

# Immidio White Paper – Migration to Windows 7 with Immidio Flex Profiles

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## **Abstract**

When updating from Windows XP to Windows 7 you may notice that compatibility for user profiles containing all personal desktop and application settings is not maintained. In many cases this produces massive challenges in Windows 7 migration projects in corporate IT environments. When reading this whitepaper you will learn why this is the case and how to use Immidio Flex Profiles for making user profiles cross-platform compatible to Windows XP and Windows 7, both for migration projects and side-by-side scenarios using multiple versions of Windows simultaneously.

# User Profile Migration to Windows 7

According to Forrester Research, 80% of today's PCs run Windows XP. But Microsoft support for Windows XP with Service Pack 2 ends on July 13, 2010. Only Windows XP SP3 installations can be used longer, they will be supported until April 8, 2014. Windows 7 is worldwide available since October 22, 2009. 18 months later – or with the release of Windows 7 Service Pack 1 – OEMs will not be allowed to sell Windows XP anymore. A great majority of companies is planning for a migration from Windows XP to Windows 7 during the next two to five years – some companies already made this step with great success. According to IDC and Gartner, up to 50% of all corporate users will be using Windows 7 within the next year and most of them will have moved directly from Windows XP to Windows 7. These few facts indicate clearly that thinking about a migration to Windows 7 is not an academic exercise; it's a matter of following the mainstream and staying up-to-date.

What are the most common challenges when migrating from Windows XP to Windows 7? Interviews with CIOs, IT professionals and consultants show that third-party device drivers, software deployment products, application compatibility and user profile migration are the most critical aspects in such projects. In the following, we will be concentrating on introducing a successful method to reduce efforts and costs involved with user profile migration down to a minimum.

User profiles are used to preserve all personal application settings and Windows configurations for individual users, taking many aspects into account, such as Explorer settings, language preferences, themes, drive mappings, printer associations, icon positions, wallpaper selections, taskbar configurations, documents stored on the desktop, and application settings. In many cases user profiles include business critical information represented by unique, user-specific data and settings related to desktops and applications.

## Windows User Profiles V1 and V2

The original version of Windows user profiles – referred to as V1 – is used in Windows 2000 Professional, Windows 2000 Server, Windows NT, Windows XP and Windows Server 2003. With Windows Vista and Windows Server 2008, Microsoft introduced user profiles V2, changing standard profile path, folder names, localization concept and management of application-specific data. Although the changes may have been necessary for several reasons, the different profile versions are incompatible, resulting in the fact that they have to be maintained side-by-side in mixed environments. In simple words this means that you cannot use a Windows XP user profile when logging in to Windows 7 – independent of the question if it's in a migration or a side-by-side scenario.

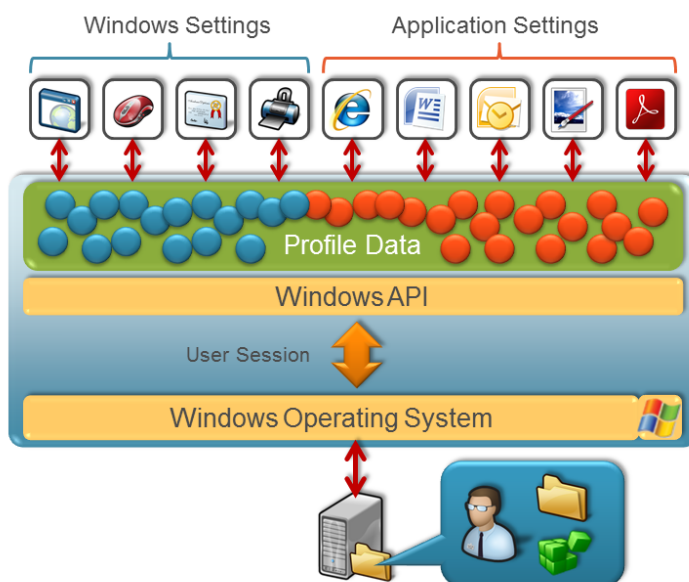
Windows XP stores user profiles in the Documents and Settings folder. This location has changed, as Windows 7 stores user profiles in the more intuitively named Users folder. V1 user profiles contained a complex folder structure, often including nested folders two and three layers deep. The V2 folder locations contain fewer nested folders to ease navigation and the new names are more intuitive to the data contained within them. V2

user profiles introduce the AppData folder which contains three subfolders: Roaming, Local, and LocalLow.

The Local and LocalLow folders are used for application data that does not roam with the user. The AppData\Local folder in Windows 7 is the same as the Documents and Settings\username\Local Settings\Application Data folder in Windows XP. The Roaming folder is used for application specific data which are machine independent and should roam with the user profile. The AppData\Roaming folder in Windows 7 is the same as the Documents and Settings\username\Application Data folder in Windows XP.

The massive changes in the folder structure prevent Windows 7 from loading user profiles from Windows XP and vice versa. Windows 7 roaming user profiles will add "v2" to the end of the profile folder, used to isolate V2 roaming user profiles from V1 roaming user profiles created by Windows XP.

Although there are such significant differences between the structures of V1 and V2 user profiles, both versions have in common that each of them stores all user-specific desktop and application settings in one single container based on the structure described previously. This means that settings of individual applications cannot be separated from each other or from desktop settings. For a user intending to migrate from Windows XP to Windows 7 – or planning to work with both Windows versions for a while – this implies the need to deal with two monolithic user profile containers side by side. Segmenting a user profile and extracting portions of it from a V1 container followed by importing the output into a V2 container is not supported out of the box.



**Figure 1: Personal settings of the Windows desktop and of all applications are stored in one user profile container, making the segmentation of individual application settings almost impossible.**

Another basic concept both user profile versions have in common is Folder Redirection. It gives administrators the ability to move user specific data out of the user profile, giving users real-time access to their data. But again there are differences in the implementation details. Windows 7 improves Folder Redirection by allowing the

administrator to redirect 10 user-specific folders. The best way to configure Folder Redirection in a domain environment is using the User Configuration\Windows Settings\Folder Redirection snap-in found in Group Policy Object Editor which is not compatible with Windows XP.

Incompatibilities between V1 and V2 user profiles during a Windows migration scenario can be addressed by the User State Migration Tool (USMT) provided by Microsoft. USMT 4, which allows user state migration from Windows XP and Windows Vista to Windows 7, is included in the Windows Automated Installation Kit. The user profile migration process is done manually by running two command line programs to copy user files and settings from one Microsoft Windows computer to another. One program, named Scanstate, scans the source PC for user accounts, files and folders, Windows settings, and program data files and settings. It stores the results in a file which is then used by the second program, named Loadstate, to transfer all scan results to a target PC.

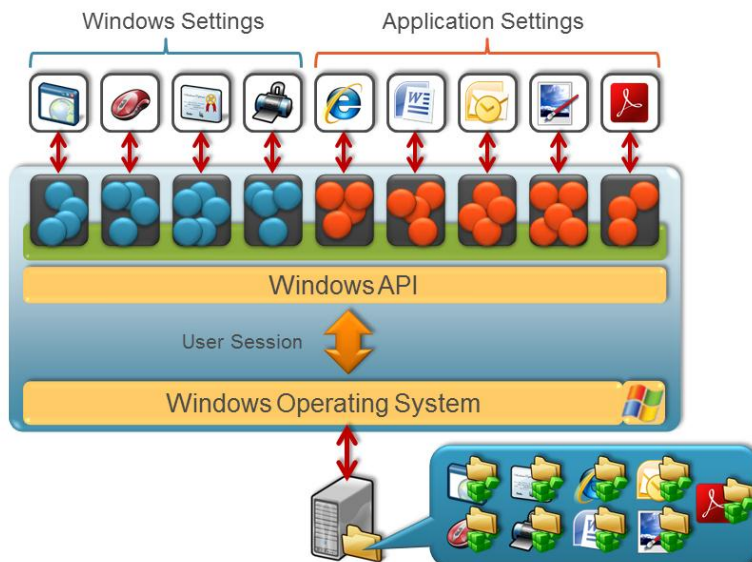
Although USMT is very powerful and even retains proper permission settings, it requires quite some pre-configuration effort using a complex syntax and preventing it from being a straight-forward solution for user profile migration. The migration process in a corporate environment is painful; it needs to be done individually on each PC involved and requires administrative privileges. In addition, USMT was never designed to transfer user profiles from Windows 7 down to Windows Vista or Windows XP which makes it incompatible to scenarios where concurrent support of multiple Windows versions is required, even though this may only be the case for a short period.

## Segment and Conquer

As said before, the need to start migrating corporate users from Windows XP to Windows 7 is only a matter of time. To make things even more complicated, many users have access to corporate and private applications through multiple physical desktops. In addition to that, remote desktops and the advent of virtual desktop infrastructures must be taken into account. As soon as the initial migration to Windows 7 is done for these platforms, Windows XP desktops hosted through Windows 7 XP Mode or Microsoft MED-V, invisible remote desktops hosting published legacy applications and client hypervisors may confront IT administrators with the fact that they still have to maintain side-by-side profile compatibility across different Windows versions. So the question is if there is a better alternative to USMT for Windows 7 migrations, also supporting Windows XP/Windows 7 side-by-side scenarios. The answer is yes, the alternative is profile segmentation, decoupling selected personal settings from the monolithic traditional user profile container.

Immidio Flex Profiles is today's most popular profile management product implementing profile segmentation. Segmented profiles work on all Windows versions that are officially supported by Microsoft, both 32 bit and 64 bit. The general idea behind this concept is using a pre-configured base profile (e.g. default, local or mandatory profile) for common base settings and store individual system or application settings in associated individual files or archives. This means that both registry and file information of application A are stored in one file while settings of application B are stored in another file, with all these application-specific archives including the segmented settings being saved to a central file share – ideally the user's home directory. The fact that profile segmentation allows the management of pre-defined sets of application settings and associated data in a

single file makes the concept so powerful. It can also be applied to sets of desktop settings, providing the option to separate printer settings from Explorer settings or wallpaper settings when saving them in individual archives.



**Figure 2: Profile segmentation, separating and decoupling sets of application and desktop settings.**

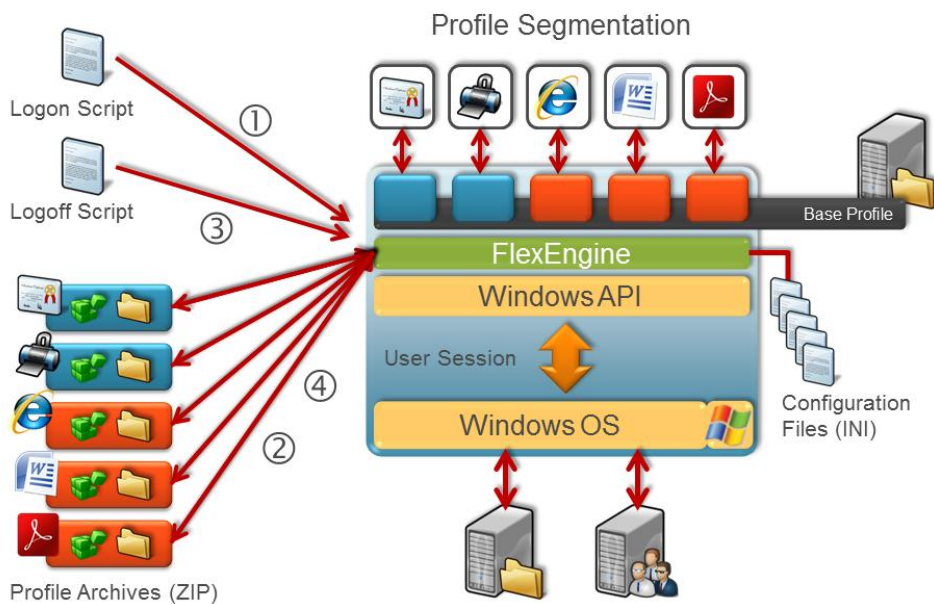
Pre-selected groups of profile segments can be stored and saved during user logon and logoff. Profile settings related to individual applications – independently if installed locally or using application virtualization – can be applied at application launch and saved at application termination. In combination, this allows full control over each user's profile, leading to minimum logon and logoff times and requiring minimum network resources.

But what's so special about Immidio Flex Profiles and profile segmentation? A short dive into the details of this concept will give you the answer to this question. The local standard profile or a pre-configured base profile is loaded the first time a user logs on to the Windows system with Immidio Flex Profiles installed. After the user has been modifying settings while working in an individualized workspace he logs off. At logoff the Immidio FlexEngine is called, a runtime component responsible for saving all user-configurable settings in a set of ZIP archive files stored in a preconfigured folder. This folder can be the user's home folder or a dedicated network share. Once the settings have been saved, the logoff process continues and the user's locally cached profile information may be discarded, while its settings are still preserved on the user's home folder.

The base profile is loaded again the next time the user logs on. Once the profile load process is finished the Immidio FlexEngine launches. It customizes (or individualizes) the user's session environment with the settings of the previous session that were saved in his home folder. These user-specific settings can be based on data stored in the registry and profile folders.

After installing Immidio Flex Profiles Advanced Edition its runtime component Immidio FlexEngine can be used immediately. In order to manage individual desktop or application-specific settings through Immidio Flex Profiles, it is necessary to create and customize a minimum set of configuration files. These configuration files reflect what files, folders or registry keys of a user's profile need to be saved or restored by Immidio Flex Profiles. Immidio Flex Profiles is shipped with the Immidio Flex Profiles Management Console which helps you when creating and maintaining configuration files that are used to control the runtime behavior of Immidio FlexEngine.

Immidio Flex Profiles not only allows the management of user-specific application settings, it also supports Windows settings influencing the user experience. In order to simplify the configuration of such settings, the Immidio Flex Profiles Management Console and Immidio FlexEngine include built-in support for common settings, controlling user-specific aspects of Windows Explorer, Internet Explorer, user desktop, printers, mouse or keyboard. It is important to note that the FlexEngine runtime component is aware of the Windows version it is running on. This makes sure that configuration settings are made at the right places in the registry and in the file system. In addition, user interface refresh cycles can be applied using the appropriate API calls required for each particular Windows version.



**Figure 3: Immidio Flex Profiles, the leading profile management solution based on profile segmentation and decoupling individual settings.**

There may be settings that need to be configured in different ways for particular versions of Windows. Wallpaper settings are a good example for this, as wallpapers have different features in Windows XP and Windows 7; Windows XP doesn't know about Aero Themes and slide shows. Immidio Flex Profiles provides the option to preserve such settings strictly within the scope of individual operating system versions. This means that wallpaper settings may be preserved with two different data sets – one for Windows XP and another for Windows 7 – while all other desktop and application settings can roam seamlessly between the two operating system versions.

If only a simple migration from Windows XP to Windows 7 is required there is also a best practice using Immidio Flex Profiles for this scenario. First use the Flex Profiles unattended installation option to roll out the Immidio FlexEngine runtime component to all Windows XP platforms that are migration candidates. You may use any standard software deployment product supporting Microsoft Installer packages for this task. The next step is to provide all necessary Flex Profiles configuration files on a network share all users have read access to. Finally use the Flex Profiles Active Directory administrative template to centrally configure FlexEngine to be executed only during logoff for the user group you want to migrate – a configuration called passive mode. Then just wait for a couple of days or weeks while ZIP files containing the segmented personal profile information are being collected in each user’s home directory. As soon as the same users want to start using a new or updated PC running Windows 7, just modify the Active Directory settings to execute FlexEngine during both logon and logoff. As a result the segmented profile information stored in each user’s set of ZIP files will be applied to the personal Windows 7 workspaces on the first logon of that particular user. From that moment on, Flex Profiles will actively start controlling that user profiles. The migration of the user profile happens without administrative intervention and completely invisible to the user. The only thing a user will notice that his personal settings from Windows XP are also available on Windows 7.

NOTE: For Immidio Flex Profiles it does not make any difference if instances of Windows XP or Windows 7 are running on physical hardware platforms or in a virtual environment, such as Microsoft Hyper-V. In addition to Windows XP and Windows 7, Immidio Flex Profiles does also work for desktops or RemoteApp programs hosted on Windows Server 2003 Terminal Services, Windows Server 2008 Terminal Services or Windows Server 2008 R2 Remote Desktop Services.

Taking all aspects described in this document into account, the migration of user profiles from Windows XP to Windows 7 only requires the introduction of Immidio Flex Profiles to a corporate Windows environment – and the mission is complete. Immidio Flex Profiles reduces the size of user profiles through integrated compression algorithms, resulting in significantly improved logon and logoff times. Compatibility between different Windows versions is provided as soon as all relevant applications and desktop settings are managed through Immidio Flex Profiles. This goes in conjunction with superior usability and simplicity as an important aspect during the initial configuration of Immidio Flex Profiles and during the Windows 7 migration phase. The graphical Immidio Flex Profiles Management Console helps administrators and IT professionals to interactively configure all necessary settings. The Immidio Flex Profiles Assistant – embedding Microsoft SysInternals Process Monitor – is the ideal product component for identifying the relevant profile information that needs to be taken into account for individual application or desktop settings. For more details, check out [www.immidio.com/flexprofiles](http://www.immidio.com/flexprofiles).