Reference Manual

Wise Package Studio
ConflictManager™

Wise solutions

Software installations made easy™

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Chapter 1
Welcome

Wise Solutions' unique ConflictManager quickly and proactively identifies and resolves potential conflicts between Windows-based software applications. ConflictManager is a database application that imports installation packages and then finds and resolves conflicts caused by files, registry keys, and other resources. You use ConflictManager to resolve potential conflicts before deploying applications across your organization's workstations, which can reduce post-rollout costs and decrease end user downtime.

Conflicts between applications are one of the most time-consuming and costly issues in today's Windows workstation environment. Applications that run independently without incident often fail when installed together due to file and other conflicts. Conflicts can occur for many reasons, but they most commonly occur when two installed applications use a .DLL with the same name. For example, Package A installs version 1.0.0.4 of a file named report.dll. Package B installs a newer version of the same file, version 2.0.0.1. When the two packages are installed on the same computer, Package A might have a conflict with the newer version of report.dll that is installed by Package B. This conflict could cause a General Protection Fault, a hung application, or some other type of problem. This type of conflict is commonly called "DLL Hell."

ConflictManager helps you avoid DLL Hell and other application conflicts. It detects conflicts that would be virtually impossible to find efficiently using any other method and helps you achieve conflict-free workstations throughout your organization.

Major features of ConflictManager include:

- A means to detect and view conflicts between applications.
- Conflict resolution rules that let you resolve conflicts automatically, saving time, reducing errors, and providing consistency in conflict resolution. With the Enterprise Edition, users can create and modify the resolution rules.
- A Resolve wizard that steps you through the process of resolving file conflicts.

- Reports that help you review and analyze conflicts detected by ConflictManager.
- The ability to export and recompile resolved installations singly or in a batch.

ConflictManager is available as a tool in Wise Package Studio. For more information about Wise Package Studio, see the Wise Package Studio Help.

In this section, learn about:

- The documentation that can help you get acquainted with ConflictManager quickly.
- How to access online help and context-sensitive help.
- Technical support resources.

Documentation Roadmap

The *ConflictManager Reference Manual* and online help assume that you are proficient in the use of the Windows operating system. If you need help using the operating system, consult its user documentation.

ConflictManager often provides multiple ways to accomplish a task. For example, to import an application, you can select Import from either the Application menu or from the right-click menu. In some cases, you can accomplish a task by using the main menu or the right-click menu, or by pressing a key combination. Instructions in this documentation generally include only the most convenient method of accomplishing a task. If you are most comfortable with a particular method, check the right-click menu and the main menu to learn the different methods you can use.

The following sources of information are available to help you learn ConflictManager.

- **Reference Manual.** The reference manual is available from the Help menu; select Online Reference. It contains detailed technical information and step-by-step instructions for performing common tasks. It is also available from Wise Solutions as a printed manual for a fee. Contact Wise Solutions Sales at 734-456-2100.

- **Online Help.** All the material in the reference manual is also available in the online help system. To access the contents, index, and search functions, select Help Topics from the Help menu. To access context-sensitive help, press the F1 key from any place in the product, and you will see help that describes the part of the product that you are in.

- **Getting Started Guide.** The printed *Getting Started Guide* contains system requirements, installation instructions, and a tutorial. You can also access a .PDF copy of the *Getting Started Guide* from the Help menu in Wise Package Studio.

- **Release Notes.** Product release notes, in .HTM format, are available by selecting Release Notes from the Help menu. The release notes document covers new features, enhancements, bug fixes, and known issues for the current version. It also contains links to release notes for other versions of the product.

Getting Help

Press the F1 key to display a help window for the active window or dialog box. You can get help on most windows, dialog boxes, and wizards in ConflictManager. Select Help Topics from the Help menu to see all the information in the reference manual presented on-screen.

Select other commands from the Help menu to view information on using help, to view the .PDF-format reference manual, and to view resources on the Web.

If you need help and cannot find the answer in this manual or the online help, read about our technical support options in Getting Product Support on page 11.

Getting Product Support

Wise Solutions offers many resources to help you use our products. You can search the product help or reference manual .PDF for answers, or you can use one of the many support resources available to you as a Wise Solutions customer.

Get Support Online

To help you get the most out of our products, we offer world-class professional services that include technical support, training, consulting, and Web-based resources. Just visit our support page at **www.wisesolutions.com/support.htm**. Our support page contains a variety of resources such as a searchable Knowledgebase, Newsgroups, and technical support options, as well as a place for you to submit feature or enhancement requests.

Check Our Knowledgebase

Access the Knowledgebase by visiting **www.wisesolutions.com/knowbase.asp** or by clicking the Knowledgebase link on our Web site's support page. The searchable Knowledgebase contains how-to procedures, answers to common support questions, and workarounds. It also contains highly technical material on a variety of subjects.

Visit Our Newsgroups

Visit Wise Newsgroups by visiting **newsgroups.wisesolutions.com** or by clicking the Newsgroups link on our Web site's support page. Newsgroup postings by fellow administrators contain answers, tips, analysis, and other comments. Contribute your own expertise to help other application repackagers.

Subscribe to TechInfo

TechInfo is a free monthly technical newsletter that contains technical tips, product updates, and other important technical information. To subscribe to TechInfo or to read back issues, visit **www.wisesolutions.com/techinfo.htm** or click the TechInfo link on our Web site's support page.

Ask Our Support Team

If you can't find an answer in our online resources, Wise Solutions offers flexible options to meet your support needs. For additional details about our support services, visit our Web site at **www.wisesolutions.com/support** or talk with a technical support representative. Before you contact technical support, make sure you have the following information:

- Serial number and product version, which you can find by selecting About... from the Help menu.
- Operating system version and service pack version if applicable.
- A description of what you do before the problem occurs.
- The exact wording of any error messages you see.
- Your name, company name, and how to contact you.
- Payment information, if applicable.

Standard Support

Standard Support is the perfect solution for registered Wise users who have general technical questions about software installations or Wise products. You can e-mail or fax unlimited technical questions 24 hours a day and receive a response within three business days at no charge. E-mail your general support questions to **standard@wisesolutions.com** or fax them to 734-456-2456.

Quick Response Support

Quick Response Support is designed for registered Wise users who need quick answers to urgent issues. You can call our technical support department directly at 734-456-2600, Monday through Friday, 9:00 a.m. to 6:00 p.m. (ET). You will be charged a flat rate per incident for Quick Response Support. Talk with a technical support representative about purchasing support for multiple incidents at a reduced rate.

Annual Support

Annual Support provides unlimited technical support to registered Wise users who have paid an annual subscription fee. Purchasing Annual Support entitles you to receive a response to your technical questions within one business day. Depending on the Annual Support option you choose, you can submit your technical questions in the following ways:

- Call technical support at 734-456-2600, Monday through Friday, 9:00 a.m. to 6:00 p.m. (ET).
- E-mail the dedicated e-mail address you receive when you purchase annual support.
- Fax 734-456-2456.

Chapter 2
ConflictManager Basics

ConflictManager is part of Wise Package Studio, and is available as a tool in Package Studio's Workbench. You use ConflictManager to find and resolve conflicts between software applications. This section contains an introduction to ConflictManager terms and concepts. Additional topics cover:

- Starting ConflictManager.
- The ConflictManager interface.
- Using ConflictManager in a multi-user environment.
- ConflictManager Professional and Enterprise Editions.
- The ConflictManager process.
- Types of conflicts.
- Guidelines for resolving file conflicts.

Introduction to ConflictManager

If you are a system administrator or desktop integrator responsible for the management and installation of software applications on a large number of workstations, ConflictManager can help you do your job more efficiently. ConflictManager improves the reliability of end user desktops by reducing the risk of problems when you deploy a new application. Using ConflictManager, you can detect and resolve potential conflicts before adding a new application to those already installed on users' workstations.

How Do Applications and Packages Differ?

ConflictManager detects and resolves conflicts between Windows-based software applications. Applications can include third-party commercial software as well as in-house custom software. All applications that are installed on computers in your organization should be imported into ConflictManager so you can ensure they will not conflict with one another.

When you import an application into ConflictManager, you must assign it a package name. Packages represent different versions of a single application installation, or different components of a larger suite. For instance, the Microsoft Office application installation might contain two packages, Office 97 and Office 2000. Another way to organize the Microsoft Office application would be to set up packages for Word, Excel, and PowerPoint. Because you are not likely to install two versions of an application on the same computer, ConflictManager does not look for conflicts between packages of the same application. This speeds the conflict detection process and avoids showing you conflicts that are not relevant.

What Kind of Information Does ConflictManager Compare?

During conflict detection, ConflictManager searches the database information listed below for each application and marks items that conflict.

File name
Version
Binary version
Size
Date/time
Path
Company
Product
16 bit (Yes or No)

Component GUID (Windows Installer installations only)
KeyPath (Windows Installer installations only)
Resource count (Windows Installer installations only)
Shared .DLL (Windows Installer installations only)
Registry key value

This information is displayed in the Resolve wizard, which you start by selecting Resolve from the Conflicts menu. The information is also displayed in the Properties dialog box, which you open by double-clicking the conflicting item in the right pane of the Application Explorer.

What Kind of Conflicts Does ConflictManager Find?

ConflictManager finds and lets you resolve conflicts caused by different applications that install files with the same name. To save time during conflict detection, ConflictManager only searches for the following situations:

- Duplicate files, of any type, in the Common Files directory and any subdirectory of Windows, including the System directory. For example, if two different applications both install the file readme.txt in the Common Files directory, ConflictManager marks them as conflicts. If you don't want ConflictManager to find conflicting readme.txt files, you can exclude that file, or any other files you don't care about, from the conflict detection.

- Duplicate executable files only (.EXE, .DLL, and .OCX files) in all other directories. For example, if two applications install sslib.dll in the Program Files directory, it is considered a conflict.

In addition to file conflicts, ConflictManager also finds conflicts that occur when two or more applications install the same system resource, such as registry keys, Autoexec.bat, Config.sys, ODBC, NT services, devices, .INI files, shortcuts, and the PATH variable. Experienced users can resolve registry key conflicts in ConflictManager. The other types of conflicts cannot be resolved in ConflictManager and are displayed for informational purposes only. For more information about conflict types, see Types of Conflicts on page 29.

Starting ConflictManager

ConflictManager is one of the tools included in Wise Package Studio. Typically, you start ConflictManager from the Projects tab by running a tool or task that is associated with ConflictManager. You can also start ConflictManager from the Tools tab by double-clicking the ConflictManager icon.

To start ConflictManager:

Start ConflictManager from Wise Package Studio in either of two ways:

- From the Projects tab, click the Run link to the right of the task or tool associated with ConflictManager.

OR

- From the Tools tab, double-click the ConflictManager icon.

The ConflictManager program opens. You can now detect, retrieve, and resolve conflicts for the application of your choice.
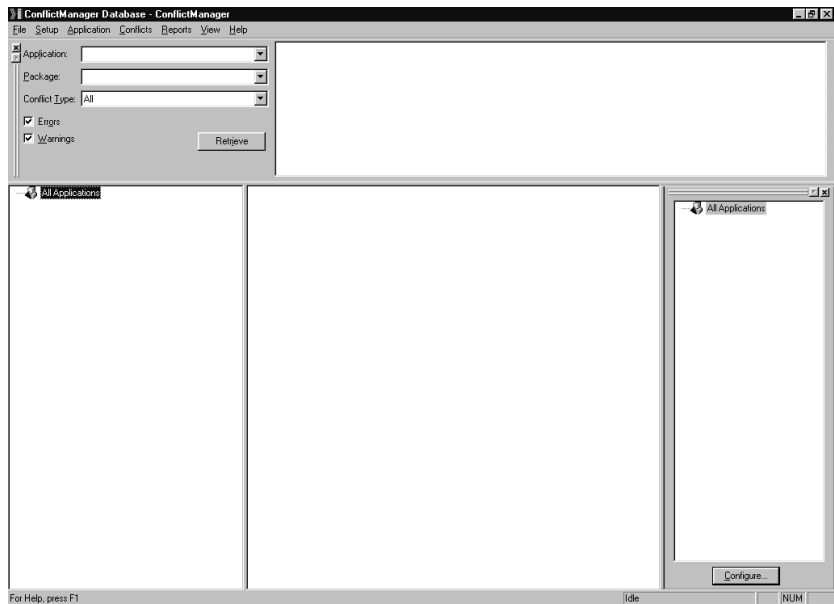
- The first time you start ConflictManager, it opens the default database, if you specified one during installation. Typically this database is empty. If this database is shared, it might contain applications imported by other users. If you imported sample applications during installation, they appear in the database.

- The first time you start ConflictManager, if you skipped the database setup during installation, the Select Data Source dialog box appears and you must connect to a database. See Opening a ConflictManager Database on page 47.

- If one or more installations have been distributed to the ConflictManager share point, the Import from Share Point dialog box appears automatically. You can select applications and click OK to import them, or click Cancel to start ConflictManager without importing applications. See Importing From the ConflictManager Share Point on page 73 for more information.

- If the database contains applications but conflicts have not been detected yet, the Detect Conflicts dialog box appears automatically. You can select applications and click OK to detect conflicts, or click Cancel to start ConflictManager without detecting conflicts. See Detecting Conflicts on page 84 for more information.

If you're new to ConflictManager, you might want to open the sample applications database and experiment with finding and resolving conflicts. See Using the Sample Applications Database on page 39.

The ConflictManager Interface

When you start ConflictManager, you see the main ConflictManager window. Some of the panes might be empty if you have not imported any applications or detected conflicts. Importing applications populates the database with information about the applications. Detecting conflicts finds conflicts between one or more selected applications and all other applications in the database. Retrieving conflicts displays the conflicts for an application you choose.

Conflict List. Choose the application and package for which you want to display conflicts, then click Retrieve.

When you retrieve conflicts, this pane of the Conflict List displays all the conflicts between the selected application and the rest of the database. Double-click an item to see the items that conflict with it.

Application Explorer. Shows the installations that you've imported into the database.

The right pane of the Application Explorer shows the contents of the folder selected in the left pane.

Groups. This pane shows the groups you've defined. Select a group to show conflicts between the selected application and the subset of applications that's defined by a group. Enterprise Edition only.

Status Bar. Shows the conflict detection status. "Idle" displays when conflict detection is not running.

Areas of the ConflictManager Window

Conflict List. This pane initially appears at the top of the window, and lets you view conflicts between an application and the rest of the database. You choose an application and package, and other filtering criteria, and click Retrieve. The right pane of the Conflict List shows all conflicts between the selected application and all other applications in the database. When you click a conflict item in this pane, the tree structure in the Application Explorer automatically expands to show the location of the conflict. In the Enterprise Edition, if a group is selected, only the conflicts between the selected application and the applications in the group appear.

Conflicts are classified as either warnings, errors, or information. See What Are Warning, Error, and Information Conflicts? on page 30 for descriptions of these conflict classifications.

Application Explorer. The Application Explorer initially appears in the lower left of the window. The left pane of the Application Explorer shows all applications that are in the current ConflictManager database. You can see all the file, registry, and .INI modifications made by each installation by expanding the tree structure beneath its name. The three icons in this pane are:

 Group Icon. In the Enterprise Edition, this icon represents the group that you are currently viewing. "All Applications" is considered a group (it is the only group in the Professional Edition). You choose a group in the Groups pane, which you open by selecting Groups from the View menu.

 Application Icon. This icon represents an application installation that is in the ConflictManager database.

 Package Icon. This icon represents the different versions of a single application installation. For instance, the Microsoft Office application installation might contain two packages, Office 97 and Office 2000. Packages are differentiated in the database so ConflictManager can avoid showing conflicts between different packages of the same application.

The right pane of the Application Explorer contains the conflicts that are located in the folder that's selected on the left. This lets you see conflicts by location in the installation.

Groups. The Groups pane, accessed by selecting Groups from the View menu, initially appears in the lower right of the window, and shows groups you defined. You use groups to see conflicts between a given subset of applications. Normally, when you click the Retrieve button, the selected application is compared against every other application in the database. If you only want to see conflicts within a particular group of applications, you can create a group of applications and display conflicts only within that group.

> **Enterprise Edition only**
> Groups are available in the Enterprise Edition only.

Customizing Your Workspace

To customize the ConflictManager window, you can show or hide its panes, resize the panes, and dock and undock the Groups pane and the Conflict List pane.

To show or hide panes:

Hide or show the Status Bar, Conflict List, or Groups pane by selecting its name from the View menu.

To resize panes:

Adjust the height or width of any ConflictManager pane, whether docked or undocked, by dragging its border.

To dock and undock panes:

To undock the Conflict List or Groups pane, click anywhere in the gray area of the pane and drag it towards the center of the window.

To dock the Conflict List, drag it to the top or bottom of the ConflictManager window. To dock the Groups pane, drag it to the left or right of the ConflictManager Window. The Conflict List can dock only at the top or bottom; the Groups pane can dock only on the left or right.

Enterprise Edition only
The Groups pane is available in the Enterprise Edition only.

Using ConflictManager in a Multi-user Environment

Most organizations that use ConflictManager use it in a multi-user environment. Users can run ConflictManager from their local computers or from a server installation. When users select a network directory as the **Destination Directory** during installation, the ConflictManager program files are installed on a server and the users' computers are configured to run the software from the server. Regardless of how they run ConflictManager, users can access a single ConflictManager database that is stored on the server.

When you use ConflictManager in a multi-user environment:

- Multiple users can distribute to the ConflictManager share point.

- When an application is imported to ConflictManager, whether automatically or by a user, all ConflictManager users can view it and detect conflicts against it.

- Multiple users can resolve conflicts, provided each user resolves conflicts for a different application.

  Typically, each user is assigned to work on a specific application or applications. Users detect and resolve conflicts for their assigned applications. Your company standards should determine whether a user can update an application that is assigned to someone else. This could happen when using one of the aggressive resolution rule sets or when using the Copy Down button in the Resolve wizard.

ConflictManager Professional and Enterprise Editions

ConflictManager is available in the Professional and Enterprise editions of Wise Package Studio. The Professional Edition is designed for system administrators working as part of a desktop integration team at a department or division level within an organization. It contains a powerful set of features for detecting and resolving conflicts between applications. The Enterprise Edition contains the following advanced features designed for the corporate repackaging team:

- Auto Import Service imports applications into the ConflictManager database automatically. See Running the Auto Import Service on page 76.

- Application groups let you organize imported applications into groups, which reduces the number of conflicts you view at one time. See Grouping Applications on page 80.

- User-defined conflict resolution rules let you modify the predefined rule sets or create your own to reflect your company's standards. See Creating a New Rule Set on page 66.

- Additional conflict reports that show conflicts for multiple applications and groups. See What Reports Are Available? on page 106.

The ConflictManager Process

ConflictManager provides an efficient way to detect and resolve potential conflicts before you deploy applications across your organization's workstations. Before you begin to use ConflictManager, however, you must set up your work environment by connecting to a database, defining conflict settings. If you are using the Enterprise Edition, you might also want to customize conflict resolution rules. Once you have set up ConflictManager, you can import applications into the database, detect conflicts between applications, resolve conflicts, export the changed applications, and test the modified installations.

Before You Start to Use ConflictManager

Before you can start resolving application conflicts, you must set up your ConflictManager work environment. This consists of connecting to or creating a database, defining conflict settings, and defining resolution rules.

- **Connect to or create a database.** The ConflictManager installation process sets your default ConflictManager database. If you choose to use an Access database for ConflictManager, it is created automatically in the Wise Package Studio share point directory during installation. If you want to use an MSDE or SQL Server database instead, you must create the database and register it as a data source either before or after installing ConflictManager.

  When you first start ConflictManager, it opens your default database. If you want to use a database other than the default, or if you did not connect to a database during installation, you must create a database, register it as a data source, and then open it in ConflictManager. See Opening a ConflictManager Database on page 47 and Creating a New ConflictManager Database on page 48.

- **Define conflict settings.** Conflict settings determine the type of conflicts that are detected and the items, such as files and registry keys, that are excluded from the conflict detection. Excluding files and registry keys helps eliminate conflicts that don't have a negative impact on any installation. You define ConflictManager settings in the Conflict Settings dialog box, which you access by selecting Conflict Settings from the Setup menu. For more information, see Defining Conflict Settings on page 56.

- **Define conflict resolution rules.** Conflict resolution rules let you resolve conflicts automatically, which saves time, reduces errors, and provides consistency in conflict resolution. ConflictManager contains four predefined rule sets you can use.

If you have the Enterprise Edition, you can modify the existing rule sets or create your own to meet your needs. Rule sets are stored with the database, therefore, if you use multiple ConflictManager databases, you must define rule sets separately in each one. To define resolution rules, select Conflict Resolution Rules from the Setup menu. See Using Conflict Resolution Rules on page 64.

Process for Resolving Conflicts

Rather than depending on the trial and error method of finding conflicts—that is, by installing an application and waiting for it to crash—you can approach the problem systematically with ConflictManager. You first obtain a Windows Installer or WiseScript installation file for each application you want to check for conflicts. If you want to check an application that is not in either of those formats, use Wise Package Studio to repackage it. Then import each application into a ConflictManager database, where you use ConflictManager to compare applications and find potential conflicts.

Typically, you follow the general process listed below to use ConflictManager. In some cases you might not follow all these steps, and often you might not follow them in order. If you are using ConflictManager for the first time, however, the steps below help familiarize you with different parts of the process.

Step 1: Define Applications

Before using ConflictManager to find conflicts, you need definitions of all the application installations that you need to compare. Each application must be in WiseScript (.WSE) format or Windows Installer (.WSI or .MSI) format. You can obtain application installations in different ways.

- If you're a software developer or your company uses in-house custom applications, you can build your installation in a Wise authoring tool such as Windows Installer Editor.

- Use an existing third-party Windows Installer or WiseScript installation.

- Use SetupCapture, ApplicationWatch, or other Wise Package Studio tools to repackage a third-party installation into WiseScript or Windows Installer format. See the *Wise Package Studio Reference Manual* for more information on the Package Studio tools.

- Use the predefined applications that are shipped with ConflictManager's sample database.

Step 2: Prepare Installations for Import into ConflictManager

Whether you built an installation in a Wise product or used Wise Package Studio to convert a third-party installer into WiseScript or Windows Installer format, you need to import the installation into ConflictManager. You can prepare installations for import into ConflictManager in the following ways:

- **Distribute to the ConflictManager share point.** You can use the Distribution Wizard to distribute an application installation to the ConflictManager share point directory. This is the recommended way to distribute applications that you plan to import into ConflictManager.

- **Distribute the installation to any network or local drive.** Use the Distribution Wizard to distribute the installation and its associated files to any network or local directory.

- **Save the installation to any network or local drive.** If you are not using ConflictManager in a multi-user environment, simply save the installation on your computer.

> **!** **Note:**
> In order to export an application after resolving its conflicts, you must have access to the original installation and its associated files.

For more information about the Distribution Wizard, see the topic titled *Distribution Wizard* in the Wise Package Studio Help.

Step 3: Import Application Installations into ConflictManager

After you prepare installations for import, use ConflictManager to import them into the ConflictManager database. You can import application installations in the following ways:

- **Import from the ConflictManager share point.** If you or a coworker used the Distribution Wizard to distribute installations to the ConflictManager share point, import them into ConflictManager by selecting Import from Share Point from the Application menu. If you have the Enterprise Edition, you can use the Auto Import Service to import applications automatically. See Importing From the ConflictManager Share Point on page 73.

- **Import from any network or local drive.** If you or a coworker used the Distribution Wizard to distribute an installation to a network drive, or if an installation was saved to a local drive, import the installation

into ConflictManager by selecting Import from the Application menu. See Importing From a Network or Local Drive on page 78.

- **Distribute directly to the ConflictManager database.** The Distribution Wizard can distribute an application installation directly to the ConflictManager database. When you use this distribution method, the application automatically appears in the database the next time you open the database in ConflictManager.

> **!** **Note:**
> Distributing directly to the ConflictManager database does not copy any files, so you cannot recompile the application after resolving its conflicts. Use this method only when you plan to use ConflictManager as a reporting tool.

Step 4: Detect Conflicts

After importing all the application installations that you need into ConflictManager, you can find conflicts by selecting Detect from the Conflicts menu. You choose one or more applications for which to find conflicts, which populates the database with conflict information for those applications you chose. ConflictManager identifies conflicts in files, registry, Autoexec.bat, Config.sys, ODBC, NT services, devices, .INI files, shortcuts, and path additions.

To actually see the conflicts, you use the Retrieve button in the left pane of the Conflict List. You can only retrieve conflicts for one application at a time. You can use the Reports menu to display and print conflict information in varying formats.

See Detecting Conflicts on page 84 and Reviewing Conflicts on page 86 for more information.

Step 5: Resolve Conflicts

The process of resolving a conflict involves looking at each file that has a conflict and choosing which version should be installed on the destination computer. You can also choose to change the location of conflicting files so that each application can use its respective version of the file. To resolve file conflicts for a particular application, select either Resolve or Resolve with Rules from the Conflicts menu. The Resolve command runs the Resolve wizard, which lets you review and resolve file conflicts individually. The Resolve with Rules command uses conflict resolution rules to resolve conflicts automatically. See Resolving Conflicts on page 91 for more information.

Step 6: Save Resolved Application Installations

The final step in the ConflictManager process is to save the changes you made to the installation back to the original WiseScript (.WSE) or Windows Installer file (.WSI), which you then recompile. You can also export to the original .MSI, which you do not need to recompile. This produces an installation that does not conflict with other applications on your company's computers. ConflictManager provides two ways to save installation changes:

- **Export.** Writes an application's database information to an installation file. After you export an installation you must compile it in either the Windows Installer Editor or WiseScript Editor.

- **Export and Recompile.** Exports all applications whose conflicts have been resolved. An option lets you recompile the applications automatically after exporting.

See Exporting Applications After Resolving Conflicts on page 100 for more information.

Step 7: Testing Your Repackaged Installation

After you save and recompile a resolved installation, you should install it on a clean machine and test it to make sure it works. If it does not work, return to ConflictManager and redo the conflict resolution, either individually with the Resolve wizard or automatically with rules.

> **! Note:**
> It is important to test your application on a clean machine. A machine that is not clean might contain newer versions of some of the files you resolved. Because these newer files are not overwritten during the installation, you do not get a true representation of your resolved installation.

- To redo the conflict resolutions with the Resolve wizard, select Resolve from the Conflicts menu. In the wizard, select one or more files, then use the Revert button to undo your previous conflict resolutions for those files. Then try other ways to resolve the conflicts. Use this method when you want to revert changes for just one or a few files.

- To redo the conflict resolutions automatically with rules, select Resolve with Rules from the Conflicts menu and select a different rule set. This reverts all the previous conflict resolutions for that application and then resolves them using the different rule set.

- To revert all previous resolutions without applying a new rule set, select Resolve with Rules from the Conflicts menu and select the **Restore original conflicts** rule set. This reverts all previous conflict resolutions

but does not resolve the conflicts. Later, you can resolve conflicts with a different rule set or with the Resolve wizard.

After you redo the conflict resolutions, repeat the steps to save, export, and compile the application. Then install it on a clean machine and test it again.

Types of Conflicts

You use ConflictManager primarily to find file conflicts, but it can find other types of conflicts as well. Each type of conflict has an associated icon that appears to the left of the conflict item in the Conflict List and Application Explorer. Following is a list of the types of conflicts and their icons.

Files and components. Files with identical names that are installed at the same location by more than one application. Windows Installer components that have matching key files, but one or both contain additional non-advertising resources. Also, Windows Installer components that have additional resources that conflict with a file in a WiseScript installation.

Registry. Registry keys and named values that are set differently by more than one application.

Autoexec.bat. Modifications to Autoexec.bat that are made by more than one application. These errors do not occur in Windows Installer installations.

Config.sys. Modifications to Config.sys that are made by more than one application. These errors do not occur in Windows Installer installations.

ODBC. ODBC data source and driver conflicts that occur when the registry entries of two or more applications configure the same driver differently.

Service. Windows NT services of the same name that are installed by more than one application.

Device. Device drivers that are installed in Win.ini by more than one application. These errors do not occur in Windows Installer installations.

.INI file. .INI files and entries that are changed by more than one application.

Shortcut. Shortcuts of the same name that are installed by more than one application.

Path. Changes to the PATH variable made by more than one application. These errors do not occur in Windows Installer installations.

What Are Warning, Error, and Information Conflicts?

Conflicts are classified as either warnings, errors, or information. When you display conflicts, these classifications are indicated by an icon to the left of the conflict type icon.

Warning. Warnings represent possible conflicts. A warning conflict occurs when two installation packages install a non-16-bit file with the same file name but different file information (file version number or date/time) to different directories. This type of conflict is not critical but might warrant some attention.

Error. Errors are the more serious conflicts and deserve careful inspection. Errors can occur in the following situations:

- When two or more installations install files of the same name to the same directory, but the component GUIDs do not match.
- When two or more installations install a non-16-bit file of the same name with different file information to the same directory.

> **Note:**
> Because 16-bit .DLLs are shared by all applications, any 16-bit .DLLs installed to different directories with the same file name but different file information are marked as errors.

- When Windows Installer components have matching key files, but one or both contain additional non-advertising resources. Also, when Windows Installer components have additional resources that conflict with a file in a WiseScript installation.
- When two or more installations set the same registry key to different values.

For a list of other possible errors, see Guidelines for Resolving File Conflicts on page 31.

Information. Information conflicts occur when two or more installation packages install a non-16-bit file with identical file information to the same directory or to different directories. Information conflicts also occur when two or more installation packages set the same registry key to the same value. These are not true conflicts, therefore they do not appear in the Conflict List. You can see them, however, by browsing through the Application Explorer.

Guidelines for Resolving File Conflicts

This section provides guidelines for resolving various types of file conflicts. Use them to help you resolve file conflicts. If you are using the Enterprise Edition, you can also use these guidelines to help you set up conflict resolution rules. The advantage of using conflict resolution rules is that you don't have to analyze each individual conflict; the Resolve with Rules function does the analysis for you.

When you resolve a conflict with the Resolve wizard, you must first determine the conflict type. You do this by analyzing the file conflict information in either of two ways:

- Look at the file conflict information displayed in the Resolve wizard, which you start by selecting Resolve from the Conflicts menu.
- Look at the Conflicts tab of the Properties dialog box, which you open by double-clicking the conflicting item in the right pane of the Application Explorer.

In the Resolve wizard and the Properties dialog box, you can see each conflicting file's version, date/time, size, and other information that lets you determine what is causing the conflict.

The following table lists the types of file conflicts that can occur and recommends how to resolve them. The Conflict column list the types of file conflicts possible. The Problem column explains what can happen if the conflict is not resolved. The Recommended Resolution column describes in general terms how to resolve the problem, then lists the rule action to use if you are setting up conflict resolution rules. It also tells you the button to click to resolve the problem in the Resolve wizard.

Conflict	Problem	Recommended Resolution
Two files with the same name have different version, date/time, or size.	If the installation does not use versioning rules (WiseScript replacement options or the Windows Installer REINSTALLMODE property), the older version can install over the newer version, causing a problem when each application requires a specific version of the file. Also, the new file might not be compatible with the old one.	Copy the file information (source path included) from one application to another, or isolate the file. For more information on resolving these conflicts, see When to Resolve Conflicts by Copying File Information on page 33 and When to Resolve Conflicts by Isolating Files on page 34.
Two files with the same name are installed to the same directory, but component GUIDs do not match.	After both applications are installed, uninstalling one of them will remove the file, essentially breaking the application that is left.	Match GUIDs for identical files across applications. Use the rule action *Replace the MSI component GUID with the matching conflicting file's GUID*. If you're using the Resolve wizard, use the Copy Up button. OR Use the rule action *Use the MSI component GUID in the active application to replace the MSI component GUID in the conflicting applications*. If you're using the Resolve wizard, use the Copy Down button.
File is KeyPath to one component, but not another.	After both applications are installed, uninstalling one of them will remove the file, essentially breaking the application that is left.	Make both files KeyPaths to their respective components. Use the rule action *Use the MSI component KeyPath in the active application to replace the MSI component KeyPaths in the conflicting applications*, or the rule *Replace the MSI component KeyPath with the matching conflicting file's KeyPath*. If you're using the Resolve wizard, use the Fix Comp button.

Conflict	Problem	Recommended Resolution
The shared .DLL counter is not set for a file shared by a WiseScript application and a Windows Installer application.	In a mixed WiseScript/ Windows installer environment, shared .DLL counters must be set so the WiseScript's shared .DLL reference counts are up to date. Otherwise, uninstalling either application will break the other.	Set the Shared .DLL flag on one or both files. Use the rule action *Set shared DLL counters if required*. If you're using the Resolve wizard, use the Fix Comp button.
Two Windows Installer components have matching key files, but one or both contain additional non-advertising resources. Or, one component has additional resources that conflict with a file in a WiseScript installation.	If the KeyPath file already exists during installation, the entire component is not installed, resulting in the additional resources not being installed.	Break out the non-advertising resources into their own component. Use the rule action *Move non-advertising resources into different component*. If you're using the Resolve wizard, use the Fix Comp button.

When to Resolve Conflicts by Copying File Information

When you resolve a conflict by copying file information, you either replace the active application's file with the matching conflicting file or replace the conflicting files with the active application's file. It usually is safe to copy file information when one file is simply a newer version of the same file, that is, all information is the same except version, date/time, or size. An exception is when the older file is substantially larger than the newer file. The older file might contain functions that the new version does not. In this case, you might have to experiment to find which file works best.

> **!** **Note:**
> In some rare cases, two files have the same name but different values in the **Company** field, meaning they were created by different manufacturers. These errors are difficult to resolve, because the two files might be entirely different. If they're .DLL files, they might have entirely different APIs and different functions. In this situation it is best to isolate the files. For help, see When to Resolve Conflicts by Isolating Files on page 34.

To resolve conflicts by copying file information:

You can copy file information in any of the following ways:

- Use the rule action *Replace the active application's file with the matching conflicting file* with a condition to compare the application file version to the conflicting files, and sort by version.
  If you're using the Resolve wizard, use the Copy Up or Latest button.

  This is the more conservative way to resolve conflicts because it does not affect other applications.

OR

- Use the rule action *Replace the conflicting files with the active application's file* with a condition to compare the application file version to the conflicting files.
  If you're using the Resolve wizard, use the Copy Down button.

  This is the more aggressive way to resolve conflicts because it changes other applications. You must export, recompile, and test any other applications that you change.

When to Resolve Conflicts by Isolating Files

Isolating files is generally safer than copying them. You should isolate files to resolve conflicts when:

- Two applications install the same executable file (.DLL, .OCX, or .EXE) to the System directory or to any common directory.
- Two files have the same name but they are not different versions of the same file, especially if the **Company** (manufacturer) is different.

You resolve the conflict by moving one or both of the files to their respective application directories and telling the operating system to look in that directory before looking in the System directory. You can accomplish this with application paths (AppPaths) or, in Windows 98 SE, Windows 2000, Windows XP, and Windows Me environments, you can accomplish this with isolated components. Moving a file that is not listed in the registry is generally safe because it's certain that no programs will try to find it by looking in the registry.

> **!** **Important Note:**
> When you isolate a file, the file is still copied to the System directory in addition to the application directory. If the System directory already contains an earlier version of the file, the earlier version is replaced. This could cause a problem in any application that uses the earlier version of the file. Therefore, it is best to isolate both versions of the file.

If the conflicting files are listed in the registry, using an application path to move them to a private application directory can cause problems. ConflictManager updates the registry when a file is moved to a private application directory. This can cause other applications to follow the moved file and result in a further conflict. You might need to experiment to find which applications find the file via the registry and which simply look in the path. Then you can move the .DLL for the applications that look at the registry entry, and leave a copy in the System directory for applications that look in the path.

When an application has conflicting files that are listed in the registry, and it is intended for installation on Windows 98 SE, Windows 2000, Windows XP, or Windows Me, you can use isolated components to move the conflicting files. This usually does not cause problems.

To isolate a file when using the Resolve wizard:

1. From the Conflicts menu, select Resolve.

2. On the Welcome dialog box, select an option from the **Isolation Method** drop-down list:

   - Choose **Do not move files** to disable the Move button in the File Conflicts and File Conflicts in Registry dialog boxes.

   - Choose **Isolated Components** if the application will be installed only in a Windows 98 SE, Windows 2000, or Windows Me environment.

   - Choose **Application Paths** if the application will be installed in any Windows environment.

3. If you choose **Application Paths**, enter the directory path where Windows should look for the files in the **Path** field. This path is created under the main application directory.

4. Click the Next button and resolve conflicts as described in Resolving File Conflicts Individually With the Resolve Wizard on page 92.

To isolate a file when resolving with rules:

Enterprise Edition only
The ability to create rules is available in the Enterprise Edition only.

Create a rule containing the action *Isolate the file via [AppPaths OR Isolated Components]*. Set this action's variable as follows:

- Choose **Isolated Components** if the application will be installed only in a Windows 98 SE, Windows 2000, or Windows Me environment.

- Choose **AppPaths** if the application will be installed in any Windows environment.

  When you choose this variable, a second line is added to the action: *into the directory Shared*. If you leave this line as is, the application path is set to a directory named Shared under the main application directory. To use a different application path, click the word "Shared" and type a new directory name.

Chapter 3
The ConflictManager Database

The ConflictManager database contains information about application installations, their conflicts, and the conflict resolutions. It also contains conflict resolution rules and, in the Enterprise Edition, application groups.

In this section, learn about:

- ConflictManager databases.
- The ConflictManager share point and index.
- Using the Network Index Properties dialog box.
- Working with ConflictManager databases.

About ConflictManager Databases

The ConflictManager database stores information about imported applications and their conflicts. You can use Microsoft Data Engine (MSDE) or Microsoft Access database as your ConflictManager database. If you have the Enterprise Edition, you also can use a Microsoft SQL Server database. Using SQL Server is recommended for a large integration team because the amount of data required for managing a large number of applications requires the performance of SQL Server. The ConflictManager installation process always creates an Access database, named Applications.mdb, and registers it as a data source. If you want to use an MSDE or SQL Server database instead, you must create the database and register it as a data source. You can connect to the MSDE or SQL data source either during or after installation.

In a multi-user environment, the ConflictManager database should reside in a shared network directory so it can be accessed by multiple users at once. If you choose to use a Microsoft Access database, it is installed automatically in the directory designated as the share point during the Wise Package Studio installation.

The options on the Select Database Type dialog box in the Wise Package Studio installation determine the default ConflictManager database. If you choose **Microsoft Access** as the database type, Applications.mdb is set as your default ConflictManager database. If you choose **Microsoft Data Engine (MSDE)** or **Microsoft SQL Server** as the database type, you must specify the MSDE or SQL Server database that you have already created. That database is then set as the default ConflictManager database. If you do not connect to a database during installation (if you choose the **Skip database setup** option), you must do so afterwards.

If you connected to a database during installation, the default database opens automatically when you first start ConflictManager. Otherwise, you must connect to the database when you first start ConflictManager. You add data by importing your applications; see Importing Applications Into the Database on page 72. You can also import application data from SampleApplications.mdb; see Using the Sample Applications Database on page 39.

You can create additional ConflictManager databases. For example, if you are repackaging a large number of applications for a large organization, you might want to set up a separate database for each division or department. See Using Multiple Databases on page 39.

You also can use a database created for a previous version of ConflictManager. The first time you open an older ConflictManager database, its format is updated automatically.

Using Multiple Databases

A single ConflictManager database is sufficient for most organizations. However, you might want to use multiple databases in these instances:

- If you are repackaging a large number of applications for a large organization, you can use multiple databases to reduce the database size and thus reduce the time it takes to detect conflicts within each database.

- If you are repackaging for multiple operating systems, you can use a separate database for each target operating system.

- If your organization has multiple departments, each using a different set of applications, you can use a separate database for each department. This concept is similar to using application groups, but on a larger scale. For more information about groups, see Grouping Applications on page 80.

Each ConflictManager database should reside in a separate share point directory on its own server. Running multiple databases on a single server degrades performance. In addition, you cannot run the Auto Import Service, which imports applications automatically on a server-based installation, on more than one database on a single computer. For more information, see Creating a New ConflictManager Database on page 48.

Using the Sample Applications Database

ConflictManager ships with a sample applications database, named SampleApplications.mdb, that contains installation information for a number of commonly-used application packages. The sample applications database is located in the share point directory. You can use this sample database as follows:

- You can open the sample database directly and use it to explore and learn ConflictManager before you start entering and processing live data.

- You can import the sample applications into your ConflictManager database, to provide a starting point for finding conflicts with your applications. You can delete the sample applications from your database at any time.

  If you did not import the sample applications into your ConflictManager database during the Wise Package Studio installation, you can use the Copy ConflictManager Applications utility to do so at any time. See Copying Data Between Databases on page 49.

About the ConflictManager Share Point and Index

When you install Wise Package Studio, you specify the location of the share point directory. This directory stores information created and used by Package Studio and ConflictManager.

The share point directory contains a subdirectory, named scripts, that stores distributed installation scripts and Windows Installer files. The scripts directory is created the first time you use the Distribution Wizard to distribute to the ConflictManager share point. The scripts directory also stores .QUE files, which are temporary files representing applications that have been distributed but not yet imported into ConflictManager. After you import the applications into ConflictManager, the .QUE files are deleted.

When you use the Distribution Wizard to distribute to the ConflictManager share point, additional subdirectories are created under the share point. These subdirectories store files associated with each application's installation. The subdirectories are numbered sequentially, as in 000\001, and so on. An index file, wamdb.idx, records the location of the files.

The share point directory also contains the Sample Applications database as well as the default Access-based ConflictManager database, if you choose to install it.

A common question is "Can I clean up the share point by deleting unused files after resolving conflicts?" The answer is no. It is too difficult to know which files are safe to delete. Also, ConflictManager lets you revert resolved applications to their original state, but if you delete an application's original files, you cannot revert.

Indexing Files With wamdb.idx

When you distribute to the ConflictManager share point, a sequentially-numbered directory structure is created to store occurrences of files. An index file named wamdb.idx, located in the share point directory, records the location of files. For example, assume you have three installations, each containing a version of report.dll. The first time you distribute an installation containing report.dll, it is placed in the Share Point\000\001 directory. If you distribute an installation containing the same version of report.dll, a counter is set for that file in wamdb.idx; the file is not saved a second time. If the third installation uses a different version of report.dll, it

is stored in a second directory, Share Point\001\002. The result is a set of all the unique files across all your installations. Because of the indexing of files, distributing to the share point eliminates storage of duplicate files and results in smaller storage requirements than if you distribute to a network directory.

QUE Files and Automatic Importing

When you use the Distribution Wizard to distribute to the ConflictManager share point, temporary files are created in the share point directory. These files, which have the same name as the installation file but with the extension .QUE, represent applications that have been distributed but not imported into ConflictManager. The .QUE files are removed after you import the applications they represent into ConflictManager.

Distributing to the ConflictManager share point lets you import applications into ConflictManager in any of these three ways:

- If you are running the Auto Import Service in the Enterprise Edition, the service periodically searches the share point for .QUE files and, when it finds one, imports that application into the ConflictManager database automatically.

- If the share point contains .QUE files when you start ConflictManager, it displays the applications and lets you import them.

- If you do not import an application when you start ConflictManager, or if an application is distributed to the share point after you start ConflictManager, you can use the Import from Share Point command on the Application menu.

Using the Network Index Properties Dialog Box

ConflictManager contains a menu command, Network Index Properties, that lets you maintain the server path and database index.

- You can change the server path, which is the path where files associated with an installation are stored. If the drive with the original server path becomes full, you can create a new server path on a different drive and set it as the new default. See Adding Server Paths.

- You also can restructure the index, and you can rebuild the index if it becomes corrupted. See Restructuring the Index on page 45 and Rebuilding the Index on page 46.

> **Warning:**
> Do not change the contents of the **Index Location** field in the Network Index Properties dialog box. Changing this field changes the share point value in Wise Package Studio, which means existing Package Studio tasks will not work.

Adding Server Paths

The ConflictManager server path is where the files associated with an installation are stored. Initially, the server path is the same as the share point directory. However, you can add new server paths. You might need to do this if you are repackaging a large number of applications and distributing to the ConflictManager share point, and the drive containing the share point directory becomes full. When that happens, you can create a new directory on another network drive, then use the Network Index Properties dialog box to set the new location as the "active" server path. The server path information is stored in the index file, wamdb.idx, which remains in the original share point directory.

ConflictManager can support up to 255 different server paths, but only one path can be active at a time. When you distribute to the share point, the installation's associated files are placed in the active server path.

After you set a new active server path, when anyone distributes to the ConflictManager share point, the files associated with the installation are stored in the new active server path location. The installation script, .MSI, or .WSI, as well as the related .QUE file, are always stored in the original Share Point\scripts directory. Using an additional server path does not result in duplicate files. The files are still indexed to prevent file duplication across all server paths.

> ⚠ **Warning:**
>   Do not change the contents of the **Index Location** field in the Network
> Index Properties dialog box. Changing this field changes the share point value in
> Wise Package Studio, which means existing Package Studio tasks will not work.

To change the active ConflictManager server path:
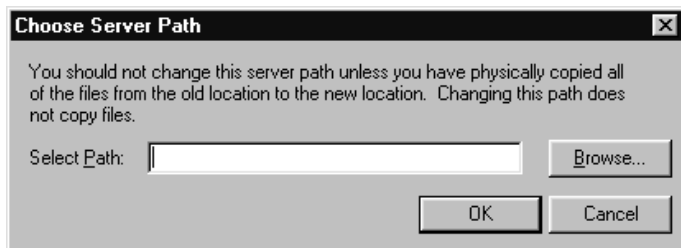
1. From the Setup menu, select Network Index Properties.

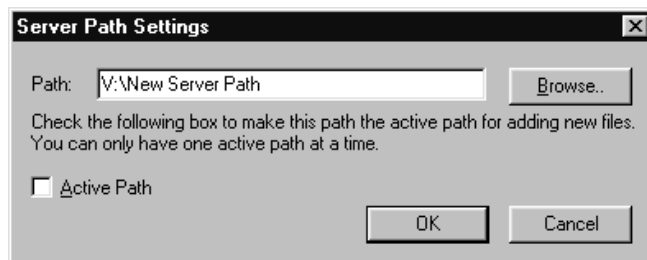   The Network Index Properties dialog box appears.
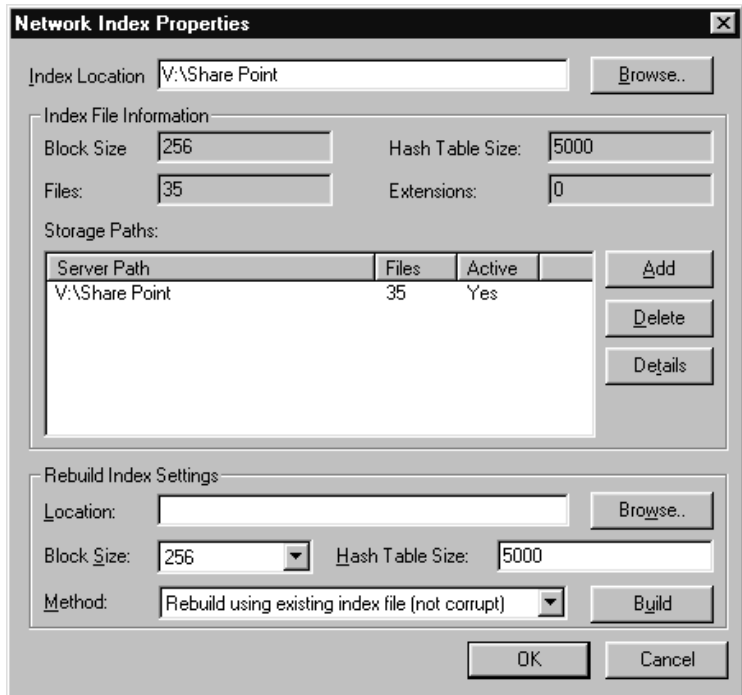
2. Click the Add button.

   A Choose Server Path dialog box appears.

3. In the **Select Path** field, specify the new server path, then click OK to return to the Network Index Properties dialog box.

4. In the **Storage Paths** list, click the new server path then click the Details button.

   A Server Path Settings dialog box appears.

5. Mark the **Active Path** checkbox and click OK to return to the Network Index Properties dialog box.

   The "Yes" in the Active column next to the new server path name indicates that this is now the active server path. Now, whenever someone distributes to ConflictManager share point, the associated files will be stored in the new path location.

6. Click OK to close the Network Index Properties dialog box.

Deleting a Server Path

You can delete a ConflictManager server path, but only if you have not yet added data to it. Do this if you add a new server path in the Network Index Properties dialog box, then realize that you mis-typed the name or selected the wrong path. This does not actually delete the directory path from the computer; it only deletes the path from ConflictManager. You cannot delete a server path that is active or that contains files.

> ⚠ **Warning:**
> Do not change the contents of the **Index Location** field in the Network Index Properties dialog box. Changing this field changes the share point value in Wise Package Studio, which means existing Package Studio tasks will not work.

To delete a server path:

1. From the Setup menu, select Network Index Properties.

   The Network Index Properties dialog box appears.

2. If the server path you want to delete is currently active, set a different path to be the active one. In the **Storage Paths** list, click the server path you want to make active, then click the Details button.

   In the Server Path Settings dialog box, mark the **Active Path** checkbox and click OK to return to the Network Index Properties dialog box.

3. In the **Storage Paths** list, click the server path you want to delete and click the Delete button.

4. The path is removed from the **Storage Paths** list.

Restructuring the Index

If, after you have used ConflictManager for some time, you find that distribution to the ConflictManager share point runs slower than it did at first, you might want to restructure the index by increasing the index block size, the hash table size, or both. This changes the index file, wamdb.idx. You do this in the Network Index Properties dialog box.

> **Note:**
> This procedure is intended for database administrators.

> **Warning:**
> Do not change the contents of the **Index Location** field in the Network Index Properties dialog box. Changing this field changes the share point value in Wise Package Studio, which means existing Package Studio tasks will not work.

To restructure the index:

1. From the Setup menu, select Network Index Properties.

   The Network Index Properties dialog box appears.

2. In the **Rebuild Index Settings** section of the dialog box, you can increase the block size and hash table size.

   - To increase the block size, select a higher number from the **Block Size** drop-down list.
   - To increase the hash table size, enter a higher number in the **Hash Table Size** field.

3. From the **Method** drop-down list, select **Rebuild using existing index file (not corrupt)**.

4. Click the Build button to begin the rebuild process.

   The index is restructured. This can take some time, depending on the size of your database.

5. When the Rebuild is Complete message appears, click OK.

Rebuilding the Index

If you encounter errors, such as the inability to copy files, while distributing to the ConflictManager share point, your database index (wamdb.idx) is probably corrupt. To resolve the database corruption and eliminate the distribution errors, you should rebuild the index. You do this in the Network Index Properties dialog box.

> **Note:**
> This procedure is intended for database administrators.

> **Warning:**
> Do not change the contents of the **Index Location** field in the Network Index Properties dialog box. Changing this field changes the share point value in Wise Package Studio, which means existing Package Studio tasks will not work.

To rebuild a corrupt index:

1. From the Setup menu, select Network Index Properties.

    The Network Index Properties dialog box appears.

2. From the **Method** drop-down list, select the method to use to rebuild the index:

    -   **Rebuild using file/directory structure.** When you select this option, the rebuild process reads all files and directories in the ConflictManager share point and all its storage paths share points. This is the recommended method, as it gathers all possible ConflictManager data. This process can take quite a long time if your database contains a large number of applications.

    -   **Rebuild using database data.** Use this method only if all the applications you have distributed to the ConflictManager share point have been imported into ConflictManager. Because this method only reads the ConflictManager database, it does not record applications that have been distributed but not imported. This is the slowest method of rebuilding the index. There is no advantage to using this method.

3. Click the Build button to begin the rebuild process.

    The index file is rebuilt. Expect this process to take a long time, even an hour or more, depending on the size of your database.

4. When the Rebuild is Complete message appears, click OK.

Working With ConflictManager Databases

When you first start ConflictManager, it opens your default database, which is specified during installation. If you want to use a database other than the default ConflictManager database, or if you did not connect to a database during installation, you must create a database, register it as a data source, and then open it in ConflictManager. See Opening a ConflictManager Database and Creating a New ConflictManager Database on page 48.

You can copy data, including applications, conflicts, rule sets, and groups, from one ConflictManager database to another. For example, you might copy data from the ConflictManager Sample Database into a live ConflictManager database, if you did not do so during the Wise Package Studio installation. See Copying Data Between Databases on page 49.

If you are using an Access database in ConflictManager, it can eventually become fragmented and use disk space inefficiently. Use ConflictManager's Compress Database utility to defragment the database file, decrease the size of the file, and free disk space. See Compressing an Access Database on page 50.

When an application becomes obsolete, you might want to delete it from the database. See Deleting an Application From the Database on page 51. In rare cases, you might want to delete all applications from a database. ConflictManager contains a menu command that deletes all applications, conflicts, rule sets, and groups. See Deleting the Contents of a Database on page 52.

Opening a ConflictManager Database

If you connected to a database during installation, the default database opens automatically when you first start ConflictManager. If you skipped the database setup during installation, or if you want to use a different database, you must open the database from ConflictManager. The database you open must have been created and registered as a data source.

To open a ConflictManager database, select Open Database from the File menu. A Select Data Source dialog box appears. This is a standard Windows ODBC connection wizard, which lets you connect to a database via an ODBC data source. If you need help connecting to a ConflictManager database, consult your organization's database administrator.

The bottom of the File menu lists the last eight databases you opened. You can open a listed database by clicking its file name.

The database you open becomes your default; it opens whenever you start ConflictManager, until you open a different database.

Creating a New ConflictManager Database

If you are repackaging a large number of applications, you might use multiple databases to reduce the size of the individual databases and thus reduce the time it takes to detect conflicts. You can create additional ConflictManager databases in Microsoft Access or Microsoft Data Engine (MSDE). If you have the Enterprise Edition, you can also create databases in Microsoft SQL Server.

To create a new database for use with ConflictManager, you simply create a blank database and register it as a data source. It is not necessary to create tables in the database; the first time you open the database in ConflictManager, you are prompted to have ConflictManager create the tables for automatically. You should set security on either the database or its directory, so that unauthorized users do not modify the database accidentally.

> **Note:**
> The following procedure assumes you are familiar with creating and registering either Microsoft Access, MSDE, or SQL Server databases. Wise Solutions does not offer technical support for Microsoft Access, MSDE, or SQL Server. See your company's database administrator if you need assistance.

You can create a new database in a local or shared network directory. If you create the database in a shared directory, make sure each ConflictManager user has read and write access to the shared directory. If you have the Enterprise Edition and want to use the Auto Import Service to import applications automatically, you must create each database on a separate server with a separate ConflictManager server installation, because the Auto Import Service can import to only one database.

> **IMPORTANT:**
> Use only ConflictManager to modify this database.

To create a database for use with ConflictManager:

1. In Microsoft Access, MSDE, or SQL Server Enterprise Manager, create a blank database and specify a name and location.

2. Set up security for the new database if necessary.

3. Register the new database as a data source. How you do this depends on your operating system:

- In Windows 95, Windows 98, Windows NT, and Windows Me, select the ODBC Data Sources icon from the Control Panel.

- In Windows 2000 or XP, select Administrative Tools from the Control Panel, then select Data Sources (ODBC).

4. Open the database in ConflictManager. See Opening a ConflictManager Database on page 47. The first time you open a new database, a warning message appears indicating that the database does not contains any tables.
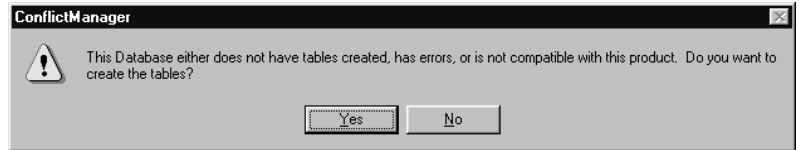
5. Click the Yes button to create tables for the database.

6. When the Tables Created Successfully message appears, click OK.

The database opens in ConflictManager and is ready to use.

Copying Data Between Databases

ConflictManager ships with a Copy ConflictManager Applications utility that copies data from one ConflictManager database to another. The utility program, IMCopyDB.exe, is located in the ConflictManager directory under the Wise Package Studio application directory. It copies all applications, conflicts, rule sets, and groups from the source database to the destination database. You might use this utility to copy data from the ConflictManager Sample Database into a live ConflictManager database, if you did not do so during the Wise Package Studio installation.

Do not use this utility to copy data from an older version ConflictManager database to a new one, because it ignores the new database tables. If you want to use a database from a previous version of ConflictManager, just open it in ConflictManager and its format is updated automatically.

To copy data between databases:

1. In Windows Explorer, navigate to the ConflictManager directory under the Wise Package Studio application directory.

2. Double-click IMCopyDB.exe.

The Copy ConflictManager Applications dialog box opens.
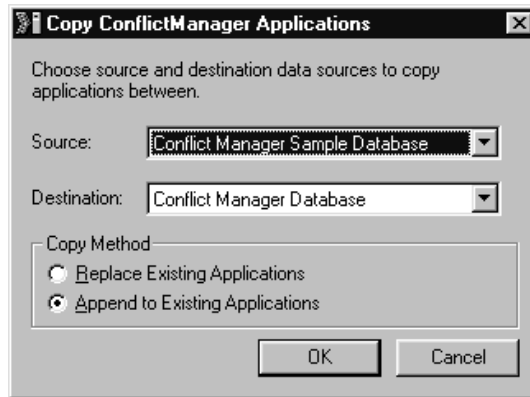
3. In the **Source** field, specify the database you want to copy from.

4. In the **Destination** field, specify the database you want to copy to.

5. Select an option in the **Copy Method** area:

   - **Replace Existing Applications.** Overwrite all applications in the destination database with the applications in the source database.

   - **Append to Existing Applications.** Add the applications in the source database to those in the destination database.

6. Click OK.

   Data is copied from the source database to the destination database. If the source database is large, this can take a long time.

Compressing an Access Database

As you work in an Access-based ConflictManager database, adding and deleting applications, it can become fragmented and use disk space inefficiently. Use ConflictManager's Compress Database utility to defragment the database file, decrease the size of the file, and free disk space. When you compress a database, unused data is removed and a defragmented copy of the database is created.

> **Access databases only**
> Use the Compress Database utility on Microsoft Access databases only.

A database does not compress for any of the following reasons:

- You don't have enough storage space on your disk for both the original and compressed versions of the database. Delete any unneeded files and try again.

- You don't have permission for all tables in the database. If you don't own this database, contact its owner to find out whether you can be given either Modify Design or Administer permissions on all tables. If you own this database, you need to update your permissions for all tables. Do this through Microsoft Access.

To compress a database:

1. Open the database you want to compress.
2. From the File menu, select Compress Database.

    The database is compressed immediately; no message boxes or dialog boxes appear while the compression is in process. When the operation is finished, a message appears telling you that it was successful.

3. Click OK to finish.

Deleting an Application From the Database

The ConflictManager database should contain all applications used in your organization. When you discontinue use of an application, you can delete it from the database. You also can delete the entire contents of a database; for more information, see Deleting the Contents of a Database on page 52.

> ⚠ **Warning:**
> Deleting an application cannot be undone. Be sure to select the correct application to delete.

To delete an application from the database:

1. Open the database that contains the application you want to delete.
2. From the Application menu, select Delete.

    The Delete Application dialog box appears.
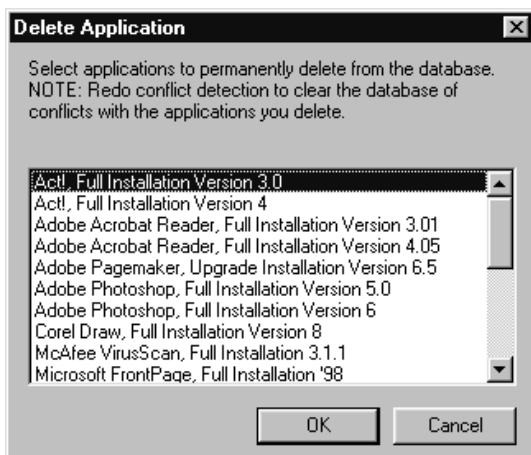
3. Select the application you want to delete and click OK. Use CTRL-click and SHIFT-click to select multiple applications.

   The applications you selected are deleted from the database.

> **Note:**
> If you have detected conflicts for applications in this database, you should rerun the conflict detection to clear the database of conflicts with the applications you deleted.

Deleting the Contents of a Database

ConflictManager provides a utility to delete all data in a database and recreate all the database tables. Use this utility only when you want to completely delete the entire contents of a database; it deletes the applications, their conflicts, and all rule sets and application groups. You also can delete a single application from the database; see Deleting an Application From the Database on page 51.

> **Warning:**
> Deletion of database contents cannot be undone. Be sure to select the correct database.

To delete the contents of a database:

1. Open the database you want to clear.

2. From the File menu, select Delete Database Contents.

   A dialog box prompts you to confirm the deletion.

ConflictManager

⚠ This will delete your current data source contents. Do you want to continue?

Yes   No
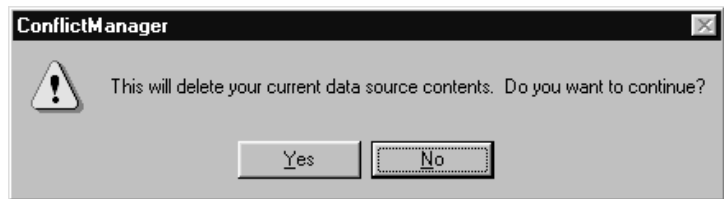
3. Click the Yes button to continue.

   The contents of the current database are deleted, leaving an empty database. When the operation is finished, a message appears telling you that the deletion was successful.

4. Click OK to finish.

Chapter 4
Setting Up ConflictManager

Before you use ConflictManager to detect and resolve conflicts, you should define conflict settings, which determine the type of conflicts that are detected. Conflict settings also determine items, such as files and registry keys, that are excluded from conflict detection. This lets you refine the conflict detection so it finds only the kinds of conflicts that concern you.

You also should decide whether you want to use conflict resolution rules and, if so, you need to decide which predefined rule set or sets to use. If you are using the Enterprise Edition, you can modify the predefined rule sets or create your own.

In this section, learn about:

- Defining conflict settings.
- Using and defining conflict resolution rules.

Defining Conflict Settings

Conflict settings determine the type of conflicts that are detected and the items, such as files and registry keys, that are excluded from the conflict detection. Excluding files and registry keys helps eliminate conflicts that don't have a negative impact on any installation. For instance, several applications might install a file named readme.txt, but that generally is not a conflict that you need to resolve. Therefore, you could define the conflict settings to ignore that file during conflict detection.

You define the conflict settings in the Conflict Settings dialog box. This dialog box contains three tabs:

- **Types.** Lets you define the kinds of conflicts you want to find.
- **Files/Directories.** Lets you specify the directories and files to ignore during conflict detection. You can use wildcards to ignore all instances of a particular type of file.
- **Registry Keys.** Lets you specify the registry subtrees and individual keys to ignore during conflict detection.

> **Note:**
> If you change conflict settings after you have found conflicts, you must rerun the conflict detection to apply the changes to the current conflict database.

Defining Conflict Types

You use the Types tab of the Conflict Settings dialog box to specify the types of conflicts you want to find, such as warning, error, or informational conflicts for files or registry keys. You can also specify whether to find conflicts for other items, such as devices, .INI files, shortcuts, and more.

To define conflict types:

1. From the Setup menu, select Conflict Settings.

    The Conflict Settings dialog box appears, with the Types tab active.

2. In the **File Conflicts** drop-down list, select an option to define the type of file conflicts you want to find.

- **Normal file conflicts (warnings and errors only).** Find warning and error conflicts. Warnings occur when files with the same name and different file information are installed in different directories. Errors occur when files with the same name and different file information are installed in the same directory.

- **Normal conflicts plus informational.** Find information conflicts in addition to warnings and errors. An information conflict occurs when two or more installation packages install a file with identical file information, either to the same directory or to different directories. Finding information conflicts slows the conflict detection process.

- **Do not run file conflicts.** Run the conflict detection without looking for file conflicts. You might select this option when you want to check for a specific type of conflict other than file conflicts.

3. **If file has version information, ignore date/time for conflict analysis.** Mark this checkbox to ignore date and time differences between files that have the same version and size. Clear this checkbox

if you want the conflict detection to find date and time differences when all other file information is the same.

4. In the **Registry Conflicts** drop-down list, select an option to define the type of registry conflicts you want to find.

- **Normal Registry conflicts (warnings and errors only).** Find registry keys and named values that are set differently by more than one application.

- **Normal Registry plus informational conflicts.** Find all registry keys and named values that are set by more than one application, whether they are set to the same or different values.

- **Do not run registry conflicts.** Run the conflict detection without looking for registry conflicts. You might select this option when you want to check for file conflicts only, or for a specific type of conflict other than registry conflicts.

5. Mark any of the following checkboxes to find additional conflicts.

> **Note:**
> These checkboxes are not often used because the types of conflicts listed below are rarely found and cannot be resolved. In addition, leaving these checkboxes unmarked speeds conflict detection.

- **Autoexec.bat.** Find modifications to Autoexec.bat that are made by more than one application.

- **Config.sys.** Find modifications to Config.sys that are made by more than one application.

- **ODBC.** Find Open Data Base Connectivity data sources that are configured differently by applications.

- **NT Services.** Find Windows NT services that are installed by more than one application.

- **Devices.** Find device drivers that are installed in Win.ini by more than one application.

- **INI Files.** Find changes to .INI files that are made by more than one application.

- **Shortcuts.** Find shortcuts that are installed by more than one application.

- **Path Additions.** Find changes to the PATH variable that are made by more than one application.

6. Click OK to close the dialog box, or click the Files/Directories or Registry Keys tab to define additional settings. See Excluding Files and Directories on page 59 or Excluding Registry Keys on page 62.

Excluding Files and Directories

You use the Files/Directories tab of the Conflict Settings dialog box to specify files and directories to ignore during conflict detection. For example, readme.txt is installed by many applications, but generally is not a conflict that you need to resolve. Another example of a file to ignore is MSCREATE.DIR, entered as a wildcard under All Directories. As you use ConflictManager, you might find additional files and directories that can be ignored. You can add them to the Conflict Settings at any time.
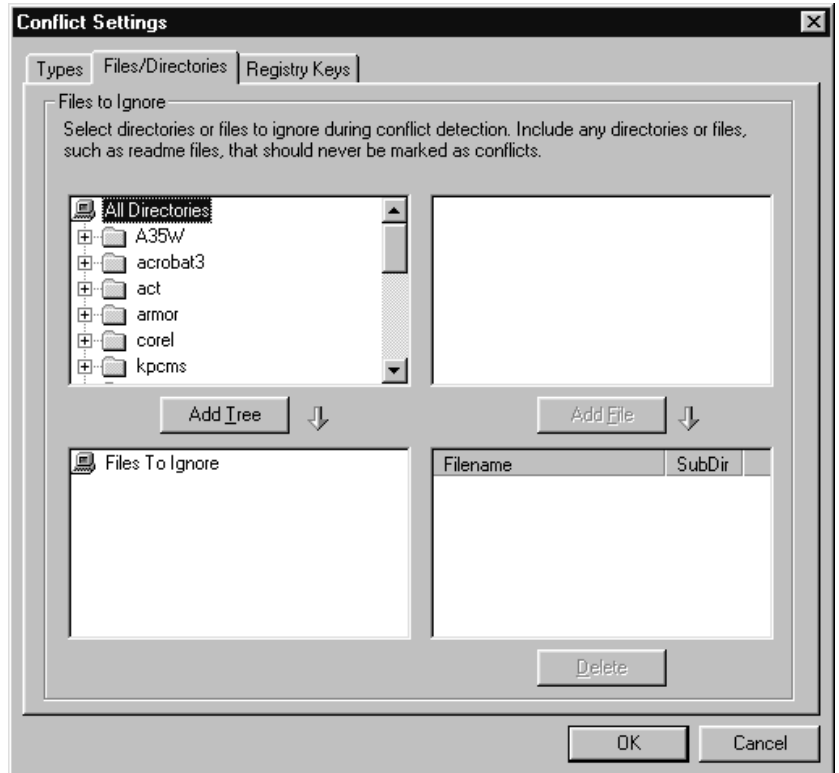
The upper two list boxes show the directories and files available to your computer, including your local drives, mapped drives, and local network. The bottom two list boxes represent the directory structure and files that will be ignored during conflict detection.

The upper left list box shows a composite view of all directories created on the destination computer by all application installations in the database. Some installed files or directories might be located in the Windows directory or the Program Files directory. When you select a directory in the upper left list box, the upper right list box shows the files contained in that directory.

> **Note:**
> The upper left list box shows information for ALL applications, even if you have a group selected in the Groups pane. (Groups are available in the Enterprise Edition only.)

The two lower list boxes contain the exclusion list, which represents the directory trees and files to ignore during conflict detection. You can add an entire directory tree to the exclusion list, or you can add individual files. When you add a directory, you can specify a wildcard, such as *.txt, to ignore only those files in the directory that match the wildcard.

To specify directories or wildcards to ignore during conflict detection:

1. From the Setup menu, select Conflict Settings.

   The Conflict Settings dialog box appears.

2. Click the Files/Directories tab.

3. In the upper left list box, navigate to a directory that you want to ignore, then click the Add Tree button.

   The Add Wildcard dialog box appears.
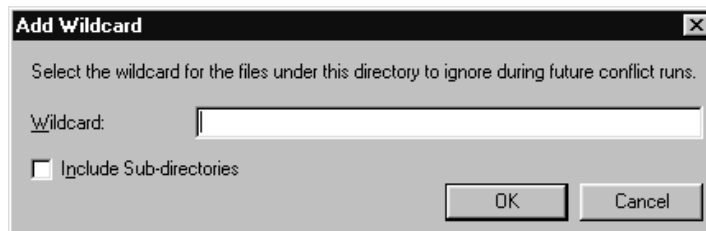
4. In the Add Wildcard dialog box, you can choose to ignore all files in the directory or only those files that match a wildcard. You also decide whether to apply your choice to only the directory you selected or to all its subdirectories also.

   - To ignore all files in the directory, leave the **Wildcard** field blank.

   - To ignore just certain files in the directory, enter a wildcard in the **Wildcard** field, such as `*.txt`.

- To apply your choice to all subdirectories of the directory also, mark the **Include Sub-directories** checkbox.

5. Click OK in the Add Wildcard dialog box.

   The Conflict Settings dialog box reappears with the directory added to the lower left list box. The lower right list box shows what file or files should be ignored in that directory, and whether they are applied to subdirectories also. If you entered a wildcard, it appears in the **Filename** column. If you left the **Wildcard** field blank, a single asterisk character (*) appears in the **Filename** column to represent all files.

6. When you are finished selecting directories to exclude, click OK to close the dialog box, or click the Types or Registry Keys tab to define additional settings. See Defining Conflict Types on page 56 or Excluding Registry Keys on page 62.

To specify files to ignore during conflict detection:

1. From the Setup menu, select Conflict Settings.

   The Conflict Settings dialog box appears.

2. Click the Files/Directories tab.

3. In the upper left list box, navigate to a directory that contains a file you want to ignore.

4. In the upper right list box, click on the file name and then click the Add File button. Use the CTRL or SHIFT keys to select multiple files.

   The file is added to the lower right list box, and the corresponding directory structure appears in the lower left list box.

5. When you are finished selecting files to exclude, click OK to close the dialog box, or click the Types or Registry Keys tab to define additional settings. See Defining Conflict Types on page 56 or Excluding Registry Keys on page 62.

! **Note:**
If you delete a file from the lower right list box and it empties the directory, the directory structure still displays but disappears after you close the Conflict Settings dialog box.

Excluding Registry Keys

You use the Registry Keys tab of the Conflict Settings dialog box to specify registry key subtrees and registry values to ignore during conflict detection. As you use ConflictManager, you might find additional registry keys that can be ignored. You can add them to the Conflict Settings at any time.
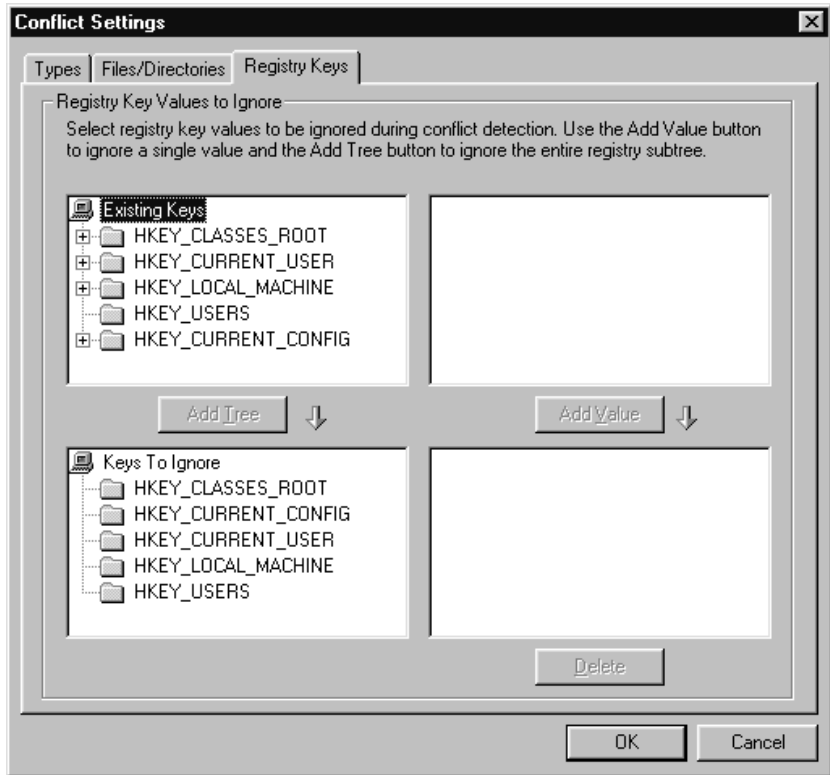
The upper two list boxes show registry keys and values for all applications in the database. The lower two list boxes represent the keys and values to be ignored during conflict detection. The left two list boxes show key structure, and the right two list boxes show values.

To specify registry keys to ignore during conflict detection:

1. From the Setup menu, select Conflict Settings.

   The Conflict Settings dialog box appears.

2. Click the Registry Keys tab.

3. In the upper left list box, navigate to a registry key or value that you want to ignore.

   - To ignore an entire tree, select the key in the upper left list box and click the Add Tree button.

   - To ignore an individual value, select the value in the upper right list box and click the Add Value button.

   The registry key subtree or value is added to the corresponding lower list box.

4. When you are finished selecting registry keys to exclude, click OK to close the dialog box, or click the Types or Files/Directories tab to define additional settings. See Defining Conflict Types on page 56 or Excluding Files and Directories on page 59.

! Note:
If you delete a value from the lower right list box and it makes the key empty, the corresponding registry key subtree still shows temporarily but disappears after you close the Conflict Settings dialog box.

Using Conflict Resolution Rules

ConflictManager's resolution rules let you resolve conflicts automatically. Using resolution rules saves time, reduces errors, and provides consistency in conflict resolution.

ConflictManager contains four predefined rule sets. After you find conflicts, you use the Resolve With Rules menu command to resolve the conflicts according to the rule set you choose. The majority of conflicts can be resolved this way. See Resolving File Conflicts Automatically With Rules on page 91. You might find some conflicts that cannot be resolved with rules; if so, use the Resolve wizard to resolve those few conflicts individually.

If you have the Enterprise Edition, you can modify the predefined rule sets or create your own to reflect your company's standards. Before you create your own rule sets, experiment with the predefined rules. You might find that the predefined rule sets resolve your conflicts satisfactorily and you don't have to create your own. See About the Predefined Rule Sets on page 65.

Rule sets are stored with the database, therefore, if you use multiple ConflictManager databases, you must set up rule sets separately in each one. The predefined rule sets are added automatically to each new ConflictManager database you create. If you open a database created in a previous version of ConflictManager, it is updated and the predefined rule sets are added automatically.

About Conflict Resolution Rules

ConflictManager rule sets help you resolve conflicts automatically. A rule set is simply a collection of rules. A rule consists of one or more actions, one or more conditions, and one or more sort options.

- An action states how a conflict will be resolved.

- A condition determines the criteria that a conflict must meet in order for the action to be performed. For example, if you select the condition **version differs**, the Resolve with Rules process performs the action only on conflicts caused by files having different version numbers.

- A sort option determines how conflicting files are sorted and thus which one is used to resolve the conflict. For example, if you sort by version number, then the file with the highest version number is used.

See Guidelines for Resolving File Conflicts on page 31 for recommendations on when to use each rule action.

How Conflict Resolution Rules Are Applied

Conflict resolution rules are applied in the order they appear from top to bottom in the list of rules in the Conflict Resolution Rules dialog box.

When a rule has more than one condition, only conflicts that meet all of the conditions have the rule applied to them. For example, if you specify the two conditions **File is executable** and **Version differs**, the rule only applies to conflicts that meet both conditions.

About the Predefined Rule Sets

ConflictManager contains the following predefined rule sets:

- **Conservative.** The conservative rule set changes as little as possible to get the application to work. It replaces files in the active application only with the corresponding files in the conflicting applications. An active application file is changed only if its version and date are lower than that of the conflicting file, and only if the manufacturer is the same as in the conflicting file.

  The conservative rule set ignores conflicts that cannot be resolved in a conservative way. This can result in more conflicts for you to resolve individually.

- **Aggressive (all operating systems)** and **Aggressive (Windows 98 SE/2000/ME only).** The aggressive rule sets change more files in the active application and can change files in other conflicting applications. They replace all conflicting files with the most recent version; this means that files in the other conflicting applications might be replaced. Do this only when you have access to the other applications' source files and can recompile the other applications.

  The aggressive rule sets also attempt to isolate any files that are shared by multiple applications. The aggressive rules for all operating systems use application paths to isolate files; the aggressive rules for Windows 98 SE/2000/Me use isolated components.

  The aggressive rule sets can resolve more conflicts than the conservative rules. The drawback is that you must export and retest any other applications that are changed.

- **Restore original conflicts.** This is actually an empty rule set that provides an easy way to undo an application's conflict resolutions and revert to its original file versions and locations. When you resolve with rules, the first thing any rule set does is revert all previous conflict resolutions for the selected application. Because this rule set contains no rules, that's all it does.

Creating a New Rule Set

If the predefined rule sets do not meet your needs, and you don't want to modify a predefined rule set, you can create a new rule set based on your organization's standards.

Enterprise Edition only
The ability to modify and create rule sets is available in the Enterprise Edition only.

To create a new rule set:

1. From the Setup menu, select Conflict Resolution Rules.

   The Conflict Resolution Rules dialog box appears.
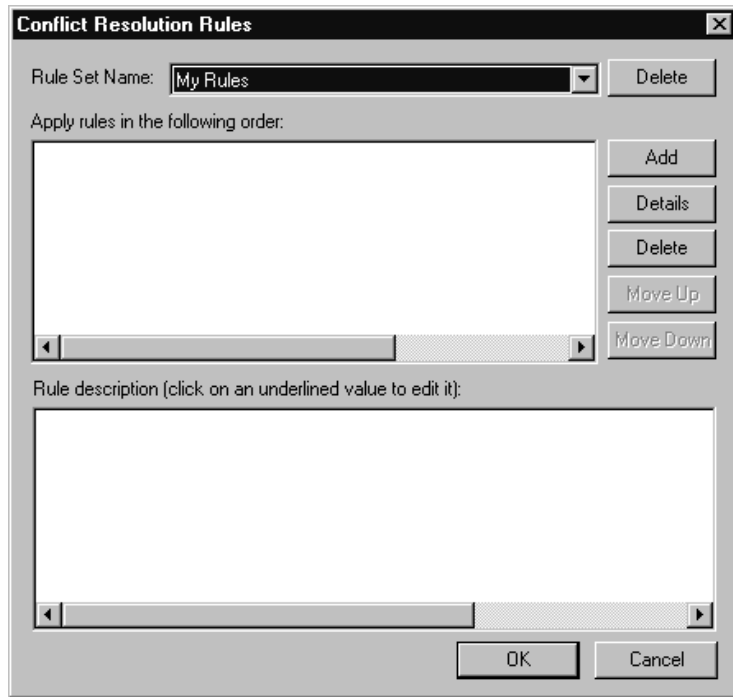
2. From the **Rule Set Name** drop-down list, select **<new>**.

   The Enter Rule Set Name dialog box opens.

3. In the **Rule Set Name** field, enter a name for this rule set and click OK.

4. In the Conflict Resolution Rules dialog box, click the Add button to add the first rule for this rule set.

The Rules wizard starts and opens the Name dialog box.

5. Enter a name for this rule and click the Next button.

The Actions dialog box appears.
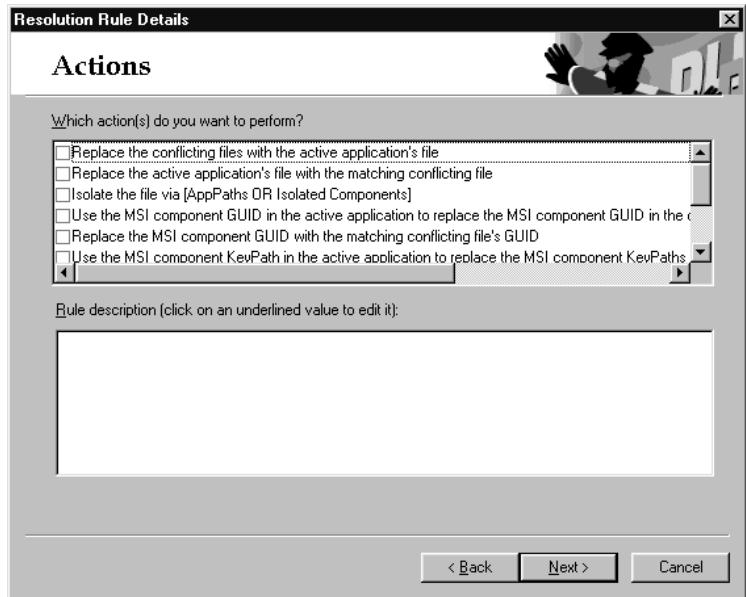
6. In the **Which action(s) do you want to perform** list, mark the checkbox next to the action or actions you want to perform. Mark the checkboxes in the order you want the actions to be performed.

   A description of each action appears in the **Rule description** list.

7. If a description contains underlined text, you can click the underlined text to open a Rule Detail Settings dialog box. There you can select a value for the underlined text.

8. Click the Next button.

   The Conditions dialog box appears.
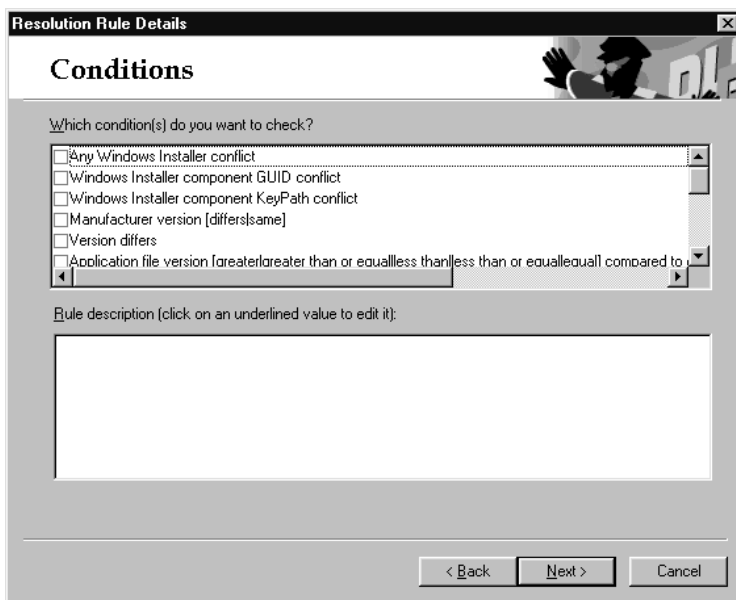
9. In the **Which condition(s) do you want to check** list, mark the checkbox next to each condition you want to check, in the order you want to check them.

   As you mark checkboxes, a description of each condition appears in the **Rule description** list.

10. If a description contains underlined text, you can click the underlined text to open a Rule Detail Settings dialog box. There you can select a value for the underlined text.

11. Click the Next button.

    The Sort Order dialog box appears.

12. In the **Which sort(s) do you want to perform** list, mark the checkbox next to each sort option you want to perform, in the order you want to perform them (you can change the sort order later).

    As you mark checkboxes, a description of each sort option appears in the **Rule description** list.

13. To rearrange the sort order, click on a sort option in the **Rule description** list, then click the Move Up or Move Down button.

14. Click the Finish button.

    The Conflict Resolution Rules dialog box reappears, with your rules displayed in the **Rule description** list. You cannot edit the rules from this dialog box, however, you can click any underlined text to set a value.

15. Click the OK button to save this rule set, or continue to add and edit rules.

Editing a Rule Set

You can edit or delete existing rule sets. You also can edit and delete rules within a rule set, and change the order in which rules are applied.

❗ Enterprise Edition only
The ability to edit rule sets is available in the Enterprise Edition only.

To edit a rule set:

1. From the Setup menu, select Conflict Resolution Rules.

   The Conflict Resolution Rules dialog box appears.

2. From the **Rule Set Name** drop-down list, select the rule set you want to edit.

   You can edit the rule set in any of the following ways:

   • To add a new rule to the rule set, click the Add button and step through the Rules wizard. See Creating a New Rule Set on page 66.

   • To edit a rule, click the rule in the rules list and click the Details button. This starts the Rules wizard, which you can step through to change the rule name or change any of the actions, conditions, and sort options.

   • To delete a rule, click the rule in the rules list and click the Delete button.

   • To change the order of the rules, click a rule in the rules list and click the Move Up or Move Down button.

3. When you are finished editing the rule set, click OK to save your changes.

Chapter 5
Importing and Grouping Applications

Once you have defined your conflict settings and resolution rules, you are ready to import applications in to the ConflictManager database. Typically, you use the Distribution Wizard to distribute your repackaged applications to the ConflictManager share point or to a network directory. Then, you import the applications to ConflictManager.

The Enterprise Edition of ConflictManager lets you group applications, which lets you reduce the number of conflicts you view at one time. In a large organization, for example, you might not be concerned about resolving conflicts between applications that are installed on computers in different departments. By creating a group for each department, you can view conflicts for one department at a time.

In this section, learn about:

- Importing applications into the database.

- Grouping applications.

Importing Applications Into the Database

Before you can detect conflicts, you must import application installations into the ConflictManager database. These can be installations that you repackaged in Wise Package Studio, or new installations that you built in the Wise Installation System or Wise for Windows Installer.

You can import an application into the database in the following ways:

- **Import from the ConflictManager share point.** This is the recommended way to distribute and import applications. You use the Distribution Wizard to distribute an application installation to the ConflictManager share point. Then, you open ConflictManager and import the application. If you are using the Enterprise Edition, you can use the Auto Import Service to import applications automatically. See Importing From the ConflictManager Share Point on page 73.

- **Import from any network or local drive.** You can import an application from any drive. Use this method when you distribute application installations to a network drive, or when you have developed the installation and saved it to a local or network drive. See Importing From a Network or Local Drive on page 78.

> **Note:**
> Do not import an application from a CD. If you do, you will not be able to export the application after resolving its conflicts, because you will not have access to its source files and you cannot write to a CD.

- **Distribute directly to the ConflictManager database.** This method is provided primarily for organizations that want to use ConflictManager as a reporting tool. You use the Distribution Wizard to distribute an application installation directly to the ConflictManager database. The next time you open the database in ConflictManager, the application automatically appears in the database.

> **Note:**
> Distributing directly to the ConflictManager database does not copy any files, so you cannot recompile the application after resolving its conflicts.

Importing From the ConflictManager Share Point

When you use the Distribution Wizard to distribute an application to the ConflictManager share point, the installation is copied to the directory designated as the share point during the Wise Package Studio installation. You can import installations from the share point in any of three ways:

- When you start ConflictManager, it searches the share point for applications that have not been imported. If it finds any, it displays the Import from Share Point dialog box automatically. If you select one or more applications and click OK, the applications are imported. If you click Cancel, ConflictManager opens without importing the applications.

- If you do not import an application when you start ConflictManager, or if an application is distributed to the share point after you start ConflictManager, you can use the Import from Share Point command on the Application menu.

- Use the Auto Import Service to import applications automatically. To use this method, the Auto Import Service must be installed on the server, and you must distribute the applications to the ConflictManager share point with a Workbench task that contains command line variables for the Application and Package names. See Running the Auto Import Service on page 76.

Enterprise Edition only
The Auto Import Service is available in the Enterprise Edition only.

Note:
When you use either Windows Installer Editor or WiseScript Editor to add files to an application that has already been distributed to the share point, a prompt appears asking if you want to add the new files to the share point. If you do so, the .QUE file for that application is reset and, the next time you start ConflictManager, you will be asked to import the application.

To import an application from the ConflictManager share point:

1. Display the Import from Share Point dialog box in either of two ways:

   - In ConflictManager, select Import from Share Point from the Application menu.

   OR

   - Start ConflictManager after distributing installations to the ConflictManager share point. The Import from Share Point dialog box appears automatically.

The Import from Share Point dialog box lists the applications that are available to be imported.
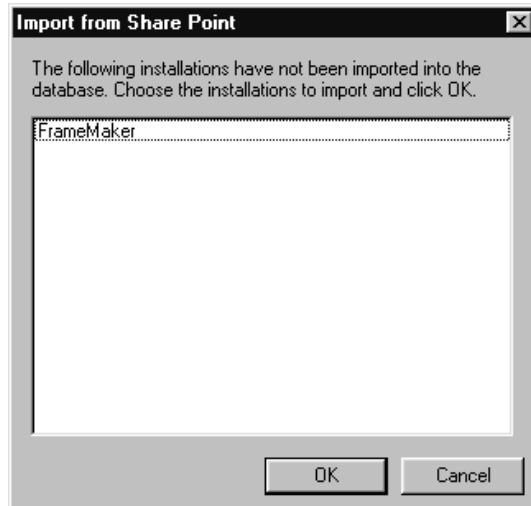
2. Select the applications you want to import and click OK. Use CTRL-click and SHIFT-click to select multiple applications.

   The Import Application dialog box appears.

3. Complete the Import Application dialog box:

   - **WSE/MSI/WSI File.** Specify the pathname to the installation file you want to import.

- **Application Name.** To create a new application, enter the name you want to use for this application in the ConflictManager database. If the application you're adding is a package of an existing application, select it from the drop-down list.

- **Package Name.** The package name, such as Full Install 3.0 or Basic Install 3.0, distinguishes this installation from others with the same application name. To create a new package, enter the name in this field. To replace an existing package, select a package from the drop-down list. See How Do Applications and Packages Differ? on page 14.

- **Setup Executable.** This option is used only with .WSE files created in version 7.03 or lower of InstallMaster, any version of InstallMaker and InstallBuilder, or any version of the Wise Installation System - Standard Edition. Specify the compiled .EXE file for this installation. If ConflictManager can't find the necessary file information stored in the installation file or in the application's source path, it extracts the necessary files from the setup executable to a temporary directory, then collects the data and removes the temporary directory and its contents.

- **Transform File.** When you import a .WSI or .MSI, you can specify a transform to be applied to the application before it is imported to ConflictManager. That way, any files or registry keys that are added by the transform can be included in conflict detection.

- **Use Transactions for Import.** Mark this checkbox to import installation resources as transactions instead of importing them individually. This speeds the import, but can lock database records temporarily during the update. Use this option if you are the only person importing applications, and if you are only importing one application at a time. If multiple people are importing applications at one time, or if you are importing multiple applications, do not mark this checkbox.

4. Click OK to import the application into the database.

5. If you selected multiple applications, the Import Application dialog box appears for the next application. Continue to enter the Import Application information for each application.

Running the Auto Import Service

Enterprise Edition only
The Auto Import Service is available in the Enterprise Edition only.

The Auto Import Service can import applications into the ConflictManager database automatically. In order to use this service:

- The Auto Import Service must be installed on the server on which the ConflictManager database resides. The service is installed during a ConflictManager server installation.

- The data source must be set up on the server.

- The applications to be imported must have been placed in the share point by the Distribution Wizard, and the Distribution Wizard must have been launched as a task from the Projects tab. The Application and Package name variables must be specified in the task's command line options.

The service starts when someone boots the server. It periodically searches the share point for .QUE files, which represent distributed applications. When it finds a .QUE file, the service automatically imports that application into the ConflictManager database and then removes the .QUE file. The next time you open the ConflictManager database, it includes that application.

The Auto Import Service can import to one ConflictManager database only. If you want to use multiple ConflictManager databases, install each one on its own server, and perform a ConflictManager server installation on each server.

While the Auto Import Service is running, a ConflictManager Auto Import Service task appears on the server's taskbar. Click the task to view the status of the service.

The ConflictManager Auto Import Service dialog box shows the imports that have been attempted and whether they were successful. The Failed Script Count field displays the number of import attempts that have failed. Failed imports are retried the next time the service is started, or you can click the Retry button.

To retry failed imports:

- Failed imports are retried automatically the next time the service is shut down and restarted.

OR

- Click the Retry button on the ConflictManager Auto Import Service dialog box.

To shut down the service:

1. Display the ConflictManager Auto Import Service dialog box.

2. Click the Exit button.

To start the service:

1. On the server, from the Windows Start menu, select the Programs folder, then the StartUp folder.

2. Click the Auto Import Service icon.

   The service starts and the ConflictManager Auto Import Service dialog box appears.

Importing From a Network or Local Drive

You can import an application installation from any network or local directory you can access. Use this method when you use the **Network** distribution method in the Distribution Wizard, or when the installation is saved on a local or network drive.

! **Note:**
Do not import an application from a CD. If you do, you will not be able to export the application after resolving its conflicts, because you will not have access to its source files and you cannot write to a CD.

To import an installation from a network or local drive:

1. From the Application menu, select Import.

   The Import Application dialog box appears.

2. Complete the Import Application dialog box:

   - **WSE/MSI/WSI File.** Specify the pathname to the installation file you want to import.

   - **Application Name.** To create a new application, enter the name you want to use for this application in the ConflictManager database. If the application you're adding is a package of an existing application, select it from the drop-down list.

   - **Package Name.** The package name, such as Full Install 3.0 or Basic Install 3.0, distinguishes this installation from others with the same application name. To create a new package, enter the name in this

field. To replace an existing package, select a package from the drop-down list. See How Do Applications and Packages Differ? on page 14.

- **Setup Executable.** This option is used only with .WSE files created in version 7.03 or lower of InstallMaster, any version of InstallMaker and InstallBuilder, or any version of the Wise Installation System - Standard Edition. Specify the compiled .EXE file for this installation. If ConflictManager can't find the necessary file information stored in the installation file or in the application's source path, it extracts the necessary files from the setup executable to a temporary directory, then collects the data and removes the temporary directory and its contents.

- **Transform File.** When you import a .WSI or .MSI, you can specify a transform to be applied to the application before it is imported to ConflictManager. That way, any files or registry keys that are added by the transform can be included in conflict detection.

- **Use Transactions for Import.** Mark this checkbox to import installation resources as transactions instead of importing them individually. This speeds the import, but can lock database records temporarily during the update. Use this option if you are the only person importing applications. If multiple people are importing applications at one time, do not mark this checkbox.

3. Click OK to import the application into the database.

   If the database already contains one or more applications, the Detect Conflicts dialog box appears, with the new application highlighted. You can detect conflicts now (see Detecting Conflicts on page 84) or click the Cancel button to skip conflict detection.

! **Note:**
If you get a message that some files cannot be found, the paths in the installation might be absolute. Avoid this problem by using the Distribution Wizard to distribute to the ConflictManager share point or to the network, instead of saving to the network drive.

Grouping Applications

You can use groups to reduce the number of conflicts you view at one time. A group consists of a subset of the applications in your database. When you retrieve conflicts for a group, you only display conflicts between the applications in the group.

Enterprise Edition only
Groups are available in the Enterprise Edition only.

A group can represent a functional area within your company, a company location, or any other entity that uses a subset of your applications. Groups can have one level of subgroups, which might represent departments within a location, or locations within states. A parent group always contains all the applications in all its subgroups.

For example, you might create a group for each department in your organization. Your Accounting and Engineering departments never use the same applications, so you put them in separate groups. Then, you can retrieve conflicts for Engineering alone, because it doesn't matter whether their applications conflict with those of any other department.

See Creating and Editing Application Groups and Retrieving Conflicts for a Group on page 88.

Creating and Editing Application Groups

Use the Groups pane to create and edit groups. You can set up groups and subgroups, add applications to groups, and delete applications from groups. To show the Groups pane, select Groups from the View menu.

Enterprise Edition only
Groups are available in the Enterprise Edition only.

When you detect conflicts for a group, you only find conflicts between the applications in that group. Therefore, when you create a group, be sure to add all the applications you want to check for conflicts. When you add an application to a subgroup, that application is added to the parent group as well.

Tip:
The right-click menu gives you quick access to most of the tasks that you can accomplish in the Groups pane.

To create an application group:

1. You can start to create application groups in two ways:
   - Select Application Groups from the Setup menu.

     OR

   - On the Groups pane, click the Configure button.

   The Edit Groups dialog box appears.
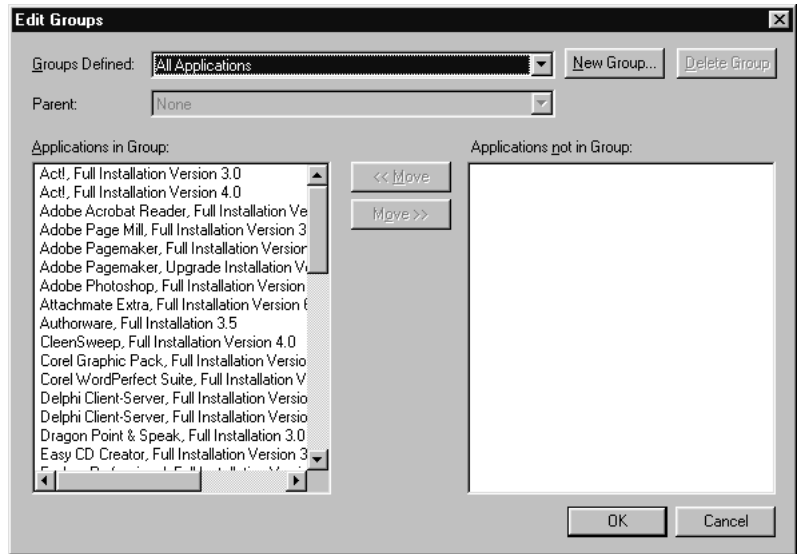
2. Click the New Group button.

   The New Group dialog box appears.
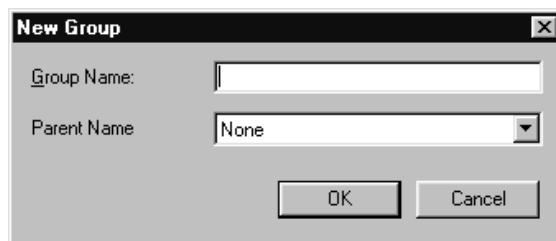
3. In the **Group Name** field, enter a name for the new group.

4. If this is a subgroup, select its parent group from the **Parent Name** drop-down list.

5. Click OK to close the New Group dialog box.

6. In the **Applications not in Group** list, select all the applications you want to include in this group and click the <<Move button.

You can select more than one application at a time. To move just one application, double-click it. To remove an application from the **Applications in Group** list, select it and click the Move>> button.

7. When you are finished defining the new group, click OK.

To edit an application group:

1. You can begin to create application groups in two ways:

   - Select Application Groups from the Setup menu.

     OR

   - On the Groups pane, click the Configure button.

   The Edit Groups dialog box appears.

2. From the **Groups Defined** drop-down list, select the group you want to edit.

3. Edit the group in any of the following ways.

   - Use the two Move buttons to move applications back and forth between the **Applications in Group** and **Applications not in Group** lists.

   - Select a different parent group from the **Parent** drop-down list.

   - Delete the group by clicking the Delete Group button.

4. When you are finished editing the group, click OK.

To add an application to a group by dragging:

1. If necessary, show the Groups pane by selecting Groups from the View menu.

2. In the Groups pane, select the group containing the application you want to add. This usually is All Applications.

3. If necessary, expand the All Applications tree in the left pane of the Application Explorer.

4. Drag the application or package over a group name in the Groups pane.

   - You can drag the entire application from the right pane of the Application Explorer.

   OR

   - You can click the application name in the left pane of the Application Explorer, and drag a package from the right pane.

   Use CTRL-click and SHIFT-click to select multiple applications or packages.

5. The application or package is added to the group. If you dragged the application to a subgroup, it is added to the parent group also.

Chapter 6
Finding and Resolving Conflicts

As soon as you have at least two applications in your database, you can begin to find and resolve conflicts. ConflictManager detects conflicts by comparing the files each application installs. When it finds a conflict, it creates records in the database. To see the conflicts ConflictManager finds for a specific application, you retrieve them. To resolve the conflicts, you use either the Resolve wizard to resolve conflicts one by one, or the Resolve with Rules menu command to resolve as many conflicts as possible based on resolution rules you have chosen. Finally, you export the changes to the original installation file and recompile it. The conflict-free application is ready for deployment to your end users.

In this section, learn how to:

- Detect conflicts.
- Review conflicts.
- Resolve conflicts.
- Export applications after resolving conflicts.

Detecting Conflicts

After importing the application installations you use into ConflictManager, you can find conflicts by selecting Detect from the Conflicts menu. You choose one or more applications for which to find conflicts, then start the detection process, which populates the database with conflict information for those applications you chose.

The ConflictManager database contains the combined results of all the detection processes you have performed. However, repeating the detection process for an application overwrites all previous conflict records for that application.

To see the conflicts that ConflictManager finds, you use the Retrieve button in the upper left pane of the Conflict List. You can only retrieve conflicts for one application at a time.

To detect conflicts:

1. From the Conflicts menu, select Detect.

    The Detect Conflicts dialog box appears.
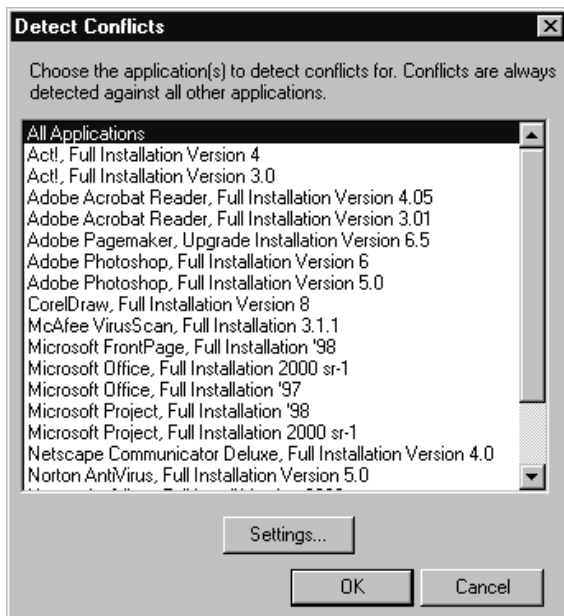
2. In the Detect Conflicts dialog box, select one or more applications for which you want to find conflicts. You can use SHIFT-click or CTRL-click to select multiple applications.

    *   Conflicts are found only between the application or applications you select and all other applications in the database. For example, if you have Microsoft Word and Lotus Notes in the database, and you choose to find conflicts for Word, any item for Word that conflicts with Notes (or some other application) will be found, but no items for Notes will be found.

    *   Select **All Applications** to find every record in every application that conflicts with any other application.

    You can change the conflict settings from this dialog box. Click the Settings button and define the settings as described in Defining Conflict Settings on page 56.

3. Click OK to begin the conflict detection.

Depending on the number of applications in the database and the speed of your server, conflict detection can take a few minutes to run. While the conflict detection is running, you can see its status on the status bar in the lower right of the window. You can continue to use ConflictManager while conflict detection is in progress. When conflict detection is complete, the status bar displays "Idle."

You cannot exit the program while conflict detection is running; you must stop the conflict detection first.

To stop conflict detection:

If you need to close ConflictManager, but conflict detection is running, you must stop the conflict detection first. To do so, select Stop from the Conflicts menu. The status in the status bar returns to "Idle".

Stopping conflict detection before it finishes can leave partial records in the database. If you must stop conflict detection, be sure to rerun it later. You cannot revert the database to its previous state, unless you have a current backup copy.

Reviewing Conflicts

In order to view conflicts for a particular application, you must retrieve them in the Conflict List. To do this, you specify an application, a package, and the type of conflict to display, then click the Retrieve button. The right pane of the Conflict List shows all conflicts meeting those criteria. Clicking a conflict in the Conflict List lets you view further information about that conflict in the Application Explorer. See Retrieving Conflicts in the Conflict List.

You can also review conflicts by printing one or more of the conflict reports. These reports, which you access from the Reports menu, provide conflict information in varying formats. For more information about reports, see Running Conflict Reports on page 105.

You can view properties for any item in the right pane of the Application Explorer by displaying a Properties dialog box. The Properties dialog box shows additional information about the item. See Viewing Properties on page 89.

If you are using the Enterprise Edition, you can use application groups to narrow the scope of the conflicts you retrieve. This lets you see the conflicts for just a subset of the applications in the database, rather than all applications. See Retrieving Conflicts for a Group on page 88.

Retrieving Conflicts in the Conflict List

The Conflict List lets you select an application package and view the files and system modifications in that package that conflict with other applications. Typically, you select an application, a package, and the type of conflict to display. When you click the Retrieve button, the Conflict List displays the conflicts between the selected, or active, application and all other applications in the database.
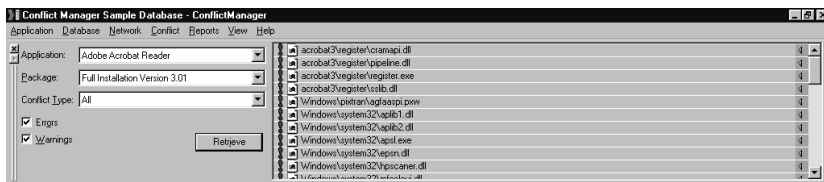
To retrieve conflicts:

1. In the left pane of the Conflict List, select an application from the **Application** drop-down list.

2. In the **Package** drop-down list, select the application package for which you want to display conflicts.

3. In the **Conflict Type** drop-down list, select the type of conflicts you want to display: **All**, **Files**, **Registry**, or **Other**.

4. Mark the **Errors** checkbox to list error conflicts (items that almost certainly will cause problems); clear the checkbox to exclude errors.

5. Mark the **Warnings** checkbox to list warning conflicts (items that probably will not cause problems); clear the checkbox to exclude warnings.

6. Click the Retrieve button.

   All conflicts that meet the criteria you entered are displayed in the right pane of the Conflict List. For a description of the types of conflicts possible, see Types of Conflicts on page 29.

> **Note:**
> The types of conflicts that actually display depend on your Conflict Settings. For example, if your Conflict Settings are set to detect file conflicts only, then registry conflicts will not appear even if you select Registry in the Conflict Type field.

Once you have displayed the conflicts, you can perform the following actions.

• Click any item in the Conflict List to display the same item in the Application Explorer. This lets you see where in the directory structure the item is located.
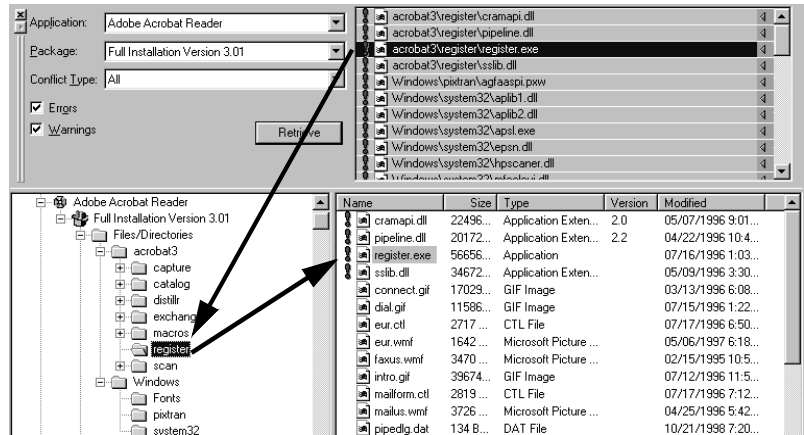
• Double-click an item in the Conflict List to display the same item in the Application Explorer and display the names of all conflicting application packages.

Clearing the Conflict Display

To clear the Conflict List and Application Explorer of the current conflicts, select Refresh from the View menu. This does not delete the conflicts from the database; it simply clears the display. It also rereads application data, which can be useful if the Auto Import Service, or another user, has imported applications into the database since you started this ConflictManager session.

Retrieving Conflicts for a Group

Enterprise Edition only
Groups are available in the Enterprise Edition only.

You can use groups to reduce the number of conflicts you view at one time. A group consists of a subset of the applications in your database. When you retrieve conflicts for a group, you only display conflicts between the applications in the group. See Grouping Applications on page 80 for information on setting up groups.

To view the conflicts between applications in a group:

1. If necessary, show the Groups pane by selecting Groups from the View menu.

2. Select a group name in the Groups pane.

3. In the left pane of the Conflict List, select an application from the **Application** drop-down list. The **Application** drop-down list contains only the applications in the currently selected group.

4. Select other options for retrieving conflicts:

   - In the left pane of the Conflict List, select an application from the **Application** drop-down list.

   - In the **Package** drop-down list, select the application package for which you want to display conflicts.

   - In the **Conflict Type** drop-down list, select the type of conflicts you want to display: **All**, **Files**, **Registry**, or **Other**.

   - Mark the **Errors** checkbox to list error conflicts; clear the checkbox to exclude errors.

   - Mark the **Warnings** checkbox to list warning conflicts; clear the checkbox to exclude warnings.

5. Click the Retrieve button.

All the conflicts between the application you selected and the other applications in the group are shown in the right pane of the Conflict List.

Viewing Properties

You can view properties for any item in the right pane of the Application Explorer by displaying a Properties dialog box. The Properties dialog box shows additional information about the item. This information differs depending on the type of item you select; it can include the following:

File details
Component details
Registry key settings
Autoexec.bat settings
Config.sys settings
ODBC drivers
ODBC data sources
Service settings
Device settings
.INI file settings
Shortcut (Icon) details
Path settings
Conflicts for all item types

> **Caution:**
> You can change the information displayed in the Properties dialog boxes, but it is not recommended except for Registry keys, and then only if you are the developer of the application and you have extensive knowledge of how Windows operates. See Resolving Registry Key Conflicts on page 97.
>
> Changing property information incorrectly can damage the installation.

To view properties:

1. If you want to retrieve conflicts for a group, click a group in the Groups pane (Enterprise Edition only).

2. Select options for retrieving conflicts:

   - In the left pane of the Conflict List, select an application from the **Application** drop-down list.

   - In the **Package** drop-down list, select the application package for which you want to display conflicts.

   - In the **Conflict Type** drop-down list, select the type of conflicts you want to display: **All**, **Files**, **Registry**, or **Other**.

   - Mark the **Errors** checkbox to list error conflicts; clear the checkbox to exclude errors.

- Mark the **Warnings** checkbox to list warning conflicts; clear the checkbox to exclude warnings.

3. Click the Retrieve button to display conflicts.

4. Click any item in the right pane of the Conflict List to display the same item in the Application Explorer.

5. In the right pane of the Application Explorer, double-click the item for which you want to view properties.

   A Properties dialog box appears. The information in the dialog box differs depending on the type of item you selected.

Resolving Conflicts

Resolving a conflict involves looking at each file that has a conflict and choosing which version is installed on the destination computer. You can also choose to change the location of conflicting files so that each application can use its respective version of the file. ConflictManager provides two menu commands to resolve conflicts for a particular application:

- **Resolve with Rules.** This command uses conflict resolution rules to resolve conflicts automatically. See Resolving File Conflicts Automatically With Rules.

- **Resolve.** This command runs the Resolve wizard, which lets you review and resolve file conflicts one at a time. See Resolving File Conflicts Individually With the Resolve Wizard on page 92.

The Resolve and Resolve with Rules commands resolve file conflicts only. To resolve registry key value conflicts, you must use the Properties dialog box that is accessible from the Application Explorer. See Resolving Registry Key Conflicts on page 97.

> **Caution:**
> Resolve registry key conflicts only if you are the developer of the application and you have extensive knowledge of how Windows operates. Changing registry information incorrectly can damage the installation. Changing information in HKEY_CLASSES_ROOT is never recommended.

Resolving File Conflicts Automatically With Rules

You can use ConflictManager's resolution rules to resolve the majority of conflicts automatically. This is the fastest way to resolve conflicts. You specify the rule set to use and the application for which to resolve conflicts, and the conflicts are resolved according to the rules. Resolving with rules always deletes all previous conflict resolutions for the selected application.

When the conflict resolution is finished, retrieve conflicts for that application. If conflicts are listed, they could not be resolved automatically. Use one of the manual methods to resolve the remaining conflicts. See Resolving File Conflicts Individually With the Resolve Wizard on page 92 and Resolving Registry Key Conflicts on page 97.

To resolve conflicts automatically:

1. From the Conflicts menu, select Resolve with Rules.

   The Resolve with Rules dialog box appears.
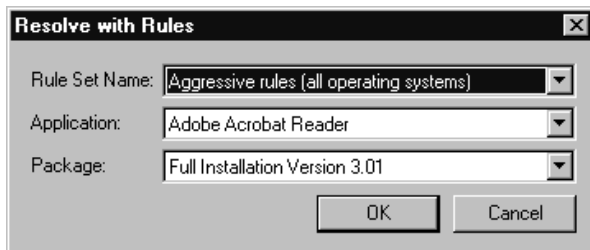
2. Specify the rule set you want to use and the application for which you want to resolve conflicts.

   • **Rule Set Name.** Select the rule set you want to use.

   • **Application.** Select the application for which you want to resolve conflicts.

   • **Package.** Select the package for which you want to resolve conflicts.

3. Click OK.

   A Resolving Conflicts dialog appears, and conflicts are resolved based on the rule set specified. If there are only a few conflicts to resolve, the dialog box appears only briefly.

Resolving File Conflicts Individually With the Resolve Wizard

The Resolve wizard walks you through a series of steps that let you quickly resolve file conflicts. Use it to resolve file conflicts individually without using resolution rules. You can also use the Resolve wizard to resolve conflicts that cannot be resolved automatically with rules. For recommendations on how to resolve various types of conflicts, see Guidelines for Resolving File Conflicts on page 31.

To resolve conflicts with the Resolve wizard:

1. From the Conflicts menu, select Resolve.

   The Welcome dialog box appears.
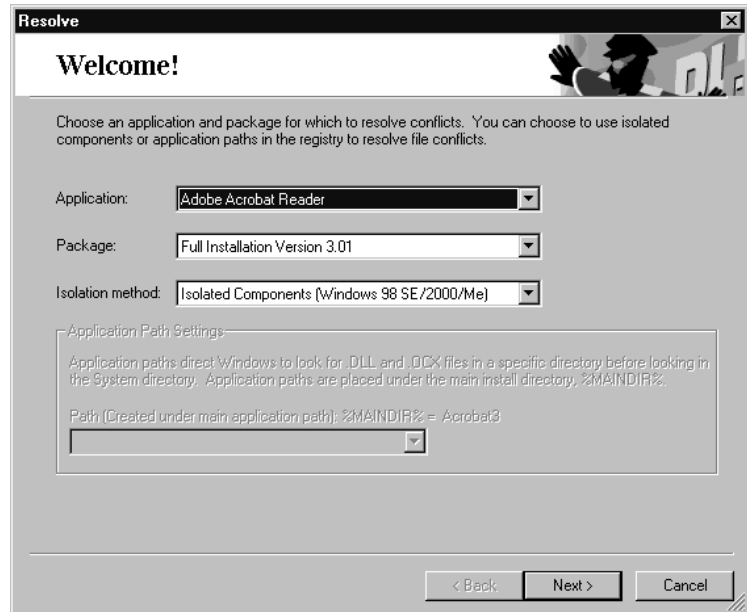
2. In the **Application** drop-down list, select the application for which you want to resolve conflicts.

3. In the **Package** drop-down list, select which package of the selected application you want to resolve conflicts for.

4. In the **Isolation method** drop-down list, select an option to allow the wizard to move executable files from the System directory. This activates the Move button on the File Conflicts and File Conflicts in Registry dialog boxes.

   - **Do not move files.** Do not allow file isolation.

   - **Isolated Components (Windows 98 SE/2000/Me).** Isolate files by using Windows Installer isolated components. The isolation of the files is then managed by the operating system. This is supported by Windows 98 SE, Windows 2000, and Windows Me only.

   - **Application Paths.** Isolate files by moving them out of the System directory and into a private directory in the main application path. This is supported by all Windows operating systems.

5. **Path.** If you select the **Application Paths** isolation method, enter the directory name for the private directory that can contain the executable

files. Enter a new directory name to signify a directory to hold the conflicting file. For example, PrivateDir.

6. Click the Next button.

    The File Conflicts dialog box appears. This displays conflicts between files that are NOT listed in the Windows registry. You usually can move such files without causing problems.

    The top list displays the conflicting files, including file name, version, date and time, size, and other identifying characteristics. You might need to scroll the list horizontally to see some of the information. However, you can resize and move the columns, and you can sort on any field by clicking the column heading. You also can resize the dialog box to see more of the file information.
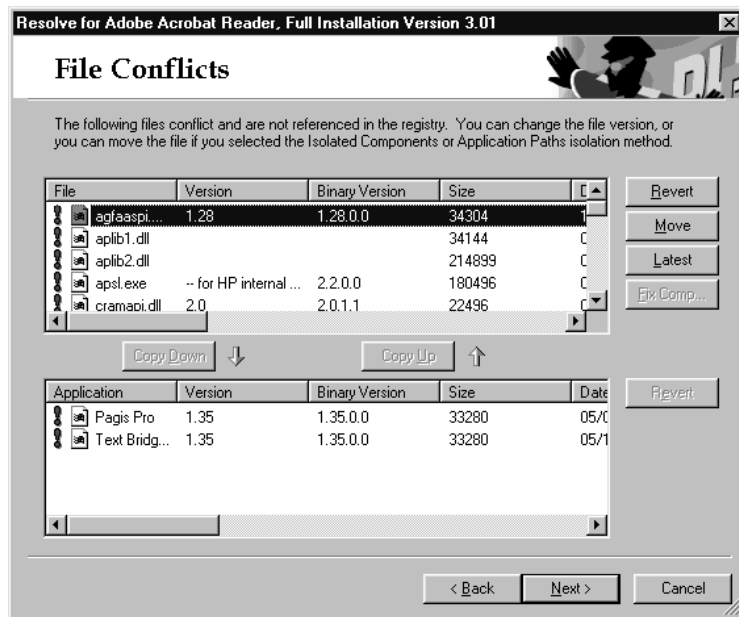
7. Decide which file or files you want to move or use. Then select the file or files in the top list and take the appropriate action as described below. You can use SHIFT-click or CTRL-click to select multiple files. When you resolve a conflict for a file, the exclamation point to the left of the file name changes from red to white.

    •   Click the Move button to move the selected file to the private directory and tell the application to look for the file there. This button is not available if you chose the **Do not move files** isolation method in the Welcome dialog box.

- Click the Latest button to use the most recent version of the selected file for the active installation. If one file has a newer version but another has a newer date/time, a Latest File Selection dialog box appears, where you choose whether to use the file with the newest modified date or the highest internal version number.

- Click the Fix Comp button to change the file's component. This can fix the following issues:

  - If the file is a KeyPath to one component but not another, make the file a KeyPath to its own component.

  - If the file has extra non-advertising resources, move them to a new component.

  - If the file's shared .DLL counter is not set, set it.

  If the component has more than one of these issues, a Fix Options dialog box appears, where you can select which actions to take.

- To apply a file in the top list to an application package in the bottom list, select the desired file in each list and click the Copy Down button. The file remains in its current location but will be used to install the application in the bottom list.

- To apply a file in the bottom list to the current application, select the desired file in each list and click the Copy Up button. The file remains in its current location but will be used to install the application in the top list.

- To undo changes made to a particular file, click the file, then click the top or bottom Revert button, depending on whether the file is in the top or bottom list. This resets the file to the state it was in when you imported the installation.

8. Click the Next button.

   The File Conflicts in Registry dialog box appears. This displays conflicts between files that ARE listed in the Windows registry.

   The top list displays the conflicting files, including file name, version, date and time, size, and other identifying characteristics. You might need to scroll the list horizontally to see some of the information. However, you can resize and move the columns, and you can sort on any field by clicking the column heading.

9. Decide which file or files you want to move or use. Then select the file or files in the top list and take the appropriate action as described below. You can use SHIFT-click or CTRL-click to select multiple files. When you resolve a conflict for a file, the exclamation point to the left of the file name changes from red to white.

- Click the Move button to move the selected file to the private directory and tell the application to look for the file there. This button is not available if you chose the **Do not move files** isolation method in the Welcome dialog box.

> **Caution:**
> When conflicting files are listed in the registry, moving them to a private application directory can cause problems. ConflictManager updates the registry when a file is moved to a private application directory. This can cause other applications to follow the moved file and result in a further conflict.

- Click the Latest button to use the most recent version of the selected file for the active installation. If one file has a newer version but another has a newer date/time, a Latest File Selection dialog box appears, where you choose whether to use the file with the newest modified date or the highest internal version number.

- To apply a file in the top list to an application package in the bottom list, select the desired file in each list and click the Copy Down button. The file remains in its current location but will be used to install the application in the bottom list.

- To apply a file in the bottom list to the current application, select the desired file in each list and click the Copy Up button. The file remains in its current location but will be used to install the application in the top list.

- Click the Details button to open a separate dialog box listing all the registry keys that contain the path to the selected file.

- To undo changes made to a particular file, click the file, then click the top or bottom Revert button, depending on whether the file is in the top or bottom list. This resets the file to the state it was in when you imported the installation.

10. When you have resolved all file conflicts, click the Finish button.

The Resolve wizard makes the changes you specified and then closes.

Resolving Registry Key Conflicts

The Resolve and Resolve with Rules commands resolve only file conflicts. To Resolve registry key value conflicts, you must use the Properties dialog box that is accessible from the Application Explorer.

Caution:

Resolve registry key conflicts only if you are the developer of the application and you have extensive knowledge of how Windows operates. Changing registry information incorrectly can damage the installation. Be especially careful when changing information in HKEY_CLASSES_ROOT, because incorrect changes there can damage the operating system.

To resolve registry conflicts:

1. Retrieve conflicts:

- If you want to retrieve conflicts for a group, click a group in the Groups pane (Enterprise Edition only).

- In the left pane of the Conflict List, select an application from the **Application** drop-down list.

- In the **Package** drop-down list, select the application package for which you want to display conflicts.

- In the **Conflict Type** drop-down list, select the type of conflicts you want to display, in this case, either **All** or **Registry**.

- Mark the **Errors** checkbox to list error conflicts.

- Click the Retrieve button to display conflicts.

2. In the right pane of the Conflict List, click the registry item for which you want to resolve conflicts.

3. In the right pane of the Application Explorer, double-click the registry key for which you want to resolve conflicts.

   A Properties dialog box appears.
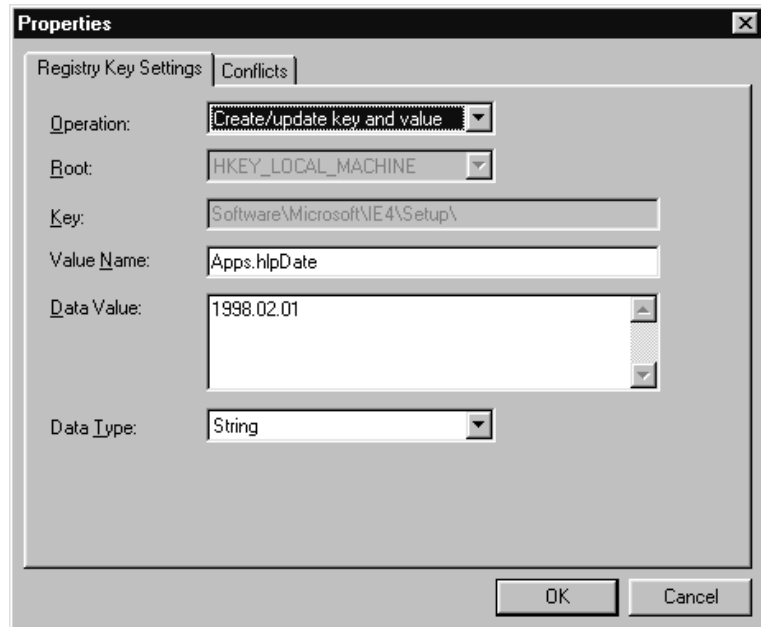
4. Click the Conflicts tab. This shows the registry keys that conflict and displays their values.
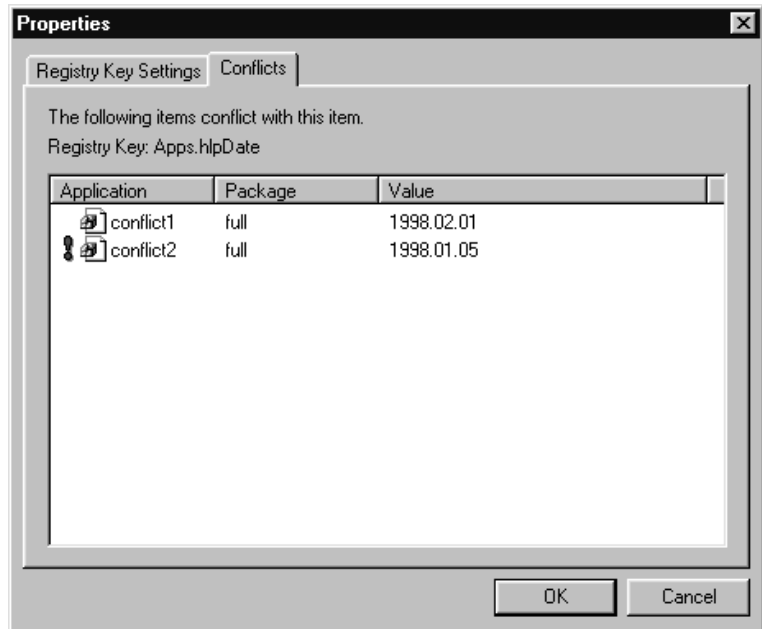
5. Decide which value you want to use and write it down on paper exactly as it appears.

6. Click the Registry Key Settings tab.

7. In the **Data Value** field, enter the key value you recorded from the Conflicts tab. Be sure to type the value exactly.

8. Click OK to save the change and close the dialog box.

Now you can export, compile, and test the application.

Exporting Applications After Resolving Conflicts

After you resolve all conflicts for an application, you can export the changes to the original WiseScript (.WSE) or Windows Installer file (.WSI or .MSI), which you then recompile. This produces an installation that does not conflict with other applications on your company's systems. You can export the installation to a single computer or to a network share point. The export function requires an existing installation file to export to; it cannot create a new installation file.

ConflictManager contains two menu commands for exporting installations after you have located and resolved conflicts in them.

- **Export.** Writes an application's database information to an installation file. When you export a WiseScript installation, you have the option to overwrite the existing installation or modify it with the changes made in ConflictManager. Exporting to a Windows Installer file (.MSI or .WSI) always overwrites the existing data. After you export an installation you must compile it in either the Windows Installer Editor or WiseScript Editor. See Exporting an Application on page 101.

- **Export and Recompile.** Exports all applications whose conflicts have been resolved. An option lets you recompile the applications automatically after exporting. This is useful when you resolve conflicts for multiple applications, especially when you use the Resolve with Rules command. That way, you don't have to keep track of which applications you've changed, and you don't have to recompile them individually. See Exporting and Recompiling Applications on page 103.

> ⚠ **Note:**
> In order to export an application, the original installation and its associated files, as well as any new files you have added during conflict resolution, must have a valid source path.

Exporting an Application

Use this command to export changes for a single application. The installation you plan to export to must already exist. When you export to a .WSE or .WSI file, you must compile the installation after exporting. You do not have to compile .MSI files.

To export an installation:

1. From the Application menu, select Export.

   The Export Application dialog box appears.

2. In the **Application Name** field, select the application that you want to export.

3. In the **Package Name** field, select the package that you want to export.

4. In the **Installation File** field, specify the path and file name of the Windows Installer installation file (.WSI or .MSI) or WiseScript file (.WSE) to which you are exporting. This field defaults to the installation file that was originally imported into ConflictManager, the location of which is stored in the database. Normally, you should accept the default. If you are exporting a WiseScript, you can export to a different file.

   If a file was imported from a WiseScript, you must export it as a WiseScript. If a file was imported from a Windows Installer file, you must export it as a Windows Installer file.

5. The Export Options section of the dialog is different depending on what the type of file is being exported.

- If you're exporting to a WiseScript file (.WSE). select one of the following options:

  - **Overwrite existing installation.** Mark this option to replace the entire installation with the information in the ConflictManager database.

  - **Merge changes with existing installation.** Mark this option to add only the changed information to the existing installation.

- If you are exporting to a Windows Installer file (.WSI or .MSI), you don't have a choice to overwrite or merge because the installation file you choose is always overwritten. If you have previously distributed this .MSI to users, the Small, Minor, and Major options in the **Upgrade Type** drop-down list (listed below) change your installation so that it contains the necessary changes to function as an application update.

  - **None (Do not modify).** Choose this if you have never distributed this .MSI to users. The only changes in the exported .MSI are the conflict resolution changes.

  - **Small (Change PackageCode).** Select this option if you want to ship this version of the application as a patch or reinstall. Small updates generally contain minimal updates such as changes to the contents of files. This option creates an .MSI that has conflict resolution changes plus a new package code, which will reinstall over the previous version to update it. If you want a patch, use the Patch Wizard to create a patch between the previous version .MSI and the .MSI you are exporting.

  - **Minor (Change Version and PackageCode).** Select this option if you want to ship this version of the application as a patch or reinstall. Minor updates generally contain changes such as new or removed features, files, or other items. This option creates an .MSI that has conflict resolution changes plus a new package code and version, which will reinstall over the previous version to update it. If you want a patch, use the Patch Wizard to create a patch between the previous version .MSI and the .MSI you are exporting. The only difference between Small and Minor is that a Minor update updates the version of the installed application.

  - **Major (Change ProductCode, Version and PackageCode).** Select this option if you want to ship this version of the application as an upgrade. You usually ship an installation as an upgrade when it contains comprehensive changes. If you select

this option, an upgrade entry is created on the Upgrade page, and this update will upgrade previous versions.

6. If you are exporting an .MSI, you can specify a transform file (.MST) in the **Transform** field. Do this when you do not want to change the original application installation. The changes you made to the installation in ConflictManager are saved in the transform file, which you can then apply to the original installation.

7. Click OK.

The installation file you specified is updated with the application information from the ConflictManager database.

8. Open the installation file in either Windows Installer Editor or WiseScript Editor as appropriate and compile it.

Exporting and Recompiling Applications

Use this command when you want to export changes for more than one application, or when you want to recompile one or more applications automatically after exporting. This process always overwrites the original installation files.

To export and recompile applications:

1. From the Application menu, select Export and Recompile.

The Export Changed Applications and Recompile dialog box appears. This lists all applications whose conflicts have been resolved since their information has changed in the database.
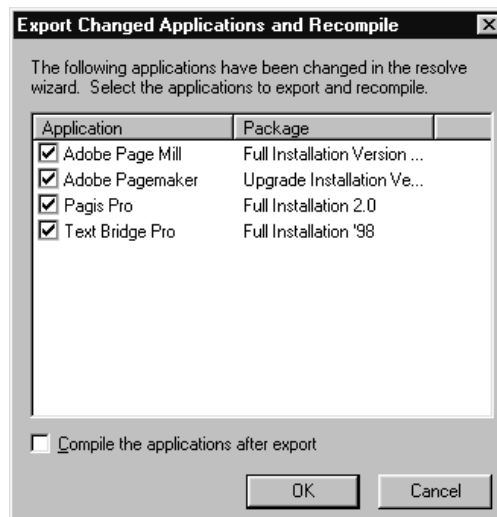
2. Mark the checkboxes next the to applications you want to compile.

3. To compile the applications automatically after exporting them, mark the **Compile the applications after export** checkbox.

4. Click OK.

The applications you marked are exported to their original installation files. If you marked the **Compile the applications after export** option, they are then recompiled.

Chapter 7
Running Conflict Reports

After detecting conflicts, you might want to review them in a different format than the on-screen display. ConflictManager provides conflict reports that you can generate and either read on the screen, print, or export to an application, file, or e-mail message.

In this section, learn:

- What reports are available.

- How to interpret the conflict level on the reports.

- How to use the report viewer.

What Reports Are Available?

The Professional Edition of ConflictManager provides the following reports:

- File Conflict for a single application
- Registry Conflicts for a single application

The Enterprise Edition of ConflictManager also provides the following reports:

- File Information
- File Conflict, for a single application, for all conflicts sorted by file, or for all conflicts sorted by application or group
- Registry Conflicts, for a single application or for all applications in a group or in the database

These reports have been developed using Crystal Reports 8.0. The ConflictManager installation installs the Crystal Reports runtimes on your computer, so you don't need the full version of Crystal Reports to run the ConflictManager reports. The ConflictManager reports are located in the ConflictManager\Reports directory under the Wise Package Studio directory, with the extension .RPT.

File Information Report

Use this report to view information about files of one or more file types. For each file, the report lists the file name, size, date/time, version, company, product, install location, and application.

> **Enterprise Edition only**
> This report is available in the Enterprise Edition only.

To generate this report:

1. From the Reports menu, select File Information.

2. In the **Filename** field in the File Report Selection dialog box, enter a wildcard to specify the files to include on the report. You can enter *.* to report on all files, or use a file extension such as *.DLL to report only on files of a particular type.

3. Click OK.

The report opens in the report viewer window. For information about the report viewer, see Using the Report Viewer on page 112.

File Conflict Reports

Use these reports to view file conflicts in varying formats. ConflictManager provides three file conflict reports:

- **File Conflict Report for a single application.** For a selected application, this report lists each conflicting file and its location, version, size, company, and product, as well as the files in other applications that conflict with it. The report is sorted in file order.

- **File Conflict Detail for all conflicts sorted by file.** For a selected group of applications or for all applications, this report lists each conflicting file and its version, size, date/time, company, and product. The report is sorted in file order. This report is available in the Enterprise Edition only.

- **File Conflict Report for all conflicts sorted by application.** For a selected group of applications or for all applications, this report lists each conflicting file and its location, version, size, company, and product, as well as the files in other applications that conflict with it. The report is sorted in application order. This report is available in the Enterprise Edition only.

The File Conflict report for a single application and for all conflicts sorted by application contain a conflict level field. For information on what the conflict level represents, see Interpreting the Conflict Level on page 110.

To generate a file conflict report for a single application:

1. From the Reports menu, select File Conflicts > Conflicts for One Application Only.

   The Report Application Selection dialog box appears.

2. In the **Application Name** field, select the application for which you want to run the report.

3. In the Enterprise Edition, you must also select the **Group** of applications for which you want to run the report.

4. Click OK.

The report opens in the report viewer window.

To generate a file conflict report for all applications, sorted by file:

1. From the Reports menu, select File Conflicts > All Conflicts Sorted by File.

2. In the Report Application Selection dialog box, choose the **Group** for which you want to run the report.

3. Click OK.

The report opens in the report viewer window.

To generate a file conflict report for all applications, sorted by application:

1. From the Reports menu, select File Conflicts > All Conflicts Sorted by Application.

2. In the Report Application Selection dialog box, choose the **Group** for which you want to run the report.

3. Click OK.

The report opens in the report viewer window.

For information about the report viewer, see Using the Report Viewer on page 112.

Registry Conflicts Application Report

Use this report to view registry conflicts for a single application. If you are using the Enterprise Edition, you can also run this report for all applications in a group or in the database. The report lists the key, name, and value of each conflicting registry entry along with a table that lists the conflicting registry entries in other applications.

The Registry Conflicts Application report contains a conflict level field. For information on what the conflict level represents, see Interpreting the Conflict Level on page 110.

To generate this report for a single application:

1. From the Reports menu, select Registry Conflicts > Conflicts for One Application Only.

   The Report Application Selection dialog box appears.

2. In the **Application Name** field, select the application for which you want to run the report.

3. In the Enterprise Edition, you must also select the **Group** of applications for which you want to run the report.

4. Click OK.

The report opens in the report viewer window. For information about the report viewer, see Using the Report Viewer on page 112.

To generate this report for a group of applications:

1. From the Reports menu, select Registry Conflicts > All Conflicts.

2. In the Report Application Selection dialog box, choose the **Group** for which you want to run the report.

3. Click OK.

The report opens in the report viewer window. For information about the report viewer, see Using the Report Viewer on page 112.

Interpreting the Conflict Level

Some ConflictManager reports display a conflict level for files that have conflicts. The conflict level is a numeric representation of the different conflict classifications: error, warning, and informational.

The following table shows the kind of conflict represented by each conflict level.

Conflict Level	Conflict Classification
1	Informational, not a true conflict and not likely to cause a problem
2	Warning, a possible conflict
4	File error, deserves attention
8	Component error, deserves attention

A file can have a combination of conflicts with different applications; in that case, its conflict level might be one of the following values:

Conflict Level	Conflict Classification
3	1 + 2 (informational + warning)
5	4 + 1 (file error + informational)
6	4 + 2 (file error + warning)
9	1 + 8 (component error + informational)
10	8 + 2 (component error + warning)
12	8 + 4 (file error + component error)

Using the Report Viewer

After you generate a report, it displays in a report viewer window. You can read the report on the screen, print it, or export it to an application, file, or e-mail message. To close the report viewer and return to ConflictManager, click the Close button.

This section describes how to use the report viewer.
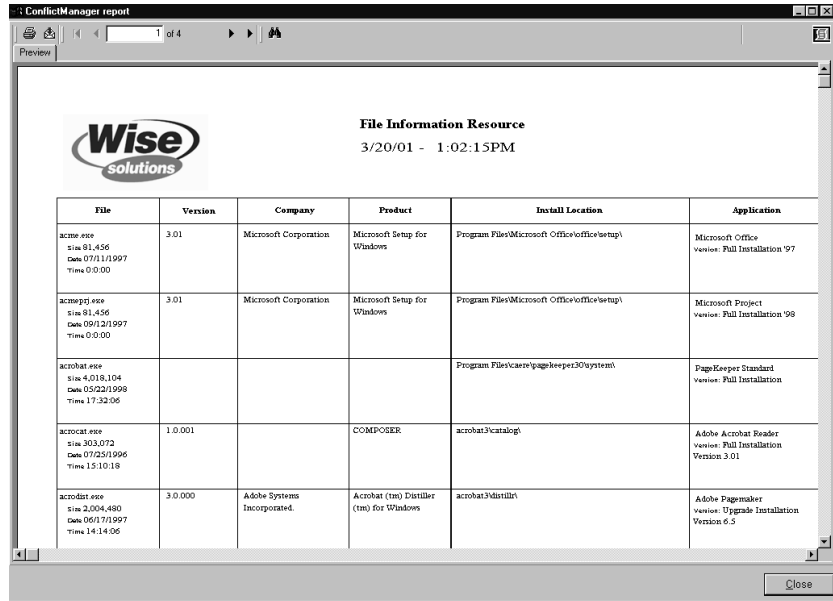
Navigating Through Reports on the Screen

To review a ConflictManager report on the screen, you can use the vertical and horizontal scroll bars to scroll to the left, right, top, and bottom of the current page. To move from page to page, use the toolbar or the right-click menu. You cannot scroll from one report page to another using the scroll bars.

Click the First Page tool to go to the first page of the report. You can also right-click and select First Page.

Click the Previous Page tool to go to the page that precedes the current page. You can also right-click and select Previous Page.

▶ Click the Next Page tool to go to the page that follows the current page. You can also right-click and select Next Page.

▶| Click the Last Page tool to go to the last page of the report. You can also right-click and select Last Page.

Printing a Report

If you want a hard copy of a ConflictManager report, you can print it on your default printer.

To print a report:

1. From the right-click menu in the report viewer, select Print.

   A Print dialog box appears.

2. Define the page range and the number of copies to print, and choose whether to collate the copies.

3. Click OK.

The report is printed on your default printer.

Exporting a Report

The report viewer lets you export a ConflictManager report in a variety of formats. You can export a report directly to an application, such as Microsoft Excel, or to a file, or to an e-mail message.

To export a report:

1. From the right-click menu in the report viewer, select Export.

   An Export dialog box appears.

2. From the **Format** drop-down list, select the data format to which you want to export.

3. In the **Destination** drop-down list, select an option to determine where to export the report.

   - **Application.** Open the application associated with the selected data format, then open the report within that application.

   - **Disk file.** Export the report to a file.

   - **Microsoft Mail (MAPI).** Send the report as e-mail.

4. Click OK.

5. Additional dialog boxes might appear, depending on the data format selected. For example, if you select **Character-separated values** in

the **Format** field, additional dialog boxes let you specify the character separator and delimiter as well as the number and date formats.

6. Depending on the destination selected, one of the following dialog boxes appears:

- If the destination is **Application**, the application associated with the selected data format launches, then opens the report within the application. This can take a few moments if the report is large. For example, if you choose Excel as the format, the report opens in Microsoft Excel.

  If your computer does not have an application associated with the selected data type, an Open With dialog box appears, where you can specify the program to use to open the exported report.

- If the destination is **Disk file**, a Choose Export File dialog box appears, where you specify the name and directory location of the exported report file.

- If the destination is **Microsoft Mail (MAPI)**, a Send Mail dialog box appears, where you enter the recipient's e-mail address. Additional fields let you enter a subject line and message. Click the Send button to send the message. The report is either included as an attachment or as text, depending on the data format.

Copying and Searching for Data in the Report

The report viewer lets you copy data from a single cell of a ConflictManager report so you can paste it into a document. You also can search for a specific text string within the report.

To copy data from a report:

1. In the report viewer, right-click in the cell that contains the data you want to copy.

2. From the right-click menu, select Copy.

3. The data in the selected cell is copied to the Windows Clipboard.

! Note:
This doesn't work in cells that are designated as "Text." Text cells are a combination of several database fields.

To search for text in a report:

1. From the right-click menu in the report viewer, select Search.

   A Search dialog box appears.

2. In the **Find What** field, enter the text string to find.

3. Click the Find Next button to begin the search.

   If the text is in the report, the first occurrence of it is outlined in red in the area of the report where it was found.

4. To find other occurrences of the same text string, click the Find Next button again.

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