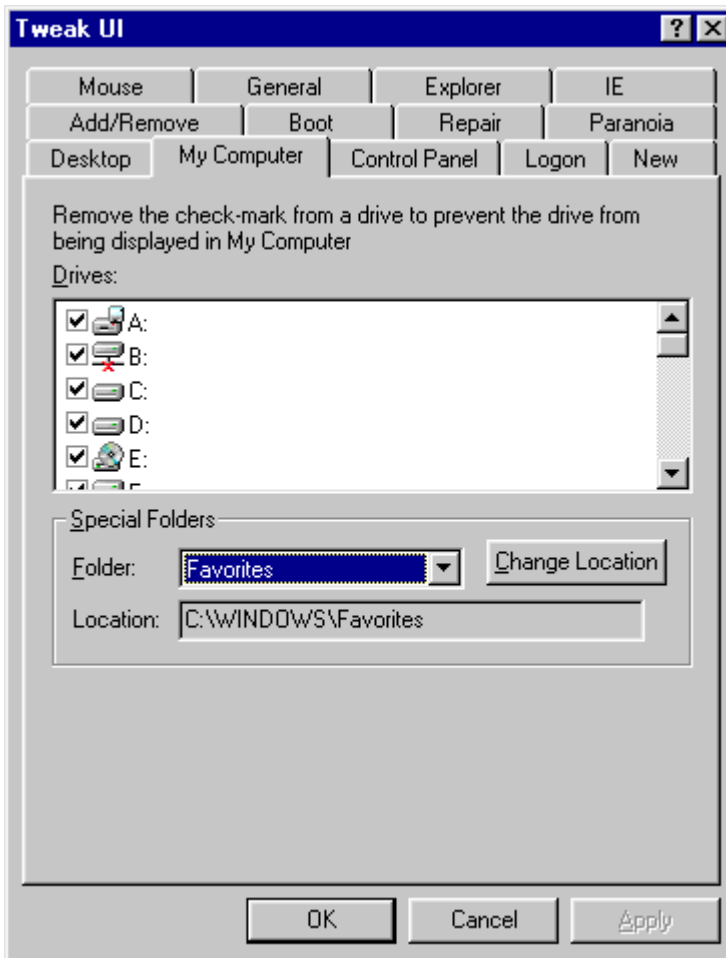
Deep Freeze allows administrators to change the location of the *My Documents* folder and the *Favorites* folder. In all cases, this assumes that the workstation is being used for a single user profile. If multiple user profiles are being used, these settings must be performed for each user. Refer to the Deep Freeze white paper *Mapping User Profiles* for more details.

Windows 95/98/Me/2000

To modify the location of the *My Documents* and *Favorites* folders in Windows 95/98/Me/2000, use the free *Tweak UI* Power Toy program from Microsoft.

Tweak UI allows an administrator to change the location of any user shell folder, including *My Documents* and the *Favorites* folder. Tweak UI can be downloaded at:

<http://www.microsoft.com/ntworkstation/downloads/PowerToys/Networking/NTTweakUI.asp>

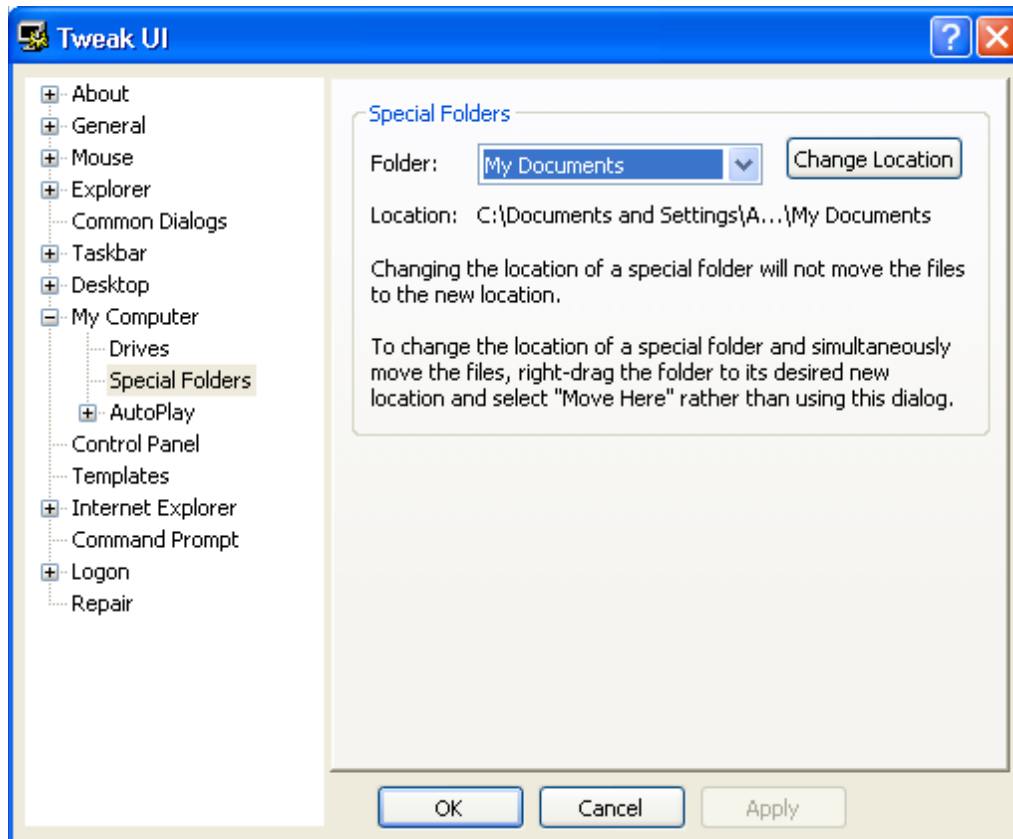


1. Select the folder to change and click *Change Location*.
2. Browse to the preferred location and click *OK*.

Windows XP

To modify the location of the *My Documents* and *Favorites* folders in Windows XP, use the free *Tweak UI* Power Toy program from Microsoft.

Tweak UI allows an administrator to change the location of any user shell folder. Tweak UI can be downloaded at: <http://www.microsoft.com/windowsxp/pro/downloads/powertoys.asp>



1. Select the folder to change and click *Change Location*.
2. Browse to the preferred location and click *OK*.

Saving Application Data

This scenario involves requirements where certain applications must be able to retain certain settings on the machine while the machine is in a Frozen state. The key to getting the application to retain data is to ensure the data is stored in a Thawed partition using one of the Storage Solutions provided earlier.

Applications Saving Data to Internal Folders

These types of application tend to have a *Data* or *Save* folder located in a sub-folder of the application. In order to get this type of application to work, the following options are available:

- Install the application to a Thawed partition or ThawSpace
- Create a mounted drive

Applications Saving Data to My Documents

These types of application tend to save their data to a sub-folder of the *My Documents* folder. If the user profile is stored on the network, nothing needs to be done. If the user profile or the *My Documents* folder is being mapped already to a Thawed partition or ThawSpace, nothing needs to be done.

If the user profile or *My Documents* is not being mapped to a Thawed partition or stored on the network, the following options are available:

- Map *My Documents* to a Thawed partition or ThawSpace
- Create a mounted drive

A Note About Application Updates

If an application needs to be updated, most likely changes are made to the registry. Because the registry is contained on the Frozen partition, these changes are lost when the machine reboots. It is best to perform updates while the machine is in a Thawed state or during a maintenance period. A maintenance period can be scheduled in both the Professional and Enterprise versions of Deep Freeze. For more information about scheduling a maintenance period, refer to the user guide.

Microsoft Office Auto Recovery Locations

Some Microsoft Office applications have auto recovery files, where projects being modified are automatically saved and can be recovered in case of failure. When a machine is Frozen, all documents that have been saved to this auto recovery location will be deleted. To prevent this, the auto recovery location can be modified to be redirected to a Thawed location on the machine.

To change the file path where documents are automatically saved in Microsoft Office applications, a series of registry settings must be configured.

Microsoft Word

Registry Path: *Software\Policies\Microsoft\Office\11.0\Word\Options*

Key Name: AUTOSAVE-PATH

Default Value: *<user>\Application Data\Microsoft\Word*

The Default Value must be changed to the path of the Thawed location on the machine.

Microsoft Excel

Registry Path: *Software\Policies\Microsoft\Office\11.0\Excel\Options*

Key Name: AutoRecoverPath

Default Value: *%USERPROFILE%\Application Data\Microsoft\Excel*

The Default Value must be changed to the path of the Thawed location on the machine.

These registry settings can either be set manually for each user through the import of registry settings or through the configuration of a Group Policy using the Office Administrative Templates available on Microsoft's website.

Saving Email Locally

Microsoft Outlook

Microsoft Outlook stores user email and contacts in a single default file called *outlook.pst*.

To move this default file to a Thawed location, complete the following steps:

1. Boot the workstation into a Thawed state.
2. Browse to the *outlook.pst* file on the local hard disk.
3. Copy *outlook.pst* to the designated Thawed location (ThawSpace, second drive, or network location). Make note of the full path to the file.
4. Delete the original *outlook.pst* file.
5. Launch Outlook.

A prompt appears asking where the *outlook.pst* file can be located. Browse to the location that the *outlook.pst* file was copied to in step 3. Once this file has been selected, Outlook may rebuild some shortcuts and update some settings.

6. Boot the workstation into a Frozen state.

Microsoft Outlook Express 5.x

To move the location of the message store files currently being used by Outlook Express 5.x, complete the following steps:

1. On the *Tools* menu, click *Options*.
2. Click the *Maintenance* tab, and click *Store Folder*.
3. Click *Change*.
4. Specify the preferred folder where messages are to be stored, and click *OK*.

Information used in this document is from a Microsoft Knowledgebase article:

Microsoft Knowledge Base Article - Q175037

OLEXP: How to Change the Default Location of Mail and News Folders

<http://support.microsoft.com/default.aspx?scid=KB;EN-US;Q175037&>

Netscape Communicator 4.x

To move Communicator and all user profiles to a new location, complete the following steps:



Be sure to make a backup of Communicator and all user profiles before continuing. Skip steps 2 and 3 to move all user profiles except the Communicator.

1. Using the *User Profile Manager*, delete all profiles.

This does not delete any files, but removes the record of the profiles from the registry.

To access the User Profile Manager on most systems, exit Netscape and browse to: *Start > Programs > Netscape Communicator > Utilities > User Profile Manager*.

2. Uninstall Communicator. (*Skip this step if only moving user profiles*).
3. Reinstall Communicator in the new location.

Do not start Netscape after rebooting. Using Windows Explorer or a DOS prompt, move the contents of the old plugins directory to the plugins directory in the new location. Do not overwrite any files if asked. If moving the files to a different computer, use a backup tape, direct cable, network connection, or disks. (*Skip this step if only moving user profiles*).

4. Move the user profile directories to the new location using Windows Explorer or a DOS prompt. If moving the files to a different computer, use a backup tape, direct cable, network connection, or disks.
5. Using Windows Explorer, go to the ...*Users\{username}\News* directory.

Open the file called *FAT* in Notepad, and fix paths to the *.RC* and *.RCG* files to reflect the new locations. Repeat for each user profile if more than one exists.

6. Using Windows Explorer, go to the ...*Users\{username}* directory and open *prefs.js* in Notepad.

Fix any and all paths present in the file to reflect the new locations. Be careful to preserve the double-backslashes in the paths (such as *C:\\Netscape\\bookmark.htm* rather than *C:\\Netscape\\bookmark.htm*). Repeat for each user profile if more than one exists.

7. Launch the *User Profile Manager*, and create new profiles directly over the old profiles that are in the new locations. Files are not overwritten.
8. Launch Communicator, verify paths in the *Edit > Preferences* menu, and verify that everything works.



If the files are being moved to a network drive, the user must have write permission to those directories, even after the move, in order to successfully run Netscape.

Information used in this document is from the Unofficial Netscape FAQ page:
http://www.ufaq.org/commonly/move_netscape.html