Telelogic Change Admin Help

Release 5.1

Before using this information, be sure to read the general information under Notices (page 12).

This edition applies to **VERSION 5.1, Telelogic Change (product number 5724*V87*)** and to all subsequent releases and modifications until otherwise indicated in new editions.

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Introduction

Telelogic™ Change® is a generic change request (page 231) system that is web-based and integrated with Telelogic™ Synergy®.

The following pages give you the basic information needed to use Telelogic Change in the Telelogic Change Administrator (*Admin*) role (page 234):

In previous releases, Telelogic Change was named SYNERGY/Change. The product referred to as Telelogic Synergy was named SYNERGY/CM.

For access to all documentation and technical support, go to http://support.telelogic.com/synergy.

Telelogic Change Features

The following Telelogic Change features provide robust, automated support for change tracking:

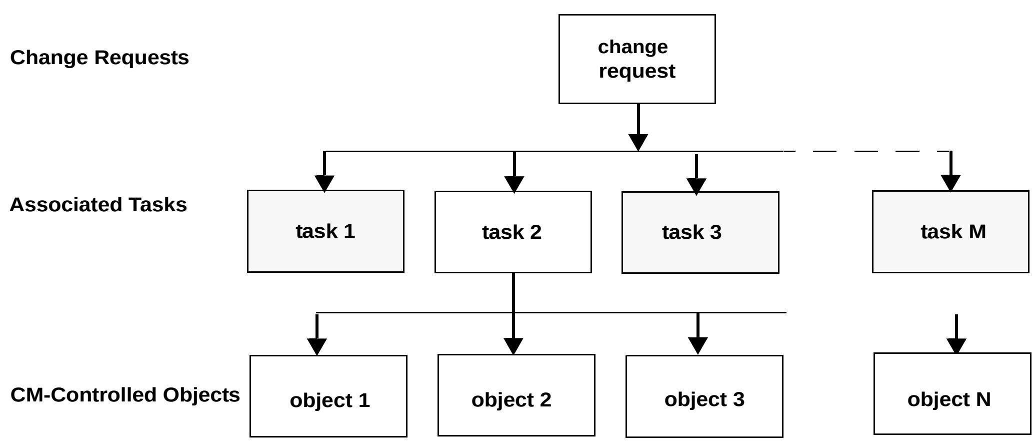
- Change Requests, Tasks, and CM-Controlled Objects (page 2)
- Role-Based Interfaces and Security (page 3)
- Group Security (page 3)
- Customizations (page 3)
- Installation Options (page 3)

Change Requests, Tasks, and CM-Controlled Objects

Telelogic Change tracks requests for changes using *change requests*. A change request (page 231) is a database object that describes a change, including what the change is and who made the request. As you work on a change request you can modify its description, defer it for later consideration, transfer it to a different database, or even reject it.

Change requests often are sufficiently complex to require dividing them into smaller components you can track individually. Telelogic Change uses *associated tasks* to do this. An associated task, or task (page 235), is a database object that describes and tracks the parts of a change request. Tasks can also have associated, controlled objects such as source files if you are using Telelogic Synergy with Telelogic Change.

The following figure shows the relationships between Telelogic Change objects.



Role-Based Interfaces and Security

Telelogic Change ships with three roles: *Admin*, *User*, and *ReportBuilder*. Telelogic Change ensures change request (page 231) database security using a back-end Telelogic Synergy privilege (page 233). For more information about creating and assigning these roles, see Administer Users (page 26).

Note If your roles look different from the roles described here, they have probably been customized.

Group Security

Telelogic Change ships with group security features that work in tandem with role-based and lifecycle security. Group security allows you to define read and write access to change requests, tasks, and objects based on a user's group membership. The groups security features are administered from the Telelogic Directory Server (TDS). For more information about creating and managing groups and access permissions, see the Telelogic Directory Server Help.

Customizations

Telelogic knows that your site has unique change tracking requirements. Therefore, Telelogic Change enables you to change lists, customize lifecycles, and create custom reports to meet your organization's needs.

You can perform other customizations, as well, using the Telelogic Change HTML templates and configuration files.

Installation Options

Telelogic Change can now be installed on one or multiple servers, including a central server mode topology. This type of installation allows you have to all your CRs reside in one database, rather than have them scattered across various databases. The databases containing tasks and objects can be connected directly to the central server, or indirectly using remote servers. The remote server acts as a proxy between the central server and remote development databases.

You can also use stand-alone mode, where CRs are stored in various databases connected to the server. This is the way the server was used in previous releases.

For additional information about the various installation options, see the appropriate *Telelogic Change Installation Guide*.

Additionally, users are now administered using the Telelogic® Directory Server™. For additional information about the Telelogic Directory Server, see the documentation for that product.

Standard Lifecycles and States

A lifecycle (page 232) is a set of rules that govern how users can modify and transition requests. When you are logged in as *User*, one of the following lifecycles (and associated states) is active:

- Change Request Lifecycle and States (page 4)
- Task Lifecycle and States (page 5)

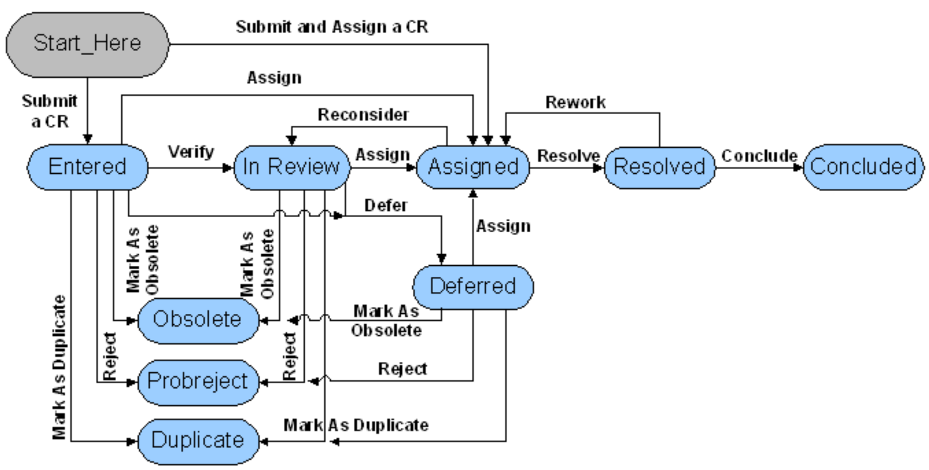
Change Request Lifecycle and States

You or another Telelogic Change administrator may have installed the *dev_process*. The states and transitions shown here are based on this process (page 233).

For the *User* role (page 234), all new change requests begin in the *entered* or *assigned* state. The change request then progresses or *transitions* through each stage in the change request's lifecycle, and its state changes.

Ultimately, the change request is either concluded successfully, marked as a duplicate of another change request, made obsolete, or rejected.

The possible transitions and states for the dev process are shown in the following figure.



Note If your lifecycle looks different from the lifecycle shown in the figures, it has probably been customized.

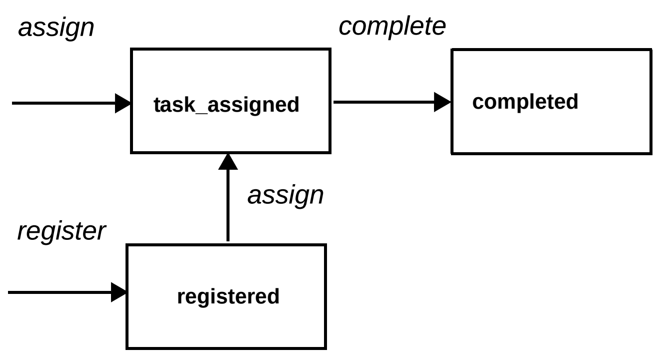
For information about customizing a lifecycle in Telelogic Change, see Add or Change a CR Lifecycle (page 121).

Task Lifecycle and States

You can create tasks during the assignment transition in a change request's lifecycle, or by using Telelogic Synergy.

All new tasks begin in either the *task_assigned* or *registered* (unassigned) state. (The *task_assigned* state is the default.) If the task is associated with a change request, you must transition the task to the *completed* state before you can resolve the change request.

The possible transitions and states are shown in the following figure.



Note You cannot customize a task lifecycle.

Take the Telelogic Change Admin Interface Tour

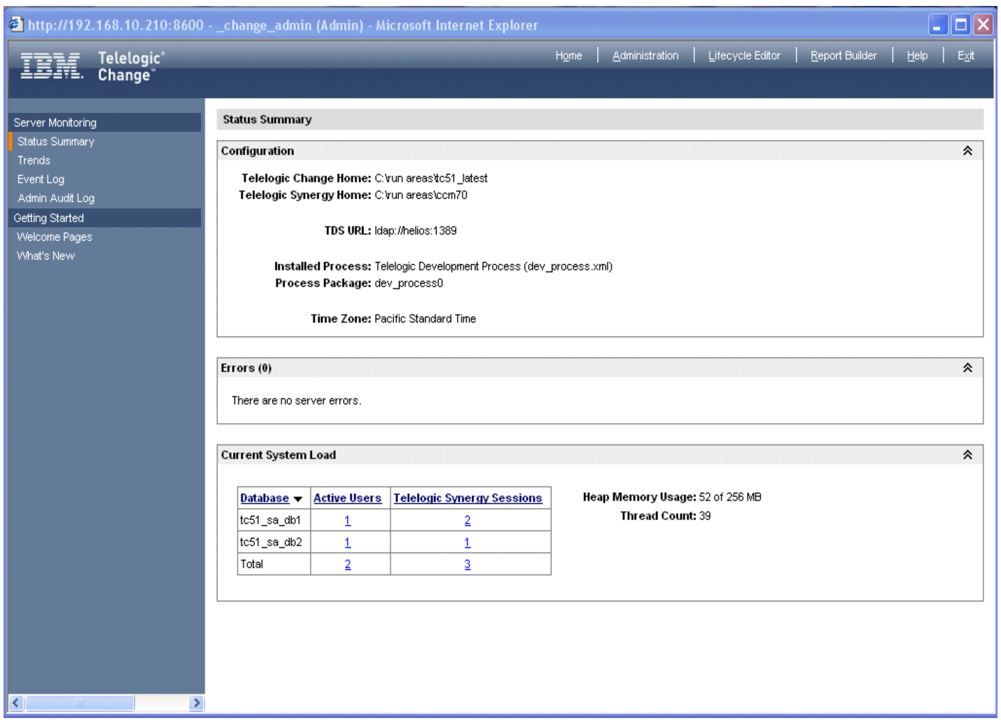
The Telelogic Change interface consists of an Action Panel (page 6), a Button Bar (page 7), and a Dialog Panel (page 8) that changes when you click an Action Panel link.

A series of reports are available from the Home (page 8) page. These pages provide relevant, up-to-date information about product usage, configuration, and debugging information useful to the Admin user.

The following figure shows the Telelogic Change window after you log on or click the **Home** link.

Action Panel

Dialog Panel with the **Status Summary** page displayed



Action Panel

The Action Panel is the top row in the Telelogic Change window and is where you start any operation (for example, **Administration**). Clicking a link displays the action's corresponding dialog box in the Dialog Panel.

The following actions are available in the Action Panel for users in the *Admin* role:

- **Home** link

  Click to display detailed status and server information for Telelogic Change, as well as to access the **Welcome** and **What's New?** pages.

- **Administration** link

  Click to perform Telelogic Change maintenance operations.

- **Lifecycle Editor** link

  Click to show and/or change a Telelogic Change lifecycle (page 232).

  If you have configured your Change installation as a remote server, you will not see this link.

- **Report Builder** link

  Click to build a Telelogic Change report using configurable components.

  If you have configured your Change installation as a remote server, you will not see this link.

- **Help** link

  Click to display help for your role.

  Note Click the **Help** link on each dialog box's button bar to display context-sensitive help.

- **Exit** link

  Click to log out of Telelogic Change. This operation quits the Telelogic Change session and frees the session's resources.

Button Bar

The buttons displayed here vary, depending on which operation in the Action Panel you selected. Help is always available, except from the status pages.

Help link

Click the Help link on each dialog box's button bar to display context-sensitive help.

Dialog Panel

The Dialog Panel is the remaining portion of the Telelogic Change window and is where dialog boxes and the results of most operations are displayed.

The following graphics indicate the operation's status:

 A green check mark indicates success.

 A red "X" indicates failure.

 An “i” ("information") indicates that you should read the results dialog box to determine what happened.

If the graphic indicates failure, the accompanying text gives the reason for the failure.

Home

When you log on or click **Home** in the Action Panel, Home for the *Admin* user provides detailed status and summary information, shows trends, and allows you to view logs needed for debugging.

- The **Status Summary** page allows you to view the current configuration and system load for each database by server. If you in central server mode, you will see information about the connected servers.

  Additionally, a current list of outstanding errors is shown in the **Errors** box. These errors are categorized for hosts, databases, and remote servers. You will only see information if errors exist, and they will be displayed until resolution. The columns in the tables displaying specific information can be sorted for your convenience.
- The **Trends** page allows you to select time intervals by which to view active users and sessions over the time period you specify.
- The **Event Log** page allows you to turn on debugging, view or download the log file, and clear the log file.
- The **Admin Audit Log** page allows you to view changes to users, packages that have been installed/uninstalled, databases that have been added or removed, linking or unlinking of remote and central servers, and changes to ACLs.

  The log is named `audit_log.xml` and is located in `/cs_app/webapps/synergy/logs.`

  You can refresh, download, or print the log by clicking the appropriate links.
- The **Getting Started** pages provide access to the welcome pages and show what is new in the current release.

Home Pages in the User interface

Home pages are also available in the User role-based interface. These pages are configurable, and users can define their own pages, use a default page, or select from various pre-defined custom pages. These default or predefined custom pages can be defined by any user having the *Admin* role.

For more information on defining and assigning default home pages for specific users or groups, log on to the User interface and see the help.

Using Help

Admin help contains information about setting up and using Telelogic Change when you log in using the Admin role. Help is in HTML format and is designed to run on any platform using the supported browsers. Help uses frames to give you a fast and persistent way of finding information in the help system.

Your browser must be enabled to use cookies for Help to store and retrieve certain settings. If cookies are disabled, the Help system will not open with the last tab page you selected nor link to the Telelogic Change Web site.

Display context-sensitive help by clicking the **Help** link on the dialog box's button bar. View a different topic in this help by clicking its link in the text, in the Contents page, or in the Index.

You can also display help by clicking the **Help** link in the Action Panel.

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Administering Telelogic Change

The following pages describe how to log into and perform administrative operations for Telelogic Change.

- Start a Telelogic Change Session (page 16)
- Set Up Telelogic Change to Log In as a User (page 17)
- Upgrade a CR Process File from an Earlier Release (page 18)
- Perform General Operations (page 19)
- Set Up the Server (page 20)
- Administer Users (page 26)
- Install, Uninstall, or Create a Package (page 33)
- Debug Telelogic Change (page 37)
- Update Telelogic Change with Configuration Changes (page 38)

For more information, see Administration (page 145).

Start a Telelogic Change Session

Starting a session requires that you use a supported browser and that you know the URL for your Telelogic Change installation. Also, to start an Admin session your user ID must have at least one of the Telelogic Synergy privileges associated with the *Admin* role.

For more information, see Show or Change Privileges for One User (page 29) and Map Telelogic Synergy Privileges to Telelogic Change Login Roles (page 31).

1. Open a browser.
2. Surf to the URL for your Telelogic Change server.

   The URL will be something like `http://`*`hostname`*`:`*`port_number/admin`*.

   > **Note** To specify the URL using an IP address, you must edit the `synergy.xml` file manually in the *`cweb_home`*`\cs_app\etc` directory.

3. In the **Telelogic Change Login** window, type your **User ID** and **Password**.

   > **Note** You (your user ID) must have the *ccm_admin* Telelogic Synergy role across all databases to install a package in stand-alone mode. Also, when you are assigning privileges to users for each database, you will see only the databases in which you have the *ccm_admin* Telelogic Synergy role.
   >
   > In central server mode, you need the *ccm_admin* Telelogic Synergy role in the central CR database.

4. Press **Enter** or click **Login**.

   The Telelogic Change window appears. You will see the **Status Summary** page, which gives you configuration information and the current system load. Usage trend graphs and the log file are accessed from this window.

Set Up Telelogic Change to Log In as a User

After you have installed Telelogic Change, you must install a Telelogic Change process package. Unless a process package is installed, you will only be able to log in as *Admin*.

1. Start a Telelogic Change Session (page 16), logged in as a user who has the *Admin* role.

2. Install whichever process package is appropriate for your site, as shown in Install a Package (page 34).

Upgrade a CR Process File from an Earlier Release

If you want to use a CR Process file created when using an earlier version of Telelogic Change, perform the following steps to install and convert the file. This example assumes you are upgrading from 4.7; if you are upgrading from another version, make the appropriate substitutions.

Also see the **CR Process Upgrade Checklist** referenced in the Welcome pages.

1. Copy the 4.7 XML file to the 5.1 CR Process directory; that is, to `CS_HOME/WEB-INF/cr_process`, as shown in Telelogic Change Directories (page 220).
2. Start a Telelogic Change Session (page 16), logged in as the local admin user and with the *Admin* role.
3. Display the CR Process dialog box for the 4.7 XML file.

   For steps, see Display the CR Process Dialog Box (page 107).
4. Save the file.

   For steps, see Save a CR Process File with a New Name (page 108).
5. Create and install the updated CR Process package.

   For steps, see Create a Process Package (page 36) and Install a Package (page 34).
6. Test the CR Process.
7. If your CR Process does not work as intended, make the necessary changes and then repeat steps 5 and 6.

Perform General Operations

Use the **General** tab to:

- Set Telelogic Change to use the Telelogic Synergy integration
- Configure the e-mail server used by Telelogic Change
- Set date and name display formats
- Change user and group list behavior
- Reload configuration data
- Download and view audit logs

Display this page by clicking the **Administration** link.

For more information, see General tab (page 147).

Set Up the Server

You can perform the following server administration operations:

- Show or Change a Database Configuration (page 21)
- Add a Database (page 21)
- Remove a Database (page 22)
- Show or Change Host Configuration (page 22)
- Add a Host (page 22)
- Remove a Host (page 23)
- Add a Remote Server (page 25)
- Remove a Remote Server (page 25)

For more information, see Server tab (page 149) and Edit the pt.cfg File (page 39).

Show or Change a Database Configuration

You can change the database configuration, including enabling and disabling a database and changing the maximum number of sessions.

1. On the Action Panel, click **Administration**.
2. In the **Databases** list on the **Server** tab, click a listed database.

   The **Database Configuration** subdialog box appears.
3. Change the database properties, if necessary.
4. Click **Save**.

For more information, see Database Configuration subdialog box (page 151).

Add a Database

You can add a database to the list of available databases for your Telelogic Change installation.

1. On the Action Panel, click **Administration**.
2. Next to **Databases** on the **Server** tab, click **Add**.

   A database path pop-up dialog box appears.
3. Type the path to the database, and then click **OK**.

   For Windows, the path must be a UNC format path.

   The **Database Configuration** subdialog box appears.
4. Enter information for the database.
5. Click **Save**.

For more information, see Database Configuration subdialog box (page 151).

Remove a Database

You can remove a database from the list of available databases for your Telelogic Change installation.

1. On the Action Panel, click **Administration**.
2. In the **Databases** list on the **Server** tab, click a listed database.

   The **Database Configuration** subdialog box appears.
3. Below **Databases**, click **Remove**.
4. Click **Save**.

For more information, see Database Configuration subdialog box (page 151).

Show or Change Host Configuration

You can change the host configuration, including enabling and disabling a host and changing the maximum number of sessions.

1. On the Action Panel, click **Administration**.
2. In the **Hosts** list on the **Server** tab, click a listed host.

   The **Host Configuration** subdialog box appears.
3. Change the host properties, if necessary, and then click **Save**.

For more information, see Host Configuration subdialog box (page 152).

Add a Host

You can add a host to the list of available hosts for your Telelogic Change installation.

1. On the Action Panel, click **Administration**.
2. Next to **Hosts** on the **Server** tab, click **Add**.

   A host name pop-up dialog box appears.
3. Type the host name, and then click **OK**.

   The **Host Configuration** subdialog box appears.
4. Enter information for the host.
5. Click **Save**.

For more information, see Host Configuration subdialog box (page 152).

Remove a Host

You can remove a host from the list of available hosts for your Telelogic Change installation.

1. On the Action Panel, click **Administration**.
2. In the **Hosts** list on the **Server** tab, click a listed host.

   The **Host Configuration** subdialog box appears.
3. Below **Hosts**, click **Remove**.
4. Click **Save**.

For more information, see Host Configuration subdialog box (page 152).

Add a Central Server

You can have only one central server in your Telelogic Change installation.

1. On the Action Panel, click **Administration**.
2. On the **Server** tab, click **Central Server**.
3. Type the name of the central server to be connected.
4. Enter the URL of the central server.
5. Click **Register**.

For more information, see Central Server tab (page 153).

Remove a Central Server

You can remove remote servers from your Telelogic Change installation.

1. On the Action Panel, click **Administration**.
2. On the **Server** tab, click **Central Server**.
3. Click **Unregister**.

   This opens a dialog box that enables you to unregister (either permanently remove or remove, but preserve) the database relationship with the central server.

For more information, see Central Server tab (page 153).

Add a Remote Server

You can add additional remote servers to your central server.

1. On the Action Panel, click **Administration**.
2. On the **Server** tab, click **Remote Servers**.

   A list of servers appears.
3. Click **Add a Remote Server**.
4. Enter the URL of the remote server.
5. Click **Add**.

For more information, see Remote Servers tab (page 153).

Remove a Remote Server

You can remove remote servers from your Telelogic Change installation.

1. On the Action Panel, click **Administration**.
2. On the **Server** tab, click **Remote Servers**.

   A list of servers appears.
3. Select the name of the server to be removed.
4. Click **Remove**.

For more information, see Remote Servers tab (page 153).

Administer Users

You can perform the following user administration operations:

- Show Users (page 27)
- Give Users Access in Central Server Mode (page 28)
- Remove Users from Selected Databases (page 29)
- Change User Properties (page 29)
- Show or Change Privileges for One User (page 29)
- Change Privileges for Multiple Users (page 30)
- Map Telelogic Synergy Privileges to Telelogic Change Login Roles (page 31)
- Create a Telelogic Change Login Role (page 31)
- Change How Long Recent Report Results are Cached (page 32)

Note Most user administration must be performed using Telelogic Directory Administration. Please see the documentation for that product for information about creating and deleting users, importing users, etc.

For more information, see Users tab (page 155) and Edit the pt.cfg File (page 39).

Show Users

You can show all users (users having a Telelogic Synergy user name), or a subset of users, on the **Users** tab.

1. On the Action Panel, click **Administration**.
2. In the **Administration** button bar, click the **Users** tab.
3. View all users by clicking the **All** tab, or use the **Filter** tab to show a subset of users.

   To filter the list, select a filter field from the list, and enter a string to be matched, then press **Go**.

For more information, see Users tab (page 155).

Give Users Access in Central Server Mode

You must assign roles to all users working on the central server. Only users with roles in the central CR database can log on to Change.

1. Add the new user(s) in the Telelogic Directory Server (TDS). See the *TDS Help* for additional information. Make sure the user has a Telelogic Synergy user name defined.
2. If the new user(s) need to use Telelogic Synergy, or need to access task information in Telelogic Change, add the user(s) to the task databases using the `ccm users` command. See the appropriate *Telelogic Synergy Installation Guide* for more information.
3. On the Action Panel, click **Administration**.
4. In the **Administration** button bar, click the **Users** tab.
5. In the **User Administration** dialog box, click one or more user names.
6. Specify the required roles for the users. See Show or Change Privileges for One User (page 29) for more information.

   The user should now be able to log on to Telelogic Change.

Remove Users from Selected Databases

You can remove a user's privileges from a list of available databases. This effectively removes users from the selected databases.

1. On the Action Panel, click **Administration**.
2. In the **Administration** button bar, click the **Users** tab.
3. In the **User Administration** dialog box, click one or more user names.
4. Click **Remove Selected Users from *DBs***. The database info displayed will vary, depending if you are in central server or stand-alone mode.

   The **Remove Selected Users** subdialog box appears.
5. Set the deletion scope by selecting the databases where you want to remove the user.
6. Click **Remove**.
7. Click **Save**.

For more information, see Remove Selected Users from database subdialog box (page 158).

Change User Properties

You can change user properties by selecting one user on the **Users** tab.

1. On the Action Panel, click **Administration**.
2. In the **Administration** button bar, click the **Users** tab.
3. In the **User Administration** dialog box, click a user name.
4. If you are using read security, you can type a new read security attribute value in the **User Properties** subdialog box.

   For more information, see Is Read Security Attribute check box (page 195).
5. Click **Update** to update the user properties.
6. Click **Save**.

For more information, see Edit User area (page 156).

Show or Change Privileges for One User

You can show or change user privileges by selecting one user on the **Users** tab, and then selecting the privileges for each database.

1. On the Action Panel, click **Administration**.
2. In the **Administration** button bar, click the **Users** tab.
3. In the **Users** list, click a user name.
4. In the **Privileges** subdialog check boxes, select the privilege and database combinations for the user.

5. Click **Update** to update the user privileges.
6. Click **Save**.

For more information, see Edit User area (page 156).

Change Privileges for Multiple Users

You can change multiple users' privileges by selecting multiple users on the **Users** tab, and then selecting the privileges for each database.

1. On the Action Panel, click **Administration**.
2. In the **Administration** button bar, click the **Users** tab.
3. Click multiple user names, either in the **All** tab list or using the **Filter** tab.
4. In the **Multi-User Privileges** subdialog check boxes, select the privilege and database combinations for the users.
5. Add, set, or delete the Telelogic Synergy privileges for the selected users.
   - Click **Add** to add the selected privileges to the users' existing set of privileges.
   - Click **Delete** to remove the selected privileges from the users' existing set of privileges.
   - Click **Set** to replace the users' existing set of privileges with the selected privileges.
6. Click **Update** to update the user privileges.
7. Click **Save**.

For more information, see Multi-User Privileges area (page 157).

Run a Report Showing User Privileges

You can run a report showing all users having a specified Telelogic Change privilege in one or more databases, or showing all users with one or more privileges. If you have many users in your databases, your search may be faster by filtering by privilege.

1. On the Action Panel, click **Administration**.
2. In the **Administration** button bar, click the **Users** tab.
3. Click **Report on Users by Privilege**.
4. In the **Report on Users by Privileges** dialog box, select the privilege on which to report. Click **any privilege** to run a report showing all users having at least one privilege.
5. Select the database on which to report. Click **Select All** to show all databases (in stand-alone mode only).
6. Select **List the privileges of the matching users** to explicitly list the roles in each database.
7. Click **Run Report**.

8. To print the report, click **Print**.

For more information, see Report on Users by Privilege subdialog box (page 160).

Map Telelogic Synergy Privileges to Telelogic Change Login Roles

This operation maps Telelogic Synergy privileges (roles) to Telelogic Change login roles. For example, if the Telelogic Synergy *developer* privilege is mapped to the *User* login role, then any user with the *developer* privilege can login as *User*.

To start a session in a Telelogic Change role, a user must have at least one Telelogic Synergy privilege.

1. Display the CR Process Dialog Box (page 107).
2. On the **CR Process** subbutton bar, click **Edit**.

   The **Edit CR Process Properties** dialog box appears.
3. Click the **Roles** tab.
4. In the **Telelogic Change Roles** list, click a role.
5. In the **Telelogic Synergy Roles** list, click one or more privileges to map to the Telelogic Change role.
6. Click **Set Mapping**.

   This operation maps one or more Telelogic Synergy privileges to a Telelogic Change role.

   > **Note** You can also map privileges at the lifecycle level. The set of privileges will be the same regardless of where you define them.
7. Click **Update**.
8. On the **CR Process** subbutton bar, click **Save As**.
9. Click **Save**.

For more information, see Roles tab (page 197).

Create a Telelogic Change Login Role

Telelogic Change login roles determine which interface a user sees when logged in to a Telelogic Change session. To start a session in a Telelogic Change role, a user must have at least one Telelogic Synergy privilege.

1. Display the CR Process Dialog Box (page 107).
2. Create the role.

   For a CR Process role, click **Edit** on the **CR Process** subbutton bar. The **Edit CR Process Properties** dialog box appears.

Or, click a lifecycle in the **Lifecycles** list, and then click **Edit**. The **Edit Lifecycle Properties** subdialog box appears.

3. Click the **Roles** tab.
4. Create the new role.
   a. Under **Telelogic Change Roles**, click **Create**.

      The temporary role name, `_New_Role_`, appears in the roles list.
   b. In the **Name** box, type the new role name.
   c. In the **Description** box, type a description of the role.
5. Map Telelogic Synergy privileges to Telelogic Change login roles.
   a. In the **Telelogic Change Roles** list, click a role.
   b. In the **Telelogic Synergy Roles** list, click one or more roles (or select the **All Roles** check box).

      Note If you do not assign Telelogic Synergy privileges to Telelogic Change login roles, you will be unable to log in with a Telelogic Change role regardless of your assigned Telelogic Synergy privileges.
   c. Click **Set Mapping**.
6. Click **Update**.
7. On the **CR Process** subbutton bar, click **Save As**.
8. Click **Save**.

For more information, see Roles tab (page 197).

Change How Long Recent Report Results are Cached

User reports older than the number of days specified in the `REPORT_SAVE_LIMIT` parameter in the `pt.cfg` file are deleted automatically. You can change this time period by changing the `REPORT_SAVE_LIMIT` value in the `pt.cfg` file.

For more information, see Edit the pt.cfg File (page 39).

Install, Uninstall, or Create a Package

You can perform the following package operations:

- Install a Package (page 34)
- Uninstall a Package (page 35)
- Create and Install a CR Process Graphic File (page 35)
- Create a Process Package (page 36)

For more information, see Package Installer tab (page 171).

Install a Package

Installing a package makes that package active on the Telelogic Change server.

> **Note** You can have only one *process* package active. Therefore, you must uninstall any installed process package before installing a new one.
>
> No such restriction applies to non-process packages.

1. On the Action Panel, click **Administration**.
2. In the **Administration** button bar, click the **Package Installer** tab.

   > **Note** Installing a process package invalidates all sessions that are currently running; therefore, ensure users are logged off before installing a process package.

3. In the **Package Scope** box, click a listed package type to show only those types.
4. In the **Available Packages** box, click the package to install (for example, `dev_process`).

   The package can be a new package you just created. See Create a Process Package (page 36).

5. Click **Install**.

   The install operation installs the package and backs up any conflicting files.

   > **Note** You can install a process package only if you have the *ccm_admin* privilege for all databases in the Telelogic Change installation. In central server mode, you must have the *ccm_admin* privilege in the central CR database.
   >
   > To check your privileges, go to the **Administration** action's **User** tab, click your user name, and view the privileges.

For more information, see Package Installer tab (page 171).

Uninstall a Package

Uninstalling a package makes that package inactive. Uninstalling a package does not delete the package.

1. On the Action Panel, click **Administration**.
2. In the **Administration** button bar, click the **Package Installer** tab.
3. In the **Installed Packages** box, click the package to uninstall.

    Caution! Always uninstall packages in the reverse order of the order in which you installed them.

4. Click **Uninstall**.

For more information, see Package Installer tab (page 171).

Create and Install a CR Process Graphic File

You can create and install a CR Process graphic file to use with a customized CR Process. The file can be in any format supported by your web browser, such as `.gif`, `.jpg`, `.bmp`, etc.

1. Create a CR Process graphic by using any good commercial graphics editor.

    Give the graphic a meaningful name (*`my_new_process`*`.gif`). You will use the graphic file name in the **Image** box when you define CR Process-level properties.

2. Change directory to *`cweb_home`*`\cs_app\webapps\synergy\WEB-INF\package_templates`.
3. Create a directory structure named *`my_new`*`_template` to store the graphic file. The directory structure must contain subdirectories like the shipped `dev_template` directory.
4. Copy the *`my_new`*`_process.gif` file from its temporary location to the *`my_new`*`_template\trapeze\ptimages` directory.

You will use the package template directory later by “merging” it when you create the process package. For more information, see Create a Process Package (page 36).

Create a Process Package

You must create a process package for installing CR Process changes.

1. Display the CR Process Dialog Box (page 107).
2. Click **Create Package**.

   Note When you create a package, Telelogic Change uses this CR Process file to create the configuration file entries, templates, and other files for each lifecycle in the process.

3. In the **Package Template** list, click any applicable package template.

   For examples of how to create package templates, see Create, Customize, and Install a Web Type (page 116) and Create and Install a CR Process Graphic File (page 35).

4. Click **Create**.

After completing this operation, you can install the package as shown in Install a Package (page 34).

For more information, see CR Process Options (page 187).

Debug Telelogic Change

Use the **Event Log** dialog to turn debugging on and off and manage the log file.

Display this page by clicking **Event Log** in the **Server Monitoring** list in the **Home** location.

Update Telelogic Change with Configuration Changes

After making configuration changes—such as by adding a release number or editing the `pt.cfg` file manually—you must reload configuration data into Telelogic Change.

For information about editing the file, see Edit the pt.cfg File (page 39).

1. On the Action Panel, click **Administration**.
2. In the **Administration** button bar, click the **General** tab.
3. In the **Configuration Data** box, click **Load**.

For more information, see General tab (page 147).

Edit the pt.cfg File

The `pt.cfg` file contains Telelogic Change settings for all Telelogic Change sessions. By editing the `pt.cfg` file you can change settings that are not accessible using the GUI.

For information about Telelogic Change directory structures and file locations, see Telelogic Change Directories (page 220).

1. Edit the `pt.cfg` file.
2. Locate and change the setting (for example, a system setting).

```
...
#  comment describing the setting
#
[CCM_SYSTEM][PARAMETER_NAME]your_integer_value
[/PARAMETER_NAME][/CCM_SYSTEM]
#
...
```

3. Save the `pt.cfg` file.
4. Update Telelogic Change with Configuration Changes (page 38).

Building Reports

Use the Report Builder to design a report that will contain all the information needed to track CRs, tasks, and objects.

Reports contain information about items in a selection set. When you define a report, you must define the query used to generate the selection set, choose the attributes to show for each selection set item, and define the report layout. You can also define relation reports, which show information about associated CRs, tasks, or objects.

After you have defined a report while in the *ReportBuilder* or *CR Process Admin* role, the report is displayed in the **System** folder in the **Reports** dialog box for users who logged in using the *User* role. The format is also added to the System folder under the report name.

The main report definition operations are as follows:

- Build a Report (page 42)
- Build a Relation Report (page 55)
- Install a Report (page 58)

For a detailed example, see Report Builder Example (page 59).

Build a Report

The following steps summarize how to build reports using the Report Builder. You must perform the steps in the order shown to avoid errors.

1. Plan the report.

   For example, based on the CR Process you are using, determine whether you are reporting on CRs, tasks, or objects, decide which attributes to choose for the report, and decide which, if any, values you want calculated for you. You will need to define the specific information you want in the report in order to define the components of the report.

   For example, you must determine if you need a subreport or a relation report. Subreports and relation reports are similar, in that both allow you to look up an item related to the context item. For instance, if the context item is a CR, you may want to look up its associated tasks. Subreports and relation reports differ in several ways:

   - Defining a relation report is very similar to defining a top-level report, except that it doesn’t have a separate query or a main template. A subreport, on the other hand, has its own query that references the context item. It is actually a separate report that was previously defined. It is merely included inside another report.
   - Relation reports can be chained together in a linear fashion. That is, each item can show a single related item. Subreports enable reporting on multiple related items. This is done by including multiple subreports for the context item.

   So, if you wanted to show a CR and its tasks, both relation reports and subreports can do the job. However, to show a CR with its tasks and attachments, you would need to use a subreport, because the relation report can only show one or the other (the tasks or the attachments, but not both at the same time).

2. Start a Telelogic Change Session (page 16).
3. Install a process package, if you have not done so already.

   A process package contains the list of reportable attributes for a CR Process. Unless you install one of these packages, your attribute list will be empty. For more information, see Install a Package (page 34).

4. On the Action Panel, click **Report Builder**.

   If you have configured your Change installation to use a remote server, you will not see this link, and cannot perform this operation from this server.

   The **Report Builder** dialog box appears, with the **Select Report File** subdialog box displayed.

5. Select a report name, or create a new report by typing a new report name.

To change an existing report, click a report name in the **Available Report Files** list, and then click **Edit**.

To define a new report, type a new report name in the **New Report File** box (including the `xml` file name extension), and then click **Create**.

If you do not type a file name, Telelogic Change creates a report named `csReportX.xml`, where *XX* is a number incremented whenever Telelogic Change creates a report using an existing report name.

6. Define the query that will generate the selection set of CRs, tasks, or objects on which you are reporting.

   For steps, see Define a Query (page 44).

7. Define General Report Properties (page 45). The report name you type will appear in users' **System** report and format lists.
8. Select Templates to Include (page 46) on the report.
9. Define the Header (page 47), which is the information that will appear at the top of the report page.
10. Define the Report Body (page 48), which is the information that will appear in the body of the report.
11. Define the Footer (page 50), which is the information that will appear at the bottom of the report page.
12. Add a Chart to the Report (page 51) that will appear at the bottom of the report.
13. Define Grouping (page 52). Groupings create sections on the report based on an attribute value. You can also define a graphic for each grouping.
14. Define Sorting (page 54). Sorting determines the order that the items appear in the report.

    Note Sorting is always applied *after* grouping; therefore, the attribute selected for grouping never appears in the sorting lists.

15. Build a Relation Report (page 55) (optional).

    If your selection set contains items that have associated items (such as CRs with associated tasks), you can define a relation report that will show the associated items.

16. Install a Report (page 58).

For a detailed example, see Report Builder Example (page 59).

Define a Query

You must define a query for the content of the report.

1. In the **Report Builder** dialog box, click **Define Query**.

   The **Define Query** dialog box appears.

2. Choose query criteria.

   Select an operand, operator, and value, and the appropriate buttons. Repeat these steps until your query is completed. You can also type the entire query, or parts of the query, into the **Query String** box.

3. Click **Update**.

Related Topics

- Define the Query (Example) (page 61)

Define General Report Properties

You must define the general report properties, including the report name and what type of objects will be shown in the report.

1. In the **Report Builder** dialog box, click **Properties**.
2. Click the **General** tab.
3. Define the general report properties.
   a. In the **Name** box, type a report name.

      Make the name meaningful because the name will be listed in **System** reports and formats.

   b. In the **Type** list, click **Change Request**, **Task**, or **Object**. This selection determines the content of the **Reportable Attributes** list.
   c. In the **Style** list, click **Block** or **Column**.
   d. In the **Format** list, click the format for the generated report.
   e. In the **Description** box, type a description of the report.
4. Set up paging (optional).
   a. Select the **Paging** check box.

      Clear the **Paging** check box if you intend to print the report or use it for bulk transitioning; otherwise, you will have to print the report or transition the CRs one page at a time.

   b. In the **Items Per Page**, type the number of items.
5. If you want to include a reload button on HTML reports, click **Reload button**.
6. In the **Query Limit** box, type the maximum number of items to find. If the query result exceeds this limit, the report is stopped.
7. In the **String Limit**, type the maximum string length of a reported attribute value. Attribute values that exceed this limit are truncated.
8. In the **Reportable Attributes** list, select the attributes to display on the report.

   The **problem_number**, **problem_synopsis**, and **problem_description** attributes are included automatically in the **Attributes in Report** list when you create a new report.

   For information about arranging and setting the attributes, see Create or Change Attributes (page 105).
9. Click **Update**.

Related Topics

- Define General Properties (Example) (page 63)

Select Templates to Include

You must choose the templates you will use to construct the report. The templates represent different report elements, such as the header, body, and footer.

1. In the **Report Builder** dialog box, click **Properties**.
2. Click the **Main** tab.
3. Select templates to include on the report.
   a. Select the **Include Header Template** check box to display a header at the top of the report.
   b. Select the **Include Attribute Template** check box to define the body of the report.
   c. Select the **Include Footer Template** check box to display a footer at the bottom of the report.
   d. Select the **Include Image Template** check box to display a charting graphic at the bottom of the report.
4. Click **Update**.

Related Topics

- Select Templates to Include (Example) (page 65)

Define the Header

Define the header if you want to include a header in the report.

1. In the **Report Builder** dialog box, click **Properties**.
2. Click the **Header** tab.
3. Define the header layout.
   a. Select the **Title** check box if you want to show the report title.
      The **Title** is the name the user gives the report before running it.
   b. Select the **Date** check box if you want to show the date.
   c. Select the **Object Count** check box if you want to show the number of reported items.
   d. Select the **Report Name** check box if you want to show the name of the report.
   e. Select the **Query Name** check box if you want to show the name of the query.
   f. Select the **Query String** check box if you want to show the query string.
4. Define header metric operations (optional).
   a. In the **Metric Operations** area, click **Add**.
      The **Available Metric Operations Definition** subdialog box appears.
   b. In the **Select a Metric Type** list, click **Column** or **Row & Column**.
   c. In the **Select a Metric Operation** list, click a metric operation.
      The ***XXX* Metric** area appears under **Available Metric Operations**.
      Define the metric.
   d. In the metrics definition area, click **Create**.
5. Under the **Layout** area, click **Update**.

Related Topics

- Define the Header (Example) (page 66)

Define the Report Body

Define the report body, unless you want to show only a graphic.

1. In the **Report Builder** dialog box, click **Properties**.
2. Click the **Attribute** tab.
3. Define the body layout.
    a. In the **Number of Columns** box, type the number of columns to use on the report.
    b. Select the **Include Border** check box to include borders around attribute/value pairs on the report.
    c. Select the **Include Bulk Operations** check box to allow users to transition multiple items on the report.
4. Define subreports (optional).

    A subreport shows a selection of set of objects obtained from a previously defined report. Typically, the objects are attachments (unlike relation report objects, for which the objects are CRs, tasks, or objects). For more information about when to use subreports, see Build a Report (page 42).

    a. Under the **Subreports Included on Attribute Template** list, click **Add**.

        The **Add Subreport** subdialog box appears.

    b. Click **Change Request**, **Task**, or **Object**, depending on what type of subreport you want to run.

        This action sets the **Select Report** list to the correct choices.

    c. In the **Select Report** list, click the report to run.

        The **Define Query** dialog box appears.

    d. In the **Define Query** subdialog box, create the query for the subreport.

        Be sure to include a keyword for the type of object for which the report is run. For example, include `%problem_number`, `%task_number`, or `%cvid` in the query string to run reports for each CR, task, or object, respectively.

5. Define body metric operations (optional).
    a. In the **Metric Operations** area, click **Add**.

        The **Available Metric Operations Definition** subdialog box appears.

    b. In the **Select a Metric Type** list, click **Row**.
    c. In the **Select a Metric Operation** list, click a metric operation.

        The ***XXX* Metric** area appears under **Available Metric Operations**.

        Define the metric.

d. In the metrics definition area, click **Create**.

6. Under the **Layout** area, click **Update**.

Related Topics

- Define the Body (Example) (page 68)

Define the Footer

Define the footer if you want to include a footer in the report.

1. In the **Report Builder** dialog box, click **Properties**.
2. Click the **Footer** tab.
3. Define the footer layout.
    a. Select the **Title** check box if you want to show the report title.
    The **Title** is the name the user gives the report before running it.
    b. Select the **Date** check box if you want to show the date.
    c. Select the **Object Count** check box if you want to show the number of reported items.
    d. Select the **Report Name** check box if you want to show the name of the report.
    e. Select the **Query Name** check box if you want to show the name of the query.
    f. Select the **Query String** check box if you want to show the query string.
4. Define footer metric operations (optional).
    a. In the **Metric Operations** area, click **Add**.
    The **Available Metric Operations Definition** subdialog box appears.
    b. In the **Select a Metric Type** list, click **Column** or **Row & Column**.
    c. In the **Select a Metric Operation** list, click a metric operation.
    The ***XXX*** **Metric** area appears under **Available Metric Operations**.
    Define the metric.
    d. In the metrics definition area, click **Create**.
5. Under the **Layout** area, click **Update**.

Related Topics

- Define the Footer (Example) (page 70)

Add a Chart to the Report

Define the image template if you want to include a chart in the report.

1. In the **Report Builder** dialog box, click **Properties**.
2. Click the **Image** tab.
3. Under **Layout**, click **Add**.

   The temporary chart name, `_New_Chart,` appears in the subdialog **Charts Included in Report** box.
4. Define the chart.
   a. In the **Title** box, select the `_New_Chart` string, and then type the chart name.

      The title appears in the **Charts Included in Report** list.

   b. In the **Type** list, click a chart type.

   c. In the **Tool** list, click a tool.

   d. In the **Attribute** list, click the attribute to chart.

   e. In the **2ND Attribute** list, click the attribute to chart, if required.

   f. In the **Width in Pixels** box, type the graphic width, or accept the default value.

   g. In the **Height in Pixels** box, type the graphic height, or accept the default value.
5. Click **Update**.

Related Topics

- Add a Chart to the Report (Example) (page 71)

Define Grouping

Define attribute grouping if you want the report results to be grouped.

1. In the **Report Builder** dialog box, click **Properties**.
2. Click the **Grouping** tab.
3. Define the grouping layout.
   a. In the **Group By** list, click the attribute by which to group. For example, if you query for CRs and group using the **product_name** attribute, CRs with the same product name are grouped on the report.
   b. Select the **Include Grouping Count** check box if you want to show the number of items in the group on the report.
   c. Select the **Include Grouping Value** check box if you want to show the attribute used to group the results on the report.
4. Select or create charts for the group (optional).

   Select one or more charts, or add a chart by performing the following steps:
   a. Under **Charts Included on Grouping Template**, click **Add**.

      The **Grouping Chart Layout** subdialog box appears.

      The temporary chart name, `_New_Chart`, appears in the subdialog **Charts Included in Report** box.
   b. In the **Title** box, select the `_New_Chart` string, and then type the chart name.
   c. In the **Tool** list, click a tool.
   d. In the **Attribute** list, click the attribute to chart.
   e. In the **2ND Attribute** list, click the attribute to chart, if required.
   f. In the **Width in Pixels** box, type the graphic width, or accept the default value.
   g. In the **Height in Pixels** box, type the graphic height, or accept the default value.
   h. Click **Update**.

      The chart title appears in the **Charts Included On Grouping Template** list.
5. Define grouping metric operations (optional).
   a. In the **Metric Operations** area, click **Add**.

      The **Available Metric Operations Definition** subdialog box appears.
   b. In the **Select a Metric Type** list, click **Column** or **Row & Column**.
   c. In the **Select a Metric Operation** list, click a metric operation.

      The ***XXX* Metric** area appears under **Available Metric Operations**.

      Define the metric.

d. In the metrics definition area, click **Create**.

6. Under the **Layout** area, click **Update**.

Related Topics

- Define Grouping (Example) (page 72)

Define Sorting

Define attribute sorting if you want the report results to be sorted.

1. In the **Report Builder** dialog box, click **Properties**.
2. Click the **Sorting** tab.
3. Choose the order in which items appear on the report, based on the values of up to three attributes.

   Note The grouping attribute takes precedence over the attributes selected on this tab.

   a. In the **Attribute** list, click an attribute.
   b. In the **Sort Type** list, click the type of the attribute.
   c. In the **Direction** list, click **Ascending** or **Descending** order (for example, click **Ascending** to list items in increasing order by attribute value).

Related Topics

- Define Sorting (Example) (page 73)

Build a Relation Report

A relation report definition determines the layout and content of information reported for associated CRs, tasks, or objects. Relation Reports are “embedded” in reports, following the parent CRs with which they are associated.

> **Note** The **Main** and **Grouping** tabs are not available for relation reports. Also, relation reports do not have their own queries.

1. Display the **Report Builder** dialog box.
2. Define a Relation Report (page 56).
3. In the **Report** list, click the relation report name.
4. Define General Relation Report Properties (page 57).
5. Define the Header (page 47), which is the information that will appear at the top of each relation report.
6. Define the Report Body (page 48), which is the information that will appear in the body of the relation report.
7. Define the Footer (page 50), which is the information that will appear at the bottom of each relation report.
8. Add a Chart to the Report (page 51), which will appear at the bottom of the relation report.
9. Define Sorting (page 54). Sorting determines the order that the items appear in the report.
10. The report is ready to install. See Install a Report (page 58).

Define a Relation Report

Define a relation report if you want to generate a report for associated objects.

1. On the subbutton bar, click **Add Relation Report**.

   The **Define a Relation Report** dialog box appears.
2. In the **Report Name** box, type the relation report name.
3. In the **Report Type** list, click **Change Request, Task**, or **Object**.
4. Specify a relation. In the **Select Existing Relations** list, click the relation report items' relationship to the parent item. **Associated Tasks, Attachments**, and **Duplicate of** are shipped relations. You can create additional relations by creating relation attributes in the CR Process. The relation appears in the **Report Relation** box.

   Or, type the relation name in the **Report Relation** box. For additional information on relation types you can type in, see Telelogic Synergy Help for the `relate` command.
5. Click **Update**.

Related Topics

- Build the Relation Report (Example) (page 74)

Define General Relation Report Properties

Define the general relation report properties, including the relation report name and what type of objects will be shown in the report.

1. In the **Reportable Attributes** list, select the attributes to display on the relation report.

   For information about arranging and setting the attributes, see Create or Change Attributes (page 105) .

2. Click **Update**.

Related Topics

- Define General Relation Report Properties (Example) (page 76)

Install a Report

Before anyone can use a system report, you must create and install the package for the report.

1. On the subbutton bar, click **Save**.
2. On the subbutton bar, click **Uninstall** to uninstall any previous version of this report.

   This operation removes the report package from the **Installed Packages** list on the **Package Installer** tab.
3. On the button bar, click **Install**.

   This operation adds the report package to the list of installed packages, and to the user list of **System** reports and formats.

Related Topics

- Save and Install the Report (Example) (page 79)

Report Builder Example

The following procedures show how to build a CR report, with task relation reports, for all resolved CRs with **hammer**, **saw**, and **drill** product names. The CRs will be grouped by product name, then sorted by request type. This example uses the *dev_process* that is shipped with the product.

Note that the figures used to illustrate the example report show the Action Panel used in the *ReportBuilder* role. The other Action Panel links are different from those used in the Admin interface, but both use the **Report Builder** link, and all the corresponding dialogs are the same.

To try this example, you must do the following:

1. Add **hammer**, **saw**, and **drill** values to the **product_name** list box attribute.
2. Create CRs using the **hammer**, **saw**, and **drill** product names.
3. Create associated tasks for some of the CRs.
4. Complete the associated tasks.
5. Set the completed dates for the CRs.
6. Transition the CRs to the *resolved* state.

Related Topics

- Build the Report (Example) (page 60)
- Build the Relation Report (Example) (page 74)
- Save and Install the Report (Example) (page 79)

Build the Report (Example)

Define the report for the CRs.

1. Start a Telelogic Change Session (page 16).
2. Install a process package, if you have not done so already.

   For example, install the `dev_process` CR Process. For more information, see Install a Package (page 34).
3. On the Action Panel, click **Report Builder**.

   The **Report Builder** dialog box appears, with the **Select Report File** subdialog box displayed.
4. Create the report name.

   Type a new report name in the **New Report File** box (including the `xml` file name extension), and then click **Create**.
5. Define the Query (Example) (page 61).
6. Define General Properties (Example) (page 63).
7. Select Templates to Include (Example) (page 65).
8. Define the Header (Example) (page 66), which is the information that will appear at the top of the report.
9. Define the Body (Example) (page 68), which is the information that will appear in the body of the report.
10. Define the Footer (Example) (page 70), which is the information that will appear at the bottom of the report.
11. Add a Chart to the Report (Example) (page 71).
12. Define Grouping (Example) (page 72).
13. Define Sorting (Example) (page 73).
14. Build the Relation Report (Example) (page 74).
15. To deploy the report being created, see Save and Install the Report (Example) (page 79).

Define the Query (Example)

Define a query for resolved CRs with product name **hammer**, **saw,** or **drill**.

1. In the **Report Builder** dialog box, click **Define Query**.

   The **Define Query** dialog box appears.

2. Choose query criteria.

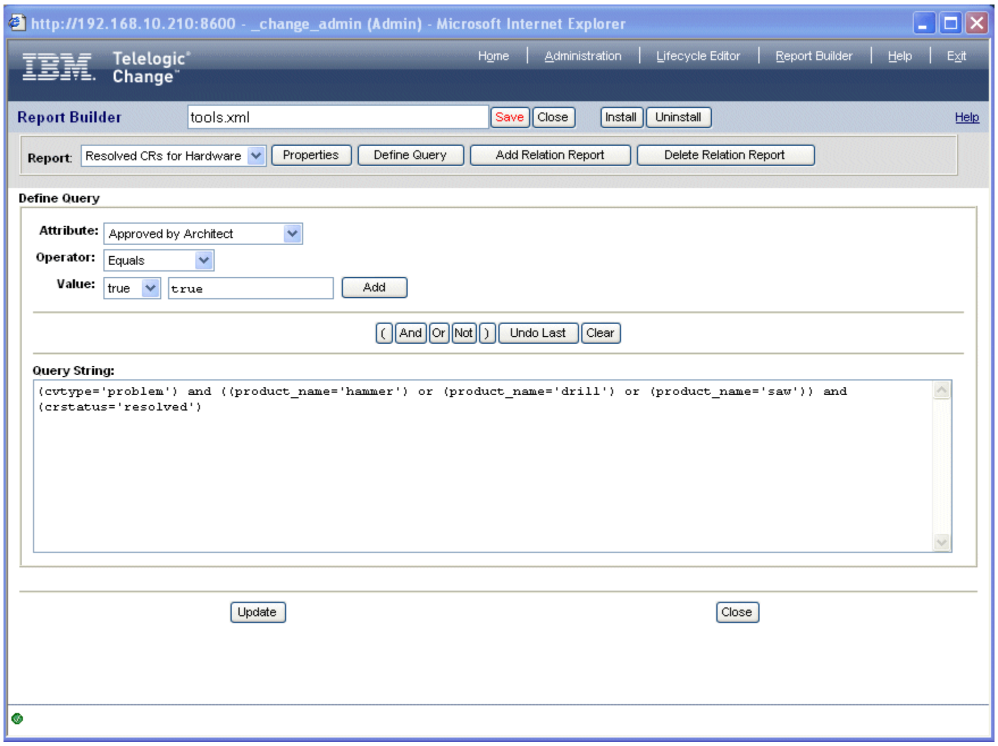
   Find all resolved CRs for the **hammer**, **saw**, and **drill** products.

   Select an operand, operator, and value, and the appropriate buttons. Repeat these steps until your query is completed. You can also type the entire query, or parts of the query, into the **Query String** box. Your query string should be:

   ```
   (cvtype=’problem’)

   and

   ((product_name='drill') or (product_name='hammer') or
   (product_name='saw'))

   and

   (crstatus=’resolved’)
   ```

3. Click **Update**.

The following figure shows the query definition.


http://192.168.10.210:8600 - _change_admin (Admin) - Microsoft Internet Explorer
IBM.
Telelogic
Change
Home
Administration
Lifecycle Editor
Report Builder
Help
Exit
Report Builder
tools.xml
Save
Close
Install
Uninstall
Help
Report:
Resolved CRs for Hardware
Properties
Define Query
Add Relation Report
Delete Relation Report
Define Query
Attribute:
Approved by Architect
Operator:
Equals
Value:
true
true
Add
(
And
Or
Not
)
Undo Last
Clear
Query String:
(cvtype='problem') and ((product_name='hammer') or (product_name='drill') or (product_name='saw')) and
(crstatus='resolved')
Update
Close

Define General Properties (Example)

Define the general report properties, including specifying that the report is for change requests and will be in an HTML format.

1. In the **Report Builder** dialog box, click **Properties**.
2. Click the **General** tab.
3. Define the general report properties.
    a. In the **Name** box, type `Resolved CRs for hardware`.
    b. In the **Type** list, click **Change Request**.
    c. In the **Style** list, click **Block**.
    d. In the **Format** list, click **HTML**.
    e. In the **Description** box, type a description of the report; for example, `Report on all resolved CRs for hammer, saw, and drill products`.
4. Select the **Reload button** checkbox, so that a reload button appears on HTML reports.
5. Accept the default values for the **Query Limit** and **String Limit**.
6. In the **Reportable Attributes** list, select the attributes to display on the report.

    You will select **Include Border** on the **Attribute** tab; therefore, you need not insert lines between attributes.

    The **CR ID**, **Synopsis**, and **Description** attributes are included automatically in the **Chosen Attributes** list when you create a new report.

    Also add the following attributes:

    Entered Date

    Resolution Date

    Request Type

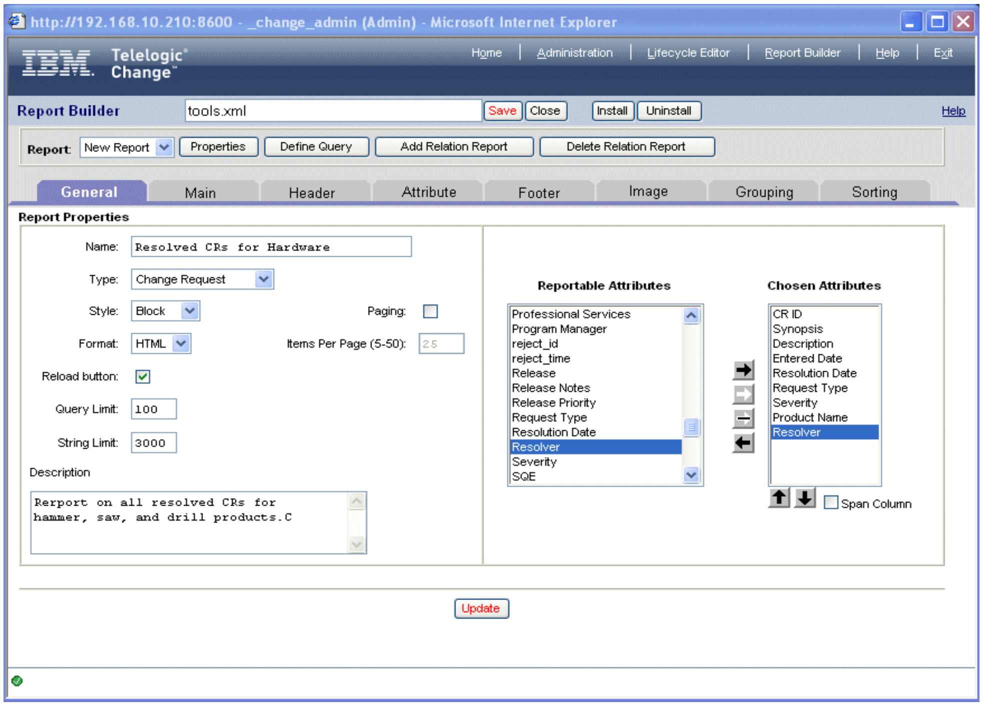
    Severity

    Product Name

    Resolver

    Select the **Span Column** check box for **problem_synopsis** and **problem_description**.
7. Click **Update**.

The following figure shows the general properties definition.


http://192.168.10.210:8600 - _change_admin (Admin) - Microsoft Internet Explorer
Telelogic Change
Home
Administration
Lifecycle Editor
Report Builder
Help
Exit
Report Builder
tools.xml
Save
Close
Install
Uninstall
Help
Report:
New Report
Properties
Define Query
Add Relation Report
Delete Relation Report
General
Main
Header
Attribute
Footer
Image
Grouping
Sorting
Report Properties
Name:
Resolved CRs for Hardware
Type:
Change Request
Style:
Block
Paging:
Format:
HTML
Items Per Page (5-50):
Reload button:
Query Limit:
100
String Limit:
3000
Description
Rerport on all resolved CRs for hammer, saw, and drill products.C
Reportable Attributes
Professional Services
Program Manager
reject_id
reject_time
Release
Release Notes
Release Priority
Request Type
Resolution Date
Resolver
Severity
SQE
Chosen Attributes
CR ID
Synopsis
Description
Entered Date
Resolution Date
Request Type
Severity
Product Name
Resolver
Span Column
Update

Select Templates to Include (Example)

Include a header, footer, body, and image on the report.

1. In the **Report Builder** dialog box, click **Properties**.

2. Click the **Main** tab.

3. Select templates to include on the report.

   a. Select the **Include Header Template** check box.

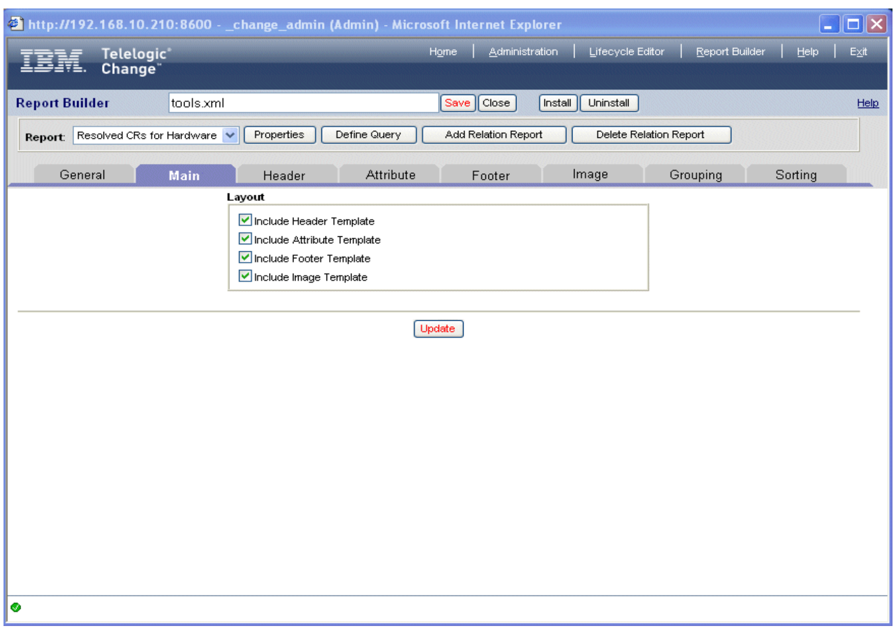
   b. Select the **Include Attribute Template** check box.

   c. Select the **Include Footer Template** check box.

   d. Select the **Include Image Template** check box.

4. Click **Update**.

The following figure shows the included templates definition.



Define the Header (Example)

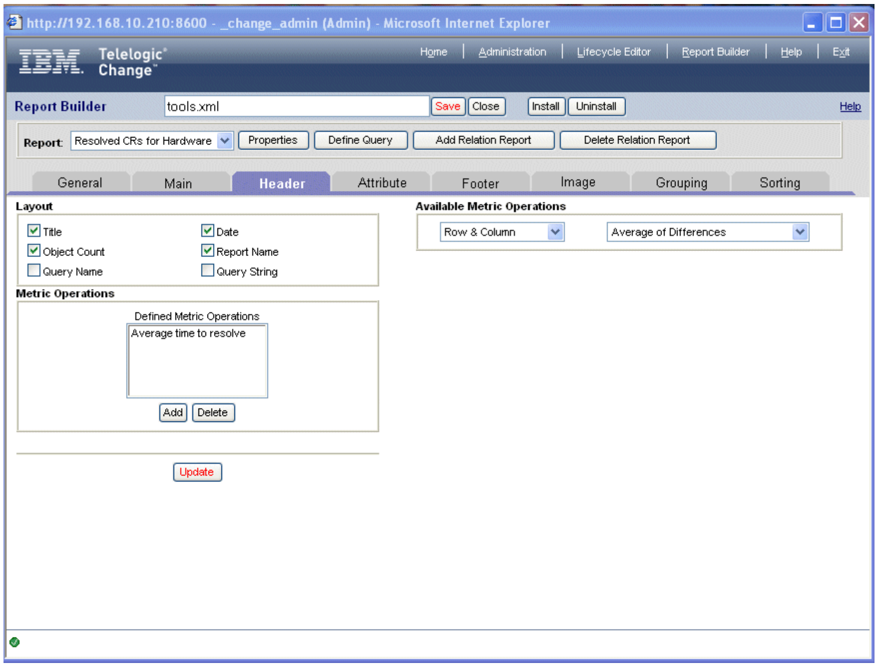
Include a title, date, object count, and report name in the header.

1. In the **Report Builder** dialog box, click **Properties**.
2. Click the **Header** tab.
3. Define the header layout.
   a. Select the **Title** check box.
   b. Select the **Date** check box.
   c. Select the **Object Count** check box.
   d. Select the **Report Name** check box.
4. Define the header metric operation for computing the average time, in minutes, to resolve a CR.
   a. In the **Metric Operations** area, click **Add**.

      The **Available Metric Operations Definition** subdialog box appears.
   b. In the **Select a Metric Type** list, click **Row & Column**.
   c. In the **Select a Metric Operation** list, click **Average of Differences**.

      The **Row & Column Average of Differences Metric** area appears under **Available Metric Operations**.
   d. In the **Label** box, type `Average Time to Resolve`.
   e. In the **Find the Difference of** list, click **resolution_date**.
   f. In the **minus** list, click **entry_date**.
   g. In the **Data Type** list, click **Date**.
   h. In the **Date Unit** list, click **Minutes**.
   i. In the metrics definition area, click **Create**.
5. Under the **Layout** area, click **Update**.

The following figure shows the header definition.



http://192.168.10.210:8600 - _change_admin (Admin) - Microsoft Internet Explorer
IBM. Telelogic Change
Home | Administration | Lifecycle Editor | Report Builder | Help | Exit
Report Builder
tools.xml
Save
Close
Install
Uninstall
Help
Report: Resolved CRs for Hardware
Properties
Define Query
Add Relation Report
Delete Relation Report
General
Main
Header
Attribute
Footer
Image
Grouping
Sorting
Layout
Title
Date
Object Count
Report Name
Query Name
Query String
Metric Operations
Defined Metric Operations
Average time to resolve
Add
Delete
Update
Available Metric Operations
Row & Column
Average of Differences

Define the Body (Example)

In the body, show how much time is required to resolve CRs.

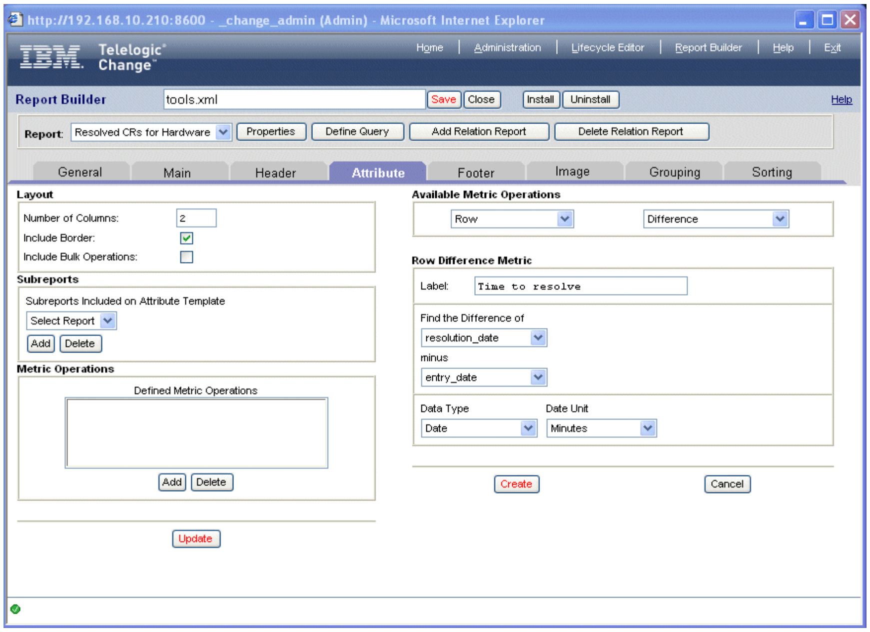
1. In the **Report Builder** dialog box, click **Properties**.
2. Click the **Attribute** tab.
3. Define the body layout.
   a. In the **Number of Columns** box, accept the default value (2).
   b. Select the **Include Border** check box to include borders around attribute/value pairs on the report.
   c. Clear the **Include Bulk Operations** check box, if set.

      In this example, the CRs for the report are already resolved.
4. Define the body metric operation.
   a. In the **Metric Operations** area, click **Add**.

      The **Available Metric Operations Definition** subdialog box appears.
   b. In the **Select a Metric Type** list, click **Row**.
   c. In the **Select a Metric Operation** list, click **Difference**.

      The **Row Difference Metric** area appears under **Available Metric Operations**.
   d. In the **Label** box, type `Time to Resolve`.
   e. In the **Find the Difference of** list, click **resolution_date**.
   f. In the **minus** list, click **entry_date**.
   g. In the **Data Type** list, click **Date**.
   h. In the **Date Unit** list, click **Minutes**.
   i. In the metrics definition area, click **Create**.
5. Under the **Layout** area, click **Update**.

The following figure shows the body definition.

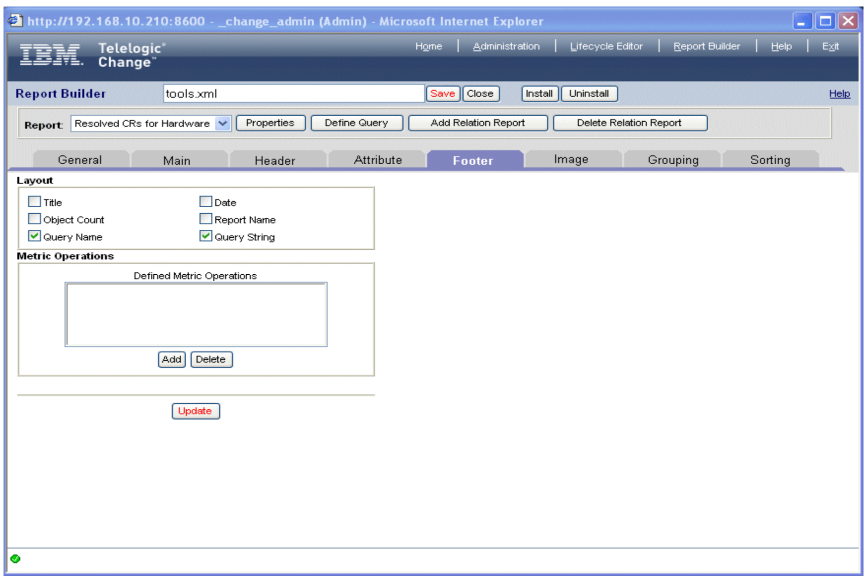

http://192.168.10.210:8600 - _change_admin (Admin) - Microsoft Internet Explorer
IBM. Telelogic Change
Home | Administration | Lifecycle Editor | Report Builder | Help | Exit
Report Builder
tools.xml
Save Close Install Uninstall Help
Report: Resolved CRs for Hardware
Properties Define Query Add Relation Report Delete Relation Report
General Main Header Attribute Footer Image Grouping Sorting
Layout
Number of Columns: 2
Include Border:
Include Bulk Operations:
Subreports
Subreports Included on Attribute Template
Select Report
Add Delete
Metric Operations
Defined Metric Operations
Add Delete
Update
Available Metric Operations
Row
Difference
Row Difference Metric
Label: Time to resolve
Find the Difference of
resolution_date
minus
entry_date
Data Type
Date Unit
Date
Minutes
Create
Cancel

Define the Footer (Example)

Include the query name and query string in the footer.

1. In the **Report Builder** dialog box, click **Properties**.
2. Click the **Footer** tab.
3. Define the footer layout.
   a. Select the **Query Name** check box to show the name of the query.
   b. Select the **Query String** check box to show the query string.
4. Click **Update**.

The following figure shows the footer definition.



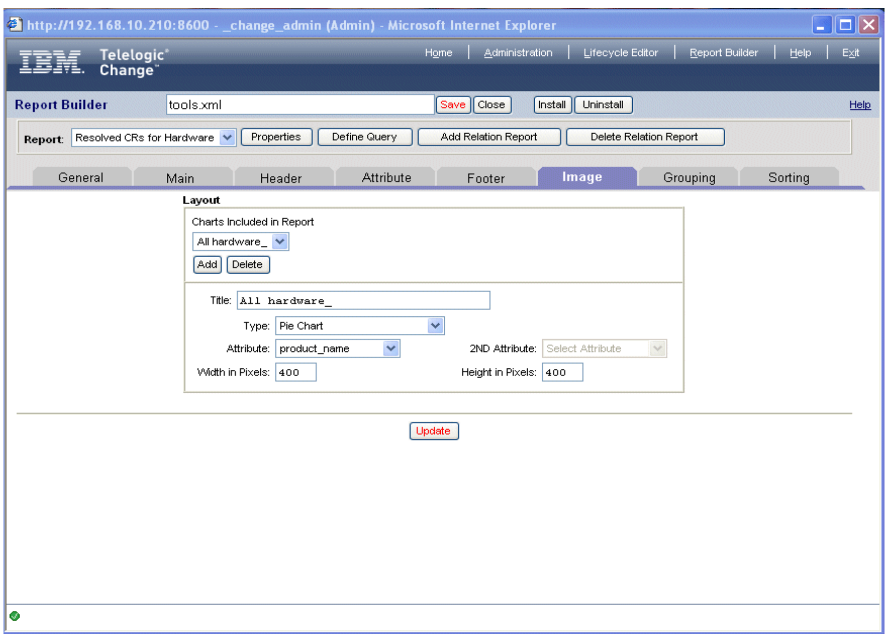
Add a Chart to the Report (Example)

Include a chart that shows the number of resolved CRs for each product.

1. In the **Report Builder** dialog box, click **Properties**.
2. Click the **Image** tab.
3. Under **Layout**, click **Add**.

   The temporary chart name, `_New_Chart`, appears in the subdialog **Charts Included in Report** box.
4. Define the chart.
   a. In the **Title** box, select the `_New_Chart` string, and then type `All hardware`.
   b. In the **Type** list, click **Pie Chart**.
   c. In the **Attribute** list, click **product_name** to create the chart products.
   d. In the **Width in Pixels** and **Height in Pixels** boxes, accept the default values (400 pixels).
5. Click **Update**.

The following figure shows the image definition.



Define Grouping (Example)

Group the results by product name.

1. In the **Report Builder** dialog box, click **Properties**.

2. Click the **Grouping** tab.

3. Define the grouping layout.

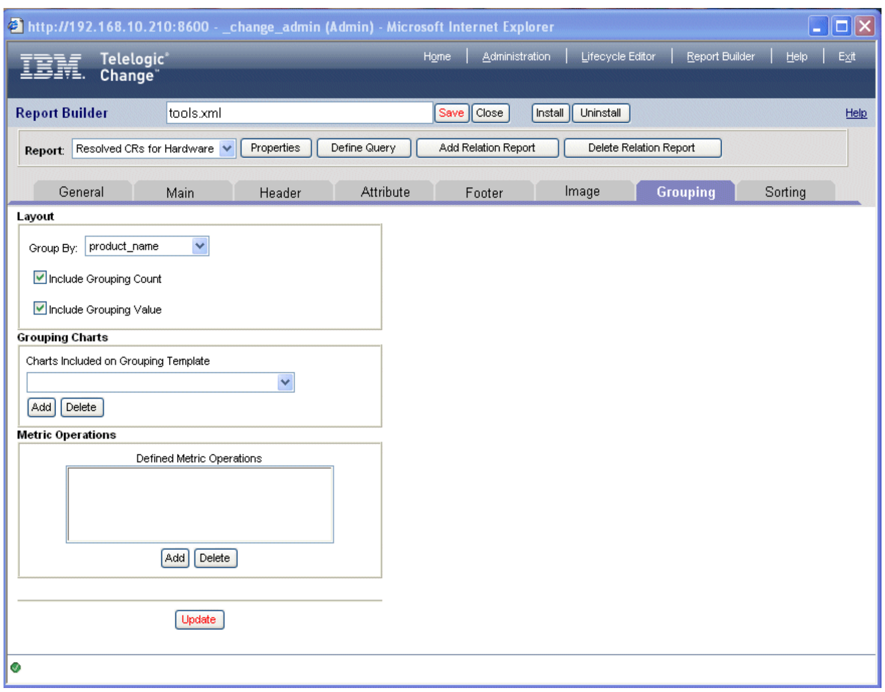
  a. In the **Group By** list, click `product_name`.

  b. Select the **Include Grouping Count** check box.

  c. Select the **Include Grouping Value** check box.

4. Click **Update**.

The following figure shows the grouping definition.

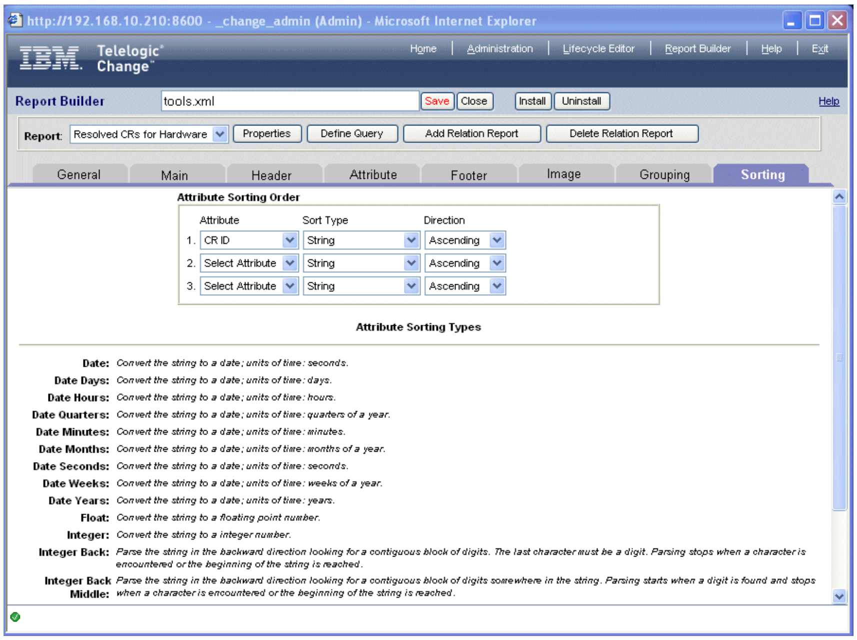


Define Sorting (Example)

Sort the results by request type (after the results have been grouped).

1. In the **Report Builder** dialog box, click **Properties**.
2. Click the **Sorting** tab.
3. Choose the order in which items appear on the report.
   a. In the **Attribute** list, click **request_type**.
   b. In the **Sort Type** list, click **String** or **listbox** to maintain the listbox order.
   c. In the **Direction** list, click **Ascending** to list items alphabetically by product name.

The following figure shows the sorting definition.



Build the Relation Report (Example)

Define the relation report for the associated tasks.

1. Display the **Report Builder** dialog box.
2. Define the Relation Report (Example) (page 75).
3. In the **Report** list, click the relation report name.
4. Define General Relation Report Properties (Example) (page 76).
5. Define the Relation Report Header (Example) (page 77), which is the information that will appear at the top of each relation report.
6. Define the information that will appear in the body of the relation report.

   For steps, see Define the Relation Report Body (Example) (page 78).

Define the Relation Report (Example)

Define a relation report that shows associated tasks.

1. On the subbutton bar, click **Add Relation Report**.

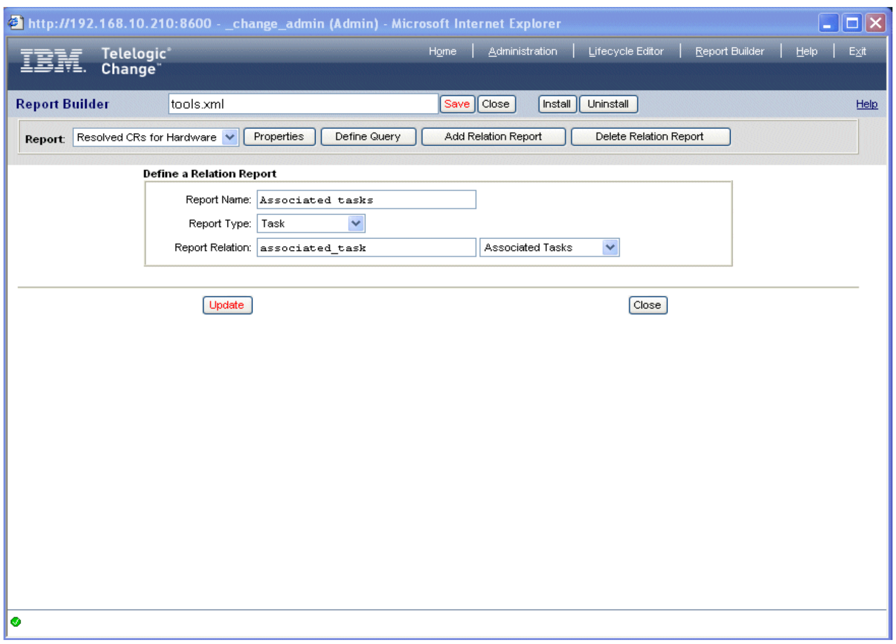
   The **Define a Relation Report** dialog box appears.

2. In the **Report Name** box, type `Associated Tasks`.
3. In the **Report Type** list, click **Task**.
4. In the **Existing Relations** list, click **Associated Tasks**.

   The relation appears in the **Report Relation** box.

5. Click **Update**.

The following figure shows the relation report general properties definition.



Define General Relation Report Properties (Example)

Define the general properties of the relation report, including the task attributes to show.

1. In the **Report** list, click the new relation report name.

The **General** tab appears. The **Relation Report Properties** are defined already.

2. In the **Reportable Attributes** list, select the attributes to display on the relation report.

Add the following attributes:

Task ID

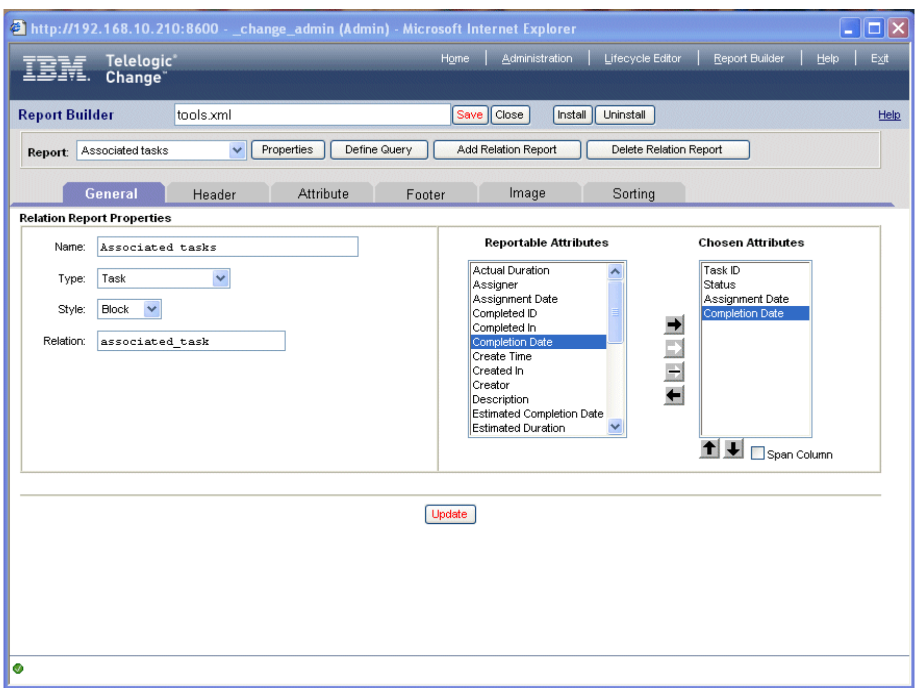
Status

Assignment Date

Completion Date

3. Click **Update**.

The following figure shows the relation report general properties definition.

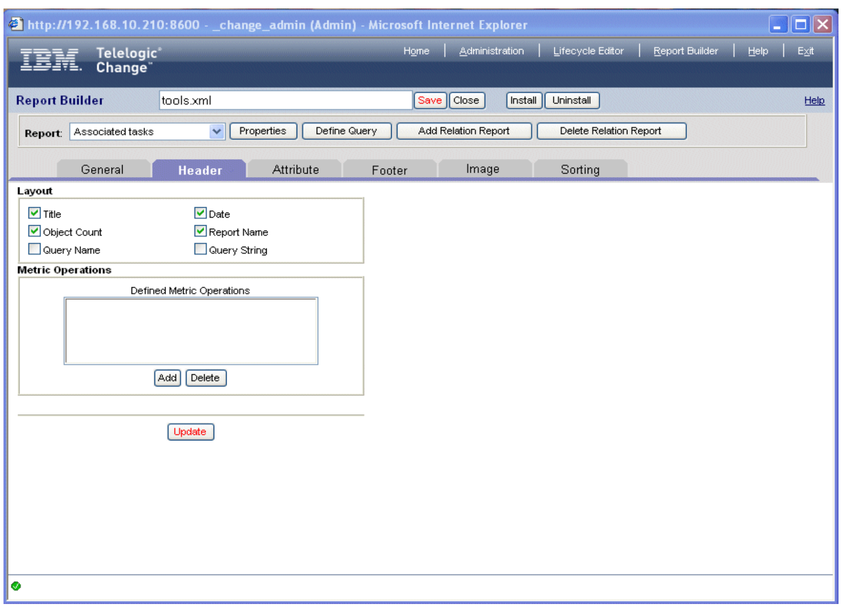


Define the Relation Report Header (Example)

Include a title, date, object count, and report name in the header.

1. In the **Report** list, click the new relation report name.
2. In the **Report Builder** dialog box, click **Properties**.
3. Click the **Header** tab.
4. Define the header layout.
   a. Select the **Title** check box.
   b. Select the **Date** check box.
   c. Select the **Object Count** check box.
   d. Select the **Report Name** check box.
5. Click **Update**.

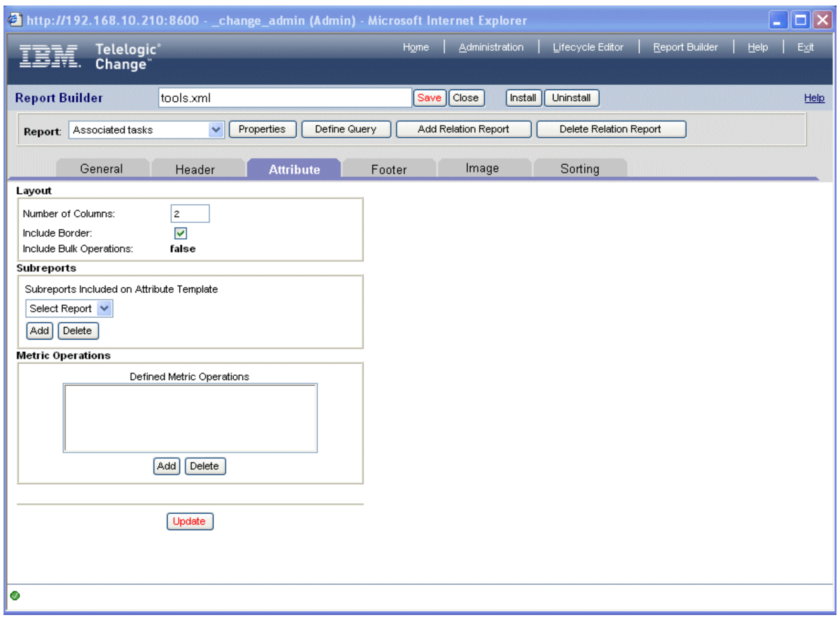
The following figure shows the relation report header definition.



Define the Relation Report Body (Example)

Define the layout for showing the tasks.

1. In the **Report** list, click the new relation report name.
2. In the **Report Builder** dialog box, click **Properties**.
3. Click the **Attribute** tab.
4. Select **Include border**.
5. Click **Update** to save the settings.



Save and Install the Report (Example)

Before anyone can use the custom report, you must create a package for the report, and then install it.

1. On the button bar, click **Save**.
2. On the button bar, click **Install**.

   This operation adds the report package to the list of installed packages, and to users' lists of **System** reports and formats.

3. Run the report.

   a. Start a session as a user.

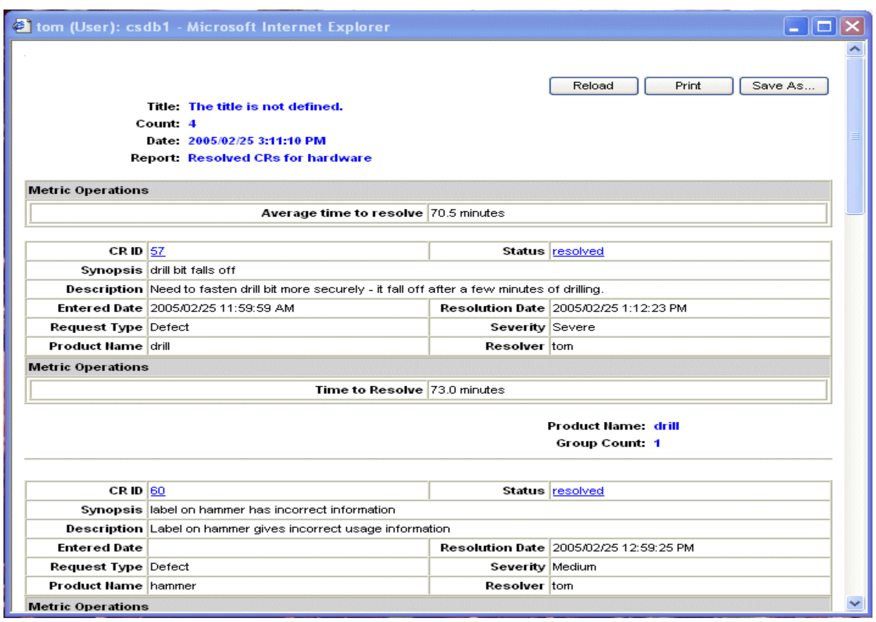
   b. On the Action Panel, click **Reports**.

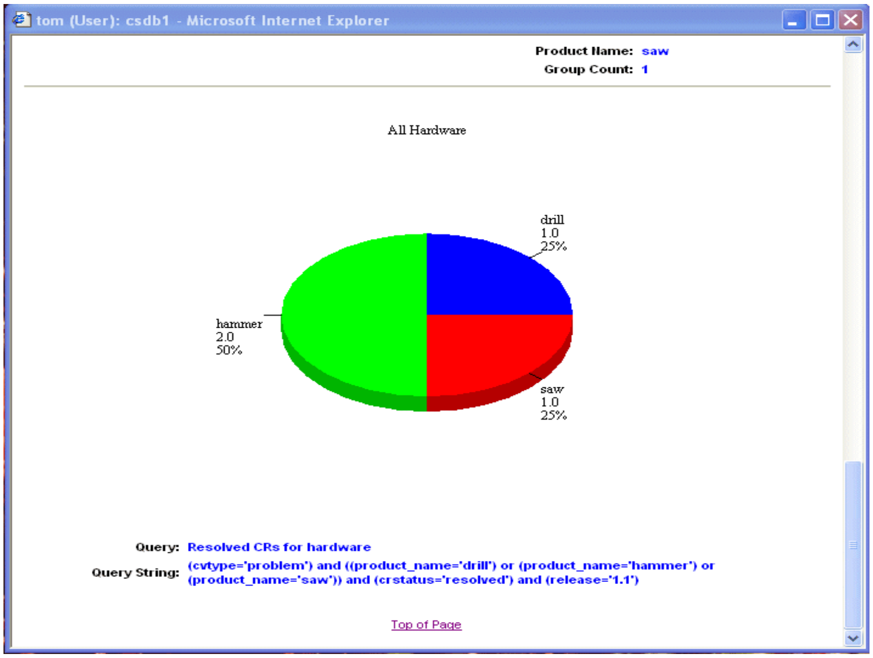
   c. In the **Reports** folder, click **System**.

   d. In the **System** report list, click the new report, then click **Run**.

   e. View the report.

   The following figures show the top and bottom of a custom report generated using this procedure.




tom (User): csdb1 - Microsoft Internet Explorer
Product Name: saw
Group Count: 1
All Hardware
drill
1.0
25%
hammer
2.0
50%
saw
1.0
25%
Query: Resolved CRs for hardware
Query String: (cvtype='problem') and ((product_name='drill') or (product_name='hammer') or (product_name='saw')) and (crstatus='resolved') and (release='1.1')
Top of Page

Customizing Telelogic Change Processes

Before customizing Telelogic Change, please read Design a Change Request Process (page 84). After reading the design information, you can proceed with performing the following types of Telelogic Change customizations:

- Change List Box Values (page 88)
- Define New Dialog Boxes (page 95)
- Create or Change Attributes (page 105)
- Create, Change, or Delete a CR Process (page 106)
- Merge Two CR Process Files (page 120)
- Add or Change a CR Lifecycle (page 121)

Caution! Because Telelogic Change is browser based, you must avoid refreshing your browser window while performing customizations or you will lose your changes.

For detailed design information helpful during customizations, see Telelogic Change Overview for Customizers (page 215).

Design a Change Request Process

Your company has one or more processes for tracking and managing change. For example, your company might have a process for performing IT tasks, such as installing a new phone line or moving a workstation, and a different process for making changes to a software product. Your company might even have a unique process to meet the change management needs of each organization.

The Telelogic Change change request process (CR Process) contains the general information and models, or *lifecycles*, for each of these processes.

Each lifecycle in a CR Process defines the properties and behaviors of changes (or *change requests*) from submission to completion, including the information tracked and managed by a change request (CR) and how, when, and by whom a CR can be updated.

The more complete and accurate your CR Process, the more effective your CR tracking and management will be. Before using the Telelogic Change CR Process editing interface to create your own CR Process, do the following:

1. Consider Using a Shipped CR Process (page 84)

2. Define the Attributes to Track (page 84)

3. Define Roles (page 85)

4. Define States (page 85)

5. Define Transitions (page 86)

6. Put It All Together (page 87)

Consider Using a Shipped CR Process

Before designing your own CR Process, you should install and experiment with one of the predefined CR Processes shipped with Telelogic Change (such as *dev_process*). Doing so will give you a better idea of what features are available, and you might even find you can modify an existing CR Process instead of creating a new one.

After familiarizing yourself with how CR Processes work, look at the shipped CR Process-level information and lifecycles to see how they are defined, and you will be prepared to create your own CR Process.

Refer to the *Telelogic Change Customization Guide* for a detailed example of planning and implementing a custom CR Process.

Define the Attributes to Track

The attributes tracked by Telelogic Change are defined in the CR Process; that is, at a high level, for all lifecycles.

Perform the following steps to define the attributes to track:

1. Determine which attributes you want to show in dialog boxes, on reports, or in queries, and determine their types (for example, list box or text box).

2. For each attribute, decide whether you want it to be writable or read-only, and whether its writability depends on who is changing the attribute, and when.

For example, a *request description* attribute might be a text box editable at any time in a lifecycle by the administrator or the creator of the CR. However, a *product name* attribute might be a list box of predetermined values that only the administrator can change.

Define Roles

Telelogic Change users are assigned roles that grant or deny them privileges when the security rules are evaluated. These privileges include being able to update CR attributes and perform specific transitions. Therefore, part of designing a CR Process is deciding which roles will be required to perform Telelogic Change operations.

Initially you need not decide which roles to assign each user; however, you should make decisions about which operations should be associated with each role. For example, you could use the *enterer* role for allowing creation of a CR. Assigning a user the *enterer* role would then allow the user to create CRs. Assigning the user additional roles (for example, *assigner*) would grant the user more privileges. Assigning a user the reserved administrator role (for example, *pt_admin*) would grant the user unlimited privileges.

> **Note** Telelogic Change also uses *login roles*, such as *User* and *Admin*, to determine which interface to present to a user. Do not confuse these login roles with the back-end Telelogic Synergy privileges just discussed.

Define States

When you define a lifecycle state, you must identify the attributes you want to include on the **Change Request Information** dialog box for that state, and establish any security rules based on the state.

Attributes

When you define a state, you can define a state-specific **Change Request Information** dialog box. Before doing so, you should decide which of the available attributes you want to display on the dialog box.

For example, for a newly created CR you might want the **Change Request Information** dialog box to display only a brief description of the CR and the name of the person who submitted it. As the CR progresses through the lifecycle, you might want to show more information, such as whether a manager's approval has been obtained, the name of the person designated to resolve the request, or special directions for addressing the request.

> **Note** If you do not define a state-specific dialog box, the lifecycle-specific dialog box is displayed. If you define neither a state-specific nor lifecycle-specific dialog box, the CR Process-level dialog box is displayed.

Security Rules

States have two types of security: role security and attribute security. Both are used to establish the requirements for modifying specific attributes. You should decide which types of security to set on each state.

Role security defines a list of attributes that are modifiable when the user has the required role. For example, for the *in_review* state, if the *verifier* role has **synopsis** and **description** listed as modifiable attributes and user "sam" has the *verifier* role, Sam can modify those attributes when the CR is in the *in_review* state.

Attribute security defines a list of attributes that are modifiable when the value of the specified attribute matches the user's ID (that is, *resolver*="tom"). The attribute should be one whose value is a user ID (that is, the attribute should have the Web Type `CCM_USER`).

If either attribute security or role security rules are satisfied, the corresponding set of attributes is modifiable. (That is, role security and attribute security rules are "OR'd" to obtain the set of modifiable attributes.) You can even use attribute and role security together; for example, to ensure that only the person who submitted the CR (**submitter**) can edit the **cr_description** and **severity** attributes while the CR is still in the *entered* state.

Define Transitions

A transition moves a CR forward or backward in a lifecycle and changes the CR state. For example, the *in_review2assigned* transition moves the CR from the *in_review* state to the *assigned* state.

When you define a transition, you should identify the attributes you want to include on the **Change Request Submission** and **Transition** dialog boxes, and establish any security rules based on the transition.

Attributes

When you define a transition, you can define **Change Request Submission** and **Transition** dialog boxes. Before doing so, you should decide which of the available attributes you want to display on the dialog box, and whether the attributes are required, optional (for submission and transition), or read-only (for information purposes only, on transition).

Required attributes must be set by the user for the transition to occur. For example, you can require a user to provide **conclusion_notes**, describing what was done, when performing the *resolved2concluded* transition.

Optional attributes can be set by the user, but are not required for the transition to occur. Such attributes might be set already but can be updated by the user. For example, a customer might submit a problem and propose a solution. If the solution is incorrect, the *reviewer* or *assigner* can correct it.

Read-only attributes provide information about the CR, such as the CR ID.

Security Rules

Transitions have three types of security: role security, attribute security, and branch security. All are used to determine whether a transition is allowed. You should decide which types of security to set on each transition.

Role security allows the transition when the user has the required role. For example, if the *entered2review* transition requires the *verifier* role and user "sam" has the *verifier* role, Sam can perform the transition.

Attribute security allows the transition when the value of the specified attribute matches the user’s ID (that is, *resolver*=”tom”). The attribute should be one whose value is a user ID (that is, the attribute should have the Web Type `CCM_USER`).

Branch security allows a transition only when an attribute has a specific value. For example, if the **change_type** attribute can be set to either **defect** or **enhancement**, and you can allow the *fix_defect* transition when **change_type** is set to **defect**, and allow the *make_enhancment* transition when **change_type** is set to **enhancement**.

If either attribute security or role security rules are satisfied (and branch security is not set), the transition can occur. You can even use attribute and role security together; for example, to ensure that only the person who submitted the CR (**submitter**) can edit the **cr_description** and **severity** attributes while the CR is still in the *entered* state.

Note, however, that if branch security is set, the transition cannot occur unless a) all branching rules are satisfied, **and** b) at least one attribute or role security rule is satisfied, if one or more are set. (That is, the "AND’ed" branching security rules are "AND’ed" with the "OR’ed" role and attribute security rules.)

Put It All Together

After defining your attributes, roles, states, and transitions, consider how these features work together to create one or more lifecycles. For example, you might want to define an *assigner* role as well as an **assigner** attribute, where the *assigner* role is used for both state and transition role security, and the **assigner** attribute is used both for tracking the assigner and for attribute security (that is, only the person who assigned the CR can modify a specified set of attributes or perform a transition).

Create your CR Process and lifecycles, and then experiment with them in a test area until you are satisfied that the CR Process meets your needs. Finally, install the CR Process in your production area.

Change List Box Values

You can perform the following operations for list boxes:

- Change a List Box Type (page 89)
- Add, Change, or Delete a Simple List Box Value (page 89)
- Add, Change, or Delete a Dependent List Box Value (page 90)
- Change a List Box Source File Value (page 91)
- Set List Boxes to be Managed Externally (page 93)
- Change a Database List Box Value (page 92)
- Manage List Box Values Outside of the Listbox Manager Interface (page 93)

For more information, see Listbox Manager tab (page 173).

Change a List Box Type

You can change the list box type list box property.

1. On the Action Panel, click **Administration**.
2. In the **Administration** dialog box, click the **Listbox Manager** tab.
3. In the **Edit Listbox Values for** list, click a database or click `All Databases`.
4. In the **Select Listbox** list, click a list box.
5. Click **Properties**.
6. In the **Customize Listbox Properties** subdialog box, change the type of the list box by clicking a type.
7. Click **Update**.
8. Click **Save**.

For more information, see Listbox Manager tab (page 173).

Add, Change, or Delete a Simple List Box Value

You can add, change, or delete a simple list box value after selecting that type of list box.

Add a simple list box value

1. On the Action Panel, click **Administration**.
2. In the **Administration** dialog box, click the **Listbox Manager** tab.
3. In the **Edit Listbox Values for** list, click a database or click **All Databases**.
4. In the **Select Listbox** list, click a simple list box (for example, **request_type**).
5. In the Value box (under **Define the Listbox Values**), type a new value.
6. Click **Add**.
7. Click **Save**.

For more information, see Listbox Manager tab (page 173).

Change a simple list box value

1. On the Action Panel, click **Administration**.
2. In the **Administration** dialog box, click the **Listbox Manager** tab.
3. In the **Edit Listbox Values for** list, click a database or click **All Databases**.
4. In the **Select Listbox** list, click a simple list box (for example, **request_type**).
5. In the **Define the Listbox Values** list, click a value.
6. In the Value box (under **Define the Listbox Values**), type a new value.

7. Click **Modify**.
8. Click **Save**.

For more information, see Listbox Manager tab (page 173).

Delete a simple list box value

1. On the Action Panel, click **Administration**.
2. In the **Administration** dialog box, click the **Listbox Manager** tab.
3. In the **Edit Listbox Values for** list, click a database or click **All Databases**.
4. In the **Select Listbox** list, click a simple list box (for example, **request_type**).
5. In the **Define the Listbox Values** list, click a value.
6. Click **Delete**.
7. Click **Save**.

For more information, see Listbox Manager tab (page 173).

Add, Change, or Delete a Dependent List Box Value

You can add, change, or delete a dependent list box value after selecting that type of list box.

Add a dependent list box value

1. On the Action Panel, click **Administration**.
2. In the **Administration** dialog box, click the **Listbox Manager** tab.
3. In the **Edit Listbox Values for** list, click a database or click **All Databases**.
4. In the **Select Listbox** list, click a dependent list box (for example, **product_version**).

   The parent list box of the selected list box (for example, **product_name**) appears in the **The parent listbox is** box.
5. In the **Select a Parent Value** list, click a value.
6. In the **Dependent Listbox Values** box, type a new value.
7. Click **Add**.
8. Click **Save**.

For more information, see Listbox Manager tab (page 173).

Change a dependent list box value

1. On the Action Panel, click **Administration**.
2. In the **Administration** dialog box, click the **Listbox Manager** tab.
3. In the **Edit Listbox Values for** list, click a database or click **All Databases**.

4. In the **Select Listbox** list, click a dependent list box (for example, **product_version**).

   The parent list box of the selected list box (for example, **product_name**) appears in the **The parent listbox is** box.
5. In the **Select a Parent Listbox Value** list, click a value.
6. In the **Dependent Listbox Values** list, click a value.
7. In the Values box (under the **Dependent Listbox Values** list), type a new value.
8. Click **Modify**.
9. Click **Save**.

For more information, see Listbox Manager tab (page 173).

Delete a dependent list box value

1. On the Action Panel, click **Administration**.
2. In the **Administration** dialog box, click the **Listbox Manager** tab.
3. In the **Edit Listbox Values for** list, click a database or click **All Databases**.
4. In the **Select Listbox** list, click a dependent list box (for example, **product_version**).

   The parent list box of the selected list box (for example, **product_name**) appears in the **The parent listbox is** box.
5. In the **Select a Parent Value** list, click a value.
6. In the **Dependent Listbox Values** list, click a value.
7. Click **Delete**.
8. Click **Save**.

For more information, see Listbox Manager tab (page 173).

Change a List Box Source File Value

You can change the source file from which the list box values are obtained after selecting that type of list box.

1. On the Action Panel, click **Administration**.
2. In the **Administration** dialog box, click the **Listbox Manager** tab.
3. In the **Edit Listbox Values for** list, click a database or click **All Databases**.
4. In the **Select Listbox** list, click the file list box (for example, **distribution**).
5. In the **File Listbox** option box, select a file name or type the new file name (for example, `new_distribution_list.txt`).

Note The list box files are in the *CS_HOME*\WEB-INF\wsconfig\templates\pt\etc directory. For more information, see Directory and File Descriptions (page 222).

6. Click **Update**.
7. Click **Save**.

For more information, see Listbox Manager tab (page 173).

Change a Database List Box Value

You can change a database list box value after selecting that type of list box.

1. On the Action Panel, click **Administration**.
2. In the **Administration** dialog box, click the **Listbox Manager** tab.
3. In the **Edit Listbox Values for** list, click a database or click **All Databases**.
4. In the **Select Listbox** list, click a database list box (for example, **release**).

   For more information, see the `ptcli.cfg` settings in the *Telelogic Change Customization Reference*.
5. In the **Database Listbox** option box, type a different database attribute.
6. Click **Update**.
7. Click **Save**.

Note To edit the values of a database attribute, change the values of the mapped attribute in the database.

For more information, see Listbox Manager tab (page 173).

Manage List Box Values Outside of the Listbox Manager Interface

You can control or manage listbox values without using the Listbox Manager interface. This is done by using a script you specify. The script will return listbox values from an external data source, such as a database or another product. For more information on scripts, see Scripts for Managing Listbox Values (page 94)

This feature will help listbox administration and security, as only users with access to the external data source will be able to administer the listbox values. In addition, you can create much more complex dependencies, where a child value may be determined not only by its parent, but also from the parent's parent or a group to which the user belongs.

Before starting this procedure, make sure the script or scripts you want to run are located in the following directory:

`cweb_home\cs_app\webapps\synergy\WEB-INF\wsconfig\scripts\listbox`

Set List Boxes to be Managed Externally

You can set listboxes to use values from an external script. If you are using dependent listboxes, you can set all listboxes in a dependency chain to use the same or different scripts.

1. On the Action Panel, click **Administration**.
2. In the **Administration** dialog box, click the **Listbox Manager** tab.
3. In the **Edit Listbox Values for** list, click a database or click **All Databases**.
4. In the **Select Listbox** list, click a list boxClick Update. (page 93).
   - For a non-dependent listbox:
     a. Click **Properties**.
     b. In the **Customize Listbox Properties** option box, select **External Listbox**.
     c. Select a script from the listbox.
     d. Go to step 5.
   - For a dependent listbox:
     a. In the **Customize Listbox Properties** option box, you will see that it is defined as a dependent listbox.
     b. Select a script from the listbox, and optionally, specify that all attributes in the hierarchy use the same script.
5. Click **Update**.
6. Click **Save**.

For more information, see Listbox Manager tab (page 173).

Scripts for Managing Listbox Values

To help you write your scripts, a sample script has been provided. You can view the sample script called `browserInfo.js` at *`cweb_home`*`\cs_app\webapps\synergy\WEB-INF\wsconfig\scripts\listbox`. It is written in JavaScript and shows how to access context variables (e.g., the name of the listbox attribute, ancestors in the dependency chain, etc.) that are passed to it and how to return results.

Information will be passed to the script using the declared variable method. The following variable names are reserved and should not be redefined by the script writer.

Reserved Variable	Type	Contents
userName	String	The username (SC login ID) of the user trying to view/edit
userGroups	List	The list of groups of which the user is a member
changeRequests	Array	One or more CRs and associated attribute name/value pairs (values are supplied for attributes listed in the ACL only)
acl	Array	ACL information
log	Object	Object with method to print message to `event.log`
defaultIsGrant	String	The default rule granting or denying (value can be true or false)
tasks	Array	One or more tasks and associated attribute name/value pairs
objects	Array	One or more objects and associated attribute name/value pairs

Note External listbox scripts are run at the time the user interacts with the corresponding listbox (that is, on demand). This has two ramifications:

1. The script must execute quickly, otherwise the user will have to wait while the listbox loads.

2. CR dialogs containing external listboxes may potentially load faster than regular listboxes because the listbox values are not retrieved unless needed.

Define New Dialog Boxes

Telelogic Change enables you to define custom dialog boxes to show change request information. You can control the attributes shown, where they are shown, and their read/write permissions.

The following table shows which dialog boxes are customizable, and at which level in the CR Process.

Dialog Box	CR Process (lowest precedence)	Lifecycle-Specific	State-Specific	Transition-Specific (highest precedence)
Change Request Information (Show)	X	X	X	
Change Request Submission (Submit)				X
Transition				X
Complete Report	X			
Query	X			

Note Role-based dialog boxes take precedence over other dialog boxes at the same level.

For details about the **Define Dialog** and **Define Report** subdialog boxes and tabs, see Define Dialog (page 190) and Define Report tab (page 196).

Use the following procedures to create new dialog boxes and reports:

Change Request Information Dialog Boxes

- Define a CR Process Change Request Information Dialog Box (page 97)
- Define a Role-Specific CR Process Change Request Information Dialog Box (page 98)
- Define a Lifecycle-Specific Change Request Information Dialog Box (page 99)
- Define a Role-Specific, Lifecycle-Specific Change Request Information Dialog Box (page 100)
- Define a State-Specific Change Request Information Dialog Box (page 101)
- Define a Role-Specific, State-Specific Change Request Information Dialog Box (page 102)

Change Request Submission and Transition Dialog Boxes

- Define a Change Request Submission or Transition Dialog Box (page 103)
- Define a Role-Specific Change Request Submission or Transition Dialog Box (page 104)

Complete Reports

- Define a Complete Report (page 119)

Define a CR Process Change Request Information Dialog Box

You can define a Change Request Information dialog box that is unique to the current CR Process.

1. Display the CR Process Dialog Box (page 107).
2. On the **CR Process** subbutton bar, click **Edit**.

   The **Edit CR Process Properties** dialog box appears.
3. Click the **Define Dialog** tab.
4. In the **Available Attributes** list, select the attributes to display on the dialog box.

   Note The **Available Attributes** list is defined at the CR Process level. You must define the attributes before you can use them to define a dialog box.

   For information about arranging and setting the attributes, see Define Dialog (page 190).

   Note If you want to create, show, or delete related objects on this dialog box, include the appropriate relation attribute in this list.
5. To preview your changes, click **Preview Dialog**. Make changes as required.
6. For each attribute, set attribute properties.
   a. In the **Attributes on Dialog** list, click an attribute. The **Attribute Properties** are displayed in a lower frame.
   b. Set the attribute properties.

      Note If you want to use the attribute for relation security (an attribute with **WebType** `CCM_RELATION`), click **Allow Creation of Associated Objects and Association/Disassociation of Objects** to make it "modifiable."
7. Click **Update**.
8. On the **CR Process** subbutton bar, click **Save As**.

   Note You can save the CR Process only if you have already defined the first state and transition for CR submission.
9. Click **Save**.

For more information, see Edit CR Process Properties (page 187).

Define a Role-Specific CR Process Change Request Information Dialog Box

You can define a Change Request Information dialog box that is unique to a specific role in the current CR Process.

1. Display the CR Process Dialog Box (page 107).
2. On the **CR Process** subbutton bar, click **Edit**.

   The **Edit CR Process Properties** dialog box appears.
3. Bring forward the role-specific **Define Show Dialog** tab.
   a. Click the **Roles** tab.
   b. In the **Telelogic Change Roles** list, click a listed role.
   c. Click **Define Show Dialog**.

      The **Define Dialog** tab comes forward.
4. In the **Available Attributes** list, select the attributes to display on the dialog box.

   Note You must already have defined attributes before you can use them. For more information, see Create an Attribute (page 114).

   For information about arranging and setting the attributes, see Define Dialog (page 190).
5. To preview your changes, click **Preview Dialog**. Make changes as required.
6. For each attribute, set attribute properties.
   a. In the **Attributes on Role Specific Dialog** list, click an attribute.

      The **Attribute Properties** are displayed in a lower frame.
   b. Set the attribute properties.
7. Click **Update**.
8. On the **CR Process** subbutton bar, click **Save As**.

   Note You can save the CR Process only if you have already defined the first state and transition for CR submission.
9. Click **Save**.

For more information, see Edit CR Process Properties (page 187).

Define a Lifecycle-Specific Change Request Information Dialog Box

You can define a Change Request Information dialog box that is unique to a specific lifecycle in the current CR Process.

1. Display the CR Process Dialog Box (page 107).
2. In the **Lifecycles** list, click a lifecycle.
3. Click **Edit** (button next to **Lifecycles**).
4. Click the **Define Dialog** tab.
5. In the **Available Attributes** list, select the attributes to display on the dialog box.

   Note You must already have defined attributes before you can use them. For more information, see Create an Attribute (page 114).

   For information about arranging and setting the attributes, see Define Dialog (page 190).
6. To preview your changes, click **Preview Dialog**. Make changes as required.
7. For each attribute, set attribute properties.
   a. In the **Attributes on Dialog** list, click an attribute. The **Attribute Properties** are displayed in a lower frame.
   b. Set the attribute properties.
8. Click **Update**.
9. On the **CR Process** subbutton bar, click **Save As**.

   Note You can save the CR Process only if you have already defined the first state and transition for CR submission.
10. Click **Save**.

For more information, see Edit CR Process Properties (page 187).

Define a Role-Specific, Lifecycle-Specific Change Request Information Dialog Box

You can define a Change Request Information dialog box that is unique to a specific combination of role and lifecycle in the current CR Process.

1. Display the CR Process Dialog Box (page 107).
2. In the **Lifecycles** list, click a lifecycle.
3. Click **Edit** (button next to **Lifecycles**).
4. Bring forward the role-specific **Define Show Dialog** tab.
    a. Click the **Roles** tab.
    b. In the **Telelogic Change Roles** list, click a listed role.
    c. Click **Define Show Dialog**.

    The **Define Dialog** tab comes forward.
5. In the **Available Attributes** list, select the attributes to display on the dialog box.

    Note You must already have defined attributes before you can use them. For more information, see Create an Attribute (page 114).

    For information about arranging and setting the attributes, see Define Dialog (page 190).
6. For each attribute, set attribute properties.
    a. In the **Attributes on Role Specific Dialog** list, click an attribute. The **Attribute Properties** are displayed in a lower frame.
    b. Set the attribute properties.
7. To preview your changes, click **Preview Dialog**. Make changes as required.
8. Click **Update**.
9. On the **CR Process** subbutton bar, click **Save As**.

    Note You can save the CR Process only if you have already defined the first state and transition for CR submission.
10. Click **Save**.

For more information, see Edit CR Process Properties (page 187).

Define a State-Specific Change Request Information Dialog Box

You can define a Change Request Information dialog box that is unique to a specific state in the current CR Process.

1. Display the CR Process Dialog Box (page 107).
2. In the **Lifecycles** list, click a lifecycle.
3. Select a state.
   a. Click the lifecycle's **States** tab.
   b. In the states list, click a state.
4. Click **Define Show Dialog**.

   The **Define State-Specific Show Dialog** subdialog box appears.
5. In the **Available Attributes** list, select the attributes to display on the dialog box.

   Note You must already have defined attributes before you can use them. For more information, see Create an Attribute (page 114).

   For information about arranging and setting the attributes, see Define Dialog (page 190).
6. To preview your changes, click **Preview Dialog**. Make changes as required.
7. For each attribute, set attribute properties.
   a. In the **Attributes on Dialog** list, click an attribute. The **Attribute Properties** are displayed in a lower frame.
   b. Set the attribute properties.
8. Click **Update**.
9. On the **CR Process** subbutton bar, click **Save As**.

   Note You can save the CR Process only if you have already defined the first state and transition for CR submission.
10. Click **Save**.

For more information, see Edit CR Process Properties (page 187).

Define a Role-Specific, State-Specific Change Request Information Dialog Box

You can define a Change Request Information dialog box that is unique to a specific combination of role and state in the current CR Process.

1. Display the CR Process Dialog Box (page 107).
2. In the **Lifecycles** list, click a lifecycle.
3. Select a state.
   a. Click the lifecycle's **States** tab.
   b. In the states list, click a state.
4. In the **Define Role Specific Dialog** list, click a role.

   The role-specific **Define Dialog** subdialog box appears.
5. In the **Available Attributes** list, select the attributes to display on the dialog box.

   Note You must already have defined attributes before you can use them. For more information, see Create an Attribute (page 114).

   For information about arranging and setting the attributes, see Define Dialog (page 190).
6. To preview your changes, click **Preview Dialog**. Make changes as required.
7. For each attribute, set attribute properties.
   a. In the **Attributes on Role Specific Dialog** list, click an attribute. The **Attribute Properties** are displayed in a lower frame.
   b. Set the attribute properties.
8. Click **Update**.
9. On the **CR Process** subbutton bar, click **Save As**.

   Note You can save the CR Process only if you have already defined the first state and transition for CR submission.
10. Click **Save**.

For more information, see Edit CR Process Properties (page 187).

Define a Change Request Submission or Transition Dialog Box

Because the **Change Request Submission** dialog box is a really a **Transition** dialog box for creating the initial change request, use these steps to define either a **Change Request Submission** dialog box or **Transition** dialog box.

1. Display the CR Process Dialog Box (page 107).
2. In the **Lifecycles** list, click a lifecycle.
3. Select a transition.
   a. Click the lifecycle's **Transitions** tab.
   b. In the transition list, click a transition.

      A button appears on the **Transitions** tab. The button reads **Define Submit Dialog** if you chose the `START_HERE2`*`to_state`* transition (the "no state" to "first state" transition), and **Define Transition Dialog** if you chose any other transition.
4. Click **Define Submit Dialog** (or **Define Transition Dialog**).

   The **Define Submit Dialog** (or **Define Transition Dialog**) subdialog box appears.
5. In the **Available Attributes** list, select the attributes to display on the dialog box.

   Note You must already have defined attributes before you can use them. For more information, see Create an Attribute (page 114).

   For information about arranging and setting the attributes, see Define Dialog (page 190).
6. To preview your changes, click **Preview Dialog**. Make changes as required.
7. For each attribute, set attribute properties.
   a. In the **Attributes on Dialog** list, click an attribute. The **Attribute Properties** are displayed in a lower frame.
   b. Set the attribute properties.
8. Click **Update**.
9. On the **CR Process** subbutton bar, click **Save As**.

   Note You can save the CR Process only if you have already defined the first state and transition for CR submission.
10. Click **Save**.

For more information, see Edit CR Process Properties (page 187).

Define a Role-Specific Change Request Submission or Transition Dialog Box

Because the **Change Request Submission** dialog box is a really a **Transition** dialog box for creating the initial change request, use these steps to define either a role-specific **Change Request Submission** dialog box or role-specific **Transition** dialog box.

1. Display the CR Process Dialog Box (page 107).
2. In the **Lifecycles** list, click a lifecycle.
3. Select a transition.
   a. Click the lifecycle's **Transitions** tab.
   b. In the transition list, click a transition.
4. In the **Define Role Specific Dialog** list, click a role.

   The role-specific **Define Submit Dialog** (or **Define Transition Dialog**) subdialog box appears.
5. In the **Available Attributes** list, select the attributes to display on the dialog box.

   Note You must already have defined attributes before you can use them. For more information, see Create an Attribute (page 114).

   For information about arranging and setting the attributes, see Define Dialog (page 190).
6. To preview your changes, click **Preview Dialog**. Make changes as required.
7. For each attribute, set attribute properties.
   a. In the **Attributes on Role Specific Dialog** list, click an attribute. The **Attribute Properties** are displayed in a lower frame.
   b. Set the attribute properties.
8. Click **Update**.
9. On the **CR Process** subbutton bar, click **Save As**.

   Note You can save the CR Process only if you have already defined the first state and transition for CR submission.
10. Click **Save**.

For more information, see Lifecycle Options (page 203).

Create or Change Attributes

You can perform the following operations for attributes:

- Create an Attribute (page 114)
- Change an Attribute (page 115)

For more information, see Attributes tab (page 193).

Create, Change, or Delete a CR Process

The CR Process defines all characteristics of your workflow, including process-level properties and all lifecycles.

> **Note** If you are creating a new CR Process, you must create the first state, and then the first transition, before you can save the CR Process.

You can perform the following operations using the **Lifecycle Editor** action:

- Display the CR Process Dialog Box (page 107)
- Save a CR Process File with a New Name (page 108)
- Create a New CR Process File (page 109)
- Delete a CR Process File (page 110)
- Define CR Process Properties (page 111)

After you create the CR Process, you will Add or Change a CR Lifecycle (page 121).

For detailed descriptions of the dialog boxes used for these operations, see Select Change Request Process File (page 181).

Refer to the *Telelogic Change Customization Guide* for a detailed example of how to plan and implement a custom CR Process.

> **Note** Clicking **Update** after making a change is only an intermediate step in updating the process file. You must click **Save** on the button bar to save the changes to the CR Process file.

Display the CR Process Dialog Box

Begin changing a CR Process by displaying the CR Process dialog box.

1. On the Action Panel, click **Lifecycle Editor**.

The dialog box appears.

2. Click a listed CR Process file.

- If you are using an existing CR Process, click a listed CR Process file, and then click **Edit**.
- If you want to delete an existing CR Process, click a listed CR Process file, and then click **Delete**.
- If you want to create a new CR Process, type the CR Process file name into the **New File** box, and then click **Create**.

The **CR Process** dialog box appears.

For more information, see CR Process Options (page 187).

Save a CR Process File with a New Name

You can rename a CR Process file by saving it with a new name.

1. On the Action Panel, click **Lifecycle Editor**.

   The **Select Change Request Process File** dialog box appears.

2. Click a listed CR Process file, and then click **Edit**.

   The **CR Process** dialog appears.

3. Change the CR Process file name.

   Note Copy and rename a CR Process file if you want to create a new process by changing an existing process.

   a. On the **CR Process** subbutton bar, click **Edit**.

      The **Edit CR Process Properties** subdialog box appears.

   b. Type new values for the CR Process **Name** and **File**.

   c. Click **Update**.

4. On the **CR Process** subbutton bar, click **Save As**.

   Note You can save the CR Process only if you have already defined the first state and transition for CR submission.

5. Click **Save**.

For more information, see CR Process Options (page 187).

Create a New CR Process File

You can create a new CR Process file instead of selecting an existing file.

1. On the Action Panel, click **Lifecycle Editor**.

   The **Select Change Request Process File** dialog box appears.

2. In the **New File** box, type a file name.
3. Click **Create**.

   The **CR Process** dialog box appears.

4. Define CR Process properties.

   For more information, see Define CR Process Properties (page 111).

5. On the **CR Process** subbutton bar, click **Save As**.

   Note You can save the CR Process only if you have already defined the first state and transition for CR submission.

6. Click **Save**.

For more information, see CR Process Options (page 187).

Delete a CR Process File

Users with the *Admin* login role can delete an existing CR Process file.

1. On the Action Panel, click **Lifecycle Editor**.

The **Select Change Request Process File** dialog box appears.

2. Click a listed CR Process file, and then click **Delete**.

3. Confirm that you want to delete the file.

Define CR Process Properties

After creating a CR Process file, you must define its properties.

1. Display the CR Process Dialog Box (page 107).
2. On the **CR Process** subbutton bar, click **Edit**.

   The **Edit CR Process Properties** dialog box appears.
3. Define general properties (optional).
   a. Click the **General** tab.
   b. Change the **Name** and **File**, and set the **Admin** role and **Image** file.
   c. In the **CR Type Attribute** list, select the appropriate attribute.
   d. In the **Read Security Attribute** list, click an attribute.
   e. In the **Default Package Template** list, click the template to use.
   f. In the **Relation Security Mode** list, click a relation security mode.
   g. Optionally, choose different templates for the base template fields.
   h. Choose foreground and background heading colors, or accept the default values (white background and black text).
   i. Type the **Description**.
   j. Define triggers to be used (optional) by clicking **Available Triggers**.
   k. Click **Update**.

   For more information, see General tab (page 188).
4. Define dialog boxes (optional).
   a. In the **Edit CR Process Properties** subdialog box, click the **Define Dialog** tab.
   b. Define one or more **Change Request Information** dialog boxes.

      For steps, see Define a CR Process Change Request Information Dialog Box (page 97) and Define a Role-Specific CR Process Change Request Information Dialog Box (page 98).

      For more information, see Define Dialog (page 190).

5. Define attributes (optional).

> **Note** All attributes you will use in a CR Process must be defined at the CR Process level before you can use them in lifecycles.

   a. In the **Edit CR Process Properties** subdialog box, click the **Attributes** tab.

   b. Define or change one or more attributes.

   For steps, see Create an Attribute (page 114) and Change an Attribute (page 115)

   For more information, see Attributes tab (page 193).

6. Define reports (optional).

   a. In the **Edit CR Process Properties** subdialog box, click the **Define Report** tab.

   b. Define one or more reports.

   For steps, see Define a Complete Report (page 119).

   For more information, see Define Report tab (page 196).

7. Define Telelogic Change roles (optional).

   a. In the **Edit CR Process Properties** subdialog box, click the **Roles** tab.

   b. Define Telelogic Change login roles.

   For steps, see Create a Telelogic Change Login Role (page 31).

   For more information, see Roles tab (page 197).

8. Define Web Types (optional).

   a. In the **Edit CR Process Properties** subdialog box, click the **Web Types** tab.

   b. Define one or more Web Types.

   For steps, see Create, Customize, and Install a Web Type (page 116)

   For more information, see Web Types tab (page 198).

9. Define Telelogic Change and Telelogic Synergy integrations (optional).

   a. In the **Edit CR Process Properties** subdialog box, click the **Telelogic Synergy** tab.

   b. Set up the integration.

   For more information, see Synergy tab (page 200).

10. Create a CR Process graphic (optional).

   For steps, see Create and Install a CR Process Graphic File (page 35).

11. Click **Update**.

12. If you plan to change or add a lifecycle, proceed to Add or Change a CR Lifecycle (page 121).

> **Note** You must add at least one lifecycle, with its first state and transition, before you can save the CR Process file.

13. On the **CR Process** subbutton bar, click **Save As**.

> **Note** You can save the CR Process only if you have already defined the first state and transition for CR submission.

14. Click **Save**.

For more information, see Edit CR Process Properties (page 187).

For a comprehensive example of how to create a CR Process and its lifecycles, see the *Telelogic Change Customization Guide*.

Create an Attribute

You can create new attributes to use in your CR Process.

1. Display the CR Process Dialog Box (page 107).
2. On the **CR Process** subbutton bar, click **Edit**.

   The **Edit CR Process Properties** dialog box appears.
3. Click the **Attributes** tab.
4. On the **Attributes** tab, click **Create**.

   A new attribute named `_New_Attribute_` appears in the **Change Request Attributes** list and in the **Name** box.

   > **Note** If your CR Process includes child CRs, you must create a relation attribute to use when defining the “copy transition” that creates a child CR. This attribute can have any name (for example, `cr_test` to create a child CR for testing), and must be **DBType** `child` and **WebType** `CCM_RELATION`. For more information about defining lifecycles for child CRs, see the *Telelogic Change Customization Guide*.
   >
   > If you plan to create lifecycle-specific queries and report formats, create an attribute with the name `lifecycle`, label **Lifecycle**, **DBType** `string`, and **WebType** `CCM_STRING`. The lifecycle attribute can then be set for each CR to the lifecycle in which the CR was created, once the attribute has been added to submit and transition dialog boxes.

5. Set the attribute properties.
   a. In the **Name** box, change `_New_Attribute_` to the name of the new attribute.
   b. In the **Label** box, type a label for the attribute (for example, `CR ID` for the `problem_number` attribute).
   c. In the **DBType** list, click a database type (for example, `string` or `boolean`).
   d. In the **WebType** list, click a WebType for the attribute (for example, `CCM_STRING` for a string attribute).

      To create a list box, click `CCM_LISTBOX` in the **WebType** list.

      If the **WebType** is `CCM_LISTBOX`, you can make the attribute dependent on another attribute (for example, make the `browser_version` “child” attribute dependent on the `browser` “parent” attribute) by clicking an attribute in the **Parent** list.

e. Select the **Queriable** check box so that you can query using the new attribute (unless you are creating a text attribute).

f. Select the **Reportable** check box so that you can create reports using the new attribute.

6. Click **Update**.

For more information, see Attributes tab (page 193).

Change an Attribute

You can change attributes in the CR Process.

1. Display the CR Process Dialog Box (page 107).
2. On the **CR Process** subbutton bar, click **Edit**.

   The **Edit CR Process Properties** dialog box appears.
3. Click the **Attributes** tab.
4. In the **Change Request Attributes** list, click an attribute.

   The attribute name appears in the **Name** box.
5. Change the attribute properties.

   You can change the following properties:

   - **Name**
   - **Label**
   - **Description**
   - **WebType**
   - **DBType**
   - **Icon**
   - **Queriable**
   - **Reportable**
   - **Is a User Preference Attribute**
   - **Send to all triggers**
   - **Parent**
   - **Is Read Security Attribute**
   - **CR Type**
6. Click **Update**

For more information, see Attributes tab (page 193).

Create, Customize, and Install a Web Type

Use the **Web Types** tab to create customized Web Types for dialog box elements such as list boxes, strings, and text boxes.

After creating the custom Web Type, you must customize its Web Type file, then create a package template to install it, to make the Web Type available whenever you install a process package.

> **Note** Avoid using a custom Web Type control file created in the installation area and not installed using a package template; otherwise, the file will be deleted whenever you install a process package.

Define the Web Type

1. Create the Web Type (page 116)
2. Customize the Web Type Control File (page 117)
3. Add the Web Type to a Package Template (page 118)

The steps shown are based on one example; that is, creating a new listbox web type that shows five choices at once rather than one.The Severity attribute then uses this web type, as shown below.

For more information, see Web Types tab (page 198).

Create the Web Type

1. Display the CR Process Dialog Box (page 107).
2. On the **CR Process** subbutton bar, click **Edit**.

   The **Edit CR Process Properties** dialog box appears.
3. Click the **Web Types** tab.
4. On the **Web Types** tab, click **Create**.

   A new Web Type named `_New_Web_Type_` appears in the **Web Types** list and in the **Name** box.

5. Set the Web Type properties.
   a. In the **Name** box, change `_New_Web_Type_` to the name of the new Web Type (for this example, use `CCM_LISTBOX_MULTILINE`).
   b. In the **Base WebType** list, click the Web Type to use as a basis for the new Web Type (for example, click `CCM_LISTBOX` to base `CCM_LISTBOX_MULTILINE` on that Web Type).
6. Click **Update**.
7. Click the **Web Types** tab again to show the new type.
8. Use the new Web Type.
   a. Click the **Attributes** tab.
   b. Set the Web Type for the `severity` attribute to the new Web Type (`CCM_LISTBOX_MULTILINE`).
   c. Click **Update**.
9. Click **Save As**.
10. Use the dev process default name, then click **Save**.
11. Create a Process Package (page 36).

    The process package will contain a duplicate of the base Web Type control file, with the new name (for example, `base.CCM_LISTBOX_MULTILINE`), in the following directory:

    CS_HOME`\WEB-INF\packages\`*install_CR_Process_name*`\`
    `wsconfig\templates\pt\include\attr_controls`

    The new control file will always be identical to the base control file. To make the new type available you must edit the new control file, create a package template containing the edited file, then “merge” the package template whenever you install the CR Process.

Customize the Web Type Control File

1. Customize the new control file (`base.CCM_LISTBOX_MULTILINE`) in the installation area.

   For example, as you want the list box to display 5 choices, you need to edit the HTML to specify a height of 5 for the `SELECT` element.

   Search for `SIZE='1'` and change to `SIZE='5'`.
2. Install the modified package.

   For steps, see Install a Package (page 34).
3. Test the new Web Type.

Start a session, and then show a dialog box that uses the `severity` attribute to verify the change was made.

Add the Web Type to a Package Template

The changes you have made so far are only to the installed package. Next you must copy the Web Type to the package templates directory.

You will use the package template directory later by "merging" it when you create the process package, thereby making the custom web type available. For more information, see Create a Process Package (page 36).

1. Change directory to your package template, e.g., `*cweb_home*\cs_app\webapps\synergy\WEB-INF\package_templates\dev_template`.
2. Install the Web Type control file.
   a. Create a subdirectory structure for the control file under the `dev_template` directory.

      The subdirectory structure should be similar to the following:

```
wsconfig\
    templates\
       pt\
         include\
            attr_controls
```

   b. Copy the customized Web Type control file (`base.CCM_LISTBOX_MULTILINE`) from the *`CS_HOME`*`\WEB-INF\packages\`*`install_CR_Process_name`*`\wsconfig\templates\pt\include\attr_controls` directory to the new `attr_controls` directory.
3. Verify that the package is in the package templates list.
   a. Click **Create Package**.
   b. To see the package template list, click the **Package Template** list box and look for the new package.
   c. Click **Create**.
   d. Uninstall the old process package and install the new one.
   e. Test the new Web Type to ensure your package template works as intended.

Define a Complete Report

You can define (or change) the default report used in your CR Process or lifecycle.

1. Display the CR Process Dialog Box (page 107).
2. Choose the level at which to define the Complete Report.

   For a CR Process Complete Report (which applies to all lifecycles), click **Edit** on the **CR Process** subbutton bar. The **Edit CR Process Properties** dialog box appears.
3. Click the **Define Report** tab.
4. In the **Reportable Attributes** list, select the attributes to display on the report.

   For information about arranging and setting the attributes, see Define Dialog (page 190).
5. For the entire report, **Define Sorting Order**.
6. Click **Update**.
7. On the **CR Process** subbutton bar, click **Save As**.

   Note You can save the CR Process only if you have already defined the first state and transition for CR submission.
8. Click **Save**.

For more information, see Define Report tab (page 196).

Merge Two CR Process Files

You can combine the lifecycles in two CR Processes by merging their CR Process files.

Merging the CR Process files creates a new CR Process file containing all lifecycles for both processes. CRProperties for the merged file are set to the properties of the first CR Process file you selected. Attribute values and the user lists are merged, with values defaulting to those of the first CR Process selected.

For additional information, see the CR process Merge Log for a complete account of the merge operation.

1. On the Action Panel, click **Lifecycle Editor**.

   The **Select Change Request Process File** dialog box appears.
2. In the **New File** box, type the name for the merged CR Process if you do not want to use the default name that will be created.
3. Click two CR Process files.
4. Click **Merge**.

   The **CR Process** dialog box appears.

   Also, the new file name will appear among the listed CR Process files the next time you display the **Change Request Process and Lifecycles** dialog box.
5. Define CR Process properties.

   After merging the CR Process files you should change some of the process properties, such as the process description. For more information, see Define CR Process Properties (page 111).
6. On the **CR Process** subbutton bar, click **Save As**.
7. Click **Save**.

For more information, see Select Change Request Process File (page 181).

Add or Change a CR Lifecycle

After creating or selecting a CR Process, you can add or change one or more lifecycles in the CR Process.

> **Note** In the following procedures, clicking **Update** after making a change is only an intermediate step in creating a lifecycle. You must click **Save** on the button bar to save the changes to the CR Process file.

The following operations are performed from the **CR Process** dialog box, after you have either selected a CR Process file or created a new CR Process file.

You can perform the following lifecycle operations:

- Add a Lifecycle (page 122)
- Change a Lifecycle (page 123)

After adding or changing a lifecycle, you must perform the following operations:

1. Create a package.

   For steps, see Create a Process Package (page 36).
2. Uninstall any previously installed process package.

   For steps, see Uninstall a Package (page 35).
3. Install the new process package.

   For steps, see Install a Package (page 34).

   > **Note** This operation will stop all back-end sessions and reload the configuration data.
4. Test the changed or new lifecycle.

Add a Lifecycle

Create a customized lifecycle for your process.

1. Display the CR Process Dialog Box (page 107).
2. On the **CR Process** subbutton bar, click **Edit**.

   The **Edit CR Process Properties** dialog box appears.
3. Above the **Lifecycles** list, click **Add**.

   The **Add Lifecycle** subdialog box appears.
4. Define the new lifecycle.
   a. In the **Add Lifecycle** subdialog box, type a lifecycle **Name**, **Admin Role** (the Telelogic Synergy privilege for change request administration, such as *pt_admin*), and **Description**.
   b. Click **Update**.

   The new lifecycle appears in the **Lifecycles** list box.
5. Continue defining the new lifecycle by selecting and editing it.

   For steps, see Change a Lifecycle (page 123).

For more information, see Lifecycle Options (page 203).

Change a Lifecycle

Customize an existing lifecycle for your process.

1. Display the CR Process Dialog Box (page 107).
2. On the **CR Process** subbutton bar, click **Edit**.

   The **Edit CR Process Properties** dialog box appears.
3. In the **Lifecycles** list, click a lifecycle, and then click **Edit**.

   The **Edit Lifecycle Properties** subdialog box appears.
4. Set general lifecycle properties.
   a. Click the **General** tab.
   b. Change the **Name**, and set the **Admin** role.
   c. Set **Heading** colors.
   d. Expand the **Base Templates** box.
   e. In the template lists, click the base templates to use.
   f. Type the **Description**.
   g. Click **Update**.

   For more information, see General tab (page 210).
5. Change the list of lifecycle-specific attributes, if necessary.
   a. Click the **Attributes** tab.
   b. Using the arrows, move attributes to and/or from the **Attributes in Lifecycle** list.
   c. Click **Update**.

   For more information, see Attributes tab (page 211).
6. Create or change lifecycle-specific dialog boxes (optional).
   a. Click the **Define Dialog** tab.
   b. Define the default **Change Request Information** dialog box.

      For steps, see Define a Lifecycle-Specific Change Request Information Dialog Box (page 99).

      For more information, see Define Dialog (page 190).
7. Create or change lifecycle-specific Telelogic Change role mappings (optional).
   a. Click the **Roles** tab.
   b. Define Telelogic Change login roles.

      For steps, see Create a Telelogic Change Login Role (page 31).

      For more information, see Roles tab (page 212).

8. Create or change states.

   For steps, see Add or Change a State (page 124).

9. Create or change transitions.

   For steps, see Add, Change, or Copy a Transition (page 126).

10. Click **Update**.
11. On the **CR Process** subbutton bar, click **Save As**.
12. Click **Save**.

For more information, see Lifecycle Options (page 203).

Add or Change a State

Create or customize a lifecycle state.

> **Note** The following steps are for adding states. To *change* states, click **Edit** buttons instead of **Add** buttons.

1. Display the CR Process Dialog Box (page 107).
2. In the **Lifecycles** list, click a lifecycle.
3. Under **Lifecycles**, click the **States** tab.
4. Add each state.
   a. On the **States** tab, click **Add**.
   b. In the **Add State** subdialog box, type the state's **Name** and **Description**
   c. In the **Map State for "Open vs. Closed" Report** area, click **Open, Closed,** or **Ignore.** (Ignored states will not appear in the reports.)
   d. Click **Update**.
5. Add role-based security rules for each state.
   a. In the **States** list box, click a state.
   b. Next to **Roles**, click **Add**.
   c. In the **Add Role Security** subdialog box's **Role Name** box, type a role, or select an existing role from the adjacent list box.
   d. Select the attributes you want a user in that role to be able to modify.
   e. Click **Update**.
6. Add attribute-based security rules for each state.

a. Next to **Attribute**, click **Add**.

   Note If the state has security set on attributes already, you can click an existing attribute, then click **Edit**, to display the **Edit Attribute Security** subdialog box.

b. In the **Add Attribute Security** subdialog box's **Name** box, type the name of an attribute that can contain a user ID (for example, `resolver`), or select an existing attribute from the adjacent list box.

c. In the **Role Name** box, type the name. If you specify both the role and the attribute, both rules are used.

d. In the attribute list box, select the attributes you want a user to be able to modify when his/her user ID matches the attribute's value.

e. Click **Update**.

7. Select the appropriate task association check box (optional). For more information, see Allow Task Association check box (page 204) or Allow Task Disassociation check box (page 205).

8. Set transition attributes for each state (optional).

   a. Click **Set Transition Attributes**.

   b. In the Specify Transition Attributes dialog box's **User**, **Date**, and **Comment** boxes, type the names of the attributes that will store this information when a change request is transitioned.

      Note All transition comments are appended to the transition log (`transition_log`). Use the **Comment** box to save the comments in another attribute, as well.

   c. Click **Update**.

9. On the **CR Process** subbutton bar, click **Save As**.

   Note You can save the CR Process only if you have already defined the first state and transition for CR submission.

10. Click **Save**.

For more information, see Lifecycle Options (page 203).

Add, Change, or Copy a Transition

Create, customize, or copy a lifecycle transition.

> **Note** The following steps are for adding transitions. To *change* transitions, click **Edit** buttons instead of **Add** buttons.

1. Display the CR Process Dialog Box (page 107).
2. In the **Lifecycles** list, click a lifecycle.
3. Under **Lifecycles**, click the **Transitions** tab.
4. Add an ordinary transition, if appropriate.

   An ordinary transition is a submit, a transition between states, or a transition for creating a parent/child CR relationship.

   > **Note** You will use some **Add Transition** dialog box options only if your CR Process includes child CRs or copied CRs. For more information about defining lifecycles for child CRs, see the *Telelogic Change Customization Guide*.

   a. On the **Transition** tab, click **Add**.

   b. In the **Add Transition** subdialog box, type the transitions's **Label** and **Description**.

      Typically, customizers label the first transition **Submit** and label child CR COPY transitions **Create**.

   c. In the **From State** list box, click the transition's starting state.

      If you are defining a Submit transition, click `START_HERE`. If you are defining a child CR COPY transition for creating a child CR, click COPY. For any other type of transition, click one of the states you defined previously.

   d. If you are defining a transition for creating a child CR, in the **To Lifecycle** list click the lifecycle to which to transition, or accept `Default Lifecycle` (the current lifecycle).

   e. In the **To State** list box, click the transition's ending state.

      If you are defining a Submit or child CR COPY transition, click *`to_state`* (for example, *`entered`*) For any other type of transition, click one of the states you defined previously.

   f. If you are defining a child CR COPY transition, click the relation that associates the child CR with the parent CR in the relation in the **Copy Relation** list.

      You must already have created the relation attribute before defining the transition. For more information, see Create an Attribute (page 114).

The child CR COPY transition name will be `COPY`*`relation_name`*`2`*`to_state`*, and when you include the *relation_name* attribute in a customized dialog box definition, users will see a **Create** and **Show** UI control on the dialog box.

g. If the transition requires a dialog, select the **Requires Dialog** check box.

h. To show the transition in a dialog, select the **Show Transition in the Interface** check box. Transitions not shown in the interface are available from the API.

   To designate a primary transition, select the **Primary Transition** check box. A primary transition is the typical path through the lifecycle from a given state. After a primary transition is selected, it will be shown first and in bold in lists of transitions for a CR.

   You cannot designate a primary transition without selecting **Show Transition in the Interface**.

   If you used earlier releases of Telelogic Change or relied on naming schemes to order transition links, you may see a change in behavior, as sorting of the links is now based on the primary transition properties and the label. Only one primary transition per **"From State"** can be specified; there is no general ranking of transitions.

i. Click **Update**.

5. Add a copy (duplicate) transition, if appropriate.

   A copy transition is a transition for creating a duplicate of a CR without creating a parent/child CR relationship.

   a. On the **Transition** tab, click **Add**.

   b. In the **Add Transition** subdialog box, type the transitions's **Label** and **Description**.

      Typically, customizers label the copy transition **Copy**.

   c. In the **From State** list box, click `COPY`.

   d. In the **To State** list box, click *`to_state`*.

   e. In the **Copy Relation** list box, click `NO_RELATION`.

      This COPY transition will copy the current CR to a new CR **without creating a parent/child relationship**. The `COPY` transition name will be `COPYNO_RELATION2`*`to_state`*, and when you include the `NO_RELATION` attribute in a customized dialog box definition, users will see a **Copy** UI control on the dialog box.

   f. Click **Update**.

6. In the **Transitions** list, click a transition.

   Click `START_HERE` to create a **Change Request Submission** dialog box.

7. Define or change the transition dialog box for the new or modified transition.

For steps, see Define a Change Request Submission or Transition Dialog Box (page 103).

8. Add role-based security rules for the transition.
   a. Next to **Role**, click **Add**.
   b. In the **Add Role Security** subdialog box's **Name** box, type a role name or select an existing role from the adjacent list box.
   c. Click **Update**.
9. Add attribute-based security rules for the transition, if needed.
   a. Next to **Attribute**, click **Add**.
   b. In the **Add Attribute Security** subdialog box's **Name** box, type an attribute name, or select an existing attribute from the adjacent list box.
   c. In the **Role Name** box, type the name. If you specify both the role and the attribute, both rules are used.
   d. Click **Update**.
10. Add branch-based security rules for the transition, if needed.
    a. Next to **Branch**, click **Add**.
    b. In the **Add Branch Security** subdialog box's **Name** box, type an attribute name, or select an existing attribute from the adjacent list box.
    c. Select the appropriate operator, either equal or does not equal.
    d. Type the value the attribute must equal (or not equal) for the transition to occur.
    e. If you want to apply role security, as well, in the **Role Name** box type a role name or select an existing role from the adjacent list box.
    f. Click **Update**.
11. On the **CR Process** subbutton bar, click **Save As**.

    Note You can save the CR Process only if you have already defined the first state and transition for CR submission.

12. Click **Save**.

For more information, see Lifecycle Options (page 203).

Setting Group Security Rules

Groups are implemented and administered using the Telelogic Directory Server. In releases prior to 5.0, group security rules were handled by Telelogic Change. The information in this section is included in order to provide a detailed overview of the information you need to consider before you begin defining groups and designing group security rules.

Before you implement group security, you should design and define your CR Process, including lifecycles, The group security feature uses a combination of rules in order to implement security. Please read Design Group Security Rules (page 130). After reading the design information, you can proceed with performing the following types of security customizations:

- Administer Groups (page 137)
- Administer ACLs (page 139)

For detailed design information helpful during customizations, see Telelogic Change Overview for Customizers (page 215).

For additional information about administering group security, see the *Telelogic Directory Server User's Guide*, available at http://support.telelogic.com/lifecyclesolutions. Information about using the group security features is found in the Telelogic Directory Server Help.

Design Group Security Rules

If you are interested in implementing group security rules, you have probably already identified some area of your change tracking system where you need to regulate access. Here are just a few examples of how you might want to control how information is viewed in Telelogic Change:

- Your company has several product lines, and you want to restrict problem information for a given product only to employees working in that product group.
- Your company uses contract workers. These contract workers need to access Telelogic Change in order to fix problems in CRs assigned to them, but you do not want them to be able to view any other CRs.
- You need to control read and write access for tasks - you want everyone in your product division to be able to view them, but only those in the development lab to have write access to them.

You can set up group security at many levels. You can have only a small set of rules, or be very restrictive in who has access to what information. For best results, become familiar with the group security capabilities by reading the information in this chapter, and then define a small set of rules. This allows you to understand how the rules work and test a small set of rules before defining additional rules.

In order to correctly set up and manage group security for your site, do the following:

1. Understand How Group Security Works (page 131)
2. Identify How Information is Used in Your Organization (page 133)
3. Define the Groups (page 133)
4. Define the Rules (page 134)
5. Put It All Together (page 136)

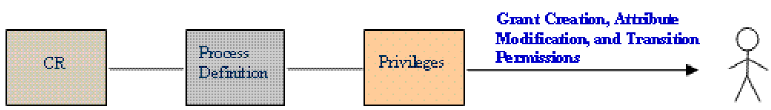
Understand How Group Security Works

Telelogic Change supports user-defined rules to create, modify, and transition change requests based on user privileges and CR attribute values. Additional security features are provided through the a combination of lifecycle and group security settings. These security features provide a method to grant or deny read and write access to a CR based on a user's group membership.

Lifecycle Security

Lifecycle security defines which users can create, modify, and transition permissions for a CR based on attribute values set on the CR and/or the user's privileges. The privileges are defined when specifying a security rule. For example, the security rule that states that a user must have the `assigner` privilege to transition a CR from the `entered` state to the `assigned` state defines the `assigner` privilege. Security rules can also be based on the state or a specific attribute on a CR. The following rule is an example: if the state of the CR is `entered` and the `enterer` attribute is equal to the current user, the current user can modify the `synopsis`, `severity`, and `description` attributes on that CR.

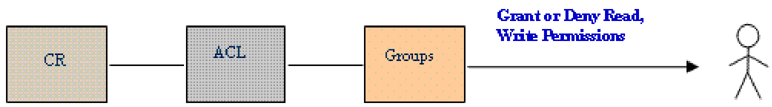
Lifecycle security rules are generally defined using the SC Lifecycle Editor and saved within a CR Process definition file. Users are assigned a set of privileges within the database. These privileges are mapped to a CR by the lifecycle definition, which ultimately controls creation, attribute modification, and transition permissions for that user.



Group Security

Group security defines which groups have read and/or write permissions for a CR, based on attribute values set on the CR and the current user's group membership. Unlike lifecycle security, which controls write access to individual attributes on the CR, the group security write permission controls general write access to the CR. Users are assigned to a set of groups, which are associated to CR permissions by rules defined in an Access Control List (ACL). ACLs provide the specific rules that are enforced for the groups and/or users you specify.

The group security rules do not alter the security rules that were established when the CR Process and lifecycles were defined, that is, the role security and attribute security rules. If there is a conflict in these sets of rules, the more restrictive rule will always be followed.



How Lifecycle and Group Security Work Together

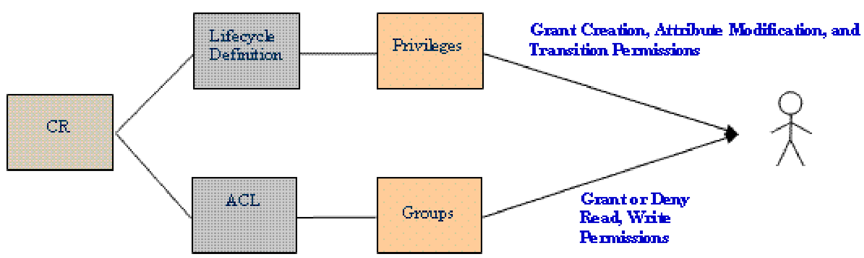
Lifecycle security and group security are complimentary in providing a comprehensive security solution:

- Group security determines read access to the CR
- If a CR is readable, group security determines CR write access
- If a CR is writable, lifecycle security determines:

  -- which creation (CR submission) forms are available

  -- which attributes are modifiable

  -- which transitions are available



Identify How Information is Used in Your Organization

Before starting to define security rules, you will need to know how the information collected by Telelogic Change is used within your organization. You want to make sure that those who need the information, and should have access to it, are able to get the information they need after security rules are implemented. By the same token, you will also need to consider if any of the information you collect is company- or department-confidential, or critical to a subset of the organization. This knowledge will assist you in the process of setting up specific groups and rules to control the types of access to information.

Define the Groups

One of the main reasons to set up group security is to better control who has access to information. Therefore, your first step will be to decide how to organize the users who will have access, or who will not have access, to the information. In many cases, the user groups you define will correspond to different departments within your organization. You may want to start defining groups based on your organization, and then further define smaller subsets of people who have the need for more specific information, or define subsets who should be restricted in the information they view.

Define the Attributes that Need Security

The attributes tracked by Telelogic Change are defined in the CR Process; you can select one or more attributes, or attribute sets when defining group security. You can set group security for change requests, tasks, and objects.

Perform the following steps to determine the type of security that is needed:

1. Determine the attributes with which you want to regulate access.

2. For each attribute, determine which groups that attribute affects.

3. For each attribute, decide the necessary rules, for example, who can view it, who can modify it, and who can view and modify it.

Define the Rules

Once you have identified the groups and attributes, you will need to map out a set of rules, or access control lists (ACLs), that correspond to your security needs. An ACL is a collection of rules that control read/write permissions. ACLs allow you to define very specific rules for a group or groups of users. Each ACL has three components: the scope, the permission, and users/groups.

Scope

Each rule must define the scope for the rule; in other words, to which CR, task, or object is this rule applicable? Unlike other applications that define an ACL on a specific object, Telelogic Change defines one global ACL for all CRs, one for tasks, and one for objects, but each rule within the ACL applies to a subset of each. The scope is set by a simple equality statement: `attribute = value`. All CRs, tasks, or objects that meet this condition are governed by this rule.

A default rule will deny read/write access to all CRs, tasks, or objects that do not match any of the rules. The default rule can be modified as needed.

Permission

Each rule must define the type of permission and whether or not to grant or deny this permission. If a user qualifies for both a grant and a deny rule, the deny rule will be enforced. The available permissions are:

- Read – the ability to view the CR, task, or object. If the user does not have read access, the user is informed that the CR or task does not exist when doing a show; for reports and search, the CR or task is simply removed from the result set.
- Write – the ability to edit the CR. However, granting write access does not necessarily mean the CR will be modifiable. Other factors may ultimately prevent write access:
  a. The CR Show form (dialog box) can be defined using read-only controls.

  b. The CR is not modifiable in this database because of rules enforced by Distributed Telelogic Change. For example, control of CR `R#1900` has been transferred from the `R` database to the `W` database, meaning it is no longer modifiable in the `R` database.

  c. Lifecycle security did not grant any attribute modification privileges for the user. For example, the CR is modifiable by the Synergy group and the user is in the Synergy group, but the lifecycle security states the user must have `assigner` privileges to modify attributes `x`, `y`, and `z` on a CR in the assigned state, and the user does not have `assigner` privileges.
- Read/Write – the ability to read and write the CR. This combination permission reduces ACL maintenance by not requiring separate rules for read and write when all other components are equal.

Users/Groups

After defining the scope and permission, each rule must specify one or more users and/or groups to which this rule applies.

- Groups – rules will generally apply to one or more groups.
- User – rules can be specific to a particular user. This is useful when temporarily granting or denying a user that doesn't belong in an applicable group (e.g., a short-term consultant). Rules can contain a mixture of both users and groups.
- {everyone} – a special purpose identifier used to represent all Telelogic Change users. This is useful when implementing a deny security model; that is, grant {everyone} and then list a few users/groups to deny.

For example, the table below shows a CR ACL for a company with 5 products: 4 products within 2 product lines, and 1 product that spans 2 product lines (integrations). In this example, the DOORS product line has the most restrictive security, followed by the Synergy product with fewer restrictions, and integrations, with the least security.

Scope				
Attribute	**Value**	**Access**	**Permission**	**Users, Groups**
Product_Line	Synergy	Grant	Read	{everyone}
Product_Line	Synergy	Deny	Read	Contractor, Guest
Product_Line	DOORS	Grant	Read	DOORS, CCB
Product	CM	Grant	Write	Synergy Dev, CCB
Product	Change	Grant	Write	Synergy Dev, CCB
Product	RM	Grant	Write	RM Dev Leads, CCB
Product	XT	Grant	Write	XT Dev Leads, CCB
Product	Integrations	Grant	Read/Write	Development, Contractor, CCB
All unmatched change requests		Deny	Read/Write	N/A

See Administer ACLs (page 139) for more information about defining and maintaining ACLs.

Put It All Together

Now you should have a basic understanding of the capabilities of the group security features used by Telelogic Change. Before starting to define group security rules, review the CR Process and lifecycles you are using. The group security rules you define will be implemented on top of those rules. You will want to be aware of what is already set up, and make sure those rules are functioning properly for you, before you add additional restrictions.

Administer Groups

You can perform the following group administration operations:

- Show Members of a Group (page 138)
- Change the Number of Users Displayed in the Lists (page 138)

Show Members of a Group

You can show members of a group on the **Groups** tab.

1. On the Action Panel, click **Administration**.
2. In the **Administration** button bar, click the **Groups** tab.
3. In the **Available Groups** dialog box, select a group.

   The members are displayed in the **Group Members** list.

For more information, see Groups tab (page 161).

Change the Number of Users Displayed in the Lists

If you have a large number of users, you can lessen the amount of time spent loading the user list. This option allows you to specify that the list not be loaded if it is larger than the number you specify. After you set a number, a filter allows you to select specific users, rather than load large user lists.

1. On the Action Panel, click **Administration**.
2. In the **Administration** button bar, click the **General** tab.
3. In the **User List Behavior** area, enter the value for the number of users to display. If the number of users in the list is equal to or greater than this number, the **Filter** tab is automatically invoked.
4. Click **Apply**.

For more information, see User and Group List Behavior area (page 147).

Administer ACLs

You can perform the following operations to create and manage access control lists:

- Define ACLs (page 140)
- Edit ACLs (page 141)

Define ACLs

You can define a separate ACL for a change request, task, or object.

1. On the Action Panel, click **Administration**.
2. In the **Administration** dialog box, click the **ACLs** tab.
3. On the **Manage Access Control Lists** page, select the check box for the type of Access Control List you are creating.
4. Click the **Edit** link.

   This displays the form used to define the rules.
5. Click **Add** to start defining rules.
6. In the **Attribute** list, select the appropriate attribute. Select **None** to match all attributes, or if you want to use a specific attribute, click **More Attributes**.

   If you clicked **More Attributes**, the **Choose Attributes for ACL Rules** dialog box is displayed.

   a. Scroll through the **Available Attributes** list. After you have identified the attribute you need, select it, then click **Add** to move it to the **Chosen Attributes** list. If you know all of the attributes you need, you can select them now. If you don't, you can always add a rule for another attribute later.

   b. When you have added all attributes you need to the list, click **OK**.

      This closes the dialog and returns you to the form.
7. In the **Attribute** list, select the attribute you just added.

   For information on implementing advanced attribute capabilities, such as combining attributes, see Attribute list (page 163).
8. In the **Value** list, select the appropriate value for the rule.
9. In the **Access** list, select the appropriate value.
10. In the **Permission** list, select the appropriate value.
11. In the **Users, Groups** box, type the user ID of any user, or type the name of a group you defined. Separate multiple entries by a comma. Is there a limit to this field?
12. Click the **Add** link to add another rule. Repeat the steps 6 - 12 until you have defined the ACLs you need.
13. Click **Save** to save changes and close the dialog.

For more information, see ACLs tab (page 163).

Edit ACLs

1. On the Action Panel, click **Administration**.
2. In the **Administration** dialog box, click the **ACLs** tab.
3. On the **Manage Access Control Lists** page, select the check box for the type of Access Control List you are creating.
4. Click the **Edit** link.

   This displays the form used to define the rules.
5. If you have many rules, use the **Filter** box to display the attributes you want to edit.
6. Make changes to attributes as required. You can edit existing attributes, add new rules by clicking the **Add** link, or delete rules by clicking the **Delete** link.

   See steps 6 - 11 in Define ACLs (page 140) for detailed information on adding new rules.
7. Click **Save** to save changes and close the dialog.

For more information, see ACLs tab (page 163)

Dialog Boxes

You can display any of the following dialog boxes in the Dialog Panel when you log in as *Admin* and click an action button on the Action Panel:

> **Note** If you are logged on to a remote server, you will not see all these actions.

- **Home** action (Home (page 8))
- **Administration** action (Administration (page 145))
- **Lifecycle Editor** action (Select Change Request Process File (page 181))
    - CR Process Options (page 187)
    - Lifecycle Options (page 203)
- **Report Builder** action (Build a Report (page 42))
- **Help** action

Administration

Use the **Administration** dialog box to view settings and perform Telelogic Change administrative operations.

Display this dialog box by clicking **Administration**.

The following options are available in this dialog box:

Button bar

Help link

Click to display help for this dialog box and its tabs.

Tabs

The **Administration** tabs are as follows:

Note If you have configured your Change installation to use a remote server, you will see only the **Server** and **Package Installer** tabs on the **Administration** page.

- General tab (page 147)
- Server tab (page 149)
- Users tab (page 155)
- Groups tab (page 161)
- ACLs tab (page 163)
- Search tab (page 167)
- Ghost CRs tab (page 169)
- Listbox Manager tab (page 173)
- Package Installer tab (page 171)

General tab

Use the **General** tab to set up Telelogic Change to be used with Telelogic Synergy, set date and user name formats, change user and group list behavior, reload configuration data, and view or test the e-mail change request submission form.

Display this page by clicking **Administration**, and then clicking the **General** tab.

The following options are available on this tab:

Telelogic Synergy Integration area

Disable the Telelogic Synergy integration check box

Select this check box to disable the Telelogic Change integration with Telelogic Synergy.

> **Note** In order for users to be able to use the integration, the user must have one of the roles defined in the `pt.cfg` setting JAVA_APPLET_ROLES.

Disable launching of Telelogic Synergy dialogs check box

Select this check box to prevent Telelogic Synergy dialog boxes from being launched from Telelogic Change.

Apply button

Click to apply changes.

Sending E-mail area

SMTP Server field

Defines the server from which mail will be sent.

From E-Mail Address field

Sets the sending e-mail address.

Apply button

Click to apply changes.

User and Group List Behavior area

Disable the All tab checkbox

Prevents all user names from being loaded in the **Users** list in the **Administration** and **Group** tabs.

Default to the All tab if the number of entries is less than field

Sets the threshold of the user names to be displayed from the **Users** list in the **Administration** and **Group** tabs. If the number of users exceeds the indicated threshold, then the **Filter** tab will be shown. Otherwise the **All** tab will be shown.

Apply button

Click to apply changes.

Date Format area

Format list (unlabeled)

Select the desired date format to be displayed from the list.

Apply button

Click to apply changes.

User Name Display area

Format list (unlabeled)

Select the desired name format from the list. This format setting affects only what is displayed, not what is saved in user attributes. The following displays of names are affected: Choose Favorite Users dialog box, reports and show dialog boxes, query builder dialog boxes, transition logs, and user administration information.

Apply button

Click to apply changes.

Configuration area

Load button

This operation reloads the Telelogic Change configuration files. Click to update the Telelogic Change interface with any configuration changes (for example, new releases added) made in Telelogic Synergy.

Server tab

Use the **Server** tab to change the Server.

Display this page by clicking **Administration**, and then clicking the **Server** tab.

The following options are available on this page:

> **Note** The tabs that you see corresponds to the type of installation you have.

- Properties tab (page 149)
- Central Server tab (page 153)
- Remote Servers tab (page 153)

Properties tab

Save button

Click to save any server properties changes.

Resize the session pool every *XX* minutes box

Type the minute interval for changing the number of available Telelogic Synergy sessions.

Resizing the pool, which is done based on the number of active users, helps ensure that resources are allocated correctly. When the pool grows, new Telelogic Synergy sessions are started; when it shrinks, existing Telelogic Synergy sessions are dropped.

A pool that is resized frequently will more closely match the current system demand. Note, however, that resizing the pool consumes resources because the server might have to start or shut down sessions.

The following is an explanation of how sessions are started and stopped when the session pool is resized. Note that resizing is always constrained by the minimum/maximum session settings.

For any two hosts A and B on a given database:

Starting sessions

- If hosts A and B are within (<=) threshold or both are above threshold, the higher priority host takes precedence. If their priorities are equal, the host with the lowest load (number of sessions) takes precedence.
- If exactly one host is above the threshold, the other host takes precedence.

Stopping sessions

- If hosts A and B are within (<=) threshold or both are above threshold, the lower priority host takes precedence. If their priorities are equal, the oldest session takes precedence.
- If exactly one host is above threshold, that host takes precedence.

Users become idle if inactive for *XX* minutes box

Type the number of minutes after which an inactive user's session is no longer counted as active.

Retry unsatisfied requests up to *XX* times box

Type the number of times to retry a Telelogic Synergy request before a request fails due to busy Telelogic Synergy sessions.

Optional start arguments box

Type optional start arguments for a session.

For example, you can set a host (`-h` *`hostname`*) argument. Setting the host enables you to run the Telelogic Synergy engines on the database server host for better performance, or to run the Telelogic Synergy engines on a Unix host when Telelogic Change is installed on Windows.

Databases group

If you are using a remote server:

Enables you to add, delete, and change Telelogic Change settings for Telelogic Synergy databases. Clicking **Add** or a listed database displays the Database Configuration subdialog box (page 151) in the right frame. You cannot add a database that is not DCM-initialized, and you cannot add a central server database.

Clicking **Remove** deletes the database from the Telelogic Change list of databases.

If you choose to remove a database, you must specify what you want to do with the CR to task relationships in the database - either delete or preserve them.

If you are using a central server:

Enables you to add, delete, and change Telelogic Change settings for Telelogic Synergy databases. Clicking **Add** or a listed database displays the Database Configuration subdialog box (page 151) in the right frame. You cannot add a database that is not DCM-initialized. If no central CR database is listed, then the next database added is assumed to be the central server database.

Clicking **Remove** deletes the database from the Telelogic Change list of databases. If you new central CR database is added.

Hosts group

Enables you to add, delete, and change host settings. Clicking **Add** or a listed host displays the Host Configuration subdialog box (page 152) in the right frame. Clicking **Remove** deletes the host from the Telelogic Change list of hosts.

Edit Telelogic Synergy Session User button

Click to display Telelogic Synergy Session User Properties subdialog box (page 152) in the right frame.

Information button

Click to display the Information subdialog box (page 153).

Subdialog boxes area

The following subdialog boxes are displayed in the right frame when you click one of the buttons in the **Properties** area:

- Database Configuration subdialog box (page 151)
- Host Configuration subdialog box (page 152)
- Telelogic Synergy Session User Properties subdialog box (page 152)
- Information subdialog box (page 153)

Database Configuration subdialog box

Use this subdialog box to change database properties.

Display this subdialog box by clicking a listed database.

The following options are available in this subdialog box:

Database box

Shows the path to the database. On Windows, this path must be a UNC path.

Status buttons

Click **Enabled** to enable the database or **Disabled** to disable the database.

Status message box

Shows status information about the database.

Label box

Shows the database label, as listed on the login page. Type a label if you want to replace the existing label.

Description box

Shows a description of the database. Type a description if you are adding a database, or if you want to change the existing description.

Min. sessions box

Shows the minimum number of sessions that can run on the database. Type a value if you are adding a database, or if you want to change the existing value.

Max. sessions box

Shows the maximum number of sessions that can run on the database. Type a value if you are adding a database, or if you want to change the existing value.

Users/session box

Shows the ratio of users to sessions. (Users can share sessions because session use is not continuous.) Type a value if you are adding a database, or if you want to change the existing value.

Host Configuration subdialog box

Use this subdialog box to change host properties.

Display this subdialog box by clicking a listed host.

The following options are available in this subdialog box:

Host box

Shows the name of the host.

Status buttons

Click **Enabled** to enable the host or **Disabled** to disable the host.

Note Hosts can be disabled by the server, as well.

Status message box

Shows status information about the database.

Description box

Shows a description of the host. Type a host description if you are adding a host, or if you want to change the existing description.

Max. sessions box

Shows the maximum number of sessions that can run on the host. Type a value if you are adding a host, or if you want to change the existing value.

Priority list

Shows the priority of the host for selection to run sessions. A lower number indicates a higher priority. Select a value if you are adding a host, or if you want to change the existing selection.

Threshold list

Shows the number of sessions that can run on the host before starting sessions on lower-priority hosts. Type a value if you are adding a host, or if you want to change the existing selection.

Telelogic Synergy Session User Properties subdialog box

Use this subdialog box to change the Session User name and password.

The Telelogic Synergy Session User is the OS user that runs back-end Synergy sessions. This user should have minimal OS and Synergy privileges.

Display this subdialog box by clicking **Edit Telelogic Synergy Session User**.

The following options are available in this subdialog box:

User Name box

Type the user name for the Telelogic Synergy session.

Password box

Type the password for the Telelogic Synergy session user.

Confirm Password box

Re-type the password for the Telelogic Synergy session user.

Information subdialog box

Use this subdialog box to view an explanation of active and inactive users, and view current server settings.

Display this subdialog box by clicking **Information**.

Central Server tab

Name of this server box

Type the name of the central server to be connected.

Central Server URL box

Type the name of the central server you are on. After registration, you can click the name to open the logon page for the central server.

Register button

Click to save any server properties changes.

Unregister button

If registered, click to open a dialog box that enables you to unregister the remote server with the central server.

Remote Servers tab

Use this subdialog box to add and remove remote servers from the central server.

Name of the server column

Shows the name of the remote server to be connected.

Address column

Shows the URL of the remote server to be connected. Once the name is entered, clicking this opens the logon page for the remote server.

Status column

Shows the status of the server to be connected.

Response Time (MS) column

Shows the response time of the latest request in milliseconds, if available.

Databases column

Shows the databases associated with the proxy.

In addition, shows the name, path, status, and status message of each database.

Remove button

Click to remove a remote server.

Add a Remote Server link

Click to add an additional remote server.

Users tab

Use the **Users** tab to view user information and change read security values. As the Telelogic Directory Administration (TDA) interface is now used to manage users and groups, the information displayed is read-only. However, you can remove users from the database, and export users to TDA. You will not see this tab if you are using a remote server.

Note All roles are Telelogic Synergy (Synergy back-end) roles.

For information about how to use this page, see Administer Users (page 26).

Display this page by clicking **Administration**, and then clicking the **Users** tab.

The following options are available on this tab:

Save button

Click to save user administration changes.

User Administration dialog box

All tab list

Displays a list of all users have a Telelogic Synergy user name in the TDS server.

Note The All tab can be disabled, depending on what threshold setting has been specified.

Click one user to display the properties for that user (first name, last name, mail address, read security, and privileges). Click multiple users to display the Multi-User Privileges area (page 157).

Click one or more users, and then click **Remove Selected Users from *DBs***, to display the Remove Selected Users from database subdialog box (page 158). The *database* information displayed varies, depending on the type of installation you have.

Filter tab list

Click to display a subset of users, groups, or privileges. A filtered list is generated by specifying a filter field from the list and entering a text string to be matched, or picking a **Privilege** name from the list. You can list users of the specified **privilege** using this tab.

Click one user to display the properties for that user. Click multiple users to display the Multi-User Privileges area (page 157).

Click one or more users, and then click **Remove Selected Users from *DBs***, to display the Remove Selected Users from database subdialog box (page 158). The database information displayed varies, depending on the type of installation you have.

Show users with (* = any string) list

Lists different criteria by which users are filtered.

text field (unlabeled)

Enter a string by which users are filtered.

Go button

Click to perform the filtering operation.

Remove Selected Users from *database* button

After selecting one or more users from the **Users** list, click to display the Remove Selected Users from database subdialog box (page 158). The *database* information displayed varies, depending on the type of installation you have.

Export Database Users button

Click to display the Export Database Users subdialog box (page 159).

Set Database Scope button (shown for stand-alone mode only)

Click to display the Set Database Scope subdialog box (page 160)

Report on Users by Privilege button

Click to display the Report on Users by Privilege subdialog box (page 160).

Edit User area

Use this area to change a user's properties and assigned roles.

Display this area by clicking **Administration**, then clicking the **Users** tab, and then clicking one user in the **Users** list.

The following options are available in this area:

Update button

Click to update the user properties and role settings.

> **Note** To apply these user administration changes you must click **Save** in the **User Administration** dialog box before exiting from the **Users** tab.

User Properties subdialog box

User ID box

Shows a unique user name.

First Name box

View the user's first name.

Last Name box

View the user's last name.

E-mail box

View the user's e-mail address.

Read Security Value box

View or type the user's read security value.

When set, the read security value allows the user to view only CRs (and attachments to CRs) that have their read security attribute set to this value. In addition to CRs, the same security rules apply to tasks and objects associated with CRs.

For more information, see Is Read Security Attribute check box (page 195).

Privileges subdialog box

Privileges/Databases column/row

Shows the Telelogic Synergy privileges you can assign to users and the databases for which the privileges are valid.

Note You will see only the databases for which you have the *ccm_admin* Telelogic Synergy privilege.

databases check boxes

Shows the privilege assignments, in each database, for the specified user. Select the privilege and database combinations for the user.

The three-state **All** column check box shows the state for an entire row: selected, cleared, or selected with a gray background.

The check box states having the following meaning:

- selected check box: The user has the privilege in all databases.
- cleared check box: The user does not have the privilege, in any database.
- selected check box with gray background: The user has the privilege in one or more, but not all, databases.

Multi-User Privileges area

Use this area to change multiple users' assigned Telelogic Synergy privileges.

Display this area by clicking **Administration**, then clicking the **Users** tab, and then clicking multiple users in the Users list.

The following options are available in this area:

Note To apply these user administration changes you must click **Save** in the **User Administration** dialog box before exiting from the **Users** tab.

Add button

Click to add the selected roles to the users' existing set of roles.

Delete button

Click to remove the selected roles from the users' existing set of roles.

Set button

Click to replace the users' existing set of roles with the selected roles.

Multi-User Privileges subdialog box

Privileges/Databases column/row

Shows the Telelogic Synergy privileges you can assign to users and the databases for which the privileges are valid.

Note You will see only the databases for which you have the *ccm_admin* Telelogic Synergy privilege.

databases check boxes

Shows the privilege assignments, in each database, for the specified users. Select the privilege and database combinations for the users.

The three-state **All** column check box shows the state for an entire row: selected, cleared, or selected with a gray background.

The check box states having the following meaning:

- selected check box: The users have the privilege in all databases.
- cleared check box: The users do not have the privilege, in any database.
- selected check box with gray background: The users have the privilege in one or more, but not all, databases.

Remove Selected Users from *database* subdialog box

Use this subdialog box to remove Telelogic Synergy role assignments/privileges from the indicated databases, which effectively removes the users from Telelogic Change and Telelogic Synergy. The *database* information displayed varies, depending on the type of installation you have.

Display this subdialog by clicking **Administration**, then clicking the **Users** tab, then clicking one or more users in the Users list, and then clicking **Remove Selected Users from DBs**.

The following options are available in this subdialog box:

Remove button

Click to perform the removal.

Note To apply these changes you must click **Save** in the **User Administration** dialog box before exiting from the **Users** tab.

Databases list

Click to delete the selected user(s) from all selected databases. Select databases by selecting their check boxes.

Select All link

Click to select all databases.

Clear All link

Click to clear all databases.

Export Database Users subdialog box

Use this subdialog box to create a text file of users that other applications can use. This file is in XML format and is used to export users to TDS.

The following options are available in this subdialog box:

Password box

Shows a default user password for exported users. You can change the passwords later for each user.

E-mail box

Shows a default e-mail address name that you can change later for each user.

Databases area

Shows a list of databases whose users can be exported to the Telelogic Directory Server.

Select All link

Click to select all databases.

Clear All link

Click to clear all databases.

Bottom of subdialog box

Export button

Click to create the file.

Set Database Scope subdialog box

Use this subdialog box to define which databases are shown in the **User Administration** dialog box. This dialog is displayed only in stand-alone mode.

Databases box (unlabeled)

Select a database to be displayed.

Select All button

Selects all databases.

Update button

Updates the databases that are displayed.

Report on Users by Privilege subdialog box

Use the **Report on Users by Privilege** subdialog box to define and run a report showing all users having a specified privilege in one or all databases, or showing all users with one or more privileges.

The following options are available in this subdialog box:

Find Users having privilege list

Select a privilege on which to report, or select **any privilege** to generate a report showing all users who have at least one privilege.

In one or more databases list

Shows all active databases for the Telelogic Change installation. Active databases are those databases that are **Enabled** in the Set Database Scope subdialog box (page 160).

Click one or more databases to set the database scope.

Select All button

Click to include all active databases in the report.

List the privileges of the matching users check box

Click to display the user's roles explicitly listed for each database.

Run Report button

Click to run the report. The report appears in the same window.

Groups tab

Use the **Groups** tab to view the groups that may be used in conjunction with security rules. As the Telelogic Directory Administration (TDA) interface is now used to manage users and groups, the information displayed is read-only.

Display this page by clicking **Administration**, and then clicking the **Groups** tab.

The following options are available on this tab:

View Groups area

Available Groups list

Use this area to show groups defined in the TDS server.

All tab list

Shows a list of all groups in the TDS server.

> **Note** The All tab can be disabled, depending on what threshold setting has been specified.

Filter tab list

Click to filter groups (reduce the number of groups displayed).

Show groups named text field

Enter a string by which groups are filtered.

Go button

Click to perform the filtering operation.

Group Members box

Shows the members of the selected group.

ACLs tab

Use the **ACLs** tab to manage the security rules for access control lists (ACLs).

Display this page by clicking **Administration**, and then clicking the **ACLs** tab.

The following options are available on this tab:

Manage Access Controls List area

Enabled check box

Click to enable or disable the ACL.

Access Control Lists list

Displays Change Requests, Tasks, and Objects.

Edit link

Click to Define ACLs (page 140) or Edit ACLs (page 141).

Manage Access Control Lists > *ACL_name* dialog box

This dialog box allows you to set rules for the item you selected in the previous page, either change requests, tasks, or objects. You can show all rules or filter the rules, as specified.

Unlabeled (Filter) text field

Enter a text string to be matched when filtering the ACL list.

Filter button

Click to perform the filter operation.

Show All button

Click to show all ACLs.

Attribute label

Click to sort the rules by attribute.

Attribute list

Click the attribute for which you are defining rules. You can use one or more attributes or attribute sets.

To add an attribute to the list, click **More Attributes**. Use the **None (matches all)** scope for global read or write access to the object.

Attributes can be customized to create more complex rules. Rules can use multiple attributes and use substitution strings as described below. You can create the following custom attributes:

Multiple attribute/value pairs **-** using the **+** and **-** operators, you can combine attributes. This allows you to create complex rules and store the results in a single rule. The following rule allows the Synergy Support group to read and write all defect CRs for the Synergy product.

Scope Attribute	Value	Access	Permission	Users, Groups
Product_Line Type	Synergy Defect	Grant	Read/Write	Synergy Support

Attribute Value = Group substitution **-** you can create one rule to define all instances where the attribute value is the same as the group value. This is done using the {substitution} value for both the **Attribute** value and **Users/Groups** name. This allows you to easily set permissions so that a group can have access to information specific to that group, as shown below.

Scope Attribute	Value	Access	Permission	Users, Groups
Responsible_Group	{substitution}	Grant	Read/Write	{substitution}

Substring parsing **-** you can use this feature when the attribute value is not an exact match for the group value, but a substring of one can be used to derive the other, or not be used at all.

In the example below, the ACL uses the value of Product_Line as a substring to create a list of groups allowed to read and write the CR.

- In the first rule, if the Product_Line=DOORS, then DOORS_PM, DOORS_PD, and DOORS_Support have read/write access.
- The second rule shows CRs with an External product line and a Contractor_Group beginning with ext_ are readable by ext_groups.
- The third rule shows an example of the CR attribute value being a substring of the Group.
- The last rule is an example of using {substitution} in the scope but not in the list of users/groups. CRs with Product_Line values of Public_*nnn* are readable and writable by everyone.

Scope Attribute	Value	Access	Permission	Users, Groups
Product_Line	{substitution}	Grant	Read/Write	{substitution}_PM, {substitution}_PD, {substitution}_Support
Product_Line Contractor_Group	External ext_{substitution}	Grant	Read	{substitution}
Product_Line Contractor_Group	External ext_{substitution}	Grant	Read	{substitution}_Group
Product_Line	Public_{substitution}	Grant	Read/Write	{everyone}

Value label

Click to sort the rules by value.

Value list

Click the value of the attribute you want to match. You can also enter a new value, allowing you to define a rule using {substitution}.

Access label

Click to sort the rules by access.

Access list

Click the access rights to be set.

Permission label

Click to sort the rules by permission.

Permission list

Click the permission rights to be set.

Users, Groups label

Click to sort the rules by the first entry in this list.

Users, Groups box

Enter the name or names of users and/or groups. For names, use the user ID (login name). For groups, enter the exact name.

Add link

Click to add a new rule.

Delete link

Click to delete a rule.

Save button

Click to save changes.

Cancel button

Click to cancel changes and close the dialog box.

General Rules area - All unmatched *items* area

This area allows you to set general access permissions for change requests, tasks, or objects.

Access list

Click to set the general access permissions for all change requests, tasks, or objects not having other rules.

Chosen Attributes for ACL rules dialog box

Available Attributes list

Click to select the attributes on which you want to set rules.

Chosen Attributes list

Shows the attributes you want to display in the **Attribute** list.

Add button

Moves the attribute to the **Chosen Attributes** list.

Remove button

Moves the attribute back to the **Available Attributes** list.

OK button

Click to save changes.

Cancel button

Click to cancel changes and close the dialog box.

Search tab

Use the **Search** tab to view the status of the indexing operation, manually regenerate indices and configure search options.

Display this page by clicking **Administration**, and then clicking the **Search** tab.

The following options are available on this tab:

Status tab

Index last updated on text

Displays the most recent time that the index was updated. If the index has not been completely updated, the page displays **Never** instead of a date and time.

Next time index will be updated text

Displays the next time that the index is scheduled to be updated. If the index has not been completely updated, the page displays **NA** instead of a date and time.

Indexer status: text

Shows if the index operation is currently running.

Currently indexing database: text

Displays the database that is currently being indexed, else is blank.

Update Index button

Click to update the search index manually.

Regenerate Index button

Click to create the search index.

> **Caution!** This action creates an index across **all databases** for the installation. This can take time to process, and search results may be incomplete while the index is rebuilding.

Database column

Shows a list of all active databases.

Last Indexed column

Shows the most recent time each database was indexed. If the database has not been completely updated, the page displays **None** instead of a date and time.

Results Format tab

CRs tab

Available Attributes list

Click to select the attributes you want to display in the search results.

Chosen Attributes list

Shows the attributes you selected to display in the search results.

Add button

Copies the attribute to the **Chosen Attributes** list.

Remove button

Removes the attribute from the **Chosen Attributes** list.

Up button

Moves the chosen attribute higher up in the list. The order of the columns in the search results matches the order of the **Chosen Attributes** list.

Down button

Moves the chosen attribute lower down in the list. The order of the columns in the search results matches the order of the **Chosen Attributes** list.

Save button

Click to save changes for both CR and Task attributes.

Tasks tab

Available Attributes list

Click to select the attributes you want to display in the search results.

Chosen Attributes list

Shows the attributes you selected to display in the search results.

Add button

Copies the attribute to the **Chosen Attributes** list.

Remove button

Removes the attribute from the **Chosen Attributes** list.

Up button

Moves the chosen attribute higher up in the list. The order of the columns in the search results matches the order of the **Chosen Attributes** list.

Down button

Moves the chosen attribute lower down in the list. The order of the columns in the search results matches the order of the **Chosen Attributes** list.

Save button

Click to save changes for both CR and Task attributes.

Ghost CRs tab

Use the **Ghost CRs** tab to manually sync the CRs to the tasks across databases.

Display this page by clicking **Administration**, and then clicking the **Ghost CRs** tab. This ghost CR (page 232) tab is displayed only for central server mode.

The following options are available on this tab:

Status tab

Name

Shows a list of all available task databases.

Remaining Updates

Shows the number of unsynced changes.

Up-To-Date As Of

Displays the most recent time that the CRs were synced across databases. If the CRs have not been completely updated, the page displays **Never** instead of a date and time.

Resync All CRs button

Click to update the ghost CRs across all databases.

Attributes tab

Available Attributes list

Click to select the attributes you need to use in the Synergy CR-based update members operation.

Chosen Attributes list

Shows the attributes you selected to use in the update members operation.

Add button

Copies the attribute to the **Chosen Attributes** list.

Remove button

Removes the attribute from the **Chosen Attributes** list.

Save button

Click to save changes for CR attributes.

Package Installer tab

Use the **Package Installer** tab to install and uninstall a Telelogic Change package.

For a complete description of the package, see Package (page 232). For information about how to use this dialog box, see Install, Uninstall, or Create a Package (page 33).

Display this page by clicking **Administration**, and then clicking the **Package Installer** tab.

The following options are available on this tab:

Root Path to the Package Directory box

Shows the path to the Telelogic Change packages directory.

Package Scope list

Click a listed package type to show only those types in the **Available Packages** box.

Available Packages box

Shows all Telelogic Change packages that are available but not yet installed.

Installed Packages box

Shows all Telelogic Change packages that are already installed.

Install button

Click to install a package selected from **Available Packages**.

The install operation installs the package and backs up any overwritten files.

> **Note** You can install a process package only if you have the *ccm_admin* privilege for all databases in the Telelogic Change installation.
>
> To check your privileges, go to the **Administration** action's **User** tab, click your user name, and view the privileges.

Delete button

Click to remove a package selected from **Available Packages**.

Uninstall button

Click to uninstall a package selected from **Installed Packages**.

Install Log button

Click to view the install and uninstall history of the selected package.

Install Information box

Shows the package README and version.

Listbox Manager tab

Use the **Listbox Manager** tab to change simple, file, database, and dependent list box values. You can define list boxes for all databases or for individual databases. Only the databases known by the central server are shown.

Selecting a list box item in the left frame updates the right frame with information about the list box. For information about how to use this page, see Change List Box Values (page 88).

Display this page by clicking **Administration**, and then clicking the **Listbox Manager** tab.

The following options are available on this tab:

Edit Listbox Values for *XXX* list

Click a listed database to begin changing list box values for that database. The default value is **All Databases**, and the value changes back to **All Databases** after you make each list box change, even if you selected a database.

You should begin database-specific changes at the top-level list box. For example, if you want to change the OS version list box, select the database, select the hardware list box, select the OS list box, and then select the OS version list box.

Save button

Click to save list box value changes.

Cancel button

Click to discard your changes and reload the existing listbox customization data.

View Listbox Dependencies button

Click to view all list box dependencies in a new window.

View Listbox Dependency Values button

Click to view the values of all dependent list boxes in a new window.

Select Listbox area

Attribute option button

Click to list attribute-type list boxes in **Select Listbox**.

Other option button

Click to list non-attribute-type list boxes in **Select Listbox**.

Sublistbox option button

Click to list sublistboxes in **Select Listbox**.

Select Listbox (unlabeled) list

Shows all defined list boxes. Click a list box to display values or properties, according to its type.

Properties button

Click to display the [Customize Listbox Properties area (page 175)] for the selected attribute.

Sort Sublists button

Click to sort sublistboxes in **Select Listbox**.

Customize Listbox Values area: Simple list box

Define the Listbox Values list

Shows all values for the selected list box. Click a listed value to display the value in the Value box beneath this list box.

Value (unlabeled) box

Shows the value selected in the **Define the Listbox Values** list box. Type a value if you are adding a value.

Add button

Click to add the value shown in the Value box.

Modify button

Click to change the value selected in the **Define the Listbox Values** list box.

Delete button

Click to delete the value selected in the **Define the Listbox Values** list box.

Customize Listbox Values area: File list box

Click a file list box-type attribute to display the Customize Listbox Properties area (page 175).

Customize Listbox Values area: External list box

Select a script list

Shows the scripts that can be selected. The scripts must be located in `CS_HOME/WEB-INF/wsconfig/scripts/listbox` to be displayed.

If you selected an external attribute that is part of a dependency chain, you will see Customize Listbox Properties area: Dependent listbox values (page 176)

Customize Listbox Values area: Dependent list box

The parent listbox is box

Shows the parent list box of the dependent list box selected in **Select Listbox**.

Select a Parent Value list

Shows the values of the parent list box. You must select a listed value before setting the dependent list box values. Click **Delete** to delete the value.

Dependent Listbox Values list

Shows the values of the dependent list box selected in **Select Listbox**. Click a listed value to select it. Click **Delete** to delete the value.

Value (unlabeled) box

Shows the value selected in the **Dependent Listbox Values** if you are deleting or changing a value. Type a value if you are adding or changing a value.

Complete Dependent List list

Shows all possible dependent values for the parent list. Click a listed value to select it. Click **Delete** to delete the value.

Add button

Click to add the value shown in the **Value** box.

Modify button

Click to change the value selected in **Dependent Listbox Values**.

Delete button

Click to delete the value selected in **Dependent Listbox Values**.

Customize Listbox Values area: Database list box

Click a database list box-type attribute to display the Customize Listbox Properties area (page 175).

Customize Listbox Properties area

Update button

Click to apply any changes.

SImple Listbox button

Click to make the list box a simple list box.

FIle Listbox button

Click to make the list box use values from a file.

FIle Listbox list (unlabeled)

Click a listed file to use for the list box values.

External Listbox button

Click to make the listbox use an external data source for the list box values.

Script list (unlabeled)

Click a listed script to make the script the source for the list box values.

Database Listbox button

Click to map the values to an attribute in the database.

Database listbox box (unlabeled)

Type the name of the database attribute to use as the source of the list box values.

Customize Listbox Values area: Define Sublistbox values

Define Sublistbox Values list

Shows all values for the selected list box. Click a listed value to display the value in the Value box beneath this list box.

Value (unlabeled) box

Shows the value selected in the **Define the Listbox Values** list box. Type a value if you are adding a value.

Add button

Click to add the value shown in the **Value** box.

Modify button

Click to change the value selected in the **Define the Listbox Values** list box.

Delete button

Click to delete the value selected in the **Define the Listbox Values** list box.

Change Sublistbox Name box

Enter the new name for the list box.

Set button

Click to add the new name to the **Value** box.

Customize Listbox Properties area: Dependent listbox values

Dependent Listbox box

Provides guidance for setting up dependency chains using external listboxes.

External Listbox check box

Check to use a script to externally manage the listbox values.

External Listbox list

Shows the available scripts which can be run to set the dependency values.

Use same script for all attributes in hierarchy check box

Click to use the same script for all attributes in the hierarchy. If you do not choose to use the script for all attributes in the hierarchy, you must navigate to each attribute and set the script.

Listbox Dependency Chain box

Shows a list of all attributes in the dependency chain.

Add button

Click to add the value shown in the **Value** box.

Select Report File

Use the **Select Report File** dialog box to select, create, or delete a custom report.

For information about how to use this dialog box, see Build a Report (page 42).

Display this dialog box by clicking **Report Builder**.

Select Change Request Process File

Use the **Select Change Request Process File** dialog box to select or create a CR Process.

For information about how to use this dialog box, see Create, Change, or Delete a CR Process (page 106).

Display this dialog box by clicking **Lifecycle Editor**.

The following options are available in this dialog box:

Button bar

Help link

Click to display help for this dialog box.

Select Change Request Process File area

Change Request Processes Directory box

Shows the path to the process file directory.

The path in this box indicates where new process files are saved and where you can select existing process files.

New File box

Type a new process file name (including its `xml` file name extension).

Create button

Click to create a process file.

CR Process (unlabeled) list

Click a listed process file, and then click **Edit**, to update the process file.

The shipped file is `dev_process.xml`.

Edit button

Click to edit an existing process file and display the CR Process (page 183) dialog box in the Dialog Panel.

Delete button

Click to delete an existing process file.

Merge button

Use to merge two selected CR Process files. Click two listed process files, type a new process name in the **New File** box, and then click **Merge**, to merge the files.

By default, the merged file name is created by merging the two CR Process names. If you want to use a different file name, type the new name into the **New File** box before clicking **Merge**.

You can save a CR Process only if you have already defined the first state and transition for CR submission.

CR Process

Use the **CR Process** dialog box to perform the following operations:

- CR Process-Level Operations (page 184)
- Lifecycle Editing Operations (page 185)

Display this dialog box as follows:

1. On the Action Panel, click **Lifecycle Editor**.

The **Select Change Request Process File** dialog box appears.

2. Select or create a CR Process file.

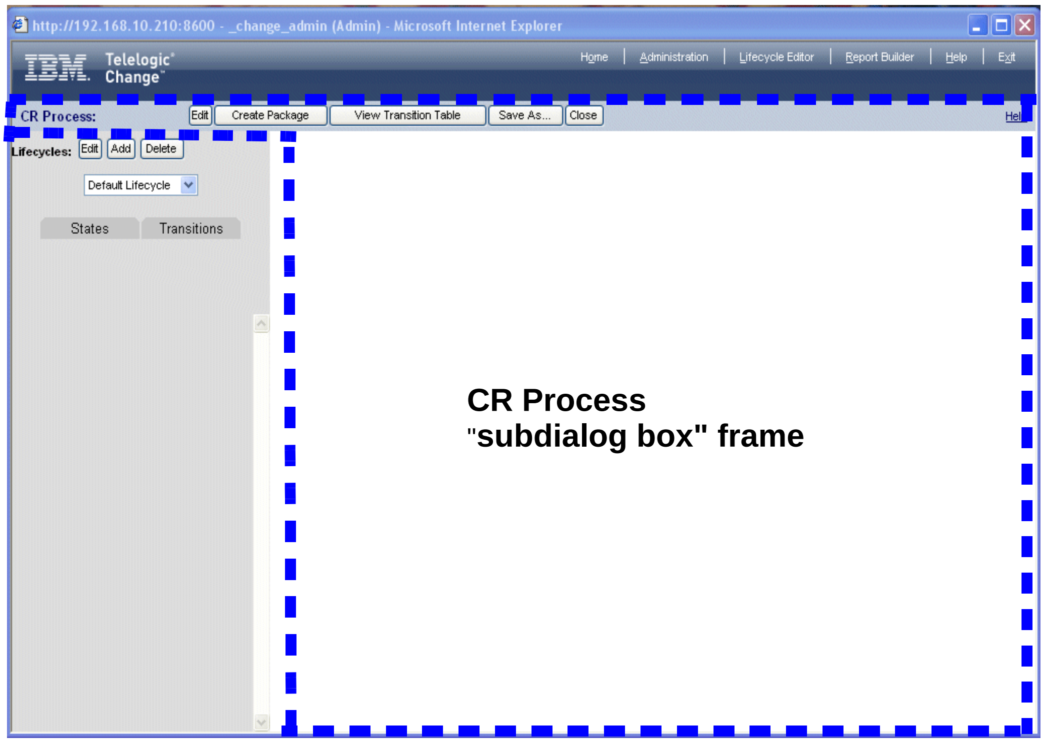
In the CR Process list, click a file, and then click **Edit**,

OR

In the **New File** box, type a file name (including the `xml` file name extension), and then click **Create**.

CR Process-Level Operations

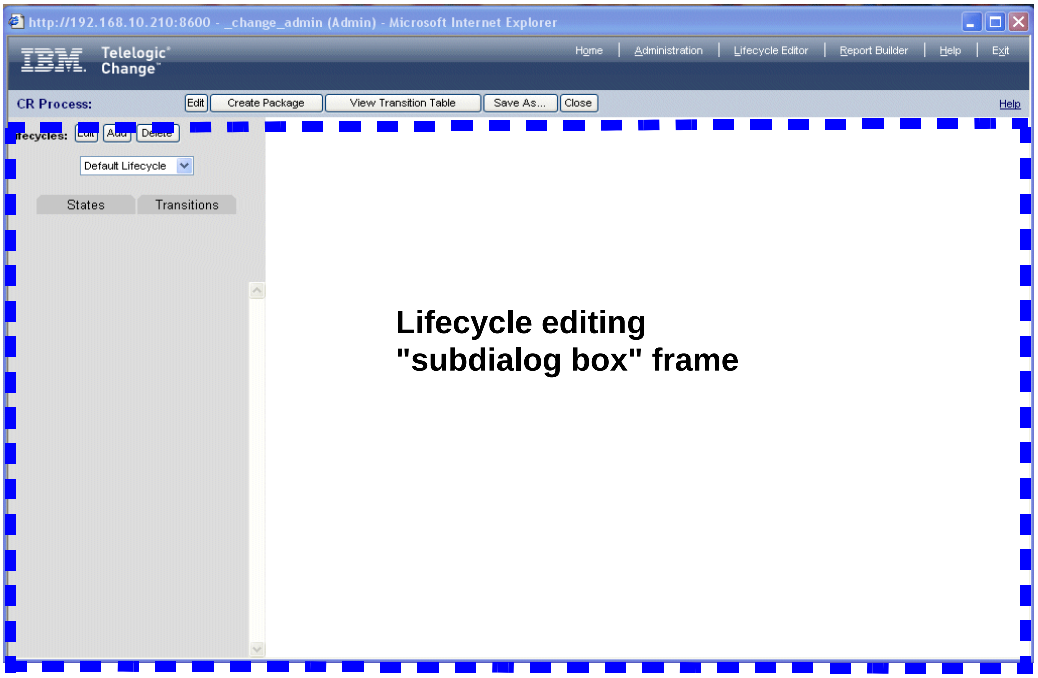
Perform CR Process-level operations using the button bar and subdialog box frame shown outlined with the blue, dashed line in the following figure.



For descriptions of the associated dialog box options, see CR Process Options (page 187). For information about how to use the options, see Create, Change, or Delete a CR Process (page 106).

Lifecycle Editing Operations

Create and change lifecycles in the CR Process using the frames shown outlined with the blue, dashed line in the following figure.



For descriptions of the associated dialog box options, see Lifecycle Options (page 203). For information about how to use the options, see Add or Change a CR Lifecycle (page 121).

CR Process Options

Use the **CR Process** dialog box to change CR Process properties or create a package.

The following CR Process-level options are available in the **CR Process** dialog box:

Button bar

Edit button

Click to display the Edit CR Process Properties (page 187).

Create Package button

Click to display the Create Change Request Package (page 199) for the current CR Process.

View Transition Table button

Click to pop up a window showing each lifecycle and its transitions.

Save As button

Click to save changes in the CR Process file.

Close button

Click to discard changes to the CR Process file.

Help link

Click to display help for this dialog box.

Subdialog boxes area

The following CR Process subdialog boxes are displayed in the right frame. The subdialog displayed depends on your button bar clicks:

- Edit CR Process Properties (page 187)
- Create Change Request Package (page 199)

Edit CR Process Properties

Use this subdialog box to change CR Process properties.

Caution! Because Telelogic Change is browser based, you must avoid refreshing your browser window while performing customizations or you will lose your changes.

The following tabs are available on this subdialog box:

- General tab (page 188) (default page)
- Define Dialog (page 190)
- Attributes tab (page 193)
- Define Report tab (page 196)

- Roles tab (page 197)
- Web Types tab (page 198)
- Synergy tab (page 200)

General tab

Use this tab to define general information for the CR Process.

The following options are available on this tab:

Update button

Click to apply any changes.

Close button

Click to discard any changes.

Name box

Type the CR Process name.

File box

Type the name of the CR Process file.

Admin box

Type the Admin role.

Image box

Type the name of the CR Process image file.

Default Package Template list

Select the name of the package template to be used.

Relation Security Mode list

Click the option for relation security.

Relation security modes enable you to control how security rules for states are applied to relation attributes.

You can include relation attributes among the **Modifiable Attributes** in security rules for states. Being able to modify a relation attribute means a user can associate and disassociate CRs on dialog boxes that have the relation attribute.

For example, suppose you are defining parent and child CRs with the following characteristics:

- a parent CR can create or delete a child CR relationship (associate or disassociate itself from a child CR) using the `cr_child` relation attribute when the parent CR is in the *assigned* state
- a child CR can create or delete a parent CR relationship (associate or disassociate itself from a parent CR) using the `has_cr_child` relation attribute when the child CR is in the *entered_child_cr* state

- the user must have the *assigner* privilege to modify a CR in the *assigned* state, and the `cr_child` relation attribute is included in **Modifiable Attributes**
- the user must have the *assigner_child_cr* privilege to modify a CR in the *entered_child_cr* state, and the `has_cr_child` relation attribute is included in **Modifiable Attributes**

  In this example, the relation security modes gives you the following security options:

  Do not apply relation security

  Allows users to create and delete relationships to child CRs from parent CRs, in any state, regardless of the security rules. This is the default setting.

  Apply relation security to both objects

  Allows users to create and delete relationships to child CRs from parent CRs only if the security rules for both the parent and child CRs are satisfied.

  Apply relation security to source object only

  Allows users to create and delete relationships to child CRs from parent CRs only if the security rules for the parent CR are satisfied.

  Apply relation security to the destination object only

  Allows users to create and delete relationships to child CRs from parent CRs only if the security rules for the child CR are satisfied.

Heading Background Color list

Type a standard HTML color name or hex value to set the heading background color for generated dialog boxes. Click the palette graphic to choose a color.

The default color is white.

Heading Text Color list

Type a standard HTML color name or hex value to set the heading text color for generated dialog boxes. Click the palette graphic to choose a color.

The default color is black.

Base Templates box

Click to expand and view information about base templates.

Show list

Click the name of the template used to generate the **Change Request Information** dialog box.

Submit list

Click the name of the template used to generate the **Change Request Submission** dialog box.

Copy list

Click the name of the template used to generate the **Change Request Copy** dialog box.

Transition list

Click the name of the template used to generate the **Transition** dialog box.

Query list

Click the name of the template used to generate the **Query** dialog box.

Description box

Type a description of the CR Process.

General Modification Scripts box

Type the script name to be used.

Available Triggers button

Click to display a list of package templates and their associated triggers, along with a description of how they are used.

For more information about using triggers, see Running In-process triggers (page 201)

Also apply to modifications done during transitions and submissions check box

Select to apply to modifications done during transitions and submissions.

Define Dialog

The following is a generic description of the **Define Dialog** options. These options vary depending on how you access the functionality (for example, from the **Edit CR Process** dialog box or from the **Roles** tab for lifecycle editing).

This tab (or subdialog box) can have the following titles, depending on the context:

Define Dialog tab

Defines a CR Process- or lifecycle-specific dialog box.

Define State-Specific Show Dialog subdialog box

Defines a state-specific **Change Request Information** dialog box.

Define Submission Dialog subdialog box

Defines a lifecycle-specific **Change Submission Transition** dialog box.

Define Transition Dialog subdialog box

Defines a lifecycle-specific **Change Request Transition** dialog box.

Define Copy Dialog subdialog box

Defines a lifecycle-specific **Copy** dialog box for copying parent object properties to a child object.

Use this tab (or subdialog box) to define a CR Process-specific, lifecycle-specific, or state-specific dialog box template. The dialog boxes can be role specific.

The following options are available in this subdialog box:

Update button

Click to update the lifecycle.

Delete Dialog button

Click to delete the defined dialog box.

This option is available for CR Process- or lifecycle-specific dialog boxes, state-specific dialog boxes, or role-based dialog boxes, including those for transitions.

Preview Dialog button

Click to view an example of the form you defined. Although you will not see all details of the form, you can check to see that the dialog has the proper layout, and verify that the spanning, height, and width of the desired controls is set correctly.

This option is available for CR Process- or lifecycle-specific dialog boxes, state-specific dialog boxes, or role-based dialog boxes, including those for transitions.

Close button

Click to discard the lifecycle changes.

Available Attributes list

Shows all attributes available for use in the dialog box.

Attributes on Dialog list

Shows all attributes used in the dialog box.

When you select an attribute in this list box, the lower frame displays detailed information about the attribute. Use the radio buttons to make the attribute required, modifiable, or read-only.

> **Note** If you want to create, show, or delete related objects on this dialog box, include the appropriate relation attribute in this list.
>
> If you want to apply relation security to the relation attribute, click the Modifiable option button (page 193).

Attributes on Role Specific Dialog list

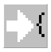
Shows all attributes used in the dialog box. This label appears with the *role_name* only when the dialog box is role specific.

When you select an attribute in this list box, the lower frame displays detailed information about the attribute. Use the radio buttons to make the attribute required, modifiable, or read-only.

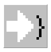
Click to add one or more attributes to the dialog box.

Click to add a blank cell to the dialog box.

Click to add a line (`<HR>`) to the dialog box.



Click to define the beginning of an expandable/collapsible section. Note that you must use a closing arrow (below) as well.



Click to define the end of an expandable/collapsible section. Note that you must use an opening arrow (above) as well.

Click to add static HTML to a dialog box. You can add static HTML or JavaScript to submit, show, or transition dialog boxes without modifying the base templates.

Click to add a baseline report to a dialog.

Click to remove an attribute from the dialog box.

Click to move the selected attribute up in the dialog box.

Click to move the selected attribute down in the dialog box.

Copy from Default button

Click to copy attributes from the default Telelogic Change dialog box definition to the new **Change Request Information** dialog box. This option is available only for CR Process and lifecycle role-specific dialog boxes.

Attribute Properties area

Name box

Shows the name of the attribute in the database (for example, `os_version`).

Label box

Shows the text used to label the attribute in the generated transition templates (for example, **Operating System Version**).

DBType list

Shows the type of the attribute in the Telelogic Synergy database (for example, `string`).

WebType list

Shows the definition tag Telelogic Change uses to display the attribute (for example, CCM_LISTBOX).

Default Value box

Type the default value for the attribute. (Available on **Define Copy Dialog** and **Define Submit** dialog boxes only.)

Width box

Type the width of the attribute in the dialog box.

Height box

Type the height of the attribute in the dialog box.

Span Column check box

Select to designate attributes that span the entire row (all columns) in the dialog box.

HTML Fragment box

Enter static HTML or JavaScript to be displayed in the dialog box. Note that no error checking is performed, so you could add static HTML or JavaScript to the dialog box that would cause the dialog box to not load or have JavaScript errors. (Available for the {HTML_TEXT} pseudo-attribute only.)

Initial State toggle

Click the **Expanded** option to show the information in an expanded state, or **Collapsed** to hide the information.

Required option button

Click to make the attribute required to perform the transition. (Available on **Define Transition Dialog** and **Define Submit Dialog** subdialog boxes only.)

Optional option button

Click to make the attribute optional for performing the transition. (Available on **Define Transition Dialog** and **Define Submit Dialog** subdialog boxes only.)

Modifiable option button

Click to make the attribute modifiable. (Available on **Define Dialog** tabs and subdialog boxes only.)

Read Only option button

Click to make the attribute read-only.

Allow Creation of Associated Objects and Association/Disassociation of Objects option button

Click to make the attribute "modifiable" for a relation attribute such as `associated_task`.

Allow Viewing of Associated Objects Only option button

Click to make the attribute "read-only" for a relation attribute such as `associated_task`.

Attributes tab

Use this tab to define all attributes and UI controls for the CR Process and its lifecycles.

Note A UI control is identified by a leading underscore in the name and all uppercase letters (for example, `_CREATE_TASK`).

The following options are available on this tab:

Update button

Click to apply any changes.

Close button

Click to discard any changes.

Change Request Attribute area

Change Request Attributes list

Shows the attributes contained in the Telelogic Synergy database, or those specific to a lifecycle. Click an attribute to change its properties or delete it.

Create button

Click to add an attribute.

Delete button

Click to remove the selected attribute.

Find Use button

Click to show the where the selected attribute is used.

Attribute Properties area

Note If you change CR Process attributes that are used on the Complete Report, you must ensure the attributes are consistent on the Complete Report.

Name box

Shows the name of the attribute in the database (for example, `os_version`).

Label box

Shows the text used to label the attribute in the generated transition templates (for example, **Operating System Version**).

WebType list

Shows the definition tag Telelogic Change uses to display the attribute (for example, CCM_LISTBOX).

DB Type list

Shows the type of the attribute in the Telelogic Synergy database (for example, `string`).

Is initially browsable check box

Select to allow the attribute to be browsable.

Icon symbol

Select to choose the icon to be displayed in browsable queries.

Queriable check box

Select to allow the attribute to be included in a query.

Reportable check box

Select to allow the attribute to be included in a report.

Is Read Security Attribute check box

Select to use the attribute for read security. You can select this check box for only one attribute.

Read security restricts users' ability to display CRs (and attachments to CRs) in Change Request Information dialog boxes, queries, and reports. If you select a read security attribute, then define the attribute value in a user's Read Security Value box (page 156), the user can display Change Request Information dialog boxes, queries, and reports only for CRs for which the CR Process read security attribute value matches the user's read security value. In addition to CRs, the same security rules apply to tasks and objects associated with CRs.

You should note the following before setting read security:

* If a user's **Read Security Value** is not set, or if a user's **Read Security Value** is set but a read security attribute is not defined in the CR Process, the user can view all CRs.

For example, suppose you create `company_id` to implement read security. The purpose of this attribute is to allow users to see only the CRs submitted by their own companies.

To set up the `company_id` read security attribute, do the following:

* Create the `company_id` attribute and select the **Is Read Security Attribute** check box.

* On the **User** tab, set the **Read Security Value** for each user for whom you want to apply read security.

After the value is set, the `company_id` is set to the user's read security value when the user submits a CR. Also, the user can view only CRs that have his read security value.

Therefore, if user `mary` has a read security value of `TBC Corp` (as assigned by the administrator), the `company_id` attribute is automatically assigned the value `TBC Corp` when he submits a CR. Also, `mary` can only view CRs with a `company_id` of `TBC Corp`.

Is a User Preference Attribute check box

Select to allow users to preset this attribute on their **Preferences** tab.

Parent list

Define the parent list box for the attribute.

View Dependencies button

Click to view the list box parent and child dependencies.

Triggers area

Post Condition Scripts box

Type one or more file names, on separate lines, for the selected attribute's post-condition trigger definitions.

An attribute *trigger* is a file containing commands that are executed (`exec()`'d) when an attribute value changes. Successful commands must return “0” (zero).

> **Note** If the attribute is a CCM_RELATION type, the trigger is executed when a user performs a relate (associate) or unrelate (disassociate).

For example, to execute the `my_script` Perl script when an attribute value is changed on the **Change Request Information** dialog box, type the following string into the **Post Condition Scripts** box:

```
perl my_script
```

> **Note** You must put trigger files in the *`CS_HOME`*`\WEB-INF\wsconfig\triggers` directory.
>
> Also, the interpreter required to run the script must be available. For example, to run a Perl script, `perl` must either be in your path or be installed in the `triggers` directory.

Also apply to modifications done during transitions and submissions check box

Select to cause the trigger to be executed even if the attribute is modified during a submit or transition. When this check box is cleared, the trigger is executed only when the attribute is modified from the **Change Request Information** or **Task Information** dialog box.

Define Report tab

Use this tab to define the default Complete Report.

> **Note** This page is identical to the lifecycle-specific Define Report page except, possibly, for its list of attributes.

The following options are available on this tab:

Update button

Click to apply any changes.

Close button

Click to discard any changes.

Name box

Type the name of the report.

Description button

Click and type a description of the CR Process.

Reportable Attributes list

Shows all attributes available for use on the report.

Chosen Attributes box

Shows all attributes used in the report.

button

Click to add one or more attributes to the report.

button

Click to add a blank cell to the report.

button

Click to add a line (`<HR>`) to the report.

button

Click to remove an attribute from the report.

button

Click to move the selected attribute up in the report

button

Click to move the selected attribute down in the report.

Define Sorting Order area

Defines the sort order of three attributes in the report.

Click an attribute, and then click the type of sorting (`String`, `Integer`, `Date`, or `Listbox`). Finally, select the sort direction (`Ascending` or `Descending`). The first attribute selected takes precedence over the second attribute in the sort. Likewise, the second attribute takes precedence over the third attribute in the sort.

> **Note** List box-type sorting means that the values are sorted in the order they are defined in a list box. For example, the `severity` attribute's list box is sorted according to the order of its values: Showstopper, Severe, Medium, and Minor.

Span Column check box

Select to make an attribute span the entire row (all columns) in the report. This selection is appropriate for descriptions.

Roles tab

Use this tab to define Telelogic Change login roles and map Telelogic Synergy privileges (roles) to them.

A user must have at least one Telelogic Synergy privilege to log into Telelogic Change.

The following options are available on this tab:

Update button

Click to apply any changes.

Close button

Click to discard any changes.

Telelogic Change Roles list

Shows all Telelogic Change login roles for the current CR Process. Click one or more to add Telelogic Synergy privileges.

Telelogic Synergy Roles list

Shows the available Telelogic Synergy privileges. Click one or more listed roles to select them.

Set Mapping button

Click to map **Telelogic Synergy Roles** to **Telelogic Change Roles**.

Create button

Click to create a new Telelogic Change role. The `_New_Role_` name appears in the **Telelogic Change Roles** list and the **Name** box. Edit the temporary name to create the new role.

Delete button

Click a role in **Telelogic Change Roles** list, and then click this button, to delete the role.

Define Show Dialog button

Click to display the Define Dialog (page 190) for the selected Telelogic Change role.

All Roles box

Select to choose all Telelogic Synergy privileges. Allows Telelogic Change users to log in if they have any Synergy role.

Name box

Shows the selected Telelogic Change role name.

Description box

Shows a description of the selected Telelogic Change role.

Web Types tab

Use this tab to define custom Web Types for dialog boxes.

The following options are available on this tab:

Update button

Click to apply any changes.

Close button

Click to discard any changes.

Custom Web Types list

Shows all Telelogic Change Web Types for the current CR Process.

Create button

Click to create a new Telelogic Change Web Type. The `_New_Web_Type_` name appears in the **Custom Web Types**. Edit the temporary name to create the new name.

Delete button

Click a Web Type in **Custom Web Types** list, and then click this button, to delete the Web Type.

Find Use button

Click show where a Web Type is used.

Name box

Shows the selected Telelogic Change Web Type name.

Base Web Type list

Click a listed Web Type to copy the existing Web Type to the new Web Type.

> **Note** Creating the Web Type in the GUI only creates a copy of the **Base Web Type** control file and gives it the name you specified. To customize the Web Type, you must edit the new control file manually. For more information, see Create, Customize, and Install a Web Type (page 116).

Create Change Request Package

Use this subdialog box to create a Change Request Package for the current CR Process.

The following options are available in this subdialog box:

CR Process box

Shows the name of the current CR Process XML file.

Package Name box

Shows the default name of the CR Process package.

Package Path box

Shows where the CR Process package will be created.

Package Template list

Click a listed directory (package template) to merge the directory's contents with the package you are creating.

A package template is a skeletal directory containing non-XML files (such as a default configuration file and image file) you can add to your process package. When you create the process package, the values in the template configuration file are merged with the generated configuration file.

For example, the shipped `dev_process` package file has a `dev_template` package template directory containing a `dev_template.cfg` configuration file and a `dev_process.gif` image file.

To create a package template, create a directory in the `package_templates` directory. In your newly created directory, create a valid Telelogic Change directory structure containing the files you want to merge with the process package.

> **Note** The package template configuration file name must match the package template name.

Description box

Describes the CR Process package.

Create button

Click to create the package.

Close button

Click to discard any changes.

Synergy tab

Use this tab to define settings specific to the use of the Telelogic Synergy integration.

The following options are available on this tab:

Update button

Click to apply any changes.

Close button

Click to discard any changes.

Activate Telelogic Synergy integration check box

Select this check box to use Telelogic Change with Telelogic Synergy. This setting overrides other integration settings, as it allows the user to turn off the integration when the lifecycle has turned it on.

All shipped lifecycles have an active integration; all custom lifecycles have the integration disabled initially.

Integration Login Role list

Click a default role for logins from other Telelogic tools.

Enter "CRs assigned to me" query

Enter the query to be used to display the list of currently assigned CRs to the user.

Running In-process triggers

You can run certain triggers within the Telelogic Change process. A Bean Scripting Framework (BSF) trigger must be used in this cases. A BSF trigger is defined by using bsf in place of the executable name, such as:

```
bsf my_trigger.js arg1 arg2
```

The `bsf` is interpreted to mean that this is a BSF trigger and should run in-process. If you do not have an executable called `bsf` in your path, the trigger will be ignored. The file extension of a BSF trigger determines which scripting language is used to execute the script.

For additional details about writing triggers, see the Trigger API documentation that is available from the Help page.

Lifecycle Options

Use the **CR Process** dialog box's **Lifecycles** frame to create, modify and delete lifecycles.

> **Caution!** Telelogic Change is browser based; therefore, you must **not** refresh your browser window while performing customizations or you will lose your changes.

The following lifecycle options are available in the **CR Process** dialog box:

Lifecycle area

Edit button

Click to display the Edit Lifecycle Properties (page 210).

Add button

Click to display the Add Lifecycle (page 208).

Delete button

Click to delete the selected lifecycle.

Lifecycles list

Click a listed lifecycle to select it and display its **Edit Lifecycle Information** subdialog box.

Tabs

States tab (page 204)

Click to display the states for the selected lifecycle.

Transitions tab (page 205)

Click to display the transitions for the selected lifecycle.

Subdialog boxes

Lifecycle options include the following subdialog boxes, most of which are accessible only after making other selections:

- Add Attribute Security (States) (page 208)
- Add Attribute Security (Transitions) (page 208)
- Add Branch Security (Transitions) (page 208)
- Add Lifecycle (page 208)
- Add Role Security (States) (page 208)
- Add Role Security (Transitions) (page 209)
- Add State (page 209)

- Add Transition (page 209)
- Define Dialog (page 190)
- Edit Attribute Security (States) (page 209)
- Edit Attribute Security (Transitions) (page 209)
- Edit Branch Security (page 210)
- Edit Lifecycle Properties (page 210)
- Edit Role Security (States) (page 212)
- Edit Role Security (Transitions) (page 212)
- Edit State Information (page 212)
- Edit Transition Information (page 212)
- Post Transition Triggers (page 213)
- Pre Transition Triggers subdialog box (page 213)
- Specify Transition Attribute Names (page 213)

States tab

Use this tab to create, remove, and change lifecycle states.

> **Caution!** If you are defining multiple lifecycles, ensure that the lifecycles use unique state names.

State selection

Edit button

Click to display the Edit State Information (page 212) for the selected state.

Add button

Click to display the Add State (page 209).

Delete button

Click to delete the selected state.

States list

Click a listed state to display state options in the left frame.

Label box

Shows the state label.

Security area

Allow Task Association check box

Select to allow users to associate tasks with change requests that are in the selected state.

Allow Task Disassociation check box

Select to allow users to disassociate tasks with change requests that are in the selected state.

Role list

Click a listed role to display the Edit Role Security (States) (page 212).

Add (role) button

Click to display the Add Role Security (States) (page 208).

Delete (role) button

Click to delete the selected role from the role-based security rules.

Attribute list

Click a listed attribute to display the Edit Attribute Security (States) (page 209).

Add (attribute) button

Click to display the Add Attribute Security (States) (page 208).

Delete (attribute) button

Click to delete the selected attribute from the attribute-based security rules.

Advanced area

Set Transition Attributes button

Click to display the Specify Transition Attribute Names (page 213).

Define Show Dialog button

Click to display the Define Dialog (page 190).

Define Role Specific Dialog list

Click a listed role to display the role-specific Define Dialog (page 190) for the current state.

Transitions tab

Use this tab to create, remove, and change lifecycle transitions. Submits and Copies (for child CRs) are also defined here because they are a type of transition.

Note You must create states before creating transitions.

Transition selection

Edit button

Click to display the Edit Transition Information (page 212) for the selected transition.

Add button

Click to display the Add Transition (page 209).

Delete button

Click to delete the selected transition from the security rules.

Transitions list

Click a listed transition to display transition options in the left frame.

> **Note** To define a **Change Request Submission** dialog box, select the `START_HERE2`*`first_state`* transition, and then click **Define Submit Dialog**.

Name box

Shows the automatically generated transition name (*from_state* + "2" + *to_state*).

Label box

Shows the transition label.

From box

Shows the state from which a change request is transitioned.

To box

Shows the state to which a change request is transitioned.

Define Submit Dialog button

Click to display the Define Dialog (page 190) in the right frame. This button appears only for the `START_HERE2`*`first_state`* transition.

Define Copy Dialog button

Click to display the Define Dialog (page 190) in the right frame. This button appears only for the `COPY`*`relation_name`*`2`*`first_child_state`* transition, which copies the selected parent CR attributes to the child CR.

The **Copy** dialog box is created automatically from the child CR's **Submit** `(START_HERE2first_child_state)` dialog box. Therefore, you need not create the **Copy** dialog box manually. You must, however, update the **Copy** dialog box attribute properties so that they are inherited from the parent CR.

For more information, see the *Telelogic Change Customization Guide*.

Define Transition Dialog button

Click to display the Define Dialog (page 190) for in the right frame. This button appears for all transitions except `START_HERE2`*`first_state`*.

Define Role Specific Dialog list

Click a listed role to display the role-specific Define Dialog (page 190) for the current transition.

Security area

Role list

Click a listed role to display the Edit Role Security (Transitions) (page 212).

Add (role) button

Click to display the Add Role Security (Transitions) (page 209).

Delete (role) button

Click to delete the selected role from the role-based security rules.

Attribute list

Click a listed attribute to display the Edit Attribute Security (Transitions) (page 209).

Add (attribute) button

Click to display the You can also require that the user have a specified Telelogic Synergy privilege (role). (page 208).

Delete (attribute) button

Click to delete the selected attribute from the attribute-based security rules.

Branch Security list

Click a listed attribute to display the You can also require that the user have a specified Telelogic Synergy privilege (role). (page 209).

Add (attribute) button

Click to display the Add Branch Security (Transitions) (page 208).

Delete (attribute) button

Click to delete the selected attribute from the branch security rules.

Advanced area

Pre Transition button

Click to display the Pre Transition Triggers subdialog box (page 213).

Post Transition button

Click to display the Post Transition Triggers (page 213).

Add Attribute Security (States)

Use this subdialog box to define a state's attribute-based security rules (the list of attributes modifiable when a user's ID matches the value of a specified attribute like **resolver**).

You can also require that the user have a specified Telelogic Synergy privilege (role).

Add Attribute Security (Transitions)

Use this subdialog box to define a transition's attribute-based security rules. (The transition is allowed if the user's ID matches the value of a specified attribute like **resolver**.)

You can also require that the user have a specified Telelogic Synergy privilege (role).

Add Branch Security (Transitions)

Use this subdialog box to allow transitions only when an attribute of the change request object has a specified value (equals), or has a value that is not equal to the specified attribute.

For example, if the **change_type** attribute can be set to either **defect** or **enhancement**, and you have (one-step) *fix_defect* and *make_enhancement* transitions, you can define the following branching security rules:

- For transition name *fix_defect*: Set **Name** to **change_type** and **Value** to **defect**.
- For transition name *make_enhancement*: Set **Name** to **change_type** and **Value** to **enhancement**.

You can also require that the user have a specified Telelogic Synergy privilege (role).

Add Lifecycle

Use this subdialog box to name and describe a new lifecycle, and to specify the lifecycle's *Admin* role (the Telelogic Synergy privilege for change request administration, such as *pt_admin*).

Also see Add a Lifecycle (page 122).

Add Role Security (States)

Use this subdialog box to define a state's role-based security rules (the list of attributes modifiable by users in a specified role).

Add Role Security (Transitions)

Use this subdialog box to define a transition's attribute-based security rules. (The transition is allowed by users in the specified role.)

Add State

Use this subdialog box to name and describe a new state.

Open, **Closed**, and **Ignore** are grouping designations required—and used—only for generating the Open vs. Closed report. Ignored states do not appear in the report.

Add Transition

Use this subdialog box to define a transition's properties, "from" state, "to" state, and description.

Submit and Copy are special types of transitions. A Submit transition creates a new CR. A Copy transition is a Submit that does either of the following:

- submits a child CR, creates a relationship, and allows parent CR attributes to be inherited by the child CR

OR

- submits a copy of the current CR, including all its properties, without creating a parent/ child relationship

Before you can define a Copy transition, you must do the following:

- If you are creating a Copy transition for a child CR, define a relationship attribute to select in the **Copy Relation** list.
- Define the child or copied CR's Submit transition (*START_HERE* to whichever state is the child or copied CR's first state, such as **entered**).

For more information about Copy transitions, see the *Telelogic Change Customization Guide*.

Edit Attribute Security (States)

Use this subdialog box to change a state's attribute-based security rules (the list of attributes modifiable when a user's ID matches the value of a specified attribute like **resolver**).

You can also require that the user have a specified Telelogic Synergy privilege (role).

Edit Attribute Security (Transitions)

Use this subdialog box to change attribute-based security rules for transitions. (The transition is allowed if the user's ID matches the value of a specified attribute like **resolver**.)

You can also require that the user have a specified Telelogic Synergy privilege (role).

Edit Branch Security

For a description of the subdialog box options, see Add Branch Security (Transitions) (page 208)

You can also require that the user have a specified Telelogic Synergy privilege (role).

Edit Lifecycle Properties

Use this subdialog box to change lifecycle properties on the following subdialog tabs:

- General tab (page 210)
- Define Dialog tab (page 211)
- Attributes tab (page 211)
- Define Report tab (page 212)
- Roles tab (page 212)

General tab

The following options are available on this tab:

Name box

Shows the name of the lifecycle.

Admin Role box

Shows the lifecycle's Administrator role (the Telelogic Synergy privilege for change request administration, such as *pt_admin*).

The Administrator can make any change request or task modification or perform any transition. Therefore, if the Administrator is set to *pt_admin*, any user who has the *pt_admin* role can make any modification or perform any transition.

Heading Background Color list

Type a standard HTML color name or hex value to set the heading background color for generated dialog boxes. Click the palette graphic to choose a color.

The default color is the color defined for the CR Process.

Heading Text Color list

Type a standard HTML color name or hex value to set the heading text color for generated dialog boxes. Click the palette graphic to choose a color.

The default color is the color defined for the CR Process.

Base Templates list

Shows the templates used to generate the **Change Request Information** dialog box.

Show list

Shows the templates used to generate the **Change Request Information** dialog box.

Submit list

Shows the template used to generate the **Change Request Submission** dialog box.

Copy list

Shows the template used to generate the **Change Request Copy** dialog box.

Transition list

Shows the template used to generate the **Transition** dialog box.

Query list

Shows the template used to generate the **Query** dialog box.

Description box

Describes the lifecycle.

Update button

Click to apply any changes.

Close button

Click to discard any changes.

Define Dialog tab

Use this tab to define a lifecycle-specific **Change Request Information** dialog box.

For a description of the tab options, see the equivalent CR Process tab definition at Define Dialog (page 190).

Attributes tab

Use this tab to create a lifecycle-specific list of attributes whose values override the CR Process values.

The following options are available on this tab:

Available Attributes list

Shows all attributes available for use in the lifecycle.

Attributes in Lifecycle list

Shows all attributes used in the lifecycle.

Click to add one or more attributes to the dialog box.

Click to remove an attribute from the dialog box.

Update button

Click to apply any changes.

Close button

Click to discard any changes.

Define Report tab

Use this tab to define a lifecycle-specific Complete Report template.

For a description of the tab options, see the equivalent CR Process tab definition at Define Report tab (page 196).

Roles tab

Use this tab to map Telelogic Synergy privileges to Telelogic Change roles for a lifecycle.

For a description of the tab options, see the equivalent CR Process tab definition at Roles tab (page 197).

Edit Role Security (States)

Use this subdialog box to change a state's role-based security rules (the list of attributes modifiable by users in a specified role).

Edit Role Security (Transitions)

Use this subdialog box to change role-based security rules for transitions (the list of roles allowed to perform the selected transition).

Edit State Information

Use this subdialog box to change the name or description of the state. Use the **Map State for "Open vs. Closed" Report** area to designate the state as open, closed, or ignored.

Open, **Closed**, and **Ignore** are grouping designations required—and used—only for generating the Open vs. Closed report. Ignored states do not appear in the report.

Edit Transition Information

Use this subdialog box to change a transition's properties, such as "from" state, "to" state, or description.

The **Requires Dialog** check box specifies if the transition occurs immediately when a user clicks the transition link (checkbox not selected), or if an intermediate dialog is required.

The **Show Transition in Interface** check box specifies whether to show a submission/ transition link in the user interface. If a link is shown and security permits, the user may explicitly initiate the transition or submission. If not, the transition or submission is only available programatically through the API.

By default, this check box is selected (links are visible). Clear the check box if you are defining a submission or transition for creating child objects.

The **Primary Transition** check box specifies if the selected transition is primary. A primary transition is the typical path through the lifecycle from a given state. After a primary transition is selected, it will be shown first and in bold in lists of transitions for a CR.

Pre Transition Triggers subdialog box

By using the **Pre Transition Triggers** subdialog box, you can define rules used before a change request is transitioned.

Pre transition triggers contain one or more file names, on separate lines, for transition pre-condition trigger definitions.

A pre transition *trigger* is a file containing commands that are executed (`exec()`'d) before a CR is submitted or transitioned. Successful commands must return "0" (zero).

For example, to execute the `my_script` Perl script before a transition, type the following string into the **Pre Transition Triggers** box:

```
perl my_script
```

> **Note** All trigger files must be stored in the *`CS_HOME`*`\WEB-INF\wsconfig\triggers` directory.
>
> Also, the interpreter required to run the script must be available. For example, to run a Perl script, `perl` must either be in your path or be installed in the `triggers` directory.

Post Transition Triggers

Post transition triggers contain one or more file names, on separate lines, for transition post-condition trigger definitions.

A post transition *trigger* is a file containing commands that are executed (`exec()`'d) after a CR is submitted or transitioned. Successful commands must return "0" (zero).

For example, to execute the `my_script` Perl script after a transition, type the following string into the **Post Transition Triggers** box:

```
perl my_script
```

> **Note** All trigger files must be stored in the *`CS_HOME`*`\WEB-INF\wsconfig\triggers` directory.
>
> Also, the interpreter required to run the script must be available. For example, to run a Perl script, `perl` must either be in your path or be installed in the `triggers` directory.

Specify Transition Attribute Names

Use this subdialog box to change the names of the attributes that store the date of a transition, and to change the ID of the user who performed the transition.

Telelogic Change Overview for Customizers

Every company has its own approach to managing change and its own suite of products. Each product has its own characteristics such as version, hardware platform, and operating system. For this reason, Telelogic has designed Telelogic Change as a highly customizable change tracking tool.

Although Telelogic Change ships with a useful set of characteristics, you might want to customize the tool to include your own products and releases, as well as other properties specific to your needs.

Before performing customizations, however, you should become familiar with how Telelogic Change creates dynamic HTML content in the user's browser.

The following pages describe the Telelogic Change components and their functionality, and show the Telelogic Change directory structure:

- Components (page 216)
- Telelogic Change Directories (page 220)
- Distributing Customized Lifecycles (page 228)

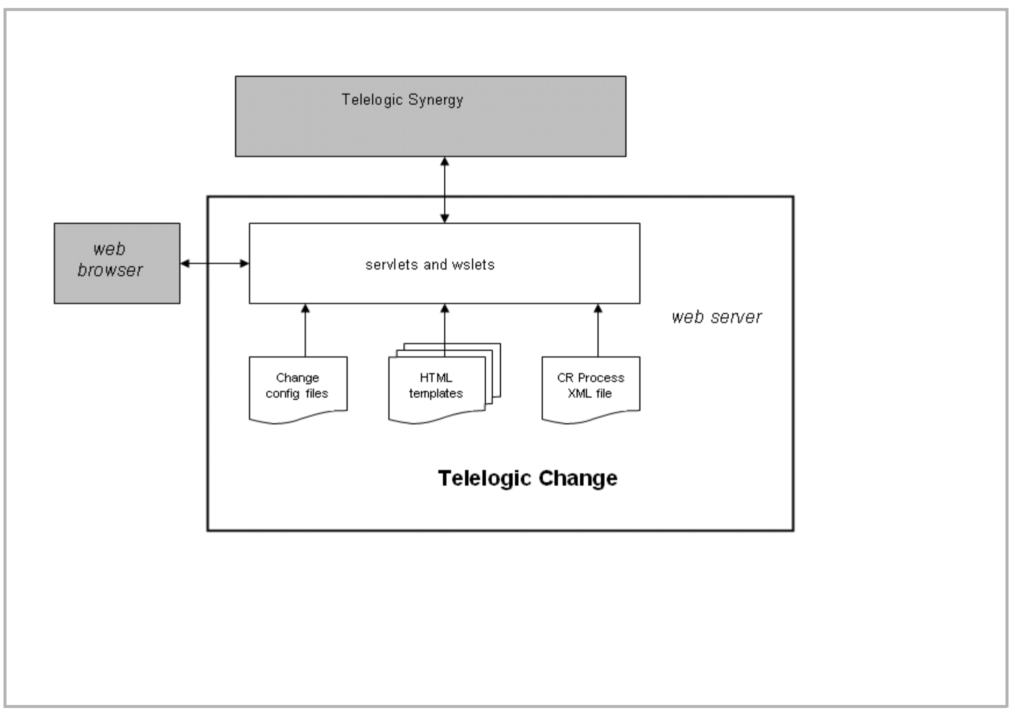
Components

Telelogic Change resides on a web server and deploys its user interface using a web browser. Data displayed in the interface is retrieved from Telelogic Change files and from the Telelogic Synergy database server. Telelogic Change also updates the Telelogic Synergy database with the values you enter and selections you make in the user interface.

You can better understand the details of these interactions by reading the following pages:

- Telelogic Synergy (page 217)
- Web Server (page 217)
- HTML Templates (page 217)
- Wslets (page 218)
- Servlets (page 218)
- Telelogic Change Config Files (page 219)
- CR Process File (XML) (page 219)

The diagram below shows the components of Telelogic Change.



Telelogic Synergy

Telelogic Synergy is the core Telelogic product that stores data for your change requests and their associated objects.

Because Telelogic Synergy controls all change request data, all change request attributes—such as **product_name** or **request_type**—must have the same name in the Telelogic Synergy database as they do in the Telelogic Change interface.

Web Server

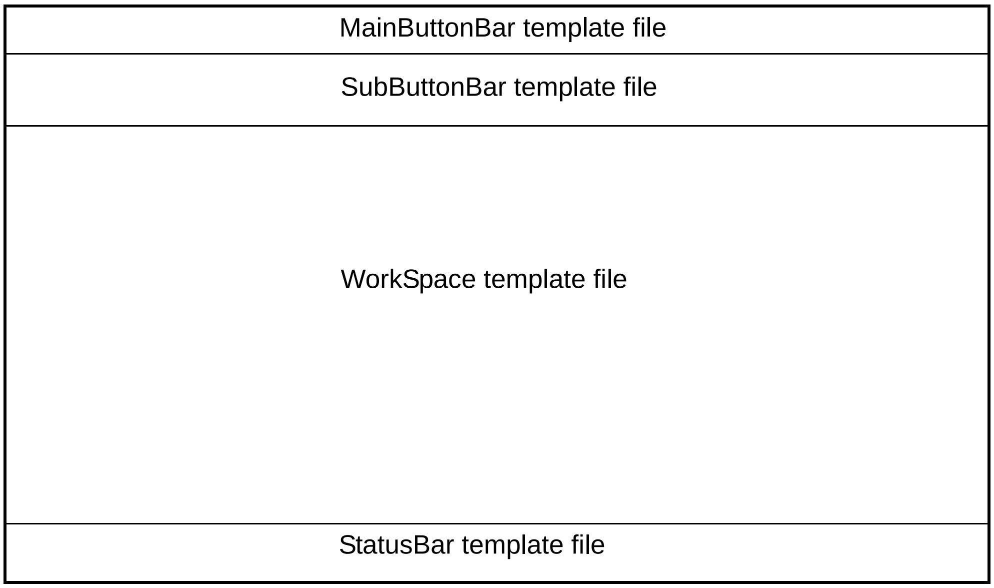
The *web server* enables users to interact with the Telelogic Synergy database through the web browser interface. The web server generates the user interface and manages transactions with the Telelogic Synergy database.

Generating the interface means dynamically displaying the processed HTML pages (also called *forms*) needed to submit new change requests, modify existing change requests, query the database, and select reports. If the user requests information from Telelogic Synergy (such as by performing a query), the web server contacts the database and retrieves the information. If the user changes information on a form (such as by submitting a change request), the web server contacts the database and sends the new or updated information.

HTML Templates

Each Telelogic Change form or report consists of one or more frames, and each frame is generated from an HTML template file.

For example, to generate the main Telelogic Change window, the templates shown in the following figure are required.



Each template file determines the appearance of the form (the colors, position of buttons, labels, and so forth), but not the dynamic content. For example, if you were to open the **Change Request Submission** dialog box's template file (which fills the *WorkSpace* frame in the previous figure), the drop-down list boxes would be empty.

Servlets

Java *servlets* trigger server-side processing. The primary servlets are as follows:

- `PTweb`

  `PTweb` generates the user interface (Telelogic Change forms).

- `PTaction`

  `PTaction` processes commands to and from the Telelogic Synergy database.

Wslets

Configurable data (such as the list of valid selections for a change request attribute) and dynamic data (such as the results of a query) are retrieved from the Telelogic Synergy database using *wslets*: Telelogic-created "web servlets" that trigger Telelogic Synergy server-side processing.

Wslets are set up and called in HTML template files using "hidden" HTML. Hidden HTML is not visible in the browser and is used to set parameters for wslets and perform the wslet calls.

Telelogic Change Config Files

Telelogic Change Configuration files control much of the functionality and appearance of Telelogic Change, and contain information specific to your organization’s Telelogic Change installation, such as product names and product versions. This information is loaded into memory when you start a Telelogic Change session.

CR Process File (XML)

The Change Request Process (CR Process) file is an Extensible Markup Language (XML) file that contains all the information to generate a CR Process package. The tools to create, edit and install this XML file are part of the Telelogic Change Administration GUI.

You must have only one CR Process file installed at a time, for each Telelogic Change installation.

ACL Files (XML)

The ACL files are Extensible Markup Language (XML) files that contain all the information to manage group security. The tools to create, edit and install these XML files are part of the Telelogic Change Administration GUI.

You must have only one ACL file for each type (one for CRs, one for tasks, and one for objects) installed at a time for each Telelogic Change installation.

Telelogic Change Directories

The following pages show the Telelogic Change directory structure and describes its contents:

- Directory Hierarchies (page 221)
- Directory and File Descriptions (page 222)

Note that throughout these pages, the following variables are used:

`cweb_home`

Specifies the parent Telelogic Change installation directory used during product installation (for example, `C:\Program Files\Telelogic Change 5.1` or `/usr/local/tc51`).

`CS_HOME`

Specifies the Telelogic Change installation directory that contains the main Telelogic Change files (for example, `C:\Program Files\Telelogic Change 5.1\cs_app\webapps\synergy` or `/usr/local/tc51/cs_app/webapps/synergy`).

Directory Hierarchies

The *cweb_home* directory hierarchy is as follows:

```
cweb_home\
     cm_update\*
     cs_app\
           bin\*
           ccmauth\*
           cgi-bin\*
           etc\*
           lib\*
           logs\*
           webapps\*
               synergy\*
            win32\*
       UninstallerData\
```

The *CS_HOME* directory hierarchy (*cweb_home*\cs_app\webapps\synergy) is as follows:

```
CS_HOME\
    trapeze\
          help\*
          images\*
          ptimages\*
          wsfiles\*
     WEB-INF\
           bin\*
           cr_process\*
           cs_reports\*
           lib\*
           package_templates\*
           packages\
           perl*
           wsconfig\*
                acl\*
                scripts\*
                system\*
                templates\
                      pt\
                           etc\*
                           forms\*
                           include\*
                           reports\*
                tmpdir\*
                triggers\*
     logs\
          event.log
          audit_log.xml
```

Directory and File Descriptions

The following tables describe the main Telelogic Change subdirectories and files:

- cweb_home Subdirectories and Files (page 222)
- CS_HOME\trapeze Subdirectories (page 223)
- CS_HOME\logs Files (page 223)
- CS_HOME\Web Subdirectories and Files (page 224)

Table: *cweb_home* Subdirectories and Files

Directory	Subdirectories and File(s)	Purpose\Contents
cweb_home\cm_update	*	Files copied to the Telelogic Synergy installation area.
cweb_home\cs_app	*	Telelogic Change and Jetty installation subdirectores.
	bin*	Jetty binaries.
	ccmauth*	Platform-specific OS authentication binary files.
	cgi-bin*	Jetty CGI scripts.
	etc*	Miscellaneous Jetty files.
	lib*	Jetty JAR files.
	logs*	Jetty log files.
	webapps*	Components for Jetty.
	win32*	Jetty Windows files.
cweb_home\UninstallerData	*	Information used to uninstall Telelogic Change and Jetty.

The following table describes the *CS_HOME*`\trapeze` subdirectories and files.

Table: *CS_HOME*\trapeze Subdirectories

Directory	Subdirectories and File(s)	Purpose\Contents
CS_HOME`\trapeze`	`help\admin\*`	HTML help files for the *Admin* role, and `images` and `wwhgifs` subdirectories for graphic files used in the help pages.
	`help\reportbuilder\*`	HTML help files for the *ReportBuilder* role, and `images` and `wwhgifs` subdirectories for graphic files used in the help pages.
	`help\user\*`	HTML help files for the *User* role, and `images` and `wwhgifs` subdirectories for graphic files used in the help pages.
	`images\*`	Common images.
	`ptimages\*`	Images specific to Telelogic Change.
	`wsfiles\*`	Generated pages the web server can reference.

The following table describes the *CS_HOME*`\logs` files.

Table: *CS_HOME*\logs Files

Directory	Subdirectories and File(s)	Purpose\Contents
CS_HOME`\logs`	`event.log`	This log records actions executed by Telelogic Change. It can be accessed from **Home** page > **Logging**.
	`audit_log.xml`	This log shows changes to users, packages that have been installed/ uninstalled, group changes, and changes to ACLs.

The following table describes the *CS_HOME*\Web subdirectories and files.

Table: *CS_HOME*\Web Subdirectories and Files

Directory	Subdirectories and File(s)	Purpose\Contents
CS_HOME\WEB-INF	bin*	Copies of Perl OS authentication and binary files.
	cr_process*	CR Process files (for example, dev_proces.xml).
	cs_reports*	Telelogic Change report XML files.
	lib*	JAR files (XML parsing modules, and so forth).
	package_template*	Package templates for merging with process packages.
	packages*	Available Telelogic Change packages.
	perl	Perl API files.
	wsconfig*	Main Telelogic Change configuration directory.

Table: *CS_HOME*\Web Subdirectories and Files (Continued)

Directory	Subdirectories and File(s)	Purpose\Contents
CS_HOME\WEB-INF\ wsconfig	admin_framework.cfg	Configuration file for the *Admin* role.
	init.cfg	Character encoding.
	local_admin.xml	Local *admin* user information.
	pt.cfg	Main Telelogic Change configuration definitions.
	pt_listbox.cfg	Saved Telelogic Change list box settings.
	report_name.cfg	Configuration file for each report created using the Report Builder.
	synergy_user.xml	Synergy back-end session user information.
	tds_config.xml	TDS connection information.
	template.cfg	Sample Telelogic Change customization configuration file.
	user_framework.cfg	Configuration definitions for the *User* role and any other custom roles.
CS_HOME\WEB-INF\ wsconfig\	acl	Files defining Access Control Lists used in group security settings.
CS_HOME\WEB-INF\ wsconfig\	script*	Scripts used by Telelogic Change group security customization features.
CS_HOME\WEB-INF\ wsconfig\	templates*	Template files.
CS_HOME\WEB-INF\ wsconfig\templates	pt*	Main Telelogic Change template directory.

Table: *CS_HOME*\Web Subdirectories and Files (Continued)

Directory	Subdirectories and File(s)	Purpose\Contents
`CS_HOME\WEB-INF\wsconfig\templates\pt`	`etc\*`	Files defining list box values and stop words for Search.
	`forms\*`	Template files used to generate forms (web pages). Includes templates common to all roles, and subdirectories for specific roles.
	`include\*`	Ready-to-use files to include using the PTInclude wslet. The root directory contains JavaScript files; subdirectories contain attribute control and custom control files, style sheets, and package-specific JavaScript files.
	`reports\*`	Template files used to generate reports.
`CS_HOME\WEB-INF\wsconfig\templates\pt\forms`	`admin_framework\*`	HTML templates unique to the *Admin* role.
	`user_framework\*`	HTML templates unique to the *User* role (or custom roles).
	`name_process\*`	HTML templates for the installed CR Process (for example, `dev_process`). For the shipped processes, **Change Request Information**, **Change Request Submission**, and **Transition** templates are included.

Table: *CS_HOME*\Web Subdirectories and Files (Continued)

Directory	Subdirectories and File(s)	Purpose\Contents
CS_HOME\WEB-INF\wsconfig\templates\pt\include	admin_framework*	Include files unique to the *Admin* role.
	attr_controls*	Attribute "controls" (generic files containing the HTML and JavaScript to display each type of attribute).
	base_templates*	Base templates used to generate auto-generated templates.
	custom_controls*	Custom "controls" (files containing the HTML and JavaScript to display one or more types of attribute as defined by the customizer).
	styles*	HTML style sheets.
	user_framework*	Include files unique to the *User* role (or custom roles).
	*name*_process*	Include files for the installed CR Process (for example, dev_process).
CS_HOME\WEB-INF\wsconfig\templates\pt\reports	user_framework*	Basic report templates that can be used with all lifecycles.

Distributing Customized Lifecycles

Once you have set up and tested your customization, you will want to distribute it to the appropriate users. This can involve installing the lifecycle on another server or deploying it in another location. Use the following Information to ensure all the necessary information is transferred.

If your customization includes changes to attributes, states, transitions, and/or security rules, you need to copy the CR Process XML file. This file is located at:

```
 C:\Program Files\Telelogic Change 5.1\cs_app\webapps\synergy\WEB-INF\cr_process
```

or

```
/usr/local/tc51/cs_app/webapps/synergy/WEB-INF/cr_process
```

If your customization includes custom lifecycle diagrams, listbox values, reports, and trigger scripts, you will need to copy your customized package template. For additional information, see the Change knowledgebase.

Terms and Concepts

Access Control List (ACL)

An *Access Control List (ACL)* is a set of rules that control read and write permissions used in group security.

ad hoc report

An *ad hoc report* is a report where the format is user-defined, that is, the user specifically selects the attributes.

If you choose a format and it shows the Available Attributes or Chosen Attributes listboxes, it is an ad hoc report. Any report with fixed formats, such as those reports in the System folder, is not an ad hoc report.

base template

A *base template* is an HTML template used to generate Telelogic Change dialog boxes visible in any non-*Admin* role.

The base templates are for the **Change Request Information**, **Change Request Submission**, **Transition**, and **Complete Report** dialog boxes.

central CR database

A *central CR database* contains CRs only, which in turn may be associated to tasks in multiple development databases. The central CR database is connected directly to the central server. There can only be one central server and one central CR database in a cluster.

central server

A *central server* stores CRs in the central CR database. Remote development databases and the central CR database can be linked via remote servers. There can be only one central server.

central server mode

The *central server mode* is a topology that consists of a central server, a set of remote servers, and a central CR database. In this setup, CRs are all stored in the same place, the central CR database, rather than being scattered across various databases.

change request

A *change request* is a database object used to track problem or enhancement requests.

change request ID

A *change request ID* is a number or a combination of characters used to identify a specific change request.

Complete Report

A *Complete Report* is a report that shows all change request attributes.

CR Process

A *CR Process* is a model for an organization's change request tracking methodology.

A CR Process can be defined using multiple lifecycles, each of which represents a unique path in the process. A CR Process is implemented by installing a Telelogic-shipped process package (that is, `dev_process.xml`) or by defining the process in the Admin GUI.

CR Process file

A *CR Process file* is an XML file that defines a CR Process and its associated lifecycle(s). For example, the `dev_process.xml` CR Process file defines a sample development process with approvals.

dependent list box

A *dependent list box* contains values that depend on the value of a "parent" attribute. For example, the `product_version` list contains values that depend on the `product_name` attribute value.

development database

A *development database* contains tasks and objects (as opposed to CRs). It may be connected directly to a central server or indirectly through a remote server. If it is connected to a remote server, it is known as a *remote development database*.

file list box

A *file list box* contains values obtained from a file. For example, the `distribution` list values could be obtained from the `distribution_list.txt` file.

format

A *format* defines the layout of the information generated by a query. You must select a format when generating a query or report.

ghost CR

A *ghost CR* is a copy of a central CR that lives in a development database. Ghost CRs are created by Change for all CRs with associated tasks, though only in development databases with those tasks. You do not update ghost CRs directly.

A user-selectable set of attributes is kept in sync with the actual CR in the central database. Only task relationships are maintained on ghost CRs, not attachment or CR-to-CR relationships. Ghost CRs exist for CR-based update operations and are used in advanced CLI queries.

group security

Group security is a feature that controls read and write access to change requests, objects, and tasks based on a user's group membership.

lifecycle

A *lifecycle* is a set of rules that govern how users can modify and transition change requests. For example, the lifecycle controls how Telelogic Change moves a change request from one state to the next, such as from the *entered* state to the *completed* state.

local admin user

The *local admin user* is a special Telelogic Change user account defined during installation. It replaces the *ChangeAdmin* user from previous releases. Unlike regular user accounts, the local admin user is authenticated by Telelogic Change directly (rather than by TDS) and is used to perform certain background activities.

metric operations

Metric operations are computations performed with attribute values. For example, the `Average` metric operation averages the values of the selected attribute for all items in a selection set (page 234).

Metric operations are used only on custom reports.

metrics

Metrics are the results of metric operations (page 232). Metrics are the computed values that appear on reports.

Package

A *package* is a set of files that change the look and/or behavior of Telelogic Change. A Package can contain something as simple as a new report format or as complex as a CR Process file.

Process Packages include a CR Process file. Because you can use only one Telelogic Change process at a time, you can install only one process package. Before installing a new process package, you must uninstall any existing process package.

Non-process packages can include a patch, the templates and configuration files for a Telelogic Change interface, or other customizations.

Before using Telelogic Change for the first time, you must set up the lifecycle and interface by installing a process package. For more information, see the Welcome pages.

package template

A *package template* is a directory containing one or more files that supplement the CR Process XML file.

A package template file can contain a CR Process graphic, list box definitions, custom Web Types, or other customizations that are not stored in the CR Process XML file. You must “merge” package templates with the CR Process XML file when you create a new process package.

For the package template directory to be listed for package creation, the directory must have been created previously in the package template directory.

privilege

A *privilege* is a Telelogic Synergy role.

process

A *process* is a set of lifecycles.

prompting query

A *prompting query* is a flexible query that asks you for values before it is executed. This allows you to easily modify the query each time you run it.

query

A *query* defines the content of a report. You must select a format when generating a query or report.

relation report

A *relation report* shows each report item’s associated CRs, tasks, or objects. For example, if a CR has associated tasks, a relation report can show the task information following the CR information.

To include a relation report on a report, you must define it using the Report Builder.

For more information about relation reports, see Build a Relation Report (page 55).

remote server

A *remote server* is a proxy between the central server and the remote development databases. Multiple remote servers may be associated with the central server.

report

A *report* comprises two parts: a query that defines the contents of the report, and a format that defines how the information is presented. When you save a query and an associated format, a report is created and saved in your Personal folder.

role

A *role*, or *login role* (for example, *User)* determines which interface you see when you start Telelogic Change.

In the CR Process editor, *role* also refers to a back-end Telelogic Synergy Classic privilege, such as *assigner*, which is defined in the database and enables users to update attributes and transition CRs.

selection set

A s*election set* is a group of CRs, tasks, or objects used to perform a Telelogic Change operation. You can create the set manually such as by multi-selecting CRs for a bulk transition, or by performing a query.

simple list box

A *simple list box* contains values that are independent of the values of other attributes. For example, the `request_type` list contains values that are independent of other attribute values such as `product_name`.

stand-alone server

A *stand-alone server* stores CRs in various development databases.

Standard Lifecycle

The *Standard Lifecycle* is the default lifecycle provided with a shipped CR Process file (for example, `dev_process.xml`).

In the Standard Lifecycle, a change request begins in the *entered* state and ends in the *concluded* state. For more information, see Standard Lifecycles and States (page 4).

subreport

A *subreport* is created by running a small report on each item in a report. A subreport can report on CRs, tasks, or objects and can have its own query.

subscription

A *subscription* to a change request allows you to stay current about any activities related to the change request. When you subscribe to a change request, you are automatically notified by e-mail of any modifications to a change request.

Telelogic Change

Telelogic Change is a generic change request management system that is web-based and integrated with Telelogic Synergy.

subreport

A *subreport* is created by running a small report on each item in a report. A subreport can report on CRs, tasks, or objects and can have its own query.

task

A *task* is a to-do list item that is assigned to a user. A task also tracks the files that were modified to complete it. You can associate one or more tasks with a change request.

XML

XML is the Extensible Markup Language used by Telelogic Change to define change request processes.

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