Chapter 3
Conflict Detection and Resolution

This chapter includes the following topics:

About Conflict Detection and Resolution

After you import packages into the Software Manager database, use ConflictManager to:

- Detect conflicts.
- Display conflicts.
- Resolve conflicts.
- Export the changes to the original installation file and recompile it.
- Generate ConflictManager reports.

You also can detect and resolve conflicts in Windows Installer Editor. Do this to compare a package that is still in the authoring phase with those that have already been deployed, without importing the package into the Software Manager database. This lets you:

- Streamline repackaging by identifying conflicts earlier in the process.
- Maintain your Software Manager database as a pristine image of packages that have already been deployed in the production environment.

See *Resolving File Conflicts Within Windows Installer Editor* in the Windows Installer Editor Help.

Prerequisites for Conflict Detection and Resolution

Before you use ConflictManager to detect and resolve conflicts:

- Define conflict settings, which determine the type of conflicts that are detected and the files and registry keys that are excluded from conflict detection.
  See About Conflict Settings on page 17.
- Decide whether to use conflict resolution rules and, if so, decide which predefined rule sets to use. You can edit the predefined rule sets or create new rule sets.

See Conflict Resolution Rules on page 22.

● Import packages into the Software Manager database, using Software Manager. See *Package Import* in the Software Manager Help.

Note

Conflict detection requires package resources to be in the Software Manager database. If a package's meta data is in the database but not its resources, you must perform an import in Software Manager.

Process for Resolving Conflicts

Typically, you will follow the steps below in the order listed. In some cases, however, you might not follow all these steps. Example: During the analysis phase of a repackaging project, you might want to check for conflicts but not resolve them. In that case, you would perform the conflict detection step only.

1. **Detect conflicts.**

   ConflictManager compares the resources each package installs. When it finds resources that conflict, it populates the Software Manager database with conflict information.

   View conflicts in the Applications/Packages pane and the Conflict List, or use the ConflictManager reports to display and print conflict information.

   See Detecting Conflicts on page 28 and Viewing Conflicts on page 29.

2. **Resolve conflicts.**

   Resolving a conflict involves looking at each file that is installed by multiple packages and selecting the version to install on the destination computer. You also can change the location of conflicting files so that each package can use its version of the file.

   You can use conflict resolution rules to resolve conflicts automatically, or run the Resolve wizard, which lets you review and resolve file conflicts one at a time.

   See Conflict Resolution on page 33.

3. **Export resolved packages.**

   After you resolve conflicts, export the changes to the original Windows Installer or WiseScript installation to produce an installation that does not conflict with other packages.

   See Package Export After Conflict Resolution on page 43.

4. **Test the resolved installation.**

   After you save and recompile a resolved package, install it on a clean machine and test it.

   Note

   It is important to test the package 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 the resolved installation.

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5. **Redo conflict resolution if necessary.**

If the package does not work, return to ConflictManager and redo the conflict resolution in any of the following ways.

To revert changes for just one or a few files	• Select Conflicts menu > Resolve. • In the Resolve wizard, select one or more files and click Revert to undo your previous conflict resolutions for those files. • Try other ways to resolve the conflicts.
To redo the conflict resolutions with rules	• Select Conflicts menu > Resolve with Rules. • Select a different rule set. This reverts all the previous conflict resolutions for that package and then resolves them using the different rule set.
To revert all previous resolutions without applying a new rule set	• Select Conflicts menu > Resolve with Rules. • Select the Restore original conflicts rule set. This reverts all previous conflict resolutions but does not resolve the conflicts. • Resolve conflicts with a different rule set or with the Resolve wizard.

After you redo the conflict resolution, repeat the steps to export and test the package.

Detecting Conflicts

ConflictManager compares the resources each package installs. When it finds resources that conflict, it populates the Software Manager database with conflict information. The database contains the combined results of all the detection processes you have performed. Repeating the detection process for a package overwrites previous conflict information for that package only.

The settings in Setup menu > Conflict Settings > Types determine which conflicts are detected.

If **Detect conflicts during package import** is marked in Conflict Settings, then conflict detection runs automatically when a new package is imported into the Software Manager database. When conflict detection runs during import, it checks for conflicts between the imported package and all other packages; it does not re-detect conflicts between all packages.

To detect conflicts

1. (Enterprise Management Server only.) If multiple databases are open, select a database in the Applications/Packages pane.

2. Select Conflicts menu > Detect.

    The Detect Conflicts dialog box appears.

3. Mark one of the following:

- **Detect conflicts between all packages**
  Find conflicts between every package and all other packages in the database.

- **Detect conflicts for selected packages**
  Find conflicts between the package you select and all other packages in the database.

  Marking this option enables the list of packages on the dialog box. In the list, select one or more packages to find conflicts for.

  Example: Suppose your database contains Microsoft Word, Lotus Notes, and Adobe Acrobat. When you select Word, ConflictManager finds resources in Word that conflict with Lotus or Acrobat. It also finds resources in Lotus and Acrobat that conflict with Word. It does not find resources in Lotus that conflict with Acrobat.

4. Click OK.

Depending on the number of packages in the Software Manager database and the speed of your computer, conflict detection can take several minutes. While conflict detection is running:

- Its status appears at the right end of the toolbar.

- You can continue to use ConflictManager.

- You cannot close ConflictManager.

When conflict detection is complete, the right end of the toolbar displays Idle and you can review conflicts.

See Viewing Conflicts on page 29.

Stopping Conflict Detection

Stop conflict detection if you need to close ConflictManager.

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.

- Select Conflicts menu > Stop.
  The right end of the toolbar displays Idle.

Viewing Conflicts

The Conflict List displays conflicts between the selected package and all other packages in the database. You can view conflicts for only one package at a time.

You can view additional information about a conflicting resource by displaying its Properties dialog box. You also can view, but not edit, properties in the Package Details pane in Software Manager.

You can use package groups to reduce the number of conflicts that appear. A package group consists of a subset of the packages in the database.

See *Package Groups* in the Software Manager Help.

To view conflicts

1. (Enterprise Management Server only.) If multiple databases are open, select a database in the Applications/Packages pane.

2. If you are using package groups, select a group name in the Groups pane.

   The Applications/Packages pane displays only packages that are assigned to that group.

3. In the Applications/Packages pane, select a package.

4. The package's conflicts appear in the Conflict List and are grouped by type.

   See Resource Conflicts on page 15.

   If a package group is selected in the Groups pane, only the conflicts between the selected package and the packages in the group are displayed.

5. To change the types of conflicts that appear, select Conflicts menu > Filter and set the filter criteria.

   See Filtering the Conflict Display on page 31.

   Note
   The settings in Setup menu > Conflict Settings > Types determine which conflicts are detected. Example: If your conflict settings are set to detect file conflicts only, then registry conflicts do not appear even when the conflict filter is set to display registry conflicts.

6. In the Conflict List, select a conflict.

   The conflicting resources in other packages appear in the Conflict Details pane.

7. To view a conflicting resource's properties, double-click it in the Conflict Details pane.

   The Properties dialog box appears.

   Note
   Because they are rare, the Properties dialog box is not available for Autoexec.bat, Config.sys, service, device, shortcut, and path conflicts.

Warning
Changing the information on the Properties dialog box is not recommended except for registry keys and .ini files, and then only if you are the developer of the package and you have extensive knowledge of how Windows operates. Changing property information incorrectly can damage the package.

See Resolving Registry Conflicts on page 40 and Resolving INI Conflicts on page 41.

When Conflict Detection Yields Unexpected Results

If conflict detection results in conflicts that you did not expect, or ignores conflicts that you did expect, here's what to do:

● Review how ConflictManager detects conflicts. See:
   About Conflicts on page 12
   Hash Value Comparisons in Conflict Detection on page 13
   Finding and Viewing the Right Conflicts on page 13

- Check your conflict settings to verify that ConflictManager is detecting the types of conflicts that are important to you.
  See

- Verify that ConflictManager is set to display the types of conflicts that you want to see. See:
  Filtering the Conflict Display

Filtering the Conflict Display

You can specify filter criteria to determine which packages and conflicts appear in the Applications/Packages, Conflict List, and Conflict Details panes. You can filter the display by conflict attributes and package attributes. The filter criteria you specify remain the same for subsequent uses of ConflictManager.

To filter the conflict display

1. Select Conflicts menu > Filter.

   The Filters dialog box appears.

2. To filter by conflict attributes, click the Conflicts tab and mark any combination of check boxes.

   - **Errors**
     Include conflicts that will cause problems.

   - **Warnings**
     Include conflicts that are not critical but might require some attention.

   - **File Conflicts**

   - **Registry Conflicts**

   - **Other Conflicts**
     Include ODBC and .ini file conflicts.

   - **Only display packages with conflicts**

   - **Display resolved conflicts**
     Include resolved conflicts in addition to those that haven't been resolved.

3. To specify filter criteria to determine which packages appear in the Applications/Packages pane, click the Packages tab.

   - To filter by package status, mark any combination of check boxes in the **Package Status to Display** section.

   - (Enterprise Management Server only.) If multiple databases are open, select from **Database** a database containing the meta data field to filter by.

   - To filter by whether the package is defined, mark check boxes in the **Filter Based on Package Definition** section.

     - **Display Defined Packages** displays packages that were defined in Workbench and Software Manager.

     - **Display Undefined Packages** displays all undefined packages.

- To filter the display by a meta data value, mark **Filter Based on Meta Data**. Then specify the following filter criteria:

    ♦ **Name**
    Select a meta data field name to filter packages by. The drop-down list contains meta data fields that are defined in the selected database.

    ♦ **Operation**
    Select the operation to use when comparing the meta data value to the value you enter below. The operations that are available depend on the data type of the meta data field.

    ♦ **Value**
    Specify the meta data value to match.

- To filter by package type, mark any combination of check boxes in the **Package Type to Display** section.

    To clear or mark a group of package types, select the group of package types and click one of their check boxes.

4. Click OK.

Note

The settings in Setup menu > Conflict Settings > Types determine which conflicts are detected. Example: If your conflict settings are set to detect file conflicts only, then registry conflicts do not appear even when the conflict filter is set to display registry conflicts.

Hiding Conflicts

Conflicts that are identified by ConflictManager are often found to be harmless upon further testing. Normally, ConflictManager will continue to display these conflicts. To filter these harmless conflicts from the conflict display, you can designate certain conflicts between specific packages to be ignored, or hidden. Example: Designate that any conflicts involving abc.dll between Package A and Package B should be ignored

When you hide a conflict, it does not appear in:

- The Conflict Details pane.

- The Resolve wizard.

- ConflictManager reports.

To designate a conflict as hidden

In the Conflict Details pane, right-click the conflict and select Hide Conflict. The icon to the left of the conflict is dimmed.

To show or hide hidden conflicts

1. Select Setup menu > Conflict Settings and click the Types tab.

2. Mark or clear **Display Conflicts Marked as Hidden** to determine how ConflictManager filters hidden conflicts.