System Migration Assistant 3.1
User's Guide

Updated September 2, 2002

Note: Before using this information and the product it supports, be sure to read the Notices and Trademarks in Appendix A.

Second Edition (August 2002)

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About The User's Guide

Introduction

This guide explains the capabilities of IBM® System Migration Assistant™ 3.1. SMA is licensed and available at no charge for use on IBM client systems. You must purchase the System Installation Tool Kit to obtain a license to use SMA on non-IBM client systems.

Although one of the features of SMA is to migrate operating system settings to client computers, the terms and conditions of the IBM International Program License Agreement for SMA do not grant any license to install, copy, or use any application software or operating system software not provided with SMA. This includes, but is not limited to, Microsoft® Windows® 3.1, Windows 95, Windows 98, Windows NT®, Windows 2000 Professional, Windows 2000 Server, Windows 2000 Advanced Server, Windows XP Professional, and DOS. Always ensure that you have obtained suitable licenses for any software you intend to use with SMA.

This guide is organized as follows:

- ▶ Chapter 1, "Overview and Concepts", contains an introductory overview of the purpose and features of SMA.

- ▶ Chapter 2, "Installation", contains instructions on how to install, upgrade, and uninstall SMA.

- ▶ Chapter 3, "Performing a Migration", describes how to run a standard migration.

- ▶ Chapter 4, "Migration in Batch Mode", describes how to perform a migration in batch mode using the command line version of SMA. Also included are instructions on how to combine a standard migration with a batch mode operation.

- ▶ Chapter 5, "Advanced Administrative Topics", discusses advanced administrative tasks, such as customizing the user interface, defining new locations for output files, migrating registry settings, setting quotas, and performing a mass migration.

- ▶ Appendix A, "Notices and Trademarks", contains information on all relevant Notices and Trademarks for SMA.

- ▶ Appendix B, "File and Registry Exclusions", contains specific details on files and registry entries excluded from migration.

Note: Throughout most of the User's Guide, the term migration refers to selective migration, which is how SMA is used predominantly. A special form of migration, called mass migration, is discussed in "Performing a Mass Migration" on page 78.

Who Should Read The Guide

This guide is intended to reduce the time novice users need to run SMA successfully. In addition, system administrators can use the guide to get a thorough understanding of the full functionality. Ample documentation of the new features of SMA is provided, including detailed instructions on how to customize the user interface and run batch mode operations.

How to Use the Guide

You can use this guide to learn about the features, capabilities, interface, and concepts of SMA. You can also use this information to assess the technical skills required to implement, use, and maintain the program.

If you are new to SMA, this guide is most effective when read in the following order:

1. Review Chapter 1, "Overview and Concepts", to get a basic understanding of SMA.

2. Download the SMA program from the World Wide Web.

3. Read Chapter 2, "Installation". Then, install SMA 3.1

4. For new users it is recommended that you run standard migrations. Before you start using SMA in this manner, read Chapter 3, "Performing a Migration", to understand its functionality.

5. Once you are familiar with SMA and/or if you are comfortable using executables in batch mode, you could opt to use SMA in that manner. Read Chapter 4, "Migration in Batch Mode", to understand how to do this.

6. Once you are an experienced user of SMA, read Chapter 5, "Advanced Administrative Topics", to learn about advanced features that might help you optimize your migration process.

How to Find Your Way Around

This guide is organized in numbered chapters and sections as well as unnumbered subsections. The Table of Contents above lists the different major sections and corresponding page numbers. In the text you will frequently find references to other sections. In most cases the page number is given for your convenience. If you are viewing the guide on-line with Acrobat Reader, you will be able to go to the corresponding section by clicking the section name or the page number. In general, the Table of Contents, references to chapters and section headings in the text, references to page numbers, and references to the World Wide Web are hyperlinked. You will notice that the cursor changes when you move it above hyperlinked text.

Further Reference

In addition to this guide, there are various other sources that you can consult on SMA:

▶ The SMA home page is
  http://www.pc.ibm.com/us/eserver/xseries/systems_management/sma.html.

▶ Download the latest software downloads and ReadMe files at
  http://www.pc.ibm.com/us/eserver/xseries/systems_management/dwnl.html.

▶ Subscribe to the SMA Users Forum to discuss problems and solutions with fellow users. Please see http://www7.pc.ibm.com/~UMS/.

▶ Get technical support. Support is available for supported systems through e-mail or fee-based telephone support. Telephone support is not available in all countries. For more information about the fee-based telephone support, see http://www.ibm.com/support or http://service.software.ibm.com/supportline.html. For more information about e-mail support, please visit http://www.pc.ibm.com/qtechinfo/MIGR-4Z7HJX.html.

▶ To purchase the System Installation Tool Kit to use SMA on non-IBM client systems, please visit http://www.pc.ibm.com/us/eserver/xseries/systems_management/sitk.html.

Chapter 1. Overview and Concepts

System Migration Assistant 3.1 (SMA) is a software tool that copies (or migrates) the look and feel of one computer to another. The look and feel, also known as the user's work environment, is the way the user or company has set up various computer preferences such as desktop and network connectivity settings. SMA can also migrate files, folders, and application settings.

System Migration Assistant is valuable when upgrading an old computer to a new system. Additionally, SMA can be used to set up a standard work environment for your company quickly and efficiently. This helps reduce the time spent deploying new computers, it minimizes time spent solving problems, automates IT processes, and reduces your total cost of ownership. SMA provides significant savings in time for system administrators. The provided functionality virtually eliminates the need to physically configure each individual computer's desktop and working environment when deploying new machines.

IBM designed SMA for system administrators. However, the product can be useful for anyone who needs to migrate files and settings from one computer to another. For example, SMA can be used to migrate office PC files to a notebook.

1.1 Changes in Version 3.1

SMA 3.1 largely continues to provide the functionality offered by SMA 3.0 and introduces the following changes and additions:

- ▶ Enhanced Application Support. The ability to migrate from an older application like Internet Explorer 5 to Internet Explorer 6.
- ▶ Automatic file redirection for file conflicts in batch mode.
- ▶ Improved logging and error handling. Ability to specify verbose logging.
- ▶ Automatic reboot capability in batch mode.
- ▶ Advanced File Viewer. Ability to just view data captured in an SMA file.
- ▶ Ability to capture ODBC data sources.
- ▶ Installation Upgrade capabilities.
- ▶ Bug fixes and general improvements.
- ▶ Updated user's guide and on-line help.

▶

1.2 Supported Operating Systems

SMA can migrate a user's work environment within and across operating systems. The below table shows which migration scenarios are valid:

To → *From* ↓	Windows 98	Windows 2000 Professional	Windows 2000 Server [a]	Windows ME	Windows XP Professional [b]
Windows 95	X	X		X	X
Windows 98	X	X		X	X
Windows NT 4.0 Workstation		X	X		X
Windows NT 4.0 Server		X	X		X
Windows 2000 Professional		X	X		X
Windows 2000 Server [a]			X		X
Windows ME				X	X
Windows XP Professional					X

Notes

Migration support for a given operating system includes all levels of service pack.

a.   This includes Windows 2000 Advanced Server.

b.   Limited to the 32-bit version.

Be aware that you cannot migrate profiles between systems with different languages (for example, from an English system to a Japanese system). Also, there are a number of additional restrictions due to operating system incompatibilities. For details, see "Performing a Migration" on page 13 and beyond.

1.3 SMA Components

During a migration, SMA takes a snapshot of your work environment. It then uses the snapshot as a blueprint to duplicate your environment on one or more other computers. The computer you take a snapshot of is called the source computer. The computer you migrate the snapshot to is called the target computer. The source and target computers can be in different physical locations and/or in different time zones. Alternatively, the source and target computer can be the same computer, with SMA used to backup and restore settings and files.

SMA has the following components:

▶   **SMA.EXE**. An executable that captures a variety of settings and files on a source computer, and copies these to a profile. The same executable is also used to apply the profile to a target computer.

- ▶ **CONFIG.INI**. A configuration file used to customize the SMA.EXE executable, in particular its graphical user interface.
- ▶ **SMABAT.EXE**. A command line interface executable for use in batch mode that is functionally equivalent to SMA.EXE
- ▶ **COMMANDFILE.TXT**. A command file used to drive the capture and migrate process in batch mode.

1.4 Basic Operations

This section describes the basic procedures you are likely to run with SMA after you have installed the software. Later chapters describe this functionality in detail.

SMA migrates the work environment of one computer to another in two steps. In the first step, you tell the System Migration Assistant what to capture, and SMA copies these settings and files to a profile file. This is referred to as the capture phase. In the second step, SMA uses the profile to copy the settings and files to the target computer. This is referred to as the apply phase.

Capture Settings and Files

During the capture phase, you need to tell System Migration Assistant what to migrate on the source computer. This is the first step during any standard migration, including when it is run in batch mode. The following settings can be captured:

- ▶ **Desktop settings**. Examples are the active desktop, colors, desktop icons, display, icon font, pattern, screen saver, wallpaper, and window metrics.
- ▶ **Printer settings.** This includes local and network printer settings.
- ▶ **Network Settings.** Examples are the computer description, computer name, TCP/IP configuration, mapped drives, dial-up networking settings, and shared folders and drives.
- ▶ **Application Settings.** You can migrate customization and configuration settings of various supported applications.
- ▶ **Files.** You can capture any number of files. These can be copied to the same location on the target computer or relocated to a different directory.
- ▶ **User Profiles.** You can select both local and network user profiles.

Apply Settings and Files

During the apply phase, SMA copies the profile to the target computer. You can apply the entire profile or deselect components of the profile before copying it. This is the second step during any standard migration, including when it is run in batch mode.

Chapter 2. Installation

This chapter describes how to install and uninstall SMA 3.1, and how to upgrade from SMA 2.2 or 3.0.

2.1 System Requirements

The following requirements apply to both source and target computers unless noted otherwise:

- ▶ A supported Windows operating system must be installed.

- ▶ There must be about 10 MB hard drive space to install SMA. In addition, there must be adequate drive space for temporary variables. In most cases, 30 MB of temporary drive space will suffice.

- ▶ In general, interconnectivity between target and source computer is assumed. In particular, the target computer should have access to the profile file on the source computer. However, it is also possible to copy a SMA profile onto a removable medium, such as a Zip Drive, and to apply the profile to a target computer that is either stand-alone or a client of a network that cannot be connected to from the source computer.

- ▶ (For source computers only.) Adequate space to store profiles. The size of a profile depends on the amount of settings and data you are migrating. For FAT32 systems the maximum size is 4GB.

Note: In the above description the assumption is made that SMA is installed on both the source computer and the target computer, and is run locally. However, it is also possible to install SMA on a server and to run it remotely.

2.2 Upgrading from SMA 2.2 or 3.0

SMA 3.1 can now upgrade over previous versions of SMA. You no longer have to uninstall the previous versions first.

2.3 Installing SMA 3.1

To install SMA, follow these steps:

1. For Windows NT 4.0 Workstation, Windows NT 4.0 Server, Windows 2000 Professional, Windows 2000 Server, Windows 2000 Advanced Server, or Windows XP Professional, log on to your computer as the administrator or as a user with local administrative rights.

2. Download the appropriate version of the SMA compressed file from http://www.pc.ibm.com/us/eserver/xseries/systems_management/dwnl.html. Please follow the instructions on the web page to download this file.

3. Run the **SMAsetup_<lang>.EXE** program that you downloaded from the Internet, where <lang> stands for the language variation you are using. For instance, the English version of the executable is **SMAsetup_en.exe**.

4. The SMA Installation program will begin and the Welcome screen will be displayed. Click **Next** to continue with the setup program or **Cancel** to exit the program.
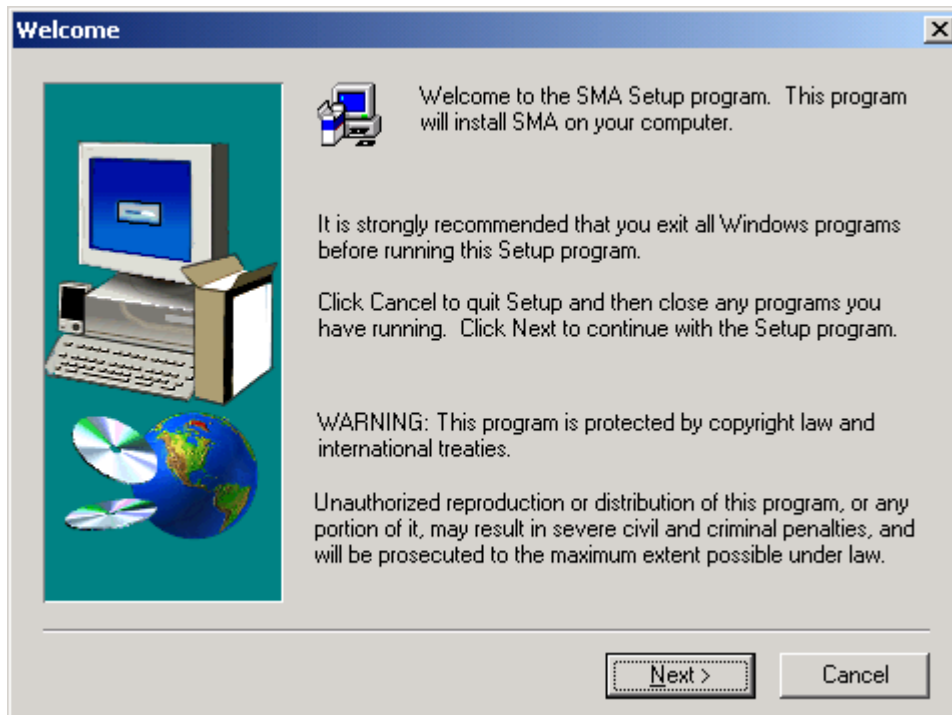
5. Choose where you want the program to be installed. Click **Next** to accept the default or **Browse** to select a different location.
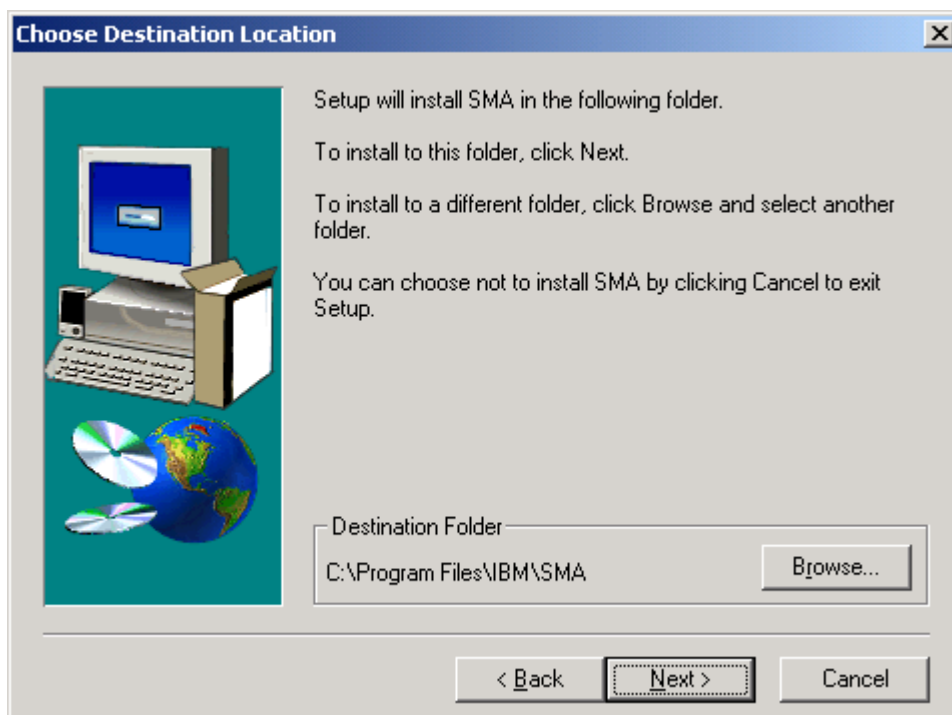
6. Select the name of the SMA program folder. Click **Next** to accept the default or change the Program Folder name before proceeding.
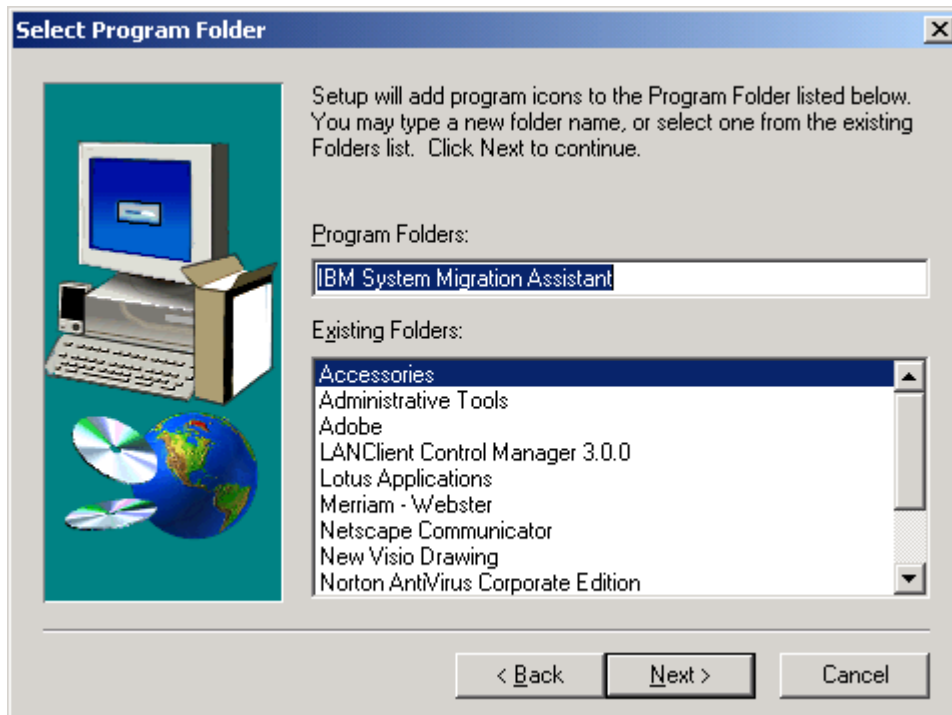
7. For Windows 95, Windows NT 4.0, no Service Pack, Server, and Windows NT 4.0, no Service Pack, Workstation, you will need an updated version of comctl32.dll. The install program automatically notifies you before installing the update. Follow the default selections to install the update.
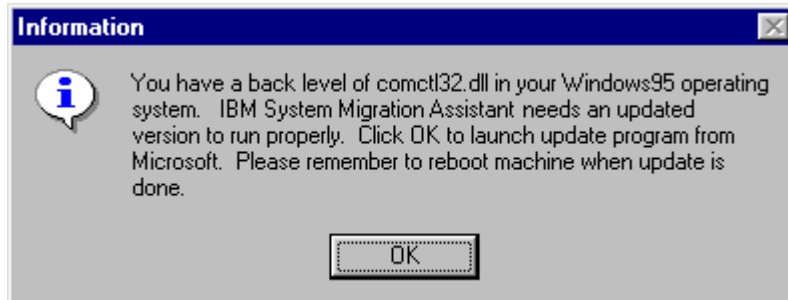
8. The installation program will indicate when it has finished. It may prompt you to reboot the system.
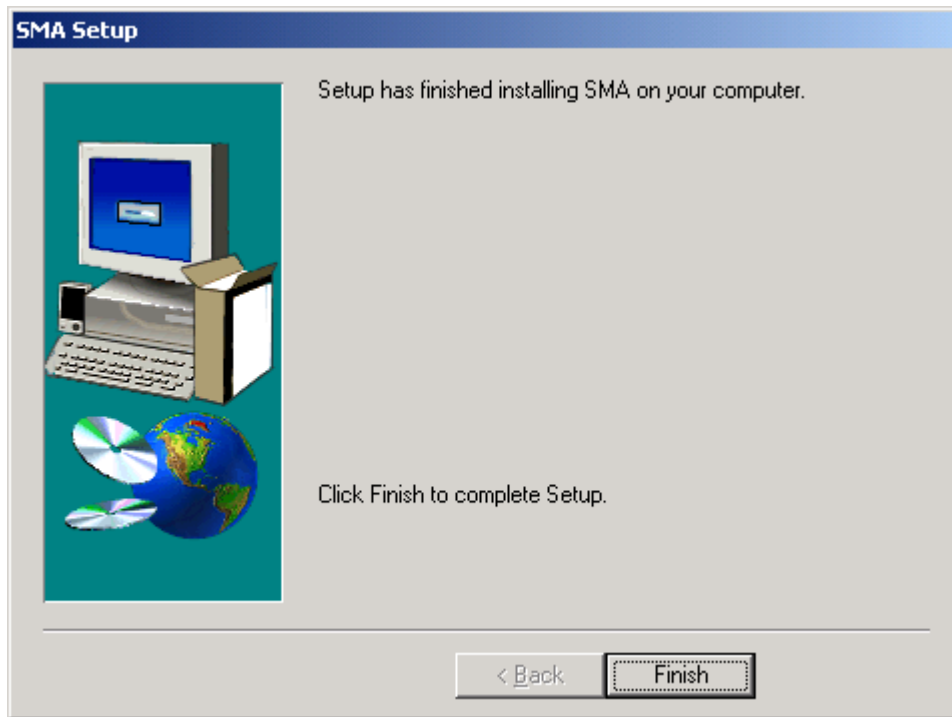
2.4 Uninstalling SMA

The following procedure permanently removes the SMA program files:

1. From the Windows Desktop, click the **Start** button.

2. Select **Settings**.

3. Select **Control Panel**.

4. Select **Add/Remove Programs**.

5. Select **IBM System Migration Assistant 3.1**.

6. Click the **Change/Remove** button.

7. Click **Yes** to confirm your intention to remove SMA. Uninstall will now start.
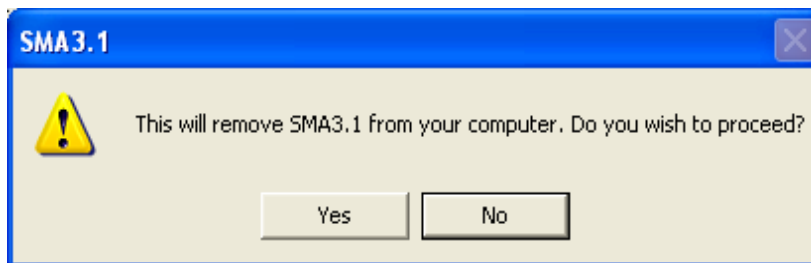
8. During uninstalling, you might be asked whether you want to remove unused shared files. Click any button depending on your preference.

9. When Uninstall has completed, click the **OK** button to exit.

Uninstalling SMA will not delete all files. If desired, you will need to delete the following files manually:

▶ SMA log files generated whenever SMA is run. These files are located at the root of the C: drive unless you changed the default copy location. For a standard migration, the default location can be changed in the config.ini file. When a migration is run in batch mode, the location can be changed in the command file. See "Customizing the Standard Migration" on page 67 for more information on config.ini and "Migration in Batch Mode" on page 57 for more information on the command file.

▶ Temporary files specific to SMA. These are located in the `C:\sma\tmp` directory unless you changed the default location of these files in the config.ini and/or command file.

▶ SMA profiles files (i.e. files with an .sma extension).

2.5 Performing a Silent Install

To run a silent install of SMA, follow these steps:

1. For Windows NT 4.0 Workstation, Windows NT 4.0 Server, Windows 2000 Professional, Windows 2000 Server, Windows 2000 Advanced Server, or Windows XP Professional, log on to your computer as the administrator or as a user with local administrative rights.

2. Download the appropriate version of the SMA compressed file from http://www.pc.ibm.com/us/software/sysmgmt/products/sma/download.html. Please follow the instructions on the web page to download this file.

3. Make sure there are no other setup programs running.

4. Launch the **SMAsetup_<lang>.EXE** program that you downloaded from the Internet, where <lang> stands for the language variation you are using. For instance, the English version of the executable is **SMAsetup_en.exe**.

5. Wait until you see the welcome screen. Then minimize the SMA setup screen, or bring up the command or Explorer window without exiting SMA setup.
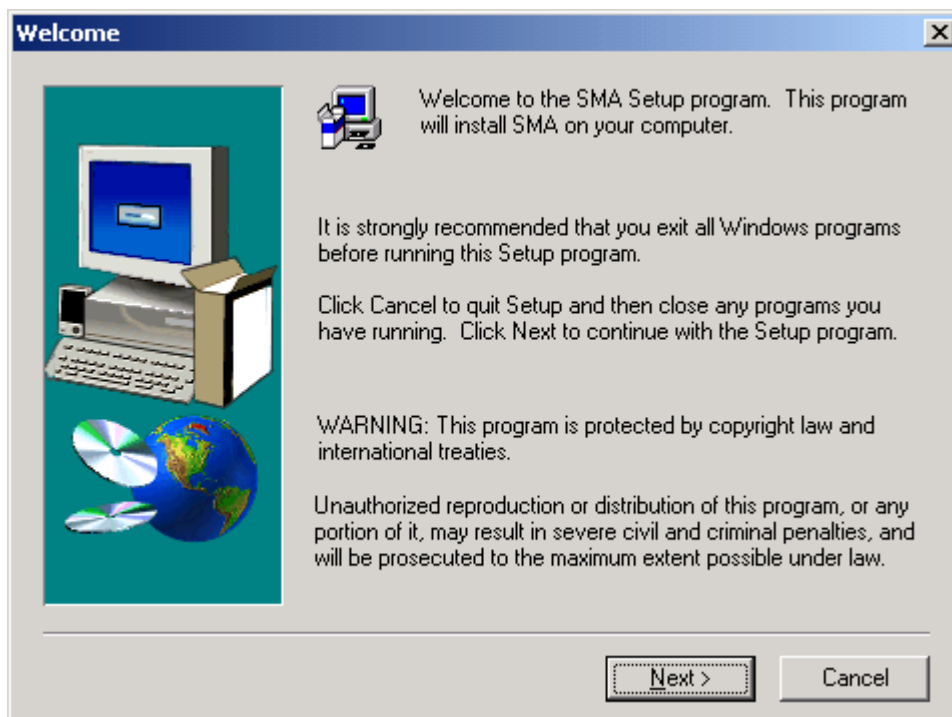
6. Locate the `pft*~tmp` folder, where '`*`' stands for one or more random characters. If you're running Windows 95, Windows 98, or Windows ME, you will find this directory in the `C:\Windows\TEMP` directory. On Windows NT 4.0 Workstation or Windows NT 4.0 Server, you will find this directory in the `C:\Temp` directory. On Windows 2000 Professional, Windows 2000 Server, Windows 2000 Advanced Server, or Windows XP Professional, you will find it in the `C:\Document and Settings\<user name>\Local Settings\Temp\ directory`.

7. Copy the folder to the location where you want to keep the install files and rename it if you wish to do so. Then cancel SMA InstallShield setup.

8. From the command line, run `setup -r` on a system which has the same configuration as the system for which you are creating the silent install. The executable setup.exe is located in the setup directory you just copied. This will create an InstallShield response file named setup.iss in the `C:\windows` or `C:\winnt` directory (depending on your operating system). For more information on the setup command, see various articles on silent installation at http://support.installshield.com/.

9. Now you are ready to install SMA in silent mode. To do so, copy the setup.iss file to the setup directory and from the command line run `setup -s -SMS`. Alternatively, you can run `setup.exe -s -SMS -f1<path>\setup.iss`, where the `f1` parameter denotes the location of setup.iss file.

10. When the install has completed, open the setup.log file located in the setup directory and locate the `ResultCode` variable in the `[ResponseResult]` field. If `Resultcode = 0`, the installation completed successfully. Common error values are `-3`, Required data not found in SETUP.ISS file, `-5`, File does not exist, `-8`, Invalid path to the InstallShield response file, and `-12`, dialogs are out of order.

Chapter 3. Performing a Migration

System Migration Assistant migrates the custom working environment of one computer to another in two phases. During the capture phase, you tell SMA what settings and files to copy on the source computer. During the apply phase, SMA copies these settings and files to a target computer. This chapter describes how to run these steps during a standard migration. Migration in batch mode is described in the next chapter.

Note: Before you run SMA, please make sure to exit all other applications first. Other applications might interfere with the operations that SMA is trying to perform.

3.1 Logon Considerations

SMA is run by two different kinds of users with different goals in mind. Administrators typically use the program either to replicate (nearly) all the settings of a system or to set up a standard working environment. Regular users (without administrative rights) typically run the program to migrate their desktop and application settings as well as files to another machine.

If you are an administrator or a user with administrative rights, you can use the full functionality of SMA. For Windows NT 4.0 Workstation, Windows NT 4.0 Server, Windows 2000 Professional, Windows 2000 Server, Windows 2000 Advanced Server, and Windows 2000 XP Professional, you will need administrative rights to use the full functionality. If you are not working with one of these operating systems and/or if you are a regular user and use SMA to migrate your desktop settings, application settings, and files, you can do so successfully without needing administrative rights to your computer.

For the abovementioned operating systems, you must have administrator privileges to capture the following settings:

- ▶ Computer name.
- ▶ Computer description.
- ▶ Shared folders and drives.
- ▶ TCP/IP configuration.
- ▶ Workgroup/Domain.

Similarly, you must have administrator privileges to capture and apply these settings:

- ▶ NTFS file permissions.
- ▶ Registry settings.
- ▶ User profiles.

3.2 Capturing Settings and Files

The profile file is the basis of a migration and is the main output of the capture phase. The profile contains all the settings and files to be applied to one or more target computers. During the capture phase you specify which settings and files you want to migrate.

Before you select the settings on your source computer, please make sure that all to-be-captured settings are correct. If you are new to SMA and are capturing for the first time, please read the rest of this section to see which settings can be captured. Please be aware that general migration scenarios and restrictions apply as described in "Supported Operating Systems" on page 4. That is, not all migration scenarios across operating systems are supported, and across language migrations are never supported.

The screenshots on the following pages reflect the options that are available in the default configuration of SMA. It is possible that your administrator made changes to the user interface. Alternatively, you might want to configure the user interface for future use. For details, see "Customizing the Standard Migration" on page 67.

To start the **SMA.EXE** program on the source computer:

1. Make sure you are logged on as the appropriate user.

2. From the Windows Desktop, click the **Start** button.

3. Select **Programs**.

4. Select **IBM System Migration Assistant**.

5. Select **System Migration Assistant**.

The next pages describe the various screens that guide you through the capture process.

System Migration Assistant
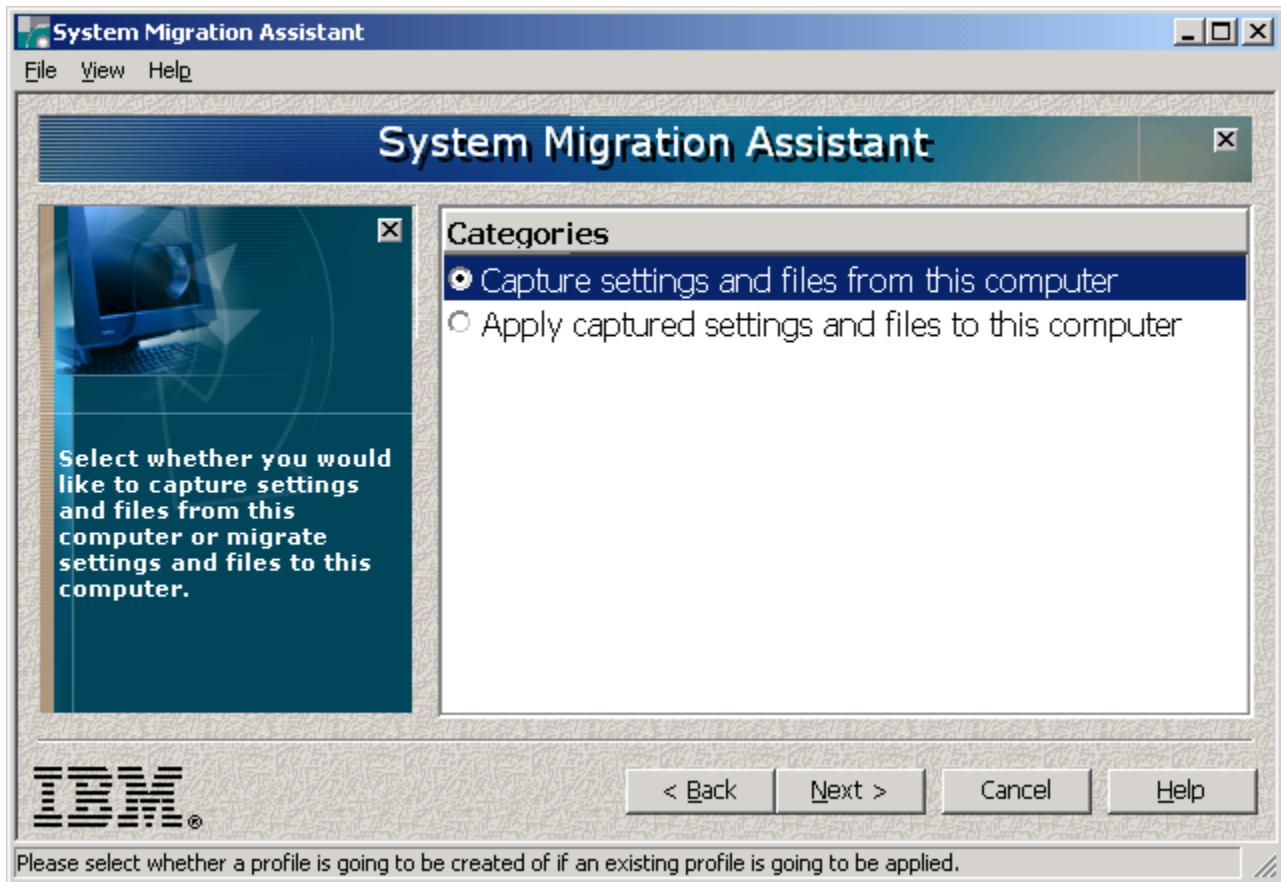
Click **Next** to start capturing settings and files from the source computer. If at any point you want to cancel SMA, you can click the **Cancel** button on the active window. For more details on how to use the **Apply captured settings and files to this computer** option, see "Applying Settings and Files" on page 36.
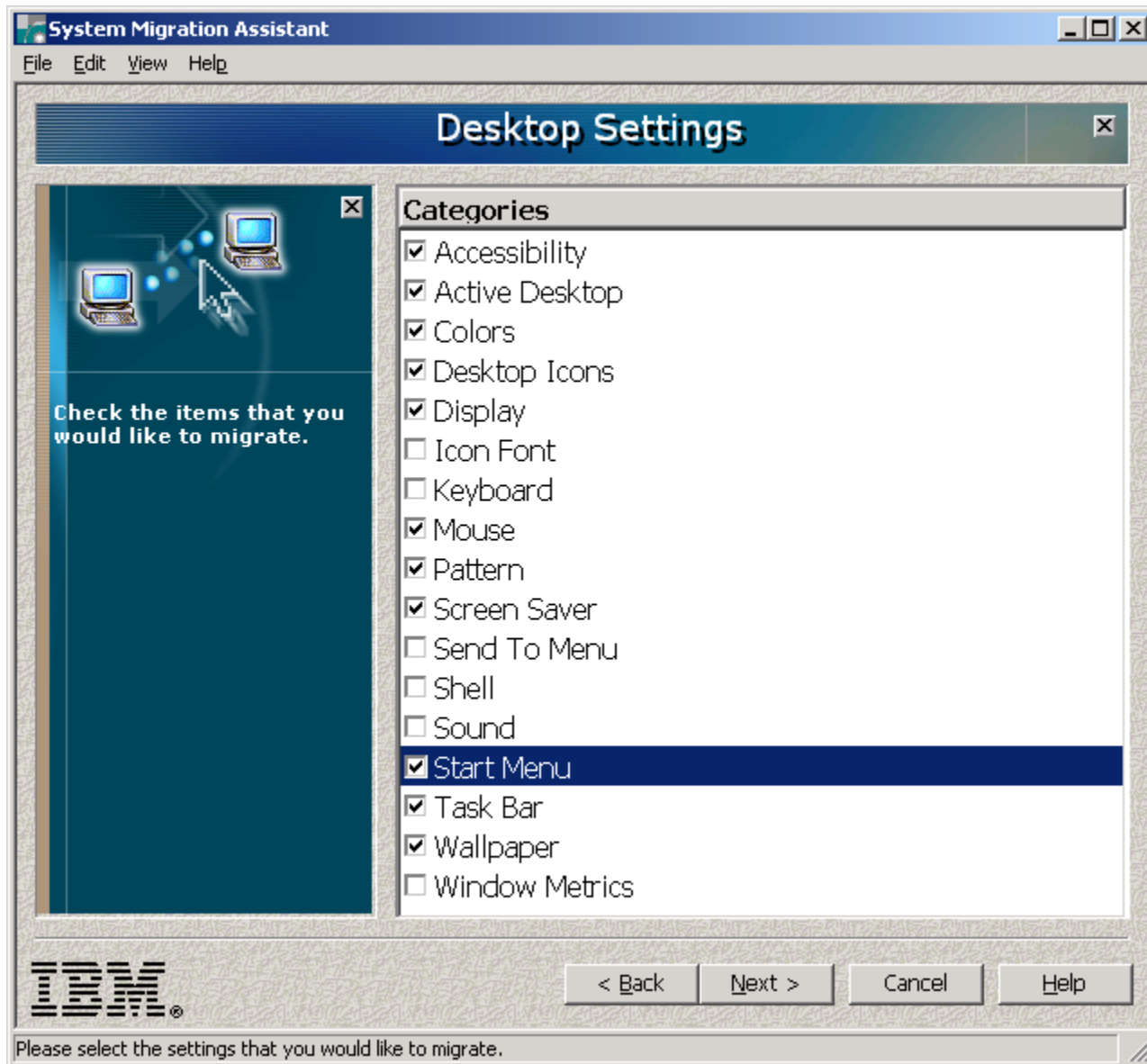
Migration Options

Check the categories that you would like to migrate. You can select any number of categories but you must make at least one selection.

For each category that you choose to migrate, you will see a window that allows you to select individual settings.

When you have made your selection, click **Next** to continue.

Desktop Settings

Note: This window will only appear if you checked the **Desktop** option on the **Migration Options** window.

Select individual settings or use the "Check All" and "Check None" options on the Edit menu to (de)select all settings. The following desktop settings can be migrated:

► **Accessibility**. Captures the accessibility settings for keyboard, sound, mouse, as well as general accessibility settings.

► **Active Desktop**. Captures the active state.

► **Colors**. Desktop color and window colors.

► **Desktop Icons**. All desktop contents including folders and files shortcuts, icons, and icon positions.

► **Display**. Desktop width, height, and color depth.

► **Icon Font**. Captures the icon font.

- ▶ **Keyboard**. Keyboard repeat rate, cursor blink rate, and delay.

- ▶ **Mouse**. Left or right handed mouse settings, speed, and double-click time.

- ▶ **Pattern**. Desktop pattern.

- ▶ **Screen Saver**. Current screen saver settings.

- ▶ **Send To Menu**. Send To menu settings.

- ▶ **Shell**. View sort order, view type (larger icon, small icon), show/hide status bar/toolbar.

- ▶ **Sound**. Sound settings.

- ▶ **Start Menu**. Start menu commands.

- ▶ **Task Bar**. Docking edge, size, always-on-top, auto hide, show clock, show small icons in Start menu.

- ▶ **Wallpaper**. Desktop wallpaper.

- ▶ **Window Metrics**. Spacing and arrangement order of minimized windows, message dialog font, menu size, scroll bar sizes.

The following migration restrictions apply to the desktop settings:

- ▶ **Accessibility**. If you migrate from Windows 95 or Windows 98 to Windows NT 4.0 Server, Windows NT 4.0 Workstation, Windows 2000 Professional, Windows 2000 Server, or Windows 2000 Advanced Server, you cannot migrate the ShowSounds, SoundSentry, and Stickykeys settings.

- ▶ **Active Desktop**. If you plan to migrate the Active Desktop including the wallpaper, you must also select the wallpaper setting. Active Desktop is not supported for Windows XP Professional.

- ▶ **Pattern**. Patterns settings cannot be migrated from any operating system to a computer running Windows XP Professional.

- ▶ **Screen Saver**. You cannot migrate the screen saver if you migrate from Windows 95 to Windows NT 4.0 Workstation or Windows 2000 Professional. Similarly, you cannot migrate the screen saver if you migrate from Windows 98 to Windows 2000 Professional.

- ▶ **Shell**. In order for the Windows Explorer shell settings to migrate properly, you must migrate both your shell desktop settings and the Microsoft Internet Explorer application settings. If Windows XP is the target system, the folder view settings (Large Icons, Tiles, Details, etc.) fail to migrate.

- ▶ **Sound**. In order to migrate sounds, you must have at least one sound selected in the Sounds and Multimedia window located in the Control Panel. If you opted to use no sounds, for instance by selecting the "No Sounds" Scheme in this window, these settings will not migrate successfully. In addition, sound files (i.e. .WAV files) are not migrated when you select the sound option. In most cases this will not cause problems as the operating systems use many of the same sound schemes. However, if you use custom created sounds or are using a sound scheme not known on the other operating system, you will need to migrate the sound files also. For details on file capture, see page 24.

- ▶ **Taskbar**. If you migrate to a target computer running Windows ME or Windows XP Professional, the taskbar location will not be applied.

- ▶ **Wallpaper**. If you migrate a wallpaper file that is of .jpg type the Active Desktop setting must be captured in source in order to activate it on the desktop. Please note: it is not necessary to capture the Active desktop setting when migrating wallpaper that is of .bmp file type.

- ▶ **Desktop Icons**. When migrating desktop icons from Windows 95 to Windows 98/SE, you may need to auto arrange to line up icons properly on the target machine.

Settings for Applications
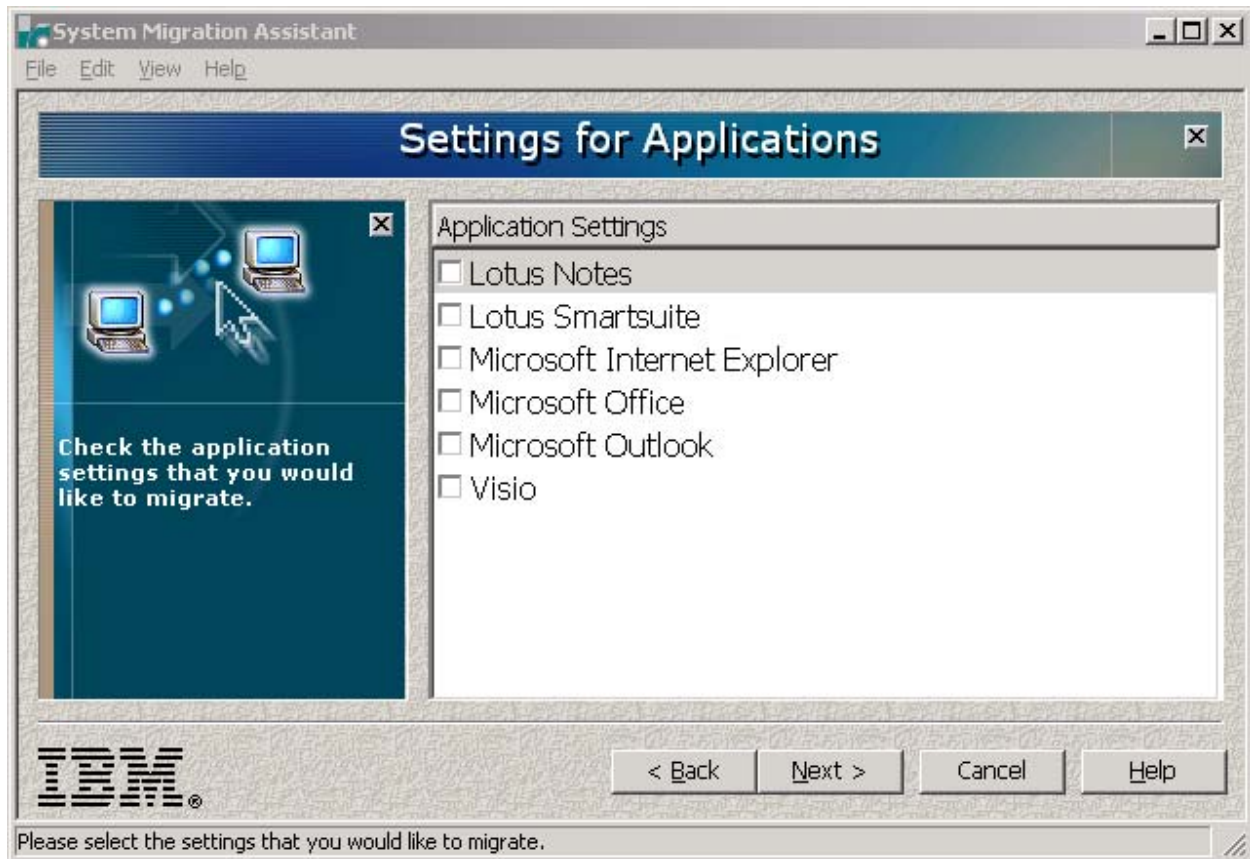
Note: This window will only appear if you checked the **Application Settings** option on the **Migration Options** window.

By default, SMA supports the migration of the customization and configuration settings of the following applications:

► Lotus® Notes® 4 and 5.

► Lotus SmartSuite™ Millennium Edition.

► Microsoft Office 97, 2000 and XP

► Microsoft Outlook 98, 2000, and XP.

► Microsoft Internet Explorer 4, 5, and 6.

► Netscape Navigator 6.

► AT&T Net Client 4 and 5.

► Microsoft Visio 2000 and 2002

► Microsoft Project 2000

For Internet Explorer and Netscape Navigator, the customizations that the user has made to the browser are migrated. These include Bookmarks, Cookies, Favorites, History Folder, and AutoComplete. Similarly for the other applications, all customizations are captured that will enable the same look and feel on the target computer. This includes the address book and locally stored email for Lotus Notes and Microsoft

Outlook, but does not include separate data files such as spreadsheets and word documents in Microsoft Office 2000. Also note that the application itself is not migrated.

The following migration restrictions apply to the application settings:

▶ One of the application settings that can be migrated is the most recently used files (or, history of files). In order for this setting to work, you must also migrate the corresponding files and place them in the same directory path on the target computer as on the source computer (see page 24).

▶ SMA does not create Netscape Navigator user profiles on the target machine when applying the applications settings of Netscape Navigator. These user profiles must be created prior to running the apply phase on the target computer. Make sure that the profile path for the user on the target computer is identical to the path of the corresponding user on the source computer.

▶ The data corresponding to the SmartCenter Drawers in Lotus SmartSuite – such as the data for the address book, calendar, and reminders – will only be captured and migrated successfully if they are stored in the default location on the source computer.

▶ For Internet Explorer, the status bar settings fail to migrate.

▶ Some applications do not support cross-version migration. Most settings will not transfer in the following scenarios:

    a. Office 97 to Office 2000/XP (no settings migrate)

    b. Office 2000 to Office XP (partial settings migrate)

    c. Visio 2000 to Visio 2002 (partial settings migrate)

    d. AT&T Net Client 4 to AT&T Net Client 5 (no settings migrate)

    e. Lotus Notes 4 to Lotus Notes 5 (partial settings migrate)

    f. Outlook 98 to Outlook 2000/XP (partial settings migrate)

    g. Outlook 2000 to Outlook XP (partial settings migrate)

    Note: For Outlook, most key settings (mail file, address book, etc.) do migrate successfully.

IBM plans to continually expand the list of applications whose settings can be migrated. To check for additional supported applications and to download the appropriate updates to SMA, check the SMA home page regularly at http://www.pc.ibm.com/us/eserver/xseries/systems_management/sma.html. Furthermore, individual end users can expand the list of applications whose settings SMA can migrate in their environment. For details, see "Migrating Additional Application Settings" on page 73. This functionality is recommended for advanced users only.

Settings for Printers
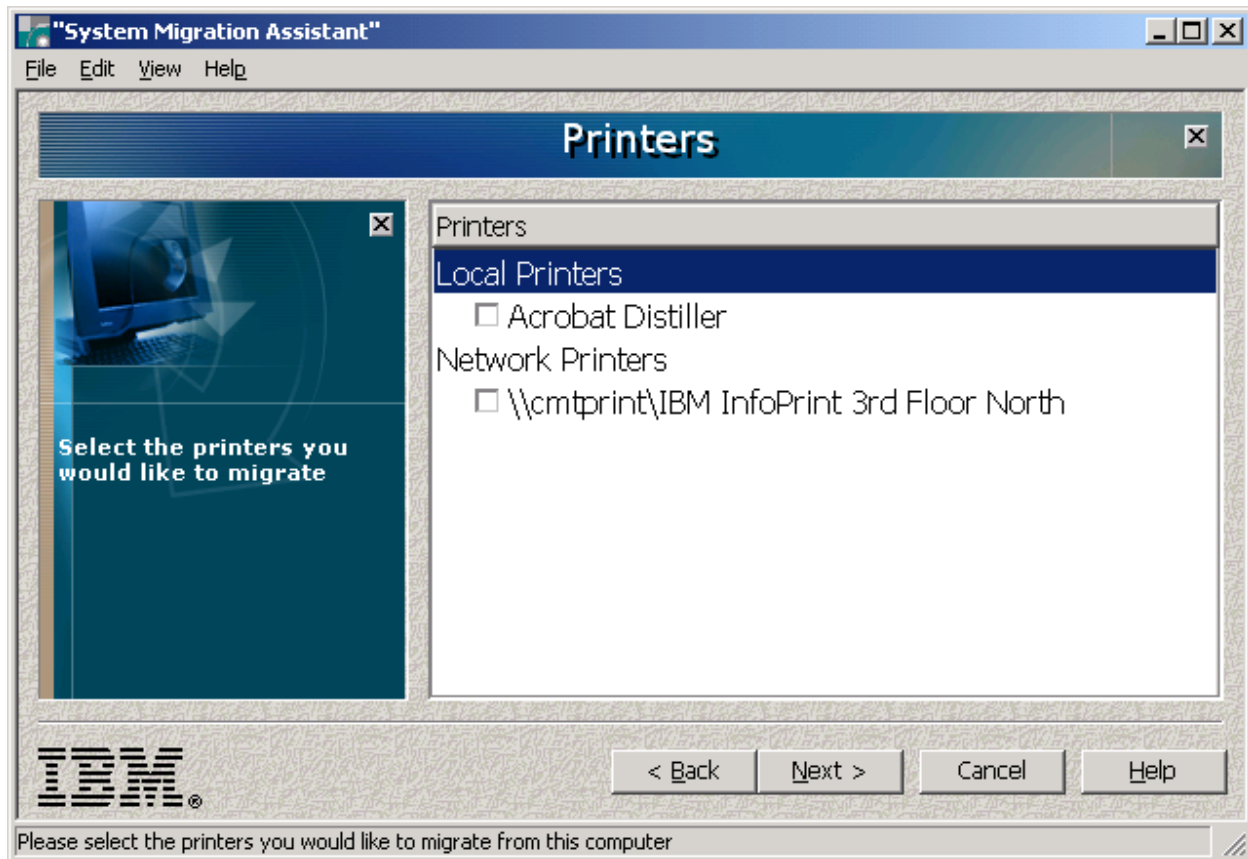
Note: This window will only appear if you checked the **Printers** option on the **Migration Options** window.

Select the printers that you want to migrate. SMA will migrate the printer links and their drivers.

SMA does not support the migration of local printers from a source computer running a different operating system than the target. Network printers, however, are supported when migrating to a different operating system.
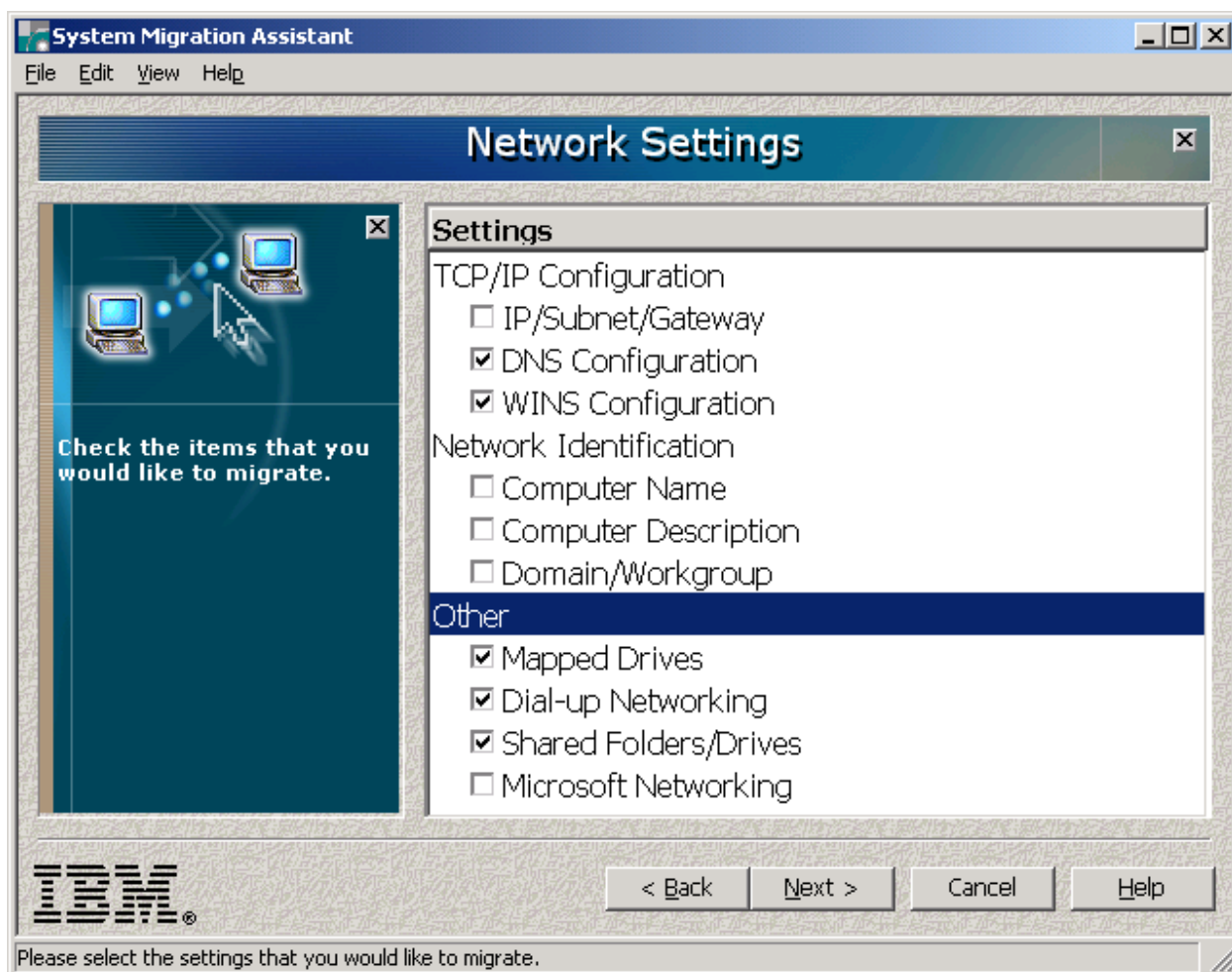
Network Settings

Note: This window will only appear if you checked the **Network** option on the **Migration Options** window.

Select individual settings or use the "Check All" and "Check None" options on the Edit menu to (de)select all settings. The network settings you can capture are:

► TCP/IP Configuration:

  ▪ **IP/Subnet/Gateway**. IP address, subnet mask, and default gateway.

  ▪ **DNS Configuration**. You can migrate the Domain Name Server search order, domain suffix search order, and Host Domain.

  ▪ **WINS Configuration**. Windows Internet Name Service configuration.

► Network Identification:

  ▪ **Computer Name**. Network Computer Name.

  ▪ **Computer Description**.

  ▪ **Domain/Workgroup name**.

► **Other**:

  ▪ **Mapped Drives**.

- **Dial-up networking**. Remote Access Services configuration phone book entries for Dial-up networking.

- **Shared Folders/Drives**.

- **Microsoft Network**. Client for Microsoft Network settings are available only on Windows 95 and Windows 98 systems and can therefore only be migrated across these operating systems. Also, the target machine must have Client for Microsoft Network installed prior to applying these migration settings. The following Client for Microsoft Network settings are captured:

  - Primary Network Logon. *Windows Logon or Client for Microsoft Network Logon.*

  - Logon Options. *Quick logon or logon after restoring network connections.*

  - Logon Validation. *When logging on to an NT Domain.*

  - Domain Name. *The domain that validates the logon.*

  - Access Control. *Share-level access or User-level access.*

- **ODBC Data Sources**. ODBC data sources. Migrates any user defined ODBC data source definitions, but not the database files themselves.

The following migration restrictions apply to the network settings:

▶ If the source machine's TCP/IP configuration is set to obtain an IP address automatically, you can capture this by selecting the **IP/Subnet/Gateway** option. Applying these settings on a target computer will activate DHCP. You have the option of deselecting this option during the apply phase, but you can never edit the related network settings on the "Editable Network Settings" page (see page 43). The corresponding fields will be grayed out.

▶ If the source machine's TCP/IP configuration is set to static IP addresses, you can edit the TCP/IP address, subnet mask, and default gateway during the apply phase. (For details, see "Editable Network Settings" on page 43.) The TCP/IP address as well as the network computer name must be unique on the network and are thus likely candidates for editing. In order to edit these settings during apply, you must capture the settings here.

▶ If your source machine is a member of a domain and you want your target machine to be a member of the same domain, you must first create a new computer account for the target machine on the domain. If there's already an account for that machine on the domain, you must recreate the account. For Windows 2000 Server and Windows 2000 Advanced Server systems, make sure to check the "Allow pre-Windows 2000 computers to use this account" checkbox if this situation applies.

▶ If you are migrating a PerSys profile on a dual-home target system, SMA will only migrate the network settings of the first network card.

▶ SMA will not migrate network adapter settings or any other hardware settings.

File Selection – Hierarchy Tab
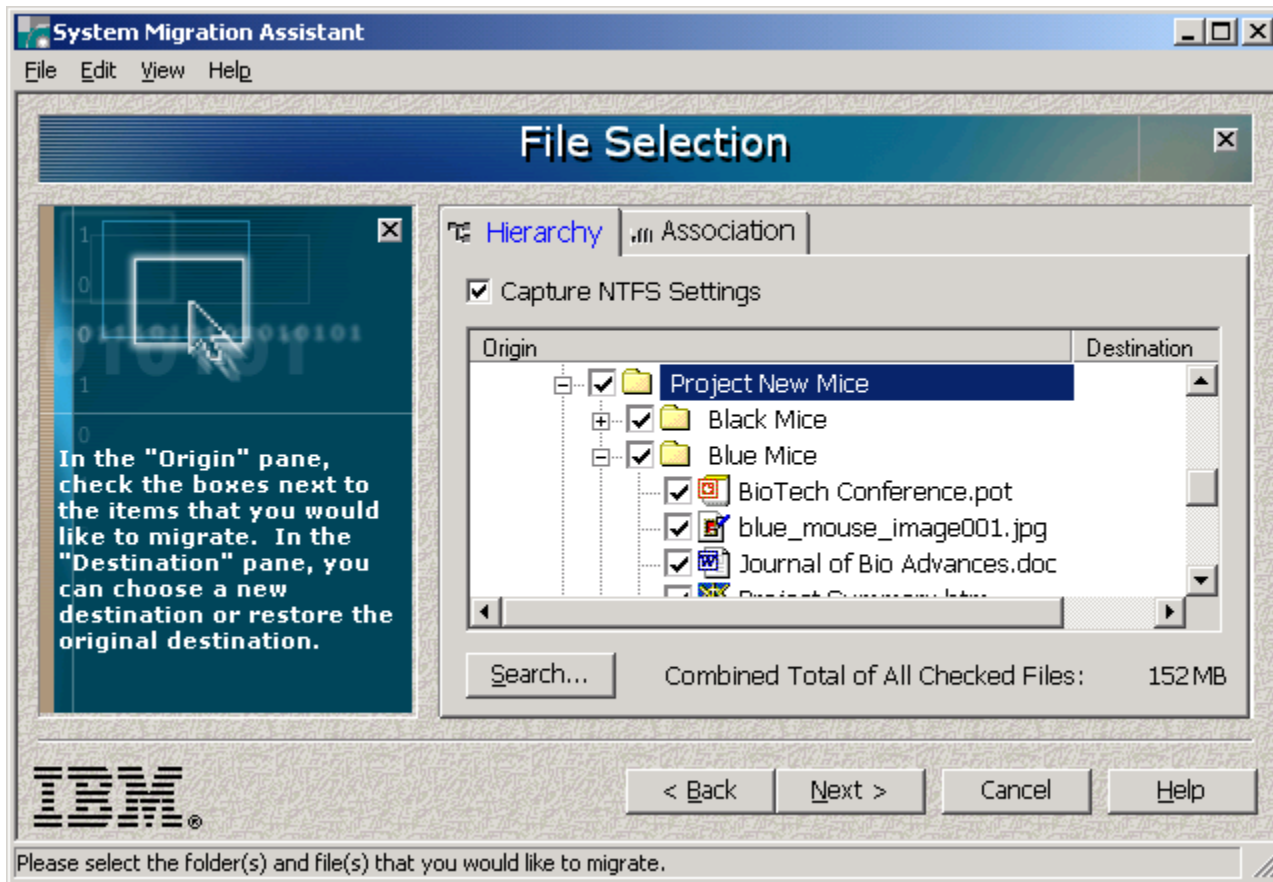
Note: This window will only appear if you checked the **Files and Folders** option on the **Migration Options** window.

The hard drive(s) on the source machine need(s) to be scanned before this window can become fully available. While SMA is scanning, a message window pops up indicating the scanning status. Please wait until this process has finished.

In the **File Selection** window, you can transfer any selection of files and folders. If you check a folder for migration, its entire contents are selected including files and the content of subfolders. If applicable, the "Capture NTFS Settings" checkbox will be present. The NTFS settings will be captured unless you uncheck this box.

As you select files or folders, you may receive the following message:
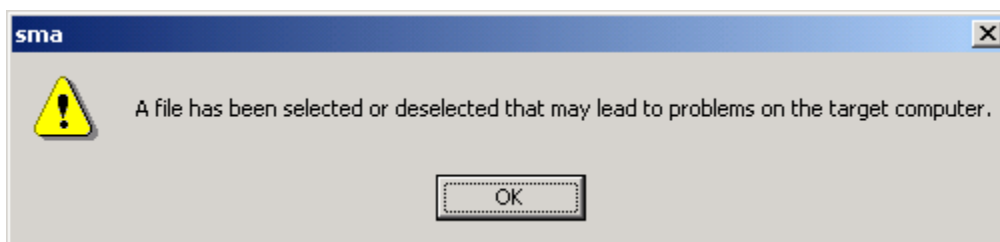
This message appears when you select a file that might cause migration problems. In the default setup, SMA will display this warning when an application-related file with a .dll, .exe, or .com extension is selected. (For details on how to configure this setup, see "Customizing the Standard Migration" on page

67.) If you select application-related files, the corresponding application is unlikely to function properly on the target machines, because SMA will not adjust the corresponding Windows registry entries. If you are unsure about the nature of the application, it is recommended that you install the application on the target computer rather than migrating it from the source computer. If you are certain that the application will function without requiring registry entries, you can ignore the warning and migrate the application files.

IMPORTANT: Do not migrate Windows operating system files from a source to a target computer. This is likely to cause severe malfunction of the target computer. You must have the Windows operating system installed on the target system before using System Migration Assistant.

For this reason it is strongly recommended that you do not select the entire contents of the `C:` drive, as this will select all files, including all operating system files. To easily install and maintain operating systems as well as install additional applications, IBM recommends LANClient Control Manager. For more information, see http://www.pc.ibm.com/us/desktop/lccm/index.html.

Notice that if your source computer does not have the same disk drive layout as the target computer, you may need to plan an alternate destination for files and folders. Changing location is described next.

Note: The "My Documents" folder is not known in Windows NT 4.0 Server and Windows NT 4.0 Workstation. Therefore, if you plan to migrate the contents of the "My Documents" folder from a source computer to a target system running either of these operating systems, you must redirect this folder. You cannot use the "My Documents" redirection option described below for these target systems.

File Selection – Redirect Files
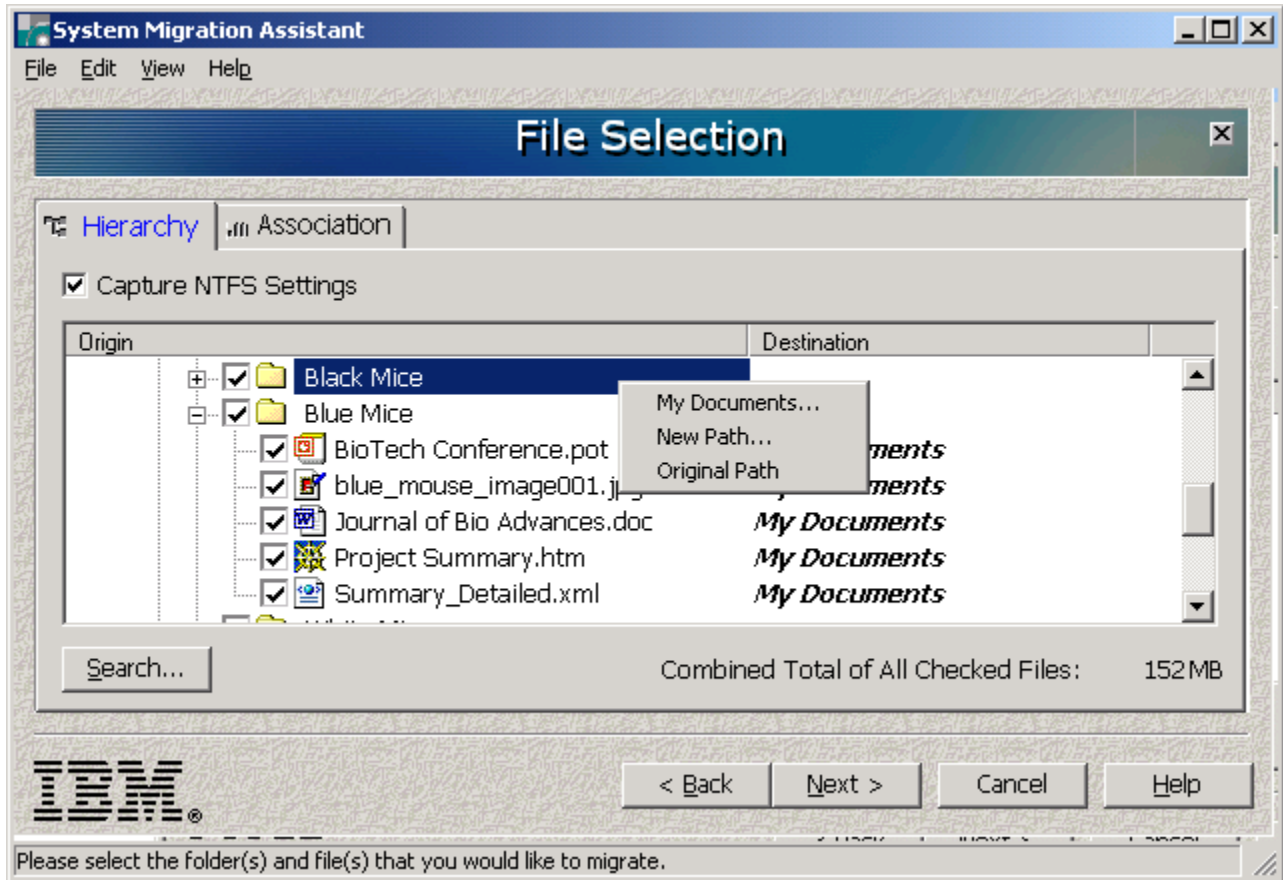
To redirect an individual file, check the file, right-click the name (or type shift-F10), and choose one of the options in the pop-up window (see below). To redirect all files in a folder, check the folder, right-click the name, and choose one of the options in the pop-up window. All files in this folder and included subfolders will be relocated according to the option you choose, and the new location will appear in bold italics in the destination field of the to-be-relocated files (but not folders).

When you right-click a selected file or folder, a window will pop up with three options:

▶ **My Documents...** If you select this option, a new window will appear providing three options:
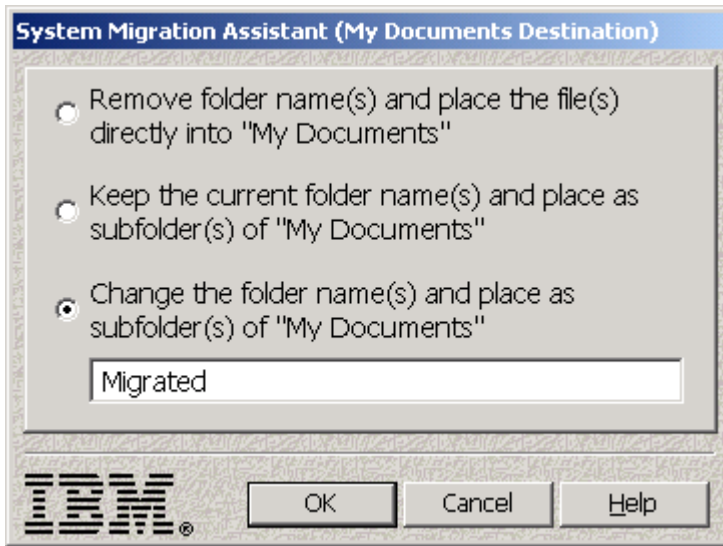
- **Remove folder name(s) and place the file(s) directly into "My Documents"**. The file will be copied directly to the "My Documents" folder.

  Example:

  ```
  C:\MyDir\sample.txt          ⟶      My Documents\sample.txt

  C:\MyDir\SubDir\abc.doc       ⟶      My Documents\abc.doc
  ```

- **Keep the current folder name(s) and place as subfolder(s) of "My Documents"**. The file's original path will be preserved when the file is copied to the "My Documents" folder.

  Example:

  ```
  C:\MyDir\sample.txt          ⟶      My Documents\MyDir\sample.txt

  C:\MyDir\SubDir\abc.doc       ⟶      My Documents\MyDir\Subdir\abc.doc
  ```

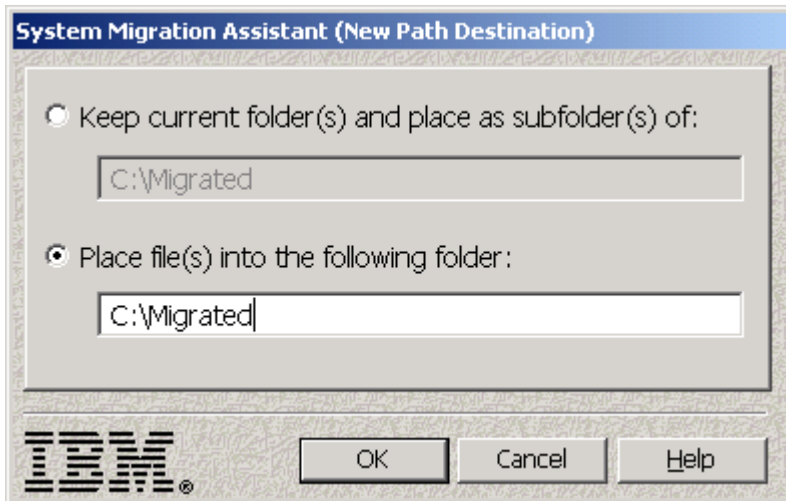- **Change the folder name(s) and place as subfolder(s) of "My Documents"**. The file will be copied directly to a subfolder in "My Documents". You must enter the name of this subfolder in the field below the corresponding radio button.

  Example:

  ```
  C:\MyDir\sample.txt          ⟶      My Documents\Migrated\sample.txt

  C:\MyDir\SubDir\abc.doc       ⟶      My Documents\Migrated\abc.doc
  ```

► **New Path...** If you select this option, a window will appear providing two options:

- **Keep current folder(s) and place as subfolder(s) of:** The file's original path will be preserved when the file is copied to the subfolder whose name you must enter in the field below the corresponding radio button.

  Example:

  ```
  C:\MyDir\sample.txt          →      C:\Migrated\MyDir\sample.txt

  C:\MyDir\SubDir\abc.doc       →      C:\Migrated\MyDir\SubDir\abc.doc
  ```

- **Place file(s) into the following folder:** The file will be copied directly to the subfolder whose name you must enter in the field below the corresponding radio button.

  Example:

  ```
  C:\MyDir\sample.txt          →      C:\Migrated\sample.txt

  C:\MyDir\SubDir\abc.doc       →      C:\Migrated\abc.doc
  ```

► **Original Path**. Select this option if you want to undo destination changes.

During a standard migration, when a file is relocated to a folder that already has a file with that name, the existing file will be overwritten. It is also possible to prevent the overwriting of existing files. For details, see "Customizing the Standard Migration" on page 67. When existing files are not to be overwritten, the base name of the to-be-relocated file will be appended with '_01' to prevent overwriting of the file already present. For example, the file sample.txt will be renamed sample_01.txt. Additional duplicate files will be given the addition '_02', '_03', and so forth.

Note: Files that make references to file or folder locations using hard-coded pathnames will likely malfunction when you redirect the referred-to files or folders. Hard-coded pathnames might occur in batch files (.bat, .cmd) and configuration files (.ini, .cfg). Please take caution when using the redirect functionality.

For shortcut (.lnk) files only, SMA will change the hard-coded pathname when the referred-to files or folders are redirected.

File Selection - Search
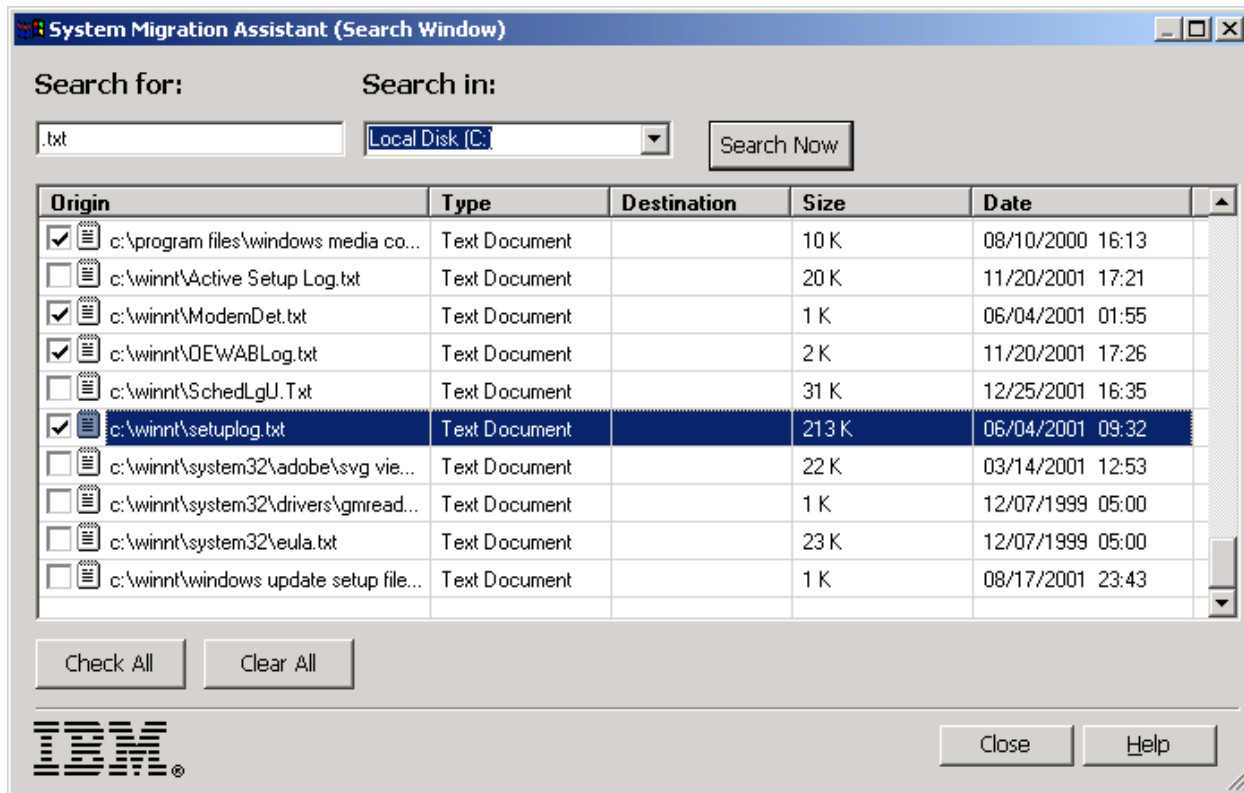
Click the **Search...** button in the **File Selection** window to find files or folders. A new window appears, giving you the following options:

▶ **Search for**. Type the full or partial file name you are looking for. You can use the (*) wildcard to match zero or more characters or the (?) wildcard to match exactly one character.

▶ **Search in**. In the drop-down box, select the location to start the search from. You can select one or all hard drives.

▶ **Search Now**. Click this button to start the search process. SMA will look for files and folders matching the entered string in the requested location and all its subfolders. The search routine is not case-sensitive. Results are given as follows:

  ▪ **Origin**. Shows the files found including the full path. You can click on the checkboxes to select the files you want to migrate.

  ▪ **Type**. Show the file type.

  ▪ **Destination**. Shows the planned location of the files on the target computer. By default, this field is blank, indicating that the files will have the same path on the target computer as it has on the source computer. However, users can select alternate destinations by right-clicking on the corresponding cell on the destination panel. For more information on the popup dialog box that appears, see "File Selection – Redirect Files" on page 26.

  ▪ **Size**. Shows the size of the file.

  ▪ **Date**. Shows the date and time of the file.

    Note: Any of the above columns can be clicked and the list will be sorted based on the column type.

▶ **Check All**. Click this button to select all files shown in the search panel.

▶ **Clear All**. Click this button to deselect all files shown in the search panel.

File Selection – Association Tab
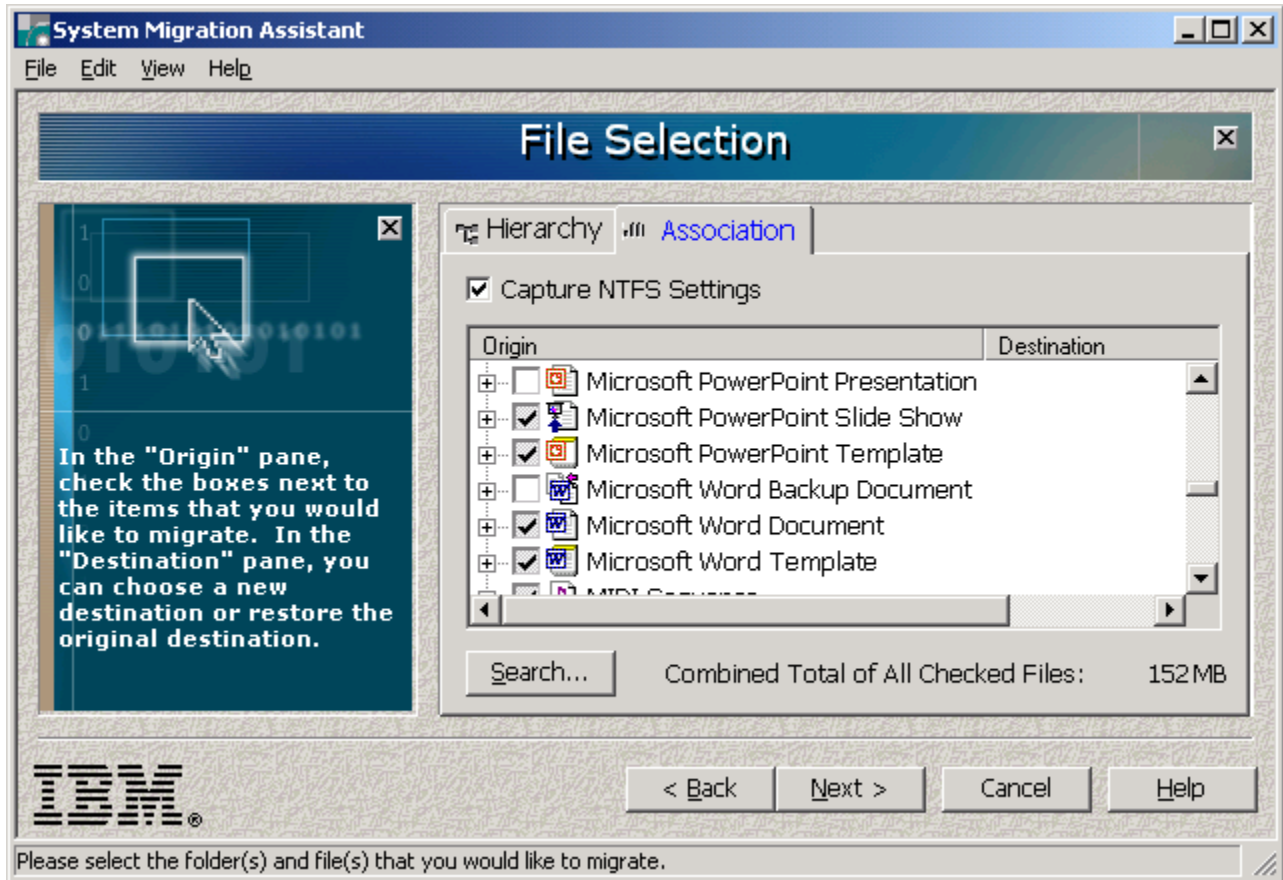
The **Association** Tab organizes files by file type instead of by drive location. You can select all files of the same type or select any combination of individual files and/or file types. Just like with the **Hierarchy** tab, you can redirect and search for files and folders.
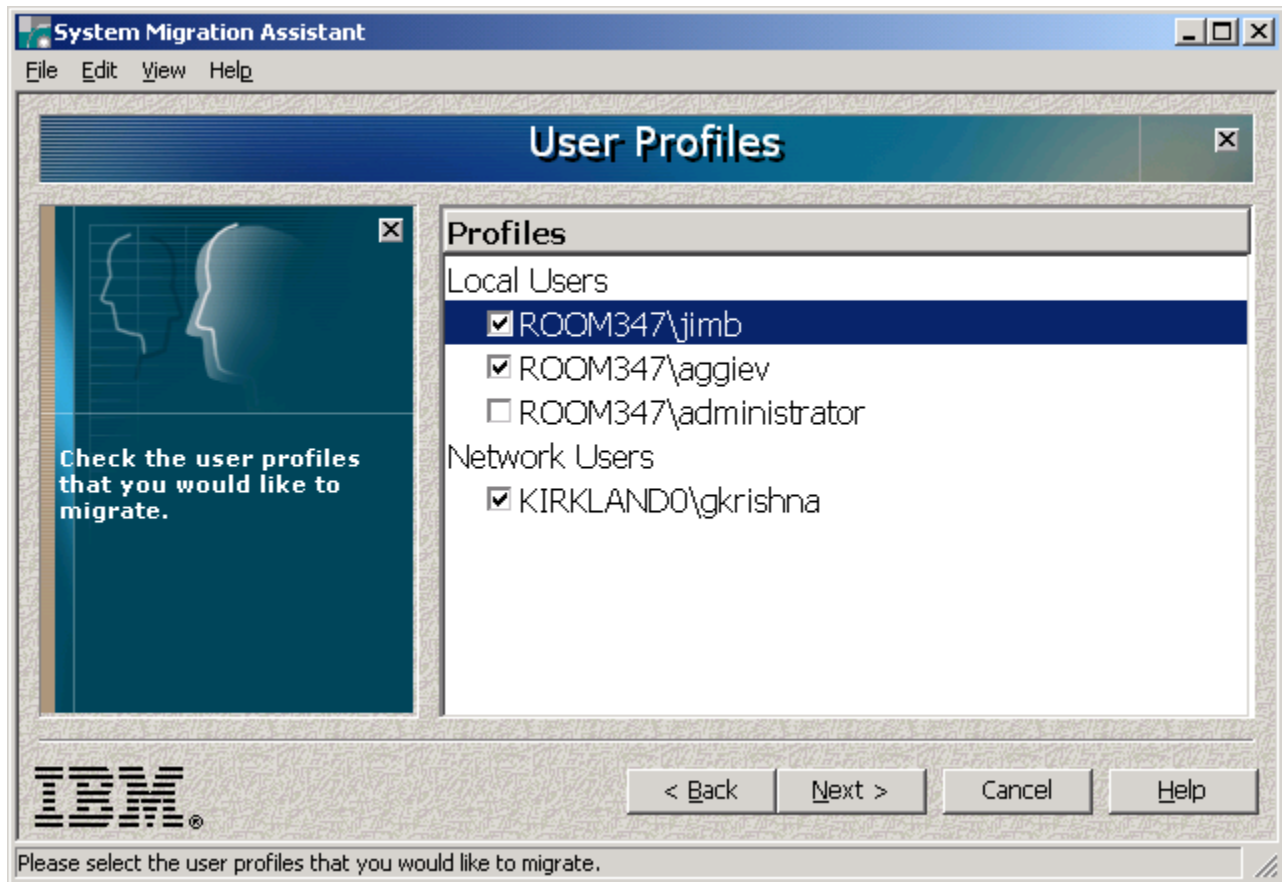
User Profiles

Note: This window will only appear if you checked the **User Profiles** option on the **Migration Options** window. The profiles of the currently logged on user and the guest account are never shown.

Select the user profiles that you want to migrate. SMA will migrate the user-specific settings stored in the profile plus the contents of the "My Documents" folder of that user. For a local profile, the user password is not migrated. Instead the password is reset to the user name.

SMA does not support the migration of user profiles from a source computer running Windows 95, Windows 98, or Windows ME to a target computer running Windows NT 4.0 Workstation, Windows 2000 Professional, or Windows XP Professional.

Also, for Windows 2000 and Windows XP, you not only need to have administrative privileges when migrating user profiles, but your user account must also have the "Act as part of the operating system" privilege. When attempting to migrate a user profile to a target system, SMA will create this privilege for you, but the migration will not succeed because a reboot is required after this privilege is set. So you can reboot the system and run SMA again, or set up the privilege manually, and then reboot the system to run SMA. This setting is found in the Local Security Policy of the system.

Profile Location
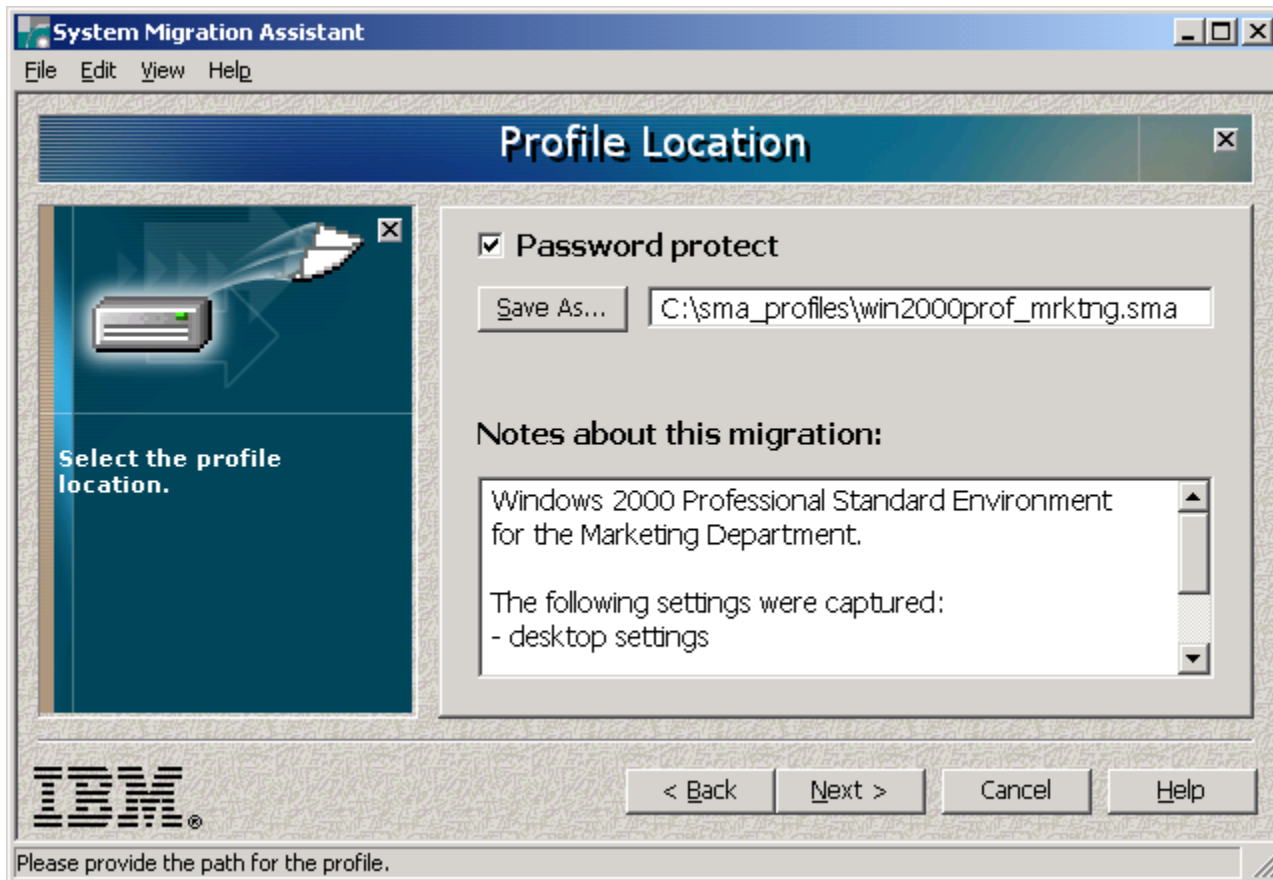
This screen has the following options:

► **Save As...** Provide the name of the profile by using this button or type a filename including the full path in the field next to the button.

Note: On rare occasions invalid characters might appear at the end of the filename. This issue can be easily resolved by manually deleting these characters.

► **Notes about this migration:** You can enter comments in this panel. The maximum number of characters that you can enter is 1024 characters.

▶ **Password Protect**. Select this option if you want to password protect the profile. If you select this option and click **Next** when you have filled in all other fields, you will be asked to enter and confirm a password. The password must be between 4 and 16 characters long.

Copy Progress
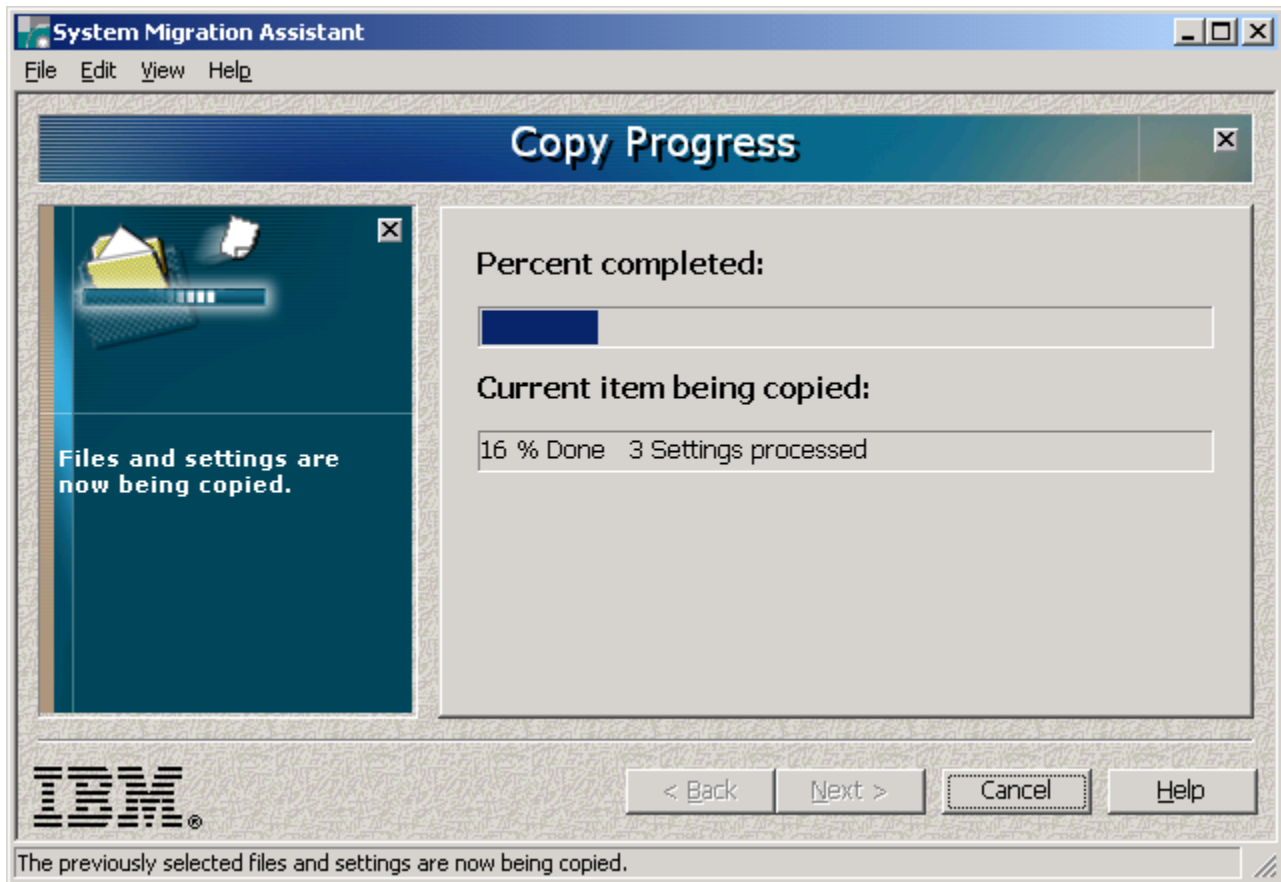
SMA now copies your settings and files to the profile file. This may take a few minutes, depending on how many settings and files are being copied.

Migration Summary
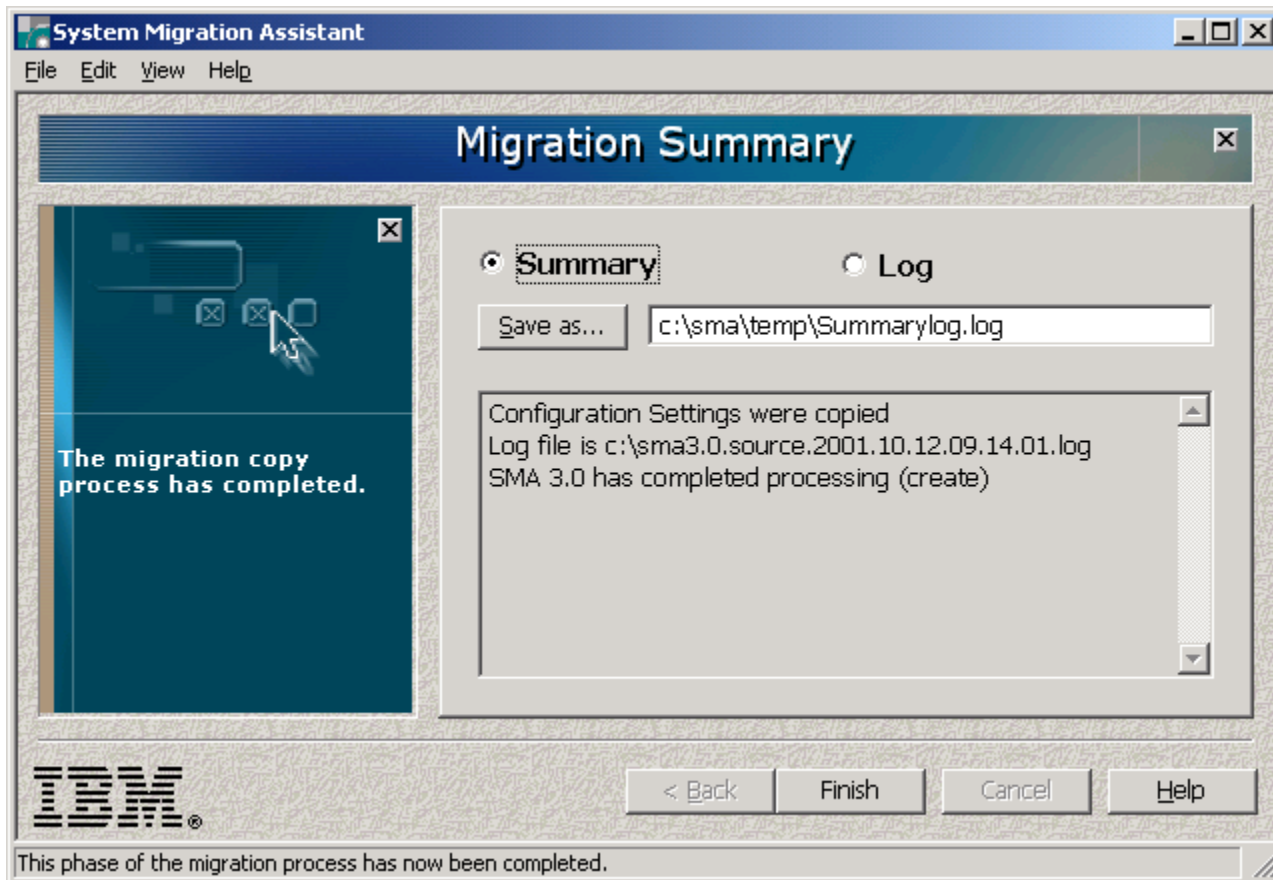
When the profile file has been created, a summary is provided. The summary reports whether any errors occurred and mentions the location of the log file. You can see the contents of this log file by selecting the **log** radio button. You have the option of saving the summary information. Click **Finish** to exit.

3.3 Applying Settings and Files

During the second phase of the migration process the settings and files are applied to the target computer.

To start the **SMA.EXE** program on the target computer:

1. Make sure you are logged on as the same user as during the capture phase.

2. From the Windows Desktop, click the **Start** button.

3. Select **Programs**.

4. Select **IBM System Migration Assistant**.

5. Select **System Migration Assistant**.

System Migration Assistant
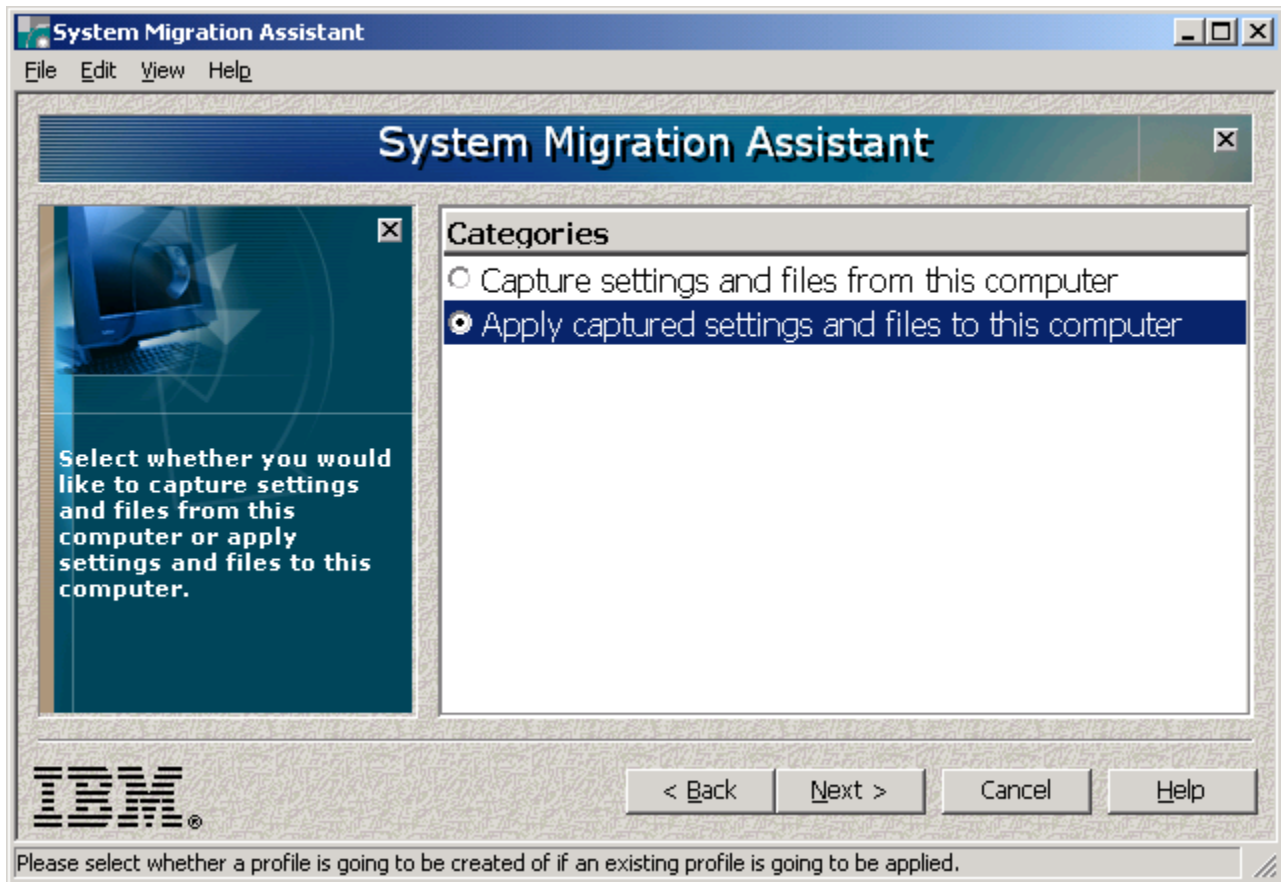
Select **Apply captured settings and files to this computer** and click **Next**.

Profile Location
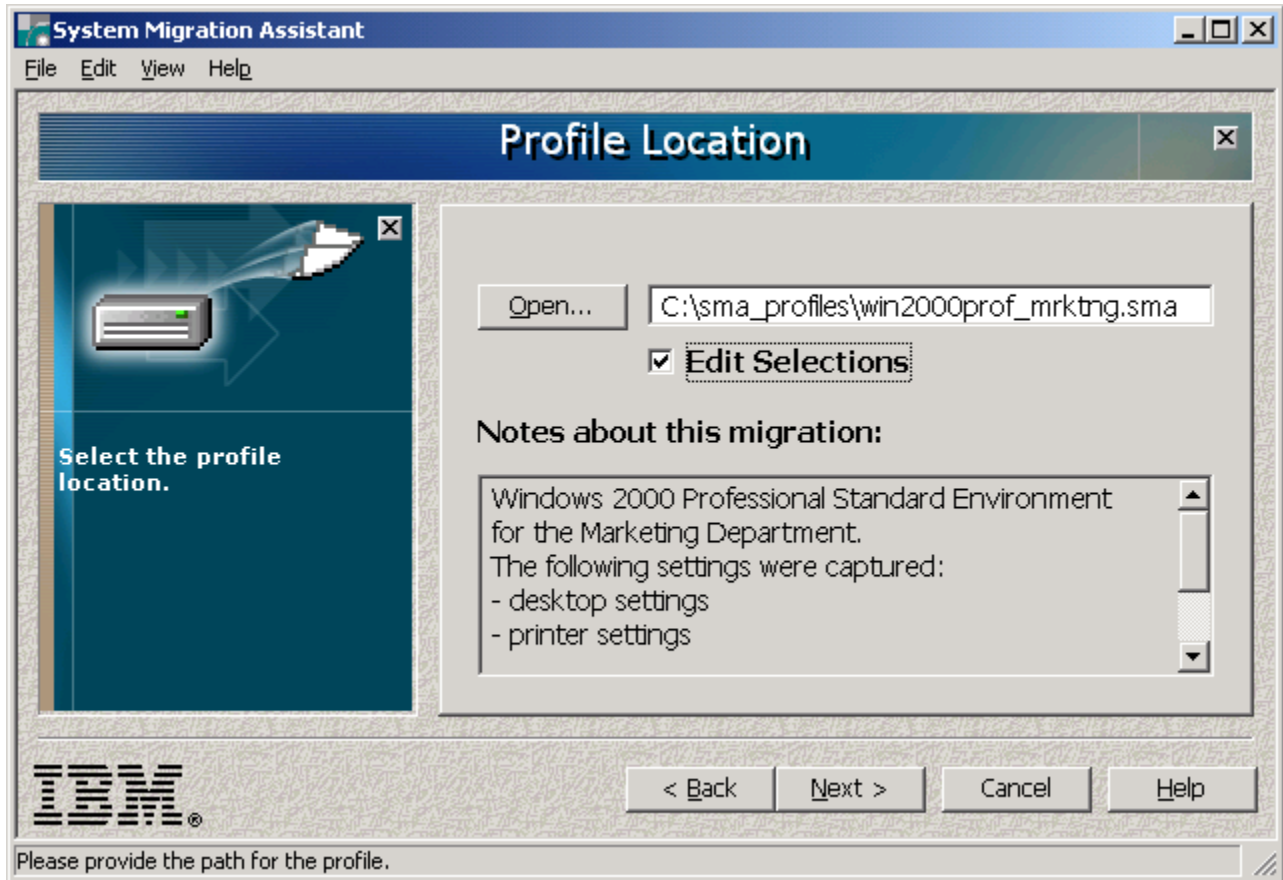
Click the **Open..,** button and select the profile file that you want to apply. Notes about this profile will appear in the notes panel. If you want to edit the profile, select **Edit Selections** and click **Next**. If the profile file is password protected, you will be prompted to provide a password.

Printer Settings
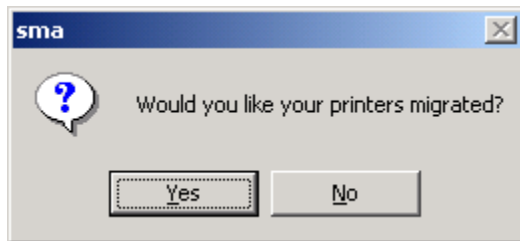
Note: This window will only appear if you captured printer settings and clicked the **Edit Selection** checkbox on the **Profile Location** window.

Click **Yes** to migrate the printer settings or click **No** if you want to unselect the printer settings.

Desktop Settings

Note: This window will only appear if you captured any desktop settings and clicked the **Edit Selection** checkbox on the **Profile Location** window.

The desktop settings selected during the capture phase are shown. You have the option of deselecting one or more of these settings.

Settings for Applications

Note: This window will only appear if you captured any application settings and clicked the **Edit Selection** checkbox on the **Profile Location** window.

The application settings selected during the capture phase are shown. You have the option of deselecting one or more of these settings.

Network Settings
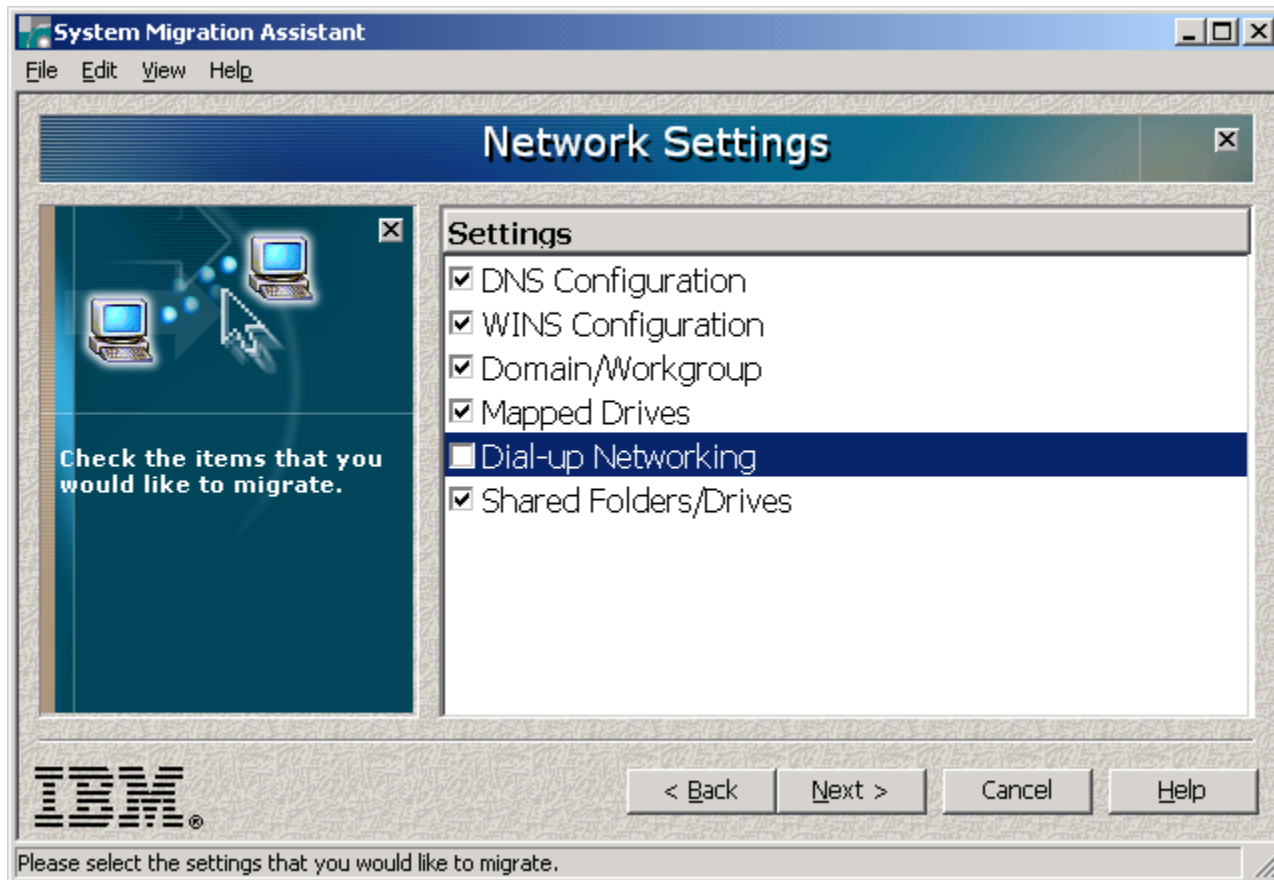
Note: This window will only appear if you captured any network settings and clicked the **Edit Selection** checkbox on the **Profile Location** window.

The network settings selected during the capture phase are shown. You have the option of deselecting one or more of these settings.

Editable Network Settings

Note: This window will only appear if you captured any editable network settings and clicked the **Edit Selection** checkbox on the **Profile Location** window.

In this window you can edit the values of various network settings. The fields of network settings that you did not capture in this profile or that are not editable in this network configuration are grayed out (see "Settings for Printers
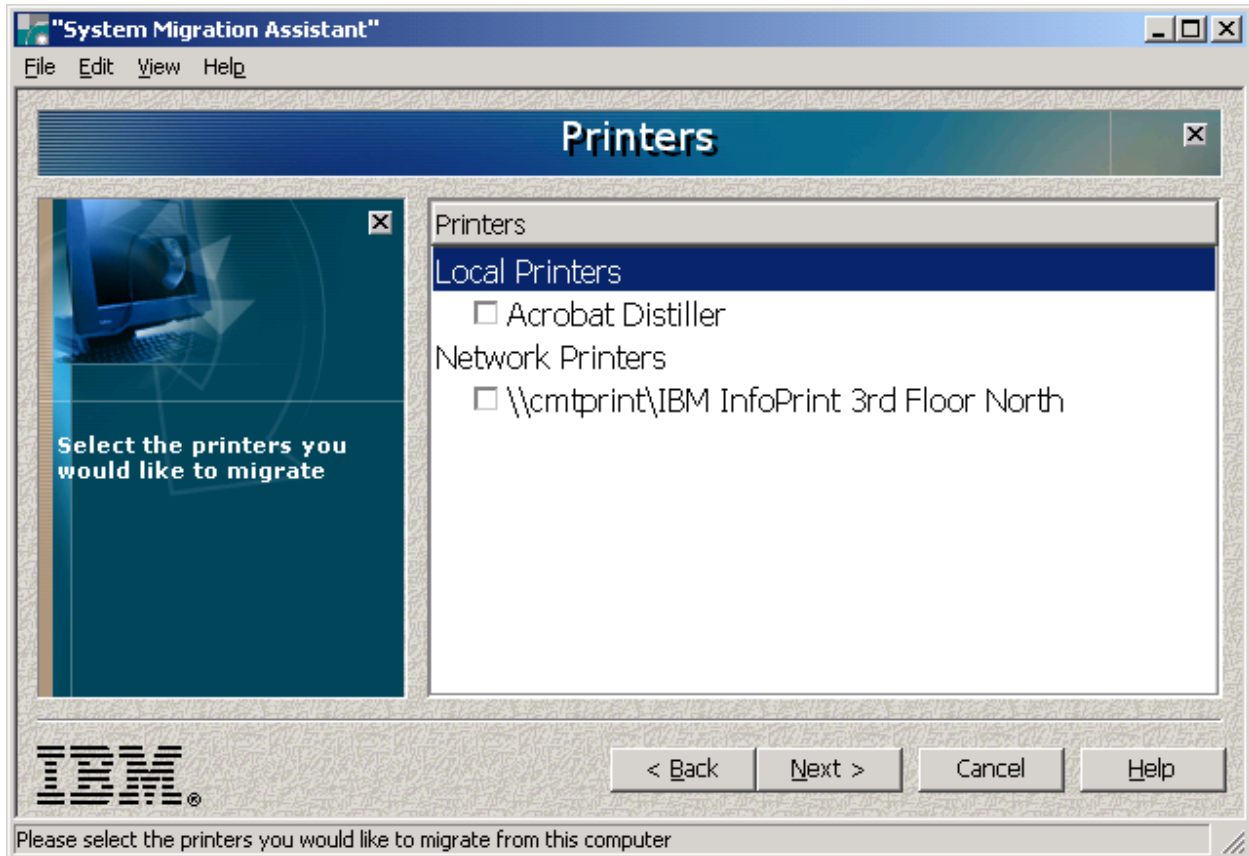
Note: This window will only appear if you checked the **Printers** option on the **Migration Options** window.

Select the printers that you want to migrate. SMA will migrate the printer links and their drivers.

SMA does not support the migration of local printers from a source computer running a different operating system than the target. Network printers, however, are supported when migrating to a different operating system.

Network Settings" on page 21 for details). If you are migrating a target computer to the same domain as the source computer and are keeping the source computer operational, you must change the IP address, but you can keep the domain name

Also, you can either apply the computer name or the domain name but you cannot apply both at the same time. If you want to migrate both settings, you must first copy one setting, and then run apply again with the other setting.
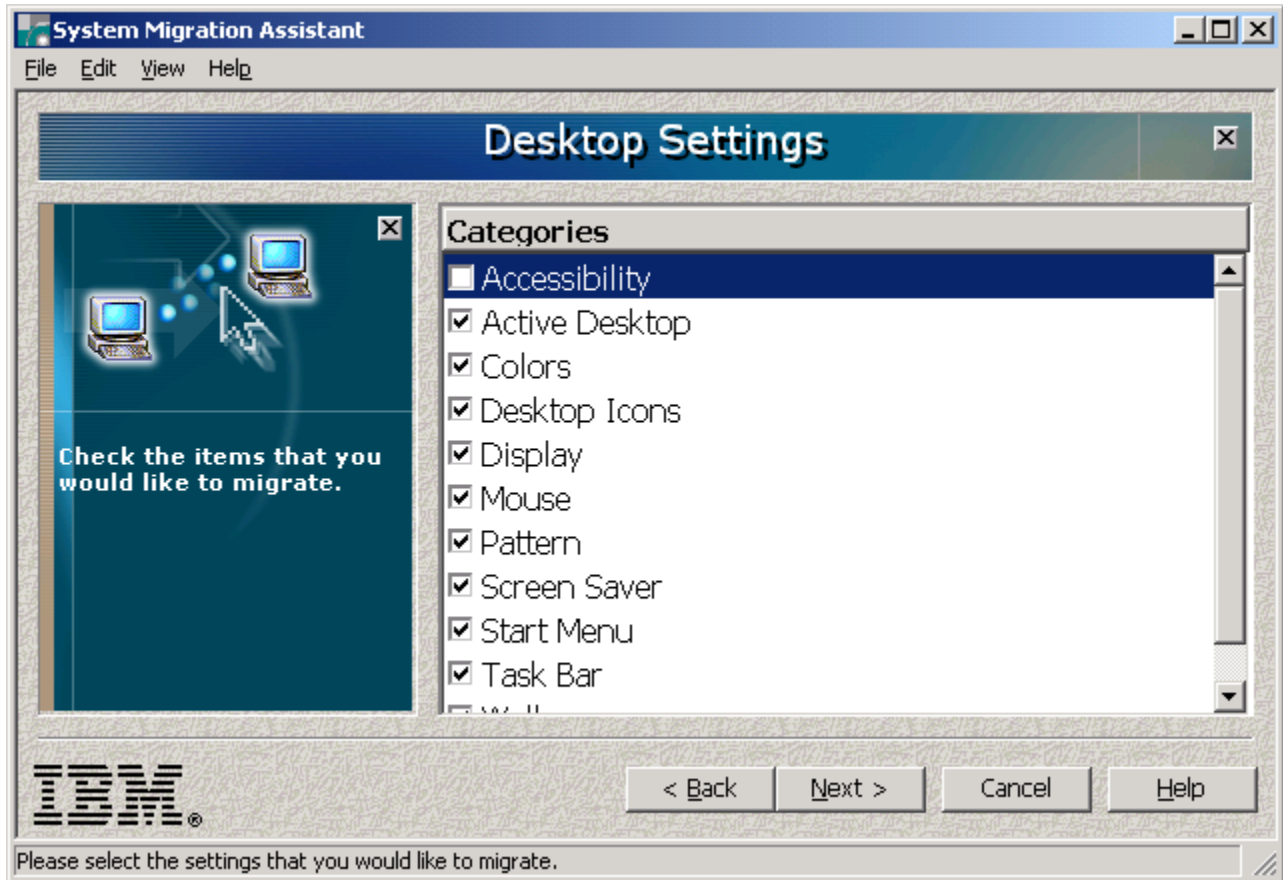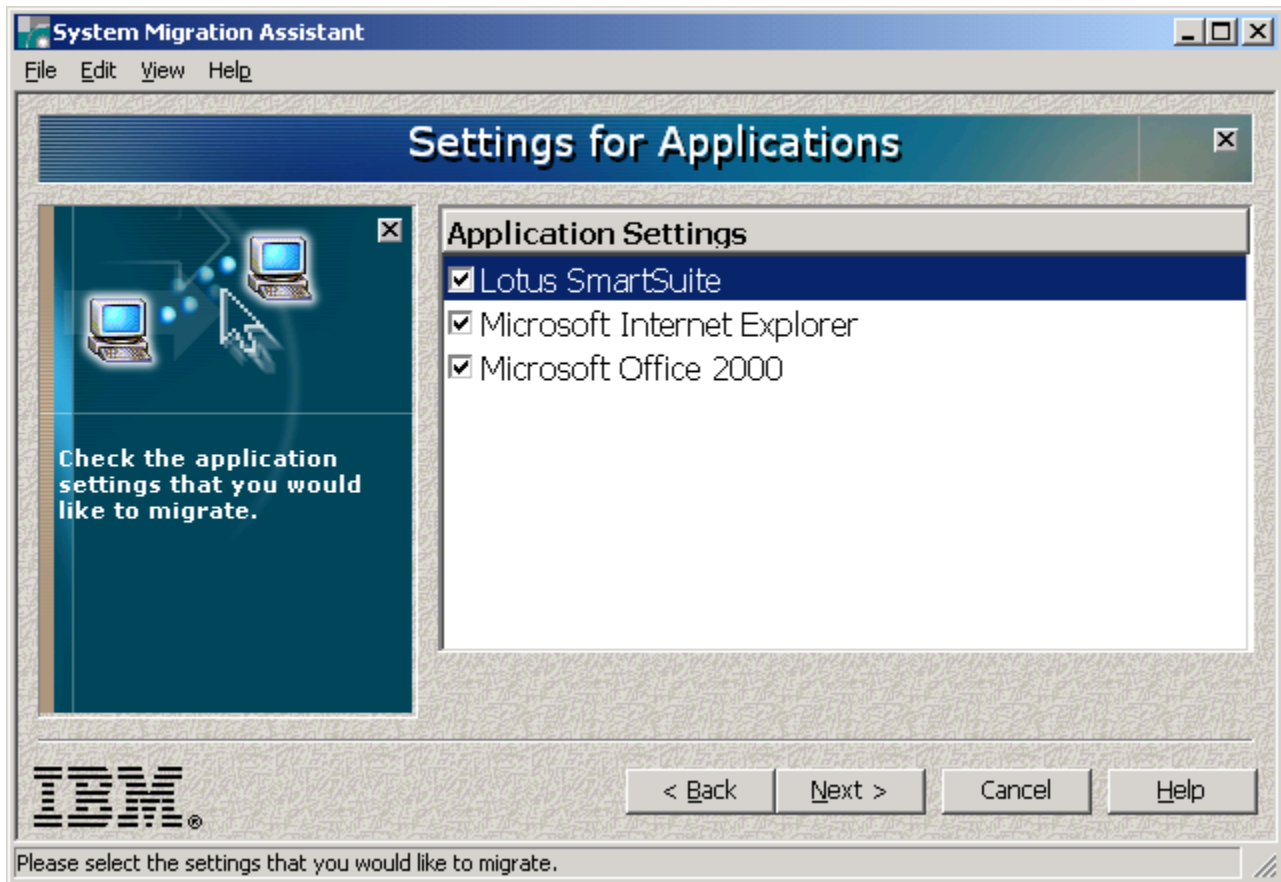
File Selection – Hierarchy Tab
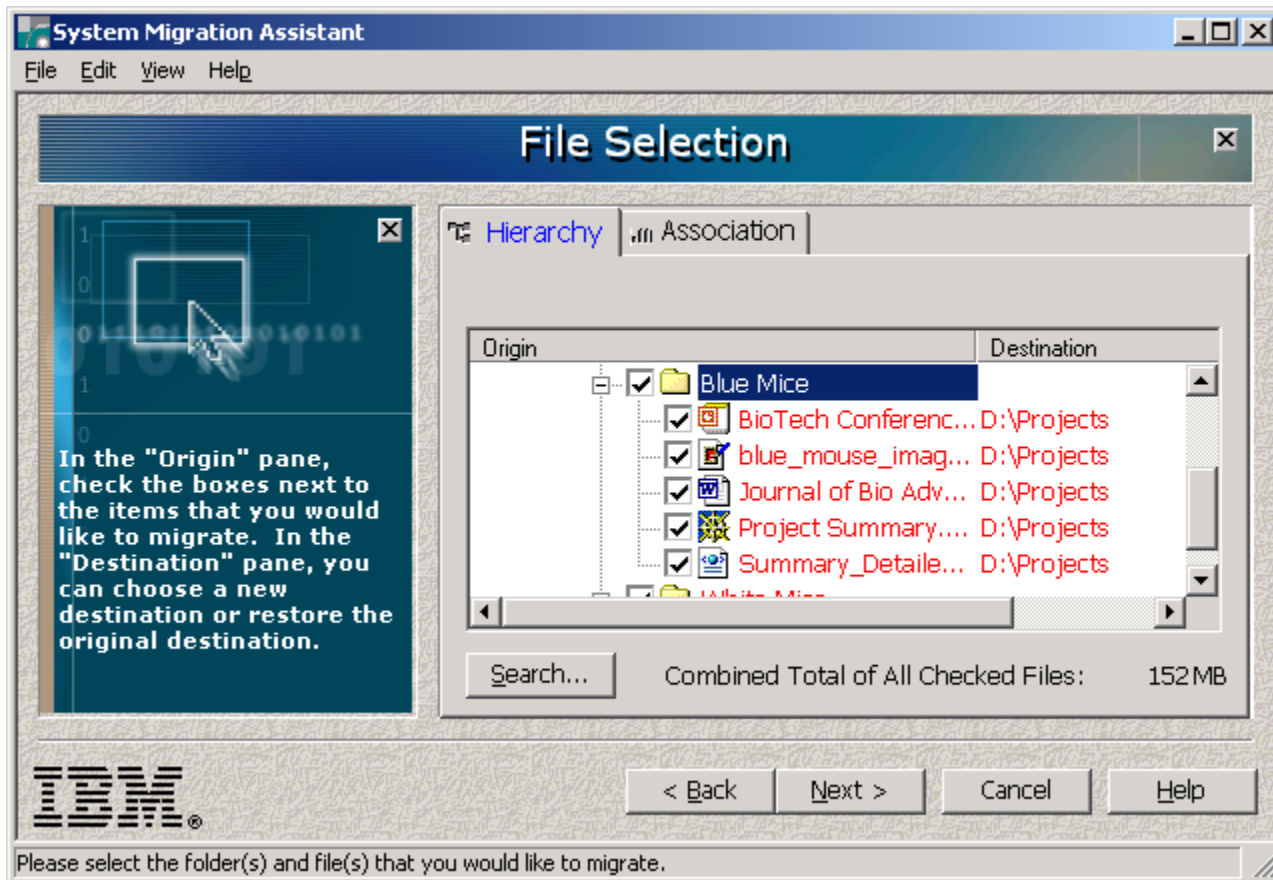
Note: This window will only appear if you captured files and clicked the **Edit Selection** checkbox on the **Profile Location** window.

The files and folders selected during the capture phase are shown. You have the option of deselecting one or more selections.

Files with an invalid pathname for the target computer are given in red. You must resolve these conflicts before proceeding.

File Selection – Redirect Files
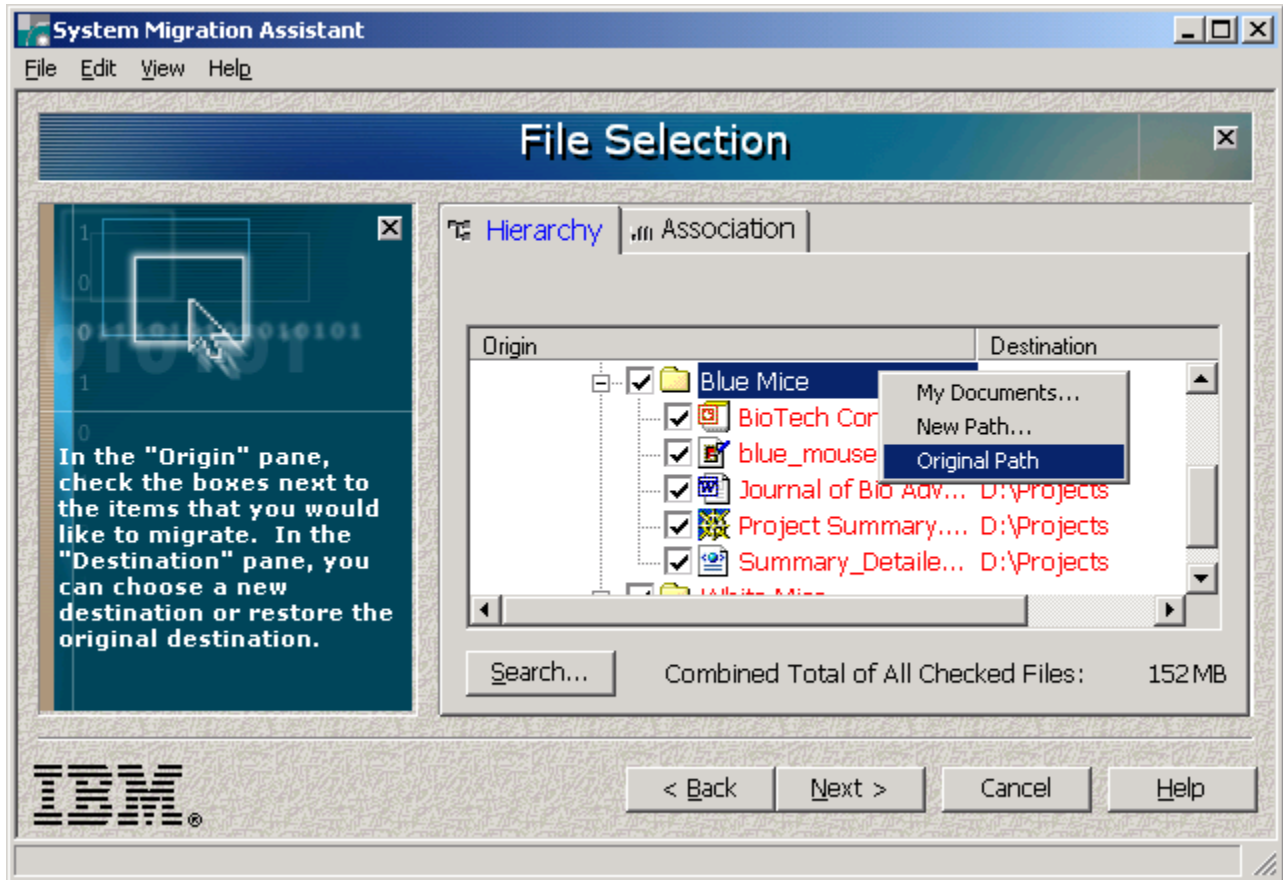
You can change the destination of the to-be-copied files on the target computer. For more information on how to use these functions and possible problems that can occur as a result of redirection, see page 26.

File Selection - Search
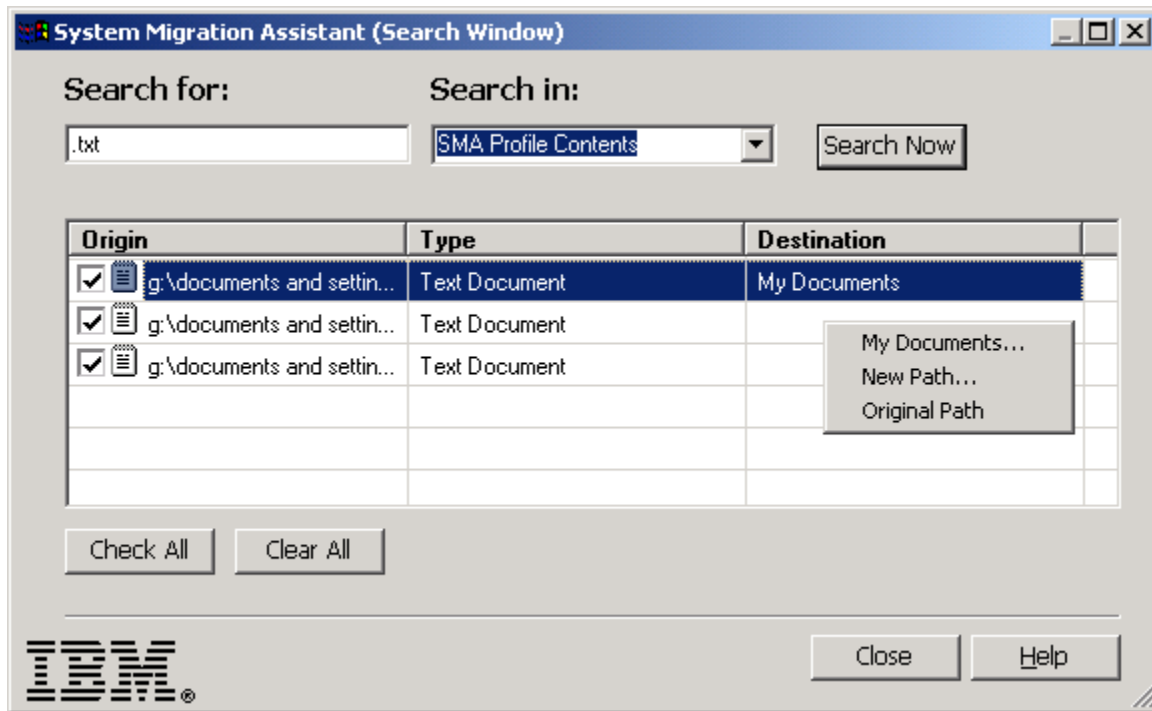
Use the search function to find a specific subset of files and folders. For more information on how to use these functions, see page 29. Note that the **Search in** drop-down box only allows you to search within the given profile.

File Selection – Association Tab
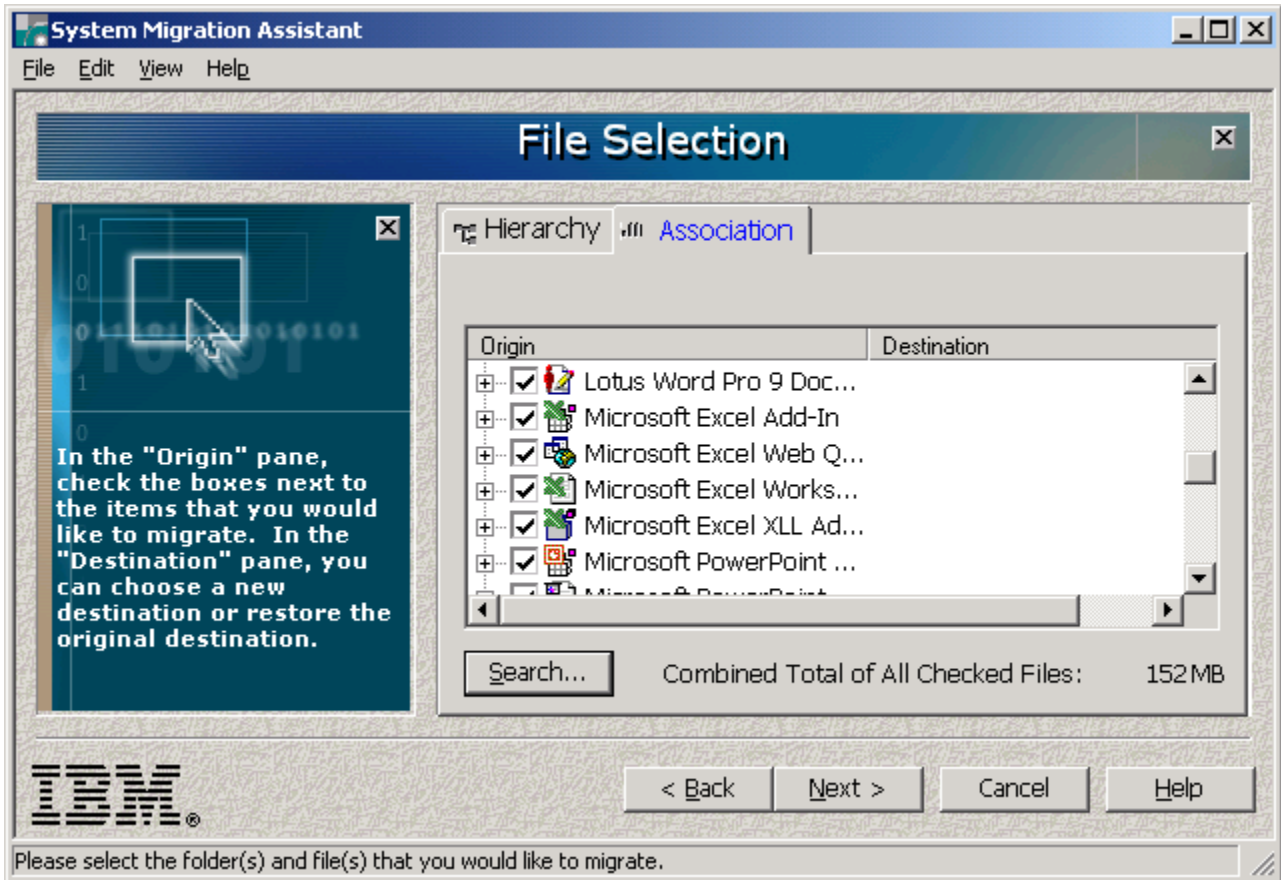
If you select the **Association** tab, files selected during the capture phase are organized according to file type rather than by drive location. You have the option to deselect, search, and redirect files and folders.
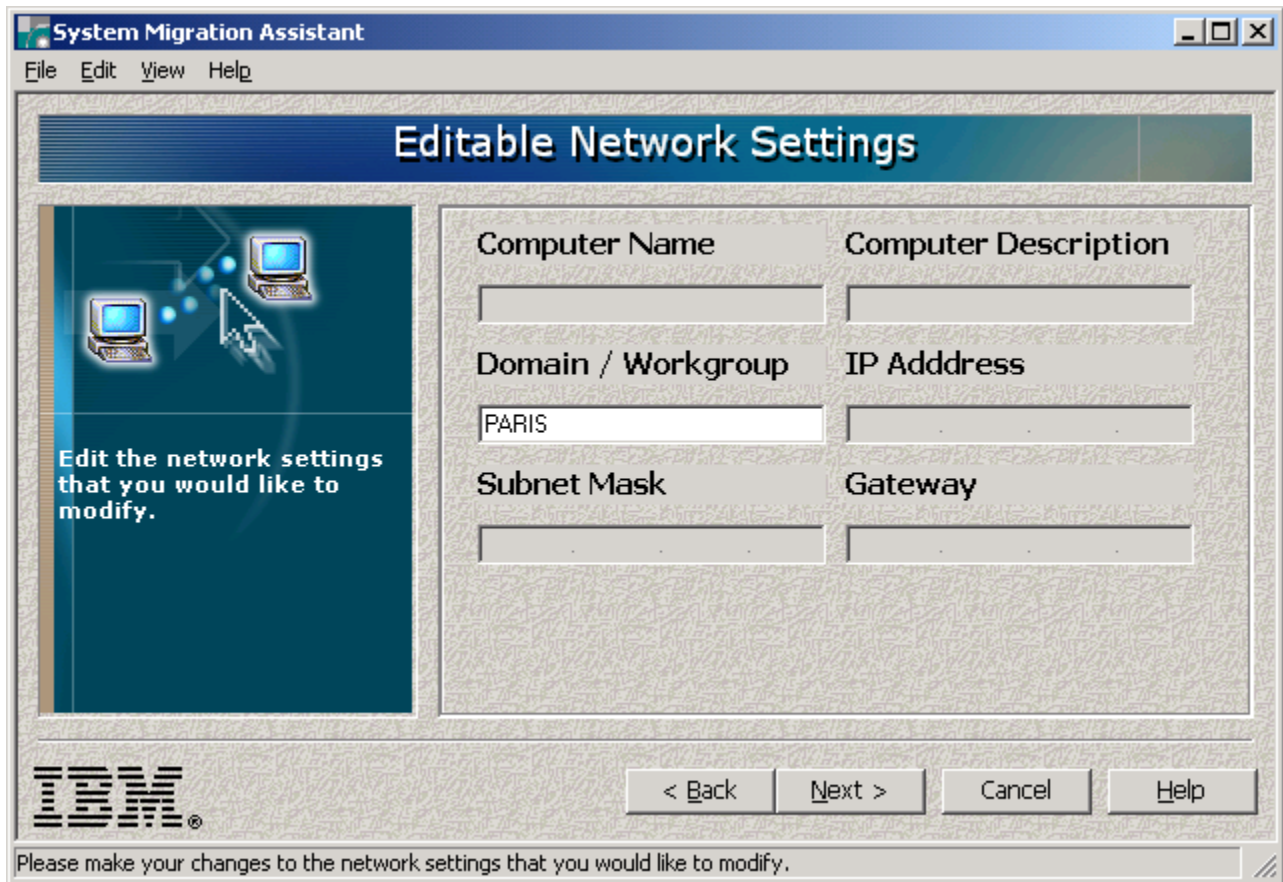
User Profiles

Note: This window will only appear if you captured any user profiles and clicked the **Edit Selection** checkbox on the **Profile Location** window.

The user profiles selected during the capture phase are shown. You have the option of deselecting one or more of these user profiles.

Start Copy Process
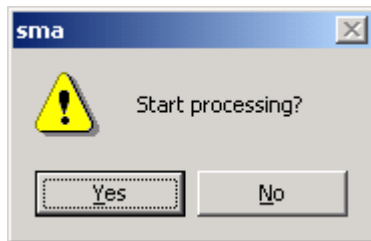
SMA is ready to start copying the to-be-migrated settings. Click **Yes** to start the copy process or click **No** if you want to re-edit the profile or cancel the migration process.

Domain Authority Dialog

Note: This window will only appear if you are migrating the domain setting.

Provide a username and password to enable access to the domain. The user must have at least account operator privileges in the domain. Remember that you must also create a new computer account prior to applying the profile (see "Settings for Printers
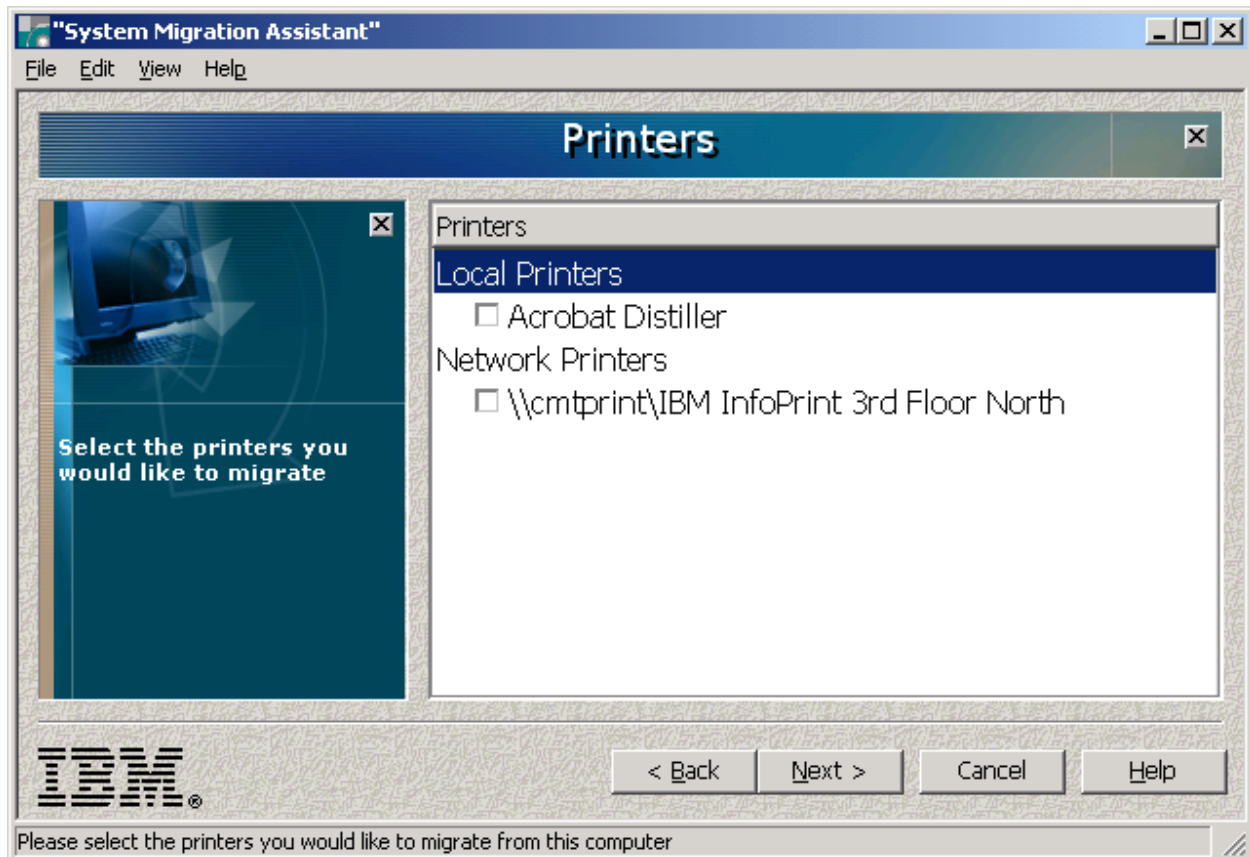
Note: This window will only appear if you checked the **Printers** option on the **Migration Options** window.

Select the printers that you want to migrate. SMA will migrate the printer links and their drivers.

SMA does not support the migration of local printers from a source computer running a different operating system than the target. Network printers, however, are supported when migrating to a different operating system.

Network Settings" on page 21 for details).

Copy Progress
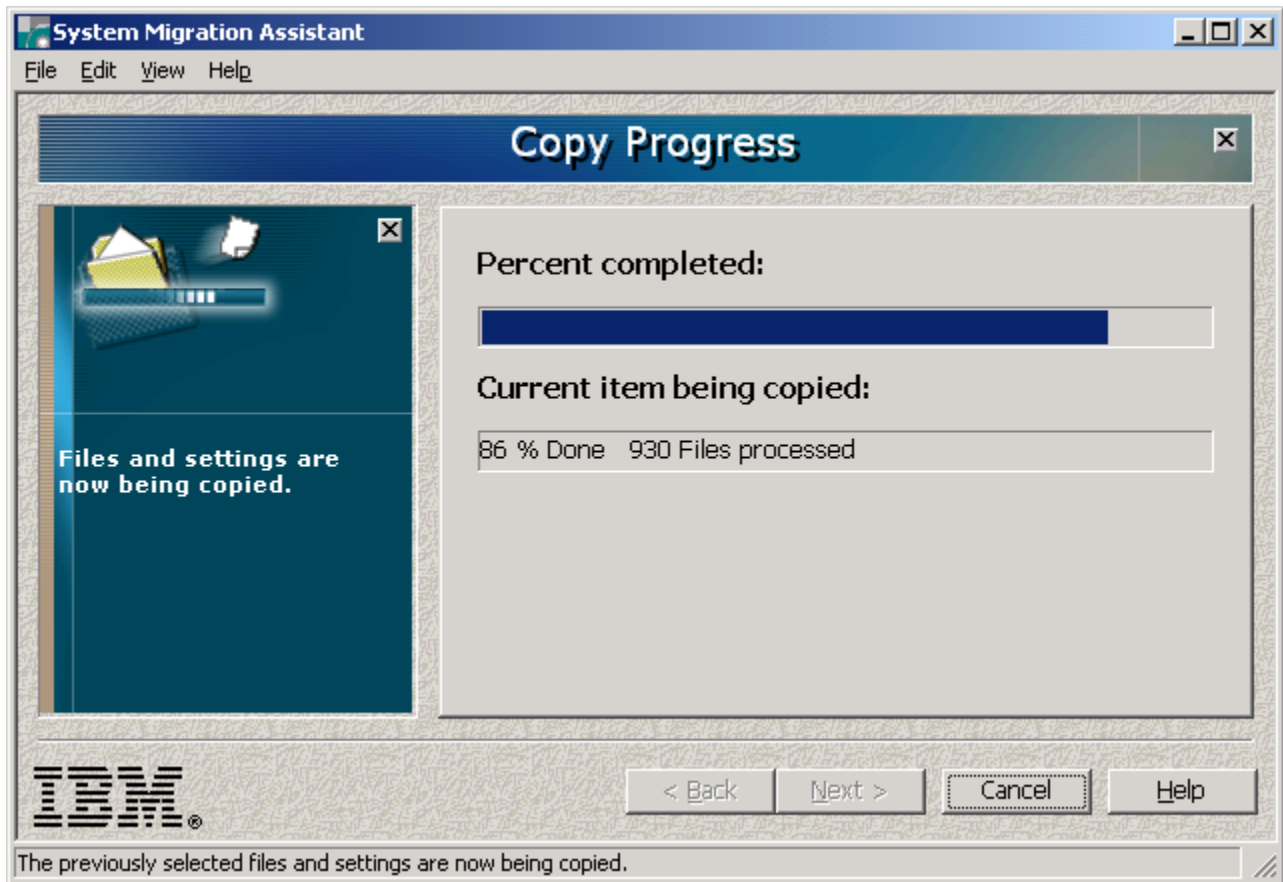
SMA now copies the settings and files to the target computer. This may take a few minutes, depending on the size of the profile file.

Important: Clicking the **Cancel** button will halt the copy process, but does **not** undo the changes that have already been made. This will leave the computer with some of the changes and file migrations complete, but others not. In the worst case, it could leave the computer in an inconsistent state requiring reinstallation of the operating system. Do not cancel the copy process unless absolutely necessary.

If you are applying an SMA 2.2 profile, you might notice that the 'percent completed' progress bar does not faithfully represent the actual percentage done. This is issue is most noticeable on target machines running Windows XP Professional. However, the profile is being applied correctly. Please wait until the copy process has finished and the **Migration Summary** window appears.

Migration Summary
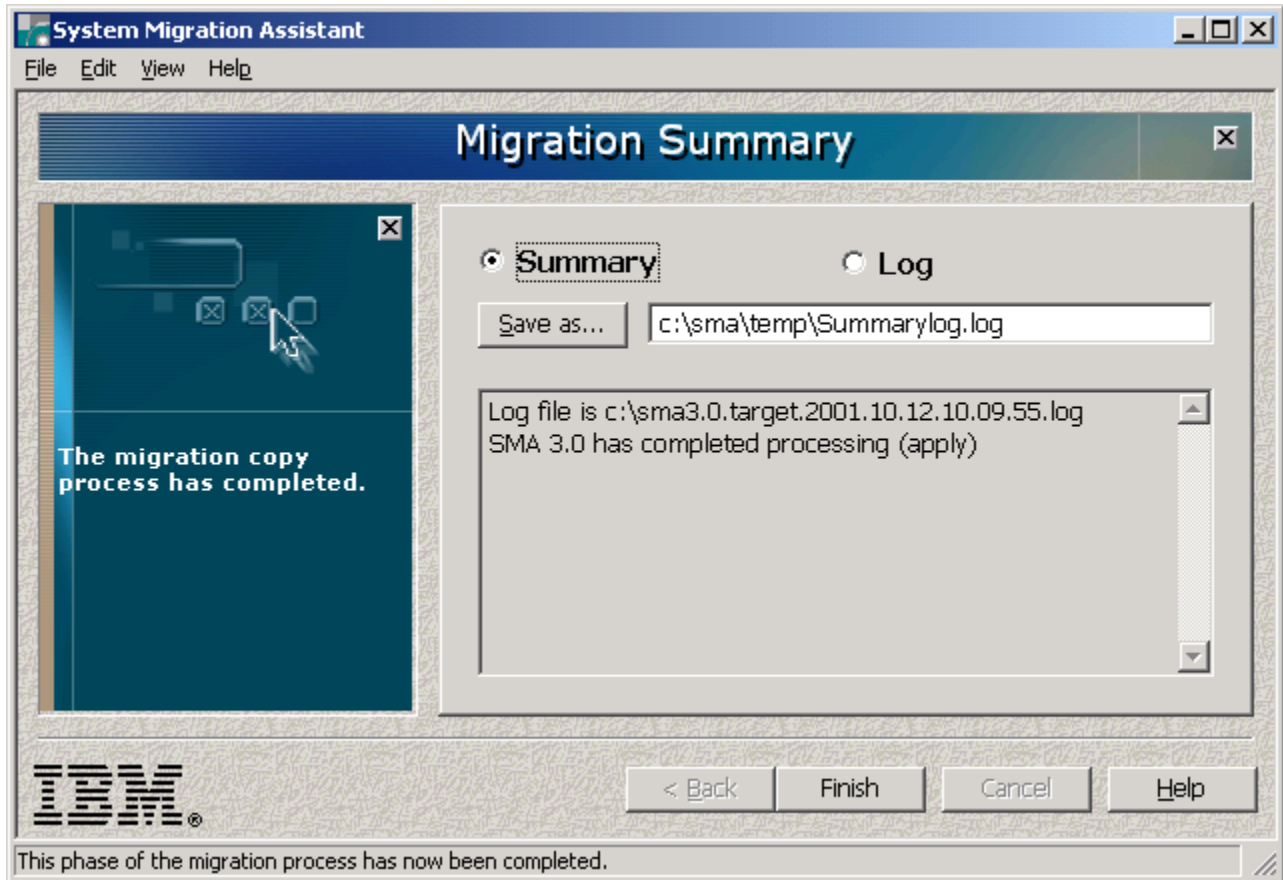
When the settings and files have been applied to the target computer, the summary screen will appear. Any errors are given in the summary. Click the **Log** button to get a detailed overview of the migration process. Click **Finish** to exit SMA.

Reboot Computer
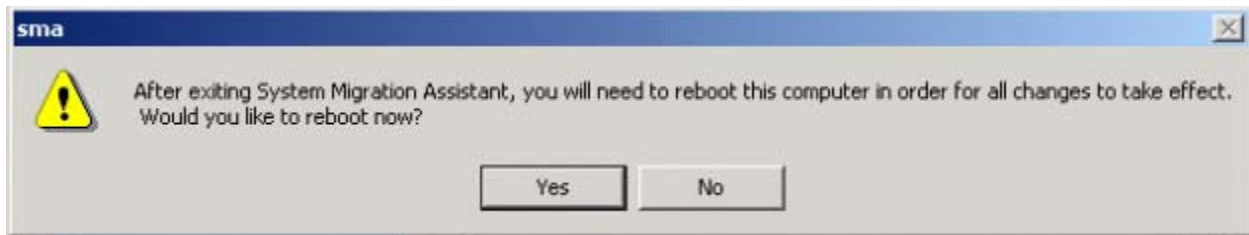
Depending on the settings that you applied, you will be prompted to reboot the computer in order for the changed settings to take effect.

Chapter 4. Migration in Batch Mode

This chapter describes how to perform a migration in an unattended fashion. The same settings and files can be migrated in batch mode as during a standard migration, and the two modes can even be used interchangeably (see "Creating a Command File Template" on page 64 for more details). The same logon considerations apply to batch mode migration as to a migration via the user interface (see page 13).

Note: Before you run SMA during the capture or apply phase, please make sure to exit all other applications first. Other applications might interfere with the operations that SMA is trying to perform.

The name of the batch mode executable is **SMABAT.EXE**, located in the `<drive>:\Program Files\IBM\SMA` directory. The syntax of the command is:

```
SMABAT       {(/c cmdfile [/n smafile]) | (/a [cmdfile] /n smafile) | (/e smafile)}

      [/o logdir] [/t tmpdir] [/p smapwd] [/s tsmpwd] [/jdu userid /jdp pwd] [/v]
```

where

`/c cmdfile`	Capture the settings and files. You must specify the full path and the name of the command file. Optionally you can specify the `/n` parameter with the full path and the name of the profile file. You must specify either the `/c`, `/a`, or `/e` parameter when running SMABAT.
`/a [cmdfile]`	Apply the settings and files. You must also specify the `/n` parameter with the full path and the name of the profile file. You can optionally specify the full path and the name of the command file to deselect settings prior to copying the profile to the target computer. You must specify either the `/c`, `/a`, or `/e` parameter when running SMABAT.
`/e smafile`	Extract the command file used to create the profile. You must specify the full path and the name of the profile. You must specify either the `/c`, `/a`, or `/e` parameter when running SMABAT.
`/n smafile`	Provide the full path and the name of the profile file.
`/o logdir`	Provide the full path and the name of the log file directory. This parameter is optional.
`/t tmpdir`	Provide the full path and the name of the temporary SMA directory. This parameter is optional.
`/p smapwd`	Provide the password that will be used to password protect the profile during capture or that is required to access the profile during migration. This parameter is optional.
`/s tsmpwd`	Provide a TSM password. This parameter is optional. This is an advanced featured described in <u>Migration with Tivoli Storage Manager</u>.
`/jdu userid` `/jdp pwd`	Provide a username and password to enable access to the domain. The user must have at least account operator privileges in the domain. These parameters are required only during the apply phase when you migrate the domain setting. When used, both parameters must be provided. You must also create a new computer account prior to applying the profile (see <u>Network Settings</u> for details).
`/v`	Enables Verbose logging in the SMA log files. This can be helpful to resolve migration problems.

The command file guides the execution of the command, especially during capture. The next sections describe the role of the command file in detail. Examples are given at the end of the chapter.

Note: Please edit the command file with care. A semicolon should precede all comments in the file. SMA does not treat the text in this file in a case sensitive fashion. If the command file has syntax errors, error messages will be written to standard output but processing continues. However, depending on the nature of the error the actual results might differ significantly from the intended behavior.

4.1 Capturing in Batch Mode

During the capture phase, **SMABAT.EXE** reads the contents of the command file and creates a profile file. An example of a capture command is:

```
SMABAT /c C:\MyCommandFileDir\TheCommandFile.txt
```

As the example shows, the command file completely drives the capture process. SMA provides a default command file, `<drive>:\Program Files\IBM\SMA\commandfile.txt`, which you can use as a template to create your own version.

The remainder of the section explains the various commands in the command file. SMA will process these commands in the exact order in which they appear in the file. In the command file, each command is described in a separate section clearly marked with a beginning and end, namely `[<command>_start]` and `[<command>_end]`. One or more parameters and their values can be entered between these markers, with each parameter-value pair placed on a separate line.

Example:

```
[transfer_mode_start]

transfer_mode = selective

[transfer_mode_end]
```

The same settings can be migrated in batch mode as through the user interface. Therefore, for more details on the various settings including migration restrictions, see "Capturing Settings and Files" on page 13 and beyond. File migration is functionally equivalent in both modes, but the batch mode has a unique method of selecting files and folders, involving inclusion and exclusion on the basis of various characteristics. These procedures are described last.

The commands, with the exception of those driving file migration, are:

▶ **Password**. To specify a password, provide a value for `plain_password`. The maximum password length is 16 characters and the minimum is 4 characters. If a password is provided on the command line, the value in the file will be ignored.

Note: The functionality of the parameter `encoded_password` is beyond the scope of the documentation.

▶ **Transfer_Mode**. This has two possible values, i.e. `selective` or `mass`. You must specify one of these values. Remember that `selective` refers to the standard migration. For details on mass migration, see "Performing a Mass Migration" on page 78.

▶ **Profile_Path_and_Name**. The full path and the name of the profile file. For example:

```
[profile_path_and_name_start]

output_profile = C:\sma_profiles\newprofile.SMA

[profile_path_and_name_end]
```

The value entered here will be ignored when you specify a profile name on the command line.

- ▶ **TSM**. This is an advanced feature described in "Migration with Tivoli® Storage Manager" on page 71.

- ▶ **Desktop**. To select a desktop setting, type 1, otherwise type 0 or leave unspecified. The following desktop settings can be set:
  - ▪ `accessibility.`
  - ▪ `active_desktop.`
  - ▪ `colors.`
  - ▪ `desktop_icons.`
  - ▪ `display.`
  - ▪ `icon_font.`
  - ▪ `keyboard.`
  - ▪ `mouse.`
  - ▪ `pattern.`
  - ▪ `screen_saver.`
  - ▪ `sendto_menu.`
  - ▪ `shell.`
  - ▪ `sound.`
  - ▪ `start_menu.`
  - ▪ `taskbar.`
  - ▪ `wallpaper.`
  - ▪ `window_metrics.`

- ▶ **Network**. To select a network setting, type 1, otherwise type 0 or leave unspecified. The following network settings can be set:
  - ▪ `ip_subnet_gateway_configuation.`
  - ▪ `dns_configuration.`
  - ▪ `wins_configuration.`
  - ▪ `computer_name.`
  - ▪ `computer_description.`
  - ▪ `domain_workgroup.`
  - ▪ `mapped_drives.`
  - ▪ `shared_folders_drives.`
  - ▪ `dialup_networking.`
  - ▪ `microsoft_networking.`

- ▶ **Registry**. You can migrate registry values and keys. This is an advanced feature described in "Migrating Registry Settings" on page 70.

- ▶ **Applications**. Enter one or more supported applications. In the specified section, put in the application family name, as specified in the example in the commandfile.txt found in the SMA installation directory.

Example:

```
[applications_start]
Lotus Notes
Lotus SmartSuite
Microsoft Office
Microsoft Outlook
[applications_end]
```

▶ **UserProfiles**. For local profiles, type computer_name\username. For network profiles, type domain_name\username. To tell SMA to capture all of the user profiles, set GetAllUserProfiles = 1.

Example:

```
[userprofiles_start]
```
GetAllUserProfiles = 1
```
[userprofiles_end]
  -- or --
[userprofiles_start]
JANESCOMPUTER\administrator
MYDOMAIN\janed
[userprofiles_end]
```

▶ **MigrationNote**. Enter comments about the profile. You can use up to 1024 characters.

▶ **Misc_Settings**. Various miscellaneous settings can be selected here:

  ▪ `bypass_registry`. This parameter is only interpreted during the apply phase. See "Applying in Batch Mode" on page 63 for details.

  ▪ `quota`. Leave unspecified, or specify a number in megabytes to restrict the amount of uncompressed data that can be captured in a profile.

  ▪ `printers`. Enter 1 to select the printer settings, otherwise enter 0. This value must be specified.

  ▪ `capture_ntfs_attribute`. Enter 1 to capture the NTFS attributes, or enter 0 or leave unspecified.

  ▪ `user_exit`. After SMA finishes, the executable specified here (including full directory path) will be launched. This value is optional.

  ▪ `overwrite_existing_files`. Enter 0 to prevent the overwriting of existing files, or enter 1 or leave unspecified to overwrite existing files during a selective migration.

  ▪ `temp_file_location`. SMA will write temporary files to this directory. The default location is `C:\sma\temp`. It is possible to use a shared location on another system. If a temporary directory is specified on the command line, the value in the command file will be ignored.

  ▪ `log_file_location`. SMA will write log files to this directory. The default location is the `C:` drive. It is possible to use a shared location on another system. If a log file directory is specified on the command line, the value in the command file will be ignored.

  ▪ `alternate_print_driver_location`. Specify an alternate location of printer driver files. This parameter is optional.

  ▪ `removable_media`. Enter 1 to enable the use of removable media, or enter 0 or leave unspecified.

- AutoReboot. Enter 1 to have SMA reboot automatically at the end of a target side migration. The default value is 0. If you leave it unspecified, the system will not reboot.

  Note: the Automatic reboot feature is not supported in batch mode on a Windows 98 or ME target sytem. The user must manually close the SMABAT command window and manually reboot the system.

- ▶ **Editable_Connectivity**. This section is only interpreted during the apply phase. See "Applying in Batch Mode" on page 63 for details.

File migration in batch mode is driven by three file selection and three file deselection commands, as well as a special command that acts on drives. You can use any number of file selection and deselection commands and create any sequence. SMA processes these commands in strict serial order. For instance, if a file inclusion command is followed by a file exclusion command which is in turn followed by a file inclusion command, SMA will include files on the basis of the first command, then it will exclude files from the resulting set on the basis of the exclude command, and then it will include files from the original set of scanned files on the basis of the third command. Changing the order of commands can dramatically affect the final outcome.

SMA will select and deselect files on the basis of the original location of files and folders on the source computer. File redirection statements are stored in the profile and get interpreted during the apply phase after file deselection commands have been processed.

The processing of file and folder names is not case sensitive. For file names but not path names, you can use the asterisk (*) wildcard that matches zero to many characters, and the question mark (?) wildcard that matches exactly one character. All file migration commands are optional.

The file handling commands are:

- ▶ **Exclude_Drives**. Enter the drive(s) that is/are not going to be scanned, such as the C: drive. When you exclude a drive, none of the files stored on that drive can be selected. If you use this command, it must be placed at the beginning of the file migration section.

- ▶ **IncludeFile**. With this command you can search for all files that match a particular pattern in a specific folder, but not in its subfolders. Wildcards are allowed in the file name only and logical names such as "My Documents" are not allowed. Optionally, you can place these files in a new folder on the target machine. Wildcards are not allowed in the name of the new location but logical names are allowed.

  Example:

  [includefile_start]

  ; Copy all files in the folder C:\Documents and Settings\JohnD\My Documents* and place these

  ; in the same location on the target machine. Notice that the actual physical path of the My

  ; Documents folder must be used here.

  C:\Documents and Settings\JohnD\My Documents*

  ; Copy all .cpp files in the D:\MyCode folder and put these in My Documents\MyCode on the

  ; target machine

  D:\MyCode*.cpp, My Documents\MyCode

  [includefile_end]

  Note: The logical name "My Documents" is translated to the correct physical location on the drive. "My Documents" is not used on Windows 95, Windows NT4.0 Workstation, and Windows NT4.0 Server.

- ► **IncludePath**. With this command you can select a folder and copy its contents including subfolders and their contents. Optionally, you can relocate your selection on the target machine. Wild card characters are not allowed in this command.

  Example:

  ```
  [includepath_start]
  ```

  ; Copy the entire contents of My documents

  ```
  My Documents
  ```

  ; Copy everything starting the folder C:\Project_1\Lab23\1998\WhiteMice, and copy this

  ; to the target machine in My Documents\WhiteMice.

  ```
  C:\Project_1\Lab23\1998\WhiteMice, My Documents\WhiteMice
  ```

  ```
  [includepath_end]
  ```

- ► **IncludeFileDescription**. With this command you can search for all files that match a particular pattern on part of or the entire machine. If desired, you can relocate these files and preserve or remove the directory structure.

  The syntax is

  ```
  <File Name>,[<Start Location>],<New Location>,[{P | R }]
  ```

  where

`<File Name>`	Is the name of a file without the path. Wildcards are allowed. This parameter is required.
`<Start Location>`	The search starts here. The location and all its subfolders will be searched. The start location can be a drive letter, a folder, or the logical locations "My Computer" or "My Documents" (on applicable operating systems only). It cannot have wildcard characters. This parameter is optional. If left unspecified, SMA will search "My Computer", excluding the CD-ROM and network drives.
`<New Location>`	This is the folder to which the files will be copied. The folder will be created on the target machine if necessary. It can be the root of a drive such as the `C:\` drive, or a logical location such as "My Documents". It cannot have wildcard characters. This parameter is required.
`P	R`	Preserve/Remove path. You can specify one of these parameters. If the option is "Preserve", the path of the file (from the root of the drive) is preserved and recreated on the target machine starting in the folder specified in `<New Location>`. If the option is "Remove", the file will be stripped from its original path and will be placed directly in the folder specified in `<New Location>`. This parameter is optional. If left unspecified, the path will be preserved.

  Example:

  ```
  [includefiledescription_start]
  ```

  ; Get all files ending in .doc, and put them directly in the My Documents folder, i.e. remove the

  ; original paths.

  ```
  *.doc,, My Documents,R
  ```

  ; Get all files ending in .xls located in the folder C:\acctng or its subfolders, and put them in

  ; C:\Accounting\LastQuarter\Spreadsheets, preserving the original directory structure.

  ; The new location for files and folders directly located in the C:\acctng folder will be

; C:\Accounting\LastQuarter\Spreadsheets\acctng

```
*.xls, C:\acctng, C:\Accounting\LastQuarter\Spreadsheets, P
```

```
[includefiledescription_end]
```

▶ **ExcludeFile**. With this command you can deselect one or more files in a specific folder but not its subfolders. This command has just one parameter, file name, which must be specified with the full path. Logical paths are not supported and wildcards are only allowed in the file name. For instance, `C:\Docs\*.tmp` will remove all files with a .tmp extension from the `C:\Docs` folder.

▶ **ExcludePath**. With this command you can deselect all files and folders located in a certain folder. This command has just one parameter, folder location, which must be specified without wildcards. For instance, `C:\Windows` will remove everything in that location, including subfolders and their contents.

▶ **ExcludeFileDescription**. With this command you can exclude all files with a certain name. Wildcards are allowed but a path name is not allowed. Optionally you can start the search from a certain location of the directory structure onward, i.e. that folder and all its subfolders. Logical names are allowed. If the location is not specified, all selected files will be searched.

Example:

```
[excludefiledescription_start]
```

; Select all files matching the specified pattern, located in the My Documents folder or

; its subfolders.

```
*_old.doc, My Documents
```

```
[excludefiledescription_end]
```


4.2 Applying in Batch Mode

During the apply phase, **SMABAT.EXE** copies the contents of the profile onto the target computer. An example of an apply command is:

```
SMABAT /a /n C:\sma_profiles\receptionists.sma
```

In this example, the selected profile is applied as is to the target computer without any changes. It is also possible to edit a profile prior to applying it, as is shown in the following example:

```
SMABAT   /a C:\MyCommandFile\EntryLevelReceptionistCommandFile.txt
         /n C:\sma_profiles\receptionists.sma
```

In this example, SMA applies the profile receptionists.sma after some changes have been made as described in the command file EntryLevelReceptionistCommandFile.txt.

The command file that is used during the apply phase has the same syntax as the file used during the capture phase, although some of the commands behave differently. During the apply phase, you can only make changes to a given profile. For instance, if your profile includes all desktop settings but you don't want to apply the active desktop to a given target computer, you can deselect that option by typing `active_desktop = 0` in the desktop settings section of the command file. However, if your profile does not include printer settings, you cannot include printer settings by entering `printers = 1` in the miscellaneous settings section of the command file. In order for deselection to be successful, you must know which settings were stored in the profile.

Similarly, when the profile includes a selection of files, you can exclude some or all, but you cannot select a file that is not included in the profile. In order for deselection to be successful, you must know which files are in the profile, as this information is not readily available in the original command file. Remember

that SMA processes file exclusion commands assuming the original location of files and folders on the source computer prior to interpreting redirection statements.

During copying, when a file is relocated to a folder that already has a file with that name, the base name of the to-be-relocated file will be appended with '_01' if the `overwite_existing_files` parameter in the command file is set to not overwriting. For example, the file sample.txt will be renamed sample_01.txt. Additional duplicate files will be given the addition '_02', '_03', and so forth.

During the apply phase, these commands exhibit special behavior:

- ▶ **Exclude_Drives**. This command is ignored.

- ▶ Misc_Settings:

  - ▪ `bypass_registry`. Enter 1 to deselect all registry settings, or enter 0 or leave unspecified.

- ▶ **Editable_Connectivity**. You can edit the values of various connectivity settings. Remember that you must have these settings included in the profile in order to edit them. The parameters, whose equivalents during a standard migration are described in detail in "Editable Network Settings" on page 43, are:

  - ▪ `computer_name`.
  - ▪ `computer_description`.
  - ▪ `ip_address`.
  - ▪ `subnet`.
  - ▪ `gateway`.
  - ▪ `domain_workgroup`.

4.3 Creating a Command File Template

SMA is designed such that batch mode migration and migration executed via the user interface can be used interchangeably. In fact, when SMA is run through the user interface, **SMABAT.EXE** is invoked in the background to do the actual creation of the profile during capture and to copy the files and settings during apply.

One advantage of this design is that the profiles produced in either mode are the same. For instance, if you at one point created a profile in batch mode but at a later time are uncertain about the settings and files captured, you can open the profile and examine its contents through the user interface.

Another advantage of this design is that you can use the user interface to create a command file template for use in batch mode. Rather than creating an actual profile, SMA is run through the user interface to capture the *types* of settings that you want to capture. This information is written to a command file, which you can then use to capture a profile in batch mode. In other words, you can create this template file once and then use it repeatedly to capture the actual settings of different source computers. Although the specific settings that you migrate will depend on the source computers' environment, the kind of settings that you migrate will be the same across your entire organization. File migration information is not written to this template, because file handling is driven differently in the two modes.

To create a command file template, follow these steps:

1. With a text editor, open the `<drive>:\Program Files\IBM\SMA\config.ini` file.

2. Locate the `Just_Create_Command_File` option. Add `Yes` after the equal sign.

3. Locate the `Command_File` option and change the default name and location of the template file, e.g. `C:\MyCommandFiles\Win2KCommands.txt`. Remember the default set by SMA, i.e. `C:\CommandFile\Commands.txt` or the default location of your choice.

4. Start **SMA.EXE** and run the capture phase as described on page 13 and beyond. Notice that the **Files and Folders** checkbox on the **Migration Options** page does not appear, nor does the corresponding **File Selection** window. The **Profile Location** window is used to capture the location and name of the profile in the template file, although no actual profile will be created.

5. Edit the `<drive>:\Program Files\IBM\SMA\config.ini` file and change the `Command_File variable` back to the default location, i.e. `C:\CommandFile\Commands.txt`, or the location of your choice. This will prevent your template file from being overwritten the next time you run SMA. If applicable, also reset the `Just_Create_Command_File` option.

6. (Optional.) If you want to add specific file inclusion and exclusion routines, edit your template file and make the desired changes.

7. On the source computer, run the batch program in capture mode using your new template file and create the profile. Apply this profile to one or more target computer in batch mode. If desired, repeat this step for different combinations of source and target computers.

4.4 File Migration Examples

File and Folder Selection During the Capture Phase

The following examples describe how to use combinations of file inclusion and exclusion to create more complex file selections. Only the file handling sections of the command file are shown.

Example 1: Get all files ending in .doc, and put them directly in the "My Documents" folder. Exclude the files that are in the `D:\No_Longer_Used` directory.

```
[includefiledescription_start]
*.doc,, My documents,Remove
[includefiledescription_end]
[excludepath_start]
D:\No_Longer_Used
[excludepath_end]
```

Example 2: Select the entire contents of the `D:` drive, but remove all files located in the root of the drive and all .tmp files.

```
[includepath_start]
D:\
[includepath_end]
[excludefile_start]
D:\*
[excludefile_stop]
[excludefiledescription_start]
*.tmp
[excludefiledescription_end]
```

Note that the two exclude statements might theoretically apply to the same files. This is not a problem because the various commands are handled in strict serial order, each section being interpreted before SMA turns to the next section.

Example 3: Select the entire contents of the D: drive, but remove all files located in the root of the drive. Then, include .doc and .bmp files located at the root of the drive.

```
[includepath_start]
D:\
[includepath_end]
[excludefile_start]
D:\*
[excludefile_stop]
[includefile_start]
D:\*.doc
D:\*.jpg
[includefile_end]
```

File and Folder Deselection when Applying the Profile

Example: During capture a profile was created containing all files ending in .doc and these were put directly in the "My Documents" folder. Excluded were files that were in the D:\No_Longer_Used directory (as in example 1 above). During apply, files that match the *_old.doc pattern are also deselected.

```
[excludefiledescription_start]
*_old.doc
[excludefiledescription_end]
```

Chapter 5. Advanced Administrative Topics

5.1 Customizing the Standard Migration

The standard configuration of SMA when run through the user interface, including the look and feel of the user interface itself, can be easily changed. Some of the available customization features are:

- ▶ The ability to skip SMA Source wizard pages.
- ▶ The ability to have certain settings selected by default.
- ▶ The ability to guarantee that certain settings are always or never selected.

Customization is accomplished by editing the `<drive>:\Program Files\IBM\SMA\config.ini` file.

Note: In the config.ini file, any text that appears after a semicolon ";" will be treated as a comment. The semicolon must appear at the beginning of the text and must not be preceded by other characters. Also, the text in this file is not interpreted in a case sensitive fashion.

The following variables are given in the config.ini file:

- ▶ **Global Options**. These variables appear once at the beginning of the file and apply globally to the entire SMA migration process:

  - `Configuration_File_Show_Configuration_Messages`. This variable determines whether error messages will be displayed when an error occurs while interpreting the config.ini file. Valid values are Yes and No. The default value is No.

  - `Window_Background_Image_Name`. By default, a sand pattern is used for each window. If you want a different pattern or image, then provide the complete path to the desired (.bmp) bitmap image. The image will be tiled if it isn't large enough.

  - `Temp_File_Location`. This is the location where SMA will place files for compression and decompression during processing. The default location is `C:\sma\temp`. It is possible to use a shared location on another system. The following example will write the temporary files in a directory with the same name as the username on the system drive:

    `Temp_File_Location = %systemdrive%\%username%`

  - `Log_File_Location`. This is the location where the log file will be placed. The default location is the `C:` drive. It is possible to use a shared location on another system. The following example will write the log files in a directory with the same name as the computer on the system drive:

    `Log_File_Location = %systemdrive%\%computername%`

  - `Command_File`. This is the location and name of the command file that SMA uses in the background to record the types of settings that are captured. The default value is "`C:\CommandFile\Commands.txt`". For more details, see "Migration in Batch Mode" on page 57 and beyond.

  - `Just_Create_Command_File`. Enter "yes" if you only want to create a command file template without creating a profile. For more details see "Creating a Command File Template" on page 64.

  - `Exclude_Drives`. Type the drive(s) that is/are not going to be scanned prior to file selection. The excluded drive will not be displayed on the **File Selection** window and none of the files on that drive can be selected during capture. This variable is ignored during the apply phase.

  - `Overwrite_Existing_Files`. Enter `No` to prevent overwriting of existing files during a selective migration. Enter `Yes` or leave unspecified to overwrite existing files.

- ▪ `Default_Profile_Path`. This is the default location (or folder) that SMA uses to save, or open, an SMA profile. This path will be specified in the "save as..." edit box when capturing settings on the source system. On the target system, it will be the default location for the browse dialog when searching for an SMA file.

- ▪ `Verbose_Logging`. Default here is "no". Set this to "yes" to have SMA generate extended logging information in the SMA log files. This may assist in problem determination.

- ▶ **Splash Screen**. These variables pertain to the splash screen shown when you start **SMA.EXE**:

  - ▪ `Splash_Page_Display_Time`. This is the amount of time that the splash screen will be displayed, measured in seconds. If left unspecified, the splash screen will be displayed for 2 seconds

  - ▪ `Splash_Page_Text_Line1` through `Splash_Page_Text_Line4`. You can type up to four lines of text that will be displayed on the splash screen.

- ▶ **Generic Page Options**. These options apply to all the pages (windows) shown during the SMA migration process.

  - ▪ `<specific>_Page_Title`, where <specific> stands for the various page qualifiers. Examples are `Start_Page_Title`, `Options_Page_Title`, etcetera. If you want to change the window title, you can enter a different title here. Otherwise, the default will be used.

  - ▪ `<specific>_Page_Banner_Text`. If you want to change the banner text, you can type it here. Otherwise, the default will be used.

  - ▪ `<specific>_Page_Banner_Font`. Enter a font name or leave unspecified to use the default font for the text in the banner.

  - ▪ `<specific>_Page_Banner_Font_Size`. Enter a font size or leave unspecified to use the default font size for the text in the banner.

  - ▪ `<specific>_Page_Banner_Text_Foreground_Color`. Enter a color or leave unspecified to use the default color for the text in the banner. The color is based on Red, Green, and Blue (RGB) values. For example, to display bright red, type 255,0,0, to display black, type 0, 0, 0.

  - ▪ `<specific>_Page_Banner_Text_Shadow_Color`. Type a color or leave unspecified to use the default color for the text shadow in the banner. The color is based on Red, Green, and Blue (RGB) values.

  - ▪ `<specific>_Page_Guidance_Text`. The guidance section is the left panel on each window. If you want to provide alternate guidance to what is shown by default, type it here.

  - ▪ `<specific>_Page_Guidance_Font`. Enter a font name or leave unspecified to use the default font for the text in the guidance window.

  - ▪ `<specific>_Page_Guidance_Text_Font_Size`. Enter a font size or leave unspecified to use the default font size for the text in the guidance window.

  - ▪ `<specific>_Page_Guidance_Text_Color`. Enter a color or leave unspecified to use the default color for the text in the banner. The color is based on Red, Green, and Blue (RGB) values.

  - ▪ `<specific>_Page_Status_Bar_Text`. The status bar is located at the bottom of the window. If you want to provide alternate text in the status bar to what is shown by default, type it here.

- ▶ **Choice Options**. These variables refer to selections you can make during the migration process by selecting a radio button or checking a checkbox. Choice variables are found on the first window as well as the desktop settings, application settings, and network settings windows.

  To change the default setting, pick one attribute from each of these pairs: Hide/Display, Enabled/Disabled, and Checked/Unchecked. The first pair determines whether the option is shown on the screen or is hidden, the second pair determines whether you can change the selection, i.e.

enabled, or whether the selection is grayed out, i.e. disabled, and the third pair determines whether the setting is selected or not selected. The Enabled/Disabled pair is ignored when the Hide value is chosen. If no values are given, the default settings are used.

Examples:

`Start_Page_Choice_Create = Display, Enabled, Unchecked`. This variable refers to the **Capture settings and files from this computer** radio button on the first window. The example here has it displayed, enabled, and not selected. Please note that this radio button and the **Apply captured settings and files to this computer** radio button are dependent and mutually exclusive. Therefore, in this example the setting for the other button should be `Start_Page_Choice_Apply = Display, Enabled Checked`.

`Options_Page_Choice_Selective = Hide, Checked,` and `Options_Page_Choice_Mass = Hide, Unchecked`. Hide both the selective migration and mass migration radio buttons on the options page. Selective migration will be chosen during capture. Please note that these radio buttons are dependent and mutually exclusive. Therefore they should either be hidden or displayed at the same time, and exactly one button should be checked.

`Desktop_Page_Choice_Colors = Display, Disabled, Checked`. The color option on the desktop settings page will be displayed, selected, and grayed out, i.e. you cannot unselect it. This setting will always be captured.

`Options_Page_Choice_Files = Display, Disabled, Unchecked`. The files and folders option on the options page will be displayed, not checked, and disabled, meaning that you cannot select it. The File Selection window will not appear and no files will be migrated.

`Desktop_Page_Choice_ Task_Bar= Hide, Checked`. The task bar option on the desktop settings page will not be displayed. However, it is checked, meaning that it will be captured.

`Options_Page_Choice_Printers = Hide, Checked`. The printer option is hidden on the options page, but it is checked, meaning that the printer settings are captured.

`Options_Page_Choice_Applications = Hide, Checked`. The application settings option is hidden on the options page, but it is checked, meaning that the application settings page will always appear.

▶ **Show Window Options**. This option is only available for the desktop settings, application settings, and network settings windows. If you want to hide the window, enter "No". Otherwise type "Yes" or leave the value unspecified, e.g. `Desktop_Page_Show_Page = Yes`. If a window is not shown, all other values specified in the config.ini file for the corresponding settings will be used.

▶ **Other Options**. Several unique options appear on the various pages:

- `Applications_Page_Show_Registry_Button`. This option shows or hides the registry button on the application settings page. Possible values are `Yes` and `No`. The default selection is `No`. For more details, see "Migrating Registry Settings" below.

- `Selection_Page_File_Quota`. Leave unspecified, or specify a number in megabytes to restrict the amount of uncompressed data that can be captured in a profile.

- `Selection_Page_File_Warning_Message`. During file and folder selection, selecting or deselecting files with certain extensions will cause SMA to display a warning message regarding possible migration difficulties (see page 24). Enter your own message here or leave the value blank to show the default message.

- `Selection_Page_Warning_Extensions`. During file and folder selection, selecting or deselecting files with certain extensions will cause SMA to display a warning message regarding possible migration difficulties. Change the set of extensions here or use the default configuration

as shown in the example. When adding file extensions, make sure that each one is entered on a new line.

Example:

```
[Selection_Page_Warning_Extensions_Start]

exe

com

dll

[Selection_Page_Warning_Extensions_End]
```

5.2 Migrating Registry Settings

With SMA you can capture and apply registry settings for software applications that have entries in the registry. You can either do this through the user interface or in batch mode.

IMPORTANT: Registry settings deeply affect the way Windows functions. If you are not careful, you can completely disable or destroy the functionality of your system. It is often difficult to determine which applications depend on which keys. Therefore, use extreme caution when selecting registry settings. The migration of registry settings is only recommended for advanced users who have a thorough understanding of the registry database.

If you want to capture the registry settings through the user interface, you first need to enable the **Registry** button. For details, see "Customizing the Standard Migration" on page 67. When enabled, this button will appear on the **Settings for Applications** window (this window, without that option, is shown on page 19). Clicking this button will bring up the following window.
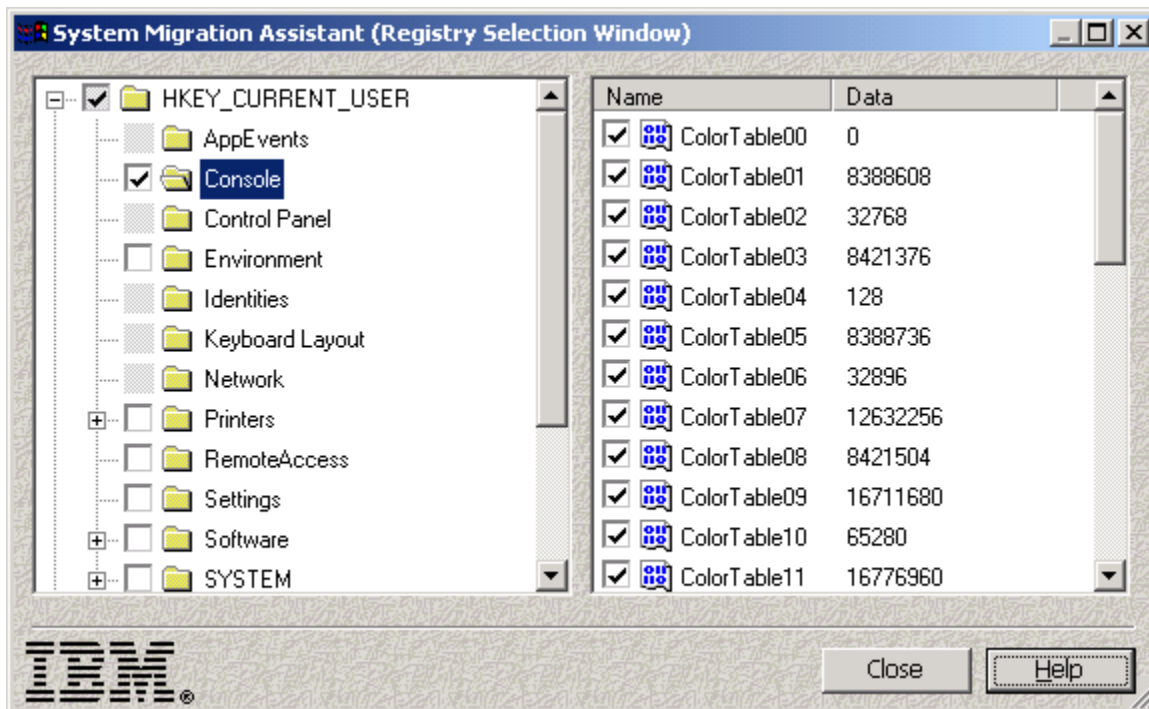
You can select within the following registry keys:

```
HKEY_CURRENT_USER
```

```
HKEY_LOCAL_MACHINE\SOFTWARE
```

The registry settings for hardware cannot be captured.

If you captured any registry settings, a checked checkbox will appear on the **Settings for Applications** window during apply (this window, without the checkbox, is shown on page 41). You have the option of deselecting the registry settings.

To migrate the registry settings in batch mode, you must edit the command file. The syntax of each line in the registry section is:

```
<hive>,<keyname>,[<value>]
```

where

`<hive>`	This parameter is required
`<keyname>`	The keyname must be enclosed in double quotes ("). Spaces, including leading spaces, are not ignored. This parameter is required
`<value>`	The value must be enclosed in double quotes ("). Spaces, including leading spaces, are not ignored. This parameter is optional

Example:

```
[registry_start]

; The first example migrates the registry value.

HKLM,"software\microsoft\currentversion","value"

; The second example migrates the registry key

HKLM,"software\microsoft\currentversion"

[registry_end]
```


5.3 Migration with Tivoli® Storage Manager

If you have Tivoli Storage Manager installed on your machine, you have the option of using this functionality to store the profile during the capture phase. You can do this both during a standard migration and in batch mode.

If you are capturing a profile through the user interface, the relevant TSM options will automatically appear on the **Profile Location** window. Check the checkbox and fill in any other appropriate options before proceeding.
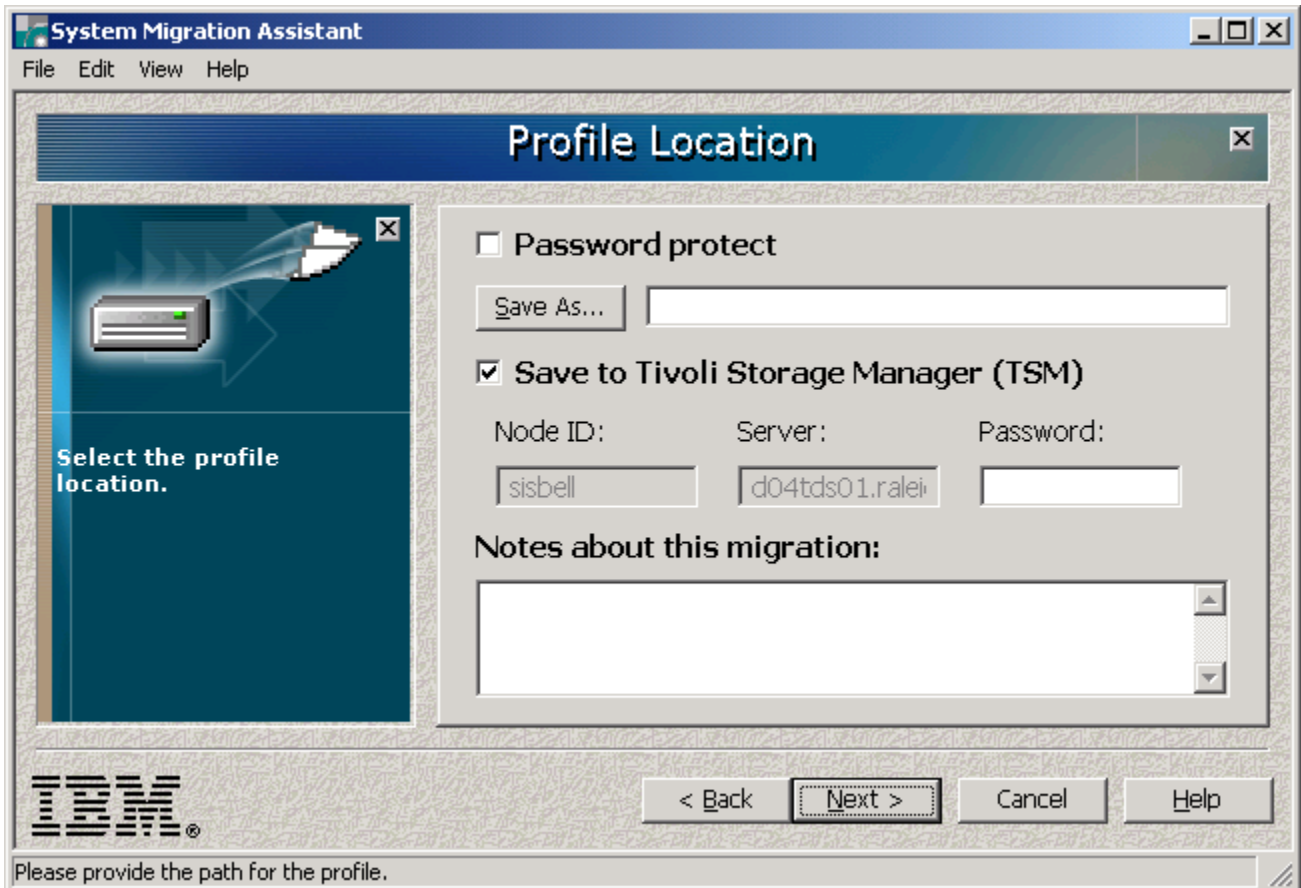
If you are running SMA in batch mode, you can specify a TSM password on the command line (for details, see "Migration in Batch Mode" on page 57). In addition, there are a number of TSM parameters in the command file:

▶ `using_tsm`. Possible values are 0 and 1. Specify 1 if you want to enable TSM storage.

▶ `tsm_node_id`, `tsm_password`, `tsm_server_name`, and `tsm_timeout`. In most cases these parameters can be left unspecified, as SMA will retrieve these parameters from your TSM configuration. Specify only if you want to overwrite these values.

For more information, see your Tivoli Storage Manager documentation or check http://www.tivoli.com/.

5.4 Migrating Additional Application Settings

By default, SMA 3.1 supports the migration of application settings for a select list of applications. Finally, an individual end user can enable the migration of applications settings for additional applications in his or her organization. The latter feature is described here.

Note: Enabling the migration of application settings for additional applications is a potentially very time-consuming activity that requires an excellent knowledge of the application, in particular the storage locations of customized settings. This feature is therefore only recommended for advanced users.

To support an additional application, you must create an application file called `<app>.smaapp`, located in the `<drive>:\Program Files\IBM\SMA\Apps` directory, where `<app>` stands for the prefix of the name you give the file. In this file, the to-be-migrated settings are described using a specific set of commands. To support a new application, it might be easiest to copy an existing application file and make the necessary changes to obtain the desired behavior. An example of an existing application file is `Lotus_SmartSuite.smaapp`.

In the application file, each command is described in a separate section. Each section is clearly marked with braces, namely [`<command>`]. One or more fields can be entered between these markers, with each field placed on a separate line. Any text that appears after a semicolon ";" will be treated as a comment. If SMA encounters an invalid statement while interpreting this file, an error message is written to the log file but processing continues.

The application file contains the following:

- ▶ **General**. This required section identifies the application family, and its supported versions. It has the following format:

   - **Family** = <Application Family Name>, where <Application Family Name> stands for the non-version specific name of the application. For example, "Microsoft Office", not "Microsoft Office 2000". The name should be entered without double quotes, e.g. *My Application*. Leading spaces are ignored. If you run SMA in batch mode, this name should correspond to the string in the Applications section of the command file.

   - **App[n]** = <Application Short Name>, where <Application Short Name>, is a version specific short name for a supported application. This string is used later in the SMAAPP file to specify migration information about a specifc application. For example, "App1 = Office2000", and "App2 = OfficeXP". You can enter as many versions as you want in this section, providing that each application belongs to the application family that this SMAAPP file represents.

- ▶ **App_Info.<ShortName>**. This required section basic information about the application represented by the "<ShortName>" field. (i.e. "[App_Info.Office2000]")

   - **Name** = <Application Name>, where <Application Name> is the name of the application (i.e. "Microsoft Office 2000").

   - **Version** = <AppVersion>, where <AppVersion> is the version number for the application (i.e. "8.0", or "5").

   - **Detect_[n]** = <RegistryRoot>, "<RegistryPathAndKey>". This value is how SMA determines if the application is installed. SMA will look for the existence of the specified registry key. You can provide multiple (n) different possibilities. SMA only needs to find one of the keys. Here is an example:

      Detect_1 = HKLM, "Software\Microsoft\Windows\CurrentVersion\Uninstall\Office8.0"

      Detect_2 = HKLM, "Software\Microsoft\Windows\CurrentVersion\Uninstall\Office9.0"

- ▶ **Install_Directories.<ShortName>**. This required section locates the installation directory as given in the registry. You must specify this path for each operating system separately by defining each of the following fields:

- Win2000=<hive>,<keyname>,<value>

- WinXP=<hive>,<keyname>,<value>

- WinNT=<hive>,<keyname>,<value>

- Win98=<hive>,<keyname>,<value>

- WinME=<hive>,<keyname>,<value>

- Win95=<hive>,<keyname>,<value>

▶ **Files_From_Folders.<ShortName>**. This optional section specifies the customization files that need to be migrated. A single line has the following the syntax:

```
<SMA_Var>, <Location>, [<File>]
```

where

<SMA_Var>   This is a required parameter. You must use a SMA-internal variable corresponding to a directory. The actual physical location of this directory is in many cases operating system dependent. The variables are:

%Windows Directory%. This is the location of your operating system files.

%Systemroot Directory%. This is the location of your system root directory.

%Install Directory%. This is location of the application as defined in the **Install_Directories** section.

%UserProfiles Directory%. This is the location of your user profile directory. On Windows 2000 Professional, this variable translates to C:\Documents and Settings\<username>.

%Appdata Directory%. This is the Application Data directory, which is a subfolder of the user profile directory.

%LocalAppdata Directory%. This is the Application Data directory in the Local Settings folder, which is a subfolder of the user profile directory.

%Cookies Directory%. This is the Cookies directory, which is a subfolder of the user profile directory.

%History Directory%. This is the History directory, which is a subfolder of the user profile directory.

%Favorites Directory%. This is the Favorites directory, which is a subfolder of the user profile directory.

<Location>   This is a required parameter specifying a file or a folder path. If you specify a file, this file will be copied. Both (*) and (?) wildcards are allowed in the filename. If you specify a folder, all the contents of this folder will be copied, unless you specify otherwise in the next parameter. Wildcards are not allowed in the folder name.

<File>   This is an optional parameter that can only be used if a folder is specified in the Location parameter. It specifies the file(s) in that folder that must be migrated. Specify the exact file name or use wildcards. Both (*) and (?) wildcards are allowed.

Example:

```
%Windows Directory%, notes.ini
%Install Directory%, data, *.id
```

► **Registry.<ShortName>**. This optional section specifies the registry entries that you want to migrate. Each line is specified using the syntax `<hive>,<keyname>,[<value>]`, e.g. `HKCU, "Software\Lotus\123\99.0"`.

► **Registry_Exclude.<ShortName>**. This section, if used, should follow the **Registry** section and specifies registry keys and/or values that need to be excluded from the selected set of registry entries. Each line is specified using the syntax `<hive>,<keyname>,[<value>]`, e.g. `HKCU, "Software\Lotus\123\99.0\Paths"`.

► **Files_Through_Registry.<ShortName>**. This optional section specifies files that need to be migrated. The location of the file is determined through the registry and is operating system dependent. The syntax of this command is:

```
<OS>= <Registry>, <File>
```

where

`<OS>`　　　　　This required parameter specifies the operating system. You must use one of the operating system symbols used in the **Install_Directories** section, i.e. `Win2000`, `WinXP`, `WinNT`, `Win98`, `WinME`, or `Win95`.

`<Registry>`　This required parameter specifies the registry entry using the syntax `<hive>,<keyname>,<value>`. The value field must correspond to a folder.

`<File>`　　　This required parameter specifies the file(s) that must be migrated. Specify the exact file name or use wildcards. Both (*) and (?) wildcards are allowed.

Example:

```
WinXP=HKCU,"Software\Lotus\Components\Spell\4.1","Multi User Path",*.udc
```

Creating Your Own Custom SMAAPP Files

The following is a detailed list of the steps needed for a user to create their own SMA App file.

1. Use a generic template from one of the existing app files or the one provided below. Typically they are created using word pad. The example below can be copied and pasted into word pad, and modified.
2. Carefully modify, using the following steps to fit your application, leaving out all commas and quotations, or the app file will have errors.
3. It is difficult to figure out what each app needs to migrate successfully so a lot of testing is involved to determine which registry key will migrate successfully.
4. Run regedit to open registry.
5. The first section is the basic app info section.
6. **GUI_Name** – Name of application.
7. **Registry_Name** – Usually found in registry in HKLM (HKEY_LOCAL_MACHINE).
8. Click on the HKLM tab, then the software tab.
9. Find and click on the vendor folder that pertains to your application i.e. Microsoft.
10. Next click on your specific application i.e. Microsoft Office.
11. Search the folders for the folder that contains the path to the app you are migrating. You only need to provide the folder which contains the path, for this example "software\Microsoft\office\9.0" the path is located in a tab under the 9.0 folder, this is followed with the actual application folder i.e. "MS Project".
12. **The Install_Directories** section is fairly simply and usually found in the same location for every application. *There are a few exceptions to this. Look in the HKLM, "Software\Microsoft\Windows\currentversion\App Paths\" folder. There will be a folder that is

associated with your app i.e. WINPROJ.EXE. This folder will have the path information for the install location.

*Occasionally an app will not have a folder in this section related to your app. If you cannot find a folder for your app, you need to locate a folder elsewhere that contains the install path and use that key for this section.

13. **Files_From_Folders** section is where you determine with wild cards and specific locations which folders and files you want to migrate. In this example we are using Microsoft Project so we want *.mpt which will grab all the files with the mpt extension. This could be done for any file extension such as .doc or .jpeg ect. Often programs create folders in the "documents and settings" under your user account. Check the application data folder for any folders that pertain to your app. If one exists, like for MS project, use the following format to grab the folders and files i.e. %AppData Directory%, Microsoft\MS Project.

14. Often apps are related to existing applications so you need to check all the folders to make sure all the files are grabbed. In this example not only do we need to grab the MS Project folder but the Office folder has our personal settings for the application stored here. To grab that use the same syntax i.e. %AppData Directory%, Microsoft\Office, MSProjec.pip. The comma indicates that we want to grab the following file i.e. our settings file MSProjec.pip.

15. Next click on the Local Settings folder under your user account and check for additional folders or files that pertain to the app. Microsoft Project doesn't have any but if it did the format for grabbing that info is the same only %LocalAppData Directory%, (folder or file).

16. The Registry section is where you grab most of the user settings. Typically they are all located in the HKCU (HKEY_CURRENT_USER) tab in the registry in the software section, like you had to find for the Basic_App_Info section. Add all the registry keys that you find containing information based on your app. The format is HKCU, "Software\Microsoft\Office\9.0\MS Project".

17. Once all the keys are found you can save the app as a .smaapp file and put it into SMA for testing.

18. Click on program files folder on your hard drive then click on the IBM folder, then expand the SMA folder, and copy your new app file into the Apps directory.

Example Microsoft Project 2000.smaapp

```
[Basic_App_Info]
GUI_Name= Microsoft Project 2000
Registry_Name= HKLM, "Software\Microsoft\Office\9.0", "MS Project"
[Basic_App_Info_End]

[Install_Directories]
Win95=HKLM, "Software\Microsoft\Windows\CurrentVersion\App Paths\WINPROJ.EXE", "Path"
Win98=HKLM, "Software\Microsoft\Windows\CurrentVersion\App Paths\WINPROJ.EXE", "Path"
WinME=HKLM, "Software\Microsoft\Windows\CurrentVersion\App Paths\WINPROJ.EXE", "Path"
WinNT=HKLM, "Software\Microsoft\Windows\CurrentVersion\App Paths\WINPROJ.EXE", "Path"
Win2000=HKLM, "Software\Microsoft\Windows\CurrentVersion\App Paths\WINPROJ.EXE", "Path"
WinXP=HKLM, "Software\Microsoft\Windows\CurrentVersion\App Paths\WINPROJ.EXE", "Path"
[Install_Directories_End]

[Files_From_Folders]
*.mpt
%AppData Directory%, Microsoft\MS Project
%AppData Directory%, Microsoft\Office, MSProjec.pip
[Files_From_Folders_End]

[Registry]
HKCU, "Software\Microsoft\Office\9.0\MS Project"
```

HKCU, "Software\Microsoft\Office\MS Project"
HKCU, "Software\Microsoft\Office\9.0\Common\Toolbars"
HKCU, "Software\Microsoft\Office\9.0\Common\Open Find\Microsoft Project"
[Registry_End]

5.5 Performing a Mass Migration

A special case of migration is mass migration. During mass migration, all settings and files are captured and applied by default. Although not recommended, it is possible to deselect files during either migration phase. However, settings cannot be deselected. Mass migration can be run both through the user interface and in batch mode. You must have administrator privileges to run a mass migration.

The migration restrictions that apply during mass migration are different from those that apply during selective migration. These restrictions are discussed in detail in the next sections.

Supported Operating Systems

Mass migration is supported for all operating systems mentioned in the above table with the exception of Windows 95. Also, migration between computers with different operating systems is not supported.

Before you start the migration process, you must manually install Microsoft Windows Installer on either a target or a source computer running Windows NT 4.0 Server, Windows NT 4.0 Workstation, Windows 95, or Windows 98. To download Microsoft Windows Installer, go to http://www.microsoft.com/msdownload.

Capturing a Mass Migration Profile

In order to run a mass migration through the user interface, you must first enable the mass migration option on the **Migration Options** window. To do so, you must edit the config.ini file and change the value of the `Options_Page_Choice_Mass` parameter in the options section. For details, see "Customizing the Standard Migration" on page 67.

After you have enabled mass migration, start **SMA.EXE**, select the **Capture** option on the first page, and go to the **Migration Options** window. Select the **Mass Migration** option and click **Next** to continue.
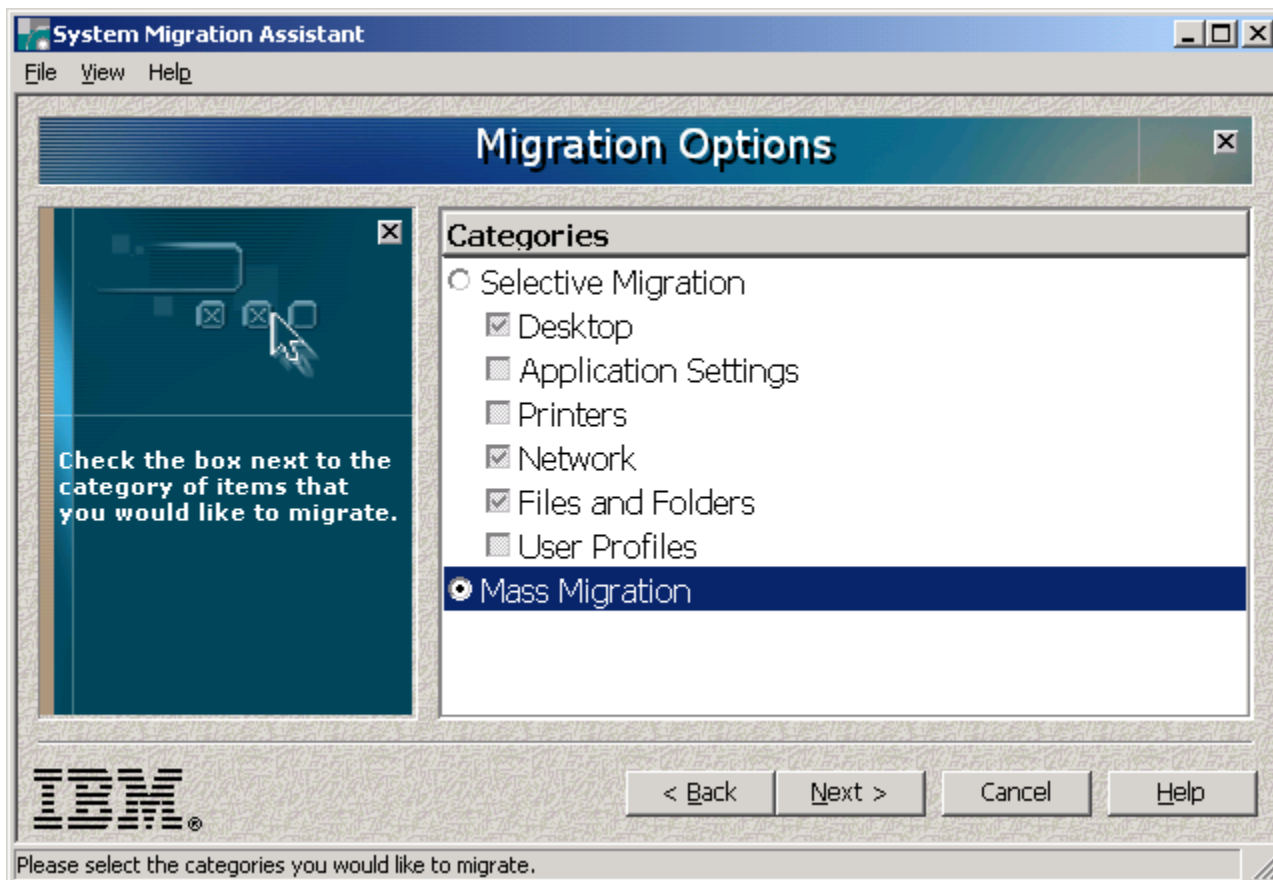
SMA will capture the desktop, printer, network, and user profile settings. Also, all files and folders are selected including all application files, but the **File Selection** window will appear allowing you to deselect and/or redirect files and folders (see page 24).

Important: It is strongly recommended that you do not deselect files. Deselecting files and applying the resulting profile might leave your target computer in an unstable state.

If files were deselected and the resulting profile has been applied, it is possible that the registry on your target computer will contain references to files that were not copied to the target computer. In that case it will be necessary to clean up the registry. There are several methods to do this. For more information, see Windows Help on your system or http://www.microsoft.com/.

If you do deselect files or folders, you may receive the following message:
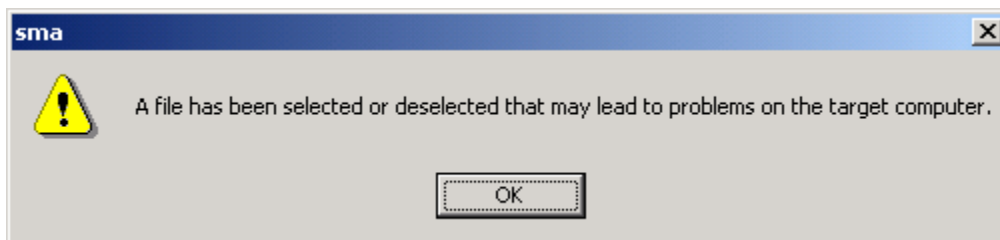
This message appears when deselecting a file might cause migration problems. In the default setup, SMA will display this warning when an application-related file with a .dll, .exe, or .com extension is unchecked. (For details on how to configure this setup, see "Customizing the Standard Migration" on page 67). When you have finished deselecting and redirecting, click **Next** to finish the capture process (see page 32).

The following additional issues should be considered before running a mass migration:

▶ **Operating system files**. SMA is not intended to migrate operating system files. This is an activity with a very high probability of causing unintended negative consequences, since many of these files are tied to particular hardware, or to a particular revision of the operating system. During the scanning process, SMA excludes files that are listed as system-related files in the `layout.inf` file, located in the `C:\winnt\inf` or `C:\windows\inf` folder (depending on your operating system). In other words, these files are neither captured nor listed in the **File Selection** window.

▶ **Multiple operating systems**. It is only possible to reliably identify active operating systems. Files associated with non-active operating systems are handled like any other file, i.e. they are not handled like operating system files. Therefore, even when the source and target computer have identical hardware configurations, the non-active operating systems are not expected to be functional on the target computer.

▶ **Drives and partitions**. Mass migration can only be successful if the source and target computer have the same drive and partition structure. In other words, if the source computer has a `C:` and a `D:` drive, the target computer should also have a `C:` and a `D:` drive. In addition, SMA only reads drives and partitions that are visible to the currently active operating system. Additional operating systems that are in partitions and/or drives that are not visible from the active operating system will not be handled in any way.

▶ **Overwriting files**. When a file is to be copied to a location where there's already a file with that file name, SMA will always overwrite the existing copy with the to-be-applied file. This behavior cannot be changed by setting the `overwrite_existing_files` in your config.ini file. SMA handles application files differently. This is discussed next.

▶ **Application files**. All application-related files such as .dll, .exe, and .sys files are selected during the capture phase. On the target computer, when a to-be-applied application file already exists in the system directory (`C:\winnt` or `C:\windows`, depending on your operating system), it is overwritten only if the to-be-applied copy is newer than the one present on the target computer. To determine this, SMA will first look for internal version information. If absent, SMA will compare dates to determine which version is newer.

▶ **Application**. During a mass migration, all applications are captured and applied. However, the application *settings* functionality that is used for selective migration does not apply to mass migration. And some application settings may not transfer without also running selective transfer to capture those settings.

▶ Other issues:

  ▪ **Computer Name**. The computer name is not migrated during a mass migration.

  ▪ **Office 2000**. Mass migration will not work for a source computer running Windows 98, Service Pack 1, with Office 2000 installed.

Applying a Mass Migration Profile

To apply a mass migration profile, simply start **SMA.EXE** and select the profile (see pages 37 and 38). If you set the **Edit Selections** checkbox, you have the option of redirecting (and at your own risk, deselecting) files. However, none of the settings can be deselected and the corresponding windows will not appear. After you have examined the **File Selection** window, click **Next** to start the copy process.

The following operating system specific issues have been identified:

▶ When applying a mass migration profile to a target system running Windows 2000 Professional, the following Windows File Protection message will appear: "Files that are required for windows to run properly have been replaced by unrecognized versions. To maintain system stability, windows must restore the original version of these files." This message can be safely ignored. Click the **Cancel** button and reboot.

▶ After a mass migration profile has been applied to a computer running Windows 98 and the computer has been rebooted, SMA will not run properly unless you rename guires~.dll, located in the `<drive>:\Program Files\IBM\SMA folder`, to guiresource.dll.

▶ Application Settings do not migrate as part of a mass migration. Some settings will migrate simply because mass migration inadvertantly picks up the necessary registry keys and files. To get application settings to migrate, the user will have to run mass transfer on both the source and target systems, followed by a run of selective transfer that picks up only application settings.

Performing a Mass Migration in Batch Mode

To run a mass migration in batch mode, you must edit the command file and set the `Transfer_Mode` to `mass` prior to capturing settings and files (see page 58 for details). All values that you specify in the command file for desktop, printer, network, registry, application, and user profile settings will be ignored. Also, mass migration will always overwrite existing files, i.e. the `overwrite_existing_files` parameter is ignored. However, you can specify the `Editable_Connectivity` settings. Although not recommended, you can also use exclude statements to deselect files and folders. All restrictions and considerations mentioned above regarding mass migration equally apply to batch mode operation.

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Appendix B. File and Registry Exclusions

File Exclusions

The following files and folders are always excluded from the scan process and can never be selected for capture:

▶ `pagefile.sys`

▶ `System Volume Information`

▶ `hal.dll`

▶ `ntuser.dat`

▶ `ntuser.dat.log`

▶ `ntuser.dat.ini`

▶ `system.dat`

▶ `user.dat`

▶ `bootsect.dos`

▶ `io.sys`

▶ `msdos.sys`

▶ `ntdetect.com`

▶ `ntldr`

▶ `$ldr$`

▶ `win386.swp`

▶ `hiberfil.sys`

▶ `boot.ini`

▶ `system.ini`

▶ `msdos.---`

▶ `command.com`

▶ `system.ini`

▶ `system.1st`

▶ `config.sys`

▶ `autoexec.bat`

▶ `%systemdir%\config`

▶ `SMA's temporary directory`

Registry Exclusions

SMA allows the capture of registry entries from HKCU and HKLM with the exception of the following sections:

- ▶ `HKCU\\Software\\Microsoft\\Windows\\CurrentVersion\\Explorer`
- ▶ `HKLM\\SOFTWARE\\Microsoft\\Windows NT\\CurrentVersion`
- ▶ `HKLM\\Hardware`
- ▶ `HKLM\\sam`
- ▶ `HKLM\\security`
- ▶ `HKLM\\system\\ControlSet00N`
- ▶ `HKLM\\system\\currentcontrolset\\enum`
- ▶ `HKLM\\system\\currentcontrolset\\services\\Tcpip`
- ▶ `HKLM\\system\\currentcontrolset\\hardware profiles`
- ▶ `HKLM\\SOFTWARE\\Microsoft\\Cryptography`
- ▶ `HKLM\\SOFTWARE\\Policies`
- ▶ `HKLM\\System\\CurrentControlSet\\Control\\Class`
- ▶ `HKLM\\System\\CurrentControlSet\\Control\\Network`
- ▶ `HKLM\\System\\CurrentControlSet\\Control\\DeviceClasses`
- ▶ `HKLM\\Software\\Microsoft\\RPC`
- ▶ `HKLM\\Software\\Microsoft\\Windows\\CurrentVersion\\Group Policy`
- ▶ `HKLM\\Software\\Microsoft\\Windows\\CurrentVersion\\Syncmgr`
- ▶ `HKLM\\Software\\Classes\\CID`
- ▶ `HKLM\\System\\CurrentControlSet\\Services\\Class\\Net`
- ▶ `HKCU\\AppEvents`
- ▶ `HKCU\\Control Panel`
- ▶ `HKCU\\Identities`
- ▶ `HKCU\\InstallLocationsMRU`
- ▶ `HKCU\\Keyboard layout`
- ▶ `HKCU\\Network`
- ▶ `HKLM\\Config`
- ▶ `HKLM\\Driver`
- ▶ `HKLM\\Enum`
- ▶ `HKLM\\Network`
- ▶ `HKLM\\Hardware`
- ▶ `HKLM\\Security`

In addition, keys are excluded when the final node is one of the following:

- ▶ `StreamMRU`
- ▶ `Cache`
- ▶ `Enum`

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