CA Harvest Software Change Manager

Plug-In for Eclipse User Guide

Release 12.5

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CA Technologies Product References

This document references the following CA Technologies products:

- CA Harvest Software Change Manager (CA Harvest SCM)

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Chapter 1: Getting Started

This section contains the following topics:

About the CA Harvest SCM Plug-In for Eclipse

CA Harvest Software Change Manager (CA Harvest SCM) Plug-In for Eclipse is a plug-in for the Eclipse Foundation's Eclipse Platform, an open platform for tool integration. The CA Harvest SCM Plug-In for Eclipse delivers CA Harvest SCM configuration management and change control to the Eclipse Integrated Development Environment (IDE).

This documentation introduces Eclipse and CA Harvest SCM, and explains how to set up and use the CA Harvest SCM Plug-In for Eclipse.

Note: A full description of the Eclipse community and white papers documenting the design and use of the Eclipse Platform are available at http://www.eclipse.org.

What You Need to Know

To use the CA Harvest SCM Plug-In for Eclipse, you need a working knowledge of CA Harvest SCM components and processes. An understanding of basic CA Harvest SCM concepts and of configuration management (managing changes with the help of processes and tested methods to avoid new errors and minimize the impact of changes) is recommended but not required.

Note: For information about CA Harvest SCM basics, see the *CA Harvest Software Change Manager Workbench User Guide*.

The administrative tasks that the plug-in requires include initializing the physical repository, defining the software development lifecycle, setting up user groups, and numerous other procedures. An administrator performs most administrative tasks during the installation and configuration of CA Harvest SCM.

Note: For information about administrative tasks, see the *CA Harvest Software Change Manager Administrator Guide*.

Eclipse Development Environment

The Eclipse environment contains one or more of the following elements:

Views

A view is a window containing at least one user interface (UI) element, such as a table or tree. You can add, remove, move, and resize views to fit your needs.

Editors

You edit your file resources using an editor. You can have multiple editors open at the same time; the active editor's tab color is the same as the window title bar. You can switch editors by right clicking a resource and clicking Open With from the shortcut menu; a list of available editors appears. A checkmark indicates the current editor that is in use. Select an editor in the list to open a resource with a specific editor.

Perspectives

A perspective is a collection of views such as the Navigator view and Explorer view, including editors and options related to the perspective. From the CA Harvest SCM perspective, you can navigate package lists, repository data views, and use your workspace. Buttons on the Eclipse toolbar let you change perspectives. The title bar shows the name of the active perspective.

The Eclipse environment gives you access to CA Harvest SCM functions and processes in the following ways:

- You can access CA Harvest SCM-specific functions from the CA Harvest SCM menu.
- You can right-click an object in the Lists view, Explorer view, Packages view, and Versions view to select available processes like the ones shown in the following table:

Object	**Processes**
Package	Check-out for update or concurrent update, check-in, concurrent merge, cross project merge, delete package, demote, promote, switch package, user-defined process (UDP)
Version	Check-out for update or concurrent update, check-in, delete versions, interactive merge, move item, move path, remove item, remove path, rename item, rename path, switch package, UDP
Item	Check-out for update or concurrent update, move item, remove item, rename item, UDP
Package root	Create package

Note: For more information about packages, versions, and items, see the *CA Harvest Software Change Manager Workbench User Guide*.

Workspace

The workspace represents your local working directories. The root resource located in the workspace is named a project. Projects are considered to be one unit of work in the Eclipse architecture.

To work on resources you must add the corresponding project to your workspace from the CA Harvest SCM repository. Adding a project to the workspace imports the project from the CA Harvest SCM server to your local workspace. When a project is initially created, a .project file is created that describes attributes of the project such as compilation type. When you share the project by checking it in for the first-time, the .project file is checked in. Adding the project to your workspace checks out the .project file, ensuring that the correct metadata is used.

When adding resources to your workspace, you are prompted to overwrite the existing workspace project in your local directory with the one from the repository, if you previously added one.

You can replace resources in your workspace with the latest CA Harvest SCM versions by using the Replace With process, available from the shortcut menu.

You can edit and delete file resources in your workspace. When you save changes to your workspace projects, these changes are saved on your local computer.

Views

A *view* is a window containing at least one user interface (UI) element, such as a table or tree. You can add, remove, move, and resize views to fit your needs.

The Plug-In for Eclipse contains the following views:

- Explorer view
- Diagram Overview
- Lists view
- Navigator view
- Packages view
- Synchronizer view
- Properties view
- Versions view
- Output Log view
- Peer Reviews view
- Pending Review Counts view
- Pending Review Lists view
- Compare view

Explorer View

You can use the Explorer view (replaces the Harvest Repositories View in prior versions) to navigate your CA Harvest SCM package lists and repository, and to select resources from the Data View.

The Explorer view initially appears in the upper left portion of the CA Harvest SCM perspective. Angled envelope-shaped icons identify packages, with forms and versions listed beneath the packages. Data views including items and versions are also shown in the Explorer view. You can use the Explorer View to explore CA Harvest SCM brokers and perform CA Harvest SCM activities. All CA Harvest SCM processes are executable from the Explorer View based on the configuration and access permissions set up by your CA Harvest SCM administrator.

All active CA Harvest SCM projects appear as child nodes of CA Harvest SCM brokers. CA Harvest SCM state nodes appear as child nodes of CA Harvest SCM projects. Each state node has its own package and view nodes as its children. The view node displays the entire view tree. The Add to Workspace action is available from the shortcut menu for any folder in the view tree that has contents.

Show Files in Explorer Tree

The Plug-in for Eclipse contains many preferences which allow you to customize how you work and visualize data. For example, the Show Files in Tree option under Explorer preferences lets you decide whether the Explorer View shows files.

Filter the Explorer View

You can customize which objects are visible to you in the Explorer View tree so that you view only the objects pertinent to your work.

Follow these steps:

1. Click Filter on the Explorer View toolbar.

   The Explorer View Filter dialog appears.

2. Select Enable filter.

   The filter selections in the tree are enabled or disabled.

3. Specify the objects you want visible in the Explorer View tree by selecting them and completing the following fields and controls. When you select an item, the ancestor items are marked with a gray checkmark. This checkmark indicates that the item is visible, although not all of its children are visible. A black checkmark indicates that the item and all of its children are visible.

   Select All *and* Deselect All

   Selects or clears all check boxes in the tree.

   Package Filter Pattern

   Specifies a name pattern that limits the set of packages displayed in the Explorer View Filter dialog tree. By entering a name pattern, only those packages that conform to the name pattern are displayed in the dialog tree. The display is not updated until you click OK.

   Filter Packages

   Applies the package name pattern to the displayed tree view in the dialog *only*; it does not affect the Explorer View filtering.

   Use Regular Expression

   Specifies the package name pattern using standard regular expression syntax. The packages permitted by the pattern are visible wherever they appear in the filter dialog tree. You can then designate which packages are visible in the Explorer View by selecting their check boxes.

   Click OK.

   The Explorer View is customized with your filter selections.

Show a Package-Centric Explorer View

You can set the Explorer View tree to display versions from a package perspective. When you do this, the tree automatically reorganizes to display the package’s branch versions in folders. Expanding these branch versions reveals other related versions. This feature is particularly useful if you want to view new items or folders created on a branch.

You show a package-centric Explorer View by selecting a package from the Package drop-down list at the top of the Explorer View. When you select a package, the working view root node updates to reflect the package's versions. If you select a package and create a path on a branch using the package, the new path version immediately appears in the Explorer View tree. If you do not select a package, the Explorer View works in the usual trunk-oriented way.

Follow these steps:

1. Select a node in the Explorer tree at the State level or lower.

   The Package field is enabled.

2. Select a package from the Package drop-down list, which lists all packages in your State context.

   The Explorer View tree is reorganized to show the package’s branch versions in folders. This includes new items or folders created on a branch.

3. (Optional) Expand any of these branch versions.

   Other related versions are displayed.

Example: Show a Package-Centric Explorer View

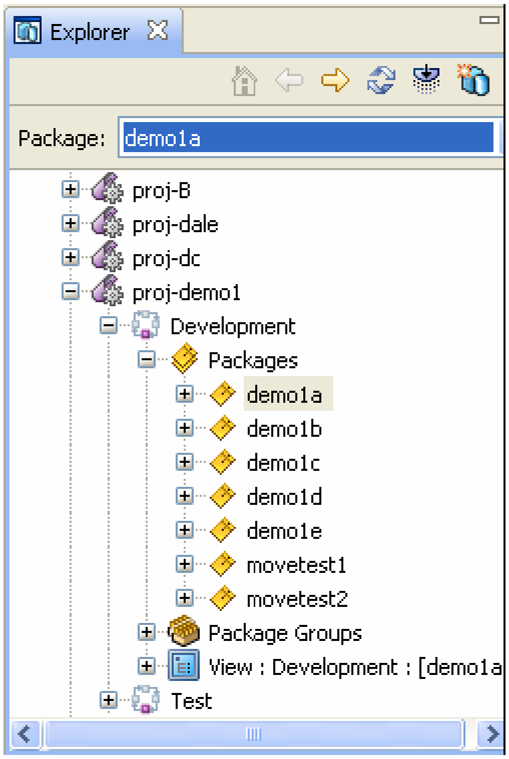
This example shows a package named demo1a in a package-centric view.

1. Set the State context to Development.

   The Package field is enabled.

2. Select demo1a from the Package drop-down list, which lists all packages in Development.

   The Explorer View tree displays the View root as Development : [demo1a] as shown in the following illustration:



List Objects

The Lists view shows CA Harvest SCM objects in a tabular format. You can execute process specific to items, versions, and packages from this view from the shortcut menu. Any functions you can execute in the Explorer view are available in the Lists view.

To display objects in the Lists view, select the parent in the Explorer view as follows:

- **Packages**—To show packages in the Lists view, select the package root.
- **Items**—To show items in the Lists view, select an item path.
- **Versions**—To show versions and their associated packages in the Lists view, select a specific item or a versions folder.

  The objects are listed in the Lists view.

  You can right-click a version and select List Other Versions to show all other versions related to the shared resource's CA Harvest SCM item.

Save Lists View Table

You can save or copy the Lists View table contents to a file under a different name, format, or in a different folder.

Follow these steps:

1. Right-click the Lists View contents, and select Save List As from the shortcut menu.

   The Save As dialog appears.

2. Select options to save data. The following fields require explanation:

   CSV

   Specifies Comma Separated Value (CSV) format, which is a type of data format in which a comma separates each piece of data. CSV format can be helpful for transferring data from one application to another, because most database systems are able to import and export comma-delimited data. This format can also be helpful to open the file in spreadsheet applications such as Microsoft Excel and OpenOffice.

   Text

   Specifies ASCII text format, which is a type of data format that is useful for opening the file in a standard text editor.

   Save contents to a file

   Names the output file specifies a location for it.

   Click OK.

   The file is created in the location you specified.

3. Select the following option to copy data.

   Copy to Clipboard Only

   Copies the formatted contents to the operating system's clipboard and exits.

   The table contents are saved or copied.

Navigator View

The Navigator view shows the resources in your workspace in a hierarchical structure. Symbols and icons indicate resource status:

- A cylinder next to a resource indicates the resource is being managed by CA Harvest SCM.
- A checkmark and a right angle bracket (>) next to a file resource indicates the resource needs to be checked in to the repository (outgoing change). A right angle bracket next to a shared directory resource indicates that a file in that directory needs to be checked in to the repository (outgoing change).
- An asterisk (*) to the left of a file name indicates that the file is new and is not yet managed by CA Harvest SCM. An asterisk to the left of a folder name indicates that either the folder is new or a resource below it is new.
- A plus sign (+) next to a file resource indicates the file has been modified.
- A right angle bracket (>) and plus sign (+) next to a file indicate the file is checked out and has been modified.

Important! If a file is renamed or moved in a CA Harvest SCM-managed project, then Team, Check Out is disabled for the file. If you want to check out a renamed or moved file, use the Replace With, Version in Repository action, and then check out on the version.

Refresh Status

If you have a file checked out (reserved) and someone else deletes the R-tag version from the repository, the repository does not have the version reserved but Navigator still shows its status indicator as reserved (checked out). The Refresh Status action lets you query the repository to determine if selected objects have reserved (R-tag) versions, and then update your Navigator view status indicators accordingly.

To refresh status

1. Set the package context to the package for which you want to see refreshed status of its associated versions.

2. Right-click the node for which you want refreshed status indicators, and select Refresh Status from the shortcut menu.

   Note: Selected nodes include those explicitly selected and the descendents of the selected nodes.

   The Project node is refreshed with the latest status indicators as follows:

   - Every selected node in the Navigator view with an R-tag in the repository is marked as checked-out.
   - Nodes in the Navigator view that show as checked-out are set to Normal status if an R-tag version is not found for an item.

Synchronizer View

The Synchronizer view is a hierarchical structure of a folder that shows files and indicates if the changes are incoming, outgoing, or conflicting.

The Synchronizer view lets you do the following:

- Work on a local area on the desktop with an anchor set to a point in the data view.
- Perform check-out, undo check-out, and check-in and commit to repository on projects, folders, or file nodes in a workspace. These actions are applied recursively to all files below the selected object.
- Delete files and folders. When you delete a folder, the action is applied recursively to all files and folders below the selected folder.
- Get files or folders from the repository to update your workspace files or folders with the latest trunk version in the repository. All files or folders that you get from the repository must be incoming; that is, they must have left-directional arrows.
- See the status of managed files.
- Evaluate incoming and outgoing changes.
- Manage synchronization between the workspace and the CA Harvest SCM repository.
- Compare refactoring changes between local files and folders with their corresponding repository items and item paths, respectively.

Properties View

The following information is available in the Properties view or Properties dialog when you select an item in the Explorer view:

- A broker name displays your current Broker Connection Properties and User properties.
- An object (package, form, item, or version) displays the object properties and Developer-entered check-in notes.
- The properties dialog for a shared file resource includes an SCM Version page that displays the properties of the CA Harvest SCM version associated with the version resource.

To view object properties do any of the following

- Select an object in the Explorer view, Lists view, or Navigator view.

  The object properties display in the Properties view in the lower left section of the CA Harvest SCM perspective.

- Right-click most objects and click Properties from the shortcut menu.

  A detailed Properties dialog appears.

View a Record of CA Harvest SCM Activity

You can view a record of your current session activity by clicking the Output Log view tab. Most activities in CA Harvest SCM generate output that is sent to the Output Log view. The log is informational and documents the results of a previous action. The messages are initially sorted chronologically, with the most recent messages appearing at the bottom. The log contents are maintained throughout the session, unless you clear or close the log.

To use the Output Log view, do one of the following:

- Double-click a message row in the log.

  A Details dialog appears and displays the entire text reported by the server.

- Click a column heading to sort the list by a particular category:
  - The exclamation point icon (!) sorts messages by severity.
  - Message sorts messages by message name.
- Right-click the Lists View contents, and select Save As from the shortcut menu.

  The Save As dialog appears.

- Use the Output Log toolbar buttons:

  Clear

  Clears the log.

  Restore Natural Sort Order

  Restores the log to the chronological order of the session output.

  Show details about selected status item

  Shows details about the message.

More information:

Set Logging Preferences (see page 54)

CA Harvest SCM Context

Context is the combination of the project, state, view, client path, processes, and package selected in CA Harvest SCM. You can define the context during the Add to Workspace action, when you create a project in your workspace and share it with CA Harvest SCM, or after a workspace has been created.

Display File Type Attributes (Binary/Text)

You can display file type attributes (binary or text) in the following ways:

- Click a file version in the Explorer View.

  The file type displays as an entry in the Stored As column of the Lists View.
- Right-click a file version, and select Properties from the shortcut menu.

  The file type displays in the Stored As field in the Properties View.

View Object Information

Properties can include a Comments or Description tab that provides relevant information about the object. The contents of the comment or description can be viewed, but not changed unless you have the proper access.

To view information about an object

1. Right-click an object, and select Properties from the shortcut menu.

   The object Properties dialog appears.

2. Click the Comments or Description tab.

   Any comments or instructions that can be helpful to users using the object appear.

Enter Object Information

Properties can include a Notes tab that let you enter relevant information about the object.

To enter information about an object

1. Right-click an object, and select Properties from the shortcut menu.

   The object Properties dialog appears.

2. Click the Notes tab to enter information about an object. Click OK.

   The information you entered is saved.

Maximize an Editor or View

You can maximize an editor or view so that it is easier to use:

- To maximize a Structure Compare or Version Compare editor, double-click its title bar.

  The editor expands to fill the comparison area.

- To maximize a form editor, double-click its title bar.

  The form editor expands to fill the plug-in.

- To maximize a view, double-click its title bar.

  The view expands to fill the plug-in.

Note: To restore a maximized editor or view to its original size, double-click its title bar again.

View a Lifecycle Diagram

The Lifecycle Diagram gives you a graphical view of the development lifecycle (CA Harvest SCM project). Project states are depicted as boxes in colors that depict the view types associated with the states. Arrows represent promote and demote processes.

To view a lifecycle

1. Right-click a project, and select Lifecycle Diagram from the shortcut menu.

   A diagram appears in the editor.

2. (Optional) Use Zoom In and Zoom Out.

   The diagram is magnified or reduced.

3. (Optional) Right-click any node.

   A shortcut menu related to the node appears.

Placement Options

You can specify the placement of items, during operations such as check-out and refactoring, to be on the trunk or branch. You configure the placement settings for these processes using the Administrator application. Both placement options can be specified, which lets the user select which one to use at a particular time. The Plug-in for Eclipse offers placements options on the Workspace Context dialog for a shared workspace project.

Edit Without Checkout

The “Allow editing without checkout” preference in CA Harvest SCM preferences lets you modify files in the Workspace without a check-out at the time of modification. This behavior is similar to the Offline mode of operation that is available in the plug-ins used with CA Harvest SCM Release 7.1, but alleviates the need to transition from to or from Offline Mode while working in Eclipse.

Delete File Options

Using the options on the shortcut menu, you can rename, move, copy, paste, or delete files. If you delete a file that is managed by CA Harvest SCM and confirm the deletion, the Remove File dialog appears, asking if you want to remove the file from CA Harvest SCM.

Note: The Ask if managed files should be deleted option is applicable only for pessimistic (early binding) mode is enabled in the preferences.

You can select the Remember this decision and do not ask again check box, and click one of the following:

- If you click Yes, managed files will always be deleted from the workspace and the repository.
- If you click No, managed files will never be deleted from the repository but will be deleted from the workspace.

You can subsequently change this setting by clicking Window, Preferences, Team, CA Harvest SCM and configuring the Delete Behavior option.

Consider the following when you use a Delete File option:

- If a file or folder is refactored or edited and you delete that file or folder, when you use the commit to repository action, the plug-in commits the deletion change only. The plug-in does not commit any other changes associated with that file or folder.
- If the Allow editing without checkout preference is not selected and if you delete a populated Java package, remove item will be executed for all items included in the Java package and remove path will be executed for the Java package which results in implicit D-tag for all the items in the Java package. If the preference is set, only the remove path will be executed on the Java package.

File and Directory Exclusion

When you perform synchronize operations, you may want to exclude certain files and directories in your project from being committed to the repository. For example, you may not want to commit the following files:

- Temporary files that external editors create
- Class files that Java compilations create
- Binary files that build operations create

These files can be numerous and they may be regenerated whenever a build is performed, resulting in a large number of outgoing changes. Typically, these are not files that you want to remain in the repository or share with other members of a team.

You can specify which files and directories should be excluded from update and commit operations in the following ways:

- Use the Ignored Resources preferences
- Use the .scmignore file

You can use the following wildcards to specify patterns:

asterisk (*)

Represents any sequence of zero or more characters. For example, the pattern of *~ matches any temporary files that end with ~.

question mark (?)

Represents any single character.

More information:

Set Ignored Resources Preferences (see page 46)
Ignore CA Harvest SCM Resources (see page 31)

Ignored Resources Preferences

Ignored Resources preferences is a global facility that lets you designate files or directories to be ignored by version management. You can set or remove patterns of files and directories to be ignored. Any file or directory that matches any one of the patterns will be ignored during update or save operations. The patterns in the global ignore facility are matched against file and directory names during a synchronize operation. The path to the file name is not included in the matching. For example, for the file /directory/subdirectory/file.txt, only the file.txt string is matched against the patterns. Use this facility for specifying globally applicable patterns but not for specifying fully qualified path names.

.scmignore File

A special file named .scmignore lists files, directories, or patterns to ignore. Any file or subdirectory in the current directory that matches any one of the patterns will be ignored. The .scmignore file differs from the global ignore facility because it applies only to files and directories that exist in the directory where the .scmignore file is located. A project can contain one .scmignore file in each directory.

Execute a Process

The processes defined for a state determine which processes you can execute in that state and which users can execute these processes. When you right-click a state, the menu shows all processes that you have access to in that state.

Follow these steps:

1. Navigate to the state or the object (package, item, or version) that you want to use for the process.
2. Right-click the state or the object, and select *process name* from the shortcut menu.

   The process execution dialog appears.
3. Complete the dialog fields, and click OK or Apply.

   The process executes.

Detached Development - Working Offline

The CA Harvest SCM Plug-In for Eclipse supports detached development. Detached development lets you disconnect a project from the CA Harvest SCM repository and thereafter work offline on resources in this project without interacting with the CA Harvest SCM repository. Reconnecting the project after working in a disconnected state lets you synchronize your offline changes to the CA Harvest SCM repository.

The following restrictions apply to detached development and working offline:

- A project can only be connected or disconnected if it has already been synchronized with the CA Harvest SCM repository.
- Detached development in the CA Harvest SCM Plug-In for Eclipse does not support a lost network session. If you either purposely or accidentally disconnect the network cable during an active CA Harvest SCM session, you must connect the network cable, shut down the CA Harvest SCM Plug-In for Eclipse, and then restart it to initiate a new session.

To use detached development or work offline

1. Disconnect your project from CA Harvest SCM:
   - To disconnect a single project, right-click the project and click Team, Disconnect Project.
   - To disconnect all projects in your workspace, click CA Harvest SCM, Disconnect All Projects.

   The project-level folder shows the text "OFFLINE," and symbols and icons indicate resource status.

2. You can work on files that have or have not been checked out of CA Harvest SCM.

   When a project is disconnected from the CA Harvest SCM repository, all Eclipse functions that require an CA Harvest SCM connection are disabled.

3. After you finish making changes, reconnect the current project or all projects in the workspace:

   - To reconnect a single project, right-click your project and click Team, Reconnect Project.
   - To reconnect all projects, click CA Harvest SCM, Reconnect All Projects.

   Note: The reconnect menu options are available only if a project is in detached or offline mode.

   The project-level folder shows the CA Harvest SCM broker name and project name when a project is connected.

4. Apply your changes to CA Harvest SCM by right-clicking the project and clicking Team, Synchronize with CA Harvest SCM.

   Every modified or new file in the project is marked as an outgoing change.

5. Right-click the project in the Synchronizer view and select Commit to Repository to apply the changes.

   Every file that was modified or that is new is checked in.

Edit Resources Offline

The plug-in supports making offline edits. After making your offline edits, you must do the following:

1. Reconnect with CA Harvest SCM.
2. Synchronize with CA Harvest SCM.
3. Commit your changes to the repository.

At commit to repository, any files edited offline are checked out of CA Harvest SCM using the Concurrent Checkout mode if available, or Check Out for Update mode. If neither mode is available an error dialog is displayed. To prevent the edited files from being overwritten by the check-out process, the files are copied to a temporary location and then restored after the check-out completes. The check-in process then continues.

When files are being checked in and the process stops (for example, Eclipse terminates abnormally or a communications failure occurs), the status of the files in the workspace can differ from that in the CA Harvest SCM repository. To minimize discrepancies, the status is updated as each file check-in occurs, rather than at the end of the process. In the Navigator View, you can refresh status of file-, folder-, and project-level objects. Select the object, right-click, and select Team, Refresh from the shortcut menu.

You can perform a recursive check-in or commit to repository by selecting an Eclipse project or folder. All files under the parent are checked in.

Ignore CA Harvest SCM Resources

With the CA Harvest SCM ignore facility, you can specify that resources added to a project are not added to version control. A file named .scmignore stores the list of files, directories, or patterns to be ignored. The .scmignore file can be added to any directory of a project.

Note: The .scmignore file is required in each directory where files or subdirectories are to be ignored.

To mark a directory, file or pattern as ignored

1. Select a file or directory currently not being ignored in the Navigator view, right-click and select Team, Ignore.

   The Specify Pattern of Files to Ignore dialog appears.

2. Enter the name of the file or directory or pattern to be ignored, and click OK.

   When specifying patterns, use * and ? characters use as wildcards.

To add or remove directories, files, or patterns in the .scmignore file

1. Select a file or directory that is currently ignored in the Navigator view, right-click and select Team, Edit Ignore Files List.

   The Eclipse editor displays the .scmignore file.

2. Modify the contents of the .scmignore file and save your changes.

   When specifying patterns, use * and ? characters use as wildcards.

Edit the Ignore File

You can edit the .scmignore file to add or remove patterns of files and directories to be ignored.

To edit the .scmignore file

1. Right-click an ignored file or directory, and select Edit Ignore Files List.

   The editor displays the .scmignore file.

2. Add or remove directories, files, and patterns in the .scmignore file. Save your changes.

   The .scmignore file is modified, and your changes affect which directories, files, and patterns are ignored.

Access Context-Sensitive Help

When you are using the Plug-In for Eclipse, you can access context-sensitive help that provides information about the interface part you are using.

To access context-sensitive help, click on the interface part for which you want information and press F1.

The Help view displays and provides specific information about the view, editor, or dialog you are using, and possibly links to topics for further help.

Note: Alternatively, in dialogs you can achieve the same result by pressing the help (?) button in the left lower portion of the dialog.

Accessibility

Keyboard access lets you use keyboard shortcuts to navigate and use the Plug-In for Eclipse. A keyboard shortcut is a key or set of keys that performs a predefined action. If you cannot use a mouse or other pointing device, or if you cannot see the screen, you can use keyboard shortcuts to perform actions in the plug-in. You may find it faster to use keyboard shortcuts rather than a menu or a pointing device.

Underlined letters indicate keyboard mnemonics in the plug-in menus. Click the Alt key to show the keyboard mnemonic. For example, the F in Show File Menu is underlined, which indicates that you can press the Alt key and F to access the Show File Menu.

The following table lists plug-in actions and their corresponding keyboard shortcuts.

Action	Keyboard Shortcut
Copy	Ctrl+C
Cut	Ctrl+X
Delete	Delete
Find Form	Ctrl+Alt+F
Find/Replace	Ctrl+F
Find Version	Ctrl+Alt+V
Help	F1
New Broker Connection	Ctrl+Alt+B
Paste	Ctrl+V
Print	Ctrl+P
Redo	Ctrl+Y
Save	Ctrl+S
Save All	Ctrl+Shift+S
Select All	Ctrl+A
Show Edit Menu	Alt+E
Show Explorer View	Alt+Shift+Q, E
Show File Menu	Alt+F
Show Help Menu	Alt+H
Show Lists View	Alt+Shift+Q, I
Show Output Log View	Alt+Shift+Q, G
Show Packages View	Alt+Shift+Q, U
Show Properties View	Alt+Shift+Q, R
Show Versions View	Alt+Shift+Q, N
Show Window Menu	Alt+W
Show Synchronizer View	Alt+Shift+Q, W
Undo	Ctrl+Z
Zoom In	Ctrl+=
Zoom Out	Ctrl+-

Execute a Keyboard Shortcut

To execute a keyboard shortcut in the plug-in, you press one or more modifier keys and usually one additional key. For shortcuts that consist of multiple keys pressed together, hold down the modifier keys, quickly press and release the regular (non-modifier) key, and release the keys. For any key sequences that include a comma, the final key is a separate keystroke.

The shortcut executes.

Example: Show Explorer View

This example shows how to use the Alt+Shift+Q, E shortcut to show the Explorer View.

Press the Alt and Shift keys and, while continuing to hold them, press the Q key, release all the keys, and type E.

The plug-in displays the Explorer View.

Chapter 2: Setting Preferences

Note: Topics are provided *only* for preferences that are not self-explanatory.

This section contains the following topics:

User Preferences

The Preferences dialog lets you set user preferences. You can search the Preferences dialog pages using the filter function. If you filter by matching the page title, type the name of the page you are seeking; the available pages are presented. The filter also searches on keywords such as appearance and logging. The history controls let you navigate through previously viewed pages. You can step backward or forward several pages at a time by clicking the drop-down arrow to display a list of the most recently viewed preference pages.

Set BIRT Preferences

The BIRT Reports preference page lets you set the count of rows in the report viewer to be displayed per chart depending upon your requirement.

For example: 5000

Follow these steps:

1. Click Tools, Preferences, BIRT Reports.

   The BIRT Reports preference page opens.

2. Type the number of rows to display in the text box and click OK.

   The BIRT Report row display count is set.

3. (Optional) Select the Export report without displaying in Report Viewer option to export the reports directly to your local file system.

   The report exports in the selected format.

   Note: The preference of number of rows to be displayed (example, 5000) is applicable only to the report viewer display and not for the direct export of the reports.

Set Plug-In Preferences

Setting preferences lets you set up the plug-in to suit your needs.

To set preference settings

1. Open the plug-in, and click Window, Preferences.

   The Preferences dialog appears.

2. Set the preferences you want to use for your plug-in sessions, and click Apply to apply changes only or click OK to save changes and dismiss the dialog.
3. (Optional) Click the Restore Default button to restore dialog settings for the currently displayed preferences to their default values.

   Your plug-in preferences are set.

Set CA Harvest SCM Preferences

Setting CA Harvest SCM preferences lets you set up the Plug-In for Eclipse to suit your needs.

To set CA Harvest SCM preference settings

1. Open the plug-in, and click Window, Preferences, Team, CA Harvest SCM.

   The Preferences dialog appears.

2. Set the preferences you want to use for your plug-in sessions:

   Allow editing without checkout

   Allows file modification without checking out the corresponding item.

   Commit edited items on Latest Trunk

   Commits the changes to the latest trunk in the repository.

   Always prompt for description on check in

   Prompts for a description when you execute a check-in.

   Always check out latest version

   Specifies that the latest trunk or branch version is used for check-out.

   Preserve local changes during Undo Check Out

   Preserves the changes in your local copy of the resource when you undo a checkout operation. By default, the undo checkout operation releases the reserved version in the CA Harvest SCM repository and checks out the latest version of the selected resource to the local Workspace. During this process, the changes made to the resource in the local Workspace are lost. The changes include edit and modify operations. When you select this option, the undo checkout operation only releases the version in the repository and retains the local changes on the existing version, without checking out the latest version.

   Delete Behavior

   Specifies how deletion of managed files should affect the CA Harvest SCM repository.

   The delete behavior applies to managed files and to the effect on the CA Harvest SCM repository when a managed file is deleted on the client. You can delete the file locally without affecting the repository or you can update the repository to show that the item has been deleted (a D-tag version is created).

Show Package State column for Versions in Lists View

Adds the Package State column for versions in the Lists View. The column represents the state in which the package that includes the version currently resides.

3. Click Apply to apply changes only or click OK to save changes and dismiss the dialog.
4. (Optional) Click the Restore Default button to restore dialog settings for the currently displayed preferences to their default values.

   Your CA Harvest SCM preferences are set.

Allow Editing Without Checkout Considerations

We recommend the use of the Allow editing without checkout preference because it improves performance and best suits refactoring operations.

The following considerations apply if you do *not* use the Allow editing without checkout preference:

- If you perform any refactoring operations on *.java files, a check-out occurs followed by the corresponding refactoring operation.
- If you perform any refactoring operations on files that result in content change of the files, a check-out occurs followed by the corresponding refactoring operation. For example, renaming a java file from a java perspective results in the change of the class name (check-out occur followed by rename operation).
- You cannot perform refactoring of a Java package because refactoring of a Java package will result in a check-out of all the files under that package.
- If a refactoring operation fails after the check-out for update of files, the files remain reserved and you need to release the files explicitly.
- If a refactoring operation fails, a Refactor Error dialog can appear that has Undo and Abort options. This dialog does not impact the workspace; you can click Undo or Abort to close the dialog.

Set BusinessObjects Report Preferences

The BusinessObjects page lets you set a URL to use for opening the Log On to BusinessObjects InfoView page or for specifying a specific report URL.

To set report preferences

1. Click Window, Preferences, Team, CA Harvest SCM, BusinessObjects.

   The BusinessObjects page appears and the BusinessObjects URL is populated with the following URL:

   ```
   http://hostname:portnumber/InfoViewApp/logon.jsp
   ```

2. Change host_name and port_number to specify your environment. Click OK.

   Your BusinessObjects report preference is set.

Set Explorer Tree Preferences

The Explorer Tree preferences page lets you specify how to display files, and set indicators that mark packages to show package conditions.

You can display files in one of the following ways:

- In the Explorer View tree as children of folders. (Enable the Show Files in Tree option.)
- In the Lists View when you select a folder in the tree; the List View automatically appears in the foreground. (Disable the Show Files in Tree option.)

To set Explorer Tree preferences

1. Click Window, Preferences, Team, CA Harvest SCM, Explorer Tree.

   The Explorer Tree page appears.

2. Display files by selecting the check box:

   Show Files in Tree

   Shows files in the in the Explorer View tree as children of folders.

3. Select the preferences that you want to appear on packages from the Indicator check boxes. Click OK.

   Your Explorer Tree preferences are set.

Set External Compare and Merge Preferences

The external compare and merge preferences let you specify the external compare and merge tool that you want to use from the plug-in and Workspace. You can also specify whether you want to perform a two-way or three-way comparison.

To set external compare and merge preferences

1. Click Window, Preferences.

   The Preferences dialog appears.

2. Navigate to Team, CA Harvest SCM, External Compare/Merge Tools.

   The right pane displays external compare and merge tools with the associated command line options.

3. Select the tool you want to use and select the comparison mode.
4. Click OK.

   The selected external tool is configured for external compare and merge from plug-in and Workspace.

More information:

Using External Compare Tool from Workspace (see page 79)
External Compare or Merge Tools (see page 94)

Set General Preferences

The plug-in contains views and editors that control what appears in certain menus and tool bars. The General page lets you specify preferences for the general appearance and behavior of these views and editors.

To set general preferences

1. Click Window, Preferences, General.

   The General page appears.

2. Select the preferences that you want to use for your plug-in sessions:

   Always run in background

   Runs long operations in the background and does not block you from doing other work.

Keep next/previous editor, view and perspectives dialog open

Keeps editor, view, and perspective dialogs open when their activation key is released; otherwise, the dialog closes as soon as the key combination is released.

Show Heap Status

Displays information about current Java heap usage.

3. Select one of the following methods for opening resources:

Double click

Selects a resource and a double-click opens the resource in an editor.

Single click (Select on hover)

Selects a resource and a single-click opens the resource in an editor.

Single click (Open when using arrow keys)

Uses the arrow keys to select a resource and open it in an editor.

Note: Depending on which view has focus, selecting and opening a resource may behave differently.

Click OK.

Your general preferences are set.

Set Compare Preferences

The Compare/Patch dialog lets you set preferences for text compare sessions.

To set compare preferences

1. Click Window, Preferences, General, Compare/Patch.

The Compare/Patch page appears.

2. Select the General preferences that you want to use for your compare sessions:

Open structure compare automatically

Automatically performs a structure compare whenever a content compare is done.

Show structure compare in Outline view when possible

Displays an outline of a structured file that is currently open in the editor area, and lists structural elements.

Show additional compare information in the status line

Shows additional information about a change in the status line.

Ignore white space

Does not show white-space changes in the compare viewer.

Automatically save dirty editors before browsing patches

Controls whether any unsaved changes are automatically saved before a patch is applied. Select this option if you want to save changes automatically.

Filtered Members

Excludes members from Compare With Each Other.

Note: Names in a list must be separated with a comma.

3. Click the Text Compare tab, and select options:

Synchronize scrolling between panes in compare viewers

Keeps identical and corresponding portions of the code in each pane of the comparison viewer side-by-side.

Initially show ancestor pane

Compares two versions of a resource with the previous version from which they were both derived. This previous version is called their common ancestor, and it appears in its own comparison pane during a three way compare. Turn this option on if you want the ancestor pane to always appear at the start of a comparison.

Show pseudo conflicts

Displays pseudo conflicts, which occur when two developers make the same change (for example, both add or remove the exact same line of code or comment).

Connect ranges with single line

Controls whether differing ranges are visually connected by a single line or a range delimited by two lines.

Highlight individual changes

Highlights differences between each change in the compared files.

Click OK.

The Compare preferences are set.

More information:

View Differences (see page 103)

Set Network Connections Preferences

The Network Connections Preferences dialog lets you customize the network connection properties used by plug-in features which connect to the Internet.

To set network connections preferences

1. Click Window, Preferences, General, Network Connections.

   The Network Connections page appears.

2. Select the General preferences that you want to use for your network connections:

   Direct connection to the Internet

   Connects remote systems directly without involving a proxy server.

   Manual proxy configuration

   Connects remote systems through a proxy server.

   HTTP Proxy

   Specifies the server and port that is to be used when making HTTP connections. If the port field is empty, the default port of 80 is used. If you select the Use this proxy server for SSL option is selected, the HTTP proxy server is used for SSL connections as well.

   SSL Proxy

   Specifies the server and port that is to be used when making SSL connections. If the port field is empty, the default port of 443 is used.

   SOCKS Proxy

   Specifies the server and port that is to be used when making SOCKS connections. If the port field is empty, the default port of 1080 is used.

   No Proxy for

   Specifies, either by name or pattern, which hosts should not use any proxy but instead should always be connected to directly.

   Enable proxy authentication

   Specifies a user name and password that is to be used when connecting to the proxy server.

   Click OK.

   The Network Connections preferences are set.

Set Help Preferences

The Help preferences page lets you indicate how to display help information.

Note: The options you select on this page can affect how the help view is presented. If the selected browser is not fully compatible with Internet Explorer or Mozilla, or has JavaScript disabled, the help view shown in the browser might be a simplified version.

To set help preferences

1. Click Window, Preferences, Help.

   The Help page appears.

2. Specify preferences:

   Use external browser

   Displays help contents if an embedded web browser is supported on your system. You can select this option to force help to use external browsers. The Web Browser preference page lets you select the browser to use.

   Open window context help

   Specifies whether the window context help will be opened in a dynamic help view or in an infopop.

   Open dialog context help

   Specifies whether the dialog context help is opened in a dynamic help section of help view or in an infopop.

   Open help view documents

   Specifies whether the documents selected in the help view will be opened in the help view or in the editor.

   Click OK.

   The Help preferences are set.

Set History Diagram Preferences

The History Diagram dialog lets you set the preferences for displaying your History diagrams.

To set History Diagram preferences

1. Click Window, Preferences, Team, CA Harvest SCM, History Diagram.

   The History Diagram dialog appears.

2. Select your History Diagram preferences:

   Trunk Orientation (Horizontal or Vertical)

   Specifies whether the main trunk is rendered horizontally or vertically.

   Horizontal Spacing

   Specifies the horizontal distance between nodes.

   Vertical Spacing

   Specifies the vertical distance between nodes.

   Node Width

   Specifies the node width. Changes to node width are automatically reflected in the Preview area.

   Node Height

   Specifies the node height. Changes to node height are automatically reflected in the Preview area.

   Version Details

   Specifies pattern-based contents to be displayed within each node. You can edit the list, and right-click the Version Details field to open a shortcut menu that lets you select tokens to add to the list. Your current cursor position establishes the insertion location when you add tokens to the list. The following tokens are supported:

   %name

   %version

   %package

   %modifier

   %creationTime

   %modifiedTime

   %clientPath

   %description

   %creatorName

   Changes to version details are automatically reflected in the Preview area. Each token defined in the Version Details pattern will be replaced with its actual value when the diagram is rendered.

3. Click the Color and Fonts tab, select diagram colors and fonts, and click OK.

   Your History Diagram preferences are set.

Set Ignored Resources Preferences

The Ignored Resources dialog lets you designate files or directories to be ignored from version management. You can set or remove patterns of files and directories to be ignored.

To add a file type to the ignore list

1. Click Window, Preferences, Team, Ignored Resources.

   The Ignored Resources dialog appears.

2. Click Add Pattern

   The Enter Ignore Pattern dialog appears.

3. Enter the name of the file or directory or pattern (for example, *.class) to be ignored, and click OK.

   The designated files or directories are ignored for version management.

To disable an ignored resource pattern

1. Click Window, Preferences, Team, Ignored Resources.

   The Ignored Resources dialog appears.

2. Clear the check box next to the ignored resource pattern you want to disable.

   The resource pattern is no longer ignored for version management.

To remove a file type from the ignore list

1. Select the file type in the ignore list.
2. Click Remove.

   The selected file type is ignored.

More information:

File and Directory Exclusion (see page 27)
Ignore CA Harvest SCM Resources (see page 31)

Set Decoration Preferences

CA Harvest SCM uses image and text decorations to indicate the status of every file and folder. For example, if a file is managed by CA Harvest SCM, a cylinder image appears next to that file's icon. If the file is checked out, a checkmark appears along with a right-angle bracket (>) next to the file name.

The CA Harvest SCM page of the Preferences dialog lets you modify your decoration settings. You can select text or image decorations or a combination of both.

To set decoration preferences

1. Click Window, Preferences.

   The Preferences dialog appears.

2. Click Team, CA Harvest SCM, Appearance in the navigation tree on the left side of the dialog.

   The CA Harvest SCM preferences page appears. These settings are applicable only to the Navigator view.

3. Set the decoration preferences.

   Text decorations

   > Specifies the character or string that you want to represent the status of the resource. The character or string you specify appears next to the resource according to the resource's state. If you prefer no text decorations, leave these fields blank.

   Image decorations

   > Specifies the character or string that you want to represent the status of the resource. Images appear next to the resource according to the resource's state. If you prefer no image decorations, clear the check boxes.
   >
   > **Note:** By clearing the boxes in the Image decorations group you can disable the image decorations but keep the text decorations. This reduces the number of images in your workspace and helps alleviate the problem of reaching an image limit in your application.

Restore Defaults

The default settings on the CA Harvest SCM page of the Preferences dialog are a combination of both image and text decorations. Clicking Restore Defaults restores the following settings:

Text decorations

- New resources-Asterisk (*)
- Managed resources-Blank
- Checked out resources-Right angle bracket (>)
- Edited resources-Plus sign (+)

Image decorations

- New resources-Clear
- Managed resources-Checked
- Checked out resources-Checked

Click OK.

Your decoration preferences are set.

Set Install/Update Preferences

The Install/Update page lets you set preferences for installing and updating the plug-in.

To set install or update preferences

1. Click Window, Preferences, Install/Update.

   The Install/Update page appears.

2. Select preferences:

   Maximum number of History configurations

   Specifies the maximum number of configurations you want maintained in the configuration history. These configurations are maintained to allow you to revert to a previous configuration of installed feature versions.

   Check digital signatures of downloaded archives

   Checks for digital signatures of downloaded archives.

   Automatically select mirrors

   Automatically selects update site mirrors.

   Valid updates

   Specifies an update level, assuming that feature versions use the form major.minor.service.

Update Policy

Specifies the update policy URL that controls the redirection of update sites within an organization.

Click OK.

The Install/Update preferences are set.

Set Peer Review Preferences

The Peer Review page lets you customize the notification format for the review request creation and for the closure of the review request. To customize the notification format, you can use the following predefined variables.

${BROKER.NAME}

${PROJECT.NAME}

${STATE.NAME}

${PACKAGE.NAME}

${REVIEW.NAME}

${REVIEW.NOTES}

${REQUESTER.NAME}

${PRIMARYREVIEWER.NAME}

To set peer review preferences

1. Select Window, Preferences, Peer Review.

   The Peer Review page appears.

2. Enter the message format in the message fields. Use the sample text as a guide.
3. Click OK.

   The notification format for the review request creation and for the closure of the review request is set.

Update Manager

You can automatically install updates for the Plug-In for Eclipse, using the Update Manager. The Update Manager lets you find and install updates, and configure the Plug-In for Eclipse. CA Harvest SCM administrators run the Update Manager from the command line or the interface.

To use the Update Manager in Eclipse SDK, click Help, Software Updates, Find and Install.

If your company policy prohibits the use of Update Manager to access the CA Update site, your administrator may set up a local update site where the administrator configures the local site to contain only the update versions approved by your CA Harvest SCM administrator.

Note: For more information about how to run the Update Manager provided by Eclipse from the command line or the interface, as well setting up a local update site at your company, see http://help.eclipse.org.

Use Update Manager to Update the Plug-in

You can automatically install updates to the plug-in using the Update Manager.

To update the plug-in

1. From the main menu, select Help, Software Updates, and Available Software.

   The Software Updates and Add-ons wizard appears.

2. Click Add Site.

   The Add Site dialog appears.

3. Complete the dialog field:

   Location

   > Specifies the URL of the CA Harvest SCM Plug-In for Eclipse Update Site. You must obtain the URL from your CA Harvest SCM administrator or contact Technical Support at http://ca.com/support.

   Click OK.

   The new CA Harvest SCM Plug-In for Eclipse Update Site is added to the update sites list.

4. Select the check box next to the remote site created.

5. Expand the tree and select the check box for the feature (CA Harvest SCM Plug-In for Eclipse update) to be installed if one is found. Click Install.

   The Progress information appears followed by the Installation wizard. Click Next.

6. Accept the license agreement and click Finish to continue through the wizard to install the update.
7. When prompted to restart the plug-in, click Yes.

   CA Harvest SCM Plug-In for Eclipse Update Site is updated.

Automatic Updates

You can configure the plug-in to search automatically for updates to the installed features on a periodic basis. The Automatic Updates preference page lets you configure how these updates are scheduled and performed. Update Scheduling options define when searches are performed and Download Options define what happens when updates are found. Each time you start the CA Harvest SCM Plug-In for Eclipse, the update scheduler executes in the background when necessary, based on the scheduling options. No messages appear if no updates are found. If updates exist, the behavior depends on the download option you select.

Note: If the application is not active at a scheduled time and the scheduled search is past due, the search immediately starts on the next startup.

If you decide not to install the download features, but later use the Help, Search for CA Harvest SCM Plug-in for Eclipse Updates wizard for updating, the downloaded files are reused—unless the server has newer versions or you have restarted the CA Harvest SCM Plug-In for Eclipse Update Site.

Note: You can automatically install updates by using the Eclipse Update Manager. The Update Manager lets you find and install updates, and configure the CA Harvest SCM Plug-In for Eclipse. CA Harvest SCM Administrators run the Eclipse Update Manager from the command line or the interface. CA Harvest SCM Plug-In for Eclipse users run the Eclipse Update Manager from the interface only. For more information about how to run the Eclipse Update Manager from the command line or the interface, see http://help.eclipse.org.

Schedule Automatic Updates

The Automatic Updates preferences let you schedule updates for your plug-in installation.

To schedule automatic updates

1. Click Window, Preferences, Install/Update, Automatic Updates.

   The Automatic Updates page appears.
2. Click Automatically find new updates and notify me.

3. Select Update Schedule options and a download option:

   Search for updates and notify me when they are available

   Searches for updates and notifies you when updates are found. Clicking Yes starts an upgrade wizard that downloads the updates.

   Download new updates automatically and notify me when ready to install them

   Downloads updates immediately when updates are found. When all the features have been successfully downloaded, a message dialog appears. Clicking Yes installs the new updates.

   Click OK.

   The automatic updates are scheduled.

Set Lifecycle Diagram Preferences

The Lifecycle Diagram dialog lets you set the preferences for displaying your lifecycle diagrams.

To set lifecycle diagram preferences

1. Click Window, Preferences, Team, CA Harvest SCM, Lifecycle Diagram.

   The Lifecycle Diagram dialog appears.

2. Select Lifecycle Diagram preferences:

   Approval Indicator

   Specifies that an approval icon is to indicate an approve process.

   Horizontal Spacing

   Specifies the horizontal distance between nodes.

   Vertical Spacing

   Specifies the vertical distance between nodes.

   Node Width

   Specifies the node width. Changes to node width are automatically reflected in the Preview area.

   Node Height

   Specifies the node height. Changes to node height are automatically reflected in the Preview area.

State Details

Specifies pattern-based contents to be displayed within each node. You can edit the list, and right-click the State Details field to open a shortcut menu that lets you select tokens to add to the list. Your current pointer position establishes the insertion location when you add tokens to the list. The following tokens are supported:

%name

%view

%numPackages

%modifier

%modifiedTime

%creationTime

%creatorName

Changes to state details are automatically reflected in the Preview area. Each token defined in the State Details pattern will be replaced with its actual value when the diagram is rendered.

3. Click the Colors and Fonts tab, and select options. Clicking the Color field, opens a color palette that lets you select colors.

   Changes to colors and fonts are automatically reflected in the Preview area.

4. Click the Connections tab, and select options for showing promote and demote processes, their names, and how they should appear as lines. Clicking a Color field opens a color palette that lets you select colors.

   Click OK.

   Your Lifecycle Diagram preferences are set.

How to Show Package and State

You can show the state name in which a package resides.

- To show package and state on incoming files, select Show Package and State in Tree on the Incoming/Outgoing Mode view toolbar.

  The package and state are appended to the version name in the form VersionName (StateName:PackageName) for incoming files.

- To show the state in which a package which includes the version resides use the Show Package State column for Versions in Lists View preference.

  The CA Harvest SCM Lists View displays an additional Package State column for versions. This column represents the state in which the package which contains the version resides.

  Note: This preference can affect the performance for displaying the synchronize tree.

To set the Show Package State column for Versions in Lists View preference

1. Open the plug-in, and click Window, Preferences, Team, CA Harvest SCM.

   The Preferences dialog appears.

2. Select the Show Package State column for Versions in Lists View check box. Click OK to save changes and dismiss the dialog.

   Your CA Harvest SCM preferences are set. Changes to this preference are stored between Eclipse sessions.

Set Logging Preferences

The Logging dialog lets you set the preferences for the output log.

Note: The Logging dialog does not affect the Eclipse metadata log. The Eclipse metadata log, which records application exceptions is always stored on the file system regardless of preference settings.

To set logging preferences

1. Click Window, Preferences, Team, CA Harvest SCM, Logging.

   The Logging dialog appears.

2. Select your logging preferences.

   Save Output Log

   > Saves the output log to a file named CASCM.log. The file is created when you log in to CA Harvest SCM, and log information is recorded in it.

   Output Log Path

   > Specifies a location for the output log file.

   Log View Length

   > Specifies the maximum number of lines displayed in the Output Log view.

   Click OK.

   Your logging preferences are set.

More information:

View a Record of CA Harvest SCM Activity (see page 23)

Chapter 3: Using the Plug-In for Eclipse

This section contains the following topics:

Disconnect a Project (see page 87)

Preliminary CA Harvest SCM Setup

Before you can use CA Harvest SCM Plug-In for Eclipse for change management, you must perform the following tasks:

- The CA Harvest SCM context you are using must contain a check-out process. You must have Execute access to this process.

  Note: This is the minimum requirement for browsing source code from CA Harvest SCM . For complete CA Harvest SCM Plug-In for Eclipse functionality, you need access to additional CA Harvest SCM processes.

- The CA Harvest SCM broker that you want to access must be started.

- If you are using more than one CA Harvest SCM broker (that is, more than one RTserver), all RTservers must be visible to each other on the Enterprise Communicator (PEC) network.

  Note: For more information about a multiple RTserver configuration, see the *CA Harvest Software Change Manager Implementation Guide*.

Change Management Working Mode Options

The CA Harvest SCM plug-in user can use one of the following change management (CM) Mode options:

- Pessimistic mode enforces that a file be checked out for either Update or Concurrent Update mode before you are allowed to edit the file.

  Note: For understanding more about Update and Concurrent Update check-out modes, see the *Administrator Guide*.

- Optimistic mode lets you edit files without initially checking them out. After you have made your file changes, you later Synchronize and Commit the changes to the repository, placing the files on a trunk or branch. The optimistic mode of operation is enabled in the plug-in by default. If you want to work in an optimistic mode, verify that the CA Harvest SCM Team Preference “Allow editing without checkout” remains selected.

Set Pessimistic Mode

You can set up your environment to use pessimistic mode.

To set up your environment to use pessimistic mode

1. Open the plug-in, and click Window, Preferences, Team, CA Harvest SCM.

   The Preferences dialog appears.

2. Clear the Allow editing without checkout preference.

   Pessimistic mode is enabled and forces any file to be checked out before it can be edited.

3. Verify that the administrator has enabled either Update mode or Concurrent Update mode or both for that check-out process in the Administrator application.

   Your environment is set to use pessimistic mode.

How To Perform Basic Tasks

The order in which you perform some activities in the Plug-In for Eclipse may vary, but you can perform the following basic tasks:

1. On your first use of the Plug-In for Eclipse, you must log in to CA Harvest SCM. Open the New CA Harvest SCM Connection dialog and define your CA Harvest SCM login credentials.

2. In the CA Harvest SCM Change Manager perspective, navigate to the Explorer view, select a folder, and add it to your workspace.

   The folder becomes an Eclipse project.

3. Edit the workspace project resources: create, modify, and save file resources locally.

4. Test your changes.

5. Synchronize the workspace project.

6. When you complete your changes, release your workspace project to the repository.

7. Merge your versions with the trunk.

8. Use the CA Harvest SCM lifecycle to update your form and promote or demote your change package.

Note: Though procedures may use the Navigator view, these processes are also available from the other Eclipse workspace resource views.

Login Authentication Considerations

When CA Harvest SCM is first installed, an initial user is created. This user must add other users who will be accessing CA Harvest SCM. The CA Harvest SCM administrator defines a user's initial password. The administrator can optionally set password policy to define rules for password validation.

If your site uses internal authentication (CA Harvest SCM Authentication), you can log in only if your user name and password are valid login credentials in CA Harvest SCM. If you attempt to log in with an expired password, CA Harvest SCM prompts you for a new password.

If your site uses external authentication, such as Microsoft Active Directory, you can log in if your user name exists in CA Harvest SCM and your user name and password are valid login credentials on the authentication server. If login fails due to password expiration, you are not prompted to change the password; you must change your password by using methods provided by the authentication server. For example, in Microsoft Active Directory, you can modify your password by using Ctrl+Alt+Delete and using the Change Password option.

If your site uses internal authentication and if the password policy defines an expiration warning, CA Harvest SCM issues a warning message indicating how many days remain before password expiration.

If your site uses external authentication, such as Microsoft Active Directory, because the CA Harvest SCM Password Policy is not in effect, you do not get password expiration warning messages.

Note: For information about password policy and external authentication, see the *CA Harvest Software Change Manager Implementation Guide*.

Log In to the Workbench

To use the Workbench, you must log in to a CA Harvest SCM broker. To log in successfully, the following conditions must be met:

- The database processes must be running.
- The CA Harvest SCM broker must be running.
- At least one CA Harvest SCM server process must be running.
- (Linux only) Set the JAVA_HOME variable export to JAVA_HOME=<dir>.

To log in to the Workbench

1. Launch the Workbench by doing the following platform-specific step:
   - (Windows) Start the Workbench executable from the program group.
   - (Linux) Run the Workbench script (workbench) in the $CA_SCM_HOME/bin folder.

   The Workbench appears.
2. Click Connection, New Connection.

   The New Connection Wizard appears.
3. Enter the broker name.
4. Enter your CA Harvest SCM user name and password.
5. (Optional) Disable the Use RT Server on same machine as broker option, and enter an RTserver name in the RT Server field.

   Click Finish.

   You are logged in to the Workbench and the broker you specified during login appears in the Explorer View.

   Your broker location persists until you discard it. Exiting CA Harvest SCM does not discard your location or remove any projects.

Note: In one Workbench session, you can log in to multiple brokers served through a single RTserver as long as Enterprise Communicator (PEC) is configured appropriately. Additional broker connections are added as top-level broker nodes in the Explorer View. If the Explorer filter is active, add the new broker as an Explorer filter value to display the broker in the Explorer View. For information about configuring PEC, see the *Implementation Guide*.

Create a CA Harvest SCM Connection

You create a CA Harvest SCM connection by entering login information on the New Connection to CA Harvest SCM Change Manager dialog.

Note: This connection requires configuration to PEC by the System Administrator.

To create a CA Harvest SCM connection

1. Start the Eclipse development environment with the CA Harvest SCM Plug-In for Eclipse installed.

   From the perspective that you are currently in, you should see a CA Harvest SCM entry in the menu bar.
2. Click CA Harvest SCM, New Broker Connection.

   The New Connection to CA Harvest SCM dialog appears.

3. Enter your CA Harvest SCM broker name, user name, and password. Click Finish.

   Note: The plug-in treats log-ins of different case as equivalent login IDs on the Windows platform.

   After a successful log in, the broker you specified during login is shown in the Explorer view. Navigate the broker node to display the active projects, states, package list, forms, data views, items, and versions. Double-clicking a form or version opens it in an editor where you can view or modify it. Forms are opened for modification in the Form Editor, and version lists are opened in the Lists window where you can perform actions on versions from the list. Double-clicking a normal-tagged version opens the version in an editor in read-only mode.

   Your broker location persists until you discard it by right-clicking the broker name and clicking Discard Broker from the shortcut menu. Exiting Eclipse does not discard your location or remove any projects.

Change Broker Connection Properties

You can change your broker connection on the Properties dialog.

To change broker connection properties

1. Right-click the broker name in the Explorer view and select Properties from the shortcut menu.

   The Properties dialog appears.

2. Specify new connection information. Click OK.

   Note: After making a change, you can restore your initial server setting by clicking the Restore Default button.

Note: When External Authentication is active, the Properties dialog will not have a Change Password button and passwords cannot be changed from the CA Harvest SCM Plug-In for Eclipse.

Change Your Password

The Change Password dialog lets you change your password if your site uses internal authentication.

If your site uses an external authentication server, such as Microsoft Active Directory, the change password function is disabled. Your password must be changed using methods provided by the authentication server. For example, if the server uses Microsoft Active Directory, you can modify your password by entering Ctrl+Alt+Delete and using the Change Password option.

Follow these steps:

1. Right-click the broker name in the Explorer View, and select Properties from the shortcut menu.

   The Broker Connection Properties dialog appears.

2. Click Change Password.

   The Enter a New Password for User *name* dialog appears.

3. Specify and confirm a new password. Click OK.

   Your password is changed.

Note: Click OK to close the Broker Connection Properties dialog.

Clear a Password

You can remove your password from file system storage if you previously saved your password.

To clear a password

1. Right-click the broker name in the Explorer View, and select Properties from the shortcut menu.

   The Broker Connection Properties dialog appears.

2. Click Clear Password.

   The password is removed from the file system. You will be prompted for the password if you restart the plug-in.

Note: Click OK to close the Broker Connection Properties dialog.

RT Server Properties

The RT Server name and the RT Server port number details are displayed.

Server Properties

The Server Properties display the CA Harvest SCM Database details, Product Version, and the Build details.

Database details

The database with which the CA Harvest SCM Server is configured and started.

Example: Microsoft SQL Server 2008 R2 -10.50.1600.1(x64)

Product Version

The release level of CA Harvest SCM Server.

Example: r12.5.0.0

Build

The build number of the corresponding CA Harvest SCM Server release level.

User Properties

The User Properties display the details of the presently logged in user in the Workbench session. The details include user name, real name, email, and user group membership details.

Discard Broker

You can discard a broker if you no longer use it and to streamline the Explorer View.

Note: Exiting CA Harvest SCM does not discard your broker or remove any projects.

Follow these steps:

1. Right-click the broker name in the Explorer View, and select Discard Broker from the shortcut menu.

   A confirmation dialog appears.

2. Click OK.

   The broker is discarded.

How to Use a Workspace

A workspace represents your local working directories in the Navigator view. The project name is the root of a workspace, and a project is considered to be one unit of work.

To work on files, do the following:

1. Add the project folder from the CA Harvest SCM repository that you want to become your workspace.
2. Modify files in your workspace.
3. Save changes to your files for the workspace project.

   The changes are saved on your local computer.

Example: Use a Workspace

This example describes a typical scenario for using a workspace.

1. Navigate the Explorer View and use the Add to Workspace wizard to add folders to a specified location on the local file system.

   The project folder (view paths) appears in the Navigator view.

2. Update the files in the workspace using tools that are external to the plug-in.
3. Refresh (F5) the workspace to synchronize it with the client path and use Synchronize to determine how the workspace differs from the repository.

   The workspace displays which files are modified or new, and displays which files have outgoing, incoming or conflicting changes.

4. Commit outgoing changes to CA Harvest SCM, get incoming changes from the repository, or merge conflicting changes into your local version.

   The status indicators in the workspace dynamically update to reflect the results of these operations.

Add Project Folders to the Workspace Considerations

The following considerations apply to adding project folders (view paths) to the workspace:

If you select a CA Harvest SCM process, its corresponding placement option is displayed as a check box button. For a check-out process, the check box represents the check-out mode for all other processes' placement options. The enabled state and selected state of the check box depends on the privileges assigned by the administrator, for example:

- If the OnTrunk check box is disabled and selected, you have the privilege to use the OnTunk placement option only.
- If the OnTrunk check box is disabled and not selected, you have the privilege to use the OnBranch placement option only.
- If the OnTrunk check box is enabled and selected, you have the the privilege to use either the OnTrunk or OnBranch placement options. When you click Next or Finish, the context placement option for that process is OnTrunk.
- If the OnTrunk check box is enabled and not selected, you have the the privilege to use either the OnTrunk or OnBranch placement options. When you click Next or Finish, the context placement option for that process is OnBranch.
- If the Allow edit without checkout preference is not selected, make sure that your check-out mode and placement options for are appropriate for the processes you use.

Example: Allow edit without checkout Preference is Not Selected

This example shows the results of the Allow edit without checkout preference not selected, a check-out process for concurrent update, and the placement option for a rename item process is on trunk:

1. You attempt to rename a *.java file.
2. A check-out occurs because of the behavior of the Eclipse JDT plug-in).
3. A reserved-tag version of the file is created on a branch.
4. The rename process attempts to rename the version on the trunk and then fails.

Add Project Folders to the Workspace

You can add project folders (view paths) to the workspace. The repository settings you specify on this dialog become the initial context settings for the workspace project. You can edit these settings subsequently using the Edit Context menu option.

If you select a CA Harvest SCM process, its corresponding placement option is displayed as a check box button. For a check-out process, the check box represents the check-out mode for all other processes' placement options. The enabled state and selected state of the check box depends on the privileges assigned by the administrator, for example:

- If the OnTrunk check box is disabled and selected, you have the privilege to use the OnTunk placement option only.
- If the OnTrunk check box is disabled and not selected, you have the privilege to use the OnBranch placement option only.
- If the OnTrunk check box is enabled and selected, you have the the privilege to use either the OnTrunk or OnBranch placement options. When you click Next or Finish, the context placement option for that process is OnTrunk.
- If the OnTrunk check box is enabled and not selected, you have the the privilege to use either the OnTrunk or OnBranch placement options. When you click Next or Finish, the context placement option for that process is OnBranch.

To add a project folder to your workspace

1. Navigate the Explorer View, and select the folder you want to add to your workspace.
2. Right-click the folder, and select Add to Workspace from the shortcut menu.

   Add to Workspace dialog appears.
3. Select an option:
   - Add to a new project configured using the New Project Wizard.
   - Add as a new project in the workspace.

4. Select a package as the context package. Set the CA Harvest SCM processes and placement options for your context. Click Next.

   The Checkout Options page appears.

5. (Optional) Select check-out options:

   Reserve files

   Checks out files and creates corresponding Reserved-tags (r-tag) in the repository.

   Create Empty Folders

   Creates directories that contain no items during a get.

   Always overwrite files without asking

   Overwrites files if the files already exist in the workspace, without displaying a confirmation dialog.

   Click Finish.

6. Complete the fields in the dialog, and click Finish.

   Note: The minimum requirement on this dialog is check-out process for browse.

   The project folder appears in your workspace.

Add Multiple Folders to the Workspace

You can select and add multiple project folders to the workspace using the Add to Workspace wizard. Each project folder that is added has the same initial context that was set during the Add to Workspace wizard operation on the Set Context page. During the Add to Workspace operation, when the wizard sets the contexts of the selected folders, an informational message is displayed in the wizard status area. The step may take a few moments to complete after you click Finish.

When you select multiple project folders in the wizard, the option to rename projects is disabled. Each folder is added to the workspace with its original name.

If any of the selected folders does not contain children, the right-click option for Add to Workspace is disabled. All selected folders must have children for the action to be enabled. The Add to workspace option remains disabled when you select a single project without children.

Add to Workspace Run in Background Option

When you perform an Add to Workspace operation, the Plug-in for Eclipse opens a progress dialog with a "Run in Background" button. Pressing this button dismisses the progress dialog and allows the Add to Workspace operation to continue its execution as a background process.

Note: If you want to always execute processes in the background, select the "Always Run in Background" option in Eclipse General preferences. This option affects all Eclipse processes that offer a background execution option.

While the background operation is executing, you can do the following:

- View the progress of this operation by opening the Eclipse Progress view.
- Perform other operations within Eclipse.
- Confirm the overwrite of existing files if a confirmation dialog appears. If you prefer to always allow the process to overwrite existing files, select the "Always overwrite files without asking" option on the Add to Workspace wizard Checkout Options page before clicking Finish in the wizard.

Edit Workspace File-Level Context

The Add to Workspace wizard lets you set the file-level context of items that you add to the CA Harvest SCM Explorer view. You can set the file-level context for multiple workspace files at the same time. File-level context and project-level context settings can differ only in a selected package. Both types of context settings share the same processes and placement option information.

To set or edit the file-level context of a workspace file

1. Right-click a workspace file in the Navigator view, and select Team, Edit Context.

   The Workspace Context dialog appears.

2. Complete the fields in the dialog. Following are descriptions of fields that are not self-explanatory:

   Inherit package from project-level context

   Sets the existing project-level package context.

   Packages set at the file-resource level override settings at the project level.

   Package

   Specifies a package context if the Inherit package from project-level context option is not selected.

   Note: Packages can be set at either the project level or the file-resource level. Packages set at the file-resource level override settings at the project level.

SCM Process Options

Sets the CA Harvest SCM processes and placement options to your file-level and project-level context.

If you select a CA Harvest SCM process, its corresponding placement option is displayed as a check box button. For a check-out process, the check box represents the check-out mode for all other process placement options.

Click OK.

The file-level context of the workspace file is set.

Note: The settings in this dialog remain the same until you modify them. After you set your context, you do not have to open the Workspace Context dialog unless you want to change the settings.

Edit Workspace Project-Level Context

The Add to Workspace wizard lets you set the project-level context of items that you add to the CA Harvest SCM Explorer view. You can set the project-level context for multiple workspace projects at the same time. Both projects and folders use the project-level-context. File-level context and project-level context settings can differ only in a selected package. Both types of context settings share the same processes and placement option information.

To set or edit the project-level context of a workspace project or folder

1. Right-click a workspace project or folder in the Navigator view, and select Team, Edit Context.

   The Workspace Context dialog appears.

2. Complete the fields in the dialog. Following are descriptions of fields that are not self-explanatory:

   Reset all files to inherit this project-level package

   Resets all the files that have file-level context information with project-level information.

   Packages set at the file-resource level override settings at the project level.

   Click OK.

   The project-level context of the workspace project or folder is set.

   Note: The settings in this dialog remain the same until you modify them. After you set your context, you do not have to open the Workspace Context dialog unless you want to change the settings.

Edit Workspace State-Level Context

You can edit the state-level context for a single workspace folder. File-level context, state-level context, and project-level context settings can differ only in a selected package. Processes may differ from state to state depending on the lifecycle definition.

To edit the state-level context of a workspace folder

1. Right-click a workspace folder in the Navigator view, and select Team, Edit Context.

   The Workspace Context dialog appears.

2. Complete the fields in the dialog. The following fields require explanation:

   State

   Specifies the state context for the workspace folder.

   Reset all files to inherit this project-level package

   Resets all the files that have file-level context information with project-level information.

   Packages set at the file-resource level override settings at the project level.

   Click OK.

   The state-level context of the workspace folder is set, and the workspace shows files for the state-level folder that you selected.

   Note: The settings in this dialog remain the same until you modify them. After you set your context, you do not have to open the Workspace Context dialog unless you want to change the settings.

Edit Files

The Editor View lets you view and edit your files. You can have multiple editors open at once; the active editor is in the foreground. You can switch editors by clicking the tabs.

To view and edit a file's content, double-click a file version.

The file versions contents appear in the Editor View.

Type Ctrl+S to save changes.

Workspace Actions

Actions in the workspace help you to use the trees and views. You can perform the following actions in a workspace:

Close Project

Closes the selected workspace. The workspace is still visible but you cannot expand it. A synchronize of a closed workspace has no effect.

Open Project

Opens a closed workspace and makes it available to be manipulated or synchronized.

Delete Project

Opens the Delete workspace *name* contents? dialog that lets you select an option for how to delete the workspace.

Undo Checkout

Performs an undo check-out of files in the subtree of the selected node. You can lose local modifications if the file has been modified, because the file will be replaced with the appropriate version from the repository.

Synchronizer View Workspace Actions

Actions in the workspace help you to use the trees and views. You can perform the following actions in a Synchronizer view workspace:

Expand All

Expands the entire subtree from the selected node. Expand all shows all files in the filtered view and saves you from individually expanding all the subtrees. Expand all is especially helpful when viewing a filtered view such as Outgoing Only or Show Conflicts Only.

Hide

Removes the selected node from the filtered view. This action has no effect in the Show All mode of the view. A hidden item can be restored to the view by a Refresh (F5) or a Synchronize.

Show in Navigator

Shows the selected project, folder resource, or file resource in the Navigator view.

Revert

Reverts the selected file or folder to the previous version in the CA Harvest SCM repository. At the folder level, the revert option reverts all the files and subfolders under the selected folder. The revert action includes operations such as rename, edit, modify, check out, remove, move, or a combination of these operations at the file or folder level. You are prompted to confirm the revert action for every file or folder that has changed.

Note: File level revert is available from the Synchronizer and Navigator view whereas the folder level revert is available only from the Synchronizer view.

Check Out and Check In

You can perform Check Out, Undo Check Out, Check In and Keep, and Check In and Release on projects, folders or file resource nodes in the Navigator view. These actions are applied to all files below the selected object recursively.

Check Out Files

When you add files to your workspace, all files are checked out for browse in read-only mode or checked out for update in read/write mode. When you modify a file, CA Harvest SCM automatically checks out the file according to the check-out process specified in your context. If concurrent update is enabled ,the files are checked out to a branch; otherwise, they are checked out to a trunk.

Update Mode

Reserves the version on the trunk, thereby preventing other users from reserving the same resource.

Concurrent Update Mode

Reserves the version on the branch, allowing other users to work on the same resource concurrently.

When checking out files, the exact version is determined by the contents of your context package. If there is an open branch for that item in the context package, a branch version is checked out to continue the existing branch. If there is no open branch, the latest trunk version is checked out.

Important! If a file is renamed or moved in a CA Harvest SCM-managed project, then Team, Check Out is disabled for the file. If you want to check out a renamed or moved file, use the Replace With, Version in Repository action, and then check out on the version.

To check out a file

1. Right-click the file and select Team, Check Out.

   If a later version of the file exists, the Later Version Exists dialog appears.

2. Click OK to use the latest version.

3. Select whether to use the latest workspace or repository version, and click OK.

   If you select the Set preference to always Check Out latest version option in the Later Version Exists dialog, these prompts will not appear for subsequent check-out operations.

   The file is checked out.

Note: If you clear the Checkout files while refactoring option, refactor operations that cause changes to files will automatically make the affected files writable and mark the files as offline-edited. The affected files will be decorated with the "+" icon, indicating that changes were made. Subsequent synchronize operations will detect these files as offline changes and permit you to check out and release the changes.

Additionally, you can create a package if the Create Package process's initial state is the current check-out state. The Create Package process's initial state is defined in the CA Harvest SCM Administrator.

You can perform a recursive check-out by selecting an Eclipse project or folder. All files under this selection are checked out.

Undo Check-out

Undoing check-out for a resource deletes the reserve-tagged version in the repository, sets the local file back to read-only mode, and then checks out the file again for browse, effectively undoing the check-out as well as any changes made to the checked out file.

To undo a check-out, right-click the resource and select Team, Undo Check Out from the shortcut menu.

If the local file has been modified, a warning message appears that the file has been changed and will be permanently deleted.

Check In Files

You have the following options for checking in files:

Check In and Keep

Checks in your file but keeps it reserved so that a copy of a file remains in the repository while leaving you a copy to work on.

Check In and Release

Checks in your file and releases the Reserve tag. To work on the file again, check it out again.

To check in a resource, select Team, Check In and Keep, or Check In and Commit to Repository (Check in and Release).

Developer check-in notes for versions and packages display in the Package List view, Package Properties, Version List view, and Version Properties.

Note: The recommended check-in alternative is to use the CA Harvest SCM Synchronizer.

Check In New Items to a Branch

Parallel development allows developers to create an item or item path on a branch. This feature allows developers to use a check-in process with the New Items or New and Existing Items option to check in a new item or item path to a branch. After a new item or item path has been checked in to a branch, most applicable package-based operations behave as they would for an initial 0-mapped version.

This feature is important because by allowing a branch option for new item check-ins the work can be kept private in a package until it is ready to be merged to the trunk.

Status Indicators

Indicators (symbols) in the Synchronizer View identify the status of files or folders as follows:

- Cylinder—Managed by CA Harvest SCM
- Plus sign (+)—Modified
- Asterisk (*)—New (not managed by CA Harvest SCM)

  Note: An asterisk to the left of a folder name indicates that the folder is new or a file below it is new.
- Check mark and right angle bracket (>)—Checked out

- Left arrow (<-)—Incoming mode (changed in the repository, but not on the client computer)
- Right arrow (->)—Outgoing mode (changed on the client computer, but not in the repository)
- Double arrow (<->)—Incoming/outgoing mode (changed on both the client computer and in the repository). Double-headed arrows indicate a conflict between the workspace and the repository.
- Plus signs (+) on top of the arrows—New for outgoing changes(not managed by CA Harvest SCM). For example, a right-directional arrow with a plus sign is a local file that has not previously been checked in. For incoming changes it indicates that the file is new and managed by CA Harvest SCM, but just not yet managed in the workspace.
- Minus signs (-) on top of the arrows—Removed.

Note: In the Lists view, you can view version tags that identify the status of items.

Examples: Indicate Status

- A check mark and a right angle bracket next to a file indicates that the file is checked out and may need to be checked in to the repository (outgoing change).
- A right angle bracket next to a shared directory file indicates that a file in that directory needs to be checked in to the repository (outgoing change).
- A right angle bracket and plus sign next to a file indicates that the file is checked out and has been modified.
- A right arrow with a plus sign indicates a local file that has not been checked in. Double-headed arrows indicate a conflict between the workspace and the repository.
- A plus sign on top of a right arrow indicates a local file that has not previously been checked in and is not managed by CA Harvest SCM.
- A plus sign on top of a left arrow indicates that the file is new and managed by CA Harvest SCM, but just not yet in the workspace.
- A minus sign on top of a right arrow indicates that the file was removed from your workspace and when the file is committed to the repository, the item will be removed from the repository.
- A minus sign on top of a left arrow indicates that the version was deleted in the repository. When you get the item from the repository, it will be removed from your workspace to be synchronized with the repository.

Refresh Checked-Out Status

The Refresh checked-out status action lets you query the repository to determine if selected objects have reserved (R-tag) versions and then update your WorkArea status indicators accordingly. If you have a file checked out (reserved) and someone else deletes the R-tag version from the repository, the repository does not have the version reserved but the WorkArea still shows its status indicator as reserved (checked out). You can resolve this mismatch in your WorkArea by using the Refresh checked-out status action.

To update the WorkArea status indicators because of changes in the repository, right-click the node for which you want refreshed status indicators, and select Refresh checked-out status from the shortcut menu.

Note: Selected nodes include those explicitly selected and the descendents of the selected nodes.

The WorkArea node is refreshed with the latest status indicators as follows:

- Every selected node in the WorkArea with an R-tag in the repository is marked as checked-out.
- Nodes in the WorkArea that show as checked-out are set to Normal status if an R-tag version is not found for an item.

Filter the Synchronizer View

You can customize the Synchronizer view so that you view only the files and folders that are pertinent to your work.

To filter the Synchronizer view, click a toolbar icon to use one of the following modes:

Incoming

Shows left arrows (<) that indicate only those items in the repository that must be brought into your local WorkArea. This action helps ensure that your local WorkArea is synchronized with the repository state by comparing your local files with the latest items in the repository.

Outgoing

Shows right arrows (>) that indicate files that have been modified locally and must be committed to the repository.

Incoming/Outgoing

> Shows both incoming and outgoing changes in a single view from which you can update your WorkArea and release to the repository.

To filter the Synchronizer view further based on the type of change, click a toolbar icon to use one of the following actions:

Addition

> Removes additions from the Incoming or Outgoing or Incoming/Outgoing mode. This means that files appearing in the Synchronizer do not list the newly added items in the WorkArea or newly checked-in items to the repository. Re-selection gets back all the incoming or outgoing additions into the synchronizer view.

Deletion

> Removes deletions from the Incoming or Outgoing or Incoming/Outgoing mode. This means that files appearing in the Synchronizer do not list the deleted items in the WorkArea or removed items from the repository. Re-selection gets back all the incoming or outgoing deletions into the synchronizer view.

Normal Change / Edits

> Shows normal edited changes with the Incoming or Outgoing or Incoming/Outgoing mode.
>
> Removes changes from the Incoming or Outgoing or Incoming/Outgoing mode. This means that files appearing in the Synchronizer do not list the changed items in the WorkArea or changed items in the repository. Re-selection gets back all the incoming or outgoing changes into the synchronizer view.

The Synchronizer view shows files that match the filter mode you selected.

If you select the addition / deletion / change options and then select the conflict / reset options, the earlier selections are still retained.

Using External Compare Tool from Workspace

You can use an external compare tool to compare the local version of a file with the one on the CA Harvest SCM repository from Workspace. The external compare tools display the differences in an intuitive way that is easy to view and understand. You can then decide the changes you want to merge. Each compare tool provides different options and benefits; select the tool that best fits your purpose. Workspace uses the external compare tool that you have configured for Workbench.

Note: The Compare Tool option in the Preferences dialog lets you configure the external compare tool you want to use for performing a 2-way or 3-way compare or merge from the Workspace. DiffDoc does not support comparison from Workspace.

For more information about the external compare tools packaged with CA Harvest SCM and the default command line settings, see chapter "Comparing and Merging Versions."

You can invoke the external compare tool by performing the following operations in the Workspace:

- Compare with Version in Repository
- Compare with Latest Trunk Version
- Double-click on a managed resource in Workspace Synchronizer View

Note: Managed resource includes outgoing changes, incoming changes, and conflicts.

Configure Two-Way or Three-Way Compare from Workspace

If you configured an external compare tool for the Eclipse plug-in, CA Harvest SCM Explorer uses the same tool for comparisons. The default mode is two-way comparison. If you want to enable three-way comparison, you must configure the same.

To configure three-way compare for Workspace

1. Click Windows, Preferences, Team, CA Harvest SCM from the Eclipse plug-in.

   The Preferences dialog appears.

2. Navigate to General, Compare/Merge, External Compare/Merge Tools.

   The right pane displays the details of the tool that you have already configured and the associated command line options.

3. Select one of the following options under Compare Tool Options:

   2-way

   Specifies that the compare and merge operation will use two-way comparison.

   3-way

   Specifies that the compare and merge operation will use three-way comparison.

   Note: WinMerge does not support three-way comparison. DiffDoc does not support two-way and three-way comparisons. For more information about the parameters in the previously mentioned commands, see Default Command Line Settings (see page 95).

4. Click OK.

   The changes are saved. You can now perform the comparisons in the configured mode from Workspace.

Synchronize Multiple Resources

You can synchronize multiple Eclipse resources with CA Harvest SCM using one synchronize operation. To do so, select any combination of Eclipse projects, folders, or file resources. For each project or folder, all files that are descendents of the project or folders are included in the synchronization. After synchronization, the results are reported in the Incoming, Outgoing, or Incoming/Outgoing mode view.

By right-clicking a folder or resource in this view, you can get a file from CA Harvest SCM or commit a file to CA Harvest SCM. To recursively get or commit multiple files in one operation, select Get or Commit at the folder level in the Incoming, Outgoing, or Incoming/Outgoing mode view.

Get Files or Folders From the Repository

Getting files or folders from the repository updates your workspace files or folders with the latest trunk version in the repository. If a package is specified in the context, the latest branch version will be retrieved. All files or folders that you get from the repository must be incoming; that is, they must have left-directional arrows.

To execute a get from repository (update your workspace with the latest branch or trunk version in the repository), right-click any file or folder that you want to get and select Get from Repository from the shortcut menu.

Your workspace is updated.

Update from Repository (Sync + Get)

The Update from Repository action combines the operations of Synchronize and Get from Repository into a single workflow. The implementation behind the Synchronize and Get remains the same as the separate actions.

This action updates the local workspace with changes from the repository only if there are no conflicts. This action never automatically overwrites any changes made in the local workspace. Any conflicts found are shown in the Synchronizer View. You then follow the normal procedure for merging conflicts in the Synchronizer View.

Commit Edited Items to the Branch on Latest Trunk

We recommend that you use the Commit Edited Items to the Branch on Latest Trunk preference when using a branch in the context of the Workspace. This commit preference specifies whether you want to commit branch items to the trunk version of the existing version in the Workspace or to the latest trunk version available in the repository. Depending on whether you always commit your changes to the Workspace trunk version or latest trunk version available in the repository, you can set your commit preference accordingly.

Note: By default this option is selected.

This option behaves as follows when branch is set in the context:

- When the option is selected, the commit operation results in a conflict when any later version exists in the repository. A further commit operation results in creating a branch version on the latest trunk version in repository.
- When you clear this option, the commit operation results in an outgoing change even if any later version exists in the repository.

Example: Commit Branch Items on Latest Trunk Version

The Workspace has version 1 of a file, sample.txt, and the latest trunk version in the repository has version 2 of the same file. The check-in context placement option is on the branch. When you commit the changes, the Synchronization view displays the conflict status of the local and repository versions. Executing a commit operation creates version 2.1.1 of the file as the latest branch version in the repository.

Note: If the check-in placement option is on the trunk, the commit operation warns you that a later version exists. Proceed to reconcile the conflict, mark the status as merged, and commit it. Then, CA Harvest SCM creates version 3 of sample.txt in the repository.

Example: Commit Branch Items on Workspace Trunk Version

The Workspace has the version 1 of a file (sample.txt) and the latest trunk version in the repository has version 2 of the same file. When you commit the changes, the Synchronization view displays the outgoing change. If you perform a commit operation on the outgoing change, CA Harvest SCM creates version 1.1.1 of the file as the branch version in the repository.

Note: If the check-in placement option is on the trunk, the synchronize operation results in a conflict. You must reconcile the conflict, mark it as merged, and then perform the commit operation to create version 3 on the latest trunk version.

Change the Commit Preference

You can change the commit preference to specify whether you want to commit the edited items always to the branch version or to the latest trunk version. By default, the commit operation commits the changes to the latest trunk version.

To change the commit preference

1. Click Window, Preferences in Workbench.

   The Preferences dialog opens.

2. Click Team, CA Harvest SCM in the left pane.

   The preferences related to Workspace appear in the right pane.

3. Do one of the following to the Commit edited items on Latest Trunk option:

   - Select the option to commit the changes always to the latest trunk version.
   - Clear the option to commit the changes always to the branch version.

4. Click OK.

   All the commit operations you perform after this point, will use the preference you have set.

Commit a File or Folder to the Repository

Committing files or folders updates the repository with modified files or folders from your WorkArea.

To execute a commit to repository, in the Structure Compare view, right-click any files or folders that you want to commit to the repository, and click Commit to Repository.

Note: All files or folders must be outgoing; that is, they must have black right-directional arrows. Or, the items can show a red double-headed conflict arrow. A commit on an item with the red double-headed arrow indicates that the local version of the file should replace the conflicting version as the latest version on the repository.

The files or folders are committed to the repository.

Commit to Repository (Sync + Commit)

You can commit changes to the repository without using the Synchronize action first. The Commit to Repository action under the Team menu combines the operations of Synchronize and Commit (formerly named Release) into a single process. These combined actions benefit you when you want to make a quick change and check it in to repository. Commit to

Repository only commits nonconflicting changes to the repository and never commits any conflicting changes. If any conflicts are found, they are shown in the Synchronizer View. You then follow the normal procedure for merging conflicts in the Synchronizer View.

Note: The one-step Commit to Repository action has the same impact on the server as the two-step process: Team, Synchronize, and then Commit.

Replace a Workspace File with a Repository Version

Use the Replace With process to replace files in your workspaces with the latest repository versions.

To replace a file in the workspace with a repository version

1. Right-click the file you want to replace in the workspace, and select Replace With, Version in Repository from the shortcut menu.

   A list of versions for the file appears in the Lists view.

2. Right-click the version you want to use for the replacement, and select Get from the shortcut menu.

   The file is replaced with the version you selected.

Replace a Workspace Folder with the Latest Trunk Version

Use the Replace With option at the folder level to replace all the files in the selected folder with the latest repository trunk versions. To replace a folder in the Workspace with the latest trunk version, right-click the folder you want to replace, and select Replace With Latest Trunk Version from the shortcut menu. All the files in the selected folder are replaced with the latest trunk version. If the Trunk version of the folder has additional or new files, they are also added to the folder.

Replace a Workspace File with the Latest Trunk Version

Use the Replace With process to replace files in your workspace with the latest repository trunk versions.

To replace a file in the workspace with the latest trunk version, right-click the file you want to replace in the workspace, and select Replace With, Latest Trunk Version from the shortcut menu.

The file is replaced with the latest trunk version.

Refresh a Workspace

The Refresh option lets you check for changes on the local file system and update the workspace accordingly.

To update a workspace because of changes in the file system, click the Refresh toolbar button.

The workspace is refreshed with the latest changes.

Note: Your Mode settings are not changed when you use the Refresh option.

Delete a Workspace

You can delete a workspace to remove it. A workspace must be closed before you can delete it.

To delete a workspace

1. Navigate to the closed workspace you want to delete.
2. Right-click the closed workspace, and then select Delete from the shortcut menu.

   A confirmation dialog appears, and you can decide to delete project contents on the disk (this deletion cannot be undone).

3. (Optional) Click Preview.

   Shows the name of the resource to be deleted.

4. Click OK.

   The workspace is deleted.

Share a Project

Newly shared projects represent their own unique context. You define context settings in the CA Harvest SCM Project Sharing wizard.

Note: Projects with linked resources can be shared and version-controlled, but the linked resources in the project are ignored and unshared.

You must specify context properties when sharing an Eclipse project regardless of whether you are using an existing broker connection or establishing a new connection. These context properties become the default context properties for the newly shared workspace project.

The Project Sharing wizard lets you select a target repository folder when sharing an Eclipse project with an existing CA Harvest SCM broker connection. A wizard page prompts you for the target view path. You can select any target location in any available repository.

To select a target repository folder

1. In the Navigator view, right-click a newly created project and click Team, Share Project from the shortcut menu.

   The Share Project dialog appears, where you can select the repository type.

2. Click CA Harvest Software Change Manager and click Next.

3. Select one of the following options and click Next.

   - Select an existing connection.
   - Create a CA Harvest SCM connection.

     A CA Harvest SCM connection is created.

4. Define context settings, regardless of whether you are sharing an existing or new CA Harvest SCM connection.

   The Set Context page lets you define an CA Harvest SCM context so that you can execute CA Harvest SCM processes defined for the context. You must set the project before you can set the State and Package.

   Note: Selecting the trunk option for the associated process executes the process on trunk.If you clear the trunk option, the associated process will execute on the branch.

Project

Displays a list of active projects.

State

Displays a list of states in the selected project.

Package

Displays change packages in the selected state.

View

(Optional) Displays all views in the project including snapshot views, and include the view's versions in the context.

Check Out

Displays the check-out processes in the selected state.

Check In

Displays the check-in processes in the selected state.

Remove Item

(Optional) Displays the remove item processes in the selected state.

Rename Item

Displays the rename processes for your selected state.

Move Item

Displays the move item processes for your selected state.

Remove Path

Displays the remove path processes for your selected state.

Move Path

Displays the move path processes for your selected state.

Rename Path

Displays the rename path processes for your selected state.

Click Next.

5. Select a target folder for the shared project.

   Folders for each repository are displayed in a tree format. The selected folder represents the location where the Eclipse project folder is added.

6. Click Finish.

   The sharing process is completed.

Unshare a Project

Unsharing a project disassociates the project from the CA Harvest SCM broker, but maintains the project in the workspace. Unsharing removes the CA Harvest SCM project metadata from the project. After you unshare a project, you can do the following:

- Discard the broker (if no other project is associated with CA Harvest SCM using this broker).
- Share the project again with CA Harvest SCM.
- Add the project to your workspace.

When you unshare a project in Eclipse, files are made read-only. If you want the files to be read/write, you must specify this on the CA Harvest SCM page of the Preferences dialog.

To unshare a project, right-click the project name in the Navigator view, and click Team, Unshare Project from the shortcut menu.

The project is unshared.

Disconnect a Project

When you disconnect a project from Eclipse, files are made read-only. If you want the files to be read/-write, you must specify this on the CA Harvest SCM page of the Preferences dialog.

To disconnect a project, right-click the project name in the Navigator view, and click Team, Disconnect Project from the shortcut menu.

The project is disconnected.

Chapter 4: Comparing and Merging

This section contains the following topics:

Compare a Workspace File with a Repository Version

You can compare a workspace file with a version in the repository to see how the file differs from the version.

To compare a file with a repository version

1. Navigate the Navigator view tree to the file you want to compare.
2. Right-click the file, and select Compare With Version in Repository from the shortcut menu.

   The Version Compare lists the file's versions.

3. Double-click the version you want to use for the comparison.

   A Progress Information dialog appears, and the file and version appear in the Text Compare.

4. Compare versions by navigating through the synchronized lines of code. You can locate lines that differ by clicking the bookmarks aligned vertically along the right side of the editor, or by clicking Select Next Change and Select Previous Change on the toolbar of the editor.

   You have compared the workspace file with the repository version.

You can also compare a file with a repository version by double-clicking the file in the Synchronizer view.

The comparison works as follows:

- If the file has an outgoing change, it is compared with the version from which the workspace item was originally populated.
- If the file shows an incoming change, the workspace version is compared with the incoming repository version.
- If the file shows a conflicting change status, the modified workspace version is compared with the incoming repository version.

The comparison pane on the left is the local workspace version and you can modify the left comparison pane to merge changes from the right pane or to make changes as necessary to reconcile the different versions. You can then save the left pane version.

Compare a Workspace File with the Latest Trunk Version

You can compare a workspace file with the latest trunk version in the repository to see how the file differs from the version.

To compare a file with the latest trunk version

1. Navigate the workspace tree to the file you want to compare.
2. Right-click the file, and select Compare With Latest Trunk Version from the shortcut menu.

   The Compare Editor view lists the file in the structure compare pane.
3. Double-click the file you want to use for the comparison.

   A Progress Information dialog appears, and the file and latest trunk version appear in the text compare pane of the Compare Editor.
4. Compare versions by navigating through the synchronized lines of text. You can locate lines that differ by clicking the bookmarks aligned vertically along the right side of the Editor, or by clicking Select Next Change and Select Previous Change on the toolbar of the editor.

   You have compared the workspace file with the latest trunk version.

Compare a Package Version with Trunk

You can compare a version in a package with the version on the trunk it is derived from.

To compare a package version with a trunk version

1. Right-click the package or the Version Root node and select Compare with Trunk from the shortcut menu.

   The Compare View tab displays the latest version of all the files in the package.

2. Double-click the file that you want to compare.

   The differences in the selected version and the previous trunk version are highlighted in the compare window. Any further comparison uses the same compare window. While comparing the files from a previous trunk, the trunk versions in the present package are not considered.

   If you double-click the R-tagged file, the comparison uses the contents from the local file system to compare with the parent trunk in the CA Harvest SCM repository.

   Note: If you have configured an external tool for compare, a separate instance of the tool opens for different versions of the package.

More information:

External Compare or Merge Tools (see page 94)
Configure Two-Way or Three-Way Compare from Workspace (see page 80)

Compare Workspace Files with Each Other

You can compare a workspace file with one or two other workspace files to see how the files differ.

To compare a file with one or two other files

1. Navigate the workspace tree, select two or three files that you want to compare, right-click, and select Compare With Each Other from the shortcut menu.

   If you selected two files, the comparison appears in the Compare editor and you can continue at Step 3.

   If you selected three files, the Select Common Ancestor dialog appears.

2. (Three-way comparison only) Select a file to use for the common ancestor. Click OK.

   The comparison appears in the Compare Editor.

3. Compare versions by navigating through the synchronized lines of code. You can locate lines that differ by clicking the bookmarks aligned vertically along the right side of the editor, or by clicking Select Next Change and Select Previous Change on the toolbar of the editor.

4. (Optional) Type Ctrl+S to save your changes.

   The changes are saved.

   You have compared the workspace file with another file.

Compare Two Versions

You can compare any two versions of an item.

To compare two versions

1. Navigate to the item that has versions you want to compare.

2. Select two versions, right-click one of the versions, and select Compare from the shortcut menu.

   The compare tool appears and displays the differences between the two versions.

   - The external compare tool appears if you invoked the compare from the Explorer tree and if you configured an external comparison tool in Preferences.
   - The default Eclipse compare/merge tool appears if you invoked the compare from the workspace.
   - The Compare tool uses the local file content and the local path from the file system for an R-tagged file.

Compare Versions or Files

You can compare two versions or files.

Note: You can select two versions, right-click and select Compare from the shortcut menu to show a comparison and bypass the dialog described in the following procedure.

To compare two versions or files

1. On the CA Harvest SCM plug-in toolbar, click Compare.

   The Compare Versions or Files dialog appears.

2. Populate the fields in the Compare Versions or Files dialog by doing one the following:

   ■ Dragging *versions* from the List View or the Explorer View to the fields.

   ■ Using the browse buttons to locate and select local *files*.

   ■ If you drag an R-tagged version, the local path is selected. If you drag an N-tagged version, the repository path is selected.

   The versions or files for the comparison are selected.

3. Click OK.

   The compare tool appears and displays the differences between the two versions. The internal CA Harvest SCM compare files process is read-only; changes cannot be made to the files.

   Note: If you configured an external comparison tool in Preferences, the external tool appears. For some external tools, the compare and merge processes are combined, and changes can be made to the files, but they will not be saved by CA Harvest SCM.

Compare Refactoring Changes

The Refactor Compare Viewer dialog lets you compare refactoring changes between local files or folders with their corresponding repository items or item paths. You can use the Synchronizer view to select conflicting changes either for local name and local path or repository name and repository path before committing the changes to the repository.

To compare a refactoring change from the Synchronizer view

1. In the Synchronizer view, right-click a refactored file or folder and select Compare Refactoring Changes from the shortcut menu.

   The Refactor Compare Viewer dialog appears. The left pane shows the local path of the file or folder and the right pane shows the repository path of the file or folder. Changes are identified by enclosing rectangles.

2. (Optional) Use the copy-from-right-to-left toolbar button to get the path or name change from the repository to the local file or folder.

3. (Optional) Click OK to make a local change.

   You have compared refactoring changes.

How to Show Package Information

You can view package information in the following ways:

- Right-click a shared resource and select CA Harvest SCM, Compare or Replace With Version.

  The Compare list view shows package information in the Package State column. This column represents the state in which the package that contains the version resides.

- Select the Incoming/Outgoing Mode View.

  The compare label for the left and right panes include package state and name. The label format is in the form *VersionName*:*VersionNumber* (*StateName*:*PackageName*). The state name represents the state in which the package resides.

Merging Versions

You resolve branching conflicts in CA Harvest SCM through merge processes. Merge processes let you view changes made to two different versions of an item, combine changes, and discard changes.

You typically accomplish merges in two stages. You can merge versions in the same project or across projects.

- Merging a branch version, created by the Concurrent Update mode of check-out, to the project trunk requires the concurrent merge process.
- Merging across projects requires use of the cross project merge process.
- The interactive merge process is the second stage required for both types of merges. You can also use the interactive merge process as a single step for merging branch versions for a specific item.

External Compare or Merge Tools

The External Compare/Merge Tools Preferences dialog lets you specify an external compare/merge tool to use for file comparison and merging. You must enter command line arguments required to launch the selected external tool. You cannot perform a merge of versions that involves path, name, or status conflicts by using external merge tools. Use the default merge tool to resolve these conflicts.

Note: The selected external compare and merge tool must be installed on your computer before you can use it. Additionally, the path to the selected tool must be listed in the Windows PATH environment variable.

CA Harvest SCM supports the following external difference/merge tools, some of which permit three-way merge:

- Araxis Merge Professional Edition—Two-way compare, two-way merge, three-way merge
- Beyond Compare—Two-way compare, two-way merge, three-way merge
- Diff Doc—Two-way compare
- Guiffy—Two-way compare, two-way merge, three-way merge
- WinMerge—Two-way compare, two-way merge

Note: For operating system support and version information about the listed external tools, see the *Release Notes*.

The default tool is Default, which refers to the CA Harvest SCM interactive merge process. The Command Lines fields are disabled when Default is selected and you do not need to specify command line information to start the interactive merge process.

More information:

Default Command Line Settings (see page 95)

Default Command Line Settings

Default command lines for supported external tools are provided in the list of external tools that follows. All external tools require file names to be specified on the command line.

The following parameters define only file names and not complete file paths:

$(File1), $(File2)

Defines files displayed in the left and right panes of the comparison tool.

$(TrunkFile), $(BranchFile), $(ResultsFile)

Defines files displayed in the left and right panes of the merge tool and the results file for two-way and three-way merge.

$(AncestorFile)

Defines common ancestor file for three-way merge only.

$(Version1), $(Version2)

Defines the path to the files displayed in the left and right panes of the compare tool.

Some external tools require full path names and file names to be specified on the command line. For this case, the following corresponding parameters are defined:

```
$(FilePath1), $(FilePath2), $(TrunkFilePath), $(BranchFilePath),
$(AncestorFilePath), $(ResultsFilePath)
```

Default commands for external tools are defined in the following list; the tools differ with regard to which parameters need to be replaced in command syntax:

Note: For help with additional parameters you can set for a tool, see the help for that tool.

- **Araxis Merge Professional Default Command Lines**

  Use the following compare or merge commands for the Araxis tool.

  The compare command has the following format:

  ```
  Compare.exe /wait /max /2 $(File1) $(File2)
  ```

  The two-way merge command has the following format:

  ```
  Compare.exe /wait /max /2 $(TrunkFile) $(BranchFile) $(ResultsFile)
  ```

  The three-way merge command has the following format:

  ```
  Compare.exe /wait /max /3 /a3 $(TrunkFile) $(BranchFile) $(AncestorFile)
  $(ResultsFile)
  ```

  /anumber

  > Specifies which file in a sequence of files on the command line is the common ancestor file.
  >
  > The ancestor file displays in the center of the Merge screen.
  >
  > For example, in the following command /a3 specifies that the third file listed is the ancestor:
  >
  > ```
  > Compare.exe /wait /3 /a3 $(TrunkFile) $(BranchFile) $(AncestorFile)
  > $(ResultsFile)
  > ```
  >
  > For example, in the following command /a1 specifies that the first file listed is the ancestor:
  >
  > ```
  > Compare.exe /wait /3 /a1 $(AncestorFile) $(TrunkFile) $(BranchFile)
  > $(ResultsFile)
  > ```

  The two-way compare command from Workspace has the following format:

  ```
  Compare.exe /wait /max /2 $(File1) $(File2) /title1:$(Version1)
  /title2:$(Version2)
  ```

  The three-way compare command from Workspace has the following format:

  ```
  Compare.exe /wait /max /3 /a3 $(File1) $(File2) $(AncestorFile)
  /title1:$(Version1) /title2:$(Version2) /title3:$(Version3)
  ```

- **Beyond Compare Default Command Lines**

  The compare command has the following format:

  ```
  BComp.exe /readonly $(File1) $(File2) /title1=$(Version1) /title2=$(Version2)
  ```

  /readonly

  Specifies that editing the files is not allowed.

  /title1

  Specifies a text version of the first file name without the path; file name(version) displays in the compare pane.

  /title2

  Specifies a text version of the second file name without the path; file name(version) displays in the compare pane.

  The two-way merge command has the following format:

  ```
  BComp.exe /rightreadonly $(TrunkFile) $(BranchFile) /mergeoutput=$(ResultsFile)
  /title1=$(TrunkFile) /title2=$(BranchFile)
  ```

  The /rightreadonly option enables editing only in the trunk pane.

  The three-way merge command has the following format:

  ```
  BComp.exe $(TrunkFile) $(BranchFile) $(AncestorFile) $(ResultsFile)
  ```

  The two-way compare command from Workspace has the following format:

  ```
  BComp.exe /rightreadonly $(File1) $(File2) /title1=$(Version1)
  /title2=$(Version2)
  ```

  The three-way compare command from Workspace has the following format:

  ```
  BComp.exe /rightreadonly $(File1) $(File2)  $(AncestorFile) $(File1)
  /title1=$(Version1) /title2=$(Version2) /title3=$(Version3)
  ```

- **Diff Doc Default Command Lines**

  Diff Doc can compare Microsoft Word documents (.doc or .rtf) with formatting intact. Merging is not supported. Diff Doc requires full path and file names to be entered in the command line.

  The compare command has the following format:

  ```
  DiffDoc.exe /m$(FilePath1) /s$(FilePath2)
  ```

  The /m option lets you specify the original file. The /s option lets you specify the modified file.

- **Guiffy Default Command Lines**

The compare command has the following format:

```
Guiffy.exe -gm $(File1) $(File2)
```

–gm

Suppresses file merge (compare only).

The two-way merge command has the following format:

```
Guiffy.exe -m $(TrunkFile) $(BranchFile) $(ResultsFile)
```

–m

Specifies two-way merge.

The three-way merge command has the following format:

```
Guiffy.exe -s $(TrunkFile) $(BranchFile) $(AncestorFile) $(ResultsFile)
```

–s

Specifies three-way merge.

The two-way compare command from Workspace has the following format:

```
Guiffy.exe -m $(File1) $(File2) $(File1) -h1$(Version1) -h2$(Version2)
```

The three-way compare command from Workspace has the following format:

```
Guiffy.exe -s $(File1) $(File2)  $(AncestorFile) $(File1) -h1$(Version1)
-h2$(Version2) -hm(Merge_Result)
```

-h1

Represents the header for the first file.

-h2

Represents the header for the second file.

-hm

Represents the header for the merged file.

- **WinMerge Default Command Lines**

  The compare command has the following format:

  ```
  Winmergeu.exe $(File1) $(File2) /dl $(File1) /dr $(File2)
  ```

  /dl

  Specifies a text description of the left-hand file without the path; file name (version) displays in the compare pane.

  /dr

  Specifies a text description of the right-hand file without the path; file name (version) displays in the compare pane.

  The two-way merge command has the following format:

  ```
  Winmergeu.exe $(TrunkFile) $(BranchFile) $(ResultsFile) /dl $(TrunkFile) /dr
  $(BranchFile)
  ```

  WinMerge does not support three-way merge; the three-way Merge command line should be left empty.

  The two-way compare command from Workspace has the following format:

  ```
  Winmergeu.exe $(File1) $(File2) /dl $(Version1) /dr $(Version2) /wr
  ```

  Note: WinMerge does not support three-way compare for Workspace.

Merge a Branch Version to the Trunk

The concurrent merge process lets you merge a branch version to the trunk.

Follow these steps:

1. Navigate to the package that has the branch version you want to merge.
2. Right-click the package, and select *concurrent merge process* from the shortcut menu.

   The *concurrent merge process* dialog appears.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.
3. Select Merge options:

   Merge Conservatively

   Creates a merge-tagged version, regardless of the contents of the versions. An exception is when the branch version is the latest version in the view; in this case, it is closed and a normal version is created.

Merge Aggressively

Creates a merge-tagged version only when conflicts are found. If no conflicts are found, the branch and trunk versions are merged to create a normal version.

Note: A conflict occurs when a set of lines is modified in both the branch and the trunk; however, insertions and deletions are not conflicts.

Take Trunk Version

Selects the trunk (target) to create the final version automatically, without comparing the contents of the versions. This option closes the branch, but does not create any versions on the trunk.

Take Branch Version

Selects the branch (source) to create the final version automatically, without comparing the contents of the versions. This option creates a normal version on the trunk and closes the branch.

The merge behavior is set.

4. (Optional) Click the tabs to enter and view information:

Comment

Specifies comments.

Note

Provides notes about the process.

Click OK.

A version is created on the trunk and is the latest in the view.

Merge Versions Interactively

The following procedure describes how to use the internal CA Harvest SCM interactive merge process and assumes that you want to resolve conflicts. If you selected Default for the merge tool preference, invoking interactive merge opens the interactive merge process. If you selected an external comparison tool for the merge tool preference, the external tool appears.

Note: For information about using the external tool to visually compare file versions, see that tool's documentation.

Follow these steps:

1. Navigate to the item or merge-tagged version you want to resolve.
2. Right-click the item or version, and select *interactive merge* from the shortcut menu.

   The *interactive merge* process dialog appears.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.
3. Specify values to use for the merge; the versions for the Status, Name, and Path fields can be different.

   The two versions of the item being merged appear in the merge dialog with common blocks (lines identical in both versions) and conflict blocks. Conflict blocks are positioned side-by-side and are outlined.

   Note: A *conflict* occurs when the same line or block of data is modified in both the branch and the trunk. Insertions and deletions are considered *changes*.
4. Resolve conflicts by manually editing the left pane text or by clicking the following toolbar actions:

   - Copy all nonconflicting changes from right to left.
   - Copy current change from right to left.

   The left pane represents the branch version being merged; the right pane represents the latest trunk version.
5. (Optional) Click Note to view information about the process.

   Click OK.

   The merge-tagged version is replaced by a new, Normal-tagged version as the latest in the project's trunk.

Compare a Branch Version with Its Parent Trunk Version

You can compare a branch version with its parent trunk version from the Explorer View tree or the Item History diagram.

To compare a branch version with its parent trunk version, right-click a branch version, and select Compare with Trunk from the shortcut menu.

The compare tool appears and displays the differences between the branch version and its parent trunk version. For R-tagged versions, the comparison uses the local content from the file system. This local content displays in the left pane to compare with the parent trunk, which displays in the right pane.

Note: If you configured an external comparison tool in Preferences, the external tool appears.

Compare Views

The compare view process lets you generate a report showing the differences between any two views, either snapshot or working, that exist in any project.

Follow these steps:

1. Navigate the Explorer tree to the state associated with a view you want to compare.
2. Right-click the state, and select Compare View from the shortcut menu.

   The *compare view process* dialog appears and the View fields show the view contexts when you invoked the dialog.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.

3. Click the button next to the Path field to open the Repository Path Selection dialog.

   The dialog appears, and you can select a repository path and a different view. The Show Views with State Nodes option lets you show only views associated with states.

4. Specify the items you want to show in the Compare View list by selecting one or more of the following options and clicking Compare.

   Recursive

   Searches all paths beneath the current path and shows the item versions matching the other filtering criteria. This option works with the Show options. Typically, only items in the path specified in the View and Path fields and specified by the Results criteria are displayed in the dialog list.

   Items only in View 1

   Specifies that all items in View 1 should be listed.

   Items only in View 2

   Specifies that all items in View 2 should be listed.

   A list of items that match your criteria shows the items unique to one view or which have changes between the views. The dialog changes dynamically to let you change your options and refresh your comparison.

   Common Items/Different Contents

   Specifies that all items that are common to View 1 and View 2 but have different contents should be listed.

   Common Items/Identical Contents

   Specifies that all items that are common to View 1 and View 2 and have identical contents should be listed.

5. (Optional) Select an item in the list, and click Difference.

   The Difference dialog appears and shows detailed, line-by-line differences between two text files.

6. (Optional) Click Note to view information about the process.
7. Click Close.

View Differences

The Difference dialog lets you see detailed, line-by-line differences between two text files. The versions being compared for differences are displayed in a read-only mode with common blocks (lines that are the same in both versions) and conflict blocks.

Follow these steps:

1. Select an item in the Compare Views results list, and click Difference.

   The Difference dialog appears, displaying two panes that show the version names and their contexts:

   left pane

   > Contains the current project and view context when the Compare Views dialog was invoked.

   right pane

   > Contains the comparison view that was selected by the compare views process.

   The panes are synchronized to display the same conflict lines. Conflicting blocks are displayed side-by-side, and the portions of the item that are the same for each version are displayed across the width of the dialog. Shaded lines indicate conflicting text.

2. View the conflicts by using the scrollbar or the conflict navigation toolbar buttons. Click Close.

More information:

Set Compare Preferences (see page 41)

Merge-Tagged Version Restrictions

These restrictions apply to merge-tagged versions of items:

- A merge-tagged version of an item must be resolved through the interactive merge process before another version of the same item can be cross project merged.
- CA Harvest SCM does not support concurrent development of item paths; the cross project merge process never creates item path versions with the merged tag.
- An item that has a merge-tagged version cannot be checked out for Update.
- Packages that contain merge-tagged versions cannot be promoted or demoted to a state in a different view.

Merge Versions Across Projects

The cross project merge process lets you merge the versions made to items in one project with the versions made for the same items in another project. The merge creates versions in the target project that are the latest for each item on the trunk. The merge process affects all items modified by a package, and you can merge multiple items simultaneously.

Follow these steps:

1. Navigate to the package that is the target (destination) for the versions you want to merge.
2. Right-click the package, and select *cross project merge process* from the shortcut menu.

   The *cross project merge process* dialog appears and your selected package is listed in the Target Package field.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.
3. Complete the following fields as appropriate to select source versions and a destination package:

   Project

   Specifies a source project.

   Versions from Package

   Specifies versions from a package to use for the merge.

Versions from Snapshot

Specifies versions from a snapshot to use for the merge.

Note: By default, the versions that are modified (versions greater than the base versions) in the snapshot view are the only merged versions. When you want to merge the entire view including the base versions, select the Merge from Base Versions option. Removed items or paths are not removed in the target project, when you use this option.

State

Specifies a source state.

Snapshot

Specifies the snapshot to use as the version source.

Merge Base Versions also

Merges the entire view including the base versions.

Target Package

(Optional) Specifies the destination package for the merged versions. You can click the Package button and use the Select a Package dialog to select a different package.

4. Select a merge option and a placement option from the Merge Options and Placement Options drop-down lists, respectively.

Merge Conservatively

Creates a merge-tagged version, regardless of the contents of the versions. The process fails if the target package has an unmerged branched version of an item also in the source package.

Merge Aggressively

Creates a merge-tagged version only when conflicts are found. If no conflicts are found, the branch and trunk versions are merged to create a normal version. Normal tags can only be created when the versions being compared are in the original baseline of both projects. If the versions were checked in after baselining, merge tags are created regardless of whether conflicts exist.

Note: A conflict occurs when a set of lines is modified in both the branch and the trunk; insertions and deletions are not conflicts.

Take Trunk Version

Automatically selects the trunk (target) to create the final version without comparing the contents of the versions. This option creates a normal version on the trunk and closes the branch.

Take Branch Version

Automatically selects the branch (source) to create the final version without comparing the contents of the versions. This option creates a normal version on the trunk and closes the branch.

Branch Only

Creates a version on the target branch. This option lets you copy changes from the source project to the target project even if one or more target items are reserved for update in the main trunk. With this option, a branch is created to store the changes. The target package cannot be the same package that contains the items reserved for update on the main trunk.

Trunk Only

Creates a version on the target trunk.

Trunk or Branch

Creates a version on the target trunk or branch. This option lets you copy changes from the source project to the target project even if one or more target items are reserved for update in the main trunk. Consider the following:

- When items are reserved for update on the trunk, a branch is created to store the changes only if the target package is not the same package that contains the items reserved for update.
- When items are not reserved for update on the trunk, the items are simply copied to the trunk.

5. (Optional) Click the tabs to enter and view information:

Comment

Specifies comments.

Note

Provides notes about the process.

Click OK.

The source package versions are merged to the target project.

Chapter 5: Managing Versions, Items, and Paths

Note: The instances of Linux in this section refer to both the Linux and zLinux operating environments.

This section contains the following topics:

How to Move, Rename, and Remove Items or Item Paths

Items and item paths are identified by name, path, and version. Using the Repository tab of the CA Harvest SCM Administrator application, administrators can move, rename, or delete an item or item path only if no project contains a version of the item or item path. To perform any of those actions on an item or item path that has a version in a project, use the plug-in and do the following:

1. Go to the project and state that contains the item or item path you want to move, rename, or remove.

2. Execute the process that corresponds to the action you want to perform on the item or item path:

   - Move item
   - Remove item
   - Rename item
   - Move path
   - Remove path
   - Rename path

   A version is created on a branch or trunk depending on the mode you selected in the process dialog. The Repositories tab of the Administrator interface shows the latest trunk version, regardless of the version's project location.

Example: Move an Item

This example shows an item in \Repository\Directory A named FileX.cpp that has V0, V1, and V2. Versions V0, V1, and V2 all have \Repository\Directory A as their parent path. FileX.cpp is being moved to Directory B.

1. Execute a move item process and specify the Trunk mode to move item FileX.cpp from \Repository\Directory A to \Repository\Directory B.

   A version V3 is created. (If you had selected the Branch mode, a version V2.1.1 would be created.)

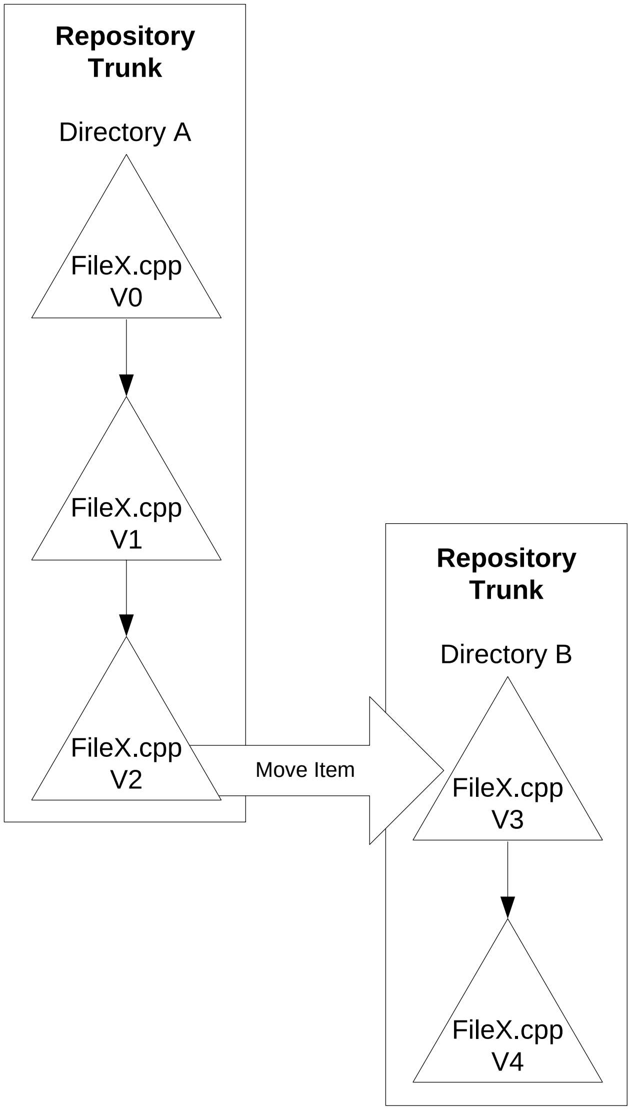
   Version V3 has \Repository\Directory B as its parent path.

   If you expand the package's Versions folder, it lists the following files:

   ```
   FileX.cpp:0 \Repository\Directory A
   FileX.cpp:1 \Repository\Directory A
   FileX.cpp:2 \Repository\Directory A
   FileX.cpp:3 \Repository\Directory B
   ```

2. Continue updating FileX.cpp using \Repository\Directory B to create version V4.

Your current view affects which versions of the item are visible. For example, if Development can see V3, this item is located in \Repository\Directory B. However, if QA can see only V2, this item is located in \Repository\Directory A as shown in the following diagram:



More information:

Item Name and Item Path Rules and Considerations (see page 111)

Item Name and Item Path Rules and Considerations

When you modify item names or item paths, for example, by renaming an item path or moving an item, consider the following rules and behaviors:

- You can create versions of existing item paths only by using a rename path, move path, or remove path process, and these versions can be on branches.
- You cannot concurrently update a branch path, that is, another package cannot be used to change the same path on its own branch.
- The interactive merge process lets you resolve item, but not item path, conflicts.
- When using the rename path, remove path, or move path processes, versions are created for all the subitems and paths under the parent item path. If a conflict occurs during the creation of these versions, the entire operation fails. For example, if you attempt to move an item path on the trunk and the item path has a subitem with a merged-tag, the entire move fails.
- You can delete an empty item path if it has no subitems or paths.
- You can delete an original root path version using the delete version process. This also deletes all the subitem and item path dependent versions. If an error occurs during the deletion for any dependent versions, the entire delete version process fails.

Delete Version Rules

The delete version process removes the last change that is made to an item or the initial version of an item. The delete version process has the following rules:

- You can only delete the absolute latest version for an item. You cannot delete intermediate versions.
- You can delete the initial version of an item (version 0) but only if the item was initially checked in as a new item. (An administrator can delete the initial version, created by the load repository function, by using the Repositories tab of the Administrator application.)
- You can delete more than one version of an item simultaneously as long as the versions are sequential and include the latest version.

- You can use the package filter in the Find Version dialog to facilitate your selection. To delete versions from multiple items, all the versions must have been created by the same package.
- You cannot delete a version in the following scenarios:
  - When the "Delete by Creator/Modifier only" option is selected, and if you are not the administator or the creator or modifier of the version.
  - If a version exists in more than one view.

    Note: If you promote a package that created a version, demote it to the previous state before deleting the version.

Delete a Version

The delete version process lets you remove versions of items in the CA Harvest SCM repository.

Follow these steps:

1. Navigate to the version you want to delete.
2. Right-click the version, and select *delete version process* from the shortcut menu.

   The *delete version process* dialog appears, and the version you selected populates the list.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.
3. (Optional) Click Add (the plus [+] sign).

   The Find Version dialog appears; you can select one or more versions.
4. Click Accept Selected.

   The versions are added to the deletion list.
5. (Optional) Remove a version from the list by selecting a version and clicking Remove (the minus [-] sign).

   The selected version is removed from the deletion list.

6. (Optional) Click Note to view information about the process.
7. Click Close.

   A dialog appears in which you can confirm or cancel the delete version process.

Note: You cannot delete a version in the following scenarios:

- When the "Delete by Creator/Modifier only" option is selected, and if you are not an administrator or the creator or modifier of the version.
- If a version exists in more than one view.
- If you promote a package that created a version, demote it to the previous state before deleting the version.

More information:

Item Name and Item Path Rules and Considerations (see page 111)
Restore a Moved or Removed Item (see page 116)
Restore a Moved or Removed Path (see page 121)

Refactoring Support

The following lifecycle processes support refactoring processes:

- Move item
- Move path
- Remove item
- Remove path
- Rename item
- Rename path

Both the rename item and remove item processes support changes on the branch.

Move Item Process

The move item process lets you logically move an item from the current path to another path. The movement is included as a change associated with a package and can progress through the lifecycle as the package is promoted from one view to another. When you move an item, it no longer displays under the original path in the item view. The move item process creates a new version located on the new parent path. This new version has properties like other versions.

Linked processes execute before and after the move item process completes successfully. In this case, “successfully” means that at least one item is moved.

Move an Item

You can logically move an item from the current path to another path.

Follow these steps:

1. Navigate to the item you want to move.
2. Right-click the item, and select *move item process* from the shortcut menu.

   The *move item process* dialog appears and displays the item name you selected.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.
3. Select a destination path for the item by clicking the button next to the Target Path field to open the Repository Path Selection dialog. Select a path, and click OK.

   The destination path is selected.
4. Specify a placement option:

   Trunk

   Creates a trunk version for refactoring changes.

   Note: This option is identical to the check-out for update process.

   Branch

   Creates a branch version for refactoring changes.

   Note: This option is identical to the check-out for concurrent update process.
5. Select a package from the Package drop-down list, or click the Package button and use the Select a Package dialog to select a package.

   The package is associated with the moved item.

6. (Optional) Click the tabs to enter and view information:

   Comment

   Specifies comments.

   Note

   Provides notes about the process.

   Click OK.

   The moved item is a new version and appears in the destination path and in the associated package's versions list.

Note: You can also move an item by selecting it in the data view and using drag-and-drop to place it on a destination view path.

More information:

Restore a Moved or Removed Item (see page 116)
Item Name and Item Path Rules and Considerations (see page 111)

Remove an Item

The remove item process lets you logically delete selected items from a view. When you remove an item from a view, the item is not deleted; the remove item process creates a new version tagged as removed (D). This version has attributes like other versions; you can view this version through the Find Version dialog or in the version view, but not in the item view.

Follow these steps:

1. Navigate to the item you want to remove.
2. Right-click the item, and select *remove item process* from the shortcut menu.

   The *remove item process* dialog appears and displays the item name you selected.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.

3. Specify a placement option:

   Trunk

   Creates a trunk version for refactoring changes.

   Note: This option is identical to the check-out for update process.

Branch

Creates a branch version for refactoring changes.

Note: This option is identical to the check-out for concurrent update process.

4. (Optional) Remove an item from the list by selecting an item and clicking Remove (the minus [-] sign).
5. Select a package from the Package drop-down list, or click the Package button and use the Select a Package dialog to select a package.

   The package is associated with the removed item.
6. (Optional) Click the tabs to enter and view information:

   Comment

   Specifies comments.

   Note

   Provides notes about the process.

   Click OK.

   The removed item is a new version and appears in the version view and in the associated package's versions list.

More information:

Item Name and Item Path Rules and Considerations (see page 111)

Restore a Moved or Removed Item

To restore a moved or removed item back to its previous location, use the delete version process.

Delete the version created by the move item or remove item process.

The version of the moved or removed item is deleted and the moved or removed item is restored.

More information:

Delete a Version (see page 112)

Rename Item Process Rules

The rename item process logically renames an item. The following rules apply to the rename item process:

- You cannot rename items that have been removed using the remove item process (D-tagged).
- You can only rename an item if it is given a unique name in each project.
- You can rename an item on a branch in a package; however, if you attempt to concurrently merge the package and a duplicate item name exists in the same view path, the name conflict will cause the merge to fail. You must resolve the name conflict by renaming one of the items before you can merge the package successfully.

Rename an Item

The rename item process lets you rename an item.

Follow these steps:

1. Navigate to the item you want to rename.
2. Right-click the item, and select *rename item process* from the shortcut menu.

   The *rename item process* dialog appears and displays the item name you selected.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.
3. Enter a new name for the item.
4. Specify a placement option:

   Trunk

   Creates a trunk version for refactoring changes.

   Note: This option is identical to the check-out for update process.

   Branch

   Creates a branch version for refactoring changes.

   Note: This option is identical to the check-out for concurrent update process.
5. Select a package from the Package drop-down list, or click the Package button and use the Select a Package dialog to select a package.

   The package is associated with the renamed item.

6. (Optional) Click the tabs to enter and view information:

   Comment

   Specifies comments.

   Note

   Provides notes about the process.

   Click OK.

   The renamed item is a new version and appears in the version view and in the associated package's versions list.

More information:

Item Name and Item Path Rules and Considerations (see page 111)

Move Path Process

The move path process lets you logically move a path from the current location to another path. The movement is included with the changes associated with a package and can progress through the lifecycle as the package is promoted from one view to another. When a path has been moved, it no longer displays under the original path in the item view. The move path process creates a version located on the new parent path. This version has properties like other versions, which you can view under the package's Versions folder.

When you move a path, the move path process also creates one new version for each item and path under this path. All those versions are combined as one change; individual versions cannot be deleted. Deleting the original moved path version automatically deletes all the sub-item/path versions created by that move path process.

Linked processes execute before and after the move item process completes successfully.

Move a Path

The move path process lets you logically move a path from the current location to another path.

Follow these steps:

1. From the Explorer view, navigate to the path you want to move.
2. Right-click the path, and select *move path process* from the shortcut menu.

   The *move path process* dialog appears and displays the path you selected.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.

3. Select a destination path by clicking the button next to the Target Path field to open the Repository Path Selection dialog. Click OK.

   The destination path is selected.

4. Specify a placement:

   Trunk

   Creates a trunk version for refactoring changes.

   Note: This option is identical to the check-out for update process.

   Branch

   Creates a branch version for refactoring changes.

   Note: This option is identical to the check-out for concurrent update process.

5. Select a package from the Package drop-down list, or click the Package button and use the Select a Package dialog to select a package.

   The package is associated with the moved path.

6. (Optional) Click the tabs to enter and view information:

   Comment

   Specifies comments.

   Note

   Provides notes about the process.

   Click OK.

   The moved path is a new version and appears in the destination path and in the associated package's versions list.

Note: You can also move a path by selecting it in the data view and using drag-and-drop to place it on a destination view path.

More information:

Restore a Moved or Removed Path (see page 121)
Item Name and Item Path Rules and Considerations (see page 111)

Remove Path Process

The remove path process lets you logically remove a path. The removal is included with the changes associated with a package and can progress through the lifecycle as the package is promoted from one view to another. When a path is removed from the trunk, it no longer displays in the item view. The remove path process creates a version tagged as removed (D). This version has properties like other versions and can be seen under the package's Versions folder.

When you remove a path, the remove path process also creates one new version (D) for each item and path under this path. All those versions are combined as one change; individual version cannot be deleted. Deleting the original removed path version automatically deletes all of the subitem and path versions created by that remove path process.

Linked processes execute before and after the move path process completes successfully.

Remove a Path

The remove path process lets you logically remove a path.

Follow these steps:

1. From the Explorer view, navigate to the path you want to remove.
2. Right-click the path, and select *remove path process* from the shortcut menu.

   The *remove path process* dialog appears and displays the path name you selected.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.
3. Specify a placement:

   Trunk

   Creates a trunk version for refactoring changes.

   Note: This option is identical to the check-out for update process.

Branch

Creates a branch version for refactoring changes.

Note: This option is identical to the check-out for concurrent update process.

4. Select a package from the Package drop-down list, or click the Package button and use the Select a Package dialog to select a package.

   The package is associated with the removed path.

5. (Optional) Click the tabs to enter and view information:

   Comment

   Specifies comments.

   Note

   Provides notes about the process.

   Click OK.

   The removed path is a new version and appears in the versions view and in the associated package's versions list.

More information:

Restore a Moved or Removed Path (see page 121)
Item Name and Item Path Rules and Considerations (see page 111)

Restore a Moved or Removed Path

To restore a moved or removed path to its previous location, use the delete version process.

Delete the version created by the move path or remove path process.

The version of the moved or removed path is deleted and the moved or removed path is restored.

More information:

Delete a Version (see page 112)

Rename Path Process

The rename path process lets users logically rename a path. The renamed path is included with the changes associated with a package and can progress through the lifecycle as the package is promoted from one view to another. When a path has been renamed, it no longer displays the old name in the item view. The rename path process creates a new version with the new name. This version has properties like other versions and you can see it under the package's Versions folder.

When you rename a path, the rename path process also creates one new version for each item and path under this path. All those versions are combined as one change; individual versions cannot be deleted. Deleting the original renamed path version automatically deletes all the sub-item/path versions created by that rename path process.

Linked processes execute before and after the rename path process completes successfully.

Rename a Path

The rename path process lets you logically rename a path.

Follow these steps:

1. From the Explorer view, navigate to the path you want to rename.
2. Right-click the path, and select *rename path process* from the shortcut menu.

   The *rename path process* dialog appears and displays the path name you selected.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.
3. Enter a new name for the path.
4. Specify a placement:

   Trunk

   Creates a trunk version for refactoring changes.

   Note: This option is identical to the check-out for update process.

   Branch

   Creates a branch version for refactoring changes.

   Note: This option is identical to the check-out for concurrent update process.
5. Select a package from the Package drop-down list, or click the Package button and use the Select a Package dialog to select a package.

   The package is associated with the renamed path.

6. (Optional) Click the tabs to enter and view information:

   Comment

   Specifies comments.

   Note

   Provides notes about the process.

   Click OK.

   The renamed path is a new version and appears in the versions view and in the associated package's versions list.

More information:

Item Name and Item Path Rules and Considerations (see page 111)

View a Version's Content

You can view a version's content in read-only mode. Merged and deleted versions cannot be viewed.

To view a version's content

1. Navigate to the version you want to view.
2. Double-click the version.

   The editor for that file type displays the file in read-only mode.

View Item or Version History

The History diagram gives you a graphical view of the version history of an item. Versions are depicted as boxes with the version name, package name, modifier, and last modified date displayed in each box. Trunk and branch versions show their relationships using connecting lines.

You can open any number of diagrams. They display side-by-side with each diagram occupying its own tab in the editor.

Follow these steps:

1. Navigate the Workbench to an item or a version for which you want to view the history.
2. Right-click the item or version, and select History Diagram from the shortcut menu.

   A diagram appears in the Workbench editor.

3. (Optional) Magnify or reduce the diagram view by using the zoom options on the shortcut menu.
4. (Optional) Right-click a diagram node to list diagram options available for the item or version, and execute an option.

   Note: You can set the orientation of the trunk versions, either horizontal or vertical, by using the History Diagram settings.

   A menu related to the node appears and includes all actions available in the tree and Lists View.

Report on Project Versions

You can report on project versions in the following ways:

- **Show Changes in Sibling Projects**—Lists all the change versions (nonbaseline) in sibling projects. This option is applicable for items and versions only.

  To report on changes in sibling projects, right-click the item or version that you want to report on in the list view or in the explorer view, and select Show Changes in Sibling Projects from the shortcut menu.

  By default, this option returns versions from only active projects. You can specify inactive projects (or switch between active and inactive projects) for listing versions in sibling projects. To switch project types, click the filter option in the upper right corner of the Reports view.

Versions View

A new Versions View lets you execute complex filtering operations to locate versions with common attributes. The search criteria are identical to the Find Version dialog, with the added convenience of saving your frequently used queries to the file system for reuse. The following default filters are provided with the view:

- All Versions
- My Reserved Versions
- My Unmerged Versions

Alter File Type

The following groups can alter file types:

- An administrator logged in to Workbench can perform any type of conversion for any of items in the repository as follows:
  - Item-based conversion
  - Extension-based conversion
- Any user other than administrator, such as any user logged in to Workbench can perform only item-based conversion.

  The item-based conversion is only allowed if the user owns the particular item, that is, if the user owns all the versions of that particular item and no versions of the item exist in other projects. The operation fails when a different user owns any of the versions.

  Extension-based conversion is disabled for the user.
- The following rules apply for both the user types:
  - N-tag and D-tag versions can be converted from binary to text and text to binary.
  - The M-tag version can be converted from binary to text only

1. To convert an item, do one of the following as appropriate:
   - From text to binary, right-click the version you want to convert and select Convert Storage Type, Convert to Binary from the shortcut menu.
   - From binary to text, right-click the version you want to convert and select Convert Storage Type, Convert to Text from the shortcut menu.

   The Change Storage Type dialog appears.
2. Do one of the following:
   - Select "Convert specified item" to convert specific versions of the item, click the item selector button to select versions, and click OK.
   - Select "Convert files or file with extension," select the view path, enter the file name or extension, select the Use Extension check box, and click OK.

List Version Report

The list version process lets you generate reports about the changes made to items in the current project. This process is useful for viewing changes made to an item to create versions on the trunk.

The listing produced by this report is in the same format as that produced by the UNIX diff command (diff is a utility that compares the differences between two files). The differences display as instructions that you can use to change the first version and make it the same as the second. These instructions contain: add a, delete d, or change c commands. A line number follows each command. A less than sign (<) precedes lines from the first version. A greater than symbol (>) precedes lines from the second version. A pair of line numbers separated by a comma represents a range of lines; a single line number represents a single line.

The differencing algorithm converts the first version into the second. The line numbers to the left of each a, c, or d instruction always apply to version 1; numbers to the right of the instructions apply to version 2. To convert version 1 to version 2, you can ignore the numbers on the right.

Generate a List Version Report

The list version process lets you generate reports about the changes made to items in the current project. This process is useful for viewing changes made to an item to create versions on the trunk.

Follow these steps:

1. Navigate to the version you want to report on.
2. Right-click the version, and select *list version process* from the shortcut menu.

   The *list version process* dialog appears, and the version you selected is listed in the dialog.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.

3. Select list version options:

   Show Change Description

   Causes the check-in change description to display.

   Show Actual Change

   Causes the actual line-by-line changes between one version and the next to display.

4. (Optional) Click Add (the plus [+] sign) to open the Find Version dialog.

   The Find Version dialog appears and you can select one or more versions. Click Accept Selected.

   The versions are added to the report.

5. (Optional) Select a version, and click Remove (the minus [-] sign).

   The version is removed from the report.

6. (Optional) Click Note to view information about the process.

   Click OK.

   The List Version report is written to the Output Log, from which you can copy it to the clipboard or save it to a text file.

More information:

List Version Examples (see page 127)

List Version Examples

The following List Version examples are based on versions of a shopping list. You can apply this algorithm to any kind of code. The original example list looks like this:

```
list1
tomatoes
potatoes
corn
```

Example 1: Delete a Line

Remove potatoes from the list and it looks like this:

```
list2
tomatoes
corn
```

The List Version report would display the following output when list1 is compared to list2:

```
2d1
< potatoes
```

This output indicates that you must delete line 2 to make the first list like the second. The line to be deleted displays below the command. The less than sign (<) indicates that this line is from list1.

Example 2: Add a Line

Then instead of leaving out potatoes, add spinach to the list. The second list now looks like this:

```
list2
tomatoes
potatoes
spinach
corn
```

The output of differencing this list against list1 would look like this:

```
2a3
> spinach
```

This output indicates that you need to add a line to list1 after line 2. The line to be added is from the second list, as indicated by the greater than sign (>), and is listed below the instruction.

Example 3: Change a Line

In the third example, you buy peas instead of potatoes. The revised shopping list now looks like this:

```
list2
tomatoes
peas
corn
```

The output of differencing this list against list1 would look like this:

```
2c2
< potatoes
---
> peas
```

This output indicates that line 2 needs to be changed. The line from the first file (< potatoes) needs to be changed to be like the line from the second file (> peas). The three hyphens indicate the end of the text in the first list and the start of the text in the second list that should replace it.

Example 4: Change Several Lines

In the fourth example, you remove the old list and replace it with fruit:

```
list2
apples
pears
bananas
```

The output of differencing this list against list1 would look like this:

```
1,3c1,3
< tomatoes
< potatoes
< corn
---
> apples
> pears
> bananas
```

This output indicates that a range of lines (1-3) in the first list must be changed and replaced with a similar range of lines from the second.

Take Snapshot Process

The take snapshot process lets you create a snapshot view of the current working view. Snapshot views are read-only images of working views at a certain point in time that let you capture a software inventory at significant points in its development. You can use snapshot views to support other application management functions, such as baselining or recreating an application at a certain point in time.

The following rules apply to the take snapshot process:

- If the current working view contains reserved or merged versions, the take snapshot process uses the latest normal trunk versions. To use the reserved or merged versions, the reserved versions must be checked in and the merged versions resolved before executing the process.
- If empty item paths exist in the paths you select, they are included in the snapshot view.
- Branch versions, even if the latest in the current view, are not included in the snapshot. You must perform a concurrent merge to merge the branch versions to the trunk before taking the snapshot.
- Branch versions are included in the snapshot, only if the snapshot is taken using the option “Snapshot view with additional packages.”

Take a Snapshot

The take snapshot process lets you create a snapshot of the current working view.

Follow these steps:

1. Navigate to the state that has the working view you want to capture in a snapshot.
2. Right-click the state, and select *take snapshot process* from the shortcut menu.

   The *take snapshot process* dialog appears.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.

3. Name the snapshot, and select options for it:

   Snapshot Name

   Names the snapshot to be created. A default name might have been specified in the process Properties dialog. The name should be used as a template to illustrate a naming convention because multiple snapshots with the same name cannot be created.

   Visible to other Projects

   Makes the snapshot view available to be used in the baseline view of other projects, that is, it will be listed in the Configure Baseline dialog. Typically, only snapshots that represent significant phases of development should be made externally visible.

   Latest versions in this view

   Captures the latest versions in the current working view. If the latest version in the working view has been reserved, the latest one with a normal tag in the trunk is selected.

   As of specified date and time

   Includes versions in the current working view that were modified before or on a specified date and time. Use the calendar feature to specify a date and time or accept the default of the current date and time.

   Important! This behavior deviates from CA Harvest SCM Change Manager r4.x. The date and time is compared with the version modification time. It does not refer to the date and time that versions were present in the working view. For a description of how to simulate CA Harvest SCM Change Manager r4.x behavior, see tech note TEC293284 at http://ca.com/support. CA Harvest SCM Change Manager r4 is no longer supported; however, we provide this information as a courtesy to our CA Harvest SCM Change Manager r4 clients. For information about CA policy for unsupported products, see http://ca.com/support or contact your Account Representative.

4. (Optional) Select packages to include in the snapshot view:

   Snapshot view with additional packages

   > Includes the versions contained in the snapshot view specified in the drop-down list, plus the packages listed in Specified packages.
   >
   > **Note:** The drop-down list shows snapshot views in the current project.

   Baseline with additional packages

   > Includes the latest versions in the baseline and the latest versions in the Specified packages.

   Specified packages

   > Specifies packages from the current state. Click Add (the plus [+] sign) to open the Select Packages dialog. You can remove packages by selecting them and clicking Remove (the minus [-] sign). Initially this list is empty.

5. (Optional) Click the button next to the Path field to open the Repository Path Selection dialog, and select a path to include in the snapshot.

   The selected path populates the Path field.

6. (Optional) Click the button next to the SubPath field to open the Repository Path Selection dialog, which shows the subpaths under the Path selected in the Path field. You can select multiple subpaths. Verify that the subpaths selected belong to the same parent. If not, select a common parent. Click OK.

   All the subpaths that you selected populate the SubPath field.

   Note: This SubPath field is applicable only for the option “Latest versions in this view.”

7. (Optional) Click Note to view information about the process.

   Click OK.

   The versions are captured in the snapshot and the snapshot is listed in the snapshot state.

View Snapshots That Include a Specific Version

You can view the snapshots in your current project that include a specific version. This is helpful, for example, if you have a request to change an item and you need to know if versions of the item exist in different views.

Follow these steps:

1. Right-click a version in the Explorer View, and select View Snapshots from the shortcut menu.

   Note: If the version is not included in a snapshot, a No Snapshots Present dialog appears.

   The View Snapshot Data dialog appears and lists all snapshots in the current project that contain the version.

2. (Optional) Sort columns in ascending or descending order.
3. Click OK.

   The dialog closes.

Lifecycle Diagram

The lifecycle diagram gives you a graphical view of the development lifecycle defined for a specific CA Harvest SCM project. The diagram appears in the Plug-in for Eclipse. Project states are depicted as boxes in colors that depict the view types associated with the states. In addition, states are listed with the state name, view name, number of packages, modifier, and last modified date displayed in each box. Promote and demote processes are represented as connecting, directed colored lines. Icons in the state boxes represent approval processes. You can customize the visual display for a lifecycle diagram in Preferences.

History Diagram

The history diagram gives you a graphical view of the history of a file or folder. Versions are depicted as boxes with the version name, package name, modifier, and last modified date displayed in each box. Trunk and branch versions show their relationships using connecting, directed lines.

You can open any number of diagrams. They display side-by-side with each diagram occupying its own tab in Eclipse. You can display files or folders in the diagram. For example, you can use the history diagram to view the versions of a directory that occurred as the result of a refactoring operation. From within the diagram, you can execute an action by right-clicking a diagram node. A menu related to the node appears and includes all actions available for the item.

Show Stored As Attribute Type

To help you quickly determine how an item is stored in the repository, the “Stored As” attribute displays in the Properties Sheet and in the List View. The value of this attribute is either text or binary.

Save List As

You can save the Lists View or results view table contents to a file on the file system. You can save the selected data or the entire list of results in either ASCII text or Comma Separated Value (CSV) format, and specify to include column labels.

Rules for Creating Item Paths

You can create item paths in existing data views by using the create item path function.

The following rules apply to the create item path function:

- A check-in process must exist in any state of the project.
- You must have Execute access for the check-in process.
- The check-in process must have either the New, or New or Existing filter option enabled.

If any of these rules are not met, the Create Item Path menu option is disabled.

Create an Item Path

You can create item paths in existing data views.

Follow these steps:

1. Navigate to the data view.
2. Right-click a view path, and select *create item path process* from the shortcut menu.

   The *create item path process* dialog appears, and the Parent field displays the view path you selected.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.
3. Enter a name for the new path in the Name field.

4. Specify a placement option:

   Trunk

   Creates a trunk version for refactoring changes.

   Note: This option is identical to the check-out for update process.

   Branch

   Creates a branch version for refactoring changes.

   Note: This option is identical to the check-out for concurrent update process.

5. Use the Package drop-down list, or click the Package button and use the Select a Package dialog, to select a package in the current state to associate with the new path.

   A package association is selected.

6. Click OK.

   The item path is created.

Chapter 6: Using Packages

This section contains the following topics:

Packages

In CA Harvest SCM, all version changes must be made in reference to a package. A package is the basic unit of work that moves through the lifecycle. It typically represents a problem, a task, or an incident that needs to be tracked, the changes made in response to the problem, task, or incident, and any associated information. The create package process lets you create a package in the state defined by the administrator as the initial state.

Packages have the following characteristics:

- **Package Group**—A package group consists of two or more packages. A package can belong to numerous package groups.
- **State**—Promote and demote processes change a package's state.
- **Forms**—A package can have a number of form associations. A form provides the link between CA Harvest SCM change management functions and problem tracking.
- **Versions**—A package can include numerous versions. Double-clicking a package expands the package to show the forms and Versions root node. To see the package’s version, expand the Versions root node.

The Package Properties dialog lets you define a package and associate the package to one or more package groups.

Work With Change Packages

An CA Harvest SCM change package is needed to make changes in the repository. These changes include checked in resources, as well as renamed and removed items. In the CA Harvest SCM Plug-In for Eclipse, you work with one change package at a time, which is the package you set in your context.

To execute CA Harvest SCM package processes, right-click one or more packages, and click a process on the Processes menu.

The Processes menu shows all promote, demote, switch package, and concurrent merge processes to which you have access.

The CA Harvest SCM Repositories shortcut menu contains options for viewing and editing forms, opening package properties, switching a version from one package to another, and listing your package assignments.

Package Status Indicators

Package status indicators are visual cues that give you useful information about packages and the objects they use. After you set preferences to show indicators, package status indicators can appear in the Explorer View.

Indicators appear on a package icon to denote the following conditions:

- A package needs approval before it can be promoted.
- A package contains reserved tag versions of files.
- A package contains unmerged versions of files.

More information:

Set Explorer Tree Preferences (see page 39)

Package Names

When you create a package, the package name you specify must be unique in the project; you cannot create multiple packages with the same name.

Package names can be created in the following ways:

- Enter a package name in the Name field of the create package process dialog.
- Do *not* enter a name in the Name field of the create package process dialog and CA Harvest SCM generates a package name when you click Apply or OK. For example, the administrator sets up the create package process to use the default name template, Package-%N('999'). A counter generates unique package names. When you click Apply, the first package created is Package- 1, the second is Package- 2, and so on.

Create a Package

The create package process lets you create a package and, optionally, automatically create and associate a form to the package. If the form option was selected in the Create Package Properties dialog, a form with the same name as the package is created and the two objects are automatically associated. The create package process streamlines creating and automatically associating a package and form.

To create a change package

1. Right-click the Packages root node in the Explorer view and select *create package process* from the Processes menu.

   The *create package* dialog appears.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.

2. Complete the dialog fields:

   Name

   Uniquely names a package, according to how package-naming is defined in the process properties.

   Assign To

   Assigns the package to a user from all defined CA Harvest SCM users in your installation.

3. (Optional) Click the tabs to enter and view information:

   Comment

   Specifies comments.

   Note

   Provides notes about the process.

   Click OK.

   The change package is created and appears in the Packages folder in the state in which you created it.

More information:

Add a Package Group to a Package (see page 142)

Set as Workspace Context Package

You can use the Set as workspace context package action to set a package to a project-level context of a workspace project. This action is an alternative to the Team, Edit Context action.

To set a package to project-level context

1. Navigate the Explorer view to the package for which you want to set project-level context.
2. Right-click the package and select Set As Workspace Context Package from the shortcut menu.

   The Set project-level context package dialog appears and lists projects that were added to the current CA Harvest SCM state and are available in the Eclipse workspace.

   Note: If no projects are available in the Eclipse workspace from the current CA Harvest SCM state, the menu option is disabled.
3. Select the projects to which you want to set the project-level context package. Click OK.

   The package is set to project-level context.

Associate a Package and a Form

The Forms list of the package Properties dialog lists the forms associated with the current package and lets you create or modify associations.

Follow these steps:

1. Navigate to the package from which you want to create the association.
2. Right-click the package, and select Properties from the shortcut menu.

   The package Properties dialog appears.
3. Click Forms, and click Add (the plus [+] sign).

   The Find Forms dialog appears and lists all forms in your installation.
4. Select one or more forms that you want to associate with the package, and click Accept Selected.

   The forms are added to the Find Forms Properties dialog.
5. Click OK.

   The associated form is listed below the package.

Remove a Package and Form Association

The Forms list of the package Properties dialog lists the forms associated with the current package and lets you remove associations—but does not delete the selected form.

Follow these steps:

1. Navigate to the package from which you want to remove the association.
2. Right-click the package from which you want to remove the association, and select Properties from the shortcut menu.

   The package Properties dialog appears.
3. Click Forms.

   The forms associated with the package are listed in the Forms list.
4. Select the form you want to disassociate, click Remove (the minus [-] sign), and click OK on the package Properties dialog.

   The associated form is no longer listed below the package.

Delete a Package

The delete package process lets you delete a package—and deletes its associated form if that form is not associated with another package.

Note: You cannot delete a package if it has versions associated with it.

To delete a package

1. Right-click one or more packages in the Explorer view, and select *delete package process* from the shortcut menu.

   The *delete package process* dialog appears and lists the package you selected.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.

2. (Optional) Do one of the following to add or remove a package from the deletion list:

   - Click Add (the plus [+] sign) to select one or more packages from the current project or state.
   - Click Remove (the minus [-] sign) after selecting a package.

   The selected packages are added or removed.

3. Click OK.

   The package is deleted and no longer appears in the package lists.

Show Package Approvals

You can view the approval history of the current package to discover who approved a package and when it was approved.

Follow these steps:

1. Navigate to the package for which you want to view the approval history.
2. Right-click the package, and select Properties from the shortcut menu.

   The package Properties dialog appears.

3. Click Approval.

   The Approval list displays the package approval information.

View Package History

You can view the package history to find who has performed the following actions and when these actions occurred:

- Created the package
- Approved or rejected the package, with their comments
- Promoted or demoted the package

Follow these steps:

1. Navigate to the package for which you want to view the history.
2. Right-click the package, and select Properties from the shortcut menu.

   The package Properties dialog appears.
3. Click History.

   The package history displays in the History list.

Create a Package Group

You can define a package group and add packages to it. You can use package groups to organize related packages.

Follow these steps:

1. Navigate to the project or state in which you want to create the package group.
2. Right-click the Package Groups node, and select New Package Group from the shortcut menu.

   The New Package Group dialog appears.
3. Click Add (the plus [+] sign) on the New Package Group dialog.

   The Select Packages dialog appears and lists all the packages in your current project or state.
4. Select one or more packages, and click OK.

   The Select Packages dialog closes, and the package is listed in the Packages list of the New Package Group dialog.

   Note: You can remove a package from the list of packages associated with the current package group by selecting the package and clicking Remove (the minus [-] sign). This does not delete the selected package; it simply removes the association.
5. Enter a name for the package group, select Bind Packages if you want to enforce the Bind Packages restrictions, and click OK.

   The package group is created and appears below the Package Groups node.

View and Modify Package Group Properties

The package group Properties dialog lets you view package group properties and modify its attributes.

Follow these steps:

1. Navigate to the package group you want to view and modify.
2. Right-click the package group, and select Properties from the shortcut menu.

   The package group Properties dialog appears.
3. Click Package Group.

   The Package Group page appears.
4. View or modify the dialog field:

   Name

   Names a package, depending on how package-naming is defined in the process properties.
5. Click Packages.

   The Packages page appears.
6. View or modify the dialog field:

   Bind

   Enforces the Bind Packages restrictions.

   Click OK.

   The package group is modified.

Add a Package Group to a Package

Using the package Properties dialog, you can add a package group to a package to organize related packages.

To add a package group to a package

1. Navigate to the package for which you want to add a package group.
2. Right-click the package, and select Properties from the shortcut menu.

   The package Properties dialog appears.
3. Click Groups.

   The package groups associated with the package are listed.

4. Click Add (the plus [+] sign) to list all the package groups in your current project. Select one or more package groups to add to the list of package groups associated with the current package.

   The package groups are listed in the Groups list.

5. Click OK.

   The package group is added to the package.

More information:

Create a Package (see page 137)

Remove a Package Group From a Package

Using the package Properties dialog, you can remove a package group from a package to organize related packages.

Follow these steps:

1. Navigate to the package for which you want to remove a package group.
2. Right-click the package, and select Properties from the shortcut menu.

   The package Properties dialog appears.

3. Click Groups.

   The package groups associated with the package are listed.

4. Select the package group you want to remove and click Remove (the minus [-] sign). This does not delete the selected package group; it simply removes the association.

   The package group is not listed in the Groups list.

5. Click OK.

   The package group is removed from the package.

Delete a Package Group

A package group consists of two or more packages. Deleting a package group deletes the package association, but does not delete the packages.

Follow these steps:

1. Navigate to the package group you want to delete.
2. Right-click the package group, and select Delete Package Group from the shortcut menu.

   A confirmation dialog appears and lets you add or remove package groups from the group deletion.
3. Click OK.

   The package group is deleted.

Approve a Package

The approve process lets designated users approve or reject a package so that it can be promoted or moved.

To approve a package

1. Navigate to the package you want to approve.
2. Right-click the package, and select *approve process* from the shortcut menu.

   The *approve process* dialog appears and lists the package you selected.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.
3. (Optional) Do one of the following to add or remove a package from the approval list:
   - Click Add (the plus [+] sign) to select one or more packages from the current project or state.
   - Click Remove (the minus [-] sign) after selecting a package.

   The selected packages are added or removed from the approval list.
4. Verify that the Approve option is selected.
5. (Optional) Click the tabs to enter and view information:

   Comment

   Specifies comments.

   Note

   Provides notes about the process.

   Click OK.

   The package is approved.

More information:

Reject a Package (see page 145)

Reject a Package

You can reject a package if it does not meet standards. If a member of a group rejects a package, that particular user must approve the package to remove the rejection; the approval of another user in the group does not override it. If it is necessary to override a rejection, a second approval process can be added.

Follow these steps:

1. Navigate to the package you want to reject.
2. Right-click the package, and select *approve process* from the shortcut menu.

   The *approve process* dialog appears and lists the package you selected.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.
3. (Optional) Do one of the following to add or remove a package from the rejection list:
   - Click Add (the plus [+] sign) to open the Select Packages dialog from which you can select packages in the current state. Click OK.
   - Click Remove (the minus [-] sign) after selecting a package.

   The selected packages are added or removed from the rejection list.
4. Select Reject from the Options group on the dialog.
5. (Optional) Click the tabs to enter and view information:

   Comment

   Specifies comments.

   Note

   Provides notes about the process.

   Click OK.

   The package is rejected.

Promote a Package

The promote process lets you move one or more packages in the current state to the next state in the lifecycle. If an approval process exists for a state, approvals are verified before a package can be promoted. When you promote a package to a state with another view, all its changes become visible in that view.

If a package is part of a bound package group, all packages in the group must be promoted together. To promote a single package that belongs to a bound package group, you must first unbind the package.

Follow these steps:

1. Navigate to the package you want to promote.
2. Right-click the package, and select *promote process* from the shortcut menu.

   The *promote process* dialog appears and lists the package you selected.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.
3. (Optional) Click Add (the plus [+] sign) to open the Select Packages dialog from which you can select packages in the current state. Click OK.

   The packages are added to the promotion list.
4. (Optional) Select packages from the list, and click Remove (the minus [-] sign)

   The packages are removed from the promotion list.
5. (Optional) Select options for promoting the package:

   Note: If an option is enabled by default, it is enforced and you cannot override it.

   Enforce Package Bind

   > Promotes all the packages belonging to a bound package group together.

   Enforce Package Merge

   > Prohibits promoting packages to the next state if the packages are associated with branch versions. If the promote process is in a state with no view, or if that state's view is the same as the one in the Promote To state, this option is not enforced.

Verify Package Dependency

Prohibits promoting packages that depend upon other packages. The dependency is based on versions in the view. You cannot promote a package with a higher item-version without also promoting the packages with the lower item-versions in the current view unless the lower item-versions already exist in the view of the destination state. If the promote process is in a state that shares the same view as the one in the destination state, this option is not enforced.

Note: The lower item-version causes a dependency error only when it is on the trunk.

Add Dependent Packages

Allows adding dependent packages also to the list of packages being promoted. To avoid conflict, it is recommended to promote all the dependent packages together. This option retrieves details of the dependent packages and lists the details in the Dependent Packages tab. The details include the list of dependent packages, their associated versions which made them dependent, and all other versions.

6. (Optional) Select the Approve before promoting option to approve the package before promoting it.

   Note: If multiple approve processes are defined for the state, a menu appears that lets you select the approve process you want to use.

7. (Optional) Click Note to view notes about the process.
8. Click OK.

   The package is promoted and appears in the destination state.

Demote a Package

The demote process lets you move one or more packages in the current state to a previous state in the lifecycle.

Follow these steps:

1. Navigate to the package you want to demote.
2. Right-click the package, and select *demote process* from the shortcut menu.

   The *demote process* dialog appears and lists the package you selected. If a package is part of a bound package group, all packages in the group must be demoted together. To demote a package that belongs to a bound package group, you must first unbind the package.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.

3. (Optional) Click Add (the plus [+] sign) to open the Select Packages dialog from which you can select packages in the current state. Click OK.

   The packages are added to the demotion list.

4. (Optional) Select packages from the list, and click Remove (the minus [-] sign).

   The packages are removed from the demotion list.

5. (Optional) Select demotion options:

   Note: If an option is enabled by default, it is enforced and you cannot override it.

   Enforce Package Bind

   > Enforces that you demote all the packages belonging to a bound package group together; otherwise, an error occurs.

   Verify Package Dependency

   > Prohibits you from demoting packages that depend upon other packages. The dependency is based on versions in the view. You cannot demote a package with a lower item-version without also demoting the packages with the higher item-versions in the current view unless the higher item-versions already exist in the view of the destination state. If the demote process is in a state that shares the same view as the one in the destination state, this option is not enforced.
   >
   > **Note:** The higher item-version causes a dependency error when it is on the trunk or on the branch.

   Add Dependent Packages

   > Allows adding dependent packages also to the list of packages being demoted. To avoid conflict, it is recommended to demote all the dependent packages together. This option retrieves details of the dependent packages and lists the details in the Dependent Packages tab. The details include the list of dependent packages, their associated versions which made them dependent, and all other versions.

   Demotion options are specified.

6. (Optional) Click Note to view information about the process.

7. Click OK.

   The package is demoted and appears in the destination state.

Package Dependency Report

The Package Dependency Report lets you view the dependent packages of packages and provides the ability to add all the dependent packages, while executing the Promote or Demote process. Using this feature, you can ensure that you promote or demote all the dependent packages together. Thus, you can also avoid any inconsistency in the code.

To maintain consistency, promote and demote the dependent packages together because there could be dependent package for any package.

You can view the package dependency report while performing the following actions:

- Promote packages
- Demote Packages

While performing the Promote or Demote process, you can view the dependent packages details in the Dependent Package tab of the Promote or Demote dialog. Optionally, you can add all the dependent packages to the promote or demote list and promote or demote all the dependent packages together.

Rename or Reassign a Package

The package Properties dialog lets you rename or reassign a package.

To rename or reassign a package

1. Navigate to the package you want to rename or reassign.
2. Right-click the package, and select Properties from the shortcut menu.

   The package Properties dialog appears.

3. Click Package, and view or modify the dialog fields:

   Name

   > Names a package, depending on how package-naming is defined in the process properties.

   Assign To

   > Assigns the package to a user. You can select a user name from all CA Harvest SCM users in your installation.

   Click OK.

   The package is renamed or reassigned.

Note: You can also right-click a package and select Rename from the shortcut menu to rename a package.

Move a Package to a Different Project

The move package process lets you move one or more packages from the current project and state to a state in another project. This process moves only the package definition and history, not any changes made in the first project. Changes associated with packages cannot be moved with this process.

Follow these steps:

1. Navigate to the package you want to move.
2. Right-click the package, and select *move package process* from the shortcut menu.

   The *move package process* dialog appears and lists the package you selected.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.
3. (Optional) Click Add (the plus [+] sign) to open the Select Packages dialog from which you can select packages in the current state. Click OK.

   The packages are added to the move package list.
4. (Optional) Select packages from the list, and click Remove (the minus [-] sign).

   The packages are removed from the move package list.
5. Select a target project and state by using the drop-down lists.

   The target project and state are specified.
6. (Optional) Select the Include Package History option.

   All the package history records that have been created in former projects are included in the moved package.

   Note: If you no longer require the history, excluding it can reduce processing time.
7. (Optional) Select the Keep Source Package option.

   Duplicates the source package and the same form is associated with both packages. Because the package relationship is maintained by the associated form, a form property page is also added. Both the packages share the same history and after the move both are independent packages linked only through forms.
8. (Optional) Click Note to view information about the process.

   Click OK.

   The package appears in the destination state of the destination project.

Switch Package Rules

The switch package process lets you move versions from one source package to a target package.

The following rules apply to the switch package process:

- You can switch versions only to a package located in the same state as the source package.
- All or some of the package versions can be switched to another package. For example, Package A has item1 (version 1), item2 (version 2), and you can switch item1 (version1) to a different package but still retain item2 (version2).
- You can switch a branch version to a target package only if the target package does not contain any existing versions of the items being switched.
- If you want to switch a trunk version, the target package cannot have a branch version of the same item.
- Both the branch and the trunk versions must be switched together if the trunk version is a result of a merge from the branch.
- If the target package has branch versions associated with it (even if those branch versions have been merged), the switch package will fail.
- The target package cannot contain the parent path of a version being switched.

Switch Versions from One Package to Another

The switch package process lets you move versions from one source package to a target package.

Note: Any versions that have review comments and attachments are switched with the package. When the target package has a review request, all source package comments and attachments are transferred to that review request. When the target package does not have a review request, the source review request is duplicated before transferring the comments and attachments. The status of the new review is reset to Open or In Progress and the primary reviewer must approve the review again.

Follow these steps:

1. Right-click a package, and select *switch package process* from the shortcut menu.

   The *switch package process* dialog appears, and the Versions list is automatically populated with the source versions.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.

2. Use the Source Package or click the Package button, and use the Select a Package dialog to select a source package.

   The selected package populates the Source Package field.

3. Select the versions in the Versions list that you want to switch to the target package.

   The versions are destined for the target package.

4. Click the Package button, and use the Select a Package dialog to select a target package.

   The selected package populates the Target Package field.

5. (Optional) Click Note to view information about the process.

   Click OK.

   The versions are switched to the target package and are no longer associated with the source package. If a failure occurs, all selected versions remain with the source package.

Quick Status Package Indicators

Package status indicators are visual cues that give you useful information about packages and the objects they use. After you set preferences to show indicators, package status indicators appear in the Plug-in for Eclipse Explorer View. Indicators appear on a package icon to denote the following conditions:

- A package needs approval before it can be promoted.
- A package contains reserved tag versions of files.
- A package contains unmerged versions of files.

Package-Centric Visualization of the Explorer View

At the top of Explorer View, you can select a package from the Package drop-down list. This package list applies to the current state context in your tree selection. If you select a package, the tree automatically rearranges itself to show versions belonging to the package at the latest version node level. While a package is selected, you can create a path on the branch and it appears immediately in the tree. The working view root node is also updated to reflect the default package. The Explorer View works in the traditional trunk-oriented way when you do not select a package.

Packages View

The Packages View lets you execute complex filtering operations to locate packages with common attributes. You can save your frequently used queries to the file system for reuse. The Packages view provides two default filters: All Packages and My Assigned Packages. Advanced Search provides additional filtering criteria.

Notify Users

The notify process lets you send a mail message to individual users or all members of one or more user groups.

To notify a user

1. Navigate the Workbench to the state that has the notify process you want to execute.
2. Right-click the state, and select *notify process* from the shortcut menu.

   The *notify process* dialog appears.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.
3. Complete the dialog fields:

   Mail Utility

   Names a mail program and any arguments you want to supply when the program is invoked. Specify a full path to the program.

   - On UNIX and Linux clients, CA Harvest SCM searches for a path in the PATH variable of the user executing the process.
   - On Windows clients, the mail program is executed on the server and must be in the path of the user who started the server.

Subject

Specifies a default subject. The subject appears on the subject line of the email message when it is sent. You can modify the content of this field. For AIX and Linux platforms, the Subject field cannot contain double quotes.

Mail Message

Specifies a message to be sent by this notify process.

For example, if this process is going to be used to notify a manager that a package has been promoted, you can specify the appropriate message in this field. If the notify process is being linked to another process, you can use system variables in the messages to represent various parameters.

When you use the package or version system variable in this field, you can right-click packages on the Workbench and select a notify process from the shortcut menu; the package or version names are listed in the notify message.

Display

Specifies a default action to be taken with any general or error outputs generated by the notify process by selecting an option in the Output and Errors menus. The choices are Display or Discard. All output is automatically appended to the output log if the Display choice is selected.

Users to Notify

Specifies the users who receive the notification. You can add a user to the list by clicking Add, selecting the user, and clicking OK. You can remove a user from the list by selecting the user and clicking Remove.

User Groups to Notify

Specifies the user groups who are notified. To be notified, users in the group must have Use Project access to the project unless they are listed in the Users to Notify list. You can add a user group to the list by clicking Add, selecting the user group, and clicking OK. You can remove a user group from the list by selecting the user group and clicking Remove.

4. (Optional) Click Note to view information about the process. Click OK.

   The mail message is sent.

Execute a User-Defined Process

The user-defined process (UDP) lets you invoke an external program to run as a process in your lifecycle. The Administrator defines the program to execute, any command line parameters, and the output options. You cannot modify them.

For programs that read from the default input device, default input parameters are specified. If the administrator defines this field as editable, you can override or modify them at execution time. You can also supply additional command line parameters.

Note: Processes invoked from CA Harvest SCM are executed in synchronous mode. After you execute a user-defined process, you cannot initiate any other action from the keyboard until it completes.

Follow these steps:

1. Navigate to the package or version you want to use to execute a UDP.
2. Right-click the package or versions, and select the UDP process from the shortcut menu.

   The *user-defined process* dialog appears and the [package] or [version] system variables are expanded to a list.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.
3. (Optional) Enter any additional command line parameters to the program executed by this UDP in the Additional Command Line Parameters field.

   The additional parameters tailor the command invocation.

   Note: This option is available only if the Administrator allows any additional parameters for this process.
4. (Optional) Edit the default input parameters in the Default Input field.

   Note: This field applies only to programs that read from the standard input device. If you defined the default input as editable in the process Properties dialog, this field becomes modifiable.
5. (Optional) Click Note to view information about the process.

   Click OK.

   The user-defined process executes.

Locate Package in the Explorer View

You can locate and highlight the package from which the version was created from the Workbench / Eclipse plug-in. This option is useful when there are multiple branch versions and when the changes are included across several packages for the same version.

Follow these steps:

1. Navigate the Workbench / Eclipse plug-in to the project you want to locate the package in which the version exists.
2. Right-click any version and select Locate Package in Explorer View.

   CA Harvest SCM navigates to the package in the explorer view and selects it.

   Note: This option is disabled for the baseline versions.

Chapter 7: Using Forms

This section contains the following topics:

Forms

CA Harvest SCM forms let you record, organize, and track information in a way that is similar to paper forms. CA Harvest SCM packages use forms to store package and user-entered information about the tasks being used through the package. For example, you can use a form to track support issues or software failures. A form can also help you organize information for a project or about a specific customer. You can create form attachments to provide additional relevant information. The form's modification history is maintained and can be viewed. Every form must have an associated package.

Create a Form

The create package process lets you create a form to record information about the package. The form type and the package that the create package process makes is configurable from CA Harvest SCM Administrator GUI.

To create a form

1. Navigate the plug-in to the state in which you want to create the package and its form.
2. Expand the state, right-click Packages, and select *create package process* from the shortcut menu.

   The *create package process* dialog appears.

   Note: The lowercase *italic* text indicates the process dialog name by the process type, since the process execution dialog names differ to each site.
3. Complete the dialog fields:

   Name

   Names the package and corresponding form.

   Assign To

   Assigns the package to a user.

   Click OK.

   A package and an associated form are created. The form is listed below the package in the Explorer View.

Add a New Form to a Package

Forms attain their greatest usefulness through association with packages and must be associated with one or many packages. The Add New Form dialog lets you add and associate a form with a package.

To add a new form to a package

1. Navigate to the package to which you want to associate the form you are creating.
2. Right-click the package, and select Add New Form from the shortcut menu.

   The Add New Form dialog appears.
3. Name the form, select the type of form you want to add, and click OK.

   Note: If you do not enter a form name, a default form name is generated based on a unique ID and the form type name.

   The associated form is listed below the package.

Save on Shutdown

If the plug-in is shut down while one or more modified forms is open, the modified forms names are listed in a dialog.

To save the modified forms on shutdown, select them, and click OK.

The forms you selected are saved.

View or Edit a Form

Forms display in the Form Editor. The fields in a form are specific to the type of form loaded and vary by form type. Forms can be edited concurrently.

To edit or view a form, right-click a form and select Edit Form from the shortcut menu, or double-click a form.

The form displays in the Form Editor.

Type Ctrl-S to save changes in the Form Editor.

How to Resolve Form Conflicts

Two users can update a form at the same time. When you save the form that you have open, a dialog appears that lets you view and merge the differences between the form that you have open and the form that another user has open. The upper pane of the dialog displays individual form fields that conflict, organized in a tree by form pages.

Follow these steps:

1. Navigate the upper pane to a conflicting form field, and click it.

   Your current form field shows in the left pane and the right pane shows the form values that are currently stored on the server. The panes synchronize so that the two panes display the same fields.

2. Resolve conflicts in the left pane in the following ways:

   - Copy a change from right to left using toolbar actions.
   - Manually edit text in the left pane.
   - Accept changes in the left pane so that they overwrite the server field value.

   Note: The left pane contents *only* will be saved.

   Conflicts are resolved.

3. Click OK.

   The form merge dialog closes and the merged form contents are saved.

Delete a Form

Deleting a form removes its association with the associated package. If the form is not associated with another package, the form is deleted completely after your confirmation.

Follow these steps:

1. Navigate to the form you want to delete.
2. Right-click the form, and select Delete Form from the shortcut menu.

   A confirmation dialog appears and lets you remove forms from the deletion.
3. Click OK.

   The form is deleted.

Print a Form

Forms are listed in the Explorer View and appear in the Form Editor.

To print a form that is displayed in the Form Editor, click the Print icon on the toolbar.

The form prints in a list format.

Form Details Report

The Form Details report lets you obtain current and historical information about a form. The report includes the following information:

- The content of each form field.
- Information about associated packages, including the name, project, and state.
- Form history that shows the user, date, and time when a form has been created or modified. A record is added to this history when a form is created, its field contents are modified, or its access is modified.

Generate a Form Details Report

The Form Details Report shows the form type and form name at the top of the report. Each tab of the form has its own subsection in the report. Associated Packages and Form History sections appear at the end of the report.

To generate a Form Details report, do *one* of the following:

- Right-click one or more forms in the Explorer View, and select Details Report from the shortcut menu.
- Right-click one or more forms in the Find Form list, and select Details Report from the shortcut menu.
- Select one or more forms on any process or properties dialog where forms are displayed in a table, and click the Form Report button.

The report appears in your default browser window. Multiple reports appear sequentially in the same browser window.

Form Attachments

Each form can have one or more attachments associated with it, linking the form to additional relevant information. You can create form attachments and use them to reference websites, view files, or copy files.

Two types of form attachments are available—file and URL.

- Files are copied to the CA Harvest SCM database. Files can originate on the local computer or a network drive.
- URLs reference web sites. Only the URL name is saved in the database.

More information:

Add a Form Attachment (see page 163)
View a Form Attachment (see page 163)
Copy a File Form Attachment (see page 164)
Remove a Form Attachment (see page 164)

Form Editor

The form editor uses XML form templates that are stored on the server. You do not need to distribute form templates to individual client computers. The form opens in an editor within the tabbed editor area of the Plug-in for Eclipse, with other text editors or diagrams.

The form editor lets you do the following actions:

- View or edit a form by using an Edit Form action.
- Edit any number of forms side-by-side. Use the tabbed editor to view multiple forms or copy and paste text between forms.
- Modify, save, print form content, and attach file or URL attachments.
- Use the form merge tool to merge your changes with changes of another user for the same form.

Note: CA Harvest SCM Web Interface (Harweb) is not required in the plug-in. Actions previously available through the plug-in embedded Harweb are native to the plug-in, for example, viewing and updating forms.

Form Templates

Form templates have the following capabilities:

- Required fields
- Pattern-based field validation
- Multiple column layout of fields
- Image field—graphical images can now be displayed on the form
- Hyperlink field
- Rich text labels
- JavaScript—the editor requires script-based customizations to be implemented in JavaScript. The formerly used Visual Basic script is not platform-independent and restricts operation on non-Windows platforms.

Note: The *CA Harvest Software Change Manager Administrator Guide* contains detailed information about customizing your form templates and using JavaScript.

Add a Form Attachment

You can add an attachment to a form to provide additional information.

To add an attachment, do one of the following:

- Drag a file from the native platform and drop it on a Form node in any tree view that shows forms.
- Right-click a Form node, and select an attachment option from the shortcut menu:
  - Add URL Attachment opens the Add URL dialog that lets you enter a URL address to reference a web site from the form.
  - Add Attachment from Local File System opens a platform file chooser that lets you browse for and select files.

  Click OK.

The attachment node appears in the Explorer View tree below the form node.

View a Form Attachment

You can view form attachments to learn more about an associated form and package.

Follow these steps:

1. Navigate the Explorer View and expand the form node.

   The form attachments are listed beneath the form.

2. Perform one of the following actions:

   - Drag the file attachment from the tree onto the native file system to make a copy of the file. Double-click the copied file to view it.
   - Double-click the file attachment to open the node in an external editor.
   - Double-click the URL attachment to open the URL in an external web browser.

   Text or document files, graphics, and other files display in their associated applications. URLs display in the Internet Explorer.

Copy a File Form Attachment

You can copy form attachments.

To copy a form attachment to the file system, drag an attachment to the file system, open it in an external editor, and save it.

The form attachment is copied.

Note: You cannot copy URL attachments.

Remove a Form Attachment

You can remove an attachment that you no longer want associated with a form.

Follow these steps:

1. Navigate the Explorer View to the form attachment you want to remove.
2. Right-click the form attachment, and select Remove Attachment from the shortcut menu.

   Note: You can select multiple form attachments to remove.

   A confirmation dialog appears.
3. Click OK.

   The attachment is removed from the form. The selected attachment is not deleted; only the association is removed.

Chapter 8: Finding Objects and Reporting

This section contains the following topics:

Find Objects

Use the Find and Filter dialogs to locate objects by specifying filtering criteria. The dialogs display search results in a list of available objects of a certain type, and you can execute available functions on your selection. For example, after locating all packages awaiting your approval, you can execute the approve process by right-clicking each package and selecting the approve process from the shortcut menu to open the approve process execution dialog.

Follow these steps:

1. Open a Find or Filter dialog.
2. Enter or select criteria, and click the execution option.

   Results are listed.
3. (Optional) Right-click one or more objects in the list to open a shortcut menu with functions you can use on the object.

Filter the Packages View

The Packages View lets you filter packages to narrow your package selection. You can define filter settings to use, and save and remove them, or use the default filters:

All Packages

Shows all the packages for the broker.

My Assigned Packages

Shows packages assigned to you.

Follow these steps:

1. Click the Packages View.

   The Filter appears.

2. Select a filter from the Filter drop-down list, and click Find.

   The results appear in the results list.

Follow these steps:

1. Click the Packages View.

   The Filter appears.

2. Specify search criteria, and click Save Filter.

   The Save Filter dialog appears.

3. Enter a name for the filter, and click OK.

   Note: If the filter name already exists, you are prompted about whether to overwrite the existing filter.

   The filter is saved and is available in the Filter drop-down list.

Follow these steps:

1. Click the Packages View.

   The Filter appears.

2. Select a filter setting from the Filter drop-down list, and click Remove Filter.

   A confirmation dialog appears.

3. Click Yes.

   After the next Filter operation is executed, the filter setting no longer appears in the Filter drop-down list.

Show All Packages

The All Packages filter shows all packages for the broker. Use All Packages to locate all packages. You can use the Advanced Options to narrow your selection.

Follow these steps:

1. Click the Packages View.
2. Select All Packages from the Filter drop-down list, and click Find.

   The packages for the broker are listed in the Packages list, and you can perform CA Harvest SCM actions on them.

Show My Assigned Packages

The My Assigned Packages filter shows packages assigned to you, regardless of project or state context. Use My Assigned Packages to locate all of your packages. You can use the Advanced Options to narrow your selection.

Follow these steps:

1. Click the Packages View.
2. Select My Assigned Packages from the Filter drop-down list, and click Find.

   The packages assigned to you are listed in the Packages list, and you can perform CA Harvest SCM actions on them.

Filter Packages by Package Name

The Filter Packages feature lets you filter packages by package name. The Name field is not case-sensitive, for example, entering N* locates packages whose names begin with N or n.

Follow these steps:

1. Click the Packages View.
2. Enter a package name in the Name field.

   Note: You can use wildcards. You can specify multiple package names at the same time by separating the names with a semicolon. You can use the question mark (?) for single character matching.
3. Verify that the Use Advanced Options check box is not selected.

   Click Find.

   The packages matching the filtering criteria are displayed in the results list.

Filter Packages by Project Status

The Project Status field has two options--Active and All. When you select the Active option, only Active projects are considered for package search. If you select the All option, both active and inactive projects are considered for package search.

Note: By default, the Active option is selected. When you select the All option and select the Use Advanced Options check-box, *only* active projects are considered for the search.

Follow these steps:

1. Click the Packages View.
2. Enter a package name in the Name field.

   Note: You can use wildcards. You can specify multiple package names at the same time by separating the names with a semicolon. You can use the question mark (?) for single character matching.

3. Select the project status option.
4. Click Find.

   The packages matching the filtering criteria are displayed in the results list.

Filter Packages Using Advanced Options

The Filter Packages feature lets you execute complex filtering operations to locate packages with common attributes.

Follow these steps:

1. Click the Packages View.
2. Select All Packages from the Filter drop-down list.
3. Select Use Advanced Options.

   The Advanced Options are enabled.

4. Complete the fields that you want to use for filtering:

   Context

   Specifies a context to filter for packages.

   Attributes

   Locates packages that were created, assigned to, or modified by a specific user.

   Note

   Locates packages according to a text substring value that you enter.

   Important! You can do compound searches by separating text substring values with a blank space.

Description

Locates packages according to a text substring value that you enter.

Important! You can do compound searches by separating text substring values with a blank space.

Dates

Specifies a date to locate packages.

Approval Status

Locates packages that are based on their status.

Click Find.

The packages matching the filtering criteria display in the results list.

Filtering Packages with and without Changes

The following new options are available in the Packages view in Workbench:

- Empty Packages Only
- Non-Empty Packages Only
- Both

The third option is the default option.

Empty Packages Only

This option selects the packages which are empty in conjunction with the other filter criteria specified. This helps to identify the packages which no longer have any versions and can be deleted or to carry forward any package history changes to another project using Move package process.

Non-Empty Packages Only

This option chooses the packages which are non-empty in conjunction with the other filter criteria specified.

Both

This option is the default option and selects both packages with versions and without versions in conjunction with the other filter criteria specified.

Use Package Filter Results

Package filter results lets you execute actions without exiting the results list.

To perform actions on package filter results, right-click a package in the results list and select an option from the shortcut menu:

Compare with Trunk

Opens the Compare tool, which shows the differences between the package's branch version and its parent trunk version.

Rename

Specifies a new name for the package.

Add New Form

Opens the Add New Form dialog, which lets you add and associate a form to the package.

New Package Group

Opens the New Package Group dialog, which lets you create or modify package group associations.

Locate Package in Explorer

Expands the Explorer View tree (if necessary) and highlights the package in the tree.

Save List As

Opens a dialog that lets you save your current search results to a specified name and location.

Set as Workspace Context Package

Uses the package to set the workspace package context.

View Forms

Opens a dialog that lists the package's associated forms. You can select one or more forms, and click Open to view or modify the forms in the form editor.

Properties

Opens the package Properties dialog, which lets you view and modify the package attributes.

Processes

Executes package processes.

Note: The selected package must exist in the workspace.

The action is performed according to your selection.

Find Files

The Find File dialog lets you locate files and select files from a list. It also supports multiple filtering operations to let you search precisely. In addition, you can use the Find File dialog simply to obtain file information, which can be output to the Output Log.

You can open the Find File dialog from a number of process execution dialogs by clicking the browser button on the dialog. For example, to open the Find File dialog from the check-in process dialog click the plus sign.

Follow these steps:

1. Click the browser button next to a files list on a process execution dialog.

   The Find File dialog appears.

2. Complete the dialog fields:

   Name

   Specifies a name or naming pattern; this enables Find.

   Note: You can use any number of wild cards (*) in any position for multiple character matching. For single character matching you can use the question mark (?). You can specify multiple file types at the same time by separating them using the OR symbol (|). For example, you can enter: *.cpp|*.h|*.txt to locate cpp, h, and txt files.

   Look in

   Specifies a directory to search for a file. Clicking the button next to this field opens a dialog, which lists directories in the current client directory. You can navigate through the file system by double-clicking a directory or by selecting a directory and clicking OK.

   Include subfolders

   Shows files in every directory below the current one that match the file name filtering criteria.

   When you select Include subfolders and click Find, CA Harvest SCM expands each directory so that the file names displayed in the list include relative paths from your current position.

   Date

   Specifies a date range for the search. By default, the All files option is selected, indicating date checking will not be performed. Selecting the Modified between option lets you select different date searches that can be performed. You can search between two dates, search the previous *x* number of months, or search the previous *x* number of days.

Use Regular Expression

Specifies the file name pattern using standard regular expression syntax.

Click Find.

The files matching the filtering criteria appear in the list and are selected.

3. Click OK.

   All selected files are returned to the calling dialog.

Filter the Versions View

The Versions View lets you filter versions to narrow your version selection. You can define filter settings to use, and save and remove them, or use the default filters:

All Versions

Shows all the versions for the broker, project, and state context.

My Unmerged Versions

Shows all your versions that are unmerged.

My Reserved Versions

Shows all your versions that are reserved.

Note: You must set a broker, project, and state context to enable the Find button.

Follow these steps:

1. Click the Versions View.

   The Filter appears.

2. Select a filter from the Filter drop-down list, and click Find.

   The results appear in the results list.

Follow these steps:

1. Click the Versions View.

   The Filter appears.

2. Specify search criteria, and click Save Filter.

   The Save Filter dialog appears.

3. Enter a name for the filter, and click OK.

   Note: If the filter name already exists, you are prompted about whether to overwrite the existing filter.

   The filter is saved and is available in the Filter drop-down list.

Follow these steps:

1. Click the Versions View.

   The Filter appears.

2. Select a filter setting from the Filter drop-down list, and click Remove Filter.

   A confirmation dialog appears.

3. Click Yes.

   After the next Filter operation is executed, the filter setting no longer appears in the Filter drop-down list.

More information:

Find Versions (see page 175)

Use Version Filter Results

Package filter results lets you execute actions without exiting the results list.

To perform actions on package filter results, right-click a package in the results list and select an option from the shortcut menu:

Compare with Trunk

Opens the Compare tool, which shows the differences between the package's branch version and its parent trunk version.

Compare

Compares two selected versions.

- If one or both of the versions are R, M or D-tagged versions, the Compare dialog appears and fills in entry fields with N-tagged versions.
- If both versions are N-tagged files, the compare tool (as specified in Preferences) appears.
- If both versions are R, M, or D-tagged versions, the Compare dialog appears, but is not filled in.

Save List As

Opens a dialog that lets you save your current search results to a specified name and location.

Properties

Opens the package Properties dialog, which lets you view and modify the package attributes.

Processes

Executes package processes.

Note: The selected package must exist in the workspace.

The action is performed according to your selection.

Show My Unmerged Versions

The My Unmerged Versions filter shows all your versions that are unmerged in a state. Use My Unmerged Versions to locate all your unmerged versions in a state. The Versions View filter options are the same as in the Find Versions dialog and you can use them to narrow your selection.

Follow these steps:

1. Click the Versions View.
2. Select My Unmerged Versions from the Filter drop-down list.
3. Select search options, and select a project and state from the Project and State drop-down lists, respectively.

   The context is set.
4. Click Find.

   Your versions that are unmerged in the project and state context are listed in the Versions list, and you can perform CA Harvest SCM actions on them.

Show My Reserved Versions

The My Reserved Versions filter shows all versions that you reserved in a state. Use My Reserved Versions to locate all the reserved versions you reserved in a state. The Versions View filter options are the same as in the Find Versions dialog and you can use them to narrow your selection.

Follow these steps:

1. Click the Versions View.
2. Select My Reserved Versions from the Filter drop-down list.

3. Select search options, and select a project and state from the Project and State drop-down lists, respectively.

   The context is set.

4. Click Find.

   The versions you reserved in the project and state context are listed in the Versions list, and you can perform CA Harvest SCM actions on them.

Find Versions

The Find Version dialog lets you select item versions from a list. The various options on this dialog work with one another to let you select versions according to multiple criteria. In addition, you can use the Find Version dialog to obtain version information.

Follow these steps:

1. Click Tools, Find Version.

   The Find Version dialog appears.

2. Specify a context for the search.

3. Complete the fields in the dialog:

   Name

   Filters versions according to a naming pattern. You can use any number of wild cards (*) in any position for multiple character matching. You can use the question mark (?) for single character matching. You can specify multiple version names at the same time by separating the names with a semicolon. The Name field is not case-sensitive, for example, entering N* locates versions with names that begin with N or n.

   Package

   Filters versions that are based on the name of the package that created them. Clicking the button next to the Package field opens the Select a Package dialog listing all packages in the current context. This filter is not available when viewing versions in snapshot views.

   Package Group

   Filters versions that are based on the packages from the package group in the selected state. Clicking the button next to the Package Group field opens a Package Group dialog listing all package groups in the current context. This filter is not available when viewing versions in snapshot views.

   Providing the Package or Package Group name is mutually exclusive.

View Path

Changes the current location to any position in the current path. You can change the path by clicking the button next to this field. The Repository Path Selection dialog appears and lets you browse through available paths and select a location.

Include subfolders

Specifies versions that match the other filtering criteria in every path below the current one. You can then select versions from multiple paths to include in this operation. By selecting this option and clicking Find displays expanded paths displays the item names and their relative paths from your current position.

Word/Phrase in File

Specifies text to search for in text files as the Storage Type buttons indicate.

Version/View

Filters the versions in one of the following ways.

If you select the ***package*** option, the following attributes are available:	If you select the ***package*** group option, the following attributes are available:
Latest in View	Latest in View
Latest in Package	Latest in Package Group
Latest	Latest
All in View	All in View
All in Package	All in Package Group
All	All

Based on your selection for the package or package group, the following attributes in the version/view are available.

Latest in View

Displays the latest versions for each item in the current view that match the other filtering criteria. Only one version per item displays. This option is incompatible with viewing branch versions because they are not in a view. When selected, the only Branch option available is Trunk Only.

Latest in Package

Displays the latest versions that are associated with the package specified in the Package field. This option is available only when the Package field is populated.

Latest

Displays the latest version for each item that matches the other filtering criteria. Versions that do not exist in the view but are associated with the current state also displays. Only one version per item displays. This option is not available when viewing versions in snapshot views.

All in View

Displays all versions matching the other filtering criteria that exist in the view that is associated with the current state. Only promoted versions display in another view. This option is incompatible with viewing branch versions because they are not in a view.

All in Package

Displays all versions that are associated with the package specified in the Package field. This option is available only when the Package field is populated.

All

Displays all versions. Versions include the branch and trunk even if that do not exist in the view but are associated with current state. This option is not available when viewing versions in snapshot views.

Latest in Package Group

Displays the latest versions that are associated with the packages within the package group specified in the Package group field.

All in Package Group

Displays all versions that are associated with the packages within the package group specified in the Package group field.

Description

Specifies text to search for in the description of the version. You can select the case-sensitive check box based on your search requirements.

For example: If you search for *No* keyword with the case-sensitive option selected, the search results display all the possible combinations like NO, no, No, or nO.

4. Click Find.

   The versions matching the filtering criteria are listed.

(For selecting versions only) Click OK to return all files to the calling dialog.

Find Version - Results

The versions that are displayed in the result pane of the Find version has more attributes information included for the following values:

- Name
- Path
- Version
- Stored As
- Status
- Package/Packagegroup
- Creator
- Created on
- Modifier
- Modified On
- Data size
- Description

Examples

The following examples provide more insight into the filters usage that is based on your selection for the package or package group.

Example 1:

This example depicts the use case when you select the package option.

Follow these steps:

1. Maintain an SCM project with the Development, Test, and Release views.
2. Create pack1, pack2, and pack3 as three packages in the Development view of the project.
3. Maintain few versions of a sample.java file in the Development view as follows:
   - sample.java (1) N in pack1
   - sample.java (1.1.1) N in pack2
   - sample.java (2) N in pack2
   - sample.java (3) N in pack3
4. Promote pack3 to the Test state.
5. Create another trunk version in the Test view as sample.java(4) in pack3.

6. Promote pack3 to the Release state.
7. Create another trunk version in the Release view as sample.java(5) in pack3.
8. Select pack2 package in the Package drop-down list.

   The following table displays list of packages that display in combination of Version/View filters usage:

Filters	Packages
Latest in view	sample.java(3)-N
Latest in package	sample.java(2)-N
Latest	sample.java(5)-N
All in view	■ sample.java (0)-N ■ sample.java (1)-N ■ sample.java (1.1.1)-N ■ sample.java (2)-N ■ sample.java (3)-N
All in package	sample.java (2) -N
All	■ sample.java (0)-N ■ sample.java (1)-N ■ sample.java (1.1.1)-N ■ sample.java (2)-N ■ sample.java (3)-N ■ sample.java (4)-N ■ sample.java (5)-N

Example 2:

This example depicts the use case when you select the package group option.

Follow these steps:

1. Maintain an SCM project with the Development, Test, and Release views.
2. Create pack1, pack2, and pack3 as three packages in the Development view of the project.

3. Include pack1 and pack2 in one package group pg12.
4. Maintain few versions of a sample.java file in the Development view as follows:
   - sample.java (1) N in pack1
   - sample.java (1.1.1) N in pack2
   - sample.java (2) N in pack2
   - sample.java (3) N in pack3
5. Promote pack3 to the Test state.
6. Create another trunk version in the Test view as sample.java(4) in pack3.
7. Promote pack3 to the Release state.
8. Create another trunk version in the Release view as sample.java (5) N in pack3.
9. Select pg12 package group in the Package Group drop-down list.

   The following table displays list of packages that display in combination of Version/View filters usage:

Filters	Use Case-1	Use Case-2
	The versions displayed when you select the pg12 package group.	**The versions displayed when you select the pg12 package group and when you promote the pack2 package from Development to the Test state.**
Latest in view	sample.java(3)-N	sample.java(3)-N
Latest in package group	sample.java(2)-N	sample.java(1)-N **Note:** This selection filters the versions from the existing packages within the view. Some of the packages do not exist in this state, though they are a part of the package group.
Latest	sample.java(5)-N	sample.java(5)-N
All in view	■ sample.java (0)-N ■ sample.java (1)-N ■ sample.java (1.1.1)-N ■ sample.java (2)-N ■ sample.java (3)-N	■ sample.java (0)-N ■ sample.java (1)-N ■ sample.java (1.1.1)-N ■ sample.java (2)-N ■ sample.java (3)-N

Filters	Use Case-1	Use Case-2
All in package group	■ sample.java (1) -N ■ sample.java (1.1.1)N ■ sample.java (2) -N	sample.java (1) -N
All	■ sample.java (0)-N ■ sample.java (1)-N ■ sample.java (1.1.1)-N ■ sample.java (2)-N ■ sample.java (3)-N ■ sample.java (4)-N ■ sample.java (5)-N	■ sample.java (0)-N ■ sample.java (1)-N ■ sample.java (1.1.1)-N ■ sample.java (2)-N ■ sample.java (3)-N ■ sample.java (4)-N ■ sample.java (5)-N

Use Find Version Results

Find Version results let you execute actions without exiting the results list.

To perform actions on Find Version results, right-click a version in the results list and select an option from the shortcut menu:

Compare with Trunk

Opens the Compare tool, which shows the differences between a package's branch version and its parent trunk version.

Compare

Compares two selected versions.

- If one or both of the versions are R, M or D-tagged versions, the Compare dialog appears and fills in entry fields with N-tagged versions.
- If both versions are N-tagged files, the compare tool (as specified in Preferences) appears.
- If both versions are R, M, or D-tagged versions, the Compare dialog appears, but is not filled in.

Save List As

Opens a dialog that lets you save your current search results to a specified name and location.

Properties

Opens the version Properties dialog, which lets you view and modify the version attributes.

Processes

Executes version processes.

Note: The selected version must exist in the workspace.

The action is performed according to your selection.

Find Forms

Forms exist at the highest level and are available in all projects defined in a CA Harvest SCM installation; you can access them without any context. Packages exist in a project and state. In these contexts, you can use the associated packages to determine which forms to display:

- If your context is at the project level (no state specified), only forms associated with packages in this project display.
- If your context is at the state level, only forms associated with packages in this project currently located in this state display.

The Find Form dialog lets you execute complex filtering operations to locate forms with common attributes. You can also use the Find Form dialog to select forms according to their association with packages.

To find a form

1. Click CA Harvest SCM, Find Form.

   The Find Form dialog appears.

2. Complete the fields in the dialog. Following are descriptions of fields that are not self-explanatory:

   Note: Form fields in the Find Form dialog are not case-sensitive; however, information is stored exactly as it is entered.

   Name

   Filters forms according to a naming pattern. If you leave the default wild card (*), forms display regardless of name. You can use any number of wild cards (*) in any position for multiple character matching. The use of the question mark (?) is also supported for single character matching. The Name field is not case-sensitive, for example, entering N* shows forms whose names begin with N or n. You can specify multiple form names at the same time by separating the names with a semicolon.

Form Type

Specifies the type of form to display to filter by its fields.

After you select the form type from the drop-down list, select the Use Form Contents option to enable the Form Contents expandable area. The Form Contents area is expanded to show the form contents for selection. When the specified form displays, you can query on the various fields of that form.

You do not need to know the precise value for a field to use it as a filter. You can use asterisks (*) in any field for wild card matching. For example, you might want to search for all Problem Reports that mention performance anywhere in the problem description. To do this, enter *performance* in the Problem Description field. CA Harvest SCM returns all matching Problem Reports to the Form dialog's list.

In general, you can use trailing wild cards in short text fields such as Category and Hardware on the Problem Report form. For longer fields such as Problem Description, you can use any number of wild cards (*) in any position for multiple character matching. The question mark (?) is also supported for single character matching.

Click Find.

The forms matching the filtering criteria are listed.

Note: Until you click Find the results are not refreshed to your specified settings.

Locate Package from Form List

You can select the list of associated packages to be displayed from the Find Form results search based on your criteria.

From the displayed list of associated packages, right-click on any package and select Locate Package in the explorer. This action locates the package in the explorer view and highlights the package.

Use Find Form Results

You can execute actions from the Find Form results list.

To perform actions on find form results, right-click a form in the results list and select an option from the shortcut menu:

Save List As

Opens a dialog that lets you save your current search results to a specified name and location.

View Packages

Lists packages that are associated with the form.

Edit Form

Opens the form in the form editor, letting you view or modify the form.

Note: You can select and edit a single form or any number of forms side-by-side.

Rename

Specifies a new name for the form.

Delete Form

Opens a confirmation dialog that lets you delete or cancel the deletion.

Add Attachment from Local File System

Opens a platform file chooser that lets you browse for and select files from your computer.

Add URL Attachment

Opens the URL Form Attachment dialog that lets you enter a URL address to reference a website from the form.

Details Report

Shows the Form Details report in your default browser window.

The action is performed according to your selection.

To perform actions on associated packages results, right-click a package in the results list and select an option from the shortcut menu:

Compare with Trunk

Opens the Compare tool, which shows the differences between the package's branch version and its parent trunk version.

Rename

Specifies a new name for the package.

Add New Form

Opens the Add New Form dialog, which lets you add and associate a form to the package.

New Package Group

Opens the New Package Group dialog, which lets you create or modify package group associations.

Save List As

Opens a dialog that lets you save your current search results to a specified name and location.

View Forms

Opens a dialog that lists the package's associated forms. You can select one or more forms, and click Open to view or modify the forms in the form editor.

The action is performed according to your selection.

Filter in Find Form Dialog

You can create new filters and update existing filters using the Find Form dialog. You can open the dialog from the Tools menu or by right- clicking a Broker in the SCM Explorer view.

Save Filter or Create New Filter

After you have provided some search criteria in the Find Form dialog, click the Save Filter button to save the filter data. This action opens a dialog box and allows you to specify a name to the filter. After you specify a name, click OK to save the filter by that name.

If a filter of the same name exists, a prompt allows you to specify whether to overwrite the previously saved filter or not. If you select Yes, it overwrites the previously saved filter else, it does not overwrite and cancels the operation.

Selection of Saved Filters

A combo box displays the list of available filters for the Find Form dialog.

After you create a new filter and save it, the filter is added in the list of all saved filters and is immediately populated in the combo box.

You can select any of the filters from the combo box. The corresponding data is populated in the respective fields in the Find Form dialog.

Remove Filter

This option removes an existing filter.

After you select a filter in the filter combo box, this button is enabled. Click the Remove Filter to remove the selected filter from the combo box.

Update or Overwrite an Existing Filter

Use the Save Filter button to update or overwrite a filter.

When you select a filter from the filter combo box, the Save Filter button remains disabled. After you modify some of the search criteria, the Save Filter button is enabled.

When you click the Save Filter button, you can either update or overwrite the existing filter by saving the filter with the same name, or create a new filter by specifying a new name.

CA Harvest SCM Reports

You can access to the BusinessObjects InfoView as a business intelligence (BI) portal to collect, consolidate, and present CA Harvest SCM data for your organization. Reports include existing Dashboard, CA Harvest SCM reports, and reports that cover security, audit, project change activity, package change activity, and source item change activity. The reports are useful for administrators, managers, quality assurance testers, and developers.

You can set a preference for configuring the URL to the Business Objects Infoview. Go to Windows, Preferences, Team, CA Harvest SCM, Business Objects to see the URL set for Business Objects.

Note: For information about CA Harvest SCM Reports, see the documentation on the CA Harvest SCM Reports installation media.

Report on Objects

BusinessObjects reports let you access your data, format it, and deliver it as reports.

To generate a BusinessObjects report

1. Verify that your BusinessObjects report preference is set.
2. Click CA Harvest SCM, Reports from the main menu.

   The Log On to BusinessObjects InfoView page appears.
3. Log in to BusinessObjects InfoView.

   The BusinessObjects InfoView home page appears.
4. Navigate the folder structure, Public Folders/CA Reports/CA SCM, and click the folder that corresponds to the type of report you want to view:

   Reports that correspond to the type you selected are listed.
5. Click the report name for the type of information you want to see.

   The report appears in BusinessObjects InfoView.

More information:

Set BusinessObjects Report Preferences (see page 39)

Reports

Broker Dashboard Reports

Important! You can generate the broker dashboard reports, only if you have the administrator or CM administrator access.

You can configure and generate the broker dashboard reports for the followings items:

- Active and inactive projects
- Active and disabled users.
- Versions, items, and item paths count
- User count per user group
- Failed login audit summary

Configure Broker Dashboard

Configure the Broker Dashboard to generate various reports.

Follow these steps:

1. Open the Workbench Client and navigate to the broker to configure and generate reports.
2. Right-click the broker node and then select the Reports, Broker Dashboard.

   The broker level report displays a high-level information about the selected broker.
3. Select the following options to configure the report:

   Show Active/Inactive projects

   Displays the count of active and inactive projects from the total projects count in the selected broker in a pie diagrammatic representation.

   Show Active/Inactive users

   Displays the count of active and disabled users from the total users in the selected broker in a pie diagrammatic representation.

   Show Versions and Items/ItemPaths count

   Displays the logical version counts, physical version count, and size of compressed versions in a bar chart.

   Show User count per UserGroup

   Displays the count of users across each user group from the selected broker in a tabular format.

   Show Failed Login Audit Summary

   Displays the failed login attempts summary for a specified date and duration in a tabular format.
4. (Optional) Select one of the options:

   Select All

   Selects all the options from the Show the reports to be shown in dashboard section.

   Deselect All

   Clears all the selected options from the Show the reports to be shown in dashboard section.
5. Click OK.

   You have now configured the broker dashboard to generate reports.

Project Dashboard Reports

You can access the project dashboard report by right clicking any selected project from the Explorer view and by selecting the Reports, Project Dashboard. You can generate a set of project dashboard reports:

Configured Dashboard Reports

- Package Distribution By State Report
- Item/Versions Distribution by State Report
- User Modified Items Report
- Peer Review Report
- Origination Repositories Information Report
- Versions from Other Projects Report
- Version Change Activity Report

Configure Project Dashboard

Configure the project dashboard to generate various reports.

Follow these steps:

1. Open the Workbench Client and navigate to the project to configure and generate reports.
2. Right-click the project, select Reports, and then Project Dashboard.
3. Select the following options to configure the report:

   Show package distribution chart

   Displays the count of package distribution across the states in the selected project.

   Show item/Version distribution chart

   Displays the details about the total items, modified items, total versions, and modified versions in the selected project.

   Show user modified items chart

   Displays the total modified items and the total assigned packages for all the users in the selected project.

   Show peer review chart

   Displays the code review requests summary for the chosen project.

Show Origination Repositories Information

Provides the origination information about the baseline repository.

For Example: A sample report shows the following project origination information:

a. ProjectA configured RepA, RepB as the baseline.

b. ProjectA created snapshot view SS1 after ProjectA had more changes.

c. ProjectB configured RepA from the repository as the baseline, but RepB from SS1.

d. ProjectB created snapshot view SS2 after ProjectB had more changes.

e. ProjectC configured RepA and RepB from SS2 as the baseline.

Now if you report on ProjectC, the origination information about RepA and RepB appears.

In this example, the report shows ProjectC’s RepA is derived from ProjectB’s SS2 and RepA is originated from ProjectA’s SS1.

Show Versions from Other Projects

Displays all versions which are merged from other projects to the current selected project.

Show Version change activity on graph

Displays the frequency of the changes for a specified state and duration.

Highlight and show logged-in user information

Displays information about the logged in users in the current session.

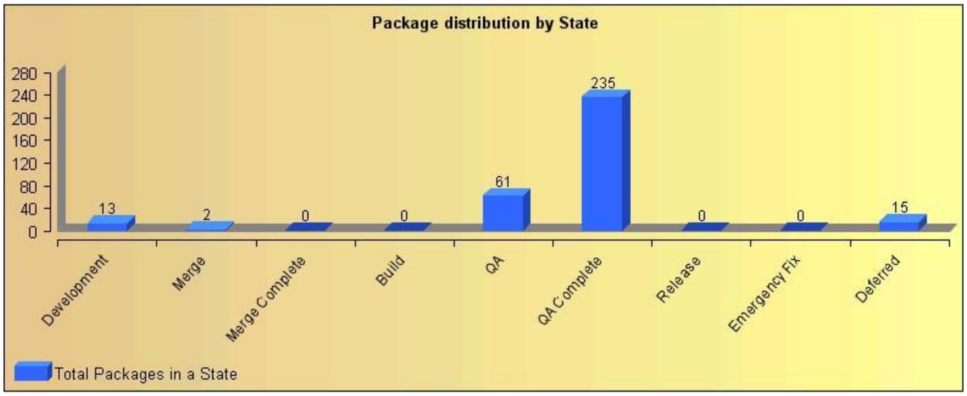
4. Click OK.

The configurations are saved to generate the report.

Package Distribution by State Report

The package distribution by state report shows the number of packages that exist in each state at the current time. This report helps you to estimate the packages that are required to be completed before being promoted to the next state. You can generate a bar chart for this report with the State names on X-axis and the Package count on the Y-axis.

The following graph illustrates a sample package distribution report. This report displays the total packages that are created in each state by the users that are logged in at a given time.

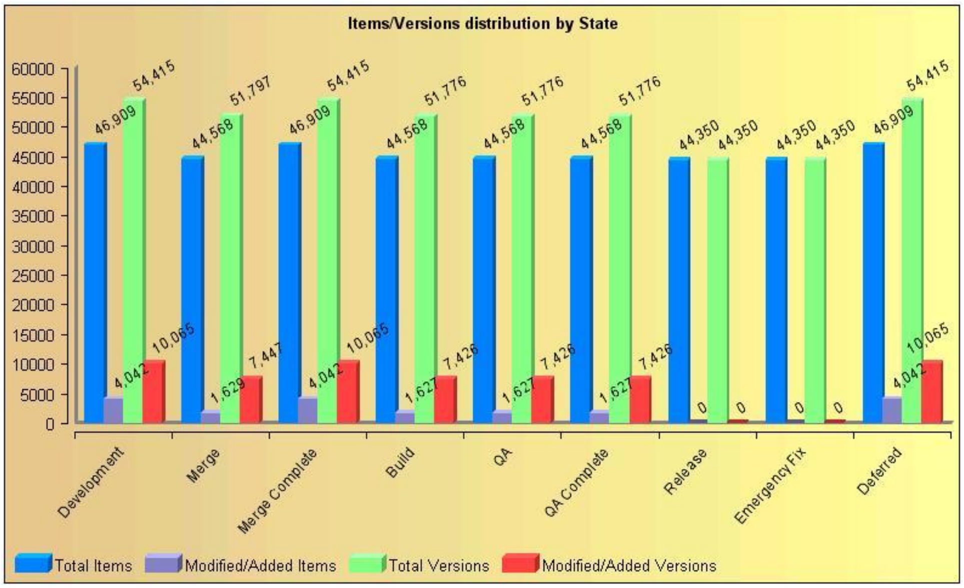


Item/Versions Distribution by State Report

The item/versions distribution by state chart displays the following information for each state in the selected project:

- A total number of items
- The modified items count
- A total number of versions
- The modified version count

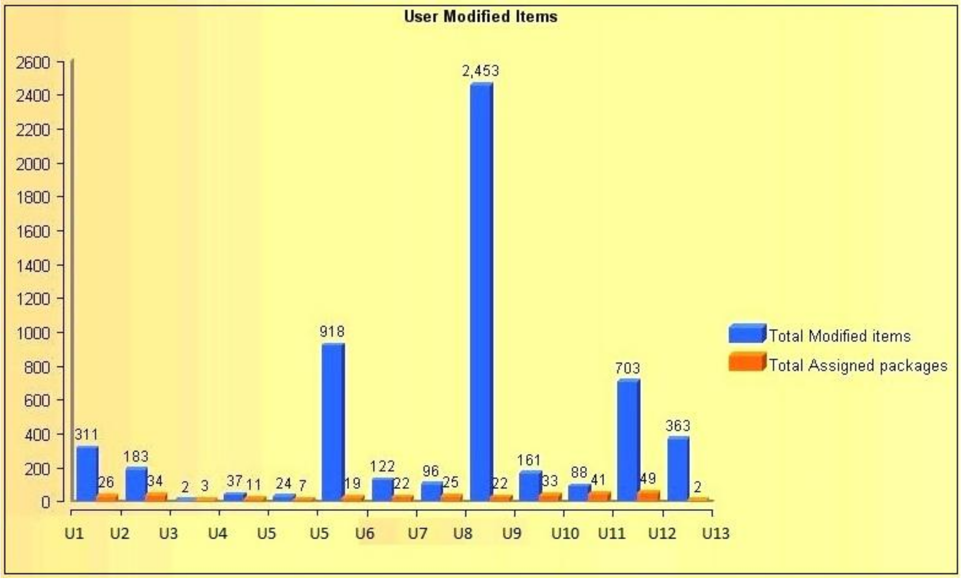
The following graph illustrates a sample item/versions distribution by state report displaying information in a selected project.



User Modified Items Report

The user modified items report displays the total number of modified items by each user in the project and the number of working packages.

The following graph illustrates a sample user modified items report that displays total modified items against total assigned packages.

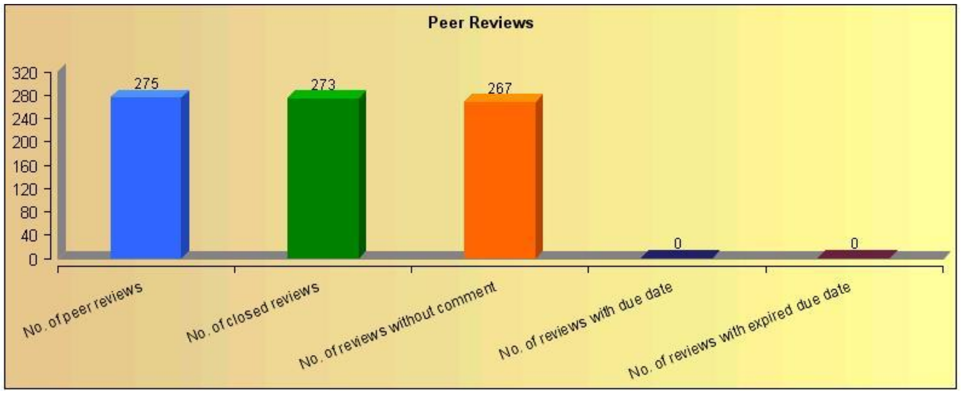


Peer Review Report

The peer review report displays the following peer reviews information in the form of a bar chart:

- A total number of the peer reviews
- A total number of closed reviews
- A total number of peer reviews without any comment
- A total number of peer reviews which are assigned with the due date
- A total number of peer reviews with expired due date

The following graph illustrates a sample peer review report.



Origination Repositories Report

The origination repositories report provides origination information about the baseline repository in a tabular form.

Example:

A sample report shows the following project origination information:

a. ProjectA configured RepA, RepB as the baseline.

b. ProjectA created snapshot view SS1 after ProjectA had more changes.

c. ProjectB configured RepA from the repository as the baseline, but RepB from SS1.

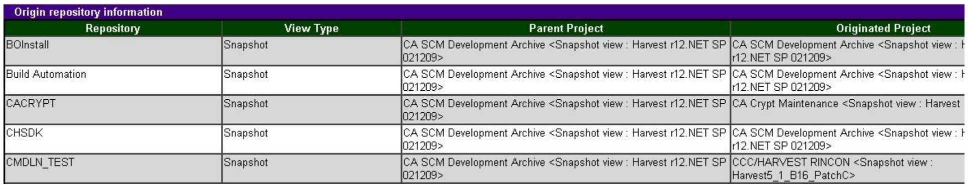
d. ProjectB created snapshot view SS2 after ProjectB had more changes.

e. ProjectC configured RepA and RepB from SS2 as the baseline.

Now if you report on ProjectC, the origination information about RepA and RepB appears.

In this example, the report shows ProjectC's RepA is derived from ProjectB's SS2 and RepA is originated from ProjectA's SS1.

The following table displays a sample origination repositories information.



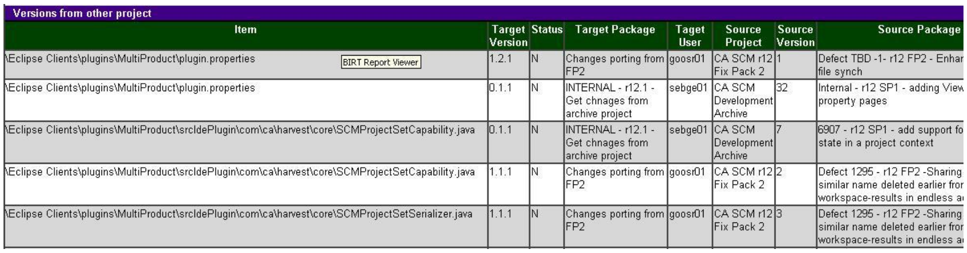
Origin repository information

Repository	View Type	Parent Project	Originated Project
BOInstall	Snapshot	CA SCM Development Archive <Snapshot view : Harvest r12.NET SP 021209>	CA SCM Development Archive <Snapshot view : H r12.NET SP 021209>
Build Automation	Snapshot	CA SCM Development Archive <Snapshot view : Harvest r12.NET SP 021209>	CA SCM Development Archive <Snapshot view : H r12.NET SP 021209>
CACRYPT	Snapshot	CA SCM Development Archive <Snapshot view : Harvest r12.NET SP 021209>	CA Crypt Maintenance <Snapshot view : Harvest
CHSDK	Snapshot	CA SCM Development Archive <Snapshot view : Harvest r12.NET SP 021209>	CA SCM Development Archive <Snapshot view : H r12.NET SP 021209>
CMDLN_TEST	Snapshot	CA SCM Development Archive <Snapshot view : Harvest r12.NET SP 021209>	CCC/HARVEST RINCON <Snapshot view : Harvest5_1_B16_PatchC>

Versions from Other Projects Report

The Versions from Other Projects report displays all versions which are merged from other projects to the current selected project.

The following table displays a sample version from other project report.



Versions from other project

Item	Target Version	Status	Target Package	Taget User	Source Project	Source Version	Source Package
\Eclipse Clients\plugins\MultiProduct\plugin.properties	1.2.1	N	Changes porting from FP2	goosr01	CA SCM r12 Fix Pack 2	1	Defect TBD -1- r12 FP2 - Enhar file synch
\Eclipse Clients\plugins\MultiProduct\plugin.properties	0.1.1	N	INTERNAL - r12.1 - Get chnages from archive project	sebge01	CA SCM Development Archive	32	Internal - r12 SP1 - adding View property pages
\Eclipse Clients\plugins\MultiProduct\srcIdePlugin\com\ca\harvest\core\SCMProjectSetCapability.java	0.1.1	N	INTERNAL - r12.1 - Get chnages from archive project	sebge01	CA SCM Development Archive	7	6907 - r12 SP1 - add support fo state in a project context
\Eclipse Clients\plugins\MultiProduct\srcIdePlugin\com\ca\harvest\core\SCMProjectSetCapability.java	1.1.1	N	Changes porting from FP2	goosr01	CA SCM r12 Fix Pack 2	2	Defect 1295 - r12 FP2 -Sharing similar name deleted earlier fror workspace-results in endless a
\Eclipse Clients\plugins\MultiProduct\srcIdePlugin\com\ca\harvest\core\SCMProjectSetSerializer.java	1.1.1	N	Changes porting from FP2	goosr01	CA SCM r12 Fix Pack 2	3	Defect 1295 - r12 FP2 -Sharing similar name deleted earlier fror workspace-results in endless a

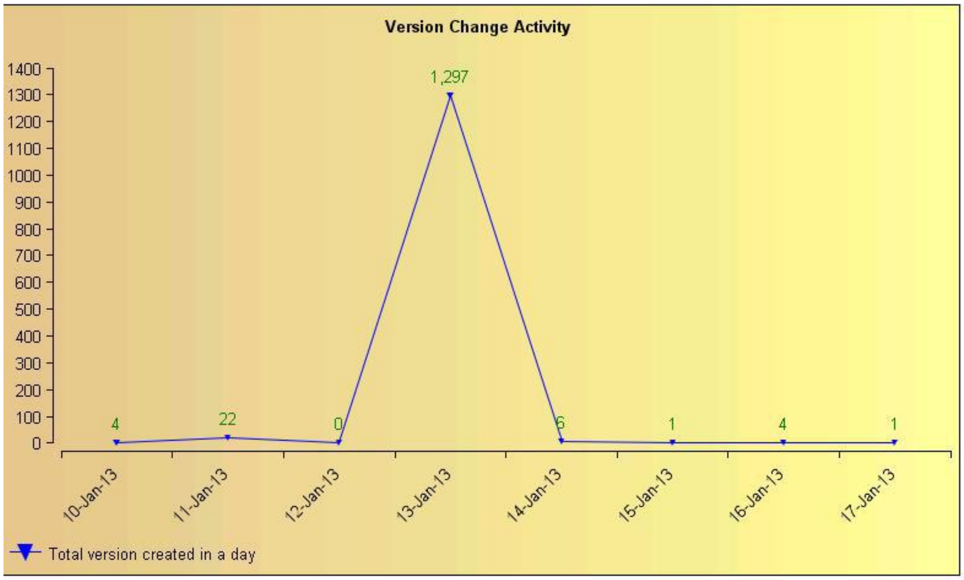
Version Change Activity Report

Version change activity report displays the graph on the frequency of the changes that are made to the SCM Repository over a period. This graph indicates time on X-axis and count of versions on the Y-axis.

Note: Depending on your access permissions, you can customize and generate the report that is based on the frequency of changes.

As a developer, you can generate the report that is based on the frequency of changes that you made. As a manager, you can generate the report that is based on the frequency of changes that the development team made.

The following graph illustrates a sample version change activity report that displays the total versions that are created at a given time.



Custom Reports

Custom reports are useful to display data for a sub group from your overall data.

Important!

- If you have the *administrator or CM administrator* access, you can peform the following tasks:
  - Create (see page 196) the custom dashboard reports for broker, project, state, and package levels.
  - Generate (see page 198) reports at all levels (broker, project, state and package).
- If you have the *use* access permissions at the project level, you can *only* generate *(see page 198)* the custom dashboard reports for the project, state, and package levels.

If you have the *administrator or CM administrator* access, you can create the customized SQL statements and can generate reports using the BIRT reports option. You can formulate the hsql queries for versions, packages, user modified versions, auditable events, or any other relevant data using the custom reports. You can create a custom report, edit, or delete the existing reports.

If you have the *use* access at the project level, you can *only* generate the custom dashboard reports (created by a user with the *administrator or CM administrator* access) for the following levels:

- Project
- State
- Package

Note: You can only run a previously created custom report but cannot edit or delete the existing reports. For more information about administering data, see the *CA Harvest SCM Administrator Guide.*

Create Custom Reports

You can create custom reports *only* if you have with the *administrator or CM administrator* access.

Follow these steps:

1. Open the Workbench Client and select the SCM broker.
2. Select the BIRT Reports toolbar button.

3. Select Custom Reports on the left pane in the Custom Dashboard Reports dialog.
4. Click Add.

   The New Custom Report dialog box opens.
5. Select a scope (Broker, Project, State, or Package objects) for which you want to create a custom report from the drop-down list.
6. Provide a title for your custom report in the Title box.
7. Select a Broker in which you want to save the custom report from the Save To drop-down list.
8. Select one of the following output formats for your custom report.

   Table

   Displays the query results in a tabular form.

   Bar Chart

   Displays the query results as a bar chart, where X-axis indicates the first column, and Y-axis indicates the number in the SQL query.

   Pie Chart

   Displays the query results as a pie chart, X-axis indicates the category, and Y-axis indicates the number that is used in the SQL query.
9. You can add custom SQL in two ways. You can either import custom SQL from an external file or type the custom SQL in the text box.
10. Use predefined keywords that are based on the selected Scope, while writing SQL.

    For example, in the Package scope, use ${PROJECT_ID}, ${STATE_ID}, ${WORKING_VIEW_ID}, ${PACKAGE_ID}, ${USER_ID}.

    These predefined keywords are available based on the selection of your scope.

    Broker

    ${USER_ID}

    Project

    ${PROJECT_ID}, ${USER_ID}

    State

    ${PROJECT_ID}, ${STATE_ID},${WORKING_VIEW_ID},${USER_ID}

    Package

    ${PROJECT_ID}, ${STATE_ID},${WORKING_VIEW_ID}, ${PACKAGE_ID}, ${USER_ID}

    Note: You can test the custom SQL before saving it as a custom report.

11. (Optional) Select the Test SQL.
12. Provide SCM Context information like the Broker name, Project name, state name, package name that is based on your selected Scope and click OK.

    A confirmation message displays the test result.

Note: If you anticipate huge records as a result of custom query execution, we recommend you to choose the tabular format.

Generate Custom Reports

If you have the *administrator or CM administrator* access, you can generate the custom reports for the following levels:

- Broker
- Project
- State
- Package

Follow these steps:

1. Open the Workbench and navigate to the broker, project, state, or package to generate reports.
2. Right-click the selected SCM item, select Reports, and then select one of the custom reports that are created from the menu.

   The custom report is generated for your analysis in the output format that you have chosen while creating that custom report.

If you have the *use* access at the project level, you can generate the custom reports for the following levels:

- Project
- State
- Package

Note: You cannot access the broker level custom dashboard reports.

Follow these steps:

1. Open the Workbench and navigate to the project, state, or package to generate reports.
2. Right-click the selected SCM item, select Reports, and then select one of the custom reports that are created from the menu.

   The custom report is generated for your analysis in the output format that the *administrator user* has chosen while creating that custom report.

BIRT Report Viewer

BIRT Report Viewer provides the Run Report and Export Report as toolbar options. You can navigate to any of the displayed pages. By default, the records displayed per page are 5000. For more information about the setting preferences, see the Set BIRT Preferences (see page 36) section.

You can export the Dashboard reports and Custom reports generated from any Harvest SCM level to the local file system. The export option supports the following output formats:

- PDF
- MS Word
- MS PowerPoint

Follow these steps:

1. Click the Export Report icon , on a generated report from the BIRT report viewer toolbar.

   The Export Report Dialog opens.

2. Select one of the available export formats--PDF, MS Word, or MS PowerPoint from the Export Format drop-down list.

   - You can choose the range of pages to export the report.

     For Example, All pages, current page, or specific pages.

   - You can also choose the display settings depending on your requirements.

3. Click OK in the Export Report Dialog box.

   A dialog opens providing you options to open or save the report.

4. (Optional) Click Open to open the file in the selected format.

5. Click Save to save the file in the specified format.

6. Choose the destination from the local file system where you want to save the reports.

   Export process completes and you can view the saved report.

Run Report

Clicking the Run report icon re-executes the SQL query and refreshes the displayed report with latest modifications.

Run and Export Report

Clicking the Run and Export icon re-executes the SQL query to ensure that the latest data is fetched from database. The updated report gets exported to the selected format. However, the report does not refresh in the viewer.

This export fetches all the available records by overriding the No of rows to display in Report viewer preference under the BIRT Report preferences.

The export option supports the PDF, MS Word, and MS PowerPoint formats.

Follow these steps:

1. Click the Run and Export Report icon , on a generated report on the upper right side of the report viewer.

   The Run and Export Report Dialog opens.

2. Select one of the available export formats--PDF, MS Word, or MS PowerPoint from the Export Format drop-down list.
3. Choose the destination from local file system where you want to save the reports.
4. Provide a name for the report and click Save.
5. Click OK.

   The export process is complete now and you can view the saved report.

BIRT Report Viewer Options in RAD IDE

BIRT Report Viewer in RAD provides more options like Toggle table of contents, Export data, Print Report, Print report on the Server apart from the Run Report and Export Report options that are available from the Eclipse IDE. The BIRT plug-ins are natively bundled in RAD, hence these more options. However, CA Harvest SCM plug-in supports *only* the Run Report and Export Report options.

Note: Export Report drop down in RAD BIRT Report Viewer displays the PDF, Word, PPT, Post script, and Excel formats. However, CA Harvest SCM plug-in supports *only* the PDF, Word, and PPT export formats.

Chapter 9: Team Collaboration for Code Review

This section contains the following topics:

Team Collaboration for Code Review

Team Collaboration for Code Review supports out-of-the-box peer reviews of code changes during a project development cycle. A developer who finishes code changes and unit tests can create a review request for other team members to review the code review.

The review request facilitates the collaboration between the requester and the reviewers in the team. The review request also facilitates the execution of the code review as follows:

- The creation of a review request for code changes is based on a change package.
- An email notification option for both reviewer and requester informs team members of relevant information during the code review cycle.

  Note: For more information about configuring the email notification option, see the *Administrator Guide*.

- Reviewers can record in-line comments or add attachments on versions in the change package.
- An assigned primary reviewer gives a final vote on the approval or rejection of code changes, and can close a review request.
- A package approval can be invoked when the primary reviewer closed the review request.
- A pre-linked UDP can be used to enforce the completion of code review request before the change package is promoted to the next state.

  Note: For more information about this integration option, see the *Administrator Guide*.

With this support, a code review is no longer an isolated individual manual operation. Instead, it organizes group efforts with direct and indirect communication among team members in a project to accomplish the review of code changes. Furthermore, all activities are recorded during the code review cycle.

How the Review Request Works

In general, you create one review request for a given package. In some cases, each individual who has a part of the code changes for the given package creates a review request, resulting in multiple review requests.

The CA Harvest SCM server maintains the status (Open or In Progress) of the Peer Review. When you create a Peer Review, its status is Open. During the life of the Peer Review, when reviewers make any Votes, Comments, or Attachments, the server changes the Peer Review status to In Progress. If all Votes, Comments, and Attachments are deleted from the Peer Review, its status is changed back to Open.

The steps for processing a review request are as follows:

1. As the review requester, you create a review request for the contents of a package. You invite one or more users in a project to participate the code review. You designate one user as the primary reviewer.

   Note: The primary reviewer determines the final result of the code review. The vote decided by other reviewers is for reference only.

   You can set an option to send email notifications to all the reviewers and requester. The emails inform participants of their review request assignments and of any updates to the review.

2. A reviewer can double-click the version associated with a review request to open the Review Comments Editor to view the changes in the selected version and enter comments. Reviewers use this editor to do the following:

   - View the changes in the new version and compare the changes to the parent version or another selected version.

- Add comments to any line of the version for review.
- Insert multiple comments at the same line by one or more reviewers.

  While these comments can express support and suggest improvement, typically the comments identify problems, issues, or concerns. The comments can support or identify why the reviewer did not approve the package changes.
- Add attachments to any line of a version for review.

All reviewers can vote Yes or No for a review request. By default, the status is shown as pending for each reviewer in the review request. The vote indicates that you approve or disapprove the changes for the entire review request. When an approve package process exists in the current working state, the primary reviewer can also approve the package during the closure of review request.

Note: The Approve Package option is enabled when the Vote is Yes from the primary reviewer. In addition, before you can use this option, an approve process must be defined. The primary reviewer must belong to the approval group with execute access granted to the approval process. For more information about defining the approve process, see the *Administrator Guide*.

More information:

Reviewers (see page 203)
Create a Review Request (see page 204)
Review and Add Comments (see page 209)
Vote on a Review Request (see page 212)

Reviewers

When you create a review request, you assign users to review the changes that belong to the package associated with the review. Each review must include one reviewer who is designated as the *primary reviewer*. You can assign other team members in a project to participate in the code review cycle. The primary reviewer is the participant who makes the final decision on the approval of code changes. The comments and voting from other reviewers provides reference information about the review request.

Note: You can change the reviewer assignments at any time.

More information:

Select Reviewers (see page 205)

Display the Peer Review View

From the Peer Review view on the Workbench, you can perform the following code review actions:

- List the review requests in a tree format.
- View and delete comments.
- View, download, and delete attachments.
- Mark version status.
- Delete review requests.
- View version status and view path

To display the Peer Review view, click Peer Review on the Workbench toolbar.

Note: If the Peer Review view does not appear, select View, Show View, Other. Expand the CA Harvest SCM folder, select Peer Review, and click OK.

The Peer Review view appears with the following tabs:

Requested Reviews

Lists all Open or In Progress review requests requested by you (the logged-in Workbench user).

Assigned Reviews

Lists all Open or In Progress review requests that you are assigned to you as a reviewer (including the primary reviewer).

Search Reviews

Lists review requests as determined by the search criteria.

The Requested Reviews and Assigned Reviews tabs list the projects in the broker and displays the same level of information for the review requests listed in each project.

More information:

How to Use the Peer Review View (see page 206)

Create a Review Request

You create a review request to initiate the code review process. When you create a request, you assign reviewers, and optionally change the primary reviewer, specify a due date, add notes, and so on.

Follow these steps:

1. Open the Explorer View and navigate to the package you want to be reviewed.
2. Right-click the package and select the Request for Peer Review option from the shortcut menu.

   The New Review Request dialog appears. The selected package name appears in the Package field.
3. Complete the dialog fields. The following fields require explanation:

   Assigned To

   > Assigns users for the package review. You can add or remove reviewers, or change the automatically assigned primary reviewer.

   Include Due Date

   > Enables the Due date drop-down list.

   Due date

   > (Optional) Specifies a date for which the reviewers must complete the review. When you click the drop-down list arrow, a calendar feature opens that lets you specify a date and time. You save your changes by selecting the checkmark.

   General Notes

   > (Optional) Provides information about the package changes that are being reviewed.

   Send an Email to Reviewer

   > (Optional) Sends an email to each reviewer notifying them that they are assigned to a review.
   >
   > **Note:** The administrator must configure email for this option to execute. For information about configuring this option, see the Peer Review information in the *Administrator Guide*.
4. Click OK.

   CA Harvest SCM creates a review request and lists it in the Peer Review view.

Select Reviewers

You can add or remove any number of secondary reviewers to a review request, and assign or change the primary reviewer.

Follow these steps:

1. On the New Review Request dialog or the Requested Reviewer Editor, locate the Assigned To field.

2. Click the plus sign.

   The Reviewer Selection dialog appears.

3. Select one or more check boxes next to the user names of the reviewers you want to assign. Click OK.

   The reviewers are assigned to the review request. The Assigned To field lists their names. A primary reviewer is automatically designated.

4. Perform optional actions:

   - Change the primary reviewer by selecting a name in the list and clicking the star symbol.

     The star symbol appears on the name in the list to indicate the new primary reviewer.

   - Remove a reviewer by selecting a name in the list and clicking the minus sign.

     The user name no longer appears in the list.

   Click OK.

   Reviewers are selected for the review request.

How to Use the Peer Review View

You display (see page 204) the Peer Review view and use Requested Reviews or Assigned Reviews tabs to perform all your review request activities at various levels in the tree:

- You can perform the following actions at the review request object level:

  - List versions for the review request by expanding a review request node.
  - Update the review request properties by double-clicking a review request.

    The requested Review Editor appears.

    As a requester, you can update the review request properties such as Assigned To, Due Date, and General Notes.

  - Locate the review request package by right-clicking a review request and selecting Locate in Explorer View from the shortcut menu.

    The Explorer view appears and the corresponding review request package is highlighted.

  - Delete a review request by right-clicking a review request on the Requested Reviews tab and selecting Delete from the shortcut menu.

    Note: You must be the requester to delete a review request and the review request must have an Open status.

    The review request is deleted.

- You can perform the following actions at the version level:
  - List the comments and attachments by all reviewers and the requester of the version by expanding a version node.

    All comments and attachments are listed. Status icons indicate review progress.
  - Comment on the version or add an attachment by double-clicking a version.

    The Review Comments Editor appears, and you can comment on the version or add attachments.
  - Track your review progress by right-clicking one or more of your assigned versions on the Assigned Reviews tab, and select Mark As, *status _option* from the shortcut menu.

    A progress indicator appears on the version.
- You can perform the following actions at the comment level:
  - View commented text or attached file name by moving the mouseover the comment or attachment.

    The text of the comment or the attached file name appears.
  - Download or delete the attachment available under the version node.
  - Add comment or attachment by double-clicking the version or by double-clicking the comment or attachment made to the version.

    The comment or attachment appears in the Review Comments Editor. You can add comments and attachments to the version and also download the attachment made to the version.
  - Delete a comment or attachment by right-clicking a comment or attachment and selecting Delete from the shortcut menu.

    The comment or attachment is deleted.

Refresh the Peer Review View

You can refresh the Requested Reviews or Assigned Reviews information in the Peer Review view to view the latest review request changes.

Follow these steps:

1. In the Peer Review view, select the Requested Review or Assigned Reviews tab.
2. Select the broker that includes the review request you want to refresh.
3. Click the Refresh toolbar button.

   The Peer Review view is refreshed with the latest changes.

List and Update Review Requests

You can list and update the requests that are assigned to you for review.

Follow these steps:

1. On the Workbench, select the Peer Review view, and then the Assigned Reviews tab. Expand the broker node.

   A list of projects that are associated with the broker appears.

2. Expand the project node of interest.

   A list of your assigned review requests for the project appears.

3. Double-click the review request that you want to update.

   The Assigned Review Editor appears.

4. Perform any of the following actions:

   - View General Notes.
   - View reviewers including the primary reviewer.
   - View the requester.
   - View the Created Date and Due Date.
   - View the review request Status:

     Open

     Indicates that no comments or attachments has been made to at least one version of the review request and that no reviewer has voted either Yes or No for the review request.

     In Progress

     Indicates that the comment or attachment has been made to the version or that a reviewer has voted either Yes or No for the review request.

     Closed

     (Primary reviewer only) Indicates that the review request is closed and unavailable for commenting and for file uploading.

   - Vote (see page 212)on the review request changes.

- View the Review Progress pane to see Vote results and reviewer comments. By clicking a reviewer name, a list of version comments and attachments added by the respective reviewer appears in the right pane. You can mouseover a comment or attachment to view the comment text or attached file name. You can also double-click the comment or attachment to open the Review Comments Editor.
- Approve the corresponding package by selecting the Approve Package option.

  Note: The Approve Package option is enabled when the Vote is Yes from the primary reviewer. In addition, before you can use this option, an approve process must be defined. The primary reviewer must belong to the approval group with execute access granted to the approval process. For more information about defining the approve process, see the *Administrator Guide*.

5. Select File, Save.

   The review request is updated.

Review Comment Rules and Considerations

When you use the Review Comments Editor to review and add comments for versions in a review request, consider the following rules and behaviors:

- You can compare normal (N) or removed (D) versions.

  When you use a D-tagged version in the comparison, the version is empty, however, you can enter a comment at line 1. For example, you can comment that a team member should not remove the version.
- You cannot compare merged (M) or reserved (R) versions.
- The parent version of the version you select for review always appears in the Parent Version pane. Therefore, when another reviewer comments on a version that has the same parent version as your review version, you do not see their comments. You can view all comments for a version by expanding the version on the Assigned Review tab and double-clicking the comment you want to view.
- Comments or attachments made to a version are specific to that review request. They are not specific to the same package to which the review request was created.

Review and Add Comments

As a reviewer, you review and add comments on all the versions that your assigned review request includes. After you review the versions, you can vote on the review request.

Note: Version comparisons in the editor for adding in-line comments use the Eclipse-based built-in diff tool.

Follow these steps:

1. Click the Assigned Reviews tab of the Peer Review view.

   A list of your assigned review requests appears under the project node.

2. Expand the Review Request node and double-click the version you want to review.

   The Review Comments Editor appears with a comparison of the version under review and the parent version. Highlighted text indicates changed lines for you to review.

3. Add a comment for a changed line:

   a. Go to the changed line and double-click the leftmost ruler.

      The Comments at Line Number dialog appears.

   b. Add the comment text in the lower text area, and click the plus sign.

   c. (Optional) Add an attachment for a changed line by clicking the paper clip symbol.

      A browser opens that lets you locate and select an attachment.

4. Repeat Steps 2 and 3 for each changed line.

5. Close the Comments at Line Number dialog after you add all your comments, and click OK when prompted.

   All comments are listed under the version object.

6. (Optional) Mark your progress (see page 211).

7. (Optional) Reopen the review session by double-clicking a comment or attachment in the list.

   The Review Comments Editor appears.

More information:

Mark Version Status (see page 211)
Vote on a Review Request (see page 212)
Review Comment Rules and Considerations (see page 209)

Mark Version Status

You can optionally track your review progress. For example, you can mark whether you have started or completed reviewing a particular version in a review request. This bookkeeping feature helps you track your progress as you perform your reviews of the versions associated with a review request.

Follow these steps:

1. On the Workbench, select the Peer Review view, and then the Assigned Reviews tab.

   All Open or In Progress review requests that are assigned to you as a reviewer are listed.

2. Select and expand a review request object.

   The versions in the review request package are listed.

3. Right-click one or more of the versions that you want to mark, select Mark As from the shortcut menu, and select one of the following options:

   Pending

   Indicates that you have not worked on this version.

   In Progress

   Indicates that you have opened the Review Comments Editor at least once to review this version.

   Completed

   Indicates that you completed your review of this version.

   The review status icons appear on the versions you marked. When you mouseover a version, text that describes the status appears.

Vote on a Review Request

After you review all the versions associated with a review request, you can vote on the review. Your vote indicates whether you approve or disapprove the changes for the entire review request. All reviewers can vote Yes, No, or Pending on the review request. The vote of the primary reviewer for the review request indicates the approval or disapproval of the review request. Votes by other reviewers provide input for the primary reviewer. When you are a primary reviewer, you can perform additional review request actions after you vote.

Follow these steps:

1. On the Peer Review view, browse the Assigned Reviews tab to the review request that you want to vote on.
2. Double-click the review request.

   The Assigned Reviews Editor appears.
3. In the Your Vote field, click the option that corresponds to the vote you want:

   Yes

   Approves the review request.

   No

   Disapproves the review request.

   Pending

   Specifies that the review request vote is undecided.

   Select File, Save.

   Your vote is recorded for the review request and appears in the Review Progress table.
4. (Optional for primary reviewers *only*) Perform the following actions:
   - Close the review at any time by selecting Close and then Save.
   - Approve the corresponding package by selecting Approve Package after the review request is closed.

     Note: The Approve Package option is enabled when the Vote is Yes from the primary reviewer. In addition, before you can use this option, an approve process must be defined. The primary reviewer must belong to the approval group with execute access granted to the approval process. For more information about defining the approve process, see the *Administrator Guide*.

Close a Review Request

The primary reviewer can close a review request at any time to make the request unavailable for commenting or file uploading.

Follow these steps:

1. Open the Assigned Review Editor for the review you want to close. For example, you can navigate the Peer Review view and double-click the review request from the tree.

   The Assigned Review Editor appears.

2. Select the Closed option in the Status field.
3. (Optional) Select the Approve Package option.

   This option approves the package that corresponds to the review request.

   Note: The Approve Package option is enabled when the Vote is Yes from the primary reviewer. In addition, before you can use this option, an approve process must be defined. The primary reviewer must belong to the approval group with execute access granted to the approval process. For more information about defining the approve process, see the *Administrator Guide*.

4. Click Save.

   The review request is closed and, optionally, its corresponding package is approved.

Delete a Review Request Comment

The Peer Review view lets you delete review request comments and attachments. When multiple comments and attachments exist for a single line of the source code, these comments are considered a “comment thread” (similar to an email thread). You are allowed to delete any comment or attachment that you made.

Follow these steps:

1. Select the Peer Review view and then the Assigned Reviews tab on the Workbench.
2. Navigate the review requests to the node of the version which contains the comment or attachment that you want to delete.
3. Expand the node, right-click the comment or attachment that you want to delete, and select Delete from the shortcut menu.

   A confirmation dialog appears.

4. Click OK.

   The comment or attachment is deleted.

Find Review Requests

Search Reviews lets you browse the review requests of interest. After you locate requests, you can perform actions (see page 215) on them, such as reopening a closed request.

Search Reviews is the only Peer Review function through which any user can view the review requests of any status. Review requests with a Closed status are not visible in Requested Reviews or Assigned Reviews but are visible in Search Reviews.

Search Criteria

Specifies search criteria for review requests such as Broker, Project Name, Package Name, Created By, Assigned to, Review Status (Open, In Progress, Closed) filters. The Advanced options let you search review requests using criteria such as Include Due Date Between, Include Creation Date Between, Comment, and Notes.

The following wildcards let you specify patterns to use in your search. You can specify multiple values at the same time by separating the values with a semicolon (;).

asterisk (*) or percent sign (%)

Represents any sequence of zero or more characters. For example, the pattern of *~ or %~ matches any temporary files that end with ~. You can also use these wildcard characters as the first or last characters in a character string.

question mark (?)

Represents any single character.

Follow these steps:

1. On the Peer Review view, select the Search Reviews tab.
2. Select a broker from the Broker drop-down list.

   The search fields are enabled.

   The following fields require explanation:

   Review Status

   Tracks the actions performed on the review request and the comments, attachments, or votes added by the reviewers as follows:

   Open

   Indicates that no reviewers have started the review.

   In Progress

   Indicates that either the reviewers have started commenting on versions or attaching files to the versions, or have voted on the review request.

   Closed

   Indicates that the primary reviewer closed the review request.

3. Enter or select criteria, and click Find.

   Note: The search fields are not case-sensitive.

   Results are listed.

Use Search Reviews Results

Search Reviews results let you execute actions without exiting the results list.

To perform actions on the review requests in the results, do any of the following:

- List versions for the review request by expanding a review request node. Expanding a version node lists the comments and attachments made by the reviewers and the requester.
- View or download the comment or attachment made under the version node.
- Delete the comments and attachments that you made.
- Review a version by expanding a review request in the list and double-clicking the version you want to review.

  The Review Comments Editor appears. As a requester or reviewer, you can add comments and attachments to the version.
- View or download the comments or attachments made to the version and its parent version.
- View or update a review request by double-clicking the review request you want to view or update.

  The review editor appears with review details.
- Reopen a closed review request by right-clicking the review request and selecting Reopen from the shortcut menu.

  Note: Only the primary reviewer or the requester of the review request can reopen a review request.
- Locate the package associated with the review request by right-clicking the review request and selecting Locate in Explorer View from the shortcut menu.

  The view changes to the Explorer View and the review request package is highlighted in the tree.

Generate Peer Review Reports

The CA Harvest SCM Peer Review supports reports that provide information about pending reviews.

Follow these steps:

1. Select the Peer Review view, and select one of the tabs: Requested Reviews, Assigned Reviews, or Search Reviews.
2. Expand the broker node that includes the project you want.
3. Right-click the project for which you want to generate the report, and select one of the following reports from the shortcut menu:

   Get All pending reviews

   Lists all the review requests that have not been closed and are pending (by specified date and time).

   Get All pending review counts by user

   Shows the number of nonclosed review objects based on the primary reviewer and are pending (by specified date and time).

   The Date Selection Dialog appears.
4. Select a date/time and click OK.

   The report appears.

You can export the report date to either a text file or CSV file.

Follow these steps:

1. Select the “Get All Pending Reviews” or “Get All pending review counts by user” view.
2. Select the rows that you want to export.
3. Right-click and select the Save List As option from the shortcut menu.
4. Provide the output file path, select the format CSV or text, and click OK.

   The report is exported to an output file.

Chapter 10: CA Vision Integration

The CA Vision integration provides traceability of requirements, user stories, tasks, and issues from CA Agile Vision™ or CA Product Vision to CA Harvest SCM Package. This integration also facilitates logging work hours and generating reports based on objects, to trace changes at a granular level.

This section contains the following topics:

Synch Server

The Synch server is a unique invocation of an SCM HServer process that is driven on an interval basis by the SCM Broker. The broker starts the synch server, which performs both inbound and outbound CA Vision object synchronization. Inbound processing retrieves records from the CA Vision server that are relevent to the SCM Projects that are associated with CA Vision Product Releases. Outbound processing includes posting SCM Package activity and posting task worklog hours. After the synchronization is complete, the HServer process exits. When the next Synch server interval time occurs, the SCM Broker starts a new synch server process. In this way, resources are not wasted by a long-waiting process that would be idle between Synch server cycles.

Synch Server Behavior

The SCM Broker controls the Synch server at the configured interval. The first time the Synch server runs and finds there are no CA Vision objects loaded into the SCM Repository, it queries the CA Vision server for Product, Release, and User database data. The synch server also stores a flag in the SCM database indicating that the CA Vision integration is enabled. The SCM Workbench uses this flag to determine whether to make CA Vision integration operations available.

On subsequent Synch server intervals, the Synch server performs two main operations:

- Obtains new or updated records from the CA Vision server
- Applies any changes requested or automatically generated in the SCM Server, such as posting worklog hours or updating task status

The Synch server obtains only the CA Vision objects, other than the Product, Release and User records, for CA Vision Releases that are associated with SCM Projects. When a release is associated with an SCM Project, a special synchronization operation is performed. All Requirement, Sprint, User Story, and Task records belonging to that release are loaded from the CA Vision server into the SCM Repository. This process is referred to as an initial product load.

After releases are associated with SCM Projects, new or changed objects associated with those releases are queried during every Synch interval, and updated in the SCM Repository as required.

Updates to the CA Vision server are performed before the retrieval of new and changed objects. In this way, updates are reflected in the retrieved objects. For example, posting worklog hours causes the associated User Story record to be changed. This changed user story is retrieved during the same Synch cycle.

Package Associations

After the SCM Project is associated with a CA Vision Release, the CA Vision integration involves associating SCM Packages with CA Vision objects such as Requirements, User Stories, and/or Tasks. After a Package is associated with a CA Vision object, the following activities and operations are enabled:

1. Package Activity - When a package is associated with a requirement, user story, or task, the package activity similar to the SCM package history is posted to the CA Vision object. This activity is displayed in the CA Harvest SCM package display segment of the requirement or user Story. All package operations such as Created, Approved, Promoted, and Demoted are logged to the CA Vision object.
2. (Optional) Code Changes - When a package is associated with a requirement, user story, or task, the trunk item versions of that package are posted to that user story. When the package is promoted to the configured Development Completion state, the code changes are posted to the user story. If the package is demoted to a state previous to the Development Completion state, the code change records are removed from the user story. Similarly, when a switch package is executed, the code changes are removed from the user story.
3. Posting Worklog Hours - If a package is associated with a task or a user story, the task worklog hours are posted using SCM Workbench. If the package is associated with a user story, then the user selects the task from the Tasks list. This list consists of the tasks that belong to the selected user story.
4. (Optional) Automatic Task Status Update - If you enable this option for the SCM Project, an Implementation, Design, or Doc Task associated with the package is automatically updated to the Completed status when the package is promoted to the Development Completion state. If the package is later demoted out of this state, its status is returned to In Progress. Similarly, QA associated with an SCM Package is updated to the Completed status when the package is promoted to the QA Completion state.

Posting Hours to a Task

Before you post worklog hours to a task, verify that the package is associated with the task or the user story that the task belongs to.

To post worklog hours, right-click the package and select the Post Worklog Hours option from the menu list. The Post Worklog Hours dialog is displayed.

You can select only one task from the task list. Select the task you want to post the hours to and specify the work date and hours worked. Click OK to post the hours. The hours are not posted to the CA Vision server immediately but are queued in an SCM database table. The Synch server posts the hours to the CA Vision server at the next Synch interval.

This operation works only when the SCM User is mapped to the corresponding CA Vision User. See the Administration Guide for details on mapping SCM Users to CA Vision Users.

Special Package Activity and Code Change Operations

For packages that are associated with requirements or user stories, the package activity is stored in the CA Vision server in the respective objects.

Rename Package

Renaming a package is reflected in the CA Vision object. A renamed activity record is written to the CA Harvest SCM Package segment of the User Story or Requirement and all subsequent activities reference the new package name. If code changes are also stored in the User Stories, then SCM updates all the code change records for the associated Package to specify the new package name.

Switch Package

If code changes are stored in user stories and a Switch Package operation is applied to a package associated with a user story, the user story is updated to reflect the moved items. If both the source and target packages are associated with user stories, then both code change segments of the user stories are updated.

Approve Package

Approve package updates the package history in the CA Vision server. The concept of a frozen package created by approving a package does not apply to CA Vision object associations. SCM does not prevent a CA Vision object from being associated or disassociated from a package even when it has been approved.

CA Vision View

You can use the CA Vision View dialog to view CA Vision Objects and how they relate to SCM Objects. The dialog contains three tabs:

1. Requirements
2. Sprints
3. User Stories

To navigate to a tree, click the corresponding tab from the list at the bottom of the view.

The tool bar at the top right corner of the view contains four buttons:

1. Refresh
2. CA Integration Preferences
3. Find CA Vision Items
4. Reports

Requirements Tree

The Requirements tree displays the CA Vision Items associated with the SCM Project from a requirement perspective. The requirements of all CA Vision Releases are displayed under the Project node. You can expand each requirement node to view the child requirements, user stories, tasks, and the associated SCM Packages at any of the selected levels.

Sprints Tree

The Sprints tree provides an overview of the status of the selected sprint from an SCM package perspective. Configure the SCM Project Lifecycle so that it can determine whether a package can be considered in the Implementation, QA, or Completed category. Every package associated with a user story or task of a given sprint is grouped into one of these three categories. In this way, you can determine the status of the sprint from an SCM perspective.

User Stories Tree

The User Stories tree displays the CA Vision Items associated with the SCM Project from a user story perspective. The user stories of all CA Vision Releases are displayed under the Project Node. You can expand each requirement node to view the child requirements, user stories, tasks, and the associated SCM packages at any of the selected levels.

CA Vision Item Editor Display

The CA Vision Item editor display lets you view the Requirements, User Stories, and Tasks object types in detail. To display the details of an object, double-click the required object in any of the CA Vision View tree displays.

Filter Options

To control whether objects are displayed from all sprints or only the ongoing sprints, use the CA Vision Preferences Page. You can access this page from the task tool bar in the CA Vision View.

- To show objects from the current sprints, select the Ongoing Sprints button.
- To show objects from all sprints, select the All Sprints button.
- To show objects from all non-closed sprints, select the Ongoing and Future Sprints button.

These options apply to both the Sprints and User Stories tabs of the CA Vision View.

Find CA Vision Objects

To find a CA Vision item, select the Find CA Vision Items button at the top of the CA Vision View. You can also open the Find CA Vision Items dialog by selecting the Associate with CA Vision Items option from a Package node in the Explorer view.

Follow these steps:

This dialog provides a wide range of variables that you can use to find a CA Vision Item. These variables include Name or Title, Product, Release, Sprint, Users and Dates. For the text fields, you can enter wildcard values by using an “*”.

1. Enter the values of the variables you want to use for the search. For the text fields, enter wildcard values by using an “*”.

   Note: Some fields are disabled if they are not valid for the current set of parameters selected.

2. Click Find to see the list of items found.

You can also use the Show Associated Packages option to search the associated packages of a specific CA Vision item.

Reports

SCM provides two types of reports associated with CA Vision. The reports provide both graphical and list data associated with SCM Package and CA Vision Objects. The charts provide CA Vision Item distribution and SCM Package Lifecycle distribution. The list provides all CA Vision Items associated with SCM Packages for the selected SCM Project or CA Vision release.

To generate a report, click the Report icon from the CA Vision tool bar. The available report types are displayed.

- Select an available report type and click Generate.
- The project-based report includes all releases associated with the SCM Project.
- With the Release based report, you can select any release that is currently associated with one or more SCM Projects.
- The Mapped Users report displays the list of all SCM users mapped to the corresponding CA Vision user.
- SCM Life cycle settings display a list of all SCM Projects with their life cycle settings.
- The SCM Project Association report displays the mapping information of all SCM Projects with CA Vision products and releases.

Chapter 11: Using Other Interfaces

This section contains the following topics:

User Interfaces

In addition to the Workbench, user clients for CA Harvest SCM consist of the following interfaces:

- **Command-line utilities**—Lets you perform CA Harvest SCM processes from a command line.

  Note: For information about the command-line utilities, see the *Command Line Reference Guide*.

- **Web Interface**—Lets you perform CA Harvest SCM processes from a web browser.

  Note: For information about Web Interface, see the Web Interface help.

- **Windows Shell Extension**—Lets you perform CA Harvest SCM check-in and check-out functions by right-clicking files in Windows Explorer.

Windows Shell Extension

When you install the client on Windows, you can optionally install the CA Harvest SCM Windows Shell Extension. Windows Shell Extension lets you access the product's version control system using Windows Explorer menus. You can check in and check out files from Windows Explorer and execute these common tasks without CA Harvest SCM running on your client computer.

Use Windows Shell Extension

CA Harvest SCM Windows Shell Extension lets you check in and check out files from Windows Explorer.

Follow these steps:

1. Right-click any folder in your Windows Explorer, and select CA Harvest SCM from the shortcut menu.

   A shortcut menu appears and lists all of the CA Harvest SCM actions that you can perform.

   Note: Initially some of the menu options are disabled until you set the Set Default Context options.

2. Select Login.

   The CA Harvest SCM Windows Extension-Login dialog appears.

3. Enter your CA Harvest SCM credentials and the name of the computer where the CA Harvest SCM broker is running, and click OK.

   You are logged in to Windows Shell Extension and remain logged in until you execute the logout function. Closing the Windows Explorer does not log you out of Windows Shell Extension.

   The Message Log appears after you successfully log in. All Windows Shell Extension activity is recorded in the Message Log. The Message Log remains open during your Windows Shell Extension session and operates in the same way as the Log View.

   After you have successfully logged in and before you can perform any check-in or check-out functions, you need to set your default context.

4. Go to Windows Explorer and right-click the directory you want to use as your destination directory for checking out, and select CA Harvest SCM, Set Context.

   The Set Default Context appears.

5. Specify context settings in the dialog, and click OK.

   The context is set and remains the same until you modify it; you do not need to open the Set Default Context dialog again unless you want to change the settings.

6. You can check in and check out files in the following ways:

   - Right-click the files or directory in Windows Explorer that you want to check in or check out, and select CA Harvest SCM, check in or check out from the shortcut menu.

   - Use the Windows Explorer Search feature to locate files, right-click the files you want to check in or out from the results list, and select CA Harvest SCM, check in or check out from the shortcut menu.

   The check-in or check-out dialog appears and you can set options and execute the process.

7. To log out of Windows Shell Extension, right-click any file or directory in Windows Explorer, and select CA Harvest SCM, Logout from the shortcut menu.

   You are logged out of Windows Shell Extension.

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