MICRO FOCUS

Dimensions CM

Dimensions CM for Visual Studio Guide

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Chapter 1
Overview

Introduction

Dimensions® CM integrates the version and request management features of Dimensions directly into the Visual Studio environment. You can synchronize your Visual Studio projects and files with the Dimensions CM repository and update defects and issues without ever leaving your IDE. Once you have completed your work you can deliver your changes to projects and streams in Dimensions, while maintaining history using requests. The integration provides rich version and issue management functionality. Whether you are using Dimensions CM to manage requests and defects, you can create, update, and progress issues as you work on them.

For installation instructions see the Installing a Windows Client in the *Installation Guide for Windows*.

If you are using Visual Studio 2003 do one of the following:

- Use the Source Code Control (SCC) interface as documented in the *Dimensions CM IDE User's Guide*.
- Migrate your existing Visual Studio projects to the new Visual Studio integration using the Visual Studio migration tool.

Chapter 2

Connecting to Dimensions CM

Dimensions Explorer

Dimensions Explorer displays information about your Visual Studio solutions and projects that are under CM control. Each node is a solution context that displays:

- The solution name.
- The CM product and stream or project.
- The repository connection name (if the node is logged into a repository).

Dimensions Explorer displays views that are applicable to the current context, for example:

- Streams and projects
- Requests
- Changesets
- Reviews (if Micro Focus Pulse is enabled)
- Baselines
- Outgoing (items that you have modified, added, and deleted)

TIP

- Use the New menu to create new objects, such as requests or baselines
- Click Open from Source Control to open a solution or project from a CM repository.
- Click Repository Browser to view the code in the repository.

To open Dimensions Explorer, from the View menu select Dimensions Explorer.

Managing Connections to Dimensions CM

To login obtain the following information from your CM administrator:

- The name of the server.
- (Optional) The port number used to run CM.
- The network protocol used by the server: SDP, HTTP, or HTTPS.
- The database name of the CM product you are working with.
- The connection string for the database.

NOTE

- Connections to Dimensions CM servers are shared with the desktop client so you can use any existing connection profiles.
- Repository bindings are created automatically when a connection is available.
- For security reasons you may be required to login using the HTTP/S network protocol instead of the default Standard Dimensions Protocol (SDP). The Dimensions CM HTTP Connector allows a connection to a server using HTTP/S, for details see the *System Administration Guide*.

To create a new connection:

1. Open Dimensions Explorer and click **Connect**.
2. In the Log in to Dimensions dialog box, click **New**. The Define a new connection dialog box appears.

   If smart card support is enabled, choose the type of login under System. This can be either User Credentials or Smart Card.
3. Enter a name for the login definition in the Definition name field. You can then select and reuse these credentials later on.
4. If you are logging in using standard user credentials, enter a User ID. You will enter a password later when you attempt to log in.
5. If you are using a smart card to log in, enter the smart card certificate in the Certificate field.
6. Under Dimensions, enter the following:
   - Server: the name of the server and optionally the port number to connect to:
     - SDP protocol: <server name[:port]>
     - HTTP protocol: http://<server name[:port]>
     - HTTPS protocol: https://<server name[:port]>
   - DB Name: The name of the Dimensions database that you want to connect to.
   - DB Connection: The database connection that you want to connect to on the server.
7. If automatic login is available select 'Use automatic log in if available' to enable it.
8. Click **OK**.

To edit an existing connection:

1. Open Dimensions Explorer and click **Connect**.
2. Select the connection you want to edit and click **Edit**.
3. If smart card support is enabled, choose the type of login under System. This can be either User Credentials or Smart Card.
4. If you are logging in using standard user credentials, enter the following:
   - User ID: The ID of the user that you want to connect as.
5. If you are using a smart card to log in, enter the smart card certificate in the Certificate field.
6. Under Dimensions, enter the following:
   - Server: The network name of the system that hosts the Dimensions server.
   - DB Name: The name of the Dimensions database that you want to connect to.
   - DB Connection: The database connection that you want to connect to on the server.
7. Select the Use automatic log in if available check box to enable automatic log in, which bypasses the Log in to Dimensions dialog box. This option is available only if it has been enabled by your administrator.

NOTE This option is only available after you first log in.

8. Click **OK**.

To delete a connection:

1. Open Dimensions Explorer and click **Connect**.
2. Select the connection that you want to delete.
3. Click **Delete** and click **Yes** to confirm the deletion.

Opening a Connection to Dimensions CM

To make it easy to log in, Dimensions CM saves a list of connections that you have defined.

NOTE Multiple connections can be open simultaneously.

To open a connection to Dimensions CM:

1. Open Dimensions Explorer and click **Connect**.
2. In the Log in to Dimensions dialog box do one of the following:
   - To open a connection: select a connection from the **Unopened connections** list. Enter your password in the **Password** field and click the **Login** button.
   - Select a connection from the **Opened connections** list and click the **Use selected** button.
   - Define a new connection.

   If you are logging in using a Smart Card, enter a PIN if prompted.

Using Automatic Log In

About Automatic Log In

Automatic log in allows you to bypass the Log in to Dimensions dialog box when re-opening the most recently used connection. It also allows you to bypass the manual entry of your password when opening any connection that is configured for automatic log in.

Enabling Automatic Log In

To enable automatic log in for a connection:

1. Your administrator configures Dimensions CM to allow you to use automatic log in.
2. You configure your connection information to enable automatic log in.
3. You log in to the connection the normal way.
4. When prompted to enable automatic log in for future connections to the server, click **Yes**.

Using Automatic Log In

Once automatic log in is enabled for a connection, it will behave like this:

If you do this	While this is true	Then this will happen
Click the **Connect** button.	No other connections are open.	If the most recently used connection had auto log in enabled, it will open in Dimensions Explorer; the log in dialog box will not appear. Else, the log in dialog box appears.
Click the **Connect** button.	Other connections are already open.	The log in dialog box appears. When you select a connection, the **Password** field is pre-populated with **(automatic login enabled)**. Click the **Log in** button.
CTRL-Click the **Connect** button.		The log in dialog box appears. Select a connection to open manually.
Allow your connection to the server to time out.		The Password Required dialog box appears. Enter your password and click **OK**.

Working Offline

If you use disconnected mode with Visual Studio to work offline you will be able to edit files while offline. When you reconnect and attempt to check in or deliver local changes to the repository, you will need to merge any conflicting changes at that time. You can test the merged code locally before proceeding with check-in.

Chapter 3

Managing your Work

About File and Version Management

The Dimensions CM integration to Visual Studio allows you to perform source control tasks from within Visual Studio. You can check out files and deliver your changes back to your Dimensions projects or streams without ever leaving Visual Studio.

Sharing Work Areas with Other Dimensions Clients

When you open Dimensions projects and streams in Visual Studio, or add Visual Studio projects and solutions to Dimensions CM, you can set up a working location outside of your default Visual Studio folder that is compatible with all Dimensions clients. This means that you may open the same project in the Desktop or Windows Explorer clients, and update and check in updates from one common working location. This does not apply to working locations that reside under the Visual Studio default folder.

When using other clients to deliver new files that exist under the root of a controlled Visual Studio solution, the Visual Studio upload rules will be used. Take care not to deliver any files in the solution that should not be controlled, for example:

- Build artifacts, such as: .obj, .dll, and .exe files.
- user-specific Visual Studio control files, such as: .suo and .csproj.user files.

The default exclusion filter for the Synchronization wizard excludes these files; if you have changed this filter or are using the command-line interface, ensure that only the desired files are placed under Dimensions CM control.

Setting Up Source Control

This section contains information about setting up the Dimensions CM integration to Visual Studio.

Choosing the Source Control Provider and Setting Options

You must make sure that Dimensions is set as the source control provider, and you can set options for Dimensions CM version.

1. Select Tools | Options. The Options dialog box appears.
2. In the left pane, select Source Control | Plug-in Selection, and choose **Dimensions Source Control**.
3. Select Source Control | Dimensions Source Control in the left pane, and click the Version tab.
4. Click **OK**.

Adding Solutions, Projects, and Files to Source Control

Use the following procedure to add solutions, projects, and files to source control.

IMPORTANT!

- You can add solutions that contain website projects to source control.
- When adding a project or file to an existing solution or project that is already under source control you are prompted to check out the relevant file(s) if pessimistic check-out is enabled. If pessimistic check-out is disabled then when you save the solution or project you will be prompted to overwrite the existing read-only versions.
- When adding a new Visual Studio project to an existing solution that is already under source control, exit Visual Studio and reopen the solution from source control. This ensures that the source control bindings and Dimensions CM metadata are set correctly.
- The Dimensions item type PROJECT is reserved for project marker files; any other files with the PROJECT item type will be ignored.
- Controlled solutions cannot span multiple Dimensions Projects or Streams.
- Solutions should be contained in their own folder.
- Solutions and projects should be in separate folders.
- It is recommended that there should be only one solution in a folder.
- For multiple solutions, we recommend a parallel structure that allows multiple solutions to be contained in separate folders. In this layout, the solutions and projects on disk are peers rather than parents / children layout.
- For multiple solutions that need to share project(s), use a parallel structure. In this case, project and solution folders should be separate (unlike parent/child layout).
- Uncontrolled solutions with controlled projects can be added to source control provided that they are all in the same Dimensions Project or Stream, and that their repository path is the same as the path that would have resulted if the solution and projects were added in one operation. This is validated prior to attempting the operation; you are notified if the paths are different. After adding the solution to source control, it should be re-opened from source control. This is necessary as the Dimensions metadata for projects in the newly added solution will not match metadata for a solution controlled in one operation. Once reopened, the solution behaves as if it was added in a single operation.
- Adding Visual Studio solutions and projects to source control may fail if the **Auto-generate Item Identifier** option is enabled in the Dimensions CM Administration Console. In this case, an error appears that states the following:

  You must not specify Item Id when creating Items of type PROJECT as this will be generated automatically

  To prevent this error, disable the **Auto-generate Item Identifier** option, which you can find with the Item Type options in the Administration Console. See the *Process Configuration* Guide for more information.

To add files to source control:

1 Do one of the following:

If you want...	Do this...
To add a solution and the projects within it to source control	■ Right-click the solution in Solution Explorer and select Add Solution to Source Control, or select File | Source Control | Add Solution to Source Control. ■ If you are connected to Dimensions, you can right-click a favorite project.
To add a Web project to source control:	a Select the project (not the solution) in Solution Explorer. b Select Add Selected Projects to Source Control.
To add a project to source control without placing the solution under source control:	a Right-click the project in Solution Explorer and select Add Project to Source Control. Note that within solutions that are not under source control, you can only add one project at a time.
To add new projects to source control when the solution is already under source control:	a Select the project or projects in Solution Explorer. b Right-click the projects and select Add Project to Source Control.

2 If you are adding a web project, the following dialog may appear. Click the **Continue** button.

3 If your current Visual Studio session is not yet logged in to Dimensions, or if current connection is the not correct one for the solution that you are working in, you may need to supply login information for Dimensions.

4 If you are adding a solution or a project in an uncontrolled solution, the **Select Dimensions Project or Stream** dialog box appears.

IMPORTANT! Your administrator can enable streams and/or projects. The instructions below apply to projects and streams.

5 Select the Dimensions project or stream to which you will add the Visual Studio project or solution. You can also create a new stream or project from here.

6 Click **Next**. If you are adding a solution or a project in an uncontrolled solution, you are prompted to select a destination folder in the repository, or to select a work area. If you select a work area, choose from these options:

- **Create compatible work area:** This is the default option for Visual Studio projects and solutions that reside outside of the default Visual Studio location. This option ensures that any Dimensions client may share the work area; for example, Visual Studio and the Desktop Client may update files in the work area. You can choose any folder that resides between the root system folder (we do not recommend choosing this) and the source control binding root folder. The binding root folder is typically at the root of the Visual Studio project and solution layout. If you are using a hierarchical layout with a single solution at the root, then the solution folder is the binding root. If you are using a parallel layout with solutions and projects at the same level, then the top level folder under which all solutions and project reside is the binding root. For example, in this hierarchical layout:

  solution

project1

project2

The *solution* folder is the binding root. In this parallel layout:

root

projects

solutions

The *root* folder is the binding root.

The **Selected Path** setting is automatically set to reflect the correct offset from the location that you select. For example, if the solution file resides under C:\Work\MyProjects\Solution1 and you select a work area path of C:\Work, then **Selected Path** is automatically set to the correct offset, in this case \MyProjects\Solution1.

- **Create work area for Visual Studio only**: If the solution or project resides under the default Visual Studio location, this option will be selected and you cannot make another choice. This work area is not compatible with other Dimensions clients.

7 If the project or solution exists under a compatible work area (a work area that can be shared with other Dimensions CM clients), the wizard will preselect a repository path to match the work area path. The **Create compatible work area** option is selected by default (and is the only available option). A compatible work area root is either a folder set as default for the selected Dimensions project or stream, or it is based on Dimensions metadata that sets the work area root.

8 Click **Next** and optionally select change requests to relate to the new files. You can select requests from the *My Inbox* and *Working List* tabs.

9 Click **Next**. The Select Design Part screen appears. You can select the design part here that will contain all new items that you add. Your Dimensions administrator can guide you as to the correct design part to choose here, if there is more than one.

10 Click **Next**. The Options screen appears. Enter a comment to apply to all of the files that you are adding. This will be stored in Dimensions as the file description for each file.

11 Click **Next**. A summary page appears. Review the choices and click **Upload** when you are satisfied that the options are correct. You can also click Back to change any of the settings.

Once the solution or project and associated files are added to source control, source control icons appear beside each of the files. For example, locked files that are not currently checked out display a blue lock icon. Files that are checked out display a red check mark.

Opening Projects and Streams from Source Control

After a project has been created and added to source control, you can access it by opening it from source control, which creates a copy of the project on your local system. You can then perform source control operations on it.

1 To open a project or stream from source control do one of the following:

- In Dimensions Explorer expand Home and click Open From Source Control.
- In Dimensions Explorer expand a node with an open connection and click Open From Source Control.
- In the Dimensions Project view, right click a stream or project and select Open From Source Control.

2 Select a Visual Studio project or solution and click **Next**.

3 On the Select Location on Disk window, browse to select the location where you want to download the solution or project. By default **Match the stream structure** is selected. This option creates a work area compatible with other Dimensions CM clients at the selected location. The folder structure below this location will match that in the repository. If this option is not selected, then a relative work are that not compatible with other Dimensions CM clients is created. You can automatically create a folder named after the solution or project by selecting the **Create directory with solution name** check box.

   If the open from source control wizard detects that the selected project has a default folder, it will suggest this as the location, with a path matching the repository path. You can override this as needed. This location will be the root folder under which the solution and projects will be placed, in their correct relative hierarchy.

   Within the file system browser you can optionally create a new folder by clicking the **New folder** button.

4 Click **Next**.

5 Review the choices you made and click the **Download** button. Or, click **Back** to return to previous screens and make changes.

Ensuring Project References are Saved

When you add or modify references in a Visual Studio project, you must make sure to explicitly save the Visual Studio project in order to write the changes to disk. You must do this before performing any version control operations.

Restoring Source Control Bindings and Features

If you encounter a crash in Visual Studio and find that the source control functionality appears to be lost after restarting Visual Studio, select the **Set Repository Bindings** menu option for the solution. This enables you to reinstate the source control bindings to the solution, and re-enable source control functionality.

Attaching to source control

If the Solution opened in Visual Studio is under Dimensions Control but does not contain the necessary bindings for Dimensions for Visual Studio, the **Attach to Source Control** menu option will be available. This scenario is most likely when the Solution has been added to Dimensions CM through one of the other clients as part of a bulk upload or migration activity. This wizard writes the necessary binding information into the solution and project files and delivers these changes so that the solution can be treated as if it was added to source control through Dimensions for Visual Studio.

Moving Files and Folders Between Projects

When you move files and folders between projects in Visual Studio, file history is preserved. However, certain scenarios may result in unexpected behavior. Review the following considerations before moving files and folders.

- **Scenario**: Moving a controlled file to a location where a controlled file with same name already exists.

  Result: Visual Studio prompts you to overwrite this file. This replaces the file in the target location with the original file's contents. The file move is interpreted during delivery as a deletion from the source project and a modification of an existing file in the target project.

- **Scenario**: Moving a controlled file to a location where an uncontrolled file with the same name already exists.

  Result: Visual Studio prompts you to overwrite this file. Overwriting replaces the file in the target location with the original file's contents. The new file is interpreted as an addition during delivery.

- **Scenario**: Moving a controlled folder to a location where a controlled folder with the same name already exists.

  Result: Visual Studio prompts you to merge folders. Do not attempt to merge folders in this way. Click **No** or **Cancel**. Because the source and target folders may contain hidden folders that contain Dimensions metadata, such a merge operation can lead to unpredictable conflicts when delivering these changes.

- **Scenario**: Moving a controlled file to a location where a file of the same name has been deleted but not yet delivered.

  Result: A warning appears and the original file will be moved to the target location. This is interpreted during delivery as a modification of the target file, and a removal from of the original file. To avoid this situation, deliver pending deletions before moving files.

- **Scenario**: moving a controlled folder to a location where the target folder has been deleted but not yet delivered.

  Result: A warning appears and the source folder is moved to the target location. During delivery, all moved content is marked as uncontrolled to minimize conflicts. Potential conflicts may result from delivering files in this scenario. To avoid conflicts, deliver all pending deletions before moving folders.

In some circumstances the file and folder information displayed after synchronization so not reflect the correct status. In such cases, close the solution and reopen it from disk.

Viewing Streams and Projects in a Repository

You can view all the stream and projects in a CM repository.

1. Open Dimensions Explorer.
2. Expand a node that has an open connection to a CM repository.
3. Click Streams and Projects. The Dimensions Projects view displays all the streams and projects for that connection.
4. Right click a stream or project to view the operations you can perform on it, for example, Open from Source Control.

Browsing Code in a Repository

You can browse a CM repository and view the files and folders in your streams and projects. In the repository browser you can:

- View the tip version or previous versions.
- View the code in each file.
- Add review comments to a files. Comments are attached to that version of the file and are displayed on any associated Review pages.

1. In Dimensions Explorer, expand a node and click Repository Browser. The browser opens in a new view and displays the contents of the latest changeset.
2. Navigate to a folder or file to view its contents.
3. To view the contents of a file without the color coded syntax, click Raw.
4. To browse the contents of a previous changeset, select the History tab, select a changeset, and click View at Version.
5. On the Content tab, browse the files and folders in the changeset.
6. To go to the tip of the stream or project, click View at Tip.
7. The repository browser is an embedded version of the Micro Focus Pulse Code view.

See also: Pulse help

Viewing Outgoing Items

You can open a view that displays all the items that you have recently modified, added, and deleted. Use this view to:

- Open files and view their contents
- Compare files with the latest revision in the repository
- Deliver some, or all, of the changes

1 Do one of the following:

- From the View menu select File Status.
- In Dimensions Explorer click Outgoing.

The File Status view is displayed.

2 From the Filter lists select the types of changes that you want to display.

3 To open an item in the Visual Studio editor, double click it.

4 To compare an item with its latest revision in the repository, right click and select Compare with Latest.

5 To deliver an item, right click and select Deliver.

6 To deliver all items, select the check box next to the top level item. On the toolbar click Deliver.

Working with Dimensions CM Projects

About Working with Dimensions CM Projects

If your organization uses Dimensions CM projects, you will check out, check in, and synchronize your files as you work on them. Generally speaking, you can work in one of the following ways with Dimensions CM projects:

- Pessimistically: This model requires all users to explicitly check out every file they will work on before making local changes, and then check it in once they have finished updating it.
- Optimistically: This model does not require users to check files out. Users work on files locally, and then regularly synchronize their local workspaces with the repository. During synchronization, users reconcile changes in their workspace with the repository, choosing how to resolve conflicts. The repository is updated with their changes, and their local workspaces are updated with other changes from the repository. For most users in an optimistic environment, synchronization may be the only Dimensions feature that is needed on a regular basis.

You can create the following types of projects:

- An empty project.
- A project based on a release or tip baseline. These types of baselines only contain one revision of each item.

- A project based on any version of another project. The new project is a child of the parent project from which it was created.

Requiring File Checkout for Dimensions Projects

For Dimensions projects, you can require users to check files out before working on them (also known as working pessimistically) by setting an option in the dm.cfg file on the Dimensions server. You must set the configuration symbol `DM_VISUALSTUDIO_PESSIMISTIC` to yes (`y`) as follows:

```
DM_VISUALSTUDIO_PESSIMISTIC y
```

Please see the *Dimensions CM System Administration Guide* for detailed information on setting options in the dm.cfg file.

Caution!

- When you work in pessimistic mode, a warning is displayed when you click the **Cancel** button while checking out a project file. The warning states that the action could not be completed. You can ignore this warning.
- In certain situations an alert appears that states that conflicting modifications have been made to a solution file. You should choose the **Overwrite** option.

Creating New Projects

1 In Dimensions Explorer, expand the connection node where you want to create the new project and do one of the following:

- Select New | Project.
- Click Streams and Projects. In the Dimensions Project view, right-click the project on which you want to base the new project. Select New | Project.
- Click Changesets. In the Changesets view right-click the changeset on which you want to base the new project and select New Project.

2 On the first page of the New Project wizard:

- Choose the product that will contain the new project.
- Enter a name for the new project.
- Select the project type.
- Provide a description of the project.
- If you will use the project to store a named branch and want all field revisions to include the branch name, enter the branch name in the **Unique Branch Name** field.
- Choose whether to add the new project to your favorites list. Favorites are shared across all clients.

3 Click Next. On the Based-on page select:

- **Nothing** if you want the project initially to contain no items.
- **Based on a Baseline** if you want the new project to be populated with the item revisions from a baseline. Select a baseline from the list.

- **Based on another Project** if you want the new project to be populated with the item revisions from an existing project. Enter the name of a project or click **Select**, choose **Another project**, and do one of the following:
  - Start typing the ID of a project. Projects that contain any characters in the string are displayed. For example, to find 'QLARIUS:VS_BRANCHA' type 'vs'.
  - Select a project from the list. Favorite projects and recently used projects are displayed at the top.

  Optionally select a version of this project on which to base the new project. Click **OK**.

  NOTE: The new project inherits all the revisions from the parent project.
- **Based on another Stream** if you want the new stream to be populated with the item revisions from an existing stream. See above for guidance.

4 Click Next. On the Project Options page do the following.

- Select **Branch** if you want Dimensions to add a period before the new revision number for new item revisions created in this project.
- Select **Do not branch** if you want Dimensions to increment the previous revision number by one for new item revisions created in this project. It is recommended that you use this option, and that you use a single assigned branch.
- Select **Allow users to override default revision number** if you want the user to be able to enter a different revision number from the one generated by Dimensions when creating new item revisions in this project
- For **Change Management Rules**, select **Use item type settings**, **Always enabled** or **Always disabled**.
- Select **Request required to refactor** if you want to require the user to provide a request ID when they make refactoring changes to the project.

5 Click Next. On the Named Branches page:

- In the list of Valid Branches, select any branches that are to be allowed when creating new item revisions in this project.
- Select the default branch that you want Dimensions to use when automatically generating the revision number for item revisions created in this project.

6 Click Next. Review your choices on the Summary screen, and click Finish to create the project.

Getting Files

When you get a file, one of the following occurs:

- If you are working with a Dimensions project, a read-only copy of the latest revision is placed in the workfile location.
- If you are working with a Dimensions stream, by default a writable copy of the latest revision is placed in the workfile location.

1 Select the solution, project, or files that you want to get in Solution Explorer.

2 Select File | Source Control | Get Latest.

Checking Out Files

When you check out a file, a writable copy of the latest revision is placed in the workfile location and assigned the next revision number. You can optionally prevent other users from checking files out while you are editing them.

If you are using optimistic source control, you do not need to explicitly check files out to edit them. If a file you attempt to edit is not already writable, you will be prompted to make it writable.

CAUTION! When you work in pessimistic mode, an alert dialog box may display when you click the Cancel button while checking out a project file. The error states that the action could not be completed. You can ignore this error.

To check out files:

1. In Solution Explorer, select the files, projects, or solution that you want to check out, and right-click. Select Check Out. The Check Out dialog box appears.
2. Refine your selection by selecting or de-selecting files in the list.
3. Optionally, click the **Compare** button to invoke the Merge tool and compare the latest version of the file you're checking out to your local copy.
4. Set **Overwrite modified files** to **Yes** if you want to overwrite local copies even if the local copies have been updated since you last retrieved them from the repository.
5. Select the **Proceed with concurrent checkout** option to get the files, even if they are already checked out to another user elsewhere. This option allows multiple users to check the files out and work on them concurrently.
6. Click **Next**. If any requests are available to relate to the files you are checking out, select the requests and click **Next**.
7. On the New Item Revision Attributes screen, you can set attributes as needed for the files you are checking out. Select the file or files, then choose a role section to display all available attributes. Set the attributes as needed and click **Finish**.
8. Click **OK**.

Undoing Check Out

When you undo a check out, a read-only copy of the latest revision is left in the workfile location and the revision number that was created during check out is released. No changes are checked into the Dimensions repository.

In Solution Explorer, select the files, projects, or solution for which you want to undo check-out. Right-click and select Undo Checkout.

Checking In Files

When you check in a file, by default a read-only workfile is left in the workfile location and the revision is checked into the Dimensions repository. If you are using optimistic source control, Dimensions CM updates the revision of the file that you originally checked out. If another user has checked in conflicting changes to the file since you originally checked it out, you are prompted to merge the conflicting changes, or overwrite the repository version with your changes.

1. In Solution Explorer, select the files, projects, or solution that you want to check in and right-click. Select Check In. The Upload Changes dialog box appears.
2. Do any of the following:
   - Select or deselect files to refine the list of files that you will check in.
   - Enter a description of the changes that you made to the files on the **Comment** tab. Optionally, reuse a previous comment by selecting it from the list under the **Comment** field.
   - On the **Options** tab, set the following options as needed:
     - **Check-out posted changes**: To check the files back out after check-in is complete.
     - **Make files read-only**: To set the local files to read-only after the upload is complete.
     - **Overwrite conflicting changes**: To check in the new versions of the files even if another user has checked in conflicting changes.
     - **Undo check-out if unmodified**: To cancel the check-in and undo the checkout status for any files that are no different locally than they are in the Dimensions repository.
   - To compare a file to the file in the repository, select the file click the **Compare** button. This invokes whatever Merge tool you have configured, such as the Dimensions Merge tool.
3. Click **Next**.
4. If necessary, select requests to relate to the new revisions. Click **Next**.
5. On the Item Attributes screen, you can set attributes as needed for the files you are checking in. Select the file or files, then choose a role section to display all available attributes. Set the attributes as needed and click **Finish**.

Accessing Specific Revisions

To get, check out, check in, or undo a check out on a specific revision of a file, rather than the latest revision, right-click the file and select History. The revision history appears. From here you can get, check out, check in, or undo check out of a specific revision. Getting revisions from here will overwrite your local copy of the file.

Synchronizing Dimensions CM Projects

About Synchronizing Dimensions CM Projects

With the Dimensions CM Synchronize Wizard, you can update:

- Your local work area with the latest changes from the Dimensions repository.
- The Dimensions CM repository with the latest changes from your local work area.

When you launch the Dimensions CM Synchronize Wizard, it compares the files and folders on your disk with the corresponding items and folders in the repository. It displays icons for each file and folder to indicate if there are differences and to show what type of differences there are.

The information displayed for each file includes a description of the difference, the proposed resolution, and a list of available actions should you wish to override the proposed resolution. If you wish to accept the proposed resolution, no file-by-file action is required on your part.

However, in the case of a *conflict*, when something has changed both in the work area and in the repository, you must specify what action to take for that file. The choices are:

- **Ignore:** Leave both the work area file and the repository item as they are.
- **Use local:** Add the work area file to the repository as the latest item version.
- **Use repository:** Overwrite the work area file with the latest item version from the repository.
- **Merge:** Launch the file Merge tool to resolve the internal differences between the work area file and the repository item.

Overview of Synchronization Change Types

The following table describes the change types displayed by the Dimensions Synchronization Wizard. Icons with an Up arrow indicate changes in the work area that are to be uploaded to the Dimensions repository. Icons with a Down arrow indicate changes in the Dimensions repository that are to be downloaded to your work area.

Work Area	Repository	Change Type
		No Change: The file has not changed.
		No Change/Locked: The file has not changed. The file is locked.
		Modification: The contents of the file have changed.
		Modification/Locked: The contents of the file have changed. The file is locked.
		Addition: The file has been added.
		Deletion: The file has been deleted. The item revisions have been removed or deleted.

Work Area	Repository	Change Type
		Deletion/Locked: The file has been deleted. The file is locked.
		Move/Rename: The file has been moved and/or renamed.
		Move/Rename/Locked: The file has been moved and/or renamed. The file is locked.
		Move/Rename/Modification: The contents of the file have changed, and the file has been moved and/or renamed.
		Move/Rename/Modification/Locked: The contents of the file have changed, and the file has been moved and/or renamed. The file is locked.
		Conflict: The file has been changed in both the work area and the repository.
		Conflict/Locked: The file has been changed in both the work area and the repository. The file is locked.
		No Change: The folder has not changed.
		Internal Change: The folder has not changed, but something inside the folder has changed.
		Addition: The folder has been added.
		Addition/Internal Change: The folder has been added, and something inside the folder has been added.
		Deletion: The folder has been deleted.
		Deletion/Internal Change: The folder has been deleted and something inside the folder has been deleted.
		Move/Rename: The folder has been moved and/or renamed.
		Move/Rename/Internal Change: The folder has been moved and/or renamed, and something inside the folder has changed.
		Conflict: The folder has changed in both the work area and the repository.
		Conflict/Internal Change: The folder has changed in both the work area and the repository, and something inside the folder has changed.

Using the Dimensions CM Synchronize Wizard

1. Right-click the solution or project you want to synchronize, and select Synchronize. Or, select File | Source Control | Synchronize.
2. Continue reading or, for more detailed information on the Synchronization Tool, see the *Dimensions CM User's Guide*.

3 **Synchronize with:** Specify a Dimensions CM project or click the browse button to select one.

4 Select the kind of synchronization you want to perform:

- Under **Include the following types of local changes** choose which type of changes from your local working location you will upload to the repository**.** Select/deselect the types of change that you want to upload: **Additions**, **Deletions**, **Modifications**, **Moves/Renames**.
- Under **Include the following types of repository changes** choose which type of changes from the repository you will download to your local working area**.** Select/deselect the types of change that you want to download: **Additions**, **Deletions**, **Modifications**, **Moves/Renames**.

5 **Under Filter using wildcards (optional)**, enter expressions to include and exclude files and folders when synchronizing. The inclusions, if entered, will be evaluated before the exclusions when the synchronization is performed.

- In the **Include local folders** field, enter an expression to specify files or folders in the working location that you want to include in the synchronization.
- In the **Exclude local files** field, enter an expression to specify files or folders in the working location that you want to exclude from the synchronization. For example:
  - `\.obj$`

    Excludes paths that end with the string ".obj"

    Excludes "hello.obj" but not "hello.c"
  - `^src\\debug`

    Excludes paths that start with the string "src\debug"

    Excludes "src\debug\hello.obj" but not "src\hello.obj"
  - `^New.*\.txt$`

    Excludes paths that start with "New" and end with ".txt"

    Excludes "New Document.txt" but not "New Document.wav"
- In the **Include repository folders** field, enter an expression to specify files or folders in the repository that you want to include in the synchronization.
- In the **Exclude repository files** field, enter an expression to specify files or folders in the repository that you want to exclude from the synchronization.

6 Click **Show additional options** to display options on change detection and login.

7. If required, change the **Synchronization options**. If you want to skip the final summary page of the synchronization wizard, select **Skip summary before synchronization.** If you want to automatically close the wizard when synchronization is complete, select **Close wizard on completion**.

8. If you require an output log for the results of the synchronization, select **Enable in folder** under **Logging** and enter a path or click the **Browse** button.

9. Click the **Next** button. The next window displays the differences between your local work area and the repository.

10. Select a display mode:

    - **Repository view:** To view only items in the repository.
    - **Work area view:** To view only files in the work area.
    - **Consolidated view:** To view items and files in both the repository and the work area. This is the default view.

11. Expand the folder tree as needed, or use the navigation buttons, to review the differences and conflicts:

    - **Previous Difference:** To ascend the file tree to the previous difference.
    - **Next Difference:** To descend the file tree to the next difference.
    - **Previous Conflict:** To ascend the file tree to the previous conflict.
    - **Next Conflict:** To descend the file tree to the next conflict.

12. To compare a work area file and a repository item, select a file/item and click the **Compare** button. The file Merge tool opens.

13. To specify a resolution for a difference or a conflict, select the file and then click a resolution on the toolbar. The resolution proposed by the wizard appears in bold text; available resolutions are underlined.

    If you do not select a specific resolution, the proposed resolution will be implemented upon completion of the wizard. Some or all of the following resolutions are available:

    - **Accept:** Accept the changes from either the local work area or the repository.
    - **Ignore:** Leave both the work area file and the repository item as they are.
    - **Use local:** Add the work area file to the repository as the latest item version.
    - **Use repository:** Overwrite the work area file with the latest item version from the repository.
    - **Merge:** Launch the file Merge tool to resolve the internal differences between the work area file and the repository item.

IMPORTANT! In certain cases, when you choose to merge items, the merged files may appear after synchronization as having been moved. If this occurs, reopen the solution from source control to correctly display the merged file locations.

14 If necessary, change any of the following default options on the Defaults tab. These settings apply to all applicable files included in the synchronization unless overridden for specific files:

- **Comment**: Description of any changes you are checking in.
- **Relate to request(s)**: A request ID to relate to the changes you are checking in.
- **Permissions after Update**: Choose whether to make files that are updated on your local system writable or left as they currently are.
- **Design part for new files**: Browse to choose a design part for any new files you are uploading.
- **Permissions after Deliver**: Choose whether to make files that you are checking in or adding to Dimensions read-only, or left as they currently are.
- **Apply date / time of:** Choose **Repository item** if you want the date/time of the files downloaded to the working location to have the same value as the item in the repository. Choose **Current system** if you want downloaded files to have the current date and time.
- **Expand substitution variables**: Choose whether to expand substitution variables.

15 To view the changes that have been made to a revision, right click and select **View**.

16 To set any of the above options to a unique value for specific files, select a file and click the **Options** tab. Here, you can override the setting with unique values.

17 Click **Next** to display a synchronization summary, then start the synchronization.

Working with Dimensions CM Streams

About Streams

When you work with Dimensions CM streams you typically:

- Update your local work area with files from the repository. This copies all new and modified files from Dimensions to your local work area. This may include merging conflicting versions of files, if other users have worked on any of the same files as you.
- Deliver your local files to Dimensions CM. This adds any new files to Dimensions CM and checks in new versions of any files that you have updated locally.
- Merge streams, for details see page 44.

You do not need to check files in or out, get files, or synchronize. To learn more about parallel development features and streams, see the *Dimensions CM User's Guide*.

You can create the following types of streams:

- An empty stream.
- A stream based on a release or tip baseline. These types of baselines only contain one revision of each item. To create a stream containing the items from a project, first create a tip baseline of the project and then create a new stream based on that baseline.

- A stream based on any version of another stream. The new stream is a child of the parent stream from which it was created.
- A personal stream, a private development branch that is only visible to the originator.

Creating New Streams

1 In Dimensions Explorer, expand the connection node where you want to create the new stream and do one of the following:

- Select New | Stream.
- Click Streams and Projects. In the Dimensions Project view, right-click the project on which you want to base the new project. Select New | Stream.
- Click Changesets. In the Changesets view right-click the changeset on which you want to base the new project and select New Stream.

2 On the first page of the New Stream wizard:

- From the **Create New Stream in Product** list, choose the product that will contain the new stream.
- Enter a name in the **Stream Name** field.
- Provide a description of the stream in the **Description** field.
- If you will use the stream to store a named branch and want all field revisions to include the branch name, enter the branch name in the **Unique Branch Name** field.
- To create a personal stream select **Create a personal stream**. Personal streams are private development branches that are only visible to the originator, for details see page 33
- Optionally add the new stream to your favorites list. Favorites are shared across all clients.

3 Click Next.

4 Select one of the following:

- **Nothing** if you want the stream initially to contain no items.
- **Based on Baseline** if you want the new stream to be populated with the item revisions from a baseline. Select a baseline from the list.
- **Based on another Stream** if you want the new stream to be populated with the item revisions from an existing stream. Enter the name of a stream or click **Select**, select **Another stream**, and do one of the following:
  - Start typing the ID of a stream. Streams that contain any characters in the string are displayed. For example, to find 'QLARIUS:VS_BRANCHA' type 'vs'.
  - Select a stream from the list. Favorite streams and recently used streams are displayed at the top.

    Optionally select a version of this stream on which to base the new stream.

    Click **OK**.

  NOTE: The new stream inherits all the revisions from the parent stream.

- **Based on another Stream** if you want the new stream to be populated with the item revisions from an existing stream. Do the following:

5 Select **Valid request must be specified when delivering changes** if you want Dimensions to require a request to be entered when any changes are made to the stream.

6 Click **Next**.

7 Review your choices on the Summary screen, and click **Finish** to create the stream.

Delivering Changes to a Stream

Deliver local work to Dimensions when you have completed work and need to add new and updated files to Dimensions. Ideally, no conflicts result because you are the only person working on the files that you have changed.

1 Select the project in Solution Explorer.

2 On the toolbar click **Deliver** or select **File** | **Source Control** | **Deliver**. The Deliver wizard appears.

3 The Deliver from this Work Area field is populated with the work area root. If you select a subfolder, its path is highlighted.

4 If you select a work area that is not associated with a stream, in the Deliver changes to this Stream field select a stream.

5 Click Advanced.

6 To restrict the deliver operation to particular files do the following:

- In **Include local files** enter expressions to restrict which files from the work area will be delivered to the repository.
- In **Exclude local files** enter expressions to identify files in the work area that you want to exclude when delivering to the repository.

7 Select the local changes that you want to include in the delivery: additions, deletions, modifications, and moves/renames.

8 If you have defined ignore rules but want to skip them for this delivery, select Disable restrictions from .dmignore file.

9 Click **Next**. One of the following occurs:

- If no conflicts occur, the next window displays the differences between your local work area and the repository. Continue to the next step.
- If conflicts are found, then the delivery is stopped and you are notified that you must perform an update and resolve conflicts before proceeding with a delivery.

10 A list of changes is displayed including each revision's work area filename, change type, and the conflict type and default resolution (if applicable).

11 On the **Default options** panel, optionally change the defaults values used when an item revision is delivered to the repository:

- **Comment**. Enter the default comment for any new item revisions that are created.

- **Relate to request(s)**. Specify one or more default requests to be related in response to any new item revisions that are created.
- **Design part for new files.** Select the part specification for the owning design part for new items created in this work area (unless overridden by any values set for a folder beneath the root folder in this work area).
- **Permissions after deliver**. Select **Make read only** or **Keep unchanged** for the permissions to be set on a file after uploading to the repository.
- **Expand substitution variables**: select Yes or No.

12 On the **Selection options** panel, optionally change the defaults values for each item revision that you select.

If you are deleting a revision, from the Removal Scope list select an option, such as delete all the item revisions from the stream. There are some restrictions, for example, you cannot delete a revision from a baseline or a revision that is related to an active request.

13 To view the changes that have been made to a revision, right click and select **View**.

14 Click **Deliver**.

Resolving Conflicts Between Local and Repository Files

Before you can deliver local changes to the Dimensions CM repository, you must resolve any conflicts between your versions of the files and the versions already in the repository. These conflicts can occur if other users have delivered new versions since you last updated your work area.

Complete the following steps to resolve conflicts.

1 You may not be aware of the conflicts until you have attempted to deliver local files to the repository. Attempt a delivery if you are not sure. Dimensions will warn you of conflicts if any are detected.

2 Update your work area with the latest files from the stream in Dimensions. When you do this, resolve any conflicts. For example, you may choose to merge conflicting local files with the versions that you are updating from the repository.

3 Once you have successfully updated your work area and resolved or merged conflicting files, the files in your working area are the new, conflict-free versions of the files. You should again attempt to deliver your local files to Dimensions. Doing so will upload the resolved versions of the files to Dimensions, and there will be no further conflicts.

IMPORTANT! In certain cases, when you choose to merge items, the merged files may appear as having been moved. If this occurs, reopen the solution from source control to correctly display the merged file locations.

Updating a Work Area from a Stream

You can update your work area with the latest changes from any version of a stream that is associated with a work area. If there are conflicts you can resolve them by:

- Choosing the item revision in the work area (Use Local).
- Choosing the item revision in the repository (Use Repository).
- Allowing Dimensions to attempt to automatically merge the contents provided there are no conflicts.

If a conflict includes path differences these resolutions are also available:

- Use local path
- Use repository path

1. Select the project in Solution Explorer.
2. On the toolbar click **Update** or select **File** | **Source Contro**l | **Update**. The Update Work Area from Stream wizard appears.
3. The **Update changes from this stream** box displays the name of the stream from which you invoked the update. To change the stream do one of the following:
   - Click **Select** and use the **Select Stream** dialog box to specify a stream and optionally a stream version.
   - Enter the name of a stream, and optionally a version, in this format:

     `PRODUCT:STREAM_NAME;VERSION`

     For example:

     `QLARIUS:JAVA_BRANCHA_STR;5`
4. The **Update this work area** box displays the work area path that will be updated. To change the work area enter its path or click **Select** and choose an area.
5. To interactively (manually) verify the results of any file merge operation before applying them to the work area, select **Perform an interactive update**.
6. To restrict the update to a specific folder and its subfolders, select **Limit the scope of the merge to this folder** and browse to the folder, or enter its repository path. If you invoked the update operation from a subfolder, and not the root of the stream, its path is pre-populated.
7. Click **Advanced**.
8. To restrict the update to particular files or folders, enter wildcard filters in:
   - The **Include repository file** box to only include specific file types.
   - The **Exclude repository file** box to exclude specific file types.

   For details about use wild cards see page 38.
9. To apply the repository date and time to the updated files in the work area select **Apply repository date and time**.
10. (Used when shelving a stream) To create a clean work and reset the work area to the latest repository content, select **Reset work area changes to repository versions**

and paths. You can also choose to delete locally added files (such as artifacts added by a local build process).

11 Select **Expand substitution variables** if required.

12 To automatically merge local and repository files whose content does not conflict, select **Auto merge non-conflicting file content**. You can also select a default character set that is used to transcode Unicode files before merging.

13 Do one of the following:

- If you are performing an interactive update click **Next** and go to the next step.
- If you are not performing an interactive update click **Update**. The work area is updated and the results are displayed.

14 On the Review Changes page expand the folder tree to display the changes that have been identified.

15 On the toolbar select a resolution for each conflict.

- To ignore a change click **Ignore**.
- To use the version of the change in the work area click **Use Local**.
- To use the version of the change in the repository click **Use Repository**.

If a conflict includes path differences these resolutions are also available:

- Use local path
- Use repository path

Your selection is displayed in the Resolution column.

CAUTION! If you select Use local or Use Repository you may discard a change that you want to keep.

To merge the content of two file revisions that are in conflict click **Merge**. The default merge tool opens and displays the content of the revisions. After you have completed the merge successfully and exited the merge tool, the resolution is shown as Merge.

16 To view the changes that have been made to a revision, right click and select **View**.

17 Click **Update**. The results of the update operation are displayed.

18 Click **Close**.

Locking Files in a Stream

You can lock files in order to prevent other users from delivering changes to the files while you are working on them. This is especially useful for files that can't be easily merged, such as bitmaps.

To lock files, right-click the files to lock in Solution Explorer and select **Lock**. To unlock files, right-click the locked files from Solution Explorer and select **Unlock**. Locked files are also unlocked by default when users deliver changes to the locked files.

Locked files appear with a red check mark. If another user has locked the file, the file appears with a red check mark and exclamation point.

Using Wildcards to Include and Exclude Files and Folders

You can use wildcard expressions to specify files to be excluded and/or included when you run the update, deliver and merge operations. For example, if your stream contains a compiled project, and the compiled sources and executables are in a folder called "debug", use the filter "*\debug" to exclude the folder from all deliveries.

You can use the following characters in expressions:

- "*" matches a complete folder tree, or a file anywhere in the folder tree.
- "?" matches any single character.
- "|" joins or concatenates multiple expressions.

Examples of exclusion filters:

- `build/bar.obj|build/bar.exe`

  Explicitly excludes the files `bar.obj` and `bar.exe` in the folder `build`.

- `obj/*`

  Excludes all files and subfolders recursively beneath the folder `obj`

- `*.obj|*.exe`

  Excludes all files with the extension `.obj` and `.exe`

- `build/*.obj|build/*.exe`

  Excludes files with the extension `.obj` and `.exe` in the folder `build` (and its subfolders).

- `build/logs`

Excludes the folder `build/logs`.

Ignoring Files and Folders during Deliveries

You can exclude specific files, folders, and file types from deliveries, for example:

- backup files
- built artifacts

To exclude items you define ignore rules in a `.dmignore` file. Each location (a folder or directory) has a single `.dmignore` file but you can have multiple ignore files across a hierarchy of folders. You can also apply ignore rules recursively, for example, you can ignore all `*.tmp` files in the current folder and all child folders.

NOTE

- Rules are case insensitive on Windows and case sensitive on Linux.
- You can use the following wildcards:
  - Asterisk (*): represents one or more characters.
  - Question mark (?): represents one character.

- In wizards where you deliver changes you can optionally disable ignore rules. For example, you may want to deliver all files, including those that you do not normally need to control.
- To edit `.dmignore` files in a language that corresponds to your locale, on your machine check the language settings for non-Unicode programs.
- Ignore rules are not the same as the *include and exclude local files filters* in the Merge, Synchronize, and Deliver wizards.

Ignore Rules

Use the following rules to ignore uncontrolled files and folders:

- `<folder name>`

  Ignores a specific folder, for example, to ignore the folder `foo`:

  ```
  foo
  ```

- `<file name>`

  Ignores a specific file, for example, to ignore the file `f.tmp`:

  ```
  f.tmp
  ```

- `*.<file extension>`

  Ignores all files with a specific extension, for example, to ignore files with the extension `.tmp`:

  ```
  *.tmp
  ```

- `r:*.<file extension>`

  Recursively ignores all files with a specific extension starting from the location of the current `dmignore` file. For example, to recursively ignore all `*.tmp` files in the current folder and all child folders:

  ```
  r:*.tmp
  ```

- `r:<folder or file name>`

  Recursively ignores a specific file or folder. For example, to ignore all `Debug` folders in the work area hierarchy, add the following rule to a `.dmignore` file in the work area root:

  ```
  r:Debug
  ```

- `:<comment>`

  Start a line with a colon (:) to add a comment, for example:

  ```
  :This is a comment that does not affect the ignore rules
  ```

  You can also add an inline comment after a rule by prefixing it with a colon, for example:

  ```
  r:Debug :My comment about this rule
  ```

- `c:`

  Clears all recursive rules inherited from parent `.dmignore` files. For example, if a parent ignore file includes:

  ```
  r:*.xml
  ```

  and you add `c:` to the current ignore file, then all `.xml` files in the current folder, and its child folders, are not ignored.

- Use the `?` symbol as any single wildcard character in a file or folder name or extension. For example, to recursively ignore all work area files with extensions `PK3` and `PK4`:

  ```
  r:*.pk?
  ```

Ignoring Files and Folders

1. In Solution Explorer, navigate to the folder where you want to ignore files and/or folders.
2. Select one or more items.
3. Right-click, select Ignore Rules, and select one of these options:
   - *Ignore <file/folder name>*

     Ignores a specific file or folder.
   - *Ignore <file/folder name> recursively*

     Ignores a specific file or folder recursively.
   - *Ignore *.<file extension>*

     Ignores all the selected file types.
   - *Ignore *.<file extension> recursively*

     Ignores all the selected file types recursively.

   The appropriate ignore rules are added to the `.dmignore` file and you do not need to add them manually.

Editing Ignore Rules

1. In Solution Explorer select the project, solution, or folder where you want to edit ignore rules.
2. Right-click, select Ignore Rules, and select **Edit .dmignore**.
3. Add and modify ignore rules.

Canceling Recursive Ignore Rules

1 In Solution Explorer, select the folder where you want to cancel all recursive ignore rules inherited from parent ignore files.

2 Right-click, select Ignore Rules, and select **Edit .dmignore**.

3 Enter `c:`

Undoing Changes in a Stream or Project

You can roll back the delivery of files and folders to a stream or project. For example, you deliver changes but discover problems in the code and decide to remove the changes. Undo creates a new changeset with the reverted changes that preserves the full history.

NOTE

- Requires the same privileges as deliver.
- Undoes an entire changeset, not individual item revisions.
- The original request relationships are not undone.
- Only makes changes in a repository and does not affect the items in a work area.
- After completing an undo, to synchronize your work area with the repository, run an update.
- You can run undo at any location as long as the changeset does not affect items further up the hierarchy.
- Can only undo a single changeset.
- If items in a changeset have more recent changes in a newer changeset, you cannot undo it.

Example

Assume that changeset 14 has this item revision:

```
f.txt revision #2
```

And that changeset 13 has the previous version of the same item:

```
f.txt revision #1
```

If you undo changeset 14, the revision in changeset 13 becomes the tip revision and a new changeset, 15, is created with the change:

```
f.txt revision #1
```

1 Do one of the following:

- To undo an entire changeset, in the Dimensions Projects view right-click a stream and select Changesets.
- To undo a specific set of changes, in Solution Explorer right-click a folder and select Folder Changesets.

2 In the Changesets dialog, right-click a changeset and select Undo Stream/Project Version.

3 (Optional) Select requests to relate to the change and add a comment.

4 Click OK.

Reverting Changes in a Work Area

You can remove the changes in a work area associated with a stream and replace them with the previous versions. For example, you have made changes locally and delivered them to a stream, but subsequently you decide to revert the changes in the work area.

NOTE

- Only reverts the changes in a local work area, not the stream.
- To synchronize the stream with the work area, deliver the changes after you have run this operation. This creates a new changeset.
- Requires the same privileges as DELIVER.
- Reverts an entire changeset, not individual item revisions.
- The original request relationships are not removed.
- Only works with streams, not projects.

Example

Assume that you have the following modifications in a work area that you delivered to a stream, which created changeset `CS_19`:

- `webapphelp\help.css` (moved from `webapp\help.css`)
- `contact_support.html` (a new file)
- `config.dat revision #9` (new revision)

After you revert to the previous changeset, `CS_18`, the work area content looks like this:

- `webapp\help.css` (the previous path)
- `contact_support.html` was deleted (a new file that was first delivered in `CS_19`)
- `config.dat revision #8` (the previous revision)

To synchronize the stream with the work area, deliver the changes, which creates changeset `CS_20` with this content:

- `webapp\help.css`
- `contact_support.html` (deletion)
- `config.dat revision #8`

1 Do one of the following:

  • To revert an entire changeset, in the Dimensions Projects view right-click a stream and select Changesets.

- To revert a specific set of changes, in Solution Explorer right-click a folder and select Folder Changesets.

2 In the Changesets dialog, right-click a changeset and select Revert from Work Area.

3 The Select Undo Options dialog box displays the stream and changeset ID from which you are going to revert changes. To change the stream click Select and select one of the options in the Select Stream dialog box.

4 The Update this Work area field displays the work area where changes will be undone. To change the work area enter its path or click Select and choose a folder.

5 To verify the undo changes before applying them to the work area, select Perform an interactive update.

6 To restrict the undo to a specific folder and its subfolders, select Limit the Scope of the Update to this Folder and browse to the folder or enter its path. If you invoked the undo operation from a subfolder its path is pre-populated.

7 Click Advanced.

8 To restrict the undo to particular files or folders, enter wildcard filters in:

- The Include repository file box to only include specific file types.
- The Exclude repository file box to exclude specific file types.

9 Apply the repository date and time to the files in the work area that will be undone.

10 To automatically merge local and repository files whose content does not conflict, select Auto merge non-conflicting file content. You can also select a default character set that is used to transcode Unicode.

11 Click Next.

12 On the Review Changes page select a resolution for each conflict. Your selection is displayed in the Resolution column.

13 Click Update.

Merging Changes across Streams

You can use Dimensions CM to merge:

- Changes across streams or their folders.
- Changes from a baseline into a target stream.
- Changes from requests owned by another stream into a target stream.

Merge is similar to Update and uses a work area to apply changes and process conflicts. This enables you to safely merge, build, and test before delivering the merge results to a target stream in a repository.

When you merge two objects, for example a stream with another stream, or a stream with a baseline, Dimensions CM looks for a common ancestor. This is a point in time where the streams or work areas diverged. This is typically referred to as a three-way merge. For example, assume you have two streams that were created from the same baseline. Modifications are performed in both streams by different developers and delivered to CM. You now merge stream 1 into stream 2. Dimensions CM looks at the baseline (the common ancestor), finds the modifications that were delivered to stream 1 after that point, and merges those changes in stream 2.

For merge examples and use cases see the chapter *Merging Changes across Streams* in the *Dimensions CM User's Guide*.

NOTE To display Dimensions CM merge commands attach your Visual Studio solution to source control and connect to a Dimensions CM repository.

The merge process uses changesets to find the common ancestor. A changeset is a logical grouping of changes that is created automatically every time that you deliver changes to a stream or project in a repository. For details see "Working with Changesets" on page 57.

Merging Specific Changes between Streams

When you merge changes between streams you can select changes that are related to specific requests, commonly known as *cherrypicking*. For example, you have delivered multiple sets of changes to a stream but want to merge one specific set into a different stream. For more details see the *Dimensions CM User's Guide*.

Merging Changes across Streams

1 Do one of the following:

- In Solution Explorer right-click a solution, a project, or an item and select **Merge**.
- In the Dimensions Projects view right-click a stream and select **Merge from Stream**.
- In the Changesets view right-click a changeset and select **Merge from Stream Version**.

The Merge Streams wizard opens.

TIP: The context from which you merge determines the scope. For example, if you select a Dimensions CM stream or a Visual Studio project the whole stream will be merged. If you select a subfolder, only the file types scoped by the folder and its sub-folders will be merged.

2 In the **Merge changes from this stream** box specify a stream that will be the source for this merge. Do one of the following:

- Click **Select** and use the Select Stream dialog box to specify a stream. Optionally specify a stream version.
- Enter the name of a stream, and optionally a version number, in this format:

  `PRODUCT:STREAM_NAME;VERSION`

  For example:

  `QLARIUS:JAVA_BRANCHA_STR;5`

  NOTE Omitting a version number merges changes from the latest stream version.

3 The **Merge changes into this target stream** box displays the name of the stream from which you invoked the merge. To select a different target stream enter its name or click **Select** and choose a stream.

NOTE You can only merge into the latest version of the target stream. Update your work area and deliver local changes before performing a merge.

4 To change the direction of the merge click the **Swap** button.

NOTE After swapping you may need to change the work area to one that is associated with the target stream.

5 The default project work area is displayed in the **Merge using this work area** box. To use a different work area enter its path or click **Select** and browse for one.

6 To interactively (manually) verify the merge results before applying them to the work area, select **Perform an interactive merge**.

7 To restrict the scope of the merge to a specific folder and its sub-folders, select **Limit the scope of the merge to this folder** and browse to the folder, or enter its path.

8 (Optional) Click **Advanced** to configure more merge options.

9 To restrict the marge to particular files or folders enter wildcard filters in:

- The **Include repository file** box to only include specific file types. The default filters are determined by the context from which you invoked the merge.
- The **Exclude repository file** box to exclude specific file types.

10 To apply the repository date and time to the files in the merge select **Apply repository date and time**.

11 To automatically merge files whose content does not conflict, select **Auto merge non-conflicting file content**. Select a default character set.

12 To merge do one of the following:

- If you performing an automatic non-interactive merge click **Merge**.
- If you performing a manual interactive merge click **Next**.

If there are no conflicts the merge completes successfully. If there are conflicts, the Review Changes page is displayed. Do the following:

a Review the list of conflicts and select an appropriate resolution for each one.

b Click **Merge**.

After the merge has completed successfully you are prompted to deliver the files to the repository.

Merging Changes from a Baseline into a Stream

1 In the Baseline view right-click a baseline and select **Merge from Baseline.**

2 The baseline ID is displayed in the **Merge changes from this baseline** box. To select a different baseline do one of the following:

- Click **Select** and use the Select Baseline dialog box to specify a baseline.
- Enter the name of a baseline in this format:

  `PRODUCT:BASELINE_NAME`

3 The **Merge changes into this target stream** box displays the name of the stream from which you invoked the merge. To select a different target stream enter its name or click **Select** and choose a stream.

NOTE You can only merge into the latest version of the target stream.

4 Continue from Step 5 on page 45.

Merging Changes from Requests Owned by Another Stream

1 In the Requests view select one or more change requests, right-click, and select **Merge from Request**. The Merge Streams wizard opens.

2 The **Merge changes from this request** box displays the selected change requests. To add change requests enter their IDs, each separated by a comma. To specify different change requests click **Select** and use the Request Selection wizard to specify a product and change requests.

NOTE You cannot merge request changes from different streams in the same merge operation.

3 The **Include changes from this stream** box displays the stream that contains the change requests. To select a different stream click **Select** and navigate to the stream.

4 The **Merge changes into this target stream** box displays the name of the stream from which you invoked the merge. To select a different target stream enter its name or click **Select** and choose a stream.

NOTE You can only merge into the latest version of the target stream.

5 To change the direction of the merge click the **Swap** button.

6 The default project work area is displayed in the **Merge using this work area** box. To use a different work area enter its path or click **Select** and browse for one.

7 To interactively (manually) verify the merge results before applying them to the work area, select **Perform an interactive merge**.

8 To include all items in the merge that are related to child requests of the selected change request, select **Also include items related to child requests**.

9 (Optional) Click **Advanced**.

10 To restrict the merge to particular files or folders enter wildcard filters in:

- The **Include repository file** box to only include specific file types.
- The **Exclude repository file** box to exclude specific file types.

For details about using wildcards see page 38.

11 To apply the repository date and time to the files in the merge select **Apply repository date and time**.

12 By default only the file changes associated with the request that you specified will be merged. To merge all changes unselect **Cherrypick file changes**. For more details see page 44.

13 To automatically merge files whose content does not conflict, select **Auto merge non-conflicting file content**. In the desktop client and Windows Explorer integration you can also select a default character set that is used to transcode Unicode files before merging.

14 To merge do one of the following:

- If you are performing an automatic non-interactive merge click **Merge**.
- If you are performing a manual interactive merge click **Next**.

If there are no conflicts the merge completes successfully. If there are conflicts, the Review Changes page is displayed. Do the following:

a Review the list of conflicts and select a resolution for each one.

b Click **Merge**.

15 After the merge has completed successfully you are prompted to deliver the files to the repository.

Topic Streams and Pull Requests

Topic streams are temporary streams that you use for a set of defined changes, for example, to fix a defect or develop a small feature. Topic streams enable you to isolate your changes from a mainline. If you need to suspend work that is in progress, or isolate work into a dedicated stream, you can shelve the changes from a work area into a topic stream.

A pull request is a special type of review that you use to evaluate and merge a set of defined changes, typically in a topic stream.

A topic stream and its related pull request work together to help you manage and merge changes:

- A topic stream is created from a parent stream, which creates a pull request.

- Changes are delivered to the topic stream and related to the pull request.
- The pull request is reviewed, approved, and merged into the topic stream's parent.

When you create a pull request, you assign reviewers to it. Reviewers see the code changes on the Changes tab of a pull request. They can add comments about the changes, identify issues, make suggestions, and answer questions. When a comment is made, the pull request author and reviewers receive an email with a snippet of the code and the review comments.

When changes have been reviewed and approved, and if there are no conflicts between the topic stream and its parent, you can merge the pull request. This merges the contents of the topic stream into its parent stream without using a work area.

Rehome is a quick and easy way to switch a work area from one stream to another.

If you have a topic and parent stream that both contain changes, and you want to update the topic stream with the changes from its parent, you can rebase the topic stream.

For detailed information about topic streams and pull requests, including examples and scenarios, see the *Dimensions CM User's Guide* available online on the documentation center.

Invoking Dimensions Deployment

You can invoke Dimensions CM deployment features in a number of ways. When you do this, the Dimensions CM Deployment Web Client view opens in a browser. Do this if you want to manage deployment of your files.

Do one of the following:

- Click **Deployment Views** on the toolbar.
- From the View menu select Deployment Views.

NOTE For information about deployment features see the *Dimensions CM Deployment Guide*.

Viewing and Updating Previous Revisions

To work with previous revisions of a file, right-click the file in Solution Explorer and select History. This displays the History view, which lists all previous actions and allows you to get, check out, check in, and compare them. This view is distinct from the historical view you can display from the History menu option.

Viewing and Updating Item Information

You can display file attributes, history, and relationships information. Right-click a file and select Item Properties. A detailed item properties view appears. From here you can review a number of tabs and update many item properties.

- **General**. This tab displays the item name, ID, state, phase, revision and description. These properties are not writable.
- **Attributes**. From here you can view and modify values for attributes assigned to items.
- **History**. This tab displays the revision history.
- **Delegates**. From here you can see any users to whom the file has been delegated, and in turn delegate it. To delegate a file, select the role to whom the users belong from the Role to delegate list, select the users from the **Available Users** list, and click **Assign** to move those users to the Assigned users list. You can also swap users by selecting users from each list and clicking the Replace button. For more on delegation, see the *Dimensions User's Guide*.
- **Users and Roles**. From this tab you can see all users and roles who are assigned to work on the item.
- **Privileges**. On this tab, you can see all privileges that you (and others) have been assigned for this item. This can be useful if you are unable to complete an action and you suspect that your Dimensions privileges may need to be expanded.
- **Related**. Here you can see all related objects, including requests, projects, and other items. You can add new relationships and remove existing relationships.

Comparing Files and Revisions

About Comparing and Merging

In Dimensions for Visual Studio you can compare:

- **Latest revision differences:** The line-by-line differences between the file open in Visual Studio and its immediate ancestor in the Dimensions repository.
- **Previous revision differences:** The line-by-line differences between the current working file and specific previous revisions.

You can merge:

- Specific revisions of items
- Different files

Comparing the Working File with the Latest Revision

You can compare the latest file open in Visual Studio and its immediate ancestor in the Dimensions repository:

Select a file in Solution Explorer, and select File | Source Control | Compare with Latest. The Merge tool opens and displays the line-by-line differences between the file revision open in Visual Studio and its ancestor in the Dimensions repository.

See the Dimensions or the Merge tool's online help.

Comparing the Working File with Previous Revisions

You can compare the current working version of a file in Visual Studio to any previous revision in the Dimensions repository.

1. Right-click the file that contains the revisions you want to compare and select History. The History view appears.
2. Select the revision, and click the **Compare Revisions** button. The Merge tool opens and displays the line-by-line differences between the working copy and the revision in Dimensions.

Working with Baselines

Displaying Baselines

1. From Dimensions Explorer, select Baselines. All available baselines appear in the Baselines view.
2. Select the **Show All** option to see all baselines for the stream or project.
3. Right-click any baseline and select **Add to Favorites** to add to your **Favorites** list, which you can display by clicking the **Favorites** node.
4. You can also search for a specific baseline. To find specific baselines:
   - **a** Right-click the **Find Results** node and select **Find**. The Select Baseline dialog box appears.
   - **b** From here you can enter information about the baseline to help find it, including its ID, the product or project it belongs to, its type, what template it was created with, and a date range when it was created.
   - **c** Click **Next** to display search results from your criteria. Select the baselines you want to include in the search results (you can CTRL+click to select multiple baselines) and click Finish. The baselines you selected appear in a new list under the **Find Results** node. For example, if this is your first search, the results appear in a child node called **Find Result 1**.

Creating Baselines

You can create a new baseline from any project in the repositories you are connected to. You can create any of the following types of baseline:

- A baseline that uses a specific baseline template that determines which revisions to include, and that is scoped by design part
- A design baseline that represents the current product design structure, or a part of it
- A tip baseline that includes the latest revisions of all files in a project
- A revised baseline, which is a baseline that is derived from an existing baseline by adding or removing item revisions that are related to requests

1 Do one of the following:

- In Dimensions Explorer click **New | Baseline**.
- In the Dimensions Project view right-click the project or stream from which you want to create a baseline and select **New | Baseline**.

NOTE If the project or stream for which you want to create a baseline is not open, right-click the **Favorite Dimensions Projects** node and select **Add to Favorites**. The Dimensions Projects tab appears with a list of all projects in the product. You can then right-click the project for which you want to create a baseline and select **New Baseline**.

2 Choose the product containing the project or stream.

3 Enter an ID string for the baseline.

4 Select the baseline type from the **Type** list.

5 In the **Create baseline from** field do one of the following:

- Start typing the ID of a stream or project. Streams and projects that contain any characters in the string are displayed. For example, to find 'QLARIUS:VS_BRANCHA' type 'vs'.
- Select a stream or project from the list. Favorites and recently used streams and projects are displayed at the top.

6 Click **Next**.

7 On the Select Baseline Template and Design Part screen, select a baseline template from the **Use following template** list. The baseline template determines which requests or items to include in the baseline. To create a design baseline, do not select a template.

8 Enter a design part ID in the **Design part** field, or click the **Browse** button to search for a design part. This field identifies the top level design part in the design part hierarchy from which you will baseline items. You can include any number of levels of children of this design part using the **Part levels** option.

9 The **Part levels** options allow you to choose the levels in the design part hierarchy from which items will be included, starting from the top level design part you entered in the **Design part** field. To include items from all design parts under the top design part, select **All**. To specify the number of levels from which to include items, select the **From top to** option and enter or click to choose a number. For example, if you select **From top to** and enter 3, then items will be included from the top three levels of the

design part hierarchy, starting with the design part you entered in the **Design part** field.

10 Click **Next**.

11 On the Baseline Options screen, enter or browse to select any requests that you want to relate to this baseline. If you selected a request baseline template, the baseline will include any items that have an *In Response To* relationship to the requests you enter here. If you selected an item baseline template, the requests you enter here will just be related to the baseline but have no effect on the content of the baseline.

12 Click **Next**.

13 On the Baseline Attributes screen, enter values for user defined attributes, and click **Next**. You must enter values for required attributes in order to create the baseline.

14 On the Ready to Create Template Baseline screen, review a summary of the new baseline and click **Finish** to create the baseline.

Creating a Tip Baseline

1 Do one of the following:

- In Dimensions Explorer click **New | Tip Baseline**.
- In the Dimensions Project view right-click the project or stream from which you want to create a baseline and select **New | Tip Baseline**.

NOTE If the project for which you want to create a tip baseline is not open, you can right-click the **Favorite Dimensions Projects** node and select **Add to Favorites**. The Dimensions Project tab appears with a list of all projects in the product. You can then right-click the project for which you want to create a baseline and select **New Baseline**.

2 Choose the product containing the project or stream, and then choose the project or stream.

3 Enter an ID string for the baseline.

4 Select the baseline type from the **Type** list.

5 In the **Create baseline from** field choose the project or stream from which to create the template baseline. Do one of the following:

- Start typing the ID of a stream or project. Streams and projects that contain any characters in the string are displayed. For example, to find 'QLARIUS:VS_BRANCHA' type 'vs'.
- Select a stream or project from the list. Favorites and recently used streams and projects are displayed at the top.

6 Click **Next**.

7 On the Baseline Options screen, enter or browse to select any requests that you want to relate to this baseline.

8 Click **Next**.

9 On the Baseline Attributes screen, enter values for any required user defined attributes, and click **Next**.

10 On the Ready to Create Tip Baseline screen, review a summary of the new baseline and click **Finish** to create the baseline.

Creating a Revised Baseline

1 Open the Baselines view for the project or stream containing the baseline from which you want to create a revised baseline.

2 Right-click the baseline and select New Revised Baseline.

3 The product and project are pre-populated based on your initial baseline selection.

4 The ID string for the revised baseline is auto-generated.

5 Select the baseline type from the **Type** list.

6 Click **Next**.

7 In the **Update using** field, list the requests related to item revisions you want to add to the baseline. The item revisions must have an *In Response To* relationship to the requests. You can enter one or more IDs separated by a comma, or click **Browse**.

8 In the **Remove using** field, list the requests related to item revisions that you want to remove from the baseline. The item revisions must have an *Affected* relationship to the requests. You can enter one or more IDs separated by a comma, or click Browse. **NOTE** You must have at least one request in the **Update using** or **Remove using** field.

9 Select the **Traverse request relationships** check box to search for item revisions included in requests related to the listed requests.

10 In the **Scope baseline using** field, enter the ID of the project or stream from which you want to include item revisions. Click **Browse** to find a project or stream.

11 Click **Next**.

12 On the Baseline Attributes screen, enter values for user defined attributes, and click **Next**. You must enter values for required attributes in order to create the baseline.

13 Click **Next**.

14 On the Ready to Revise Baseline screen, review the options for the revised baseline and click **Finish** to create the revised baseline.

Creating Projects and Streams from Baselines

Within Visual Studio, you can create new projects and streams based on the content in an existing Dimensions CM baseline. This allows you to pre-populate a new project or stream with the correct files and folders, for example if you need to create a new branch project based on previous project.

1 Open the Baselines view.

2 Right-click the baseline from which you want to create a new project or stream, and select New Project or New Stream.

3 Choose which product the new project or stream will belong to, and enter a name for the new project or stream.

4 Optionally enter a description and, for a stream, a unique branch name.

5 Choose whether to add this project or stream to your favorites list in Dimensions Explorer.

6 Click **Next**.

7 On the Based-on screen you can confirm that the correct baseline is selected, or select a different baseline.

If you are creating a stream, you can also choose whether a valid request must be specified when changes are delivered to this stream. If this is enabled, then all users of this stream must provide the ID of the request they are working on when delivering changes to files in their workspaces.

8 Click **Next**.

9 If you are creating a project, you must set the appropriate Version Management and Change Management Rules options, including:

Option	Description
When new revisions are created	Choose whether or not to create new branches when new revisions are created, and whether to allow users to override the default revision number for new revisions.
Change Management Rules	Choose whether to enable CM rules in the project. You can choose to default to CM rules settings for the item types, to always enable CM rules, or always disable them. You can also require users to relate a request for any refactoring.

10 Click Finish to create the new project or stream.

Creating Shortcuts to Favorite Baselines

You can quickly access your most commonly used baselines by adding them to your Favorites list.

1 Display the Baselines view.

2 Right click a baseline and select Add to Favorites.

Displaying Reviews

Micro Focus Pulse is a web-based tool that enables development teams to examine the health and quality of their changes. Reviews are part of Pulse that enable you to:

- Comment on, and review, the code changes in your development projects.
- Collaborate with team members.
- Get insight into the health of changes in your changesets and streams, such as the results of chain runs.
- Promote team work and development best practices.
- Vote to approve or reject reviews, which may cause reviews to be marked as approved or sent for rework.

Reviews are integrated into your client or IDE and enable you to:

- Display reviews in a separate view. You can manage a review, such as adding comments and changing its state. Links inside a review open in Pulse (in an external browser).
- Open the review related to a specific request or changeset.

See also: Pulse help

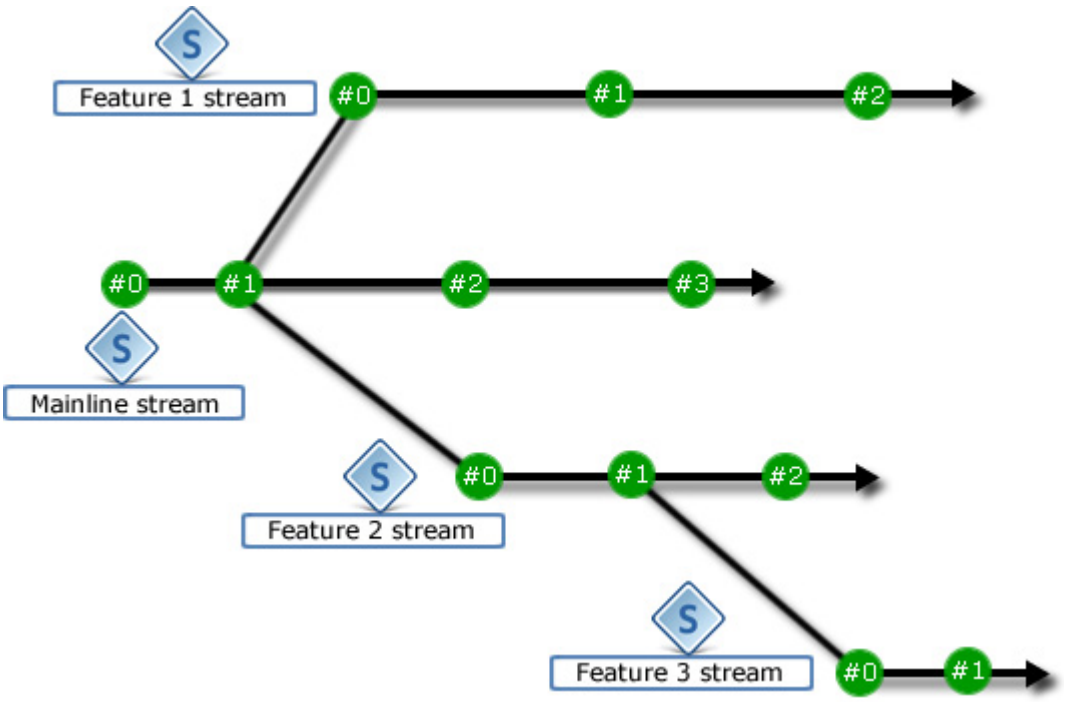
- To display the review associated with a changeset: in the Changesets view, right click a changeset, and select Open Review.
- To display the review associated with a request: in the Requests view, right click a request, and select Open Review.
- To display all reviews, open the Review view. To display a review, right click and select one of the following:
  - Open to display the review in a separate view.
  - Open in Pulse to display the review in Pulse (in an external browser).

Working with Changesets

About Changesets

A changeset is a logical grouping of changes that is created automatically every time that you deliver changes to a stream or project in a repository. Each changeset creates a new version of a stream or project. Changesets give insight into the development activity in your streams and enable you to easily identify changes. They also reduce the complexity of parallel development by making it easy to manage sets of changes. Pulse provides you with an intuitive visualization of changes throughout your development process.

The diagram below shows multiple streams where each circle represents a new stream version when a delivery has been made. Changeset version #0 (zero) is empty and represents the initial state of a stream or project.



The Changesets dialog box enables you to view all of the changes that have been made to a stream or project since it was created and includes the following information:

- The stream version created by the new changeset, for example: `[123]`
- The date and time the stream version was created, for example: `11/22/2013 15:20:13`
- The name of the user who made the delivery, the type of delivery, and any comment entered by the user at the time of delivery, for example: `DELIVER by ANON:"Modified"`

Each item in a changeset includes the following information:

- The type of change, for example, *Modification*.
- The folder path.
- The item revision.
- Any related change requests.

Inspecting Changeset Health

Changeset health is displayed visually using a combination of the expert opinions of the changes and the review state. You can use experts in Pulse to:

- Perform builds
- Capture built artifacts
- Deploy assets
- Examine source code and artifacts, report findings, and provide an opinion
- Perform static analysis

You can configure experts and tools to run in a sequence of steps called a chain. You can also configure changesets to automatically create reviews and run chains of experts. For details about using Pulse experts see the online help.

Examples of changeset health:

The changeset is currently healthy and the review was successful.

The changeset is not healthy or the review failed.

The changeset is unstable.

No experts were run on the changeset and no review is available.

The changeset was aborted.

1. Open the Changeset view. The health icon is displayed on the left.
2. To open the review associated with a changeset, right-click and select Open Review. The review opens in a new view.
3. To view a changeset's details, right-click and select Open Details. The changeset opens in a new view.

NOTE To use Pulse functionality it should be enabled in your database.

Displaying the Changes to a Stream or Project

You can display the history of changes that have been applied to items and folders in a stream or project in a repository. You can also apply filters to limit the changes that are displayed.

1 Do one of the following:

- In Dimensions Explorer, expand a node that has an open connection and click **Changesets**.
- In the Dimensions Projects view, right-click a project or stream, and select **Changesets**.
- In Solution Explorer right-click a Visual Studio project and select **Folder Changesets**. To limit the list of changesets that is displayed, right-click a subfolder.

The list of changesets is displayed in a new view. If you change connections in Dimensions Explorer to a different repository, the content of the view automatically changes.

2 To filter the view:

- From the **Filter** list select an attribute type.
- Enter a value in the box.

For example, select *Request(s)* as a filtering attribute and in the Filter box enter a request type, such as ENH.

3 To filter the view by a date range do one or both of the following:

- To display entries from a specified date, select the **From** check box and select the date.
- To display entries up to a specified date, select the **To** check box and select the date.

Updating a Work Area from a Stream or Project Version

You can update a local work area from a specific version of a stream. This option is only available when the controlled solution is opened.

1 Open the Changesets view.

2 Right-click the top level of the changeset from which you want to update a work area and select **Update from Stream Version** or **Update from Project Version**. The Update Stream dialog box opens and the stream ID and version are displayed in the **Update changes from this stream** box. For details see page 36.

Creating a New Stream or Project from a Stream Version

You can base a new stream or project on a specific version of a stream or project.

1 Open the Changesets view.

2 Right-click the changeset on which you want to base the new project or stream and select **New Stream** or **New Projec**t.

3 Complete the Create Stream wizard (see page 33) or Create Project wizard (see page 24). The stream/project ID and version number are displayed in the Based on Stream/Based on Project field.

Opening Related Changeset Requests

You can open the change requests that are related to a changeset.

1 Open the Changesets view.

2 Right-click the top level of a changeset and select **Open Related Requests**.

Each request opens in a new tab.

Comparing Changeset Items

You can compare a changeset item with:

- Another revision of the same item.
- A work file on disk. This option is only available when the corresponding file exists on disk and is part of the currently open solution.
- Another item revision in the repository.

1 Open the Changesets view.

2 Right-click a new, imported, or modified item and do one of the following:

- To compare with the previous revision (if one exists), select **Compare with <item revision>**.
- Select **Compare with**. The Compare Items dialog box appears. Do one of the following:
  - To compare the revision with a different revision of the same item, select it from the **Another Revision** list.
  - To compare the revision with a file in your work area, select **A workfile**, click the Browse button, and navigate to the file.
  - To compare the revision with a revision of a different item in the repository, select **Another item**, click the Browse button, and use the Select Item dialog box to search for it.

3 Click **OK**. The items are opened in the default merge tool.

Displaying the History of a Changeset Item

You can display the revision history of a changeset item.

1 Open the Changesets view.

2 Right-click an item revision and select **History**. The item revision history is opened in a new tab. You can right-click a revision and perform additional operations.

Displaying the Pedigree of a Changeset Item

You can display the pedigree of a changeset item.

1 Open the Changesets view.

2 Right-click an item and select **Pedigree**. The item pedigree is displayed in a new tab.

Browsing a Changeset Item Revision

You can browse the content of a changeset item revision.

1 Open the Changesets view.

2 Right-click an item revision and select **View Revision**. The revision is opened in a new tab.

Opening the Changesets Graph

You can visualize your streams of development and changesets in the Changesets Graph in Pulse.

1 Open the Changesets view.

2 Right-click a changeset and select **Open in Pulse**. Pulse opens in a new view.

3 Login if prompted.

4 Click **Repository** and select a repository from the list.

5 Click **Changeset Graph**. For more information see the help.

Customizing and Moving Changeset Columns

You can customize the columns that are displayed in the Changeset view and change their position. Customizations are saved to the registry and shared with the desktop client.

To customize changeset columns:

1 In the Changesets view right-click any column heading. The **Customization** dialog box opens.

2 Drag and drop columns between the dialog box and the columns heading row.

To move changeset columns:

Drag and drop columns to change their position on the row. You cannot move the *Type* column.

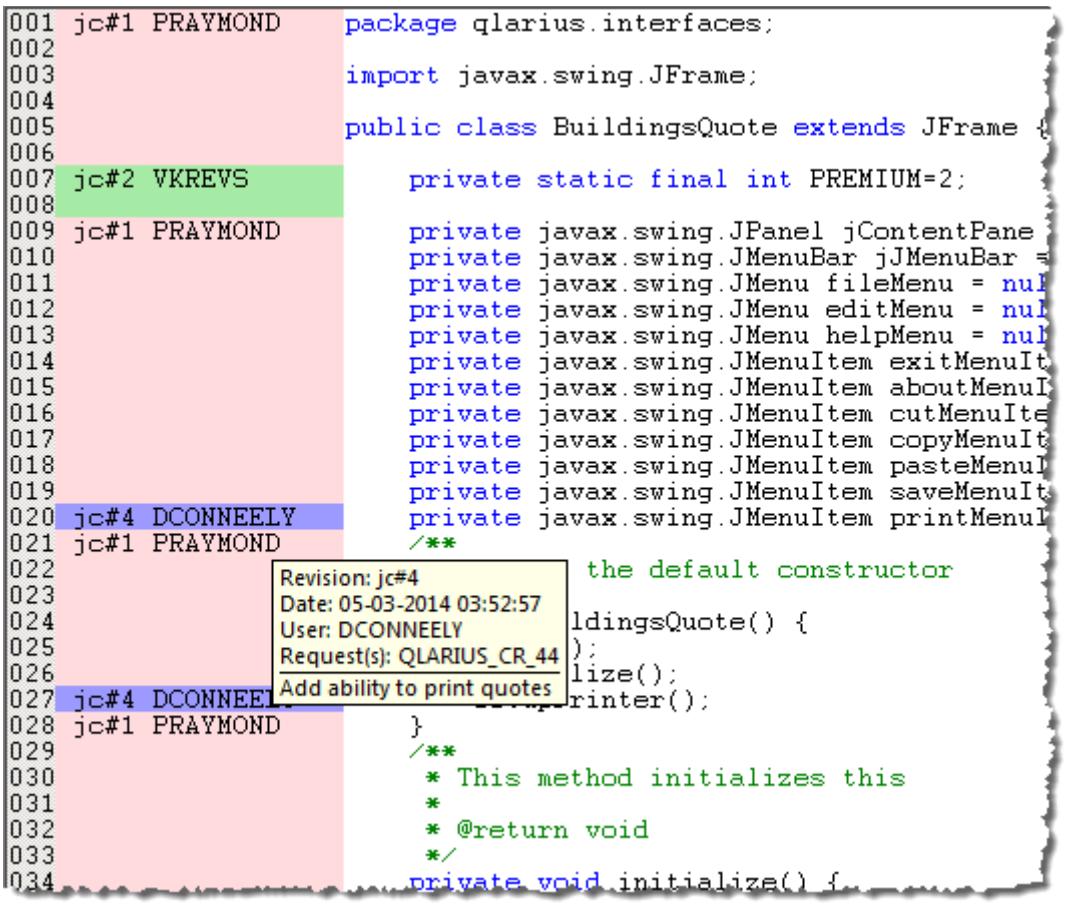
Viewing File Annotations

About Annotations

The Annotations view annotates the lines of code in your source files. Annotations make it easier to find when a change was introduced. You can also see who made a change and why. Each annotation displays the item revision and the name of the user who delivered the change. Hover over an annotation to view additional information about an item revision such as:

- The date and time of the delivery.
- Its related change requests.
- Any comments added by the user.

You can also use the ANNOTATE command in the DMCLI command-line client to list file annotations.



Opening the Annotations View

The Annotations view enables you to see who has modified blocks of code and why. Each user's deliveries are highlighted with the same color.

1 In Solution Explorer right-click a file and select **View Annotations**. The Annotations view is displayed in a new tab.

2 In the left pane place the cursor over an item revision. A tooltip displays the following information:

- The item revision.
- The user who made the modification.
- The date the modification was made.
- Any related change request.
- Comments added by the user when the item revision was delivered.

To keep the tooltip in focus press F2.

Browsing an Item Revision

You can browse the contents of a specific item revision.

1 Open the Annotations view for an item.

2 In the left pane select an item revision and on the toolbar select **View Revision**. The item revision opens in a new tab.

Opening a Request Related to an Item Revision

You can open a change request that is related to an item revision.

1 Open the Annotations view for an item.

2 In the left pane select an item revision. On the toolbar click **Open Related Requests** and select the request. The change request opens in a new view.

Comparing an Item Revision with its Ancestor

You can view and compare the differences between an item revision and its ancestor.

1 Open the Annotations view for an item.

2 In the left pane select an item revision and on the toolbar click **Compare**. The item revisions are opened in the default merge tool.

Creating Shortcuts to Favorite Projects and Streams

In Dimensions Explorer you can maintain a list of your favorite Dimensions projects and streams. This provides fast access to projects and streams that you use regularly.

1. Select View | Dimensions Explorer.
2. Double-click the **Favorite Dimensions Projects** link to open a list of all Dimensions projects and streams in the product that you are currently connected to.
3. To add a project or stream to the favorites list, right-click it and select Add to favorites, or drag projects or streams onto the **Favorites Dimensions Projects** node.

   If you expand the **Favorite Dimensions Projects** link the project or stream is displayed. Return to this list every time you want to open one of your most-used projects or streams. You can open the project from source control, from here. You can also use this to add Visual Studio projects and files to source control by right clicking the favorite and choosing to add.

Default File Merge Tool

The default file merge tool in the Visual Studio integration is Araxis Merge, an advanced two and three-way file comparison (diff), merging, and folder synchronization tool.

You can obtain help in Araxis Merge at any time by using the commands in the Help menu, or by pressing the F1 key. Some windows also contain a Help button.

You can change the default file merge tool to the Merge Tool or any other third party application. For details see *Configuring the Default Merge Tools* in the *System Administration Guide*.

Chapter 4

Creating and Managing Requests

Request Management Overview

About Request Management

You can use requests to plan, track, authorize, and control all work on development projects. A request may capture a defect, enhancement, or other work that needs to be completed on items that belong to your projects.

The fundamental concept of managing work with requests is the association of requests to files that you are working on. Follow this process to manage your work with requests:

1 If your organization requires request associations for all work and requires explicit file check-out before you can update files, you cannot start any work that is not related to a request. If your organization works optimistically and does not require explicit file check-out, you can start work on a file without checking it out and associating it with a request. In either case, you may be unable to deliver your changes to the Dimensions repository without associating your files with requests.

2 Before starting work, identify the requests that you will work on and add them to your working list. You can use requests that other users have already created, or you can create new requests.

3 Associate the appropriate issues from your working list to files when checking them out, or when checking them in.

4 The requests store a record of all affected files. This provides detailed tracking history. Furthermore, the requests can be used for other purposes such as creating baselines of revisions that were created in response to them.

You can work with Dimensions requests.

About Dimensions CM Requests

The Dimensions CM for Visual Studio Plug-in simplifies the process of administering requests. You can perform the most frequent tasks from within Visual Studio, such as actioning a request through its lifecycle or delegating the request to a developer. Normal Dimensions CM rules only allow valid lifecycle transitions that are valid. After the next state has been selected, you can choose to delegate the request to a particular role. Requests that you action are placed in the inbox of the relevant users.

Where a role has multiple potential users, you can identify the specific users that will receive the request. This allows team leaders to monitor and reassign work as necessary to maintain and improve team productivity.

Working with Requests

Displaying Requests

The Requests view displays all the requests in a stream or project in the current CM product.

1. In Dimensions Explorer click Requests.
2. Switch between:
   - The requests in your inbox.
   - All the requests in all stream and projects in the current CM product.
   - Your working list.
3. To add a new request, click New Request.
4. To browse a request, double click it.
5. To open the review associated with a request, right click, and select Open Review.
6. To search for a request, start typing in the Find Requests field. For example, start typing the part of the name of a request or its title. The list of reviews updates as you type. This field is not case insensitive.
7. Right click a request to view other operations you can perform on it.
8. To customize the toolbars, commands, and menus, right click the top toolbar and select Customize.
9. To customize the columns:
   - To add a new column, right click in any column heading and select Column Chooser. Double click a column type to add it.
   - To remove a column, right click its heading and select Hide this Column.
   - To customize a column, click the Custom button at the top right of the column heading and select a value or category.
10. To apply custom filters to the review list, right click in any column heading and select Filter Editor. In the Filter Editor do the following:
    a. To add a group, click any group title and select Add Group. You can add subgroups.
    b. To change a group's filter type, select the group and select a filter.
    c. To add a condition to a group, click '+' (plus). For each condition specify:
       - An attribute, for example, *Action Date*.
       - An operator, for example, *Equals*.
       - A custom value.
    d. To delete a condition, click '-' (minus).

Choosing Requests to Work On

To work on a request, you associate file revisions to it. This adds information about affected files to the requests, and maintains a record of all changes made in response to the request.

Before you can work on a request, you must add it to your working list. This makes the request available to you when you are checking files out / in, or delivering local changes to the repository.

1 Right-click the request and select Add to working list.

2 Now, when you add, check out, or check in files, you can relate this request to the files.

Opening and Editing a Request

1 Open Dimensions Explorer.

2 Click **Requests** node.

3 Double-click a request in the list, or right-click a request and select **Browse.**

TIP If you know the ID of the request that you want to open, you can go directly to it from Dimensions Explorer.

- Right-click a list node and select **Browse request**.
- Enter the ID of the request that you want to open and select the product that contains the request.
- Click **OK**.

4 The following information is displayed:

- **General** tab**:**
  - **ID:** The unique identifier of the request.
  - **Title:** The title of the request. Edit the title as needed.
  - **State:** The present state of the request.
  - **Phase:** The present phase of the request.
  - **Originated by:** The user name of the person who created the request.
  - **Description:** Text describing the request. Edit the description as needed.
- **Attributes** tab**:** Lists the attributes and values for the request. Update the attributes as needed.
- **Comments** tab**:** Lists the comments associated with the request. To add a new comment, enter the comment in the **New comment** field and click **Save**.
- **History** tab**:** Lists the actions that have been applied to the request.
- **Attachments** tab**:** Lists the files that are attached to the request, including filename, description, and size. You can modify attachments from here.

- **Delegates** tab**:** Lists the users who are assigned to the request and those who could be assigned to the request in various roles and capabilities. You can modify delegations from here.
- **Users and Roles** tab**:** Lists the users who have the request in their inbox, and lists the users with roles assigned to them for the request, including the role, capability, and role type.
- **Privileges** tab**:** Lists the privileges of each user relative to the request, including any rules that have been applied.
- **Related**: lists the items related to the request. You can manage item relationships from here.
- **Template View** tab**:** Displays all the information in the request as formatted by the template.

Managing Lists of Requests

In the Requests view, you can group requests into various lists in order to more easily manage them. The following groups are available in the Requests view:

- **Request Lists:** In this area, you can create named lists in order to organize requests into useful groups.
- **Colleagues:** This area is for delegating requests to users for whom you do not have permissions to view their Inbox Requests list.

1 In the Requests view, double-click a desired list under **Request Lists**, or right-click the list and select **Open**.

2 To filter the list by the contents of a column, click the drop-down menu in the column heading and choose any of the following options from the resulting menu:

- **(Custom):** Invokes the Custom AutoFilter dialog box, which allows you to specify specific values and logic for a custom filter.

  Select one of the following filter criteria and enter a value to filter on:

  - **equals:** Displays only those issues that exactly match the string you specify.
  - **does not equal:** Displays only those issues that do not exactly match the string you specify.
  - **is greater than:** Displays only those issues with a string that is greater than the one you specify. This logic applies to both numeric data, like dates, and to alphabetic text, where "greater than" would mean closer to "Z" than the specified characters.
  - **is greater than or equal to:** Displays only those issues with a string that is greater than or equal to the one you specify. This logic applies to both numeric data, like dates, and to alphabetic text, where "greater than" would mean closer to "Z" than the specified characters.
  - **is less than:** Displays only those issues with a string that is less than the one you specify. This logic applies to both numeric data, like dates, and to alphabetic text, where "less than" would mean closer to "A" than the specified characters.
  - **is less than or equal to:** Displays only those issues with a string that is less than or equal to the one you specify. This logic applies to both numeric data, like dates, and to alphabetic text, where "less than" would mean closer to "A" than the specified characters.
  - **blanks:** Displays only those issues that contain a blank (*null*) cell in the selected column.
  - **non blanks:** Displays only those issues that contain a populated (*non null*) cell in the selected column.
  - **like:** Displays only those issues that match a wildcard pattern where the percent sign (%) represents one or more characters, and an underscore (_) represents exactly one character. For example: `May % 19__`
  - **not like:** Displays only those issues that do *not* match a wildcard pattern where the percent sign (%) represents one or more characters, and an underscore (_) represents exactly one character. For example: `May % 19__`

  Optionally, you can specify a second filter criteria and value for the column using **And**/**Or** logic.

- **(Blanks):** Displays only those issues that contain a blank (null) cell in the selected column.
- **(Non blanks):** Displays only those issues that contain a populated (non null) cell in the selected column.
- Also, each unique value in the column is displayed once in the menu.

You can filter on multiple columns, in which case the second filter that you apply will act on the results from the first filter, and the third will act on the results of the second, and so on.

The current filter is displayed in an information bar at the bottom of the list. The check box toggles the filter on and off. The drop-down menu displays a list of recent filters. The **X** button clears the filter.

3 To sort by column, click in the desired column heading. Click again to toggle the sorting from ascending to descending. SHIFT-click to sort by multiple columns.

4 To organize the list, right-click on a column heading and choose any of the following options from the resulting menu:

- **Sort Ascending:** Sorts the requests from A to Z. To sort on multiple columns, press the SHIFT key while selecting from the menu.
- **Sort Descending:** Sorts the requests from Z to A. To sort on multiple columns, press the SHIFT key while selecting from the menu.
- **Group By This Column:** Organizes the requests into groups based on repeating values in the selected column. For example, if you select the Status column, the requests would be organized into groups such as NEW, ASSIGNED, and IMPLEMENTED.

NOTE You can nest groupings. Subsequent **Group By This Column** actions will nest the selected column grouping beneath the prior groupings. For example, if you grouped by Status and then by Phase, the requests would be grouped by Status (NEW, ASSIGNED, etc.) then sub grouped by Phase inside of each Status group.

- **Group By Box:** Toggles the display of the grouped-by column headings on or off. With the display on, you can right-click on the group-by column heads in order to access the following group-specific options:
  - **Full Expand:** Expands all group and subgroup nodes to expose all requests.
  - **Full Collapse:** Collapses all groups and subgroups so that all requests are hidden and only the nodes of the top-level groupings are visible.
  - **UnGroup:** Removes the selected grouping and returns the column heading to the table of columns.
- **Column Chooser:** Opens the Customization dialog box from which you can customize which columns are included in the table.
- **Best Fit:** Adjusts the width of the selected column to the widest item it contains.
- **Clear Filter:** Removes any filter in effect for the selected column.
- **Best Fit (all columns):** Adjusts the width of all columns to show as much content of each as is possible.

5 To close the list, click the **X** in the upper-right corner of the tab.

Creating an Empty Request List

1 Right-click the **Request Lists** node in the Requests view, and select **New**. The New Request List dialog box appears.

2 Enter a name for the new request list in the field.

3 Click **OK**. The new request list appears under the **Request Lists** node in the Requests view.

Creating and Populating a Request List

1. Open an existing list and select the requests you would like to include in a new request list.
2. Right-click the selected requests, and select Request Lists | New List. The New Request List dialog box appears.
3. Enter a name for the new request list.
4. Click **OK**. The new request list appears under the **Request Lists** node.

Adding a Request to a Request List

1. Open an existing list and select the requests that you want to add to another list.
2. Right-click the requests, and select Request Lists | Add to List. The Select Request List dialog box appears.
3. Select a request list from the drop-down list.
4. Click **Yes**.

Removing a Request from a Request List

1. Open a request list and select the requests that you want to remove.
2. Right-click the selected requests, and select Request Lists | Remove from List. A confirmation dialog box appears.
3. Click **Yes**.

Deleting a Request List

1. Right-click the list and select **Delete**. A confirmation appears.
2. Click **Yes**.

Creating a New Request

You can create a new request or base (prime) a new request on an existing request. If you prime from an existing request, the fields in the New Request Wizard are populated with information from that request. When you create a request, it is added to the repository and assigned to the initial lifecycle state. You can leave a request in your draft list if you don't have all the information when you create it.

1. Do one of the following:
   - In Dimensions Explorer, under the project or stream where you want to add a request, right-click **Requests** and select **New Request**.
   - To prime a new request from an existing request, right-click a request in any open list tab and select **New**.

   The first page of the Create New Request wizard appears.

2. From the **Raise request against** list select the product where the new request will be created.
3. From **of type** list select a request type.
4. Enter a title for the request.
5. To provide a description of the request do one of the following:
   - Select **From file** and enter the name of the file that contains a description of the request, or click **Browse** to search for the file.
   - Select **Text** and enter a description of the request.
6. Click **Next**. The Base Request On page appears.
7. To base the new request on an existing request, select **Base request on** and enter the request ID, or click **Browse** to search for a request.
8. To set a relationship between the new request and the request on which it is based, select a relationship type from the **Relate as** list.
9. Click **Next**. The Request Attributes page appears.
10. Enter or select attribute values as needed. Attributes in *italics* cannot be changed. Attributes in **bold** are required.
11. Click **Next**. The Related Objects page of the wizard appears.
12. To select the project or stream that the request affects, in the **Related stream/ project** box do one of the following:
    - Start typing the ID. Streams and projects that contain any characters in the string are displayed. For example, to find 'QLARIUS:VS_BRANCHA' type 'vs'.
    - Select a stream or project from the list. Favorites and recently used streams and projects are displayed at the top.
13. Enter the design part specification(s) that the request affects in the **Related design parts** field or click **Browse** to search. If you leave this field blank the root part for the product will be used.
14. Enter the baseline(s) that the request affects in the **Related baselines** field or click **Browse** and enter information such as the product, type, title, ID, originator, and status. You can then choose baselines that match your criteria.
15. Enter the item specification(s) that the request affects in the **Related items** field or click **Browse** and enter information such as the product, project, type, ID, originator, and status. You can then choose items that match your criteria.

    To define the relationship between the request and the item(s), select a relationship type from the **Relate as** list.
16. Enter other request(s) that the new request affects in the **Related requests** field or click **Browse** and enter information such as the product, type, title, ID, originator, and status. You can then choose requests that match your criteria.

    To define the relationship between the new request and the affected request(s), select a relationship type from the **Relate as** list.
17. Click **Next**. The Request Attachments page of the wizard appears.

18 To optionally add an attachment do the following:

   a Click **Add**. The New Attachment dialog box appears.

   b Enter the full path and name of the file in the **Filename** field or click **Browse** to search for one.

   c By default the attached file retains its original name. To assign a new name enter it in the **Attach as** field. This information is displayed in the **ID** column.

   d Enter a description of the file in the **Description** field. This information is displayed in the **Description** column.

   e Click **OK**. The information is displayed in the Attachments list.

   TIP: You can also drag and drop files from Windows Explorer onto the attachments list.

19 Click **Next**. The Summary page of the wizard appears.

20 Review the list of operations that will be performed. To change any of the settings click **Back**.

21 Click **Finish**.

Managing Request Attachments

You can manage attachments for requests.

1 Right-click a request and select **Attachments**. The request opens with the Attachments tab active.

2 Click the **Add** button. The New Attachment dialog box appears.

TIP You can also drag and drop files from Windows Explorer onto the attachments list. This method skips the New Attachment dialog box and adds default description text: "Attachment created *Date* by *User_ID*"

3 Enter the full path and name of the file in the **Filename** field, or click the browse button to navigate to it.

4 By default, the attached file retains its original name. To assign a new name to the attached file, enter it in the **Attach as** field. This information will be displayed in the **ID** column.

5 Enter a description of the file in the **Description** field. This information will be displayed in the **Description** column. If you do not add a description, Dimensions adds the following default text: "Attachment created *Date* by *User_ID*"

6 Click **OK**. The information is displayed in the **Attachments** tab.

   A yellow sunburst appears on the paperclip icon of each new attachment. The location and name of the original file is displayed when you mouseover the sunburst icon.

7 Repeat the above steps to add additional files.

8 Save your changes. The yellow sunburst disappears from the paperclip icon.

9 You can save a copy of an attached file to a local or network drive.

Saving Attachments

1 Right-click a request and select Attachments. The request opens with the **Attachments** tab active.

2 Select the attachments (CTRL-click to select multiple attachments).

3 Click the **Save to disk** button. The **Save attachment to** dialog box appears.

4 Navigate to the location where you want to save the attachments, and click **Save**.

To browse attachments:

1 Right-click a request and select Attachments. The request opens with the **Attachments** tab active.

2 Select the attachments (CTRL-click to select multiple attachments).

Click the **Browse** button. The attachments open in the applications associated with their file type in Windows

Editing the Description of an Attachment

1 Right-click a request and select Attachments. The request opens with the **Attachments** tab active.

2 Double click the attachment description. The Edit Attachment Description dialog box appears.

3 Enter a new description in the **Description** field.

4 Click **OK**.

Removing Attachments from a Request

1 Right-click a request and select Attachments. The request opens for browsing with the **Attachments** tab active.

2 Select the attachments (CTRL-click to select multiple attachments).

3 Click the **Remove** button. A confirmation dialog box appears.

4 Click **Yes** and save changes.

Delegating Requests to Users

If you have the proper permissions, you can delegate a request to another user. You can delegate multiple requests at the same time if they are of the same type and belong to the same product catalog. When you delegate a request, you change its role assignments.

Adding a Colleague

1. Right-click the **Colleagues** node in Dimensions Explorer and select Add colleague. The Add Colleague dialog box appears.
2. Select a user from the **Select the colleague to add** list.
3. Enter a display name for the colleague. The user ID will be appended to the display name: *DisplayName* [*User ID*]
4. Click **OK**.

Delegating Requests

1. Select the requests that you want to delegate (CTRL-click to select multiple requests).

   NOTE: You can delegate multiple requests at the same time if they are of the same type and belong to the same product catalog.
2. Right-click the request(s), and select Delegate. If you selected a single request, the request opens for browsing with the Delegate tab active, otherwise the Delegate Requests dialog box appears.
3. Select the role to assign to the user from the **Role to delegate** drop-down list.
4. Select the capability to assign to the user for the selected requests:
   - **Leader:** Sole responsibility for the request.
   - **Primary:** Primary responsibility for the request.
   - **Secondary:** Acts as a backup to the primary role.
5. To also delegate any related items, select the **Delegate related items** check box.
6. To assign user roles, do any of the following:
   - Re-assign a role to a different user, by selecting a user in the **Assigned users** list and a user in the **Available users** list, and clicking the **Replace** button.
   - Assign a role without affecting the existing role assignments, by selecting a user in the **Available users** list and clicking the **Assign** button.
   - Remove a role assignment from a user, by selecting a user in the **Assigned users** list, and clicking the **Remove** button.
7. Click the **OK** button or the **Save changes** button.

Delegating Requests (Drag and Drop)

1 Select the requests that you want to delegate (CTRL-click to select multiple requests).

NOTE: You can delegate multiple requests at the same time if they are of the same type and belong to the same product catalog.

2 Drag the selected requests to Dimensions Explorer and drop them on the user that you want to delegate them to. The Delegate to User dialog box appears.

3 Select the capability to assign to the user for this request:

- **Leader:** Sole responsibility for the request.
- **Primary:** Primary responsibility for the request.
- **Secondary:** Acts as a backup to the primary role.

4 Select the roles to assign the user.

5 To also delegate any related items, select the **Delegate related items** check box.

6 Click **OK**.

Actioning Requests

Action a request when you want to move it to another lifecycle state. Only users with the appropriate role for a given state can action to another state.

You can action multiple requests at the same time, however they must all be the same request type, for example, CR.

1 Right-click the request or requests that you want to action, and select **Action** from the resulting menu. The Action a Request wizard appears.

2 Do one of the following:

- To action to the next normal lifecycle state, select **Next lifecycle state**. If the next normal lifecycle state has more the one transition, select one from the drop-down list.
- To action to any valid state, select **To specific state**, and select a state from the drop-down list.

3 Click **Next**. The **Modify request attributes** page of the wizard appears.

4 Do the following:

a Select an appropriate role.

b Type or select attribute values as needed. Attributes in **bold** are required; attributes in *italics* cannot be modified.

5 Click **Next**. The **Delegate to other users** page of the wizard appears.

6 Do the following:

   a Select the role that you want to delegate from the **Role to delegate** drop-down list.

   b Select the capability to assign to the user for this request:

   - **Leader:** Sole responsibility for the request.
   - **Primary:** Primary responsibility for the request.
   - **Secondary:** Acts as a backup to the primary role.

   c To also delegate any related items, select the **Delegate related items** check box.

   d To assign user roles, do any of the following:

   - Re-assign a role to a different user, by selecting a user in the **Assigned users** list and a user in the **Available users** list, and clicking the **Replace** button.
   - Assign a role without affecting the existing role assignments, by selecting a user in the **Available users** list and clicking the **Assign** button.
   - Remove a role assignment from a user, by selecting a user in the **Assigned users** list, and clicking the **Remove** button.

   e Click **Next**. The **Add a comment** page of the wizard appears.

7 Enter a comment.

8 Click **Next**. The **Summary** page of the wizard appears.

9 Verify the action you are about to perform on the request.

10 Click **Finish**.

Relating Requests to Items

Add a relationship to an item, or items, when you want to show a connection between a request and the items.

Adding a Relationship to an Item

1 Right-click a request and select **Related**. The request opens for browsing with the Related tab active.

2 To add a relationship click **Add**. The Select Item(s) to Relate dialog box appears.

3 Click the **Browse** button. In the **Selection Wizard** find the items. The items that you selected are added to the Select Item(s) to Relate dialog box.

4 From the **Relationship Type** list select a relationship.

5 Click **OK**.

6 The items are added to the tree in the Related tab.

7 To commit the new relationships click Save.

Modifying or Deleting the Relationship Between a Request and an Item

1. Right-click the request containing the related item and select **Related**. The request opens for browsing with the **Related** tab active.
2. To modify the relationship type, click the Relationship column for that item and select a different type of relationship from the list.
3. To delete the relationship between a request and an item, select the item's row and click **Remove**.
4. To commit the changes click Save.

Managing Items that are Related to Requests

When items are related to a request, you can action the items, or compare an item with another revision, work-file or item.

Actioning Items

1. Right-click the request containing the related items and select **Related**. The request opens with the **Related** tab active.
2. Select the item or items that you want to action, right-click, and select **Action**. The Action Item wizard appears.
3. On the **Select lifecycle state** page do one of the following:
   - If you selected a single item choose one of the following options:
     - **Next lifecycle state**: Select this option to action the item to a normal next state. Only valid next states are shown.
     - **To specific state**: Select this option if you want to action the item to any other state. Select a state from the list. You will need the necessary privilege to action to one of these states.
   - If you selected multiple items, from the **To specific state** list select a state. You will need the necessary privilege to action to one of these states.
4. Click **Next**.
5. (Single items only) On the **Modify item attributes** page, set or change the attributes for an item. The attributes that you see depend on the following:
   - The type of item.
   - The item's lifecycle state.

   The **Attributes** column displays the attributes that are available for the selected role. You cannot change attributes displayed in italics. Attributes displayed in bold require a value.

Do the following:

a From the **Role** list optionally select a role to filter the attributes and only show ones that are relevant to a specific role.

b In the **Values** column type a value for each attribute, or select one from the list (if applicable).

6 Click **Next**.

7 On the **Delegate to other users** page, delegate the selected items to other users, assign other users a role on the items, or remove previously delegated users.

Do the following:

a From the **Role to delegate** list choose a role.

b Choose one of the following **Capability** options:

- **Primary**
- **Secondary**
- **Leader**

c To assign a user select one in the **Available users** list and click **Assign**. The user is added to the Assigned users list.

d To add a user to the **Assigned Users** list and remove all the current users, select one in the **Available users** list and click **Replace**.

8 Click **Next**.

9 On the **Add a comment** page optionally add a comment before you action the items.

10 Click **Next**.

11 The **Summary** page displays a summary of the actions to be performed on the selected items.

12 Click **Finish**.

Comparing Items

1 Right-click the request containing the related item and select **Related**. The request opens with the **Related** tab active.

2 Right-click the item that you want to action and select **Compare**. The Compare Items dialog appears.

3 Select one of the following options:

- **Another revision**: select a different revision of the item that is related to the request. If only one revision is related to the request, this option is unavailable.
- **A workfile**: select a file to compare with the item. Type the full path and filename, or click the Browse button to find a file.
- **Another item**: select a different item to compare with the item. Type the item specification, or click the **Browse** button and select an item from the **Select Object** list. The item specification has the following format:

  ```
  productID:itemID. partVariant-itemType; revision
  ```

4 To enable item header substitution, select the **Expand substitution variables** check box.

5 Click **OK**. The default merge tool opens where you can compare differences between the items.

Updating a Work Area from Requests

You can update your local work area with items that are related to specific change requests. This allows you to limit the update to the changes that are associated with the requests. The operation is similar to updating a work area from a stream.

1 Select the requests that you want to update from, right-click, and select **Update from Request**. The Update Work Area from Request wizard appears.

2 The **Update changes from this stream** box displays the name of the stream from which you invoked the update.

3 The **Update changes from the request(s)** box displays the selected change requests. To add change requests enter their IDs separated with a comma. To specify different change requests click **Select** and use the Request Selection wizard to specify a product and change requests.

NOTE The requests that you specify must contain changes delivered to the same stream.

4 The **Update this work area** box displays the work area path that will be updated. To change the work area enter its path or click **Select** and choose an area.

5 To interactively (manually) verify the results of any file merge operation before applying them to the work area, select **Perform an interactive update**.

6 To include item revisions related to child requests, select **Also include items related to child requests**.

7 Click **Advanced**.

8 To restrict the update to particular files or folders, enter wildcard filters in:

- The **Include repository file** box to only include specific file types.
- The **Exclude repository file** box to exclude specific file types.

For details about using these filters see page 38.

9 To apply the repository date and time to the updated files in the work area select **Apply repository date and time**.

10 Select **Expand substitution variables** if required.

11 To automatically merge local and repository files whose content does not conflict, select **Auto merge non-conflicting file content**. You can also select a default character set that is used to transcode Unicode files before merging.

12 Do one of the following:

- If you are performing an interactive update click **Next** and go to the next step.
- If you are not performing an interactive update click **Update**. The work area is updated and the results are displayed.

13 On the Review Changes page expand the folder tree to display the changes that have been identified.

14 On the toolbar select a resolution for each conflict.

- To ignore a change click **Ignore**.
- To use the version of the change in the work area click **Use Local**.
- To use the version of the change in the repository click **Use Repository**.

If a conflict includes path differences these resolutions are also available:

- Use local path
- Use repository path

Your selection is displayed in the Resolution column.

CAUTION! If you select Use local or Use Repository you may discard a change that you want to keep.

To merge the content of two file revisions that are in conflict click **Merge**. The default merge tool opens and displays the content of the revisions. After you have completed the merge successfully and exited the merge tool, the resolution is shown as Merge.

15 Click **Update**. The results of the update operation are displayed.

16 Click **Close**.