
Windows 2000 and NT4.0 Profile Merging

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Overview

Because pre-configured profiles are not currently included in Windows 2000, administrators must create efficient and scalable user profile configurations.

This white paper explains how profile merging works in Windows NT 4.0 and in Windows 2000, and discusses its impact in a roaming profile environment.

Windows NT 4.0 and Windows 2000 profile management compared

This section provides an overview of the profile management process in Windows NT 4.0 and in Windows 2000.

Windows NT 4.0 Profile Overview

The diagram in Figure 1 illustrates profile merging in Windows NT 4.0.

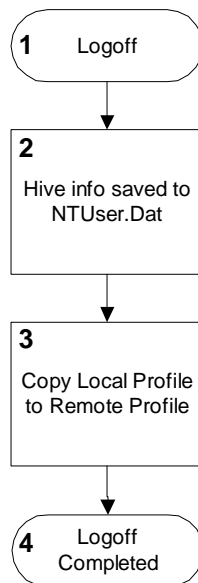


Figure 1

1. The user logs off from the workstation.
2. The user's HKEY_CURRENT_USER is saved to the NTUser.Dat file located in the %UserProfile% directory.
3. The locally cached profile stored in the %UserProfile% directory is copied to the network location specified in User Manager for Domain's **User Profile** field. This includes the NTUser.dat file and all the User Shell Folders (Start Menu, Temporary Internet Files, Cookies, etc.).

A problem occurs when the same user is logged on to two separate computers. In this case, the roaming profile is copied locally to each of the computers when the user logs on. When the user logs off from the first computer the profile is copied to the network. When the user logs off from the second computer, the local profile is copied to the network and the files from the first profile are overwritten with the files from the second profile. Profile changes made during the first logon session have not been recorded.

Windows 2000 Profile Overview

Windows 2000 improves on the Windows NT 4.0 profile management process by checking the timestamp of the local and remote files located in the user shell folders of the roaming and local profiles. This ensures that the most recently altered file will be available the next time a particular user logs onto the network.

Figure 2 illustrates the process that occurs when a user logs off from a Windows 2000 computer.

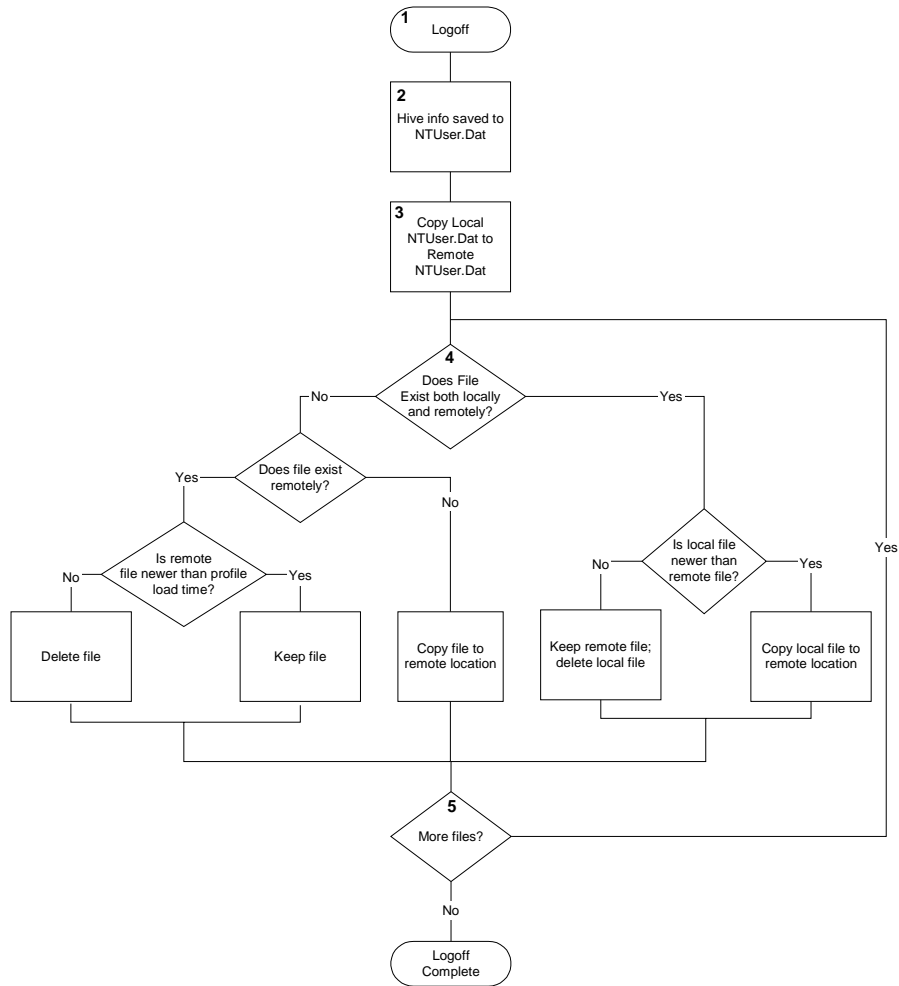


Figure 2

1. The user logs off from the workstation.
2. The user's HKEY_CURRENT_USER is saved to the NTUser.Dat file located in the %UserProfile% directory.
3. The NTUser.dat file located in the %UserProfile% directory is copied to the network location specified in the User Manager for Domain's **User Profile** field.

4. The files that make up the directory of the locally cached profile are compared to the files in the roaming profile. The following table lists the actions that occur at the time the profiles are merged.

Existing Files	Most recent	Action
Local and remote	Local file timestamp	Local file is copied to remote location
Local and remote	Remote file timestamp	Local file is deleted and remote file is kept
Local only	N/A	Local file is always copied to remote location
Remote only	Time of profile load	Remote file is deleted
Remote only	Remote file timestamp	No action is performed

5. The process continues until all of the files in both the local and roaming profiles are analyzed.

Roaming Profile Issues

Using roaming profiles in a MetaFrame multi-user environment poses risks. Windows 2000 avoids the deletion of user shell folder files by placing the most recently accessed file on the network. However, there is no mechanism that will successfully merge the HKEY_CURRENT_USER sections of the two locally cached roaming profiles.

The following example illustrates the consequences of using roaming profiles:

1. A user's roaming profile is stored on the server RP_SERVER. The user logs on to two separate Terminal Services servers: TSE_1 and TSE_2. TSE_1 and TSE_2 do not host the same applications.
2. When the user logs onto TSE_1 and TSE_2, the roaming profile is cached from RP_SERVER to the local drives of TSE_1 and TSE_2.
3. The user makes numerous changes to the environment, including changes to some of the server-specific applications loaded on TSE_1 and TSE_2. Modifications made to TSE_1's environment are stored in the user's locally cached copy of the roaming profile on TSE_1. Likewise, modifications made to TSE_2's environment are stored in the user's locally cached copy of the roaming profile on TSE_2.
4. The user logs off from TSE_1. The locally cached copy of the user's roaming profile is uploaded to RP_SERVER. The roaming profile is merged.
5. The user now logs off from TSE_2. This locally cached copy of the roaming profile is now uploaded to the ROAMING_PROFILE_SERVER. The roaming profile is merged again.
This merging occurs only with files, and NOT with the NTUser.dat (the user's HKEY_CURRENT_USER registry hive).
6. The user's TSE_1 NTUser.dat file is overwritten when the TSE_2 profile is uploaded.

In addition to the fact that the registry settings are not merged, checking the file timestamp is not always the best way to determine which copy of a file should be saved to the network. Because changes to the same file in two different sessions are made independently, it is not possible to tell if the file that was closed at a later date is the file that the user wants to keep in the roaming profile.



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