Teamcenter Express Collaborative Product Data Management (cPDM)

Self-Paced Training
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To complete this course successfully,
you must first read the section, How to use this course.

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Proprietary and restricted rights notice

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Course overview

Teamcenter Express Collaborative Product Data Management (cPDM) teaches end users how to use Teamcenter ® Express to create, revise, and manage data in the context of their everyday tasks and processes.

Course objectives

- Create and manage Teamcenter Express data.
- Effectively use the Teamcenter Express rich client interface.
- Create and use various types of database objects.
- Differentiate between work-in-process and released data.
- Use preconfigured electronic workflows to increase the efficiency of everyday processes.
- Monitor the release process before and after your involvement.
- Propose, control, and approve product data changes.

Key benefits

The key benefits of this course include:

- Increase productivity by learning through realistic projects.
- Hands-on work sessions to practice using Teamcenter Express.
- Demonstrations of best practices for implementing and using Teamcenter Express.

Prerequisites

None

Audience

Anyone responsible for consuming, reviewing, and authoring Teamcenter Express data. The course features the Teamcenter Express rich client interface. Teamcenter Express has preconfigured roles that correlate to the user tasks in the application: consumer, reviewer, and author, respectively. You learn more about roles in *Group and role settings*, in *Lesson 2, Getting started with Teamcenter Express rich client*.

Accessing Teamcenter Express online help

The *Teamcenter Express Help Library* covers functionality from end-user tasks to customization instructions.

To access the *Teamcenter Express Help Library*:

- In the rich client, choose **Help→Help→Help Library** or press the F2 key.

  Tip

  If your browser does not display the table of contents, click the message under the **Address** box and choose **Allow Blocked Content**.

- In the thin client, choose **Help→Web Collection** to access the thin client help or choose **Help→General Collection** to access the full library.

To access help for the current application:

- In the rich client, choose **Help→Help→Current Application** or press the F1 key.

  Note

  You cannot access application-specific help in the thin client.

  Tip

  If your browser does not display the table of contents, click the message under the **Address** box and choose **Allow Blocked Content**.

What is cPDM?

Collaborative Product Data Management (cPDM) is a tool that helps manage all the processes, applications, and information required to design, manufacture, and support a product throughout its life cycle.

The goal of a cPDM system is to provide a single, common interface for managing and accessing all data within an organization.

Collaborative product data management benefits

Collaborative Product Data Management (cPDM) helps you:

- Maintain a single source of design data, which reduces errors and rework.
- Produce accurate bills of materials.
- Streamline and simplify the management of everyday tasks for design-through-manufacturing.
- Increase design commonality and reuse by using the powerful and flexible search capability.
- Reduce errors through more effective collaboration and the elimination of mistake-prone manual handoffs with manufacturing.
- Manage data from multiple CAD systems in a single, integrated environment.
- Transition more successfully from 2D CAD to 3D CAD.
- Secure corporate design data while facilitating access by authorized personnel.

What is Teamcenter Express?

Teamcenter Express is an easy-to-use, preconfigured, collaborative Product Data Management (cPDM) solution designed to meet the requirements of mid-sized manufacturing companies. Teamcenter Express is designed to apply preconfigured best practices to everyday engineering tasks and processes of the following organizations:

- Small to mid-sized manufacturing companies
- Well-defined departmental workgroups
- Suppliers to OEMs and other product manufacturers

This course helps you become familiar with the commonly used capabilities of Teamcenter Express. You learn how to enhance the tasks and processes you work with every day.

How to use this course

Each lesson contains sections that explain key concepts followed by an activity to allow you to practice the concepts.

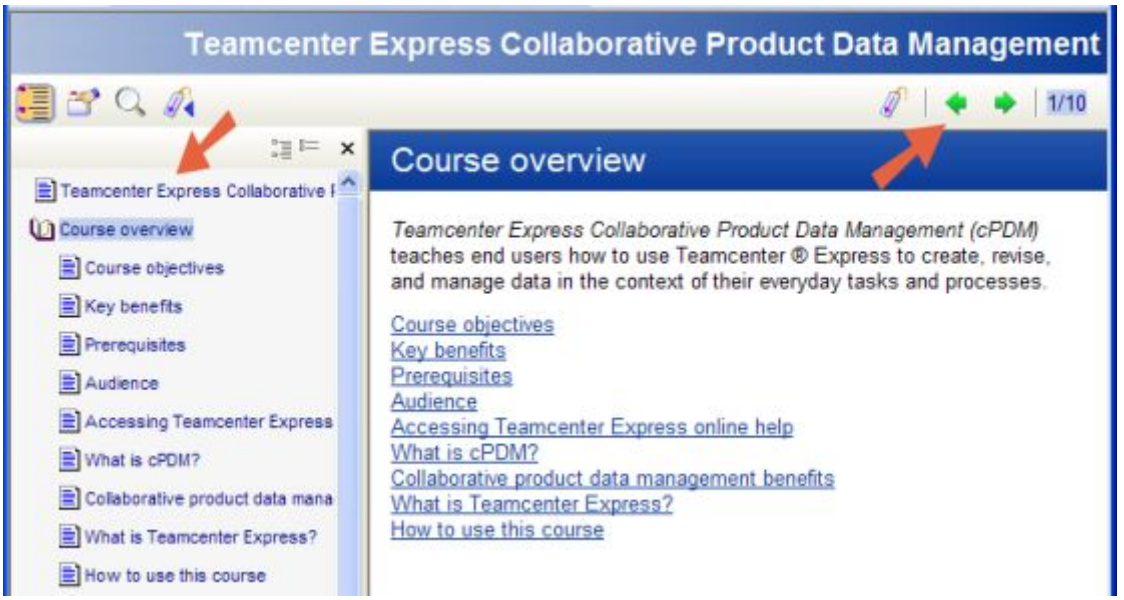
The format of the activities is consistent throughout this course. Steps are labeled and specify what you should accomplish at any point in the activity. Below each step are action boxes that emphasize the individual actions that you must take to accomplish the step.

Activities are in the form of interactive simulations. You work in the simulations just as you would work in Teamcenter Express.

> **Note**
>
> To view the interactive simulations, use Adobe Flash Player, which you can download free-of-charge from Adobe Systems Incorporated at the following URL: http://www.adobe.com.

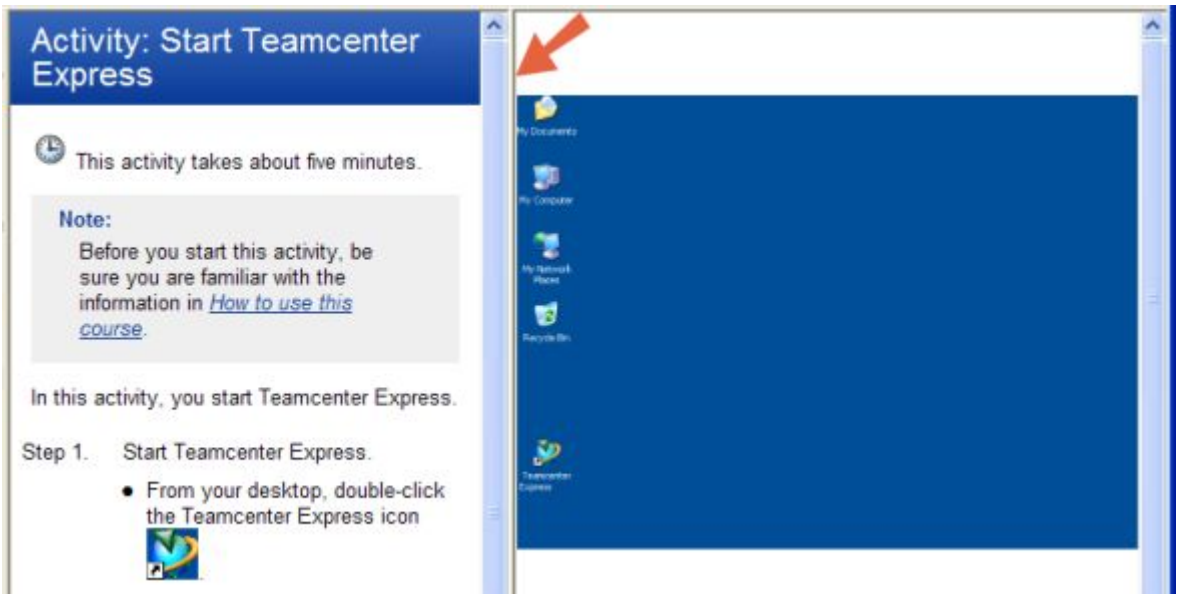
When working in the simulations, note the following:

- To navigate through the course, use the links in the table of contents (left), or the green arrows (right).



- When you launch an activity, your browser displays three frames. To better view the simulation, close the frame on the left, the contents frame. To close the frame, click the **x** located just above the contents frame. To display the contents frame again, click the **Contents** button  .

- To increase or decrease the width of any of the frames, drag the bar separating the frames.



- Because you cannot right-click in the interactive simulations, the system displays a mouse and you must click the right mouse button to proceed.

- You must type values exactly as shown, because the system is case sensitive. If you type an incorrect value, the system displays an error message and prompts you to reenter the value.

- If you lose your place, and you want the system to prompt you about what you should do next, click anywhere on the screen.

Lesson

1 Introducing Teamcenter Express

Purpose

The purpose of this lesson is to introduce you to the Teamcenter Express interfaces.

Objective

After you complete this lesson, you should be able to:

- Understand the Teamcenter Express rich client and thin client uses.
- Start a Teamcenter Express rich client and thin client session.
- Be familiar with the Teamcenter Express rich client and thin client interfaces.

Help topics

Additional information for this lesson can be found in:

- *Getting Started With Teamcenter Express*
- *Rich Client Interface Guide*
- *DHTML Thin Client Help*

Teamcenter Express user interfaces

Teamcenter Express user interfaces include the rich client interface and the thin client interface.

- The rich client interface is used by authors who are responsible for the design and configuration of product data, manufacturing authors who are responsible for creating and maintaining processes and process structures, administrators responsible for configuring and maintaining Teamcenter Express, and other users who require extensive authoring access to data stored in the Teamcenter Express database.

- The lightweight thin client interface is used by consumers, manufacturing consumers, and reviewers who need to view data, including product structure, approve data attached to a workflow task, or view 2D drawings and 3D models. The thin client interface is ideal for suppliers, production staff, and other users who do not require extensive authoring or administrative access to Teamcenter Express.

Rich client interface

The Teamcenter Express rich client is a Java application that runs on client hosts and serves as a gateway to your company's product information. You can integrate and run Teamcenter Express' product data management applications along with other applications, such as Microsoft Office applications, custom applications, Java Plug-ins, or CAD/CAM/CAE applications, all from a common platform. The rich client accesses Teamcenter Express databases using a remote or local server.

To start a Teamcenter Express rich client session, do *one* of the following:

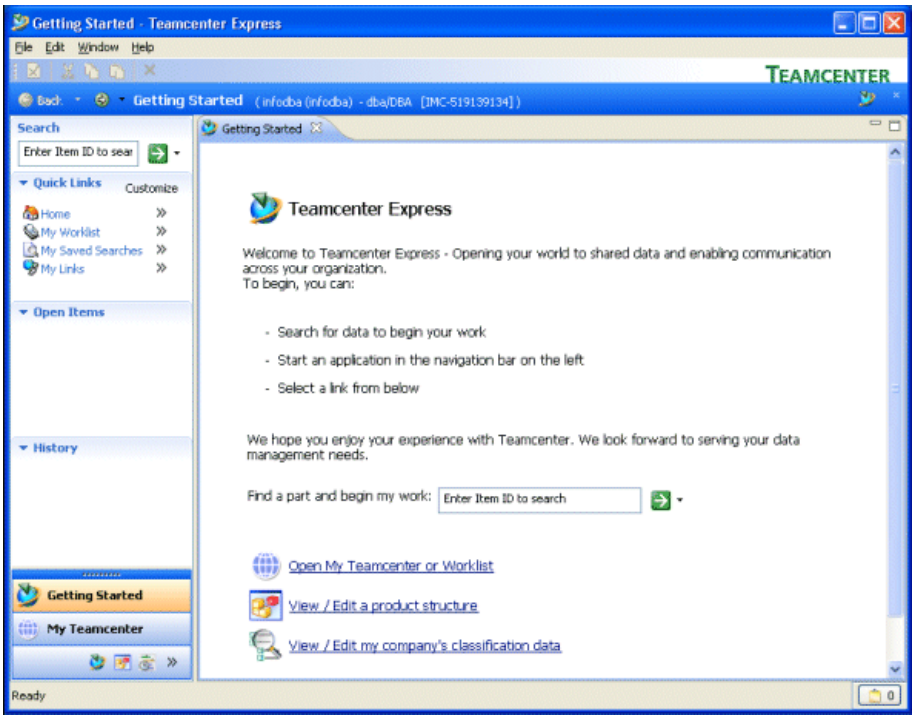
- Choose **Start→Programs→Teamcenter Express V5→Teamcenter Express V5**.

- Double-click the Teamcenter Express shortcut  on your desktop.

  Tip

  If you do not have a Teamcenter Express shortcut, choose **Start→Programs→Teamcenter Express V5**, right-click **Teamcenter Express V5**, and choose **Send To→Desktop**.

The system displays the Getting Started window.



The area on the left side of the Getting Started window is called the navigation pane. It provides quick access to the data you use most.

The following are some of the actions you can perform from the Getting Started window:

- Search for any item in Teamcenter Express.
- Access other Teamcenter Express applications.
- View or edit a product structure or bill of materials (BOM).
- Open your worklist.

Thin client interface

The Teamcenter Express thin client provides an access point to your data over the Web using a Web browser configured to use the Sun Java runtime environment. Thin client access is available to the same Teamcenter Express server and data as the rich client uses; no thin client software is required on a Teamcenter Express client.

The following are some of the advantages of the thin client:

- Brings product-related data to the desktop
- Simplifies distribution, maintenance, and upgrade-related issues
- Increases the interaction of data consumers, casual users, and remote users
- A full install of Teamcenter Express is not required

In this training, you use Internet Explorer as your Web browser.

Tip

As with other frequently visited Web sites, you may find it helpful to create a bookmark (Favorites) to the Login page.

To start a Teamcenter Express thin client session:

1. In the Web browser **Address** box, type the address of the Teamcenter Express application server in the following format: *http://machine_name:port_number/application_name/webclient*

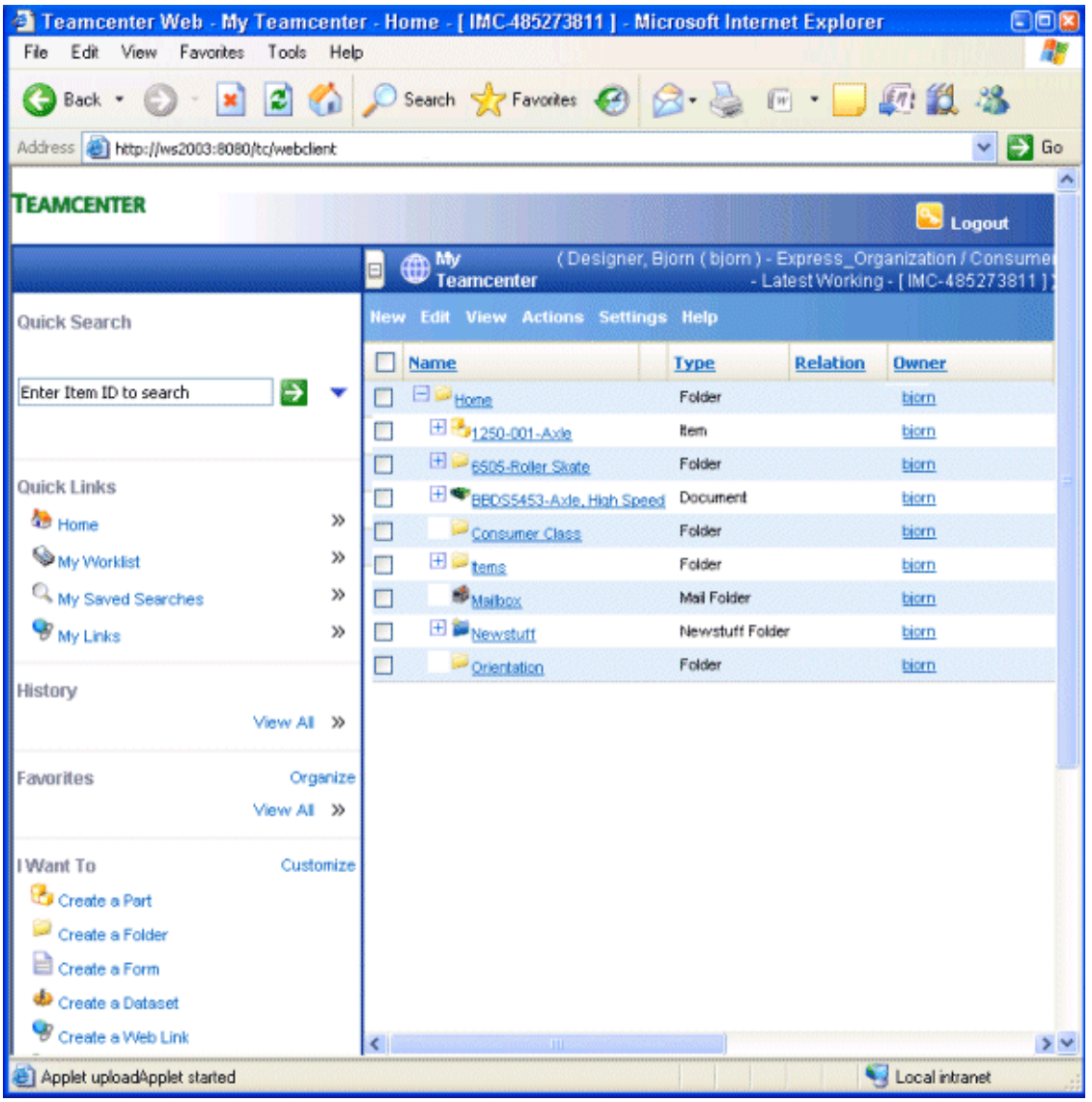
   machine_name is the network name of the system on which the Web server is running, *port_number* is the port on which it is configured to listen for requests, and *application_name* is the deployed application name (default is tc). For example: *http://tcx3train:8080/tc/webclient*.

   The system displays the **Teamcenter Login** page.

2. Type your user name and password.

3. Click **Login**.

The system opens the **Home** folder in My Teamcenter.



The area on the left side is called the navigation pane. It provides quick access to the data you use most.

The following are some of the actions you can perform from the thin client window:

- Search for any item in Teamcenter Express.
- Access other Teamcenter Express applications.
- Open your worklist (previously called the inbox).

Summary

In this lesson, you learned:

- Teamcenter Express has two user interfaces: the rich client interface and the thin client interface.
- How to start a rich client and a thin client session.

Lesson

2 Getting started with Teamcenter Express rich client

Purpose

The purpose of this lesson is to show you the basics of using the Teamcenter Express rich client interface and help you become familiar with the components of the My Teamcenter window.

Objective

After you complete this lesson, you should be able to:

- Start and exit Teamcenter Express.
- Select applications.
- Identify the components of the My Teamcenter window.
- Open the Getting Started window.
- View and change group and role settings.
- Modify details columns.
- Access the online help.
- Work with folders.
- Perform general database searches and reference database objects.
- Use the cut, paste, and append functionality.

Help topics

Additional information for this lesson can be found in:

- *Getting Started With Teamcenter Express*
- *Rich Client Interface Guide*
- *Structure Manager Guide*

Teamcenter rich client perspectives and views

Within the Teamcenter rich client user interface, functionality is provided in *perspectives* and *views*. Use perspectives and views to rearrange how the functionality is presented.

Perspectives Are containers for a set of views and editors that exist within the perspective.

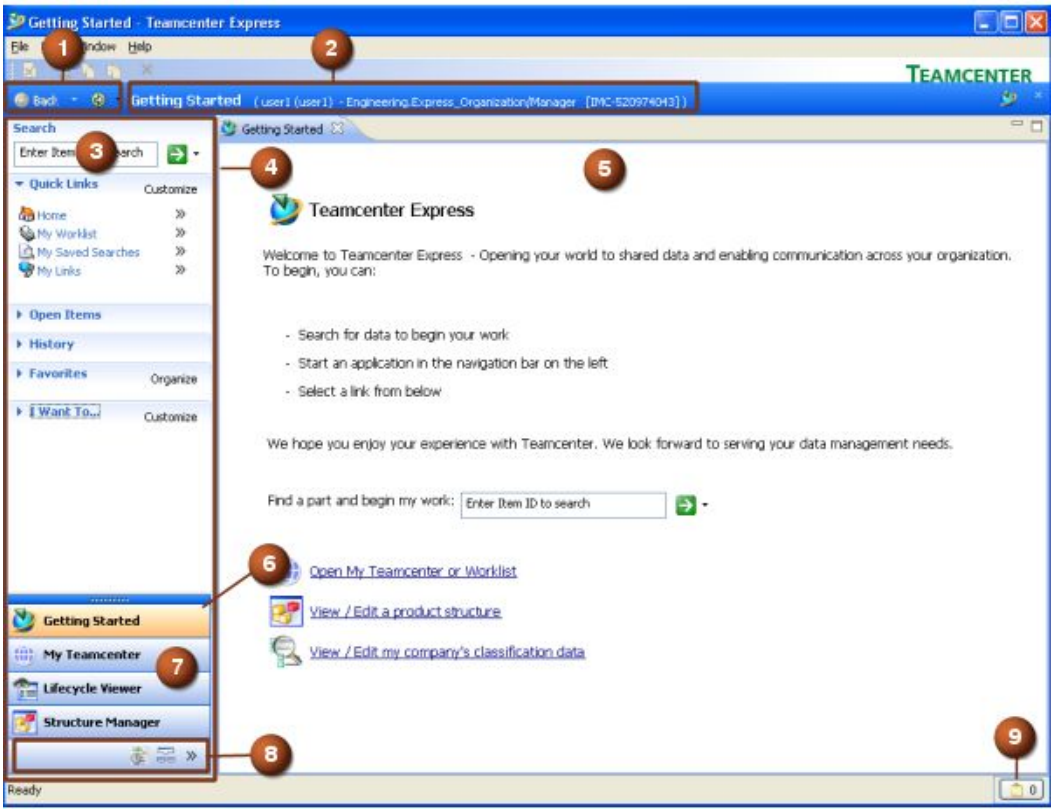
- A perspective exists in a window along with any number of other perspectives, but only one perspective can be displayed at a time.
- You can add and rearrange views to display multiple sets of information simultaneously within a perspective.
- You can save a rearranged perspective with the current name, or create a new perspective by saving the new arrangement of views with a new name.

Views Enable you to navigate a hierarchy of information, display information about selected objects, open an editor, or display properties.

- Views that work with related information typically react to selection changes in other views.
- Changes to data made in a view can be saved immediately.
- Any view can be opened in any perspective, and any combination of views can be saved in a current perspective or in a new perspective.

Rich client interface

The rich client interface has a standard menu bar and toolbar with options that vary depending on the currently active application perspective. You can place the cursor over a rich client toolbar button to display a tool tip description.



1	**Back** and **Forward**	The **Back** and **Forward** buttons allow you to move between loaded Teamcenter applications. The small arrows next to the buttons let you select from the list of currently loaded applications.
2	Application banner	The application banner shows the name of the active application and lists the current user and role. You can double-click the user and role to display the **User Settings** dialog box in which you can change your current role if multiple roles are available to your user.
3	**Search** box	The **Search** box provides predefined quick searches using dataset, item ID, item name, keyword search, and advanced search features.

4	Navigation pane	The navigation pane provides quick access to the data you use most. In addition to finding, organizing, and accessing your data, you can configure the display of the Teamcenter perspective buttons in the navigation pane to display only those perspectives that you use regularly to perform your tasks.
5	Application pane	The application pane displays the application perspectives that are open in your Teamcenter session. By default, the Getting Started application perspective displays a single **Getting Started** view. **Note** Application perspectives are composed of views that can be moved elsewhere in the Teamcenter window, or can be dragged out to the desktop. Such detached views remain connected to Teamcenter and continue to function in concert with other views.
6	**Getting Started** application button	Provides access to the Getting Started application.
7	Primary applications	Primary application buttons provide access to your most frequently used Teamcenter application perspectives.
8	Secondary applications	Secondary application buttons provide access to Teamcenter application perspectives you use infrequently.

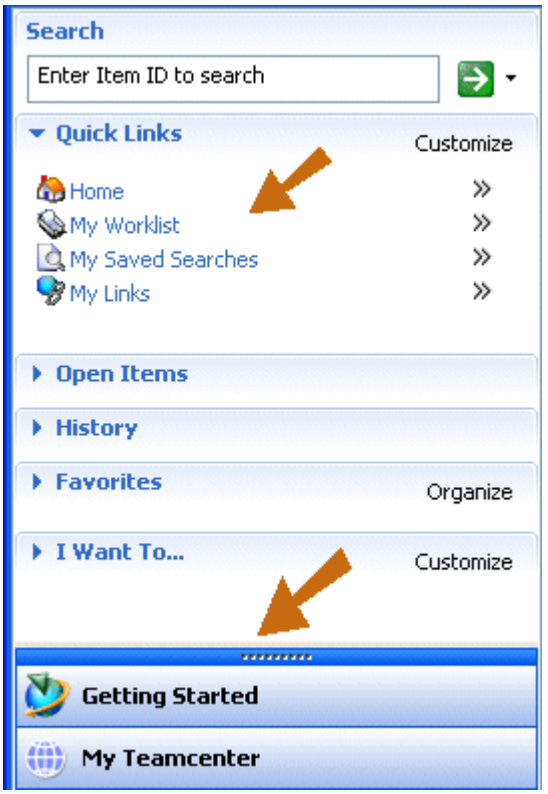
9	Clipboard	The clipboard contains references to objects that have been cut or copied from your workspace. The number of objects on the clipboard is displayed to the right of the icon.

Note

When you select an information object, such as an item, in a Teamcenter rich client application, information about the selected object is shown in the information center. The information center is located at the bottom of theTeamcenter window, to the left of the clipboard.

Start Teamcenter Express rich client

1. From the **Quick Links** section of the navigation pane, click any of the links or click any of the tabs at the bottom of the navigation pane.



   The system displays the logon dialog box.

2. Fill in all required boxes, which are indicated by red asterisks.

3. Select the database to which you want to connect in this session.

4. Click **Login**.

Key points

The following are key points on starting Teamcenter Express rich client interface and applications:

- The rich client interface is a stand-alone program, which allows you to launch the interface without logging on.
- When you initially start Teamcenter Express, no applications are selected.
- When you select an application, you are prompted to log on.
- As you select applications, the system loads applications into memory.

Activity: Start Teamcenter Express

This activity takes about five minutes.

Note

Before you start this activity, be sure you are familiar with the information in *How to use this course*.

In this activity, you start Teamcenter Express.

Step 1: Start Teamcenter Express.

☐ From your desktop, double-click the Teamcenter Express icon  .

The system displays the Getting Started window.

Step 2: Log on to Teamcenter Express.

☐ From the **Quick Links** section in the navigation pane, click Home (top left).

The system displays the **Login** dialog box.

Step 3: Type your user ID and password (**bjorn/bjorn**).

☐ In the **Login** dialog box, type your user ID and password (**bjorn/bjorn**) and click **Login**.

Note

You must type values exactly as shown, because the system is case sensitive. If you type an incorrect value, the system displays an error message and prompts you to reenter the value.

The system displays the My Teamcenter window and the **Home** folder for Bjorn.

Step 4: Close the navigation pane.

☐ Choose **Window→Navigation Pane**.

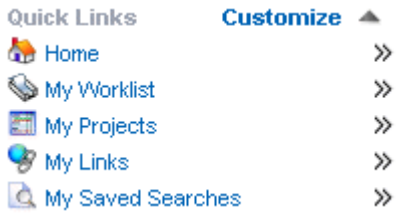
The system closes the navigation pane.

This concludes the activity.

Select applications

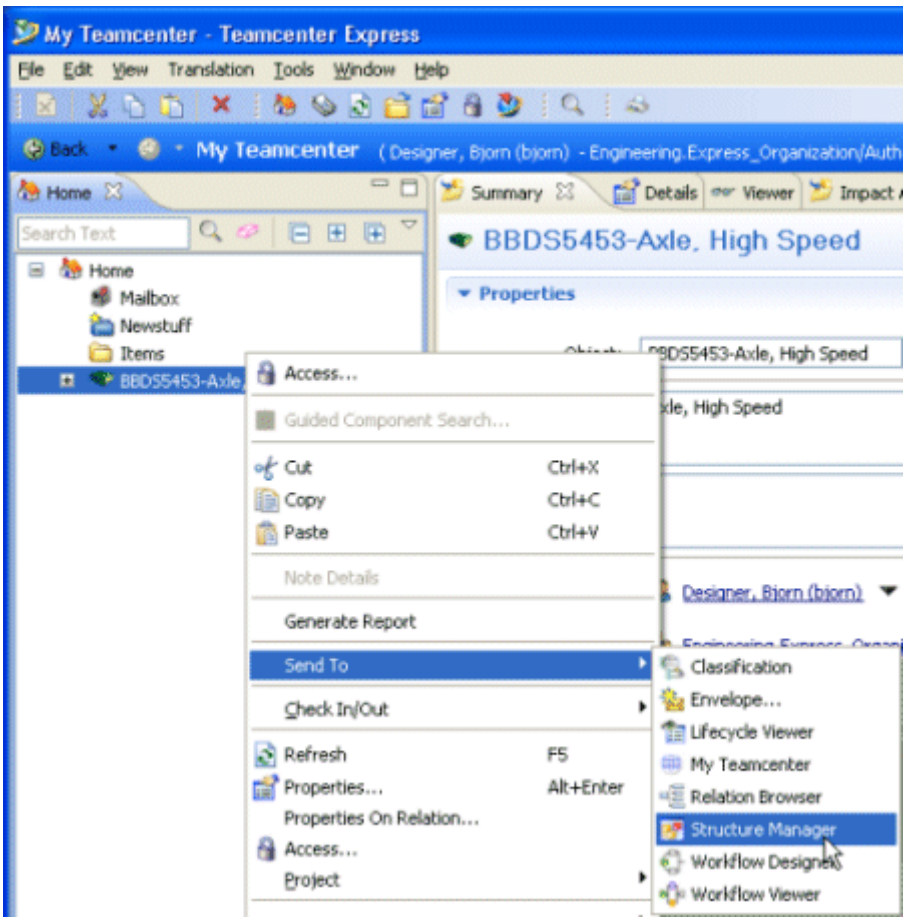
To start applications in the rich client, do *one* of the following:

- From the **Quick Links** area, click the button of the application you want to launch.



- Use the **Send To** menu command.

  For example, to launch Structure Manager, select an item or item revision object and choose **Send To→Structure Manager**.



Group and role settings

Your system administrator has set up your account. The account consists of the following:

- **Person**

  Your actual name.

- **User Name**

  Your Teamcenter Express account name.

- **Group**

  Teamcenter Express preconfigured groups during the installation process. The preconfigured groups are as follows:

  – **Express_Organization** includes all users within the company.

  – **Engineering.Express_Organization** includes all users with engineering responsibility.

  – **Management.Express_Organization** includes all users with management responsibility.

  A user may be in multiple groups. One group is designated as your default group.

- **Role**

  Inside a group, you (as a user) can perform multiple roles.

Take, for example, the person Bill Manager. His user name is **bill**, and he is in two groups:

- **Engineering** (default group). Inside this group, Bill performs the **Author** role, meaning that he has the capability to create and edit data.

- **Management**. Inside this group, Bill performs the **Manager** role, which gives him the capability to review, approve, and/or reject work submitted for approval.

The My Teamcenter window frame displays the user name, group, and role for the logged-on user:

Note

Clicking the window frame displays the **User Settings** dialog box, where you can change your group, role, and other user information.

Why have users, groups, and roles?

Using different groups and roles allows you to:

- Manage data access privileges (read, write, and delete).
- Define and control review/approve processes.
- Improve communication by providing information about users, such as phone numbers and e-mail addresses.
- Organize data according to which group created it.

View user, group, and role information

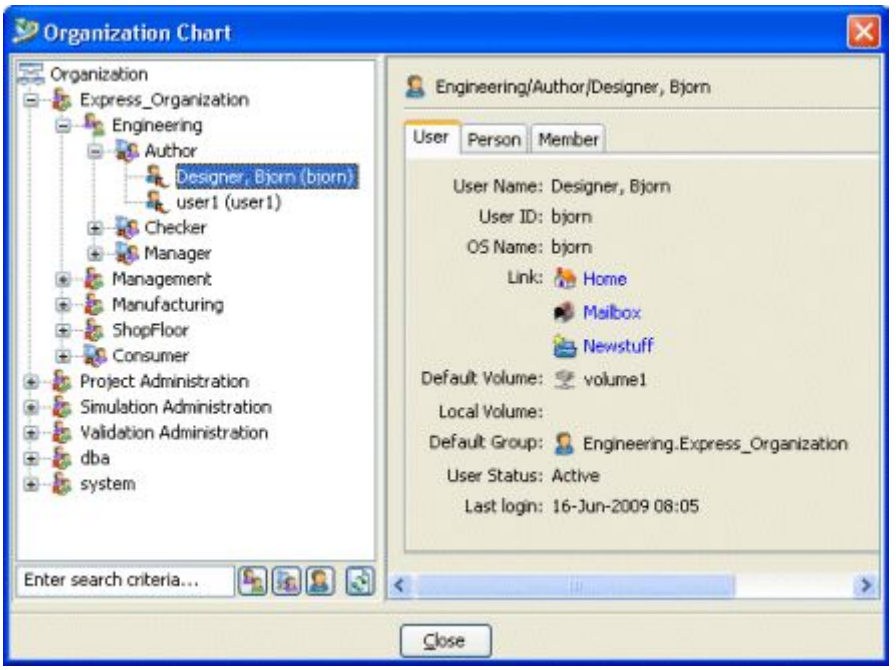
Teamcenter Express displays user, group, and role information in the Organization Chart.

Note

Only a user with administrator privileges can make changes to the Organization Chart.

1. Choose **View→Organization**.

2. To expand the groups and roles, click the **+** button or double-click the group or role names.



3. To search for users, groups, or roles, use the buttons at the bottom of the Organization Chart.

Verify/change your group and role settings

Changing your group or role may require you to find or access data in the system. Typically, you work from your default group and your data is created with that group.

1. Choose **Edit→User Setting** or, from the window frame, click the user information display:

   The system displays the **User Settings** dialog box.

2. From the lists, select a group and role.

3. Click **OK**.

   The system updates your group and role settings.

Activity: Learn about My Teamcenter

This activity takes about 15 minutes.

Note

Before you start this activity, be sure you are familiar with the information in *How to use this course*.

In this activity, you familiarize yourself with My Teamcenter.

Step 1: Learn about your **Newstuff** folder.

☐ Select the **Newstuff** folder and click the **Open** button.

The system displays details about the **Newstuff** folder in the application pane. There is nothing in your **Newstuff** folder.

☐ From the toolbar, click the **Inbox** button.

The system displays the contents of your inbox.

☐ From the toolbar, click the **Home** button.

Note

The **Newstuff** folder is still selected.

☐ Verify your access to the **Newstuff** folder by looking at the Information Center (bottom right corner of My Teamcenter).

Note

The Information Center displays the protections at a glance.

- ☐ On the toolbar, click the **Copy** button  .
- ☐ To view the clipboard contents, click the **Clipboard** button  .
- ☐ Click the **Clear clipboard contents** button  .
- ☐ Click **Close**.
- ☐ Close My Teamcenter by clicking the **x** on the right side of the window title bar.

Step 2: Return to your **Home** folder.

- ☐ Click the **Open My Teamcenter or Worklist** link.

Step 3: View your group and role setting.

- ☐ Choose **Edit→User Setting**.
- ☐ Verify your group and role settings but do not change them.
- ☐ Click **Cancel**.

This concludes the activity.

Modifying properties columns in My Teamcenter

You can modify the properties columns in My Teamcenter by:

- Sorting columns.
- Changing the column width.
- Removing/inserting columns.
- Clicking a column header and dragging it to a new location.

You can also sort the rows in the **Details** view by column contents and print the contents of the **Details** view in table format.

Tip

It is good practice to leave the **Object** and **Type** columns as the first and second columns in the **Details** view.

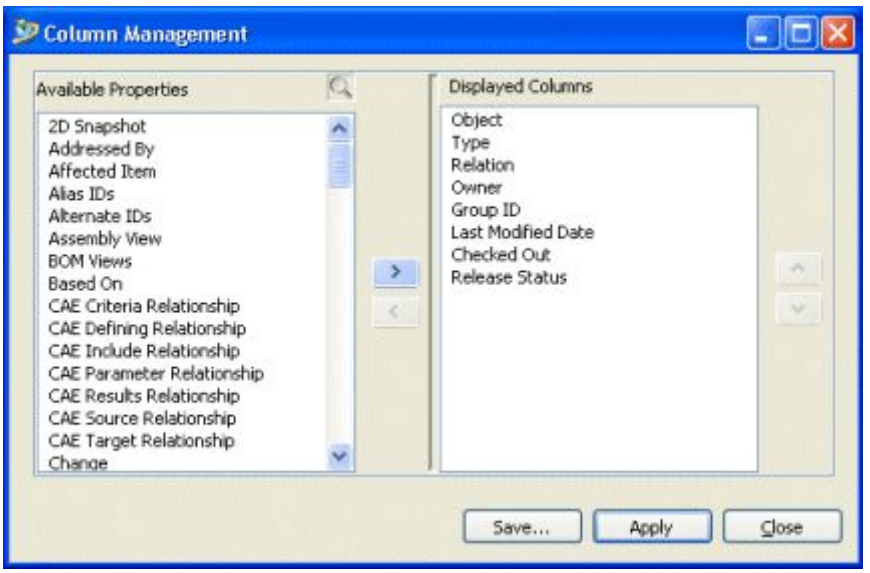
Also, display only the column options you view/change frequently. The more columns you display, the longer it takes to expand the folders and items.

Add columns to the Details view

1. In the upper right corner of the **Details** view, click the **Menu** button .

2. Choose **Column**.

   The system displays the **Column Management** dialog box.



3. In the **Available Properties** list, select attributes and then click the **Right** arrow button.

4. Set the display order of the columns using the **Up** and **Down** arrow buttons.

5. Click **Apply** to insert the columns into the current view.

6. Click **Cancel** to close the dialog box.

   The system dismisses the dialog box and displays the columns you selected.

Activity: Modify properties columns

 This activity takes about five minutes.

In this activity, you modify the properties columns in My Teamcenter.

Step 1: Add columns for **Date Released** and **Description** next to the **Release Status** column.

☐ Click the **Menu** button  and choose **Column**.

The system displays the **Column Management** dialog box.

☐ Hold down the Ctrl key and select **Date Released** and **Description**.

☐ Click  .

☐ Click **Apply**.

☐ Click **Close**.

The system displays the **Date Released** and **Description** columns in the **Details** view.

This concludes the activity.

Working with folders

Folders are used in Teamcenter Express to organize data. This is a typical folder symbol in Teamcenter Express:  .

Key points

The following are key points about folders:

- Folders can be used as a tool to organize both company-wide and individual user data.
- Your company may create a visual method of organizing data using folders.
- Any number of folders can reference the same data.
- Folders can be nested to practically any extent desired.
- A folder in Teamcenter Express is *not* the same as a directory in the operating system.

Home, Newstuff, and Mailbox folders

The system automatically creates three folders, and you cannot move or delete them.

My Teamcenter always contains the default folders:

- **Home folder**

  All objects you want to access with My Teamcenter are placed within your **Home** folder or within some folder structure beneath the **Home** folder.

- **Mailbox folder**

  Is the receiving point for any Teamcenter Express mail sent to you. When you receive new Teamcenter Express mail, you see an envelope display next to the clipboard. After expanding your mailbox and reviewing your messages, the envelope indicator disappears.

- **Newstuff folder**

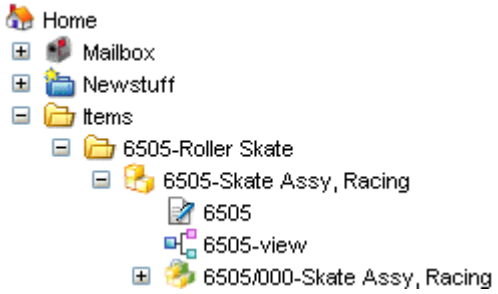
  Is the default folder for newly created database objects. You can designate other folders as the default location for newly created database objects.

Folder object behavior

The folder symbol toggles between a closed and open state.

To expand or collapse a folder, do *one* of the following:

- Click the **+** or **–** button next to the folder symbol.



- Double-click the folder symbol.

Create folders

Folders are a flexible way to organize your product information. A folder can contain other objects and/or other folders.

1. Choose **File→New→Folder**.

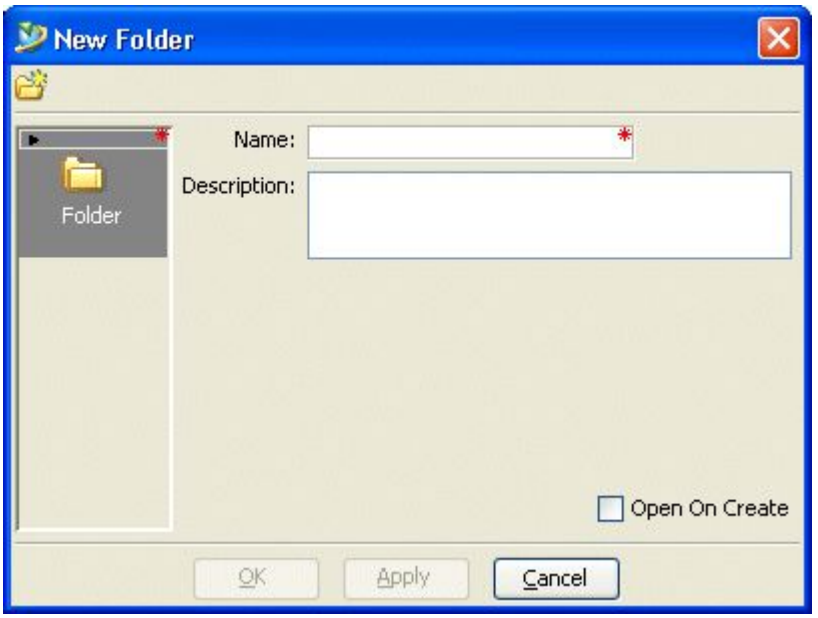
   Tip

   You can also use the Ctrl-f key combination to access the **New Folder** dialog box.

   The system displays the **New Folder** dialog box.

   Note

   Red asterisks indicate required boxes.



2. In the **Name** box, type a name for your folder. This box has a limit of 32 ASCII characters.

3. (Optional) In the **Description** box, type a description. This box has a limit of 240 characters.

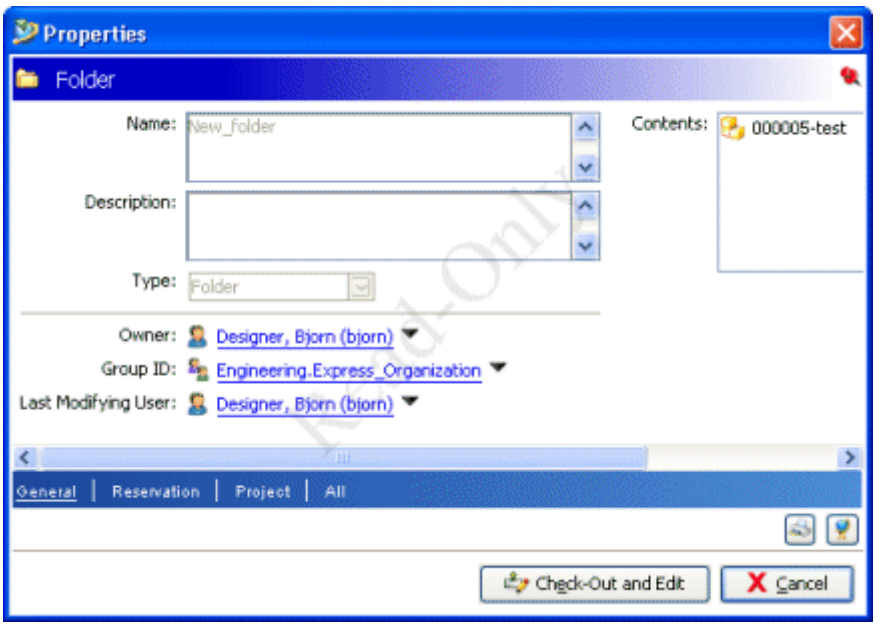
4. Click **OK**.

Rename folders

You can change the name of the folder you create, as needed.

1. Select the folder you want to rename.
2. Choose **View→Properties** or right-click and choose **Properties**.

   The system displays the **Properties** dialog box for the selected folder.



3. Click the **Check-Out and Edit** button.

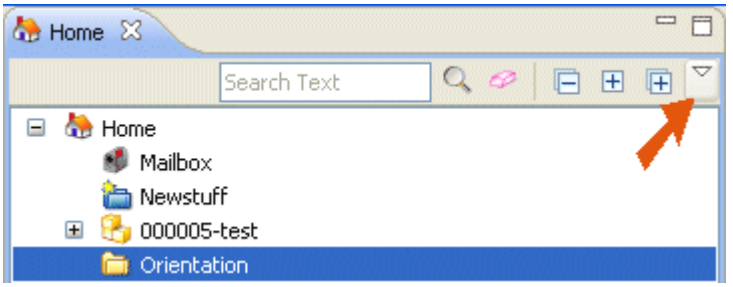
   The system displays a confirmation dialog box.
4. Click **Yes**.
5. In the **Name** box, type a new name.
6. (Optional) In the **Description** box, change or add text.
7. To save the changes, click **Save**.
8. To check in the folder, click **Check-In**.

   The system displays a confirmation dialog box.
9. Click **Yes**.

Move folders

Reorder the folders in your **Home** folder structure by moving them up or down.

1. Select a folder.
2. In the upper right corner, click the **Menu** button .



3. Choose **Move→Up/Down**.

   The system moves the folder up or down one level, as you specified.

Reorder the folders in your **Home** folder structure by moving them to the top or bottom.

1. Select a folder.
2. In the upper right corner, click the **Menu** button .
3. Choose **Move→Top/Bottom**.

   The system moves the folder to the top or bottom of the folder structure, as you specified.

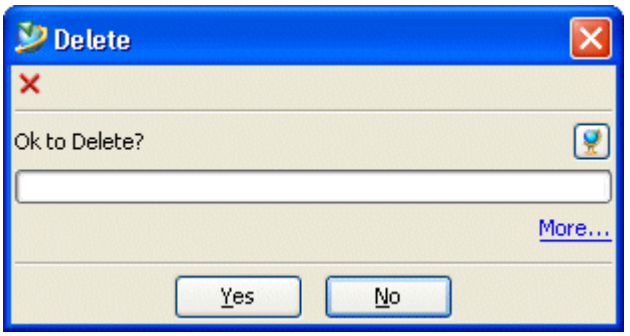
Delete folders

When deleting a folder, the contents of the folder are *not* deleted. The folder contents remain in the database and you can locate and retrieve them using the search feature in My Teamcenter.

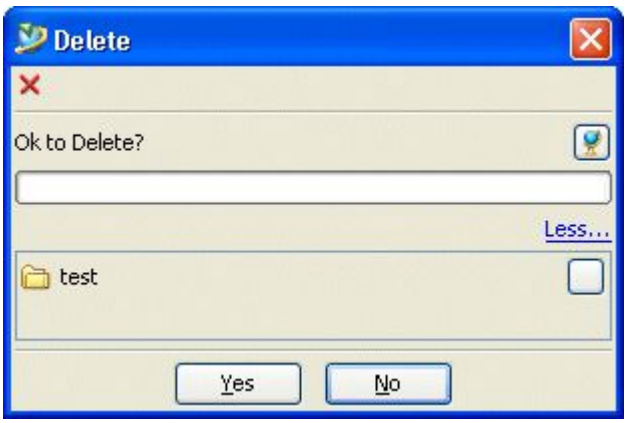
1. Select the folder you want to delete.

2. On the toolbar, click the **Delete** button .

   The system displays a confirmation dialog box.



3. To list the objects selected for deletion, click the **More** link.



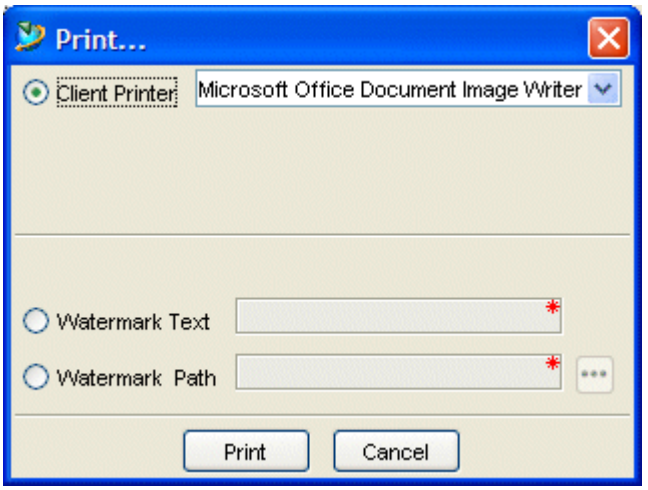
4. Click **Yes**.

Print folders

When you choose to print a folder, the system prints the folder name and a listing of the folder contents.

1. Select the folder you want to print.

2. Choose **File→Print**.



3. From the **Client Printer** list, select the printer to which you want to print.

4. Print a watermark, such as your company logo, by doing one of the following:

   - Entering some text in the **Watermark Text** box

   - To the right of the **Watermark Path**, clicking the **Browse** button to point to a file that contains watermark text or graphic

Perform a general query

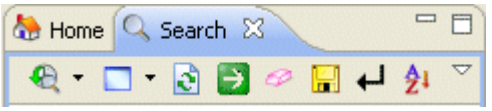
Use the search feature to locate data in the database. Teamcenter Express uses predefined query forms as templates for entering your search criteria. These query forms provide a fast, form-based interface to locate data.

Typically, you perform a search to locate data and then transfer it to another application to begin your work.

Using the General query form, you can search the database for many different types of workspace objects (for example, folders or datasets).

1. On the toolbar, click the **Search** button .

   The system displays the **Search** view.



2. Click the arrow to the right of the **Change Search** button and then click **General**.

3. Clear the contents of the query form boxes by clicking the **Clear all search fields** button .

4. In the **Name** box, type the name of the database object of interest.

   Tip

   If you do not know the exact folder name for which you are searching, you may use wildcard characters in the **Name** box to broaden the search, as follows:

   - Use an * (asterisk) to replace a string of any length.
   - Use a **?** (question mark) to replace a single character.

5. (Optional) In the **Description** box, type the description, or part of a description, that may have been defined by the object's creator.

6. Click the **Type** box.

7. In the **Value** box, type **Folder** and then press the Enter key.

8. From the **Owning User** and **Owning Group** lists, select the appropriate user and group. If you do not know the owning user or owning group, leave these options blank to search for an object that you do not own.

9. To set other search options, in the upper right corner, click the **Menu** button  and select more options for your search.

10. Click the **Go** button  .

    The system displays the **Search Results** view. The name on the query header matches the name of the query form you used.

    Note

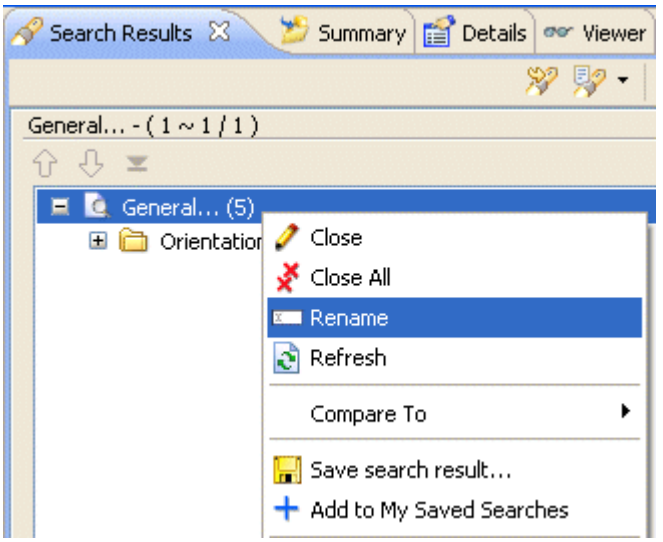
    The system adds a number to the name of the query so if you run multiple queries using the same form, you can differentiate between query results.

11. To see a list of previous searches, in the **Search Results** view, click the **Previous Searches** button  .

Rename search results

Because you can simultaneously open multiple query components in your My Teamcenter window, you may want to rename the search result to make your workspace easier to use and to help you remember the details of the search.

1. Right-click the first item in the search results tree and choose **Rename**.



2. Type a name for your query, such as **Find Orientation** and then press the Enter key.

Key points

The following are key points about search results:

- Dynamic display allows you to work with objects in the search results window.
- The system maintains the active query results between sessions in the **Open Items** on the **Navigation pane**.
- You can compare search results to other search results or to the contents of your **Home** folder.
- You can rename, save, or print the search results.
- Use the **Summary** view to view additional data related to the objects in the search results.

Activity: Find and work with folders

This activity takes about 20 minutes.

In this activity, you use the search feature to find the **Orientation** folder.

Step 1: Find the **Orientation** folder.

- ☐ On the toolbar, click the **Search** button.

  The system displays the **Search** view.

- ☐ Click the arrow to the right of the **Change Search** button and then click **General**.

- ☐ Clear the contents of the query form boxes by clicking the **Clear this query form** button.

- ☐ In the **Name** box, type **orient***.

  Note

  Be sure to type the search term exactly as shown, or the search will not work (note the *).

- ☐ Click the **Type** box.

- ☐ In the **Value** box, type **Folder** and then press the Enter key.

☐ Click the **Go** button  .

The system displays the search results at the bottom of the application pane. The name of the pane matches the name of the query form you used.

Step 2: Rename the search result to help you remember the details of the search.

☐ Right-click the first item in the search results tree and choose **Rename**.

Note

Because you cannot right-click in the interactive simulations, the system displays a mouse and you must click the right mouse button to proceed.

☐ Type a name for your query: **Folder, Orient*** and then press the Enter key.

The system displays the new name.

Step 3: Close the **Search Results** view by clicking the **x** to the right of the **Search Results** view title.

Step 4: Close the **Search** view by clicking the **x** to the right of the **Search** view title.

Step 5: In the **Home** folder, create a new folder named **My Folder**.

☐ Choose **File→New→Folder**.

☐ In the **Name** box, type **My Folder**.

☐ Click **OK**.

The system displays the folder in your **Home** folder.

Step 6: Rename the new folder you created.

☐ Select your new folder and choose **View→Properties**.

The system displays the **Properties** dialog box for the selected folder.

☐ Click the **Check-Out and Edit** button.

The system displays the **Check Out** dialog box.

☐ Click **Yes**.

☐ In the **Name** box, change **My Folder** to **Items**.

☐ Click **Check-In**.

The system displays the **Check In** dialog box.

☐ Click **Yes**.

This concludes the activity.

Referencing database objects

While it appears that object folders contain other objects (because that is what you *see*), the folders actually contain pointers or *references* to the objects. The distinction is subtle but very important. Several folders can contain references to the *same* object. That object, however, is stored only *once* in the Teamcenter Express database.

Therefore, these folders provide pointers to the same product information and allow product information to be shared throughout your enterprise, without having to make multiple physical copies of the data.

Using Cut, Copy, Paste, and Append buttons

To modify an object reference, you can select the object and use the **Cut**, **Copy**, and **Paste** buttons.

To retain the existing objects in the clipboard while adding to the clipboard contents using the **Cut** and **Copy** options, select the **Append** check box.

Key points

The following are key points about the cut, copy, paste, and append functions:

- These are clipboard options, which means that they place information on the clipboard (using cut or copy) and paste it to another location.

- These options affect only the *references* to objects stored in the database; they do not cut, copy, or paste actual objects.

- **Cut** takes the object's reference out of the folder and places it on the clipboard. It does not delete an object from the database.

  Any existing objects in the clipboard are overwritten by the cut objects.

  Tip

  To actually delete an object from the database, use the **Delete** option.

- **Copy** places a new reference to the object on the clipboard; the original reference to the object remains in the folder.

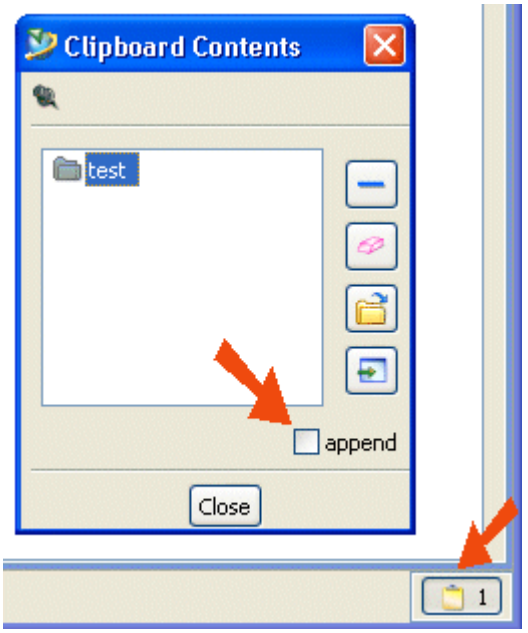
  Any existing objects in the clipboard are overwritten by the copied objects.

- **Append**, when selected, adds the selected objects to the clipboard contents.

  The existing objects in the clipboard are retained.

Note

The **Append** check box is located on the **Clipboard Contents** dialog box. You can access the clipboard dialog box by clicking the **Clipboard** button.



- **Paste** places a reference to the object or objects that are in the clipboard into the selected folders. The object reference is not taken off the clipboard, so you can perform multiple paste operations.

  Tip

  To select multiple objects, hold down the Shift key to select objects in a range or the Ctrl key to select objects in a discontinuous range.

Activity: Modify object references

This activity takes about five minutes.

In this activity, you use the copy and paste actions to place the **6505-Roller Skate** folder into the **Home** folder.

Step 1: Find the **6505-Roller Skate** folder.

- ☐ On the toolbar, click the **Search** button.
- ☐ Click the **Clear this query form** button.
- ☐ In the **Name** box, type **6505***.
- ☐ Click the **Type** box.
- ☐ In the **Value** box, type **Folder** and then press the Enter key.
- ☐ Click the **Go** button.

  The system displays the search results in the application pane.
- ☐ Close the **Search** view by clicking the **x** to the right of the **Search** view title.

Step 2: Copy and paste the **6505-Roller Skate** folder into the **Items** folder.

- ☐ From the search results, select the **6505-Roller Skate** folder.
- ☐ Right-click and choose **Copy**.
- ☐ Select the **Items** folder and then right-click and choose **Paste**.

Step 3: Expand the **6505-Roller Skate** folder to view its contents.

- ☐ Click the **+** button next to the **6505-Roller Skate** folder.

This concludes the activity.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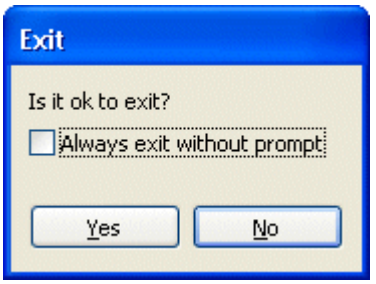
Log off of Teamcenter Express

1. Choose **File→Exit**.

   The system displays the **Exit** dialog box.



2. Click **Yes**.

Activity: Exit Teamcenter Express

This activity takes about five minutes.

In this activity, you exit Teamcenter Express.

Step 1: Exit Teamcenter Express.

☐ From the Teamcenter Express menu bar, choose **File→Exit**.

The system displays the **Exit** dialog box.

☐ Click **Yes**.

Teamcenter Express closes.

This concludes the activity.

Summary

In this lesson, you learned:

- My Teamcenter is your window into the database.
- The folder symbol toggles between a closed and open state. Double-click a folder to open or close it.
- To return to the **Home** folder, click the **Home Folder** button  .
- Display only the column options you view/change frequently.
- To find or access data in the system, you may have to change your group or role. To verify and/or change your current group/role setting, choose **Edit→User Setting** and choose **Session**.
- Use My Teamcenter to store references to objects you access frequently.
- My Teamcenter always contains three default folders: **Home**, **Mailbox**, and **Newstuff**.
- To find an existing folder, click **Search** and perform a general query with the **Type** set to **Folder**. If you do not own the folder, be sure to clear the **Owning User** and **Owning Group** boxes.
- To change the name of a folder, select the folder, choose **View→Properties**, type a new name and click **OK**.
- To delete a folder, select the folder and choose **Edit→Delete**.
- When you delete a folder, the system does not delete the folder contents.
- For data that you need to access frequently, you should copy/paste a reference to it in the **Home** folder.
- The **Cut**, **Copy**, and **Paste** buttons only cut, copy, and paste references to objects stored in the database; they do not cut, copy, and paste actual objects.
- To add objects to the clipboard (using the **Cut** or **Copy** option) without overwriting the existing contents of the clipboard, select the **Append** check box.
- To select multiple objects, hold down the Shift key to select objects in a range or the Ctrl key to select objects in a discontinuous range.

Lesson

3 *Finding and viewing data*

Purpose

The purpose of this lesson is to demonstrate how to find and view data in Teamcenter Express.

Objective

After you complete this lesson, you should be able to:

- Execute searches to find item objects.
- View file and form data associated with items.
- Set the **Item Display** option to filter the item revision display.
- Generate reports.

Help topics

Additional information for this lesson can be found in:

- *Getting Started With Teamcenter Express*
- *Rich Client Interface Guide*

What are items?

Items are the fundamental objects you use to manage information in Teamcenter Express. Items are generally used for data that is configuration or revision-controlled.

Use items to collect different types of business data, such as CAD files for products and document files. Do not, however, use items to store other items.

Each item has a label containing two separate pieces of information:

- **Item ID**

  A *unique* identifier for that item; no two items can have the same item ID. Generally, you can think of item ID as part number or document number.

  In figure 3-1, **S001–3261401** is the item ID.

- **Item Name**

  A short description, usually for logical names, such as bolt, bracket, or the title of a document.

  In figure 3-1, **Wheel** is the name of the item.

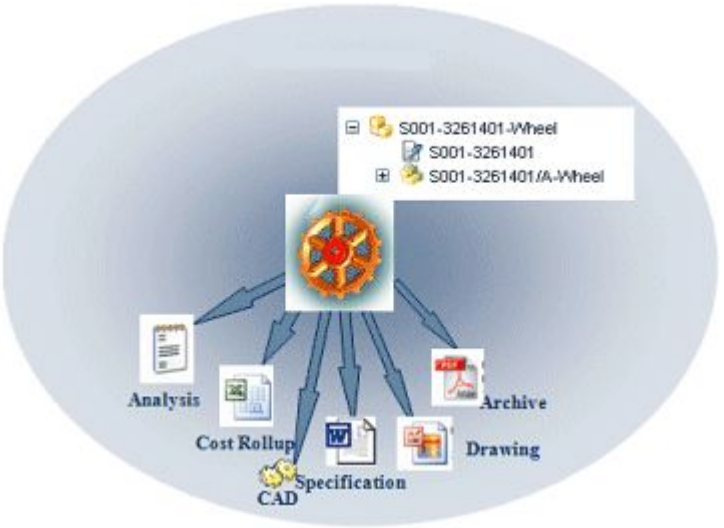


Figure 3-1. Item number/rev

Note

Company standards dictate conventions for the item IDs and item names used at your site.

Key points

The following are key points about items:

- An item can be thought of as a package that contains all data related to that item.
- Each item has at least one item revision.
- Items store all revisions of the item.

What are item types?

The term *item* describes all *types* of items that exist in the system. To effectively search for an item in the system, you should search for a specific *type* of *item*. This is the item symbol in Teamcenter Express:  .

Siemens PLM Software provides the following types of items in the initial setup for Teamcenter Express:

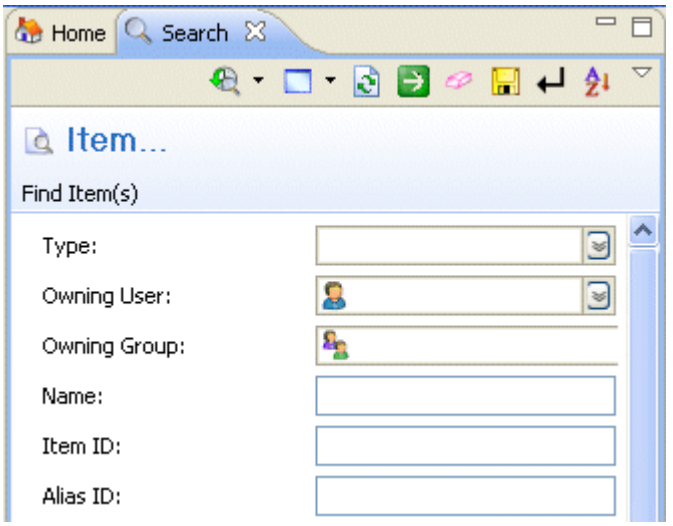
Document	Commonly used for data stored in the system that represents revision or configuration controlled documents, such as procurement specifications, test procedures, and design specifications. Generally, you search for this type of item to retrieve the files (word processor or spreadsheet, for example) associated with the type of document.
Engineering order (EO)	Holds all data related to an engineering change. Also used as part of workflow to route change information.
Item	Commonly used for data stored in the system that represents manufactured products, such as parts, subassemblies, end-items, and tools. Generally, you search for this type of item to retrieve CAD files and other file representations of part data, such as 2D or 3D images of drawings or models, or to view the bill of materials for your product.
Review_Pckg	Holds data to be shared through e-mail with people who do not have Teamcenter Express.
Standard	Used for standard or purchased parts. Companies may decide to use this item type; however, it is not a requirement.

Find items

Teamcenter Express uses predefined saved queries as the basis for most searches. These saved queries provide a fast form-based interface to the database. Your system administrator can make other queries on an as-needed basis.

1. On the toolbar, click the **Search** button .

2. Click the arrow to the right of the **Change Search** button and then click **Item**.



Note

The Item query form includes the **Item ID** search attribute, which is not found on the General query form.

3. To search for a particular item in the database based on its name, type a name in the **Name** box.

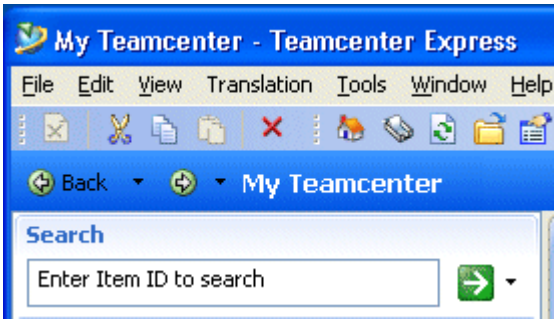
4. To search for a particular item in the database based on the part number or document number, type an item ID in the **Item ID** box.

5. To search for an item based on its type (for example, document or item), use the **Type** box to select the type of interest.

6. To display the search results, click the **Go** button .

Tip

If you only want to search for item ID, item name, dataset name, or keyword, use **Quick Search**, at the top of the navigation pane.



Special considerations

- Blank search boxes are not used for the search, meaning all values for the box apply in the search.

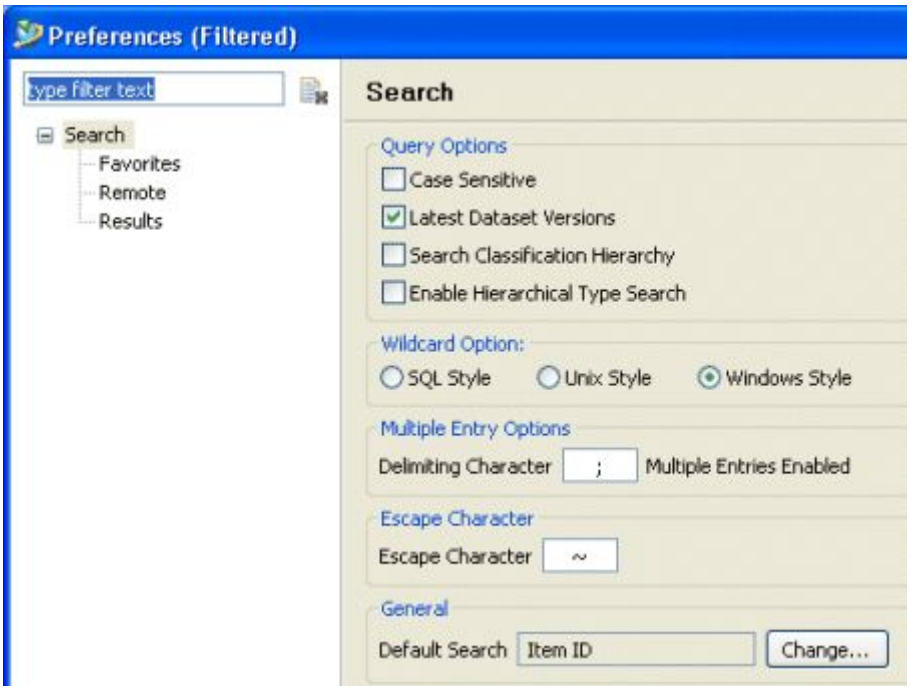
- By default, the search is case insensitive, returning objects matching both uppercase and lowercase.

- To broaden your searches, use the wildcard character * in the **Name** or **Item ID** boxes. If you do not know the exact name or item ID, use:

  – * (asterisk) to replace a string of any length.

  – **?** (question mark) to replace a single character.

- To access additional search criteria and specifications, at the top of the **Search** view, click the **Menu** button and then select **Preferences**.



- To access the advanced search criteria, which is normally defined by the Teamcenter Express administrator (such as doing a search within a search), click the arrow to the right of the **Change Search** button and then select a type of search.

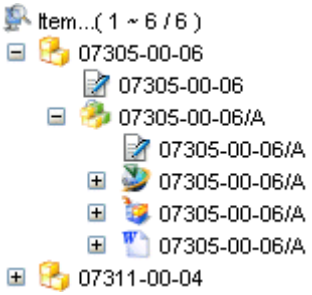
Viewing objects

You can view objects as follows:

- **From the search results window**

  After you find an item, you can view the data from the search results or you can transfer the item to another application to begin your work.

  For example, you can expand the **07305-00-06** item to view the item revision contents.

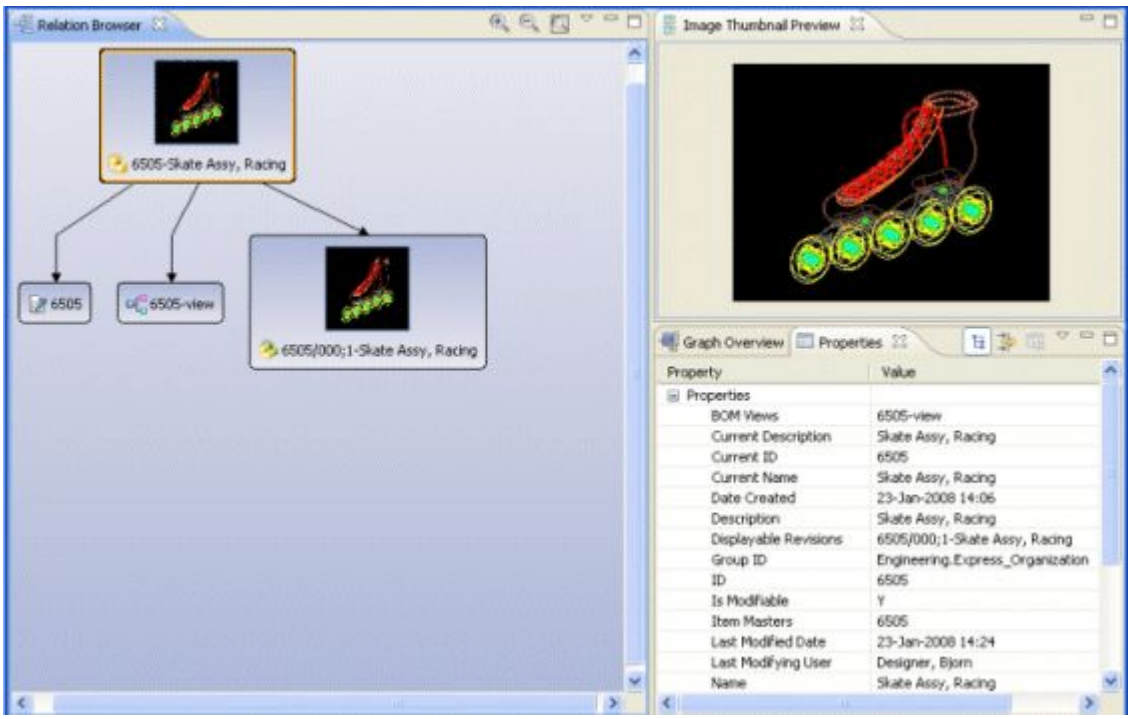


- **From the Home folder**

  Viewing the objects from the **Home** folder is the same as viewing them from the search results view. The difference is that objects in the **Home** folder are there until you remove them. The advantage of keeping a reference to the object in the **Home** folder is that you do not have to perform the search to view the object at a later time.

  Because the search results may be different a day or a month from now, you may want to retain the query so you can access it during a later session to access the results. The following activity shows how you rename a query results view so you can easily recall what it contains. The system displays the query view from session to session until you close it (right-click and choose **Close**).

You can also view objects graphically, using the Relation Browser (right-click the object and choose **Send To→Relation Browser**). The associated **Properties** view displays the properties of the selected object.



In the Relation Browser, you can right-click items and datasets and perform operations on them.

Activity: Find items

This activity takes about 15 minutes.

In this activity, you search for items and create references to them in the **Home** folder.

Step 1: Find the **1250-Axle** item.

- ☐ Click the **Search** button.
- ☐ In the **Item ID** box, type **1250**.
- ☐ Click the **Go** button.

  The system displays the search results.

Step 2: Copy a *reference* to the **1250-Axle** item into the **Home** folder.

- ☐ From the search results, select the **1250-Axle** item.
- ☐ Right-click and choose **Copy**.
- ☐ Return to the **Home** view, right-click **Home** and choose **Paste**.

Step 3: Find all items for wheel components.

☐ Return to the **Search** view.

☐ Click the arrow to the right of the **Change Search** button  and then click **Item**.

☐ Click the **Clear this query form** button  .

☐ In the **Name** box, type **wheel**.

☐ Click the **Go** button  .

The system finds the items in the database that are named **Wheel**.

Step 4: Rename the search results.

☐ Right-click the first item in the search results tree, rename it to **Find Wheel**, and then press the Enter key.

Step 5: Copy a reference to the **1503-Wheel** item into the **Home** folder.

☐ From the search results, select the **1503-Wheel** item.

☐ Right-click and choose **Copy**.

☐ Return to the **Home** view, right-click **Home** and choose **Paste**.

Step 6: Find all items with a name that begins with **wheel**.

☐ Return to the **Search** view.

☐ In the **Name** box, type **wheel***.

☐ Click the **Go** button  .

Note

The system found more items this time because of the wildcard character in the **Name** box. To enhance performance, the system displays a maximum of 30 objects. The search page indicates if there are more objects that met your search criteria, giving you an opportunity to load them.

☐ Click the **Next Page** button  .

Step 7: Rename the search results to **Find Wheel***.

Step 8: Find an item that has the item ID **BBDS5453**.

Tip

To display more information for the item search, click the **More** link.

Step 9: Copy a reference to the **BBDS5453** document into the **Home** folder.

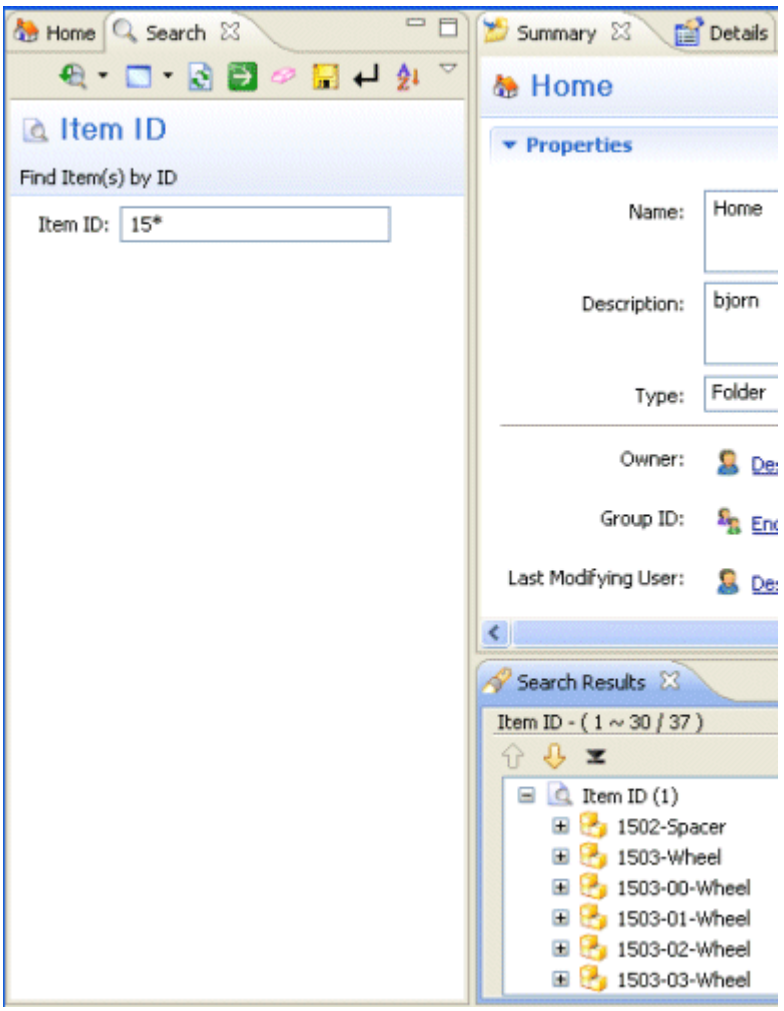
This concludes the activity.

Compare search results

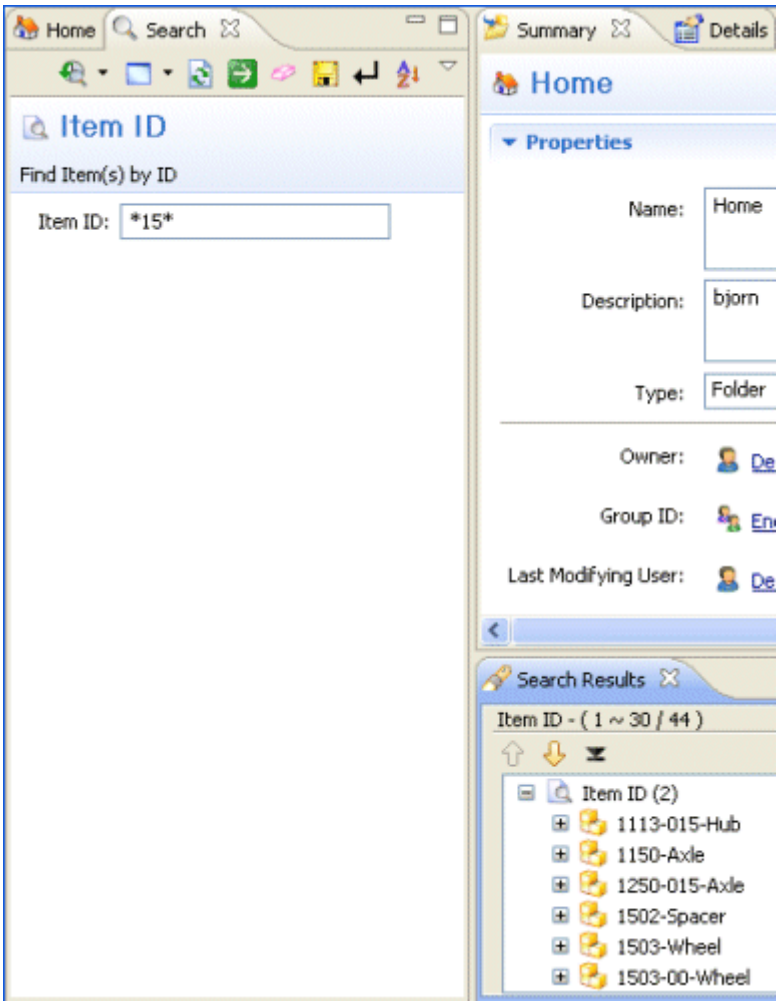
You can compare the results of one search to those of another search. Suppose you want to compare the results of the following two queries:

- **Item ID=15***
- **Item ID=*15***

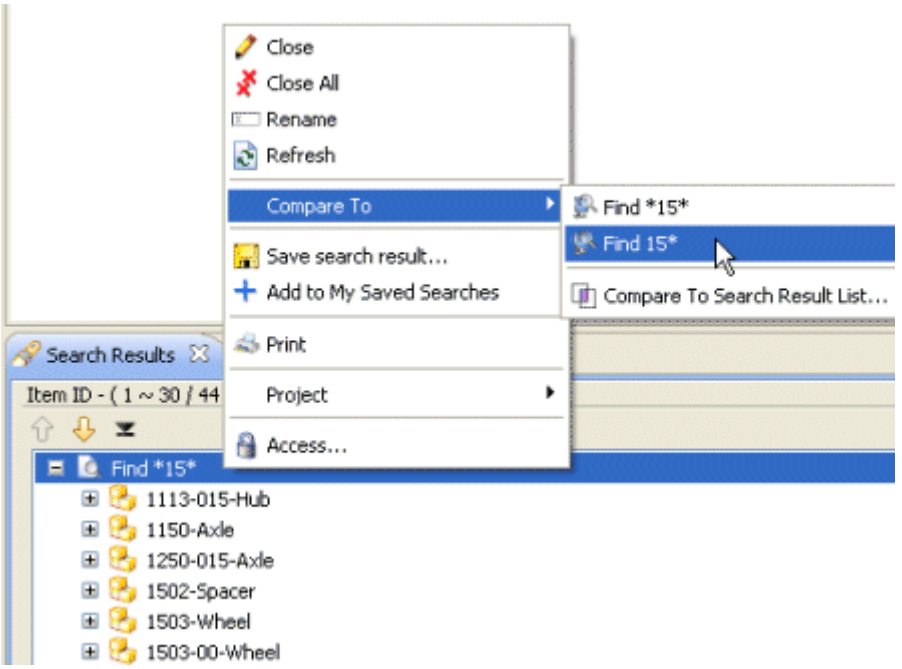
1. Execute a search using item **Item ID=15***.
2. Rename the search results to **Find 15***.



3. Execute a search using item **ID=*15***.
4. Rename the search results to **Find *15***.

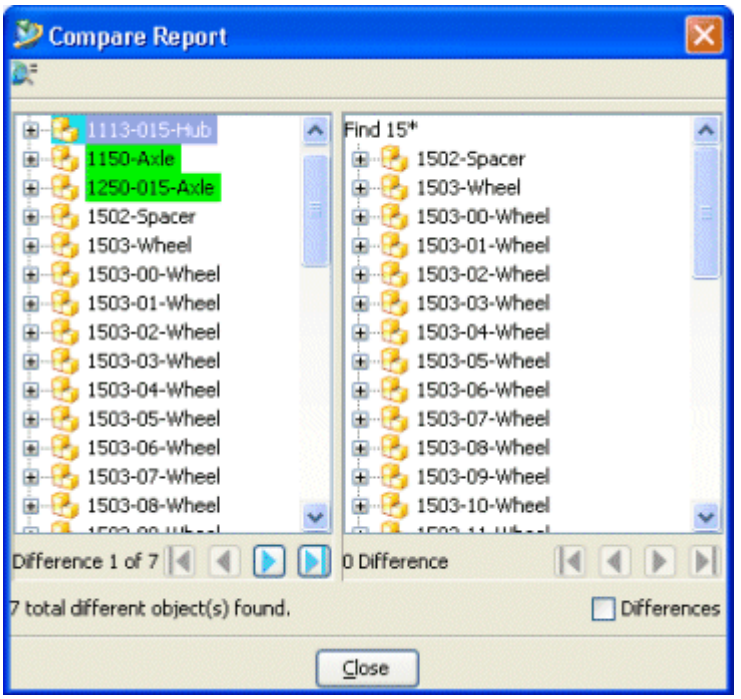

Home
Search
Item ID
Find Item(s) by ID
Item ID: *15*
Summary
Details
Home
Properties
Name: Home
Description: bjorn
Type: Folder
Owner:
Group ID:
Last Modifying User:
Search Results
Item ID - (1 ~ 30 / 44)
Item ID (2)
1113-015-Hub
1150-Axle
1250-015-Axle
1502-Spacer
1503-Wheel
1503-00-Wheel

5. Right-click the first item in the search results tree and choose the **Compare To** menu to select the other search.



The **Compare Report** dialog box displays the contents of the selected components:

- Differences between the selected components are highlighted in green.
- Identical objects have a transparent background.
- The object currently selected is highlighted in a different color.



- Use the arrows to click through each difference, one at a time.

Activity: Compare search results

 This activity takes about five minutes.

In this activity, you compare the results of two searches.

Step 1: Compare the results of the **Find Wheel** and **Find Wheel*** searches.

☐ In the search results tree, right-click **Find Wheel*** and choose **Compare To→Find Wheel**.

The system displays the Compare Report and highlights in green the differences between the selected components.

Step 2: Close the **Compare Report** dialog box.

This concludes the activity.

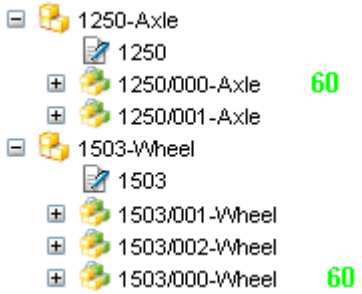
View the contents of items

To view data in Teamcenter Express, search for the item of interest, then expand the item to view the item revisions and other data about the item.

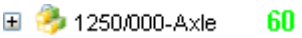
- The **1503-Wheel** item has three item revisions: **000**, **001**, and **002**.
- The numerical value **60** next to the **000** item revision indicates that it has a release status.
- The in-process symbol  indicates that the **001** item revision is in a workflow process.
- The absence of a symbol indicates working data.

Item revisions

Item revisions manage changes (revisions) to items.



Item revision labels are similar to item labels. The main difference is that this label shows a revision identifier appended to the item ID.



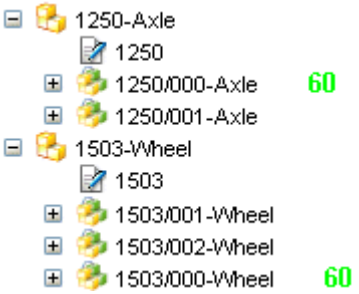
Key points

The following are key points about item revisions:

- An item revision object can also be thought of as a package that contains data for that item revision.
- Item revisions are what most users commonly access; use them to manage changes and track history.
- When you create an item, the system automatically creates the first item revision with it. As you make revision changes to the item, the system creates additional item revision objects to represent the revision changes in Teamcenter Express.

Item revision release status

When viewing the revisions of an item in Teamcenter Express, you should always observe the release status of the item revision. The release status property of the object informs you about the function or purpose of the data.



The following list shows possible values for release status. This list is an example developed for this training material. Your company may have a different list of possible release status values with different meanings.

- **60**

  Data stored with item revisions that have obtained this status are considered production data. The data is in a write-protected mode, meaning it cannot be changed unless a new revision letter is created.

- **Pre-Released**

  Data stored with item revisions that have obtained this status are also in a write-protected mode and cannot be changed unless a new revision letter is created. However, the data is not intended for production use. The designer or engineer can arbitrarily apply this status to freeze the data for use for building prototypes or for providing preliminary data to customers and suppliers.

- **ECPending**

  Data stored with item revisions that have obtained this status are not in a write-protected mode and can still be changed. This status informs the consumer of the data that this revision is currently in an engineering change process. At the successful completion of the process, the release status value changes to released.

- **(Empty Value)**

  If the item revision has no value for status, it is said to be working data, meaning that someone is currently working on the data contained in the item revision.

- **Approved**

  Pertains to items of type document.

Display items

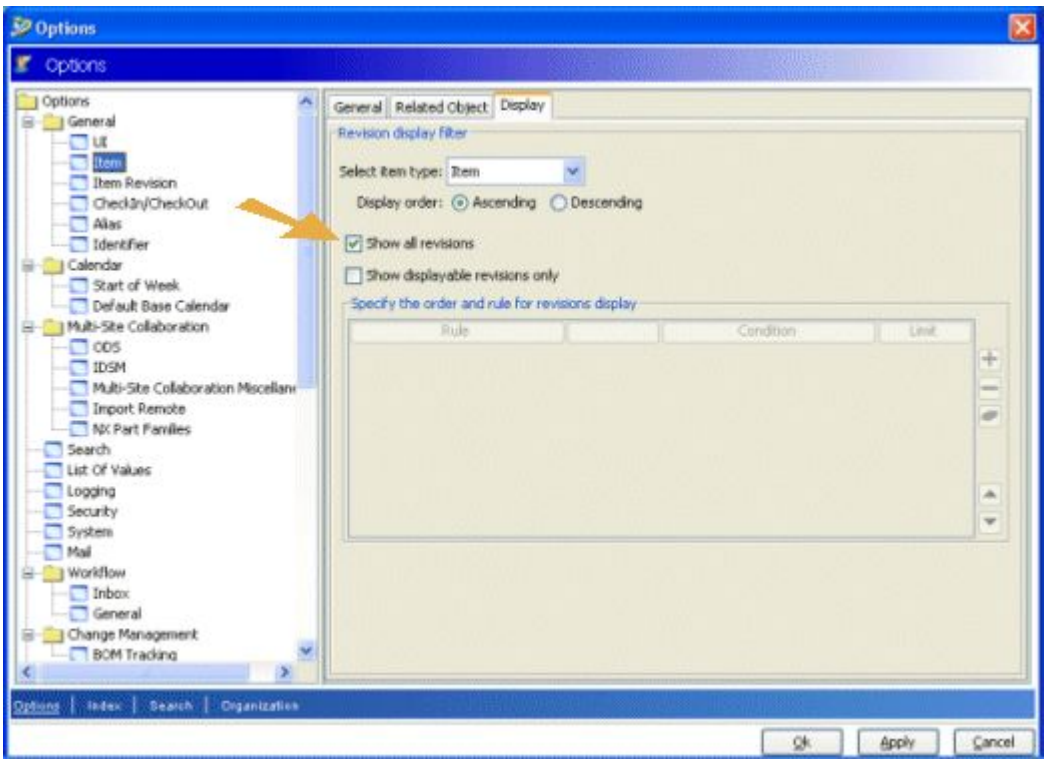
You use the **Options** dialog box to define the behavior and display of objects in Teamcenter Express. The system saves the changes you make in the **Options** dialog box to the system database. For more information about setting options, see *My Teamcenter Guide*.

In this section, you learn how to set conditions in the revision display filter so that only certain item revisions display in the item hierarchy.

1. Choose **Edit→Options**.

2. Under the **General** options folder, select **Item** and click the **Display** tab.

   The **Display** tab shows the **Revision display filter** form, which by default is set to **Show all revisions**.



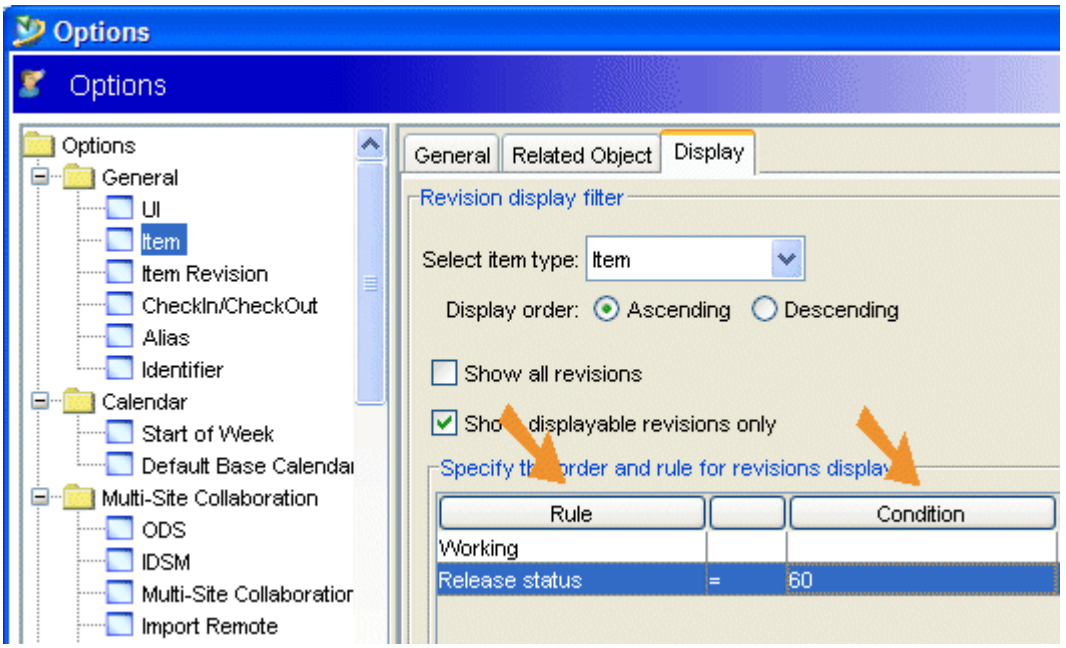
3. To enable access to the display filter settings, select the **Show displayable revisions only** check box.

   The system displays the **Display Revision Relation** dialog box.

4. Select the **Displayable Revisions** check box.

5. Click **OK**.

6. To set the display filter, use the **Rule** and **Condition** options.



7. Click **OK**.

   The system applies the filter, and displays in the item hierarchy only the item revisions that meet the display filter criteria.

   To view a list of the item revisions that do not meet the display filter criteria, expand the **More** entries in the item hierarchy.

Activity: Set the item display filter

 This activity takes about 15 minutes.

In this activity, you set the item display filter to limit the revisions that display in My Teamcenter to those that are released.

Step 1: Display the **Options** dialog box.

☐ Choose **Edit→Options**.

☐ Under the **General** options folder, select **Item** and click the **Display** tab.

The **Display** tab shows the **Revision display filter** form.

Step 2: Set the display filter.

☐ Select the **Show displayable revisions only** check box.

☐ Select the **Displayable Revisions** check box and click **OK**.

The system gives you access to the **Rule** and **Condition** options for setting the filter.

☐ Add a row to the table by clicking  .

- ☐ To access the **Rule** list, double-click the cell in the **Rule** column and select **Release status**.
- ☐ To access the **Condition** list, double-click the cell in the **Condition** column and select **60**.

  The system now limits the display to item revisions that are released.

Step 3: To accept the entries and close the **Options** dialog box, click **OK**.

The system applies the filter, and displays in the item hierarchy only the item revisions that meet the display filter criteria.

Step 4: Check the result of setting the item display filter.

- ☐ In your **Home** folder, expand the **1250-Axle** and **1503-Wheel** items and item revisions.
- ☐ To view the item revisions that do not meet the display filter criteria, expand the **More** entries in the item hierarchy.

Step 5: Set the revision display filter back to **Show all revisions**.

- ☐ Choose **Edit→Options**.
- ☐ Click the **Display** tab.

☐ Select the **Show all revisions** check box.

The **Rule** and **Condition** columns and options are shaded, indicating that the filter is not active.

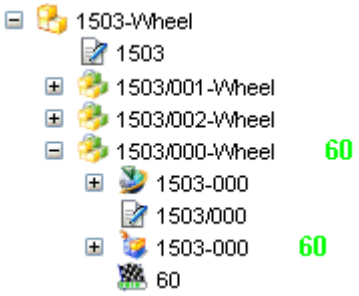
☐ Click **OK**.

The system applies the filter and displays all item revisions in the item hierarchy.

This concludes the activity.

Item revision contents

When you expand an item revision, Teamcenter Express displays the item revision contents.



Key points

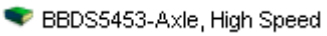
The following are key points about item revision contents:

- Item revisions generally contain objects referred to as forms and/or datasets.
  - Forms represent attribute data for the item.
  - Datasets represent physical data files for the item.
- Item revisions may also contain other objects, such as folders, and even other item revisions.
- The contents of an item revision are dependent on the item type and how a company chooses to organize data in the system.

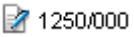
The following sections describe the types of data you can have in an item revision.

Requirement data

Requirement data is data that documents requirements for the item revision, without explicitly defining the product. In the following example, the **BBDS5453** document is a design specification that was used during the design of the part number **1250-Axle** component:



ItemRevision master data

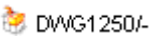


The ItemRevision Master is a form that displays additional attributes, or characteristics, specific to the item revision. Companies may change the design of this form so that it collects and presents attribute data specific to their business needs.

Selecting the form and the **Viewer** view displays the form contents.

Manifestation data

Manifestation data is data that is directly derived from the specification data but is not considered defining data. For CAD-defined items, drafting, manufacturing, and analysis data is often found under this heading:



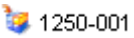
Reference data

Reference data may exist in a variety of different formats depending on the type, purpose, and status of the item revision.

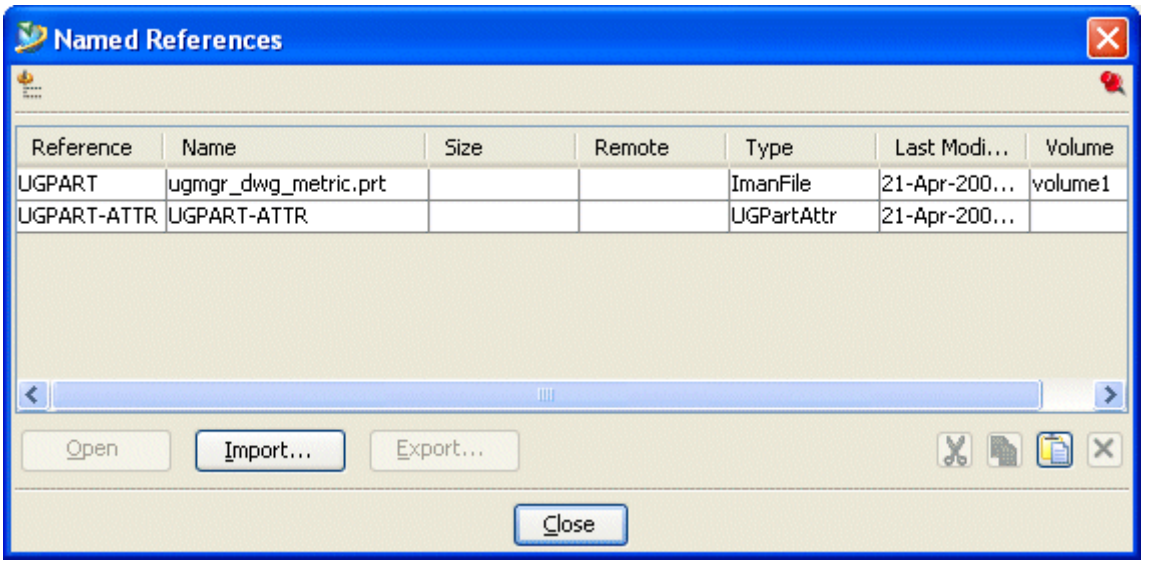
The following example shows a release checklist text dataset:

Specification data

Specification data is considered the defining data for the item revision. The following example shows a **UGMASTER** dataset that contains the CAD model data of a part definition. The **UGMASTER** dataset is specific to the NX integration with Teamcenter Express:

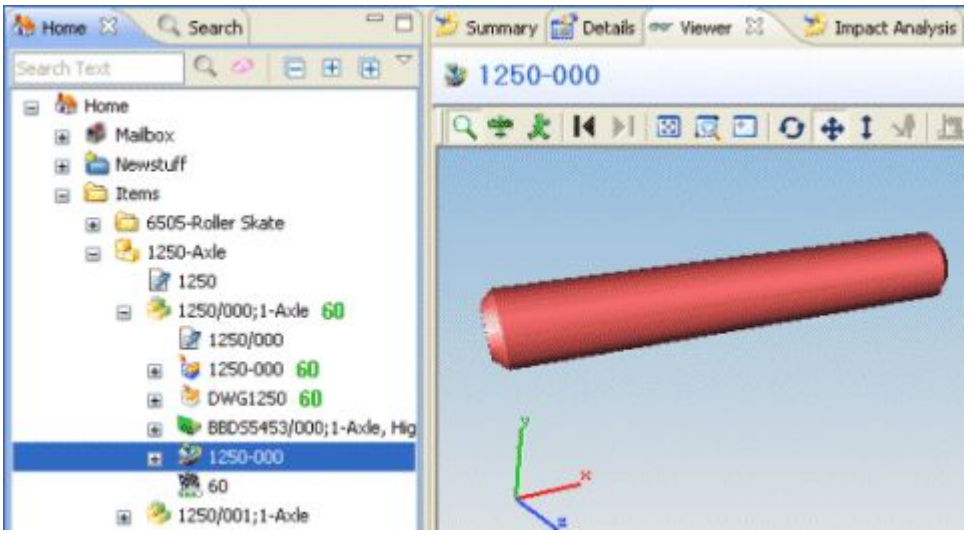


To view all the files for the dataset, select a dataset and choose **View→Named References**.



Rendering data

The **DirectModel** is a 3D image format of the part model for viewing with rich client Visualization. If you select the object and choose the **Viewer** view, the file displays in the rich client Visualization application, if it is available on your workstation.



Activity: View item, form, and file (dataset) data

This activity takes about 10 minutes.

In this activity, you view form data contained within an item.

Step 1: View the data for the **1250/000-Axle** item revision.

☐ Expand the **1250-Axle** item.

There are two item revisions for this item: revision **000** is released, revision **001** is in progress. There is no value for release status.

☐ Expand the **1250/000-Axle** item revision.

☐ Double-click the **1250/000** item revision master form 1250/000.

The system displays the item revision master form.

☐ To close the form, click **Cancel**.

☐ To view the part, choose the **DirectModel** object and choose the **Viewer** view.

Step 2: Clean up the **Home** folder.

☐ Choose the **Details** view.

☐ Click the **–** button next to the **1250-Axle** item.

☐ Cut all the items (not folders) from the **Home** folder and paste them into the **Items** folder.

Tip

To cut and paste, use the **Cut** and **Paste** buttons from the toolbar.

This concludes the activity.

Generate reports

Use the My Teamcenter **Tools→Reports** command to generate and view reports.

Some default report designs are delivered with Teamcenter Express. Your administrator can also create report designs using the Report Designer application available in the Administration application group.

1. Choose **Tools→Reports→Report Designer Reports**.
2. Select a report design.
3. Adjust the query criteria and sorting options for the report.
4. Choose the output format for the report.
   - Report contents can be sent to a comma-delimited file or output formats defined by your site administrator.
   - Output formats may include HTML and XLS files.
   - Reports sent to an HTML output format are displayed in a browser.
   - Reports sent to an XLS output format are displayed in a spreadsheet.

   Tip

   You can save or print the report using the **Save** and **Print** options available in the output format tool you choose for the report.

Activity: Generate a report

 This activity takes about 10 minutes.

In this activity, you practice generating a report and viewing it in your browser.

Step 1: Select the report design to use for the report.

☐ From the My Teamcenter menu bar, choose **Tools→Reports→Report Designer Reports**.

The system displays the Report Creation Wizard.

☐ Select **Admin - Object Ownership**.

☐ Click **Next**.

The system displays the Fill in criteria form.

Step 2: Review and, if necessary, adjust the query criteria for the report.

Note

For this activity, we set the criteria as shown in the simulation.

☐ Click the **Query Options** button  .

The system displays the **Options** dialog box. You use this dialog box to view and adjust the additional criteria and sorting options for the report.

☐ Click the **Sort Options** tab.

- ☐ In the **Name** row, click the box in the **Order By** column and, from the list, choose **Descending**.
- ☐ Click **OK**.

Step 3: Send the report contents to a comma-delimited file.

☐ Click **Finish**.

The report generator determines how many items meet the query criteria and displays an alert dialog box.

☐ Click **Yes**.

The system displays the report.

Step 4: Click **Close**.

This concludes the activity.

Summary

In this lesson, you learned:

- You generally use items to model revision-controlled data.
- An item can be thought of as a package that contains all data related to that item.
- To search for items, from the query list, choose **Item**.
- Each item has at least one item revision.
- Item revisions store specific information about a particular revision of an item.
- You can control which item revisions display in the item hierarchy using the **Item Display** option.
- An item revision can contain different types of forms and datasets.
- A dataset is an object that stores and manages a collection of data files for a particular application and purpose.
- Release status is an attribute assigned to an object after the object has successfully gone through a Teamcenter Express workflow process.
- Report output can be created as a comma-delimited file, an XLS spreadsheet file, or an HTML file that displays in a browser.
- Reports can be viewed, saved, and printed using the output tool you choose when generating a report.

Lesson

4 Creating data in Teamcenter Express

Purpose

In this lesson, you create data using the Teamcenter Express interface.

Objective

After you complete this lesson, you should be able to:

- Create an item in Teamcenter Express.
- Populate forms within Teamcenter Express.
- Create a new dataset for an item created in Teamcenter Express.
- Perform an implicit and explicit checkout.
- Change ownership of data.
- Create a new item based on an existing item revision (**File→Save As**).
- Create a new revision of an existing item (**File→Revise**).
- Open an earlier version of a dataset.

Help topics

Additional information for this lesson can be found in:

- *Getting Started With Teamcenter Express*
- *Rich Client Interface Guide*

Verifying user settings

Before creating any new data, you should verify that your user settings are set to the correct values.

The user information display in the window frame shows your user settings:

If needed, change your user settings as explained in *Lesson 2, Getting started with Teamcenter Express rich client*.

Having the correct user settings is important because any new data you create inherits the **Owning Group** property from the user setting of the user that created the data. The **Owning Group** property of the data is an important property of the data in the context of access control (**Read**, **Write**, **Delete**, and so on).

Create items in Teamcenter Express

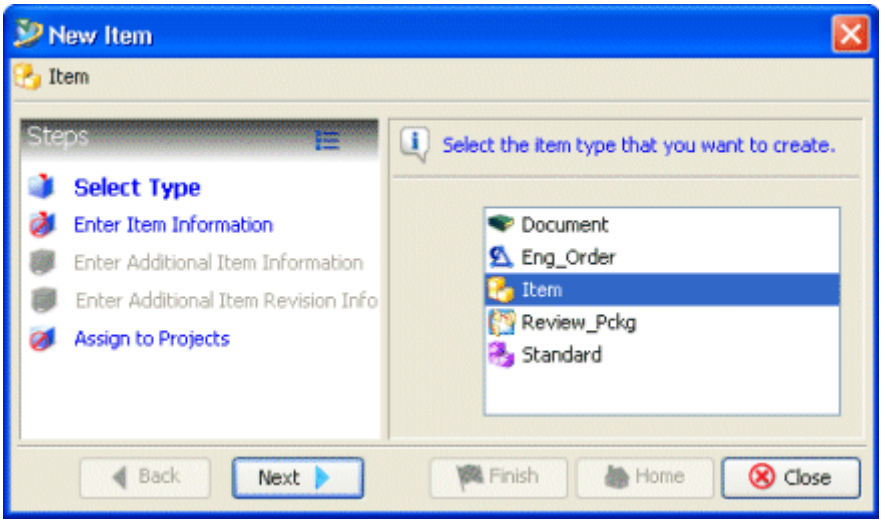
Use the **New Item** dialog box to create an item or add a new revision to an existing item.

1. Select the folder to which you want to add the item and choose **File→New→Item**.

   Tip

   You can also use the Ctrl-t key combination to access the **New Item** dialog box.

   The system displays the **New Item** dialog box.



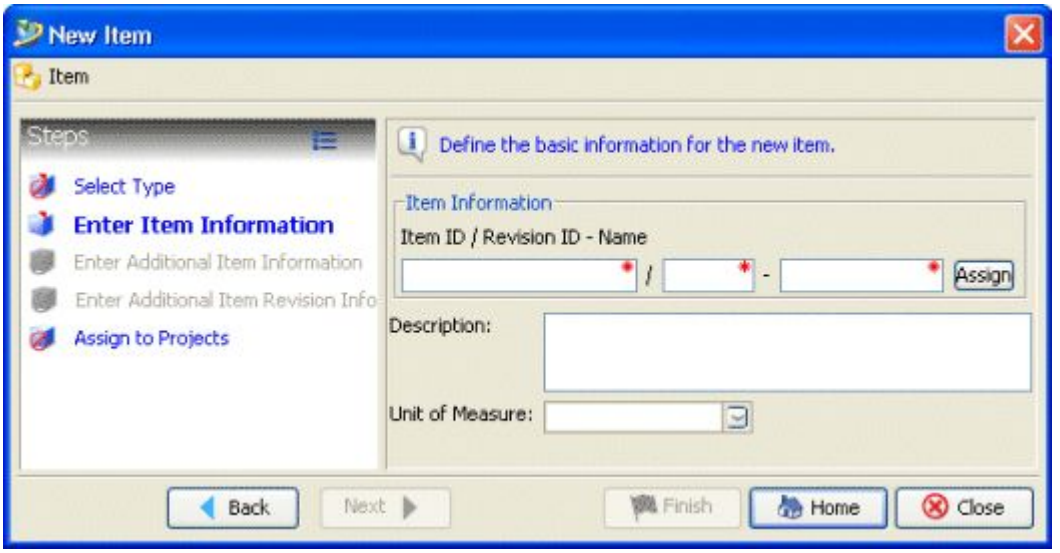
2. From the list of types on the right, select **Item**.

3. Click **Next**.

   The system displays the Enter Item Information form.

   Note

   Red asterisks indicate required boxes.



   Note

   To let the system automatically populate the **ItemID** and **Revision ID** boxes with an automatically-generated default item ID and revision, click **Assign**. Otherwise, complete steps 4 and 5.

4. In the **ItemID** box, type a *unique* identifier for that item; no two items can have the same item ID.

5. In the **Revision ID** box, type a *unique* revision identifier for the item revision.

   Note

   Many companies use a special revision identifier to designate the initial revision of any part or assembly. For example, some companies use **000** for the first revision.

6. In the **Name** box, type a name for the item. The name is a short description usually for logical names, such as bolt, bracket, or buckle.

   Note

   Some companies define specific conventions to use when assigning an item name.

7. (Optional) In the **Description** box, type a description.

8. (Optional) Select a **Unit of Measure**.

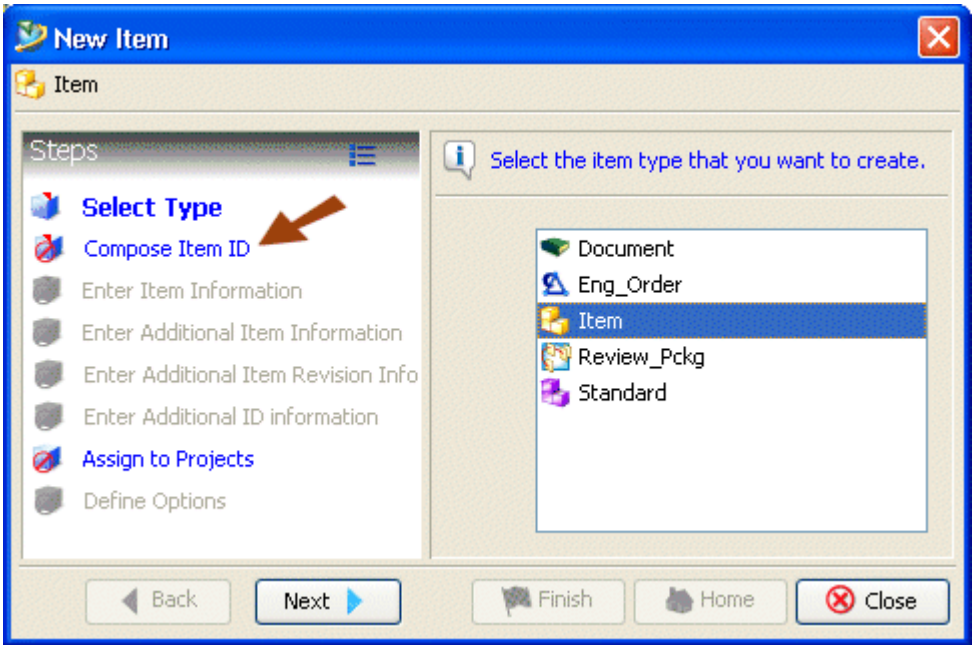
9. Click **Finish**.

   The system creates the new item in the folder you selected.

Create items using automatic part numbering

Out of the box, Teamcenter Express is configured to automatically generate part numbers. If, however, your company has a unique part numbering system, your system administrator can configure Teamcenter Express to use your company's system. Once the administrator configures and enables Teamcenter Express to use your company's system, you can select from hierarchical lists of values to automatically generate part numbers.

When the administrator enables automatic part numbering, the **New Item** dialog box includes a new option, as shown next:



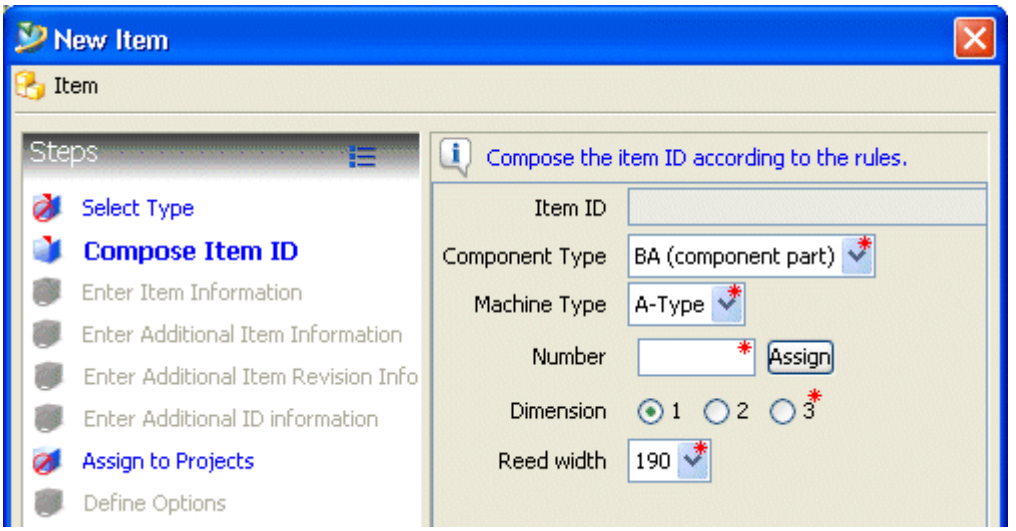
1. Choose **File→New→Item**.

   The system displays the **New Item** dialog box.

2. From the list of types on the right, select **Item**.

3. Click **Next**.

   The system displays the automatic part numbering options, as set up by your system administrator to meet your company's requirements.


New Item
Item
Steps
Select Type
Compose Item ID
Enter Item Information
Enter Additional Item Information
Enter Additional Item Revision Info
Enter Additional ID information
Assign to Projects
Define Options
Compose the item ID according to the rules.
Item ID
Component Type
BA (component part)
Machine Type
A-Type
Number
Assign
Dimension
1
2
3
Reed width
190

4. From the lists, select the values you want to use.

5. In the **Number** box, type a value or click **Assign**.

6. Click **Finish**.

   The system creates the part number with your specifications.

Delete an item

When deleting an item, the system also deletes the item master, item revisions, and item revision masters.

The objects referenced by the item or item revision are not deleted. You can access the referenced objects from the database using the **Search** option. You can delete the contents of an item before deleting the item.

1. Select the item you want to delete.

2. Click the **Delete** button  .

Print an item

Printing an item prints the item name and the property values of the item.

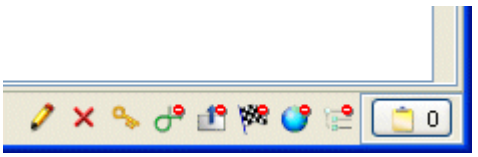
1. Select the item you want to print.
2. Choose **File→Print**.

Rename an item

If you have write access to an item and the item does not have status, you can change its name and/or its item ID. You can rename the following item types: document, item, standard, and engineering order.

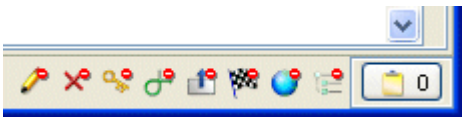
For more information about status, see *Release status*, in *Lesson 5, Viewing product structure*.

1. Select the item you want to rename.
2. Verify that the item you want to rename does not have any status associated with it.
3. Verify that you have write access (lower right corner).



Note

If you do not have write access for the selected item, the system displays a red circle with a white dash on the write access symbol.



4. Choose **Tools→Item Rename**.
5. Type a new name and/or item ID.
6. Click **OK**.

Activity: Create an item in My Teamcenter

 This activity takes about five minutes.

In this activity, you create a non-CAD item in Teamcenter Express.

Step 1: Create an item.

- ☐ In My Teamcenter, select the **Items** folder.
- ☐ Choose **File→New→Item**.

  The system displays the **New Item** dialog box.
- ☐ From the list of types on the right, select **Item**.
- ☐ Click **Next**.
- ☐ In the **Item ID** box, type **BBMS2146_000** and press the Enter key.
- ☐ In the **Rev** box, type **000** and press the Enter key.
- ☐ In the **Name** box, type **Grease** and press the Enter key.
- ☐ From the **Unit of Measure** list, select **OZ**.
- ☐ Click **Finish**.

☐ Click **Close**.

The system creates the new item in the **Items** folder.

☐ Expand the **Items** folder to see the item you just created.

This concludes the activity.

Activity: Create an item using automatic part numbering

 This activity takes about five minutes.

In this activity, you create an item using the automatic part numbering functionality.

Note

This functionality was enabled for this activity.

Step 1: Create an item.

- ☐ In My Teamcenter, select the **Items** folder.
- ☐ Choose **File→New→Item**.

  The system displays the **New Item** dialog box.
- ☐ From the list of types on the right, select **Item**.
- ☐ Click **Next**.

  The system displays the Compose Item ID form.
- ☐ From the **Component Type** list, select **BE (assembly)**.
- ☐ Click **Assign**.
- ☐ Click **Next**.
- ☐ Click **Assign**.
- ☐ In the **Name** box, enter **Test**.
- ☐ Click **Finish**.
- ☐ Click **Close**.

Step 2: View the newly created item.

- ☐ Expand the **Items** folder to see the item you just created.

This concludes the activity.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SUPPORTED

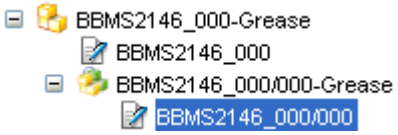
Populating items

Now that you created an item, the next step may be filling out forms and adding file data to the item.

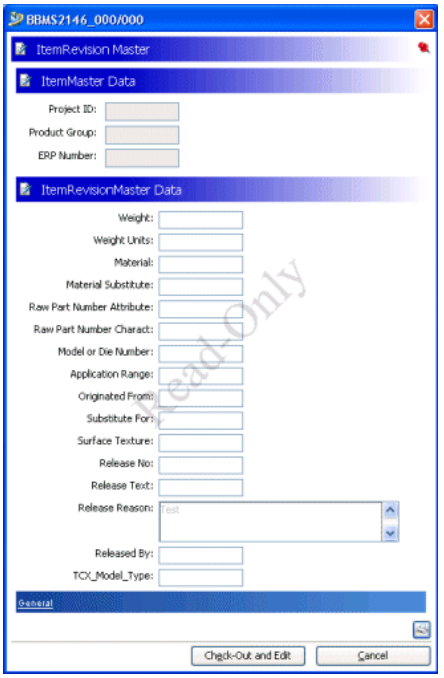
Populate the item revision master forms

Every time you create a new item or new item revision object, the system automatically creates the item revision master form.

To access the item revision master form, expand the item and item revision object.



To open a form to edit it, double-click the form and click **Check-Out and Edit**. Or, select the form and choose the **Viewer** view.



Note

This form has been customized for this training class.

Activity: Populate the item revision master forms

 This activity takes about five minutes.

In this activity, you populate the item revision master form.

Step 1: Add data to the **BBMS2146** item revision master form.

- ☐ Expand the **BBMS2146 Grease** item and item revision objects.
- ☐ Double-click the item revision master form, **BBMS2146_000/000**.
- ☐ Click **Check-Out and Edit**.
- ☐ In the **Release Reason** box, type **Test**.
- ☐ To save the changes and close the form, click **Check-In**.

Step 2: View the data you entered in the form.

☐ Choose the **Viewer** view.

The system displays the form in the Viewer.

This concludes the activity.

What is a dataset?

Datasets manage data files created by non-Teamcenter Express applications. Datasets are typically stored in item revisions. The symbol preceding the dataset name may vary depending on the associated application. The following are some example datasets.

Symbol	Type	File	Purpose
	Text	**.txt**	Text document
	MSWord	**.doc, .docx**	MSWord document
	MSExcel	**.xls, .xlsx**	MSExcel spreadsheet
	**DirectModel**	**.jt**	3D visualization models
	**UGMaster**	**.prt**	UG part files
	**SE Part**	**.par**	Solid Edge files

When you start non-Teamcenter Express applications from Teamcenter Express, the files these applications generate are maintained by Teamcenter Express. The object you use to manage these third-party files is called a *dataset*.

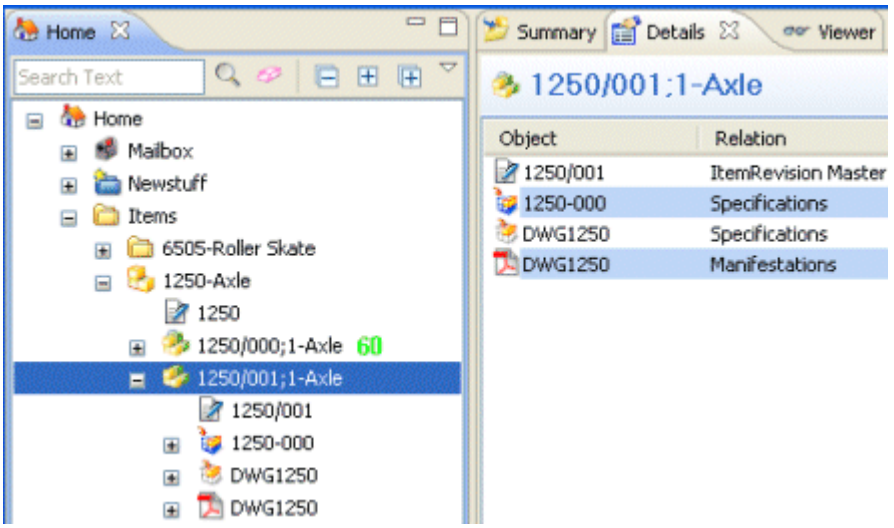
Dataset object behavior

Double-clicking a dataset launches a software application and loads a file in the application.

Item and item revision relations

When you add data to an item revision, it is important that you define the correct relation between the added data and the item revision. Teamcenter Express uses the relation definition to control internal Teamcenter Express functions.

Companies typically use many pieces of information that in some way describe or relate to an item or item revision. Teamcenter Express uses the concept of a *relation* to describe these associations (*relationships*).



When you create or add certain objects inside an item or item revision structure, Teamcenter Express automatically defines many item or item revision relations. These relation types are:

- Revision (for item revisions)
- BOM view and BOM view revision

For example, when you add a new item revision to an existing item,Teamcenter Express automatically defines the new item revision as a *revision* relation.

In addition to the automatically defined relation types, the following relation types are used with items and item revisions:

- **Specification relations**

  Are detailed methods, designs, processes, and procedures used to satisfy requirements. The specification fully defines the item revision.

- **Manifestation relations**

  Are nondefining snapshots of a particular *aspect* of an item or item revision at a particular moment in time. For example, numerically-controlled (NC) program files are a common manifestation.

- **Requirement relations**

  Are criteria that *must* be satisfied by this item or item revision. However, requirements often do not specify *how* this criteria should be satisfied. For example, a requirements relation might specify maximum weight for an item revision but not how to construct it.

- **Reference relations**

  Describe a general nondefining relationship of a object to an item or item revision. This relation type can be thought of as a miscellaneous relation type.

These relationships are typically defined when you paste an object reference into an item or item revision using **Edit→Paste** or **Edit→Paste Special**.

Activity: Create datasets

This activity takes about 10 minutes.

In this activity, you create a dataset for the grease item. You create the dataset using an existing **.txt** file.

Step 1: Create a dataset with a specification relation to the grease item.

☐ Select the **BBMS2146_000/000-Grease** item revision.

☐ Choose **File→New→Dataset**.

The system displays the **New Dataset** dialog box.

☐ In the **Name** box, add **- Spec Sheet** to the end of the default name.

Note

Be sure to enter a space between **-** and **Spec Sheet**.

☐ Click the **Import file** button .

The system displays the **Import File** dialog box.

☐ Double-click the **bbms2146.txt** file.

☐ Click **OK**.

The system creates the dataset with the *specifications* relation.

Step 2: Create a dataset with a reference relation to the grease item. To have a reference relation between the text dataset and the item revision, create the dataset in the item revision and then cut and paste to put it back into the item revision with a different relation. If you create the dataset directly in the item revision, the dataset has a specification relation to the item revision.

☐ Choose **File→New→Dataset**.

☐ In the **Name** box, add **- Suppliers** to the end of the default name.

Note

Be sure to enter a space between **-** and **Suppliers**.

☐ Click the **Import file** button .

☐ Double-click the **bbms_supplier.txt** file.

☐ Click **OK**.

The system creates the dataset with the *specification* relation.

☐ Select the **BBMS2146_000/000-Suppliers** dataset and click the **Cut** button .

☐ Select the **BBMS2146_000/000-Grease** item revision and choose **Edit→Paste Special**, not **Paste**.

Note

You choose **Edit→Paste Special** instead of **Edit→Paste** because **Paste Special** allows you to indicate how you want to paste the dataset.

The system displays the **Paste** dialog box.

☐ Select **References**.

☐ Click **OK**.

The text dataset now has a *reference* relationship to the item revision.

This concludes the activity.

Dataset checkout

Use checkout and checkin procedures to ensure that two users do not simultaneously update database objects. The capability to perform a checkout is important because, in a group write environment, users must protect the data while they work on it.

You can perform implicit and explicit checkout, as explained next.

Implicit checkout

Whenever you open a dataset to modify it, Teamcenter Express automatically performs an *implicit checkout*. This means that nobody else can modify the dataset while you work on it.

When you complete the modifications by closing the editing session, the system automatically checks the dataset back into the database (the implicit checkout is reversed).

Explicit checkout

You perform explicit checkouts manually.

The following are characteristics of an explicit checkout:

- Performing an explicit checkout locks a dataset against modifications by other users whether you are currently editing the file or not.
- While a dataset is checked out, the user that performed the checkout has *write* access, while other users have *read* access.
- (Optional) Use the **Change ID** box to correlate checked-out objects with pending change management (Change Viewer) jobs.
- When checking out a dataset, you can also export the associated file to the operating system by selecting the **Export Dataset On Checkout** check box.

To learn about dataset checkin and canceling checkout, see *Check in data*, in *Lesson 10, Releasing data*.

Activity: Modify the dataset

 This activity takes about five minutes.

In this activity, you observe the implicit (automatic) checkout/in process and perform an explicit (manual) checkout/in on a dataset object.

Step 1: Observe implicit checkout.

- ☐ Select the **BBMS2146_000/000-Grease** item revision.
- ☐ In the **Details** view, note the **Checked Out** column. This column shows the checkout status of the dataset.

  The checked out status of the **BBMS2146_000/000-Suppliers** dataset indicates that the dataset is not checked out.
- ☐ Double-click the **BBMS2146_000/000-Suppliers** dataset to open it.

☐ To update the **Details** view, reselect the **BBMS2146_000/000-Grease** item revision.

The dataset is currently checked out.

☐ Close the text editor.

The dataset is no longer checked out.

Step 2: Modify the dataset.

☐ Double-click the **BBMS2146_000/000-Suppliers** dataset.

☐ In the box outlined with a gray box, type **ACME Grease Company** and then press the Enter key.

☐ Save the text file.

☐ Close the text editor.

Step 3: Perform an explicit checkout.

☐ Choose **Tools→Check-In/Out→Check-Out**.

☐ In the **Comments** box, type **Long-term editing** and then press the Enter key.

☐ Click **Yes**.

☐ To update the **Details** view, reselect the **BBMS2146_000/000-Grease** item revision.

The dataset is currently checked out. It remains in this state until you choose to perform an explicit checkin.

Step 4: Perform an explicit checkin.

☐ Select the **BBMS2146_000/000-Suppliers** dataset and choose **Tools→Check-In/Out→Check-In**.

☐ When the system displays the message: **OK to check in?**, click **Yes**.

☐ To update the **Details** view, select the **BBMS2146_000/000-Grease** item revision.

The dataset is no longer checked out.

This concludes the activity.

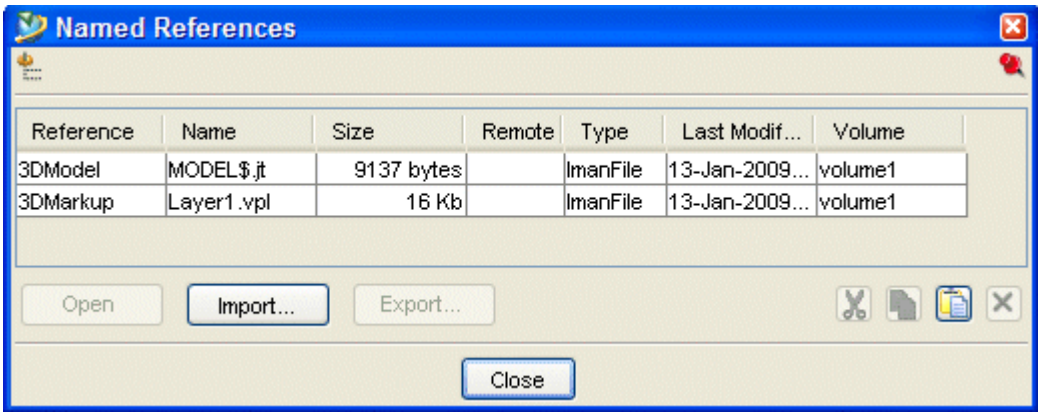
View/modify dataset named references

Datasets can manage several different file types. These file types are called named references. Use the **Named References** dialog box to view or modify the named references for a dataset.

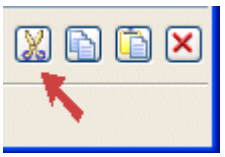
1. Select the dataset whose named references you want to view.

2. Choose **View→Named References** or right-click and choose **Named References**.

   The system displays the **Named References** dialog box.



3. To copy and paste named references between the **Named References** dialog boxes of different datasets, use the **Cut**, **Copy**, and **Paste** buttons. This method is easier than exporting the files and then importing them back into the different datasets.



Select dataset versions

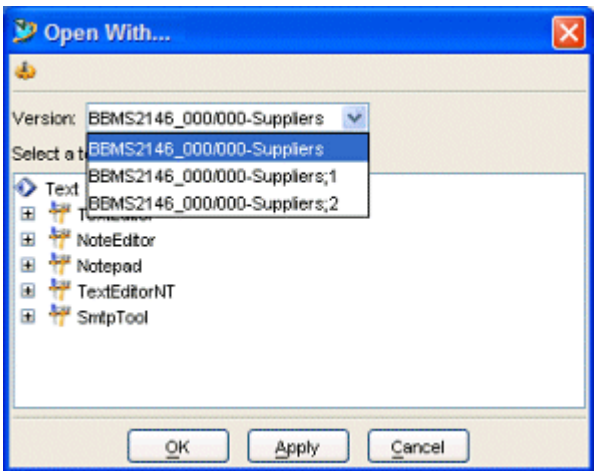
When you make changes to datasets, Teamcenter Express creates new dataset versions. You use these versions to track and undo changes by reverting to a previous version of the dataset.

1. Select the dataset whose versions you want to view.

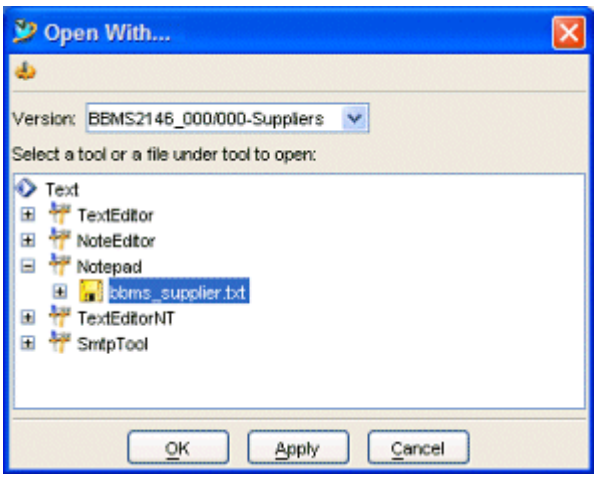
2. Choose **File→Open With**.

   The system displays the **Open With** dialog box.

3. Specify a particular version of the dataset.



4. Specify an application (tool) to use for the current editing session.



Key points

The following are key points about dataset versions:

- As work progresses and you successively modify a particular dataset, new versions are added to the database but version-0 always references the *latest* version of the dataset.

- The default version is the latest. In most cases, you should work with this version unless you have some specific reason to open an earlier version. This may be the case if you want to undo changes made in the latest version.

- Normally, you only see the version-0 dataset in the My Teamcenter workspace area; Teamcenter Express hides other dataset versions to reduce clutter.

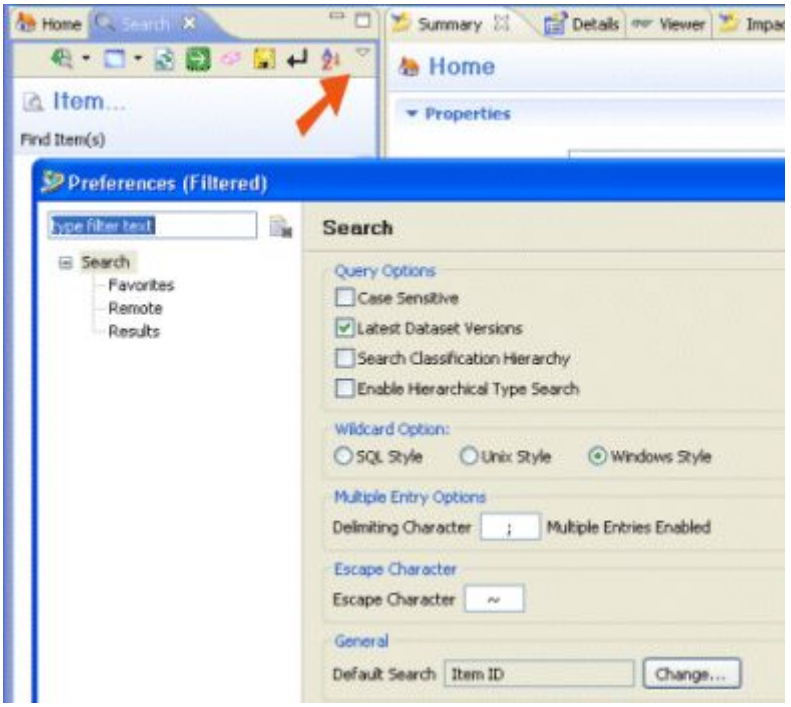
- Teamcenter Express manages multiple dataset versions until the *version limit* is reached.

  When the version limit is exceeded, the *earliest* version of the dataset is purged from the database to make room for the new version.

Note

Use the **Latest Dataset Versions** check box in the **Preferences** dialog box to either show or hide dataset versions in search results. To display the **Preferences** dialog box, click the **Menu** button and then select **Preferences**.

Select the **Latest Dataset Versions** check box only if you want to show dataset versions.



Activity: Open an earlier version of a text dataset

 This activity takes about five minutes.

In this activity, you view the named references of the **BBMS2146_000/000-Suppliers** dataset and open a previous version of the dataset.

Step 1: View the named references of the **BBMS2146_000/000-Suppliers** dataset.

- ☐ Select the **BBMS2146_000/000-Suppliers** text dataset.
- ☐ Choose **View→Named References**.

  The system displays the **Named References** dialog box.
- ☐ Close the **Named References** dialog box.

Step 2: Open an earlier version of the **BBMS2146_000/000-Suppliers** dataset.

- ☐ Choose **File→Open With**.

- ☐ Select the **Version** list to see the previous versions of the dataset.

- ☐ Choose the second-to-last version number, **BBMS2146_000/000-Suppliers;1**.

☐ Expand the Text Editor tool.

☐ Select **bbms_supplier.txt** and click **OK**.

The previous version of the text file opens in a text editor. The line of text added to this file in an earlier activity is not included in this version of the dataset.

☐ Exit the text editor.

This concludes the activity.

Change ownership

The owning user and owning group properties of the data can be modified before the data is released.

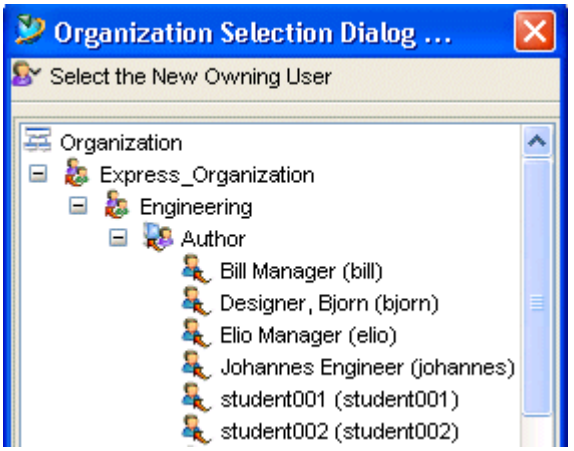
Note

After release, the capability to change these properties is restricted to the system administrator.

1. Select the object (multiple objects can be selected) whose ownership of data you want to change.

2. Choose **Edit→Change Ownership**.

3. To select the owning user as a member of the owning group, click the **New Owning User** button and navigate the organization chart.



4. To change only the owning group, select the current owning user as a member of the new owning group.

Create a new item from an item revision

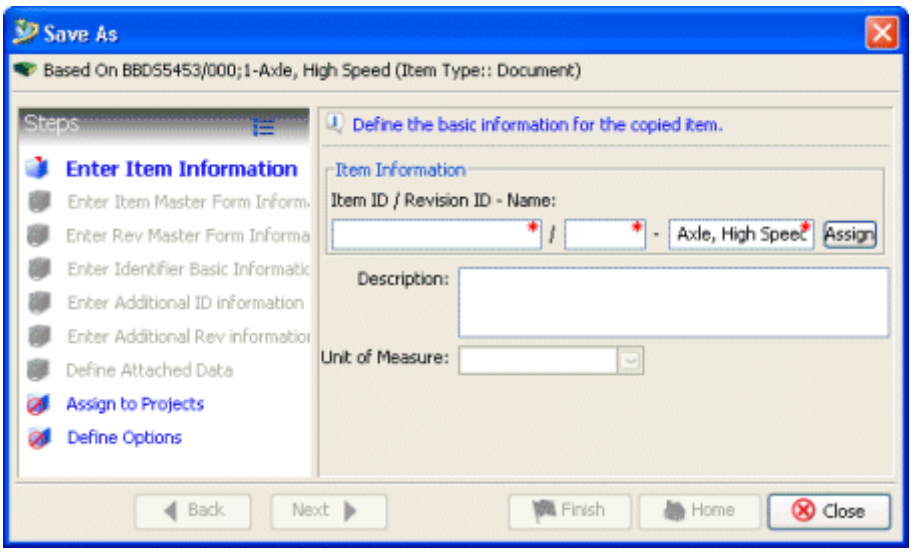
For non-CAD items, use the **File→Save As** command to create a *new item* from an existing item revision.

Note

Use **Save As** only to create items. To create item revisions, use the **Revise** command.

1. Select an existing item revision object as the basis of the new item and choose **File→Save As**.

   The system displays the **Save As** dialog box.



2. To automatically generate the next available item ID and revision, click **Assign**, or manually type an item and revision ID.

   Note

   The unit of measure and item type are carried over from the original item and cannot be modified.

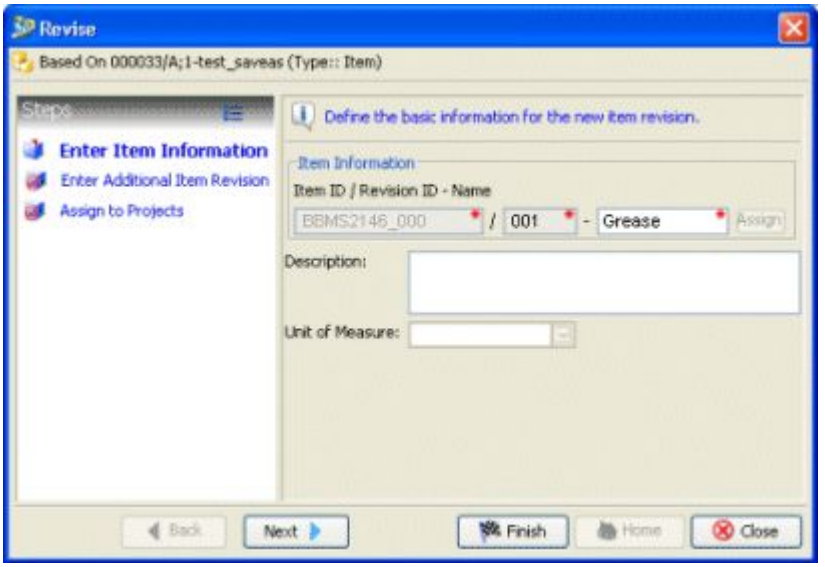
3. To create the new item and dismiss the dialog box, click **Finish**. To create the item and continue to define data for the item, click **Next**.

Create the next revision of an item revision

For non-CAD items, use the **File→Revise** command to create the *next revision* of an existing item revision.

1. From the tree or the **Details** view, select an item revision to be the basis of the new revision and choose **File→Revise**.

   The system displays the **Revise** dialog box with the item ID and name of the item revision already entered in the form.



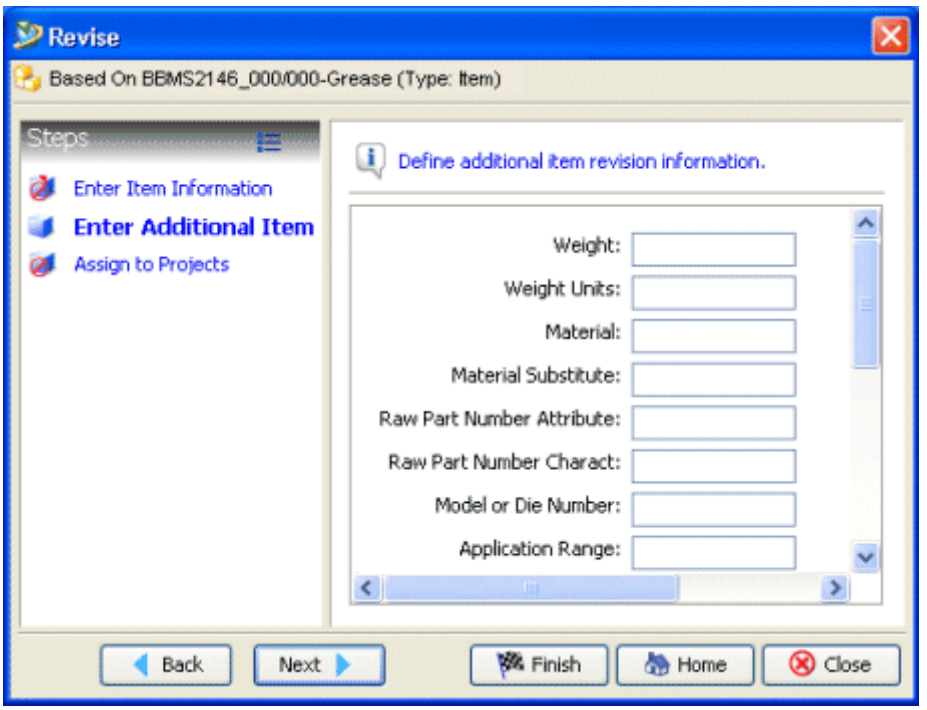
2. Assign a value to the **Revision ID** box for the new item revision.

   - To automatically generate the next available revision in the **Revision ID** box, click **Assign**, or assign the revision manually by entering it in the **Revision ID** box.

   - (Optional) Type a description and select a unit of measure.

- To continue, click **Next**.

  The system displays the item master form.



3. Select and type information in the revise forms, as needed.

   You can define the item master data or, using the links in the **Steps** section, select another form and type the related information.

   Note

   The values for the item master and other information forms default to the values from the source item revision. You can retain the default values or define other information for the new item revision using these forms.

4. Click **Finish**.

5. Click **Close**.

   The system creates the item revision and displays it beneath the item revision originally selected in the tree.

Activity: Perform a Save As and Revise operation

 This activity takes about 10 minutes.

In this activity, you perform **Save As** and **Revise** operations on an item of type document.

Step 1: Create a new item of type document in the **Newstuff** folder.

- ☐ In My Teamcenter, select the **Newstuff** folder and choose **File→New→Item**.
- ☐ From the list of types on the right, select **Document**.
- ☐ Click **Next**.
- ☐ To get the item ID and revision, click **Assign**.
- ☐ Type a name (for this activity, use **Test**).
- ☐ Click **Finish** and then click **Close**.

☐ In the **Newstuff** folder, expand the document and document revision.

The system automatically creates a text dataset because of the business rules that are in place.

Step 2: Create the next revision of the document based on the existing revision.

☐ Select the document revision and choose **File→Revise**.

☐ Click **Finish** and then click **Close**.

The system creates a new revision and a new dataset.

Step 3: Create a new document based on an existing document revision.

☐ Choose **File→Save As**.

☐ Click **Assign**.

Note

The system increments the item ID.

☐ Click **Finish** and then click **Close**.

The system creates the new document based on the existing document.

☐ Expand the new document and document revision.

This concludes the activity.

Summary

In this lesson, you learned:

- Items are the fundamental objects you can use to manage information in Teamcenter Express.
- Use item revisions to manage changes (revisions) to items.
- Use datasets to manage data files created by other software applications.
- To create a new item based on an existing item revision, use **File→Save As**.
- To create the next revision of an existing item revision, use **File→Revise**.

Lesson

5 *Viewing product structure*

Purpose

The purpose of this lesson is to demonstrate how to view product structure using the Structure Manager application.

Objective

After you complete this lesson, you should be able to:

- Identify an item as an assembly.
- View product structure.
- Print product structure using Structure Manager.
- Compare product structure.
- View an assembly in Structure Manager.
- Change revision rules and view the results in Structure Manager.

Help topics

Additional information for this lesson can be found in the *Structure Manager Guide*.

What Is Structure Manager?

Structure Manager is the application within Teamcenter Express for creating, viewing, and modifying product structure and its associated occurrence data.

You can use Structure Manager to do the following:

- **Browse product structure**

  Allows you to see what the assembly structure of a product looks like, to navigate around it easily, and find components when their location in the structure is not known.

- **Build and edit structure**

  Structure Manager offers a simple way to quickly create and modify structure using cut, copy, and paste.

- **Compare structures**

  You can compare two product structures to highlight any changes.

- **Configure product structure**

  You can set rules to determine which revisions of components are configured, or which components are effective.

- **Load data in NX**

  Structure Manager allows you to load selected components of the assembly in NX.

- **Protect data from concurrent changes**

  If another user is editing an assembly (single level) within the product structure, you are prevented from making changes until the other user has saved their changes.

How does Structure Manager work?

Structure Manager displays the information that resides in the BOM view revision. Using Structure Manager, you can see the assembly structure of a product, as shown in figure 5-1. You can navigate through the assembly to find components and then access any data associated with those components.

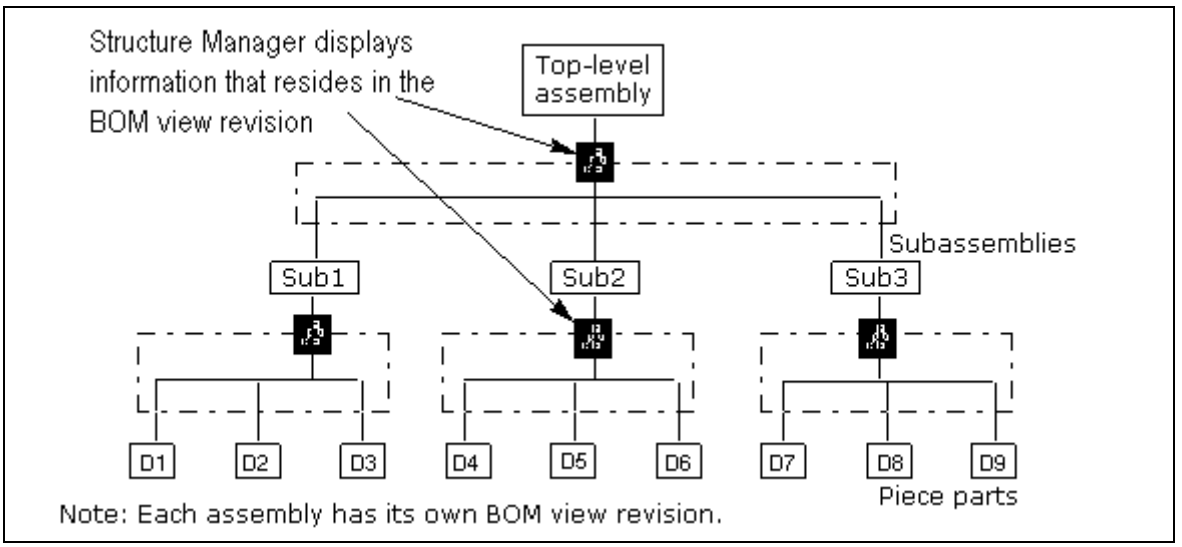


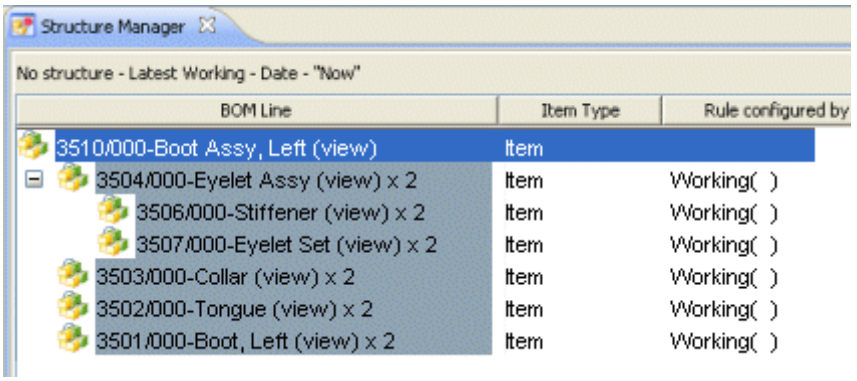
Figure 5-1. View of assembly in Structure Manager

BOM view revision object

When an item is an assembly, the system displays a BOM view revision object for the item revision.

The BOM view revision object symbol,  , identifies the BOM view revision object.

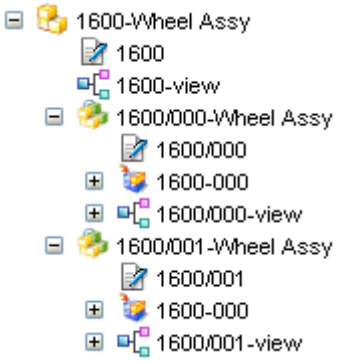
Use BOM view revisions to manage product structure for item revisions. To display a BOM view revision in Structure Manager, where you can create, view, and modify product structure, double-click the BOM view revision.



BOM view types

Teamcenter Express comes with one BOM view type: the *view* BOM view type. Some companies rename the BOM view type or create additional BOM view types. For example, a company could create an *assembly* BOM view type to define the structure of the product as it is actually manufactured. Additional entries for tools and manufacturing can be listed in the assembly BOM that are not listed in the view BOM.

This training material uses the default *view* BOM view type. This BOM view type defines the engineering or design bill of material. Engineers and designers define a product structure view that best supports their product development and change processes. This view of the product is often functional in nature. It does not always reflect the actual assembly-build sequence of the product for manufacturing.



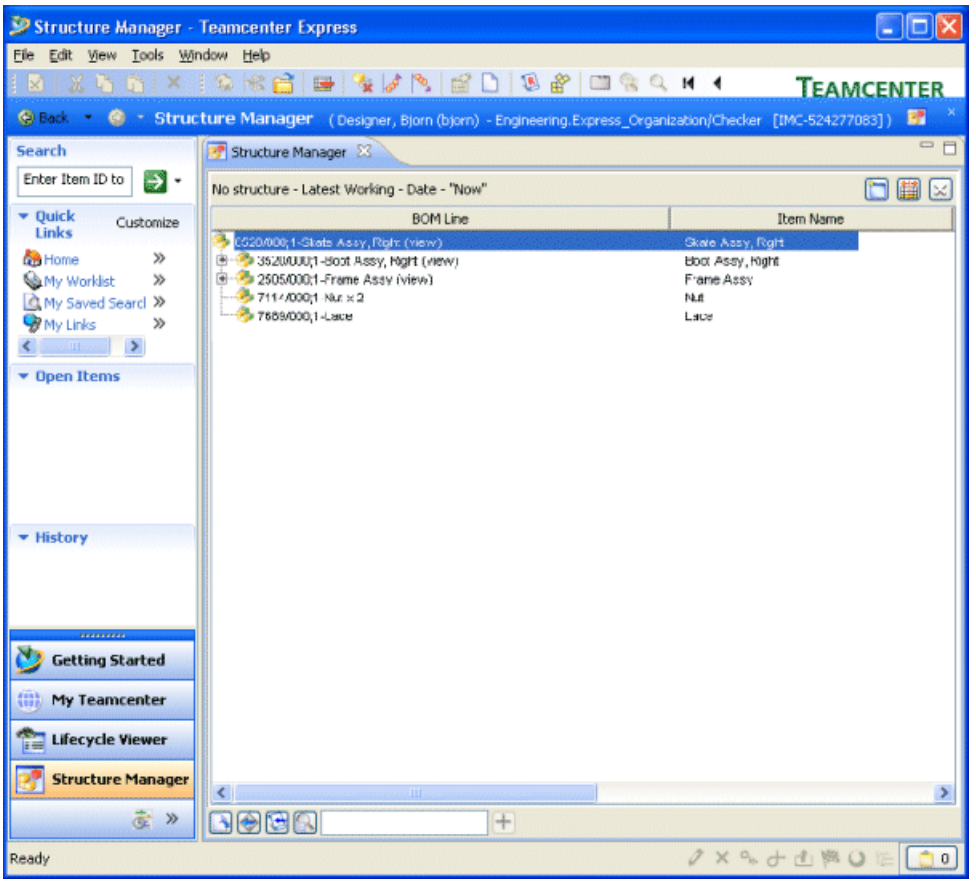
Launch Structure Manager

To view assembly structure, open the BOM view revision in Structure Manager.

To launch Structure Manager, do *one* of the following:

- Select a BOM view revision and click the **Open** button .
- Right-click an item, item revision, or BOM view revision and choose **Send To→Structure Manager**.

  The system displays the selected object in Structure Manager.



When you launch Structure Manager, the menu bar and toolbars include options specific to Structure Manager.

The revision rule setting for the currently loaded BOM view revision object displays to the right of the item revision name, in the line above the column headings.

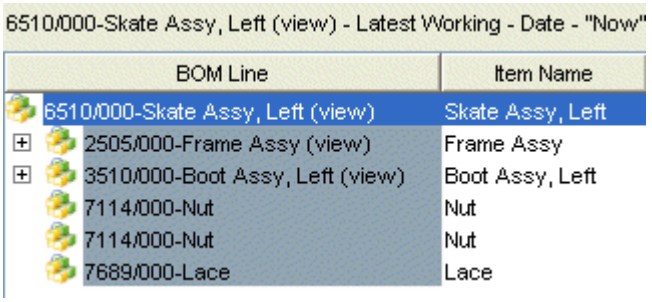
6520/000;1-Skate Assy, Right (view) - Latest Working - Date - "Now"

In this example, the revision rule is **Latest Working**.

Product structure display

Product structure is displayed in an indented BOM format similar to those used in many CAD and enterprise resource planning (ERP) systems.

The product structure is displayed graphically with each component (line in the BOM) represented by a node.



By looking at the product structure display, you can see which parts are piece parts and which parts are assemblies. If a node has a **+** button next to it, it means it is an assembly and you can expand it by clicking on the **+** button.

Activity: View product structure in Structure Manager

This activity takes about five minutes.

In this activity, you become familiar with Structure Manager.

Step 1: Search for the **6120/000-Skate Assembly, Right** item revision and then send it to Structure Manager.

- ☐ In My Teamcenter, search for the **6120-Skate Assembly, Right** item.

  Tip

  In the **Item ID** box, type **6120**.

- ☐ Close the **Search** view.

- ☐ To see the BOM view revision, expand the **6120/000-Skate Assembly, Right** item and item revision.

- ☐ Select the BOM view revision and click the **Open** button .

  The system displays Structure Manager.

Step 2: Expand the **3120/000-Boot Assembly, Right** item.

☐ To expand the **3120/000-Boot Assembly, Right** item, click the **+** button.

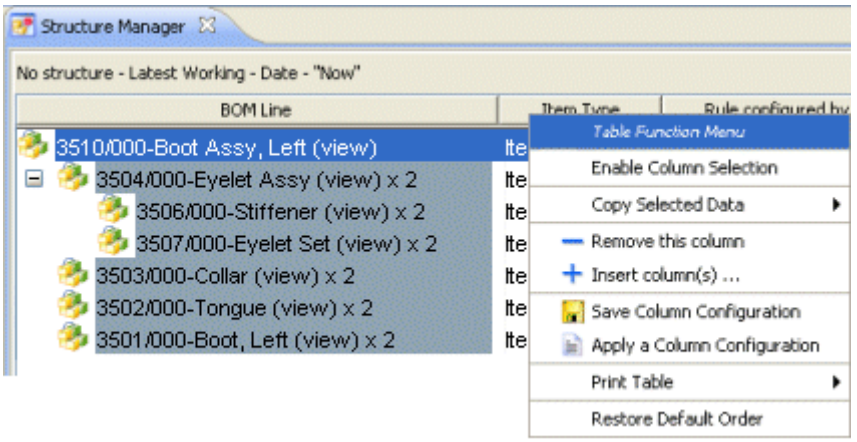
Step 3: Close Structure Manager.

☐ Close the **Structure Manager** view by clicking the **x** to the right of the **Structure Manager** view title.

This concludes the activity.

Modify product structure columns

To modify the product structure columns, right-click a column header and remove/insert columns or click a column header and drag it to a new location.



Tip

You can also print the display by right-clicking and choosing **Print Table**.

Create reports

When working in Structure Manager, you have two ways of creating reports.

To create reports using the **Tools** menu:

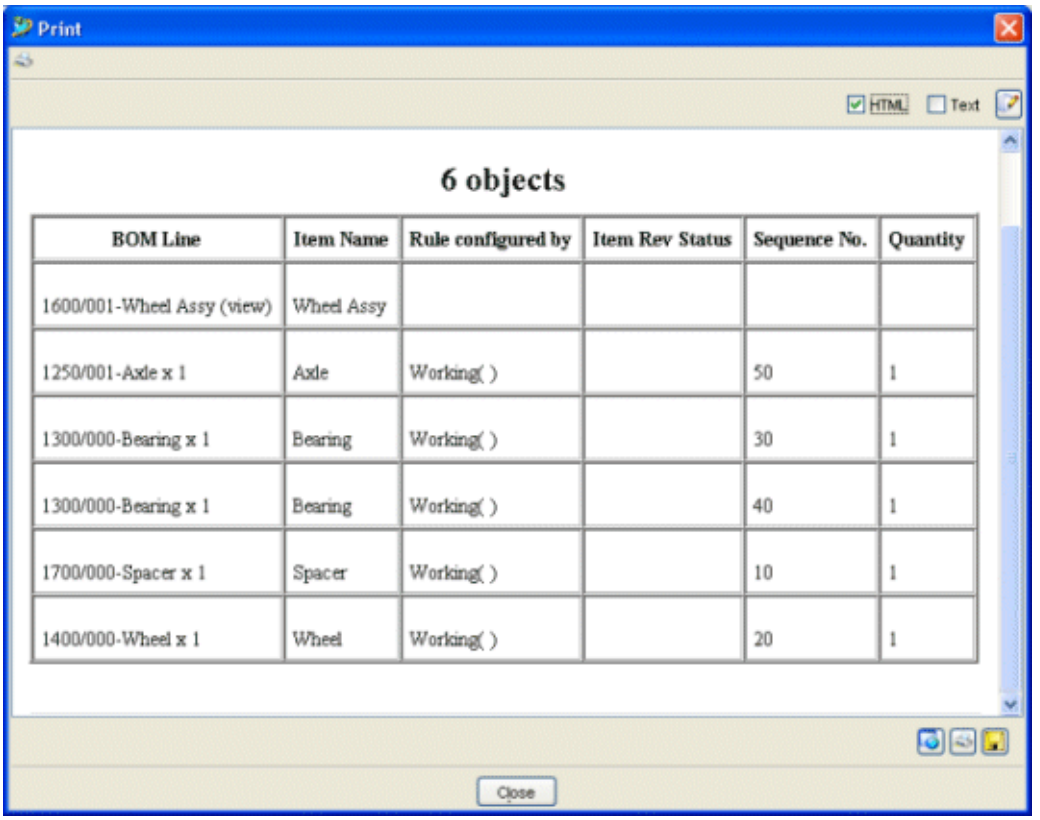
1. In Structure Manager, make sure that the BOM view is selected.
2. Choose **Tools→Quick Report→Stock List Report**.

   The system displays the report in a browser. If you want, you can use the browser's print option to print the report.

To create reports using the **Table Function Menu**:

1. Make sure that a BOM view is displayed in Structure Manager.
2. Right-click the **BOM Line** column header and choose **Print Table® HTML/Text**.

The system displays the report in the **Print** dialog box in HTML format.

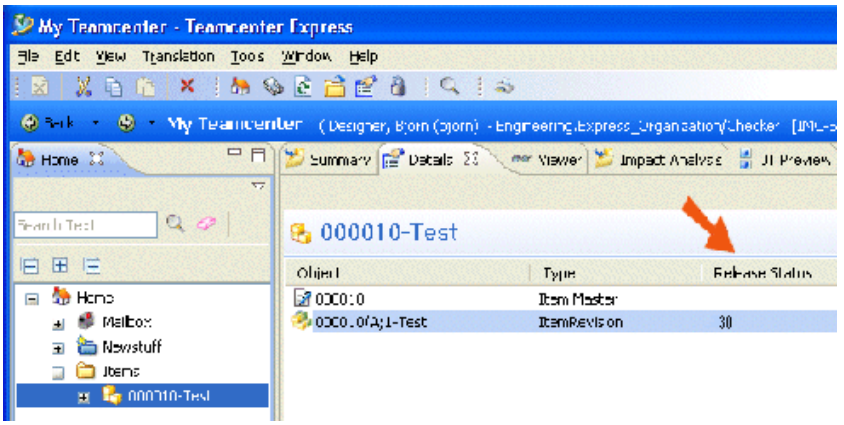


3. In the **Print** dialog box, you can do any of the following:

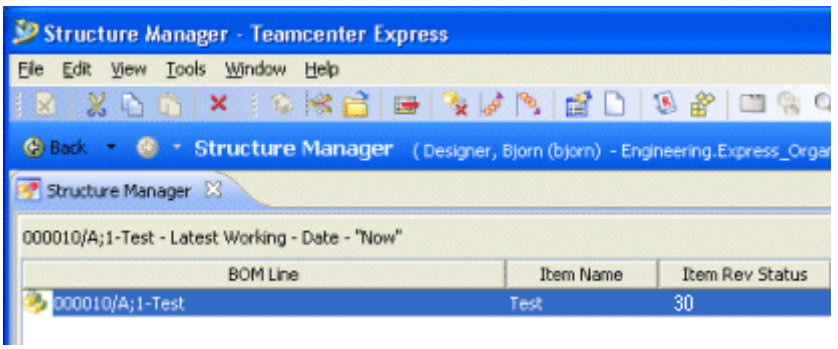
   - To display the report in text format, from the top right corner of the dialog box, select the **Text** check box.
   - To open the report in a Web browser, click the **Open in Web browser** button .
   - To print the report, click the **Print** button .
   - To save the report to a file, click the **Save** button .

Release status

Each item revision has a release status property. The release status of an item revision is shown in My Teamcenter in the **Release Status** column of the **Details** view.



You can also view release status for an item revision by looking at the **Item Rev Status** column in the Structure Manager window.



List of status types

The following is a list of possible values for release status:

- **30**

  Development release. Data stored with item revisions that have obtained this status are also in a write-protected mode and cannot be changed unless a new revision letter is created; however, the data is not intended for production use. The designer or engineer can arbitrarily apply this status to freeze the data for use in building prototypes or providing preliminary data to customers and suppliers.

- **60**

  Production release. Data stored with item revisions that have obtained this status are considered production data. The data is in a write-protected mode, meaning that it cannot be changed unless a new item revision is created.

- **90**

  Obsolete. Data stored with item revisions that have obtained this status are considered obsolete data. The data is in a write-protected mode, meaning that it cannot be changed unless a new item revision is created.

- Empty value

  If the item revision has no value for status, it is said to be working data, meaning that someone is currently working on the data contained in the revision.

  Note

  This list of release status types is the default one preconfigured in Teamcenter Express. Your company may have a different list of possible release status types with different meanings, which can be configured in Teamcenter Express.

Revision rules

Revision rules are parameters you set to determine which item revisions are displayed for an item.

The revision rule keys off the value of the release status for the item revisions that exist for an item.

By changing the revision rule, you can display different configurations of an assembly.

In Structure Manager, the current revision rule setting displays to the right of the item revision name, in the line above the column headings.

The current revision rule is displayed at the top of the Teamcenter Express Web client window, after your user name, group, and role.

In this example, the revision rule is **Latest Working**.

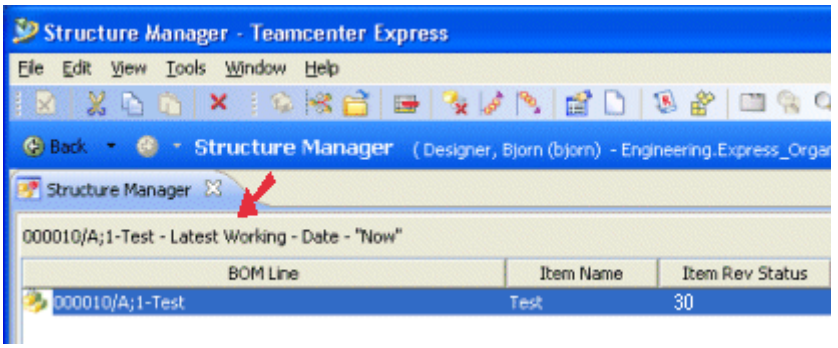


Table 5-1 shows two examples of revision rules:

Table 5-1. Revision rules examples

Revision rule	Details
Latest Working	**Precise, Working, Has Status**
Any Status, No Working	**Has Status, Working**

Note

Your system administrator configures the revision rules for your site.

List of revision rules

The revision rules used for this training material are:

- **Any Status; Working**

  Loads the latest statused revisions or, if none exist, the working revisions of data.

- **Latest Working**

  Loads the latest item revision regardless of its release status. With this rule in effect, you are able to view work-in-progress item revisions.

- **Any Status; No Working**

  Loads the latest item revision with a release status of **Released**. With this rule in effect, you only view item revisions that are released.

- **Precise Only**

  Loads the specific item revision that was in effect the last time the assembly item revision was saved. If newer revisions of the components of the assembly have been created since the last time the assembly was saved, they do not display regardless of wether they have a release status value or not.

- **Released; Config by Date**

  Loads the item revision with a release status of **Released** and an effectivity range that includes the date specified by the user by using **Tools→Revision Rule→Set Date/Unit/End Item**.

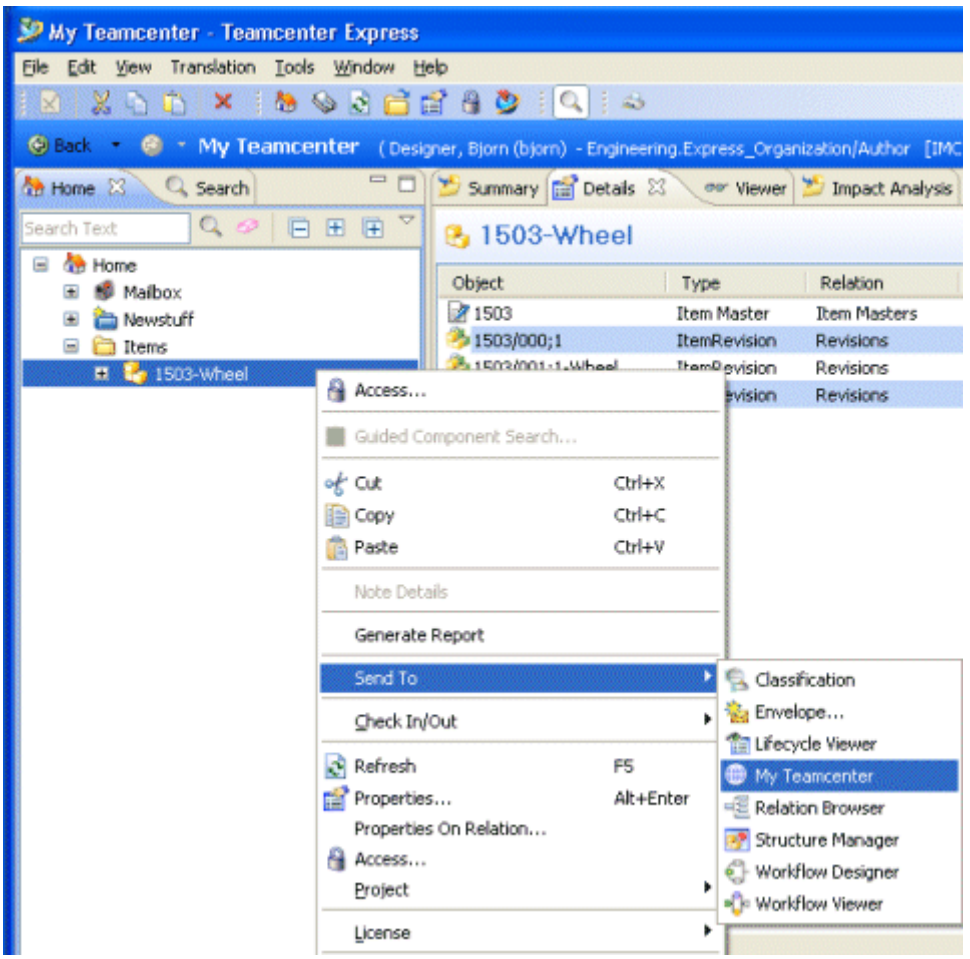
  Note

  This list of revision rules is an example developed for this training material. Your company may have a different list of revision rules.

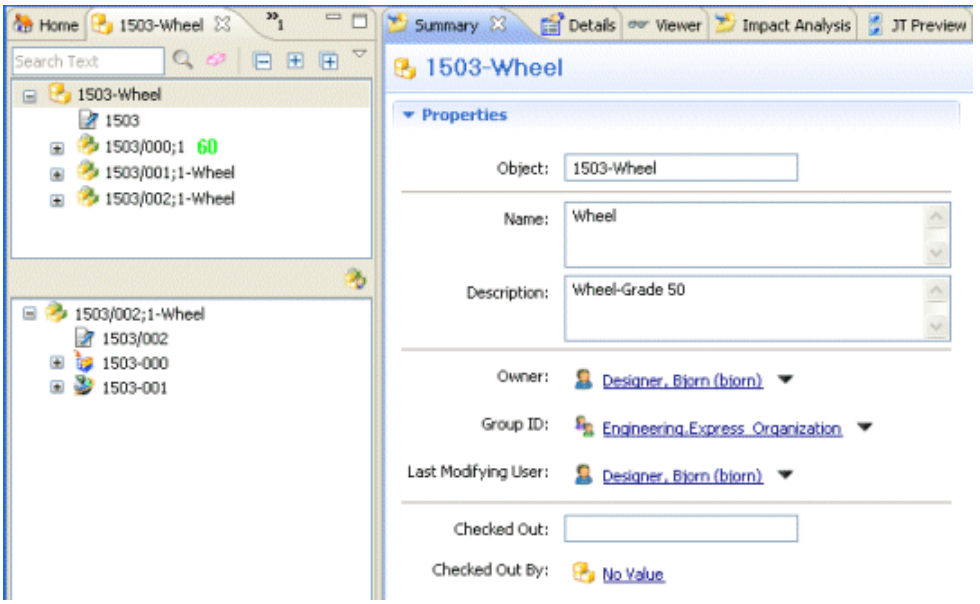
Access the revision display filter

Use the revision display filter in My Teamcenter to configure which item revisions display for an item, based on established revision rules.

1. Right-click an item and choose **Send To→My Teamcenter**.



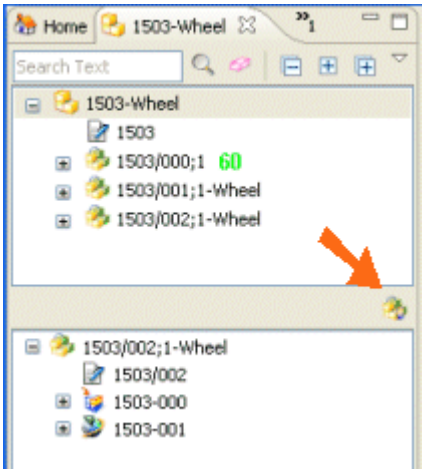
The system launches the My Teamcenter tri-pane window.



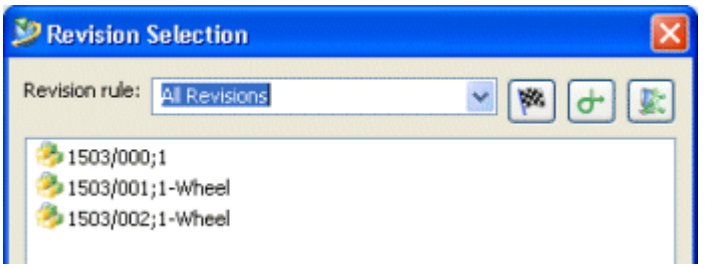
The tri-pane window displays the item tree (top left section) and item revision tree (bottom left section), as well as the standard My Teamcenter panes.

2. To view additional information about the item, click the **Details**, **Viewer**, or **Impact Analysis** views.

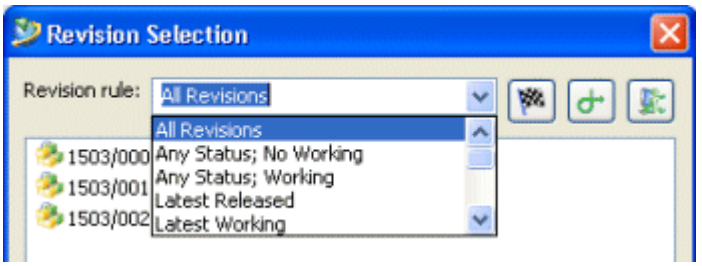
3. To sort through item revisions, use the revision display filters accessible from the **Revision Selection** button , located between the panes on the left that display the item and item revision trees.



The system displays the **Revision Selection** dialog box.



4. From the **Revision rule** list, select a revision filter option.



5. To filter the item revisions display, use the revision filter buttons:


Filters the item revisions to those that have **Released** status.


Filters the item revisions to those that have **In-process** status.


Filters the item revisions to those that have **Working** status.

In the results list, you can double-click an object to display it in the item revision tree (bottom left section) or you can select and copy an object to the clipboard for use in other Teamcenter Express applications.

Key points

The following are key points about the tri-pane window:

- The item tree (upper-left section) is a graphical display of a single item reference and its associated objects, including all item revisions.

- The item revision tree (bottom left section) is a graphical display of a single item revision reference and its associated objects.

Change the default revision rule setting

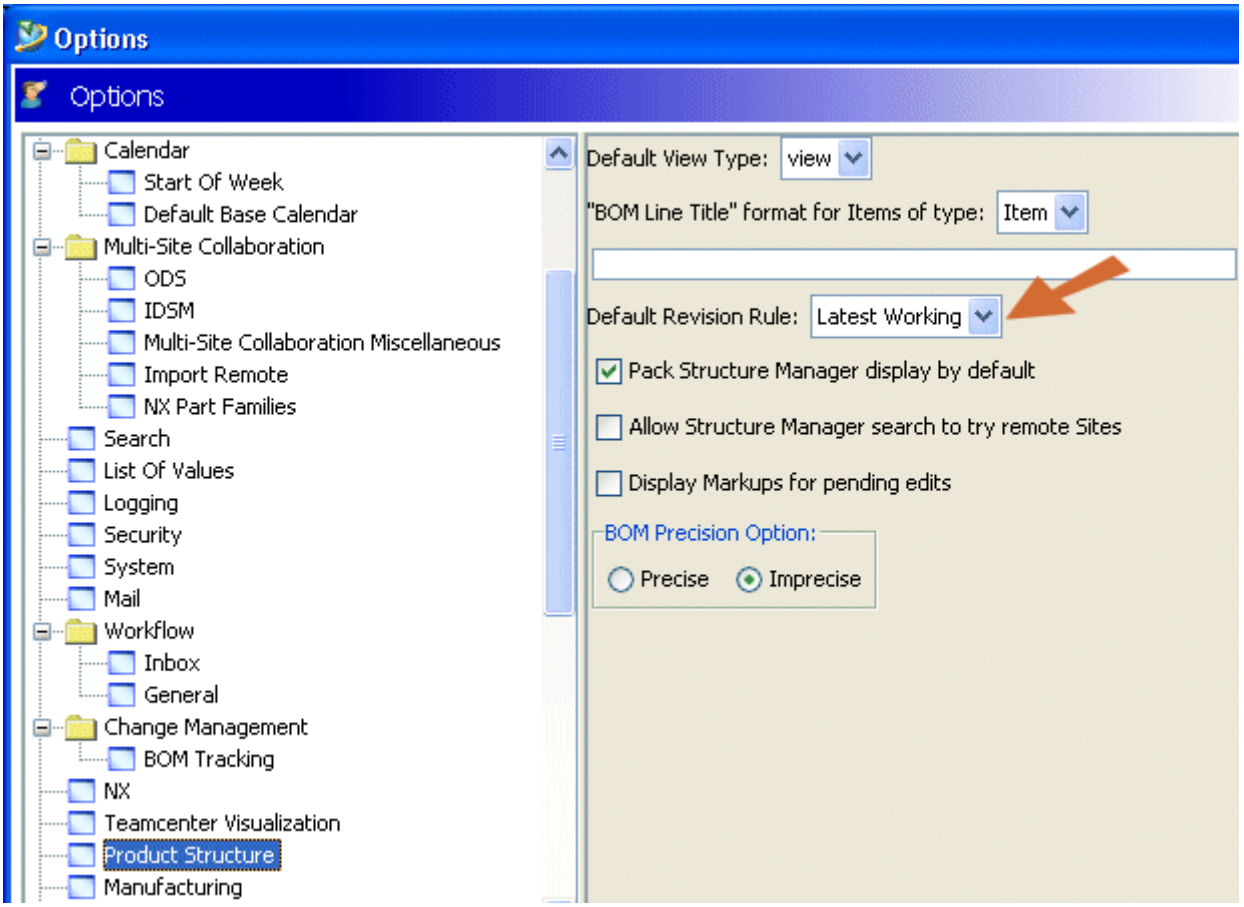
When you log on to the system, a revision rule is in effect that controls which item revisions you see listed when you view product structure (BOM). Your system administrator sets up your default revision rule.

1. Choose **Edit→Options**.

   The system displays the **Options** dialog box.

2. From the list on the left, select Structure Manager.

3. From the **Default Revision Rule** list, select the rule of interest.



4. Click **OK**.

Set an ad hoc revision rule

Instead of changing your default revision rule, you can change the revision rule in effect on an ad hoc or as-needed basis.

Note

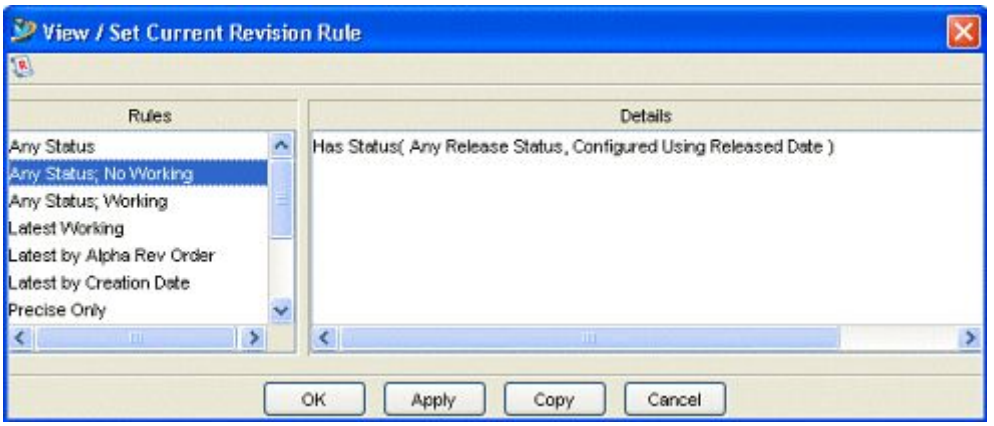
Your system administrator can add, remove, or modify existing revision rules for your site.

1. Do *one* of the following:

   - From the Structure Manager menu bar, choose **Tools→Revision Rule→View/Set Current**.

   - On the Structure Manager toolbar, click the **Revision Rule** button .

   The system displays the **View/Set Current Revision Rule** dialog box, showing the list of available revision rules.



2. Select a rule.

3. Click **OK**.

   The system displays in the Structure Manager window the corresponding change to the assembly.

Activity: Change a revision rule

This activity takes about five minutes.

In this activity, you view the **1510-Wheel Assy** BOM while changing revision rules to see which item revisions are configured.

Step 1: In My Teamcenter, search for the **1510-Wheel Assy**.

Tip

In the **Item ID** box, type **1510**.

Step 2: Send the **1510-Wheel Assy** to Structure Manager.

☐ Expand the **1510-Wheel Assy** item.

☐ Select the BOM view and click the **Open** button.

Note

The latest revision is viewable in Structure Manager: in this case, **1510/002-Wheel Assy**.

The system displays the Structure Manager window, showing the components that make up the wheel assembly.

Note

The **1503/002-Wheel** item does not have a value in the **Item Rev Status** column. This is because the release status value is currently **Working**.

As indicated in the window frame, the revision rule is currently set to **Latest Working**. This setting permits the loading of components in the following order of precedence:

☐ Working components

☐ Components containing a release status (of any type)

Step 3: Change the revision rule to **Any Status; No Working** and view the results. When you select **Any Status; No Working**, the system loads the latest item revision with a release status of **Released**. With this rule in effect, you only view item revisions that are released.

☐ On the Structure Manager toolbar, click the **Revision Rule** button.

☐ From the **Rules** list, select **Any Status; No Working**.

☐ Click **OK**.

The configured revision of the **1503** revision item object is now **000**.

Step 4: Change the revision rule to **Working; Any Status** and view the results.

The configured revision of the **1503** item revision is now **002**.

Step 5: Change the revision rule to **Latest Working** and view the results.

The configured revision of the **1503** item revision is still **002**.

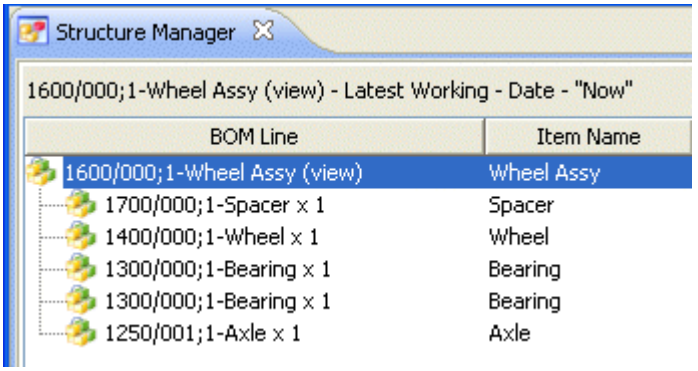
Step 6: Close Structure Manager.

This concludes the activity.

Find detailed information while BOM browsing

While browsing the BOM of a product, you may need to find out more specific information about individual components of the assembly.

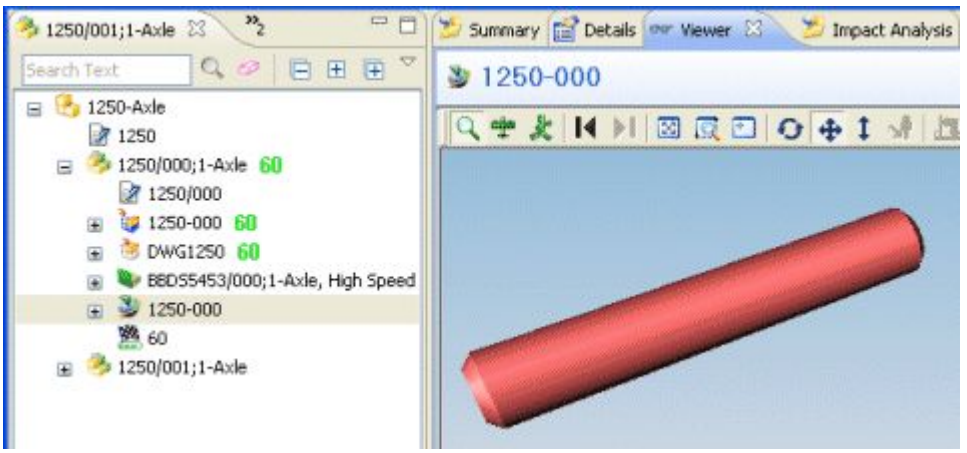
For example, while exploring the **1600/000** BOM, you see the **1250/001-Axle** and want to view the part.



1. Select the **1250/001-Axle** and send it to My Teamcenter.

2. Select the **DirectModel** dataset.

3. Choose the **Viewer** view.



You can also select and view any other files (dataset) or form data associated with the item revision.

Activity: View item data from Structure Manager

 This activity takes about 20 minutes.

In this activity, you find and view the BOM of **1600-Wheel Assy** and then view file and form data of one of the 1600 components.

Step 1: In My Teamcenter, search for **1600-Wheel Assy**.

Tip

In the **Item ID** box, type **1600**.

Step 2: Copy and paste a reference to **1600-Wheel Assy** into the **Items** folder.

Step 3: Expand the **Items** folder.

Step 4: Open the **1600-Wheel Assy** in Structure Manager.

☐ Expand the **1600-Wheel Assy** item and item revisions.

☐ Select the **1600/000-view** BOM view revision and click the **Open** button  .

The system launches the Structure Manager window showing the **1600/000-view** BOM view revision.

Step 5: View the Visualization data for the **1600/000-Wheel Assy**.

☐ On the Structure Manager toolbar, click the **Show/Hide Data pane** button  .

☐ Select the check box for the **1600/000-Wheel Assy (view)**.

The system displays the wheel assembly in the Viewer.

Step 6: View the drawing for the **1250 Axle**.

☐ Right-click **1250/001-Axle** and choose **Send To→My Teamcenter**.

The system displays the contents of the **1250/001** item revision, including the drawing data.

☐ Select the **SH1** dataset under the **DWG1250/** object and choose the **Viewer** view.

Step 7: View the item revision master form data of the **1250/001-Axle** item revision.

☐ Select the **1250/001** item revision master form.

The system displays the item revision master form in the viewer.

This concludes the activity.

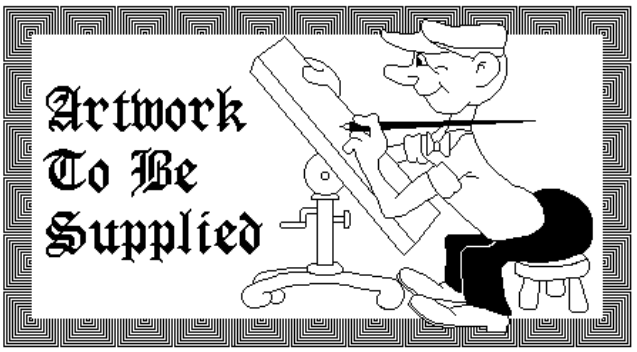
Open multiple product structures in Structure Manager

Structure Manager can have multiple product structures open simultaneously.

In the following example procedure, the product structures for two item revisions are open in Structure Manager at the same time.

1. In My Teamcenter, search for **1600/001**.
2. Send **1600/001** to Structure Manager.
3. Click the **Split window** button (top right corner).
4. Click in the empty window to select it.
5. From the bottom left of the Structure Manager window, click the **Open object by name** button.

   The system displays the **Open by name** dialog box.
6. Search for **1600***.
7. Double-click the result.



8. To return to the one-structure window, in the top right corner of the window you want to keep, click the **Unsplit** button.

Activity: Compare product structures

 This activity takes about 15 minutes.

In this activity, you open both the view and BOM data for two items so you can compare the product structures.

Step 1: Send the **6510-view** BOM view revision to Structure Manager.

- ☐ In My Teamcenter, expand **6510-Skate Assy, Left**.
- ☐ Expand the **6510/000** item revision.
- ☐ Select the **6510/000-view** BOM view revision and click the **Open** button  .

  The system launches the Structure Manager window showing the product structure for the **6510/000-view** BOM view revision.

Step 2: Display the **6520/000-view** BOM view revision in Structure Manager.

☐ Click the **Split window** button  .

The system splits the window. One side displays the **6510/000-view** BOM view revision and the other side is blank.

☐ Click in the blank window.

The system makes the new window active.

☐ From the bottom left of the Structure Manager window, click the **Open object by name** button  .

The system displays the **Open by name** dialog box.

☐ In the **ID** box, enter **6520** and then press the Enter key.

☐ Double-click the result.

The system replaces the blank window with a view of the **6520/000-view** BOM view revision.

Step 3: Compare the two BOM displays.

- ☐ Choose **Tools→Compare**.
- ☐ Select **Single Level** and click **OK**.

  The system highlights the differences between the two assemblies.
- ☐ Close the **BOM Compare** dialog box.
- ☐ Choose **Tools→Clear Compare**.
- ☐ Close Structure Manager.

This concludes the activity.

Summary

When an item is an assembly, you see a BOM view revision object that exists for the item revision.

- Use BOM view revisions to manage product structure for item revisions.
- Opening a BOM view revision object launches Structure Manager.
- Structure Manager is the application within Teamcenter Express for creating, viewing, and modifying product structure and its associated occurrence data.
- If you want to view one of the parts in the BOM, you can send the item revision from Structure Manager to My Teamcenter.
- Item revision configuration using revision rules is done by reading the release status of the revisions. Release status is an attribute assigned to an object after the object successfully goes through a release.

Lesson

6 *Sharing data outside of Teamcenter Express*

Purpose

The purpose of this lesson is to show how you can share data with users who are not Teamcenter Express users.

Objective

After you complete this lesson, you should be able to:

- Create a review package.
- Add objects to the review package.
- Export a review package.
- Modify container file data.
- Import a container file.

Help topics

Additional information for this lesson can be found in *Getting Started With Teamcenter Express*.

Review packages

Before you can share data with users who do not have Teamcenter Express, you must create a review package. Review packages hold the data you want to send out. After you create a review package, you export it as a container file to the local disk, with the option of distributing it through e-mail. You can also import a container file back into Teamcenter Express and view its contents.

When you create a review package in My Teamcenter, the data in the review package is accessible with the searching, browsing, and where-used and where-referenced tools. When you import a container file and the system creates a review item, the data in that review package is *not* accessible with the searching, browsing, and where-used and where-referenced tools.

When you create a review package, the system creates two forms:

- Master form

  Stores the name of the review package owner.

- Revision master form

  Stores the details of the review package revision and its contents. Some of the details are used to create a packaging slip when you create a container file. The system updates the details for each export of the review package.

Create a review package

You create an item of type review package just as you would create any other item type.

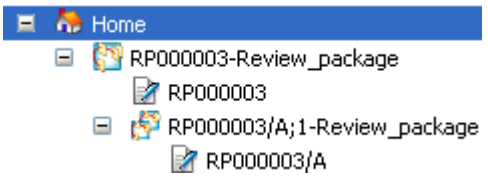
1. Select the **Home** folder.
2. Choose **File→New→Item**.
3. Select **Review_Pckg** and click **Next**.
4. Click **Assign**.
5. Type a name for the review package.

   Caution

   Do not include spaces in the name.

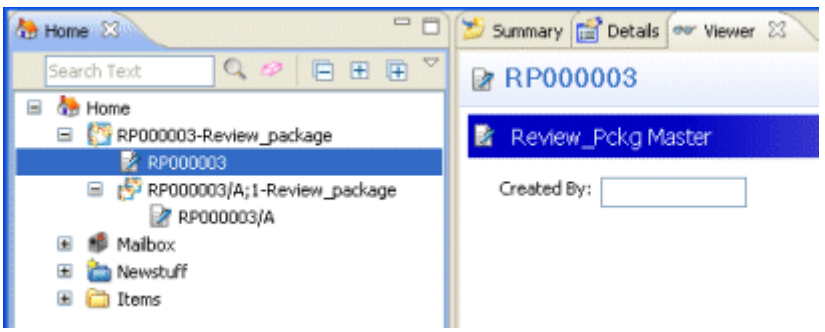
6. Click **Finish**.

   The system creates the review package item.



   Note

   If you did not type data in the item master and revision master forms, you can type data later by clicking the forms, choosing the **Viewer** view, checking out the forms, typing the data, checking in the forms, and clicking **Save**.



7. Add objects to the review package as explained next.

Add objects to a review package revision

When adding objects to a review package revision, you can use the **Cut** and **Paste** or the drag-and-drop features, as well as a method of moving objects that is specific to review packages, as explained next.

1. Before you can add objects to a review package revision, you must make that review package revision active. To make it active, right-click the review package revision and select **Make Active Review Package**.

   Note

   If you did not make any review package revision active, the system assumes that the review package revision you created last is the one that is active. If you are using the **Cut** and **Paste** or the drag-and-drop features, you do not have to worry about making review packages active.

2. Right-click the object you want to add to the review package revision and choose **Add to Review Package**.

   The system adds the object to the review package revision.

3. Export the review package revision as explained next.

Export a review package revision

From My Teamcenter or from Structure Manager, you can export review packages to the local disk. You can export review packages, as container files, in two file formats: package collaboration file (**.pcf**) or **.zip** file format. You view the resulting **.pcf** files in XpresReview, and the **.zip** files in the appropriate viewer, depending on the format of the files included in the **.zip** file. XpresReview is Siemens PLM Software' free electronic design review solution that allows you to easily share multiple documents in a collaborative environment.

When exporting, you can also choose to e-mail the resulting file. If e-mailing, note the following:

- The export feature only works with Microsoft Outlook.
- The file path of the attachment should not contain spaces.
- The file path of the attachment should not exceed 2015 characters.

1. Do *one* of the following:
   - To export from My Teamcenter, right-click the review package revision you want to export and choose **Export Review Package**.
   - To export from Structure Manager, select the item revision you want to export and choose **Tools→Export→Objects**. Verify that the **Review Package** option is selected.
2. Select the export directory by clicking the **Select object from system** button and browsing to the directory where you want to store the exported review package.
3. From the **Container Type** list, select how you want to save the review package to the local disk.
4. (Optional) Type the name of the recipient.
5. If you are exporting as a PCF, from the **PCF Options** section, select any permissions to give to the **.pcf** file.
6. To e-mail the review package, select **Attach to Email** and type the recipient's e-mail.

   Tip

   If e-mailing several people, separate e-mails with the standard Microsoft Outlook separator (;).

7. Click the **Select dataset types to be exported** button  .

   Note

   If exporting as a **.pcf** file, the system includes a limited number of dataset types. If exporting as a **.zip** file, the system includes all dataset types. You can move files between the include and exclude lists using the arrow buttons located between the two lists.

8. Click **OK** in the **Dataset Options** dialog box.

9. Click **OK** in the **Review Package Export** dialog box.

   The system exports the review package as a container file.

10. Modify the data in container files as explained next.

Modify container file data

You modify data in container files differently, depending on the output format: **.zip** or **.pcf**. In a real-world scenario, the person modifying the files would be someone who does not have access to Teamcenter Express. After that person modifies the files, you import them into My Teamcenter.

To modify data in **.zip** files:

1. Go to the directory where you exported the container file.

2. Double-click the **.zip** file to open it and double-click the individual files to display them in the appropriate viewer. For example, a **.doc** file opens in a text editor, a **.html** file opens in a browser, and so on.

3. Modify the files as needed.

To modify data in **.pcf** files:

1. Go to the directory where you exported the container file.

2. Double-click the **.pcf** file to display it in XpresReview.

   Note

   To learn how to work with XpresReview, see its online help (**Help→XpresReview Help**).

3. Modify the files as needed.

Import a container file

When importing a container file into My Teamcenter, you can select the following object types to which to import the container file:

- Item revision
  The system creates a new dataset with the item revision ID, attaches the dataset to the selected item revision, and attaches the container file to the dataset as a named reference.

  Note

  If you select to import the container file to an item, the system informs you that the container file cannot be imported directly to an item. Instead, the system imports the file to the latest item revision.

- Folder
  The system creates a new review package with an assigned ID, and places it in the selected folder.

  Note

  If you do not select anything, the system creates a new review package in the **Newstuff** folder and attaches the container file to the newly created review package revision.

1. Select an object to which to import the container file and choose **Tools→Import→Objects**.

2. From the left side of the dialog box, select **Review Package**.

3. Click the **Select object from system** button  .

4. Double-click the file you want to import.

   Note

   If you are importing to a folder or an item revision, the **To Review Package** box displays the name to be assigned to the imported revision package. If that is not the name you want, replace it with another name.

   If you do not have a folder or an item revision selected, and are therefore importing to the **Newstuff** folder, the **To Review Package** box is blank. If you do not type a name in the **To Review Package** box, the system assigns a number-based name.

5. Click **OK**.

   The system creates a new review package and a corresponding dataset type, such that the container dataset is referenced in the review package item revision.

6. To open the **.pcf** or **.zip** file, double-click the dataset.

Activity: Share data

 This activity takes about 20 minutes.

In this activity, you create a review package, add a **DirectModel** dataset to it, and then export it to your local disk. Because this training setup does not allow for coworkers to modify the data in the container file you exported, modify it yourself. After you modify it, you import the container file back into My Teamcenter.

Step 1: Create a review package.

- ☐ Select the **Home** folder.
- ☐ Choose **File→New→Item**.
- ☐ From the list of types on the right, select **Review_Pckg**.
- ☐ Click **Next**.
- ☐ Click **Assign**.
- ☐ In the **Name** box, type **RP_dir_mod** and then press the Enter key.
- ☐ Click **Finish**.
- ☐ Click **Close**.

Step 2: Activate the review package.

☐ Select the review package.

☐ Right-click the review package and choose **Make Active Review Package**.

Step 3: Add a **DirectModel** dataset to the review package.

☐ Search for an item with **Item ID = 1250***.

☐ Close the **Search** view.

☐ From the search results, expand the **1250-Axle** item, expand the **1250/000-Axle** item revision, and then select the **DirectModel** dataset.

☐ Right-click the **DirectModel** dataset and choose **Add to Review Package**.

Note

Selecting **Add to Review Package** prompts the system to add the review package to the active review package.

☐ When the system informs you that it is adding the **DirectModel** dataset, click **OK**.

The system displays the **DirectModel** dataset in the review package revision.

☐ To view the dataset, expand the review package and the review package revision.

Step 4: Export the review package revision.

☐ Select the review package revision.

☐ Right-click the review package revision and choose **Export Review Package**.

☐ Note the selections made in this dialog box.

Note

In this activity, you do not e-mail the file, but simply save it to your local disk.

☐ Click the **Select dataset types to be exported** button  .

☐ To move all dataset types to the **Include Dataset Types** list, click  .

☐ Click **OK**.

☐ Click **OK**.

The system exports the container file to the specified directory.

Step 5: Modify the data.

☐ Click the **C:\Test** directory button at the bottom of the window.

Note

When working in Teamcenter Express, you navigate to the export directory.

☐ Double-click the **.pcf** file.

The system opens the file in XpresReview.

- ☐ Click the **Text** button  (at the bottom of the window).
- ☐ Click on top of the axle, near the center.
- ☐ From the list on the left, click **<Free Text>** and then click the **Add** button.
- ☐ In the **Text** box, type: **Check length and diameter**.
- ☐ Click **OK**.
- ☐ From the toolbar, click the **Save** button.
- ☐ Close XpresReview.
- ☐ Close Windows Explorer.

Step 6: Import the modified container file into My Teamcenter.

- ☐ Choose **Tools→Import→Objects**.
- ☐ Click the **Select object from system** button  .
- ☐ Double-click the **.pcf** file you exported earlier.

☐ Click **OK**.

The system imports the PCF dataset.

This concludes the activity.

Summary

In this lesson, you learned how to:

- Create a review package.
- Add objects to the review package.
- Export a review package.
- Modify container file data.
- Import a container file.

Lesson

7 Performing where-used and where-referenced searches

Purpose

In this lesson, you perform where-referenced and where-used searches.

Objective

After you complete this lesson, you should be able to perform:

- Where-referenced searches.
- Where-used searches.

Help topics

Additional information for this lesson can be found in:

- *Getting Started With Teamcenter Express*
- *Rich Client Interface Guide*

Perform a where-referenced search

You can perform a where-referenced search to find parts and specifications related to an object.

In the following example procedure, suppose you want to find all locations where the **BBDS5453/000-Axle, High Speed** design specification is being referenced.

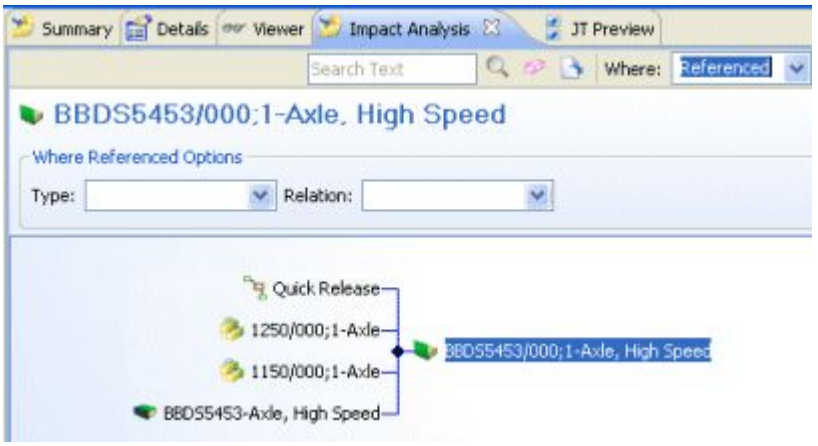
1. Select the **BBDS5453/000-Axle, High Speed** document revision.

2. Choose the **Impact Analysis** view.

3. From the **Where** list, select **Referenced**.

   The results of the where-referenced search is a list of all objects that are related to the design specification.

4. In the **Impact Analysis** view, double-click the objects whose references you want to view.



Key points

The following are key points about where-referenced search results:

- Where-referenced displays are connected with blue links.

- The **Impact Analysis** view allows you to perform either a where-used or where-referenced search in the same display.

- The relationships are displayed graphically, in the **Impact Analysis** view.

Activity: Perform a where-referenced search

This activity takes about five minutes.

In this activity, you perform a where-referenced search on the **BBDS5453** design specification document.

Step 1: Perform a where-referenced search to locate all parts affected by the design specification.

- ☐ In My Teamcenter, expand the **Items** folder.
- ☐ Expand the **BBDS5453-Axle, High Speed** document.
- ☐ Select the **BBDS5453-Axle, High Speed** document revision.
- ☐ Choose the **Impact Analysis** view, and from the **Where** list, select **Referenced**.

  The system shows the locations where the **BBDS5453-Axle, High Speed** document revision is being referenced.

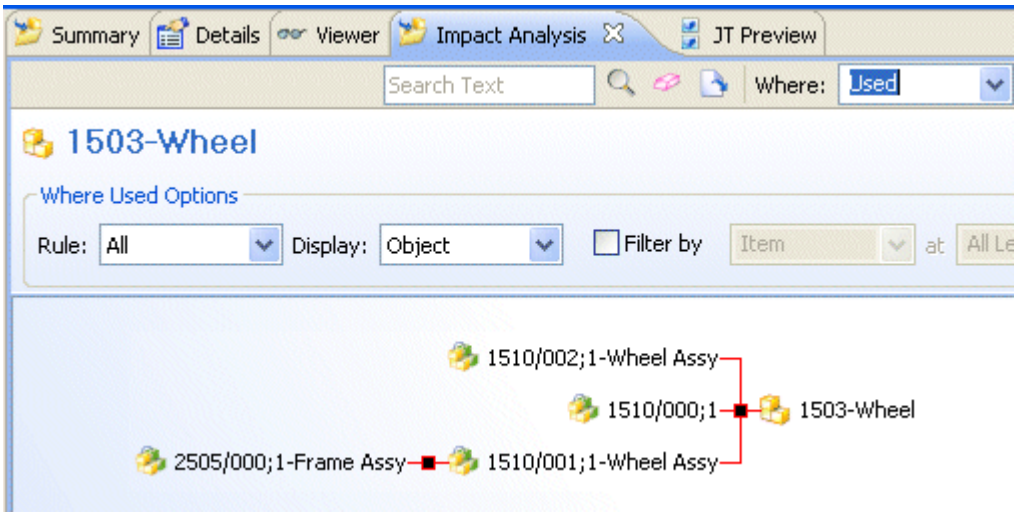
This concludes the activity.

Perform a where-used search

You perform a where-used search to find assemblies that use a selected item.

In the following example procedure, suppose you want to find assemblies where the **1503-Wheel** is being used.

1. Select the **1503-Wheel** item.
2. Choose the **Impact Analysis** view.
3. From the **Where** list, select **Used**.
4. In the **Impact Analysis** view, double-click the **1503-Wheel** item.



Use the where-used rule option to narrow down your search according to revision rules.

To specify a revision rule to use in the where-used search:

- From the **Rule** list, select one of the revision rules.

Key points

The following are key points about where-used search results:

- Where-used displays are connected with red links.
- The where-used search results consist only of item revision objects.
- You can perform iterative expansions of where-used search results by double-clicking objects displayed in the **Impact Analysis** view.
- You can specify the depth of the output results: you can choose to display the where-used results with only **One Level**, **All Levels**, or the **Top Level** assembly, as explained in *Specify depth for where-used and where-referenced searches*
- You can specify the revision rule to use in the where-used search by selecting a revision rule from the **Rule** list.

Activity: Perform a where-used search

 This activity takes about 10 minutes.

In this activity, you perform a where-used search on the **1503-Wheel** to see where it is used.

Step 1: Perform a where-used search on the **1503-Wheel** item.

- ☐ Expand the **Items** folder.
- ☐ Select the **1503-Wheel** item and choose the **Impact Analysis** view.
- ☐ Set the **Where** option to **Used**.

  The system shows the next higher assemblies that use the wheel.

Step 2: Perform a where-used search on **1510/001-Wheel Assy**.

☐ From the where-used results display, double-click the **1510/001-Wheel Assy** item revision.

The system displays the **2505/000-Frame Assy**, which is the next higher assembly that uses the **1510/001-Wheel Assy**.

Step 3: Perform a where-used search on **2505/000-Frame Assy**.

☐ From the where-used results display, double-click the **2505/000-Frame Assy**.

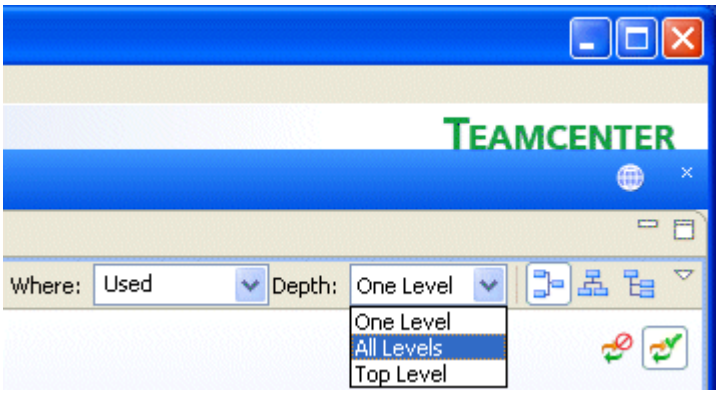
The system displays the **6510/000-Skate Assy, Left**, which is the next higher assembly that uses the **2505/000-Frame Assy**.

This concludes the activity.

Specify depth for where-used and where-referenced searches

When performing where-used and where-referenced searches, you can specify the depth of the output results.

From the **Depth** list, select one of the level display options:



One Level	Shows the parent level in the structure.
All Levels	Shows all the item revisions that have the selected item as a component.
Top Level	Shows only the top-level assembly that uses the selected item.

Summary

In this lesson, you learned:

- The Impact Analysis application allows you to perform either a where-used or where-referenced search in the same display. The relationships are displayed graphically.

- Perform a where-referenced search to find out where a selected object is being referenced. Where-referenced displays are connected with blue links.

- Perform a where-used search to find assemblies that use the selected item revision. You can choose to display the where-used results with only **One Level**, **All Levels**, or the **Top Level** assembly. Where-used displays are connected with red links.

- You can perform iterative expansions of the search by double-clicking the object button in the **Impact Analysis** view.

Lesson

8 *Editing product structure*

Purpose

The purpose of this lesson is to create and maintain bill of materials (BOM) data using Structure Manager.

Objective

After you complete this lesson, you should be able to build structure using Structure Manager.

Help topics

Additional information for this lesson can be found in *Structure Manager Guide*.

Building structure

You can create structure using the following:

- **New Item** dialog box
- **Copy** and **Paste** options
- **Add** and **Paste Special** options

Using Copy and Paste

Copying and pasting information into Structure Manager is one method for building structure. You can do the following:

- Copy more than one item revision to create several components at the same time.
- Use the **Paste** command to take items and item revisions from the clipboard and create components in an assembly in Structure Manager.
- Select several target assemblies to add the components in one operation.
- Copy items and item revisions from other application windows and paste them into Structure Manager.

Using Paste Special

In Structure Manager, if you want to paste a component multiple times, use the **Paste Special** command. This method pastes what is currently in your clipboard.

To paste a component multiple times:

1. Be sure to have a component copied in the clipboard.
2. Choose **Edit→Paste Special**.

   The system displays the **Paste** dialog box.
3. In the **Number of occurrences** box, type how many times you want the component to be displayed in the BOM.
4. In the **Quantity per occurrence** box, type the quantity within each specified occurrence.
5. Click **OK**.

Using Add

The **Add** dialog box is similar to the **Paste** dialog box. The main difference between the two dialog boxes is that the **Paste** dialog box prepopulates the **Item ID** (revision) and **Name** boxes with an item (revision) from the clipboard. When using the **Add** dialog box, you specify a component by entering the ID (rather than pasting from the clipboard).

You can add multiple occurrences, as well as more than one quantity per occurrence. For example, you may have one occurrence of a rivet with a quantity per occurrence of 50, or two occurrences of a rivet each with a quantity of 25.

To add a component multiple times:

1. Choose **Edit→Add**.

   The system displays the **Add** dialog box.

2. Click the **Open object by name** button  .

   The system displays the **Open by Name** dialog box.

3. In the **Name** or the **ID** boxes, type either the name or the ID of the component you want to add and then click **Find**.

4. From the resulting list, double-click the component of interest.

   The system enters the component information in the **Add** dialog box

5. In the **Number of occurrences** box, type how many times you want the component to be displayed in the BOM.

6. In the **Quantity per occurrence** box, type the quantity within each specified occurrence.

7. Click **OK**.

Activity: Create assembly structure

 This activity takes about 25 minutes.

In this activity, you build an inline skate assembly structure.

Step 1: Create a new recreational skate line top-level item.

- ☐ Select the **Items** folder.
- ☐ Choose **File→New→Item**.

  The system displays the **New Item** dialog box.
- ☐ From the list of types on the right, select **Item**.
- ☐ Click **Next**.

  The system displays the Enter Item Information form.
- ☐ In the **Item ID** box, type **6205_000** and then press the Enter key.
- ☐ In the **Revision** box, type **000** and then press the Enter key.
- ☐ In the **Name** box, type **Rec. Skate Assembly** and then press the Enter key.

  Note

  When the **Unit of Measure** box is left blank, no unit of measure is applied to the item. Usually the box is left blank when the item cannot be described in terms of a unit of measure.

☐ Click **Finish**.

☐ Close the **New Item** dialog box.

The system places the new item in the **Items** folder.

Step 2: Send the top-level assembly to Structure Manager.

☐ From the **Items** folder, select the **6205_000-Rec. Skate Assembly** item.

☐ Right-click and choose **Send To→Structure Manager**.

The system displays the item in Structure Manager.

Step 3: Create the **Skate Assembly, Left** item.

☐ Choose **File→New→Item**.

☐ Click **Next**.

☐ In the **Item ID** box, type **3210_000** and then press the Enter key.

☐ In the **Rev** box, type **000** and then press the Enter key.

☐ In the **Name** box, type **Skate Assembly, Left** and then press the Enter key.

☐ Click **Finish**.

The system places the new item as a child of the **6205_000/000-Rec. Skate Assembly** because that is the assembly you had selected.

Step 4: Create a new **Skate Assembly, Right** item.

☐ Click **Next**.

☐ In the **Item** box, type **3220_000** and then press the Enter key.

☐ In the **Revision** box, type **000** and then press the Enter key.

☐ In the **Name** box, type **Skate Assembly, Right** and then press the Enter key.

☐ Click **Finish**.

☐ Close the **New Item** dialog box.

Step 5: Create the new **Boot Assembly, Right** item.

☐ Select **3220_000/000-Skate Assembly, Right**.

☐ Display the **New Item** dialog box again (**File→New→Item**).

☐ Click **Next**.

☐ In the **Item ID** box, type **3230_000** and then press the Enter key.

☐ In the **Revision** box, type **000** and then press the Enter key.

☐ In the **Name** box, type **Boot Assembly, Right** and then press the Enter key.

☐ Click **Finish**.

The system places the new item in **3220_000/000-Skate Assembly, Right**. Note the **+** button to the left of the assembly.

☐ Close the **New Item** dialog box.

☐ Expand the **3220_000** node.

The system displays the new item.

☐ Select **3220_000/000-Skate Assembly, Right** again.

Besides the item you created, **3230_000/000-Boot Assembly, Right**, the system displays three additional items (created so you can finish the simulation faster).

Step 6: Save Structure Manager.

☐ On the toolbar, click the **Save** button  .

Step 7: Add the **3102 Boot, Right** item to **Boot Assembly, Right**. Because this item already exists in the database, you use **Edit→Add**.

☐ In Structure Manager, select **3230_000** and choose **Edit→Add**.

☐ In the **Item ID** box, type **3102** and then press the Enter key.

The system fills in the **Add** dialog box with information about the **3102** item ID.

☐ Click **Apply**.

The system places the **3102 Boot, Right** item inside the assembly and leaves the **Add** dialog box open.

Step 8: Add **3118 Collar** to **Boot Assembly, Right**.

☐ With the **Add** dialog box still displayed, in the **Item ID** box, type **3118** and then press the Enter key.

☐ Click **OK**.

The system places the **3118 Collar** item inside the assembly and closes the **Add** dialog box.

☐ Click the **Save** button .

Step 9: Find an existing buckle assembly by name and add it to **Boot Assembly, Right** with a quantity of three (3).

☐ Return to My Teamcenter and click the **Search** button .

Tip

To return, click the **Back** button .

☐ In the **Name** box, type **Buckle Assembly**.

☐ Click the **Go** button .

☐ In the results window, right-click the **4103-Buckle Assembly** and choose **Copy**.

☐ Return to Structure Manager.

Tip

Click the **Forward** button  .

Note

In the next action, choose **Edit→Paste Special** rather than **Edit→Paste** because choosing **Paste Special** allows you to indicate how you want to paste the item.

☐ Choose **Edit→Paste Special**.

☐ In the **Number of occurrences** box, type **3**.

☐ Click **OK**.

The system adds three occurrences of the buckle assembly to **3230_000/000-Boot Assembly, Right**.

☐ Expand **3230_000/000-Boot Assembly, Right**.

☐ Click the **Save** button.

In the steps that follow, you add an existing brake assembly to **6205_000/000-Rec. Skate Assembly**.

To demonstrate copying structure between two Structure Manager windows, you open a second Structure Manager window for **6120/000-Skate Assembly, Right** (which contains a brake assembly).

You then copy and paste the structure of the brake assembly from the second Structure Manager window into the **6205_000/000-Rec. Skate Assembly Structure Manager** window.

Step 10: Find **6120-Skate Assembly, Right** and send it to Structure Manager.

☐ In My Teamcenter, in the **Search** view, click the **More** button.

☐ Search for the item ID **6120**.

☐ From the search results, right-click **6120-Skate Assembly, Right** and choose **Send To→Structure Manager**.

Step 11: Create side-by-side Structure Manager views.

☐ Click the **Split window** button.

The system splits the window. One side displays the **6120** assembly and the other side is blank.

☐ Click in the blank window.

The system makes the new window active.

☐ From the bottom left of the Structure Manager window, click the **Open object by name** button.

The system displays the **Open by name** dialog box.

☐ In the **ID** box, enter **6205*** and then press the Enter key.

☐ Double-click the result.

The system replaces the blank window with a view of the **6205/000-view** BOM view revision.

Step 12: Copy the existing brake assembly into **6205/00-Rec. Skate Assembly**.

☐ In the **6120/000-Skate Assembly, Right** window, select **5101/000-Brake Assembly**.

☐ Click the **Copy** button  .

☐ In the **6205_000/000-Rec. Skate Assembly** window, select and then expand **3220_000/000-Skate Assembly, Right**.

☐ Click the **Paste** button  .

The system lists the **5101/000-Brake Assembly** under **3220_000/000-Skate Assembly, Right**.

- ☐ In the top right corner of the **6120/000-Skate Assembly, Right Structure Manager** window, click the **x** to close the window.

Step 13: Remove **Tongue** from **Boot Assembly, Right** (decided that it is not going to be used).

- ☐ In **6205_000/000-Rec. Skate Assembly**, select **3260_000/000-Tongue, Right**.
- ☐ Remove this line from the BOM by clicking the **Remove a line** button on the toolbar.
- ☐ Save Structure Manager.

This concludes the activity.

Activity: Complete the product structure for the skate line

 This activity takes about five minutes.

In this activity, you add the frame assembly to the recreational skate assembly.

Step 1: Send the top-level **Rec. Skate Assembly** to Structure Manager.

- ☐ To locate the **6205_000-Rec. Skate Assembly** item, in My Teamcenter, expand the **Items** folder.
- ☐ Select the **6205_000-Rec. Skate Assembly** item.
- ☐ Right-click and choose **Send To→Structure Manager**.

  The system displays Structure Manager.

Step 2: Add **Frame Assembly** to **Skate Assembly, Right**.

- ☐ In My Teamcenter, search for **2105-Frame Assembly**.

  Tip

  In the **Item ID** box, type **2105**.

- ☐ Select the **2105-Frame Assembly** item.
- ☐ Right-click and choose **Copy**.
- ☐ In Structure Manager, right-click the **3220_000/000-Skate Assembly, Right** item revision and choose **Paste**.

  The system lists the **2105-Frame Assembly** item revision under the **3220_000/000-Skate Assembly, Right** item revision.

- ☐ Expand the **3220_000/000** node.
- ☐ Save Structure Manager.

This concludes the activity.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Summary

In this lesson, you learned:

- You can create product structure in Structure Manager using the **New Item** dialog box and the **Add** and **Paste Special** dialog boxes.
- The main difference between **Add** and **Paste Special** is that the **Paste Special** dialog box prepopulates the **Item ID (Revision)** and **Name** boxes with an item (revision) from the clipboard.
- Using the **Add** dialog box, you can specify a component by entering the item ID (rather than pasting from the clipboard).
- **Number of occurrences** corresponds to the number of instances of the component to add to the structure.
- Structure Manager displays the information that resides in the BOM view revision.
- Use BOM view revisions to manage product structure for item revisions.

Lesson

9 *Planning and tracking your work*

Purpose

The purpose of this lesson is to teach you how to plan and track your work in Teamcenter Express.

Objective

After you complete this lesson, you should be able to:

- Create schedules, tasks, and milestones.
- Set up notifications and subscriptions.
- Assign resources to tasks.
- Integrate schedules with Teamcenter workflow.
- Manage calendars.

Help topics

Additional information for this lesson can be found in the *Schedule Manager Guide*.

Introducing Schedule Manager

You plan and track your work in Teamcenter Express using Schedule Manager. As a schedule owner, you can set up a project so that you are the only one who can update it; you can give others the capability to update specific tasks or schedule subsections; or you can give everyone on the team the ability to update the entire schedule.

The Schedule Manager interface presents information in two different views: a **Task** list and a Gantt chart. You can resize these views by dragging the border between the two views.

When you select a task from the **Task** list, the system displays the corresponding task bar in the Gantt chart.

Task list

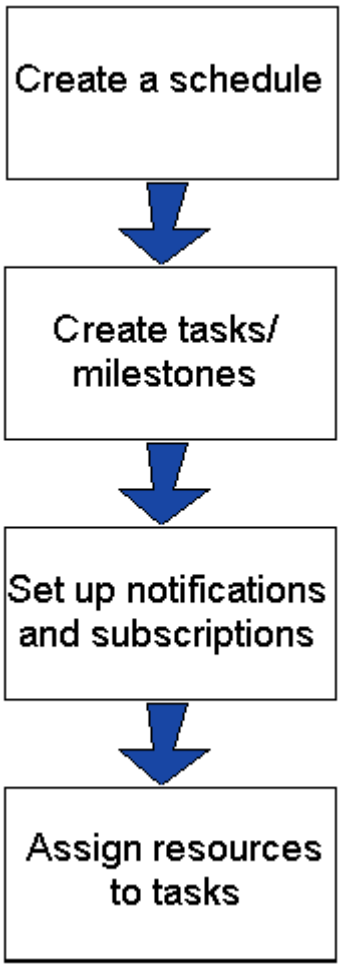
In the left pane, the **Task** list shows all tasks and milestones in table format. Columns provide the following information: task ID, task name, start date, finish date, duration, predecessor task, and successor task. The system automatically assigns a task number to each task.

Gantt chart

In the right pane, the system displays the schedule as a Gantt chart. The schedule can be viewed by week, month, quarter, or year. The Gantt chart provides a visual representation of a project's tasks. Using your mouse, you can manipulate items in the Gantt chart.

Process overview

The following flowchart illustrates the process to plan and track your work using Schedule Manager.



The sections that follow guide you through each step of the process so you can successfully learn to plan and track your work using Schedule Manager.

Create a schedule

You create schedules from My Teamcenter or from Schedule Manager. Although you can create schedules in both applications, in My Teamcenter you can only view the schedules. To manage the schedules, you must open them in Schedule Manager as explained in *Open a schedule in Schedule Manager*.

1. In either My Teamcenter or Schedule Manager, choose **File→New→Schedule**.
2. Select **Schedule** and click **Next**.
3. Click **Assign**.
4. In the **Name** box, type a name for the schedule.
5. (Optional) Type a description for the new schedule.
6. Click **Next**.
7. (Optional) In the **Customer Name** and **Customer Number** boxes, type the name and number of the customer to which this schedule applies.
8. Select a time zone.
9. Select the start and due dates.

   All tasks and milestones must fall within the start and due dates. After the schedule is created, you can change the start and due dates using the schedule **Properties** dialog box (right-click schedule and select **Properties**).
10. (Optional) Select options for the schedule.
    - **Percent Complete is linked to Work Complete**

      If you change the actual work completed, the percentage completed changes to equal the percent of scheduled work completed.

      If you change the percentage completed, the actual work completed changes to equal the scheduled work multiplied by the percentage completed.
    - **Template**

      Saves the schedule as a template, which can then be used as a basis for other schedules.
    - **Published**

      Allows other users access to the schedule.
    - **Public**

Allows published schedules to have the same access rights as templates.

A public schedule can be seen by anyone who has access to the folder in which it resides, even people who are not assigned to the schedule. You are assigned observer rights to a public schedule, unless you have additional rights.

- **Notification Enabled**

  Sends notifications when specific triggers occur within a schedule.

11. If you have a schedule template you want to use:
    - Select the **Use an existing Schedule template for this new Schedule** check box.
    - Click the **Template** button.
    - In the **Choose a Schedule Template** dialog box, select the template you want to use and then click **Select**.

      The selected template displays in the box next to the **Template** button.

      Note

      If you used a template for this schedule, the system displays the start date in the **Shift Date** box. To change the start date, click the corresponding button and select a new date.

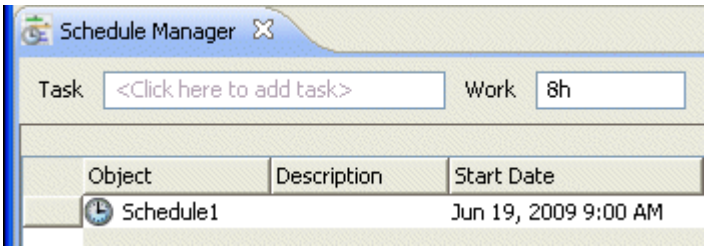
12. Click **Finish**.

Open a schedule in Schedule Manager

After you create a schedule in My Teamcenter, you open it in Schedule Manager to manage it.

1. Open My Teamcenter.
2. Navigate to a schedule.
3. Perform one of the following:
   - Double-click the schedule.
   - Right-click a schedule and choose **Send To→Schedule Manager**.

   The Schedule Manager application opens and displays the schedule.



Create tasks and milestones

After you create a schedule, you can add tasks and milestones to it.

Create a Task

1. In Schedule Manager, select a schedule.
2. Choose **File→New→Task**.
3. Select **Schedule Task** and click **Next**.
4. Click **Assign**.
5. In the **Name** box, type a task name.
6. (Optional) Enter a description for the task.
7. Click **Next**.
8. In the **Type** box, choose a task type:
   - **Fixed Work**

     Keeps the hours constant while duration or resource to task is modified (default).

   - **Fixed Duration**

     Keeps the length of time constant while the work or resource is modified.

   - **Fixed Resource**

     Keeps the resource constant while the work or duration is modified.

     Note

     Leave the **Create Phase Gate Structure** check box cleared. For more information about phase gate structures, see *Integrate schedules with Teamcenter workflow*.

9. Select a start and due date by clicking the corresponding date buttons.
10. In the **Work Estimate** box, type scheduled work for the task. You can enter information as hours, days, or weeks (for example, **20.5h** or **5d** or **1w**).

    You can also click the **Work Estimate** button to open the **Hours Chooser** dialog box where you can enter duration in minutes, hours, days, weeks, months, and years.

11. In the **Work Complete** box, type the amount of work completed, if the task has already been started. You can enter information as hours, days, or weeks (for example, **40h** or **5d** or **1w**).

    You can also click the **Work Complete** button to open the **Hours Chooser** dialog box where you can enter duration in minutes, hours, days, weeks, months, and years.

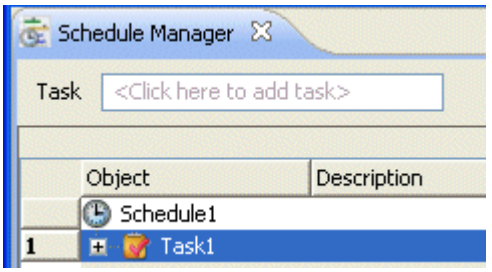
12. Click **Next**.

13. Assign members to the task.

    For information about assigning members to a task, see *Assign resources to tasks*.

14. Click **Finish**.

    The system displays the task.



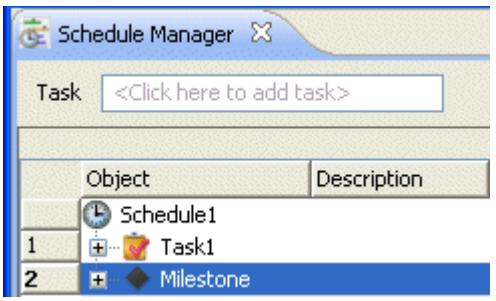
Create a Milestone

Milestones are tasks with zero duration. You can convert a task to a milestone by setting its duration to zero hours (for example, Program Approval Phase – Management Approval). You can also convert a milestone into a task by setting its duration to greater than zero hours.

1. In the **Task** list, select the task for which you want to create a milestone.

2. Choose **File→New→MileStone**.

    The system adds the milestone to the **Task** list and labels it **Milestone**.



Modify a Milestone

1. In the **Task** list, double-click the milestone.

   The system displays the **Properties** dialog box.

2. To change the name of the milestone, type a new name in the **Name** box.

3. To automatically change the milestone's status to **Complete** when its predecessor is complete, set **Auto-Complete** to **true**.

4. Click **OK**.

Set up notifications and subscriptions

You can use notifications and subscriptions to notify individuals, including yourself, of important events associated with selected tasks.

Create a notification

You can create notifications to notify you, fellow team members, and even people outside the team of important events, such as due dates, milestones, and task completions. When you create the notification rule, you can change the text of each predefined notification. You can create an unlimited number of notifications, based on the existing set of notification rules, and you can configure a notification rule for a schedule to notify the schedule team when a document has been added to a schedule.

Notifications can be received by any user in the system, a custom e-mail address, or people meeting the following qualifications: member of a schedule, member of a group, or member assigned to a task (for a task notification).

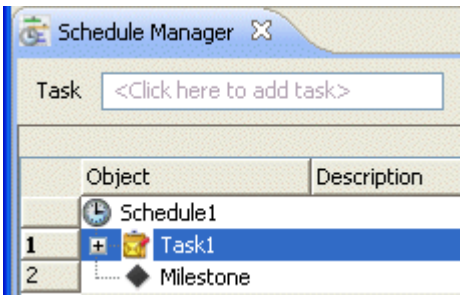
1. From the **Task** list, select one or more tasks.
2. Choose **Edit→Notification Rules**.
3. In the **Notification Rules** dialog box, click **New**.
4. Select a rule from the list and click **Next**.

   Depending on the rule selected, additional dialog boxes may appear. Complete them as necessary.
5. Select the members to be notified when the rule triggers.

   All disciplines in the membership appear in the list. When notifying disciplines, the system notifies members of the discipline who are also members of the schedule. When notifying groups, the system looks up and notifies all group members when an event is triggered.
6. Click the **Select** button next to **Add other members of the organization** to notify recipients who are not currently scheduled resources.
7. Type additional e-mail addresses, separated by commas, and click **Next**.
8. Type a subject and the message text or use the information provided.
9. Click **Finish**.

10. Close the **Notification Rules** dialog box.

    The system adds an envelope on the task icon.



Create a subscription

You can create a subscription for a task that notifies you when a specified task-related event occurs. Subscriptions are similar to notifications except that you can send a subscription only to yourself.

You can use the **Subscription Rules** dialog box to see a list of existing e-mail subscriptions, create new subscriptions, and modify existing ones.

1. Select one or more objects from the tree. You can select a task or a milestone.

2. Choose **Edit→Subscription Rules**.

3. In the **Subscription Rules** dialog box, click **New**.

4. Select one of the rules from the list and click **Next**.

   Depending on the rule selected, additional dialog boxes may appear. Complete them as necessary.

5. Type a subject and the message text or simply use the information provided.

6. Click **Finish**.

7. Close the **Subscription Rules** dialog box.

Assign resources to tasks

As the project manager responsible for creating a schedule, you define the resources for the project. As the project scope becomes more defined and you fill out the schedule by adding tasks and milestones, you are likely to refine your resource needs.

You can start adding the names of resources who will be working on this project as you acquire them. These may be the names of actual people, or they may be disciplines that act as placeholders until you are ready to assign actual tasks.

Note

You can also assign resources when the task is created.

1. Right-click a task and choose **Assignments→Assign to Task**.

2. Add resources to the task by clicking their corresponding **Assigned** box. To assign:

   - A member from a group, click the **+** arrow to expand the **Group** folder, then click the group members corresponding **Assigned** box. You cannot assign a group to a task, only its members.

   - A discipline to a task, click its corresponding **Assigned** box. To assign a member from a discipline, click the **+** arrow to expand the discipline folder, then click a member's corresponding **Assigned** box.

     Note

     People in the discipline are people who are members of the schedule and members of the discipline.

3. Click **OK**.

Integrate schedules with Teamcenter workflow

The Teamcenter workflow process divides a project into a series of phases that define best practice activities. After each phase of the process, there is a gate or quality control checkpoint. The process evaluates the phase at the gate to ensure the action plan and request for resources are sound.

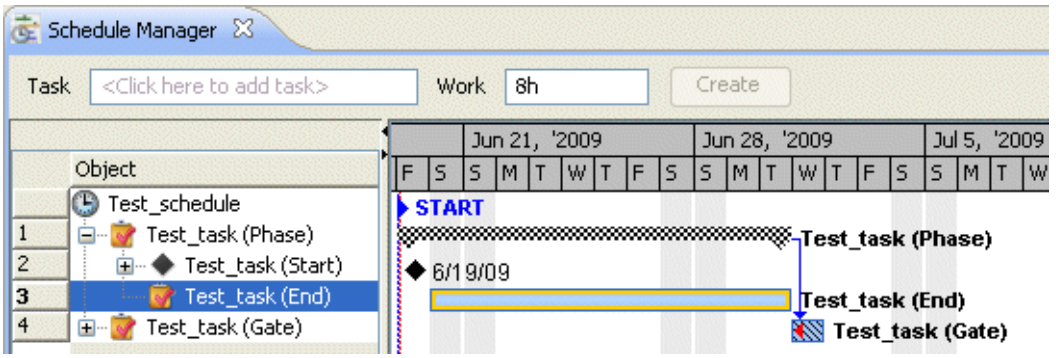
In Schedule Manager, a phase-gate initiative is a special type of schedule. A phase corresponds to a summary task. A gate is a special task, which provides criteria to determine if the phase has been completed. Tasks within phases and gates, are then linked to Teamcenter workflow. Phases are not linked to Teamcenter workflow.

Creating a phase gate initiative in Schedule Manager allows you to submit tasks to Teamcenter workflow. As tasks are worked on and updated in Teamcenter workflow, that information is sent to Schedule Manager, where the corresponding information is updated.

1. Create a schedule as explained in *Create a schedule*.

2. Create a new task as explained in *Create tasks and milestones*, being sure to select **Create Phase Gate Structure** as you go through the **New Task** wizard.

   Once created, the schedule displays a phase, two milestones, and a gate. The phase appears as hatched lines.



3. To add more phases, repeat the process.

Create deliverables

Deliverables can be associated with schedules and with the tasks within a phase. For example, a design document may be associated with the develop design document task.

Create schedule deliverables

1. In Schedule Manager, select a schedule.
2. Choose **Schedule→Schedule Deliverables**.

   The system displays the **Schedule Deliverables** dialog box.
3. Click **Add** to add a line.

   You can remove a deliverable from the **Schedule Deliverables** dialog box by selecting the deliverable and clicking **Remove**.
4. In the **Name** box, type a name.
5. Click the **Type** box and select a type from the list.
6. Repeat steps 3 through 5 to add another schedule deliverable.
7. Click **OK**.

Create task deliverables

1. In Schedule Manager, select a task.
2. Choose **Schedule→Task Deliverables**.

   The system displays the **Task Deliverables** dialog box.
3. Click **Add** to add a line.

   You can remove a deliverable from the **Task Deliverables** dialog box by selecting the deliverable and clicking **Remove**.
4. Click the **Schedule Deliverable** box and select a deliverable from the list.
5. Click the **Submit Type** box and select a type from the list.
6. Repeat steps 3 through 5 to add another task deliverable.
7. Click **OK**.

Manage calendars

Teamcenter uses four types of calendars that allow you to set up work days, work hours, holidays, and vacations used by your organization:

- Base calendar
- User calendar
- Schedule calendar
- Schedule user calendar

Calendars define working times. They do not define hours per day.

Schedule, user, and schedule user calendars share a parent base calendar. A calendar inherits all exceptions from the parent calendar. A calendar can also inherit the default working times from the parent calendar.

In this training, the focus is on the schedule calendar. For information about other calendar types, see the *Schedule Manager Guide*.

Schedule calendar

The schedule calendar allows you to set days off, holidays, and hours in a day for the current schedule. When a schedule is created, its calendar is the same as the base calendar. When you change a schedule calendar, the system automatically recalculates the schedule.

Set daily defaults

You can set daily defaults and hours for specific dates. From the **Daily Defaults** section, you can change workdays and change the number of hours in a day for scheduling purposes.

> **Note**
>
> You can only set daily defaults and hours for schedules that have not yet been published. That is, when creating the schedule, in the **New Schedule** dialog box, you did not check the **Published** check box.

1. In Schedule Manager, choose **Schedule→Schedule Calendar**.
2. Select the check box beside a day you want to specify as a working day.

   Clear the check box next to a day you want to specify as a nonworking day. The system automatically resets the hours box to 0.

Set hours for specific dates

1. Choose **Schedule→Schedule Calendar**.

2. Select the day or days you want to change (use the Ctrl key to select multiple days).

3. To change a work day to a nonworking day, select **Non Working**.

   To change the working hours for the selected day(s), select **Working HH:MM** and then select the corresponding **Details** button. In the **Working Day Exception Details** dialog box, update the working hours and click **OK**.

Activity: Create a schedule

 This activity takes about 20 minutes.

In this activity, you create a schedule, open it in Schedule Manager, create tasks, and assign tasks to users.

Step 1: Create the schedule.

- ☐ In My Teamcenter, choose **File→New→Schedule**.
- ☐ Select **Schedule** and then click **Next**.
- ☐ Click **Assign**.
- ☐ In the **Name** box, type **Schedule A**, and press the Enter key.
- ☐ Click **Next**.
- ☐ In the **Customer Name** box, type **ABC Corp**, and press the Enter key.
- ☐ In the **Customer Number** box type **12345**, and press the Enter key.
- ☐ Set **Finish Date** to **November 6**.

  Tip

  Click the button to the right of **Finish Date** and then click **6**.

- ☐ Click **Finish**.

Step 2: Open the schedule in the Schedule Manager application.

- ☐ Right-click the schedule and choose **Send To→Schedule Manager**.

Step 3: Create the task.

- ☐ In Schedule Manager, select the schedule.
- ☐ Choose **File→New→Task**.
- ☐ Select **Schedule Task** and then click **Next**.
- ☐ Click **Assign**.
- ☐ In the **Task Name** box, type **Task 1** and press the Enter key.

☐ Click **Next**.

☐ Set **Finish Date** to **August 28**.

Tip

Click the button to the right of **Finish Date** and then click **28**.

☐ Click **Next**.

Step 4: Assign the task.

☐ Assign the task to Bjorn by selecting the **Assigned** check box to the right of Designer, Bjorn.

☐ Click **Finish**.

This concludes the activity.

Summary

In this lesson, you learned:

- The basics of creating and managing schedules.
- How to create tasks and milestones.
- How to set up notifications and subscriptions.
- How to add resources to tasks.
- The basics of integrating schedules with Teamcenter workflow.
- How to create deliverables.
- How to manage calendars.

Lesson

10 Releasing data

Purpose

The purpose of this lesson is to describe the process of releasing data in Teamcenter Express.

Objective

After you complete this lesson, you should be able to:

- Differentiate between the two release methods.
- Set release status manually.
- Submit data for review and perform a review task.
- Work with the worklist.
- Identify life cycle states.
- Explain the difference between target and reference objects.
- Use Workflow Viewer and audit files to track processes.
- Delegate tasks.

Help topics

Additional information for this lesson can be found in:

- *Workflow Viewer Guide*
- *Rich Client Interface Guide*

Methods for releasing data

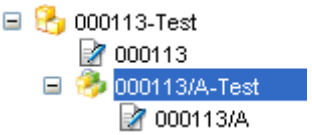
In Teamcenter Express, you can release data either manually or using a workflow process.

Release data manually

If you want to quickly set the release status on an item revision and not go through a workflow process, use the Status Manager, as described next. After you release an item revision, you cannot make any more changes to it.

1. Be sure that you are logged on to Teamcenter Express as a user with the **Author** role.

2. Select the item revision you want to release.

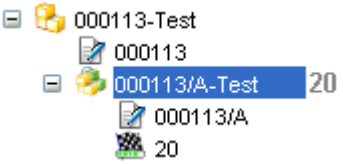


3. Choose **Tools→Status Manager→20 Checking**.

   Note

   Only users with the **Checker** or **Manager** role can select the other two status options, **60 Released** or **10 Check Rejected**.

   The system changes the status of the selected object to 20.



Note

The rest of this lesson provides information about releasing data using workflow processes.

Releasing data using workflow processes

Workflow stems from the concept that, to accomplish an objective, all work must flow through one or more processes. Workflow is the automation of those business processes. Using workflow, documents, information, and tasks are passed between users during the completion of a particular process.

By default, Teamcenter Express provides several workflow templates that are ready to be used. In addition to the workflows provided with Teamcenter Express, your site administrator can use Workflow Designer to model workflow processes, allocate resources, and manage data according to business rules. You use the worklist to accomplish workflow tasks.

Teamcenter Express provides two applications you can use to accomplish workflow objectives:

- **My Worklist**

  Allows you to perform and track tasks that have been either assigned to you or were created by you. The worklist provides you with a list of all the tasks that you are responsible for, and allows you to complete those tasks.

- **Workflow Viewer**

  Allows you to view the progress of a workflow process, even if you are not a participating member of that particular process.

A process uses defined tasks to automatically notify selected users requesting work signoff. The requests are tracked through an electronic worklist and each request maintains pointers to the data being approved.

A process can have any number of tasks arranged in a serial or parallel progression. At the time of signoff, each review task has a list of users allocated to perform the signoff.

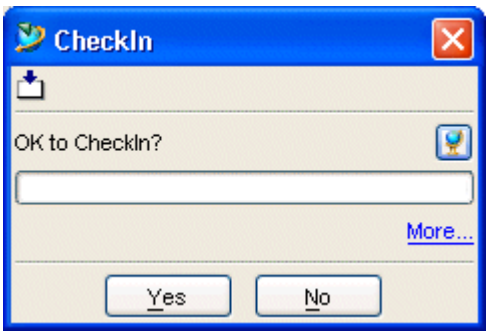
Check in data

You cannot initiate a workflow process on data that is checked out. To remove the checked-out status of data when you are finished working on it, use either the **Check In** or **Cancel Checkout** commands.

Perform a checkin

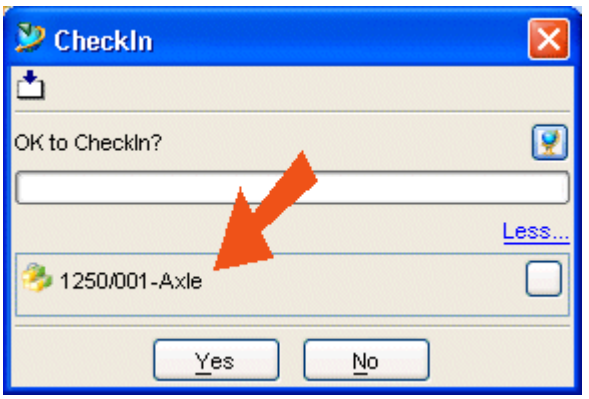
1. Select the object you want to check in.
2. Choose **Tools→Check In/Out→Check In**.

   The system prompts you to confirm the checkin.



3. To verify that you're checking in the correct object, click the **More** link.

   The system displays the name of the object you are checking in.



4. Click **Yes**.

   The system unlocks the data that was checked out.

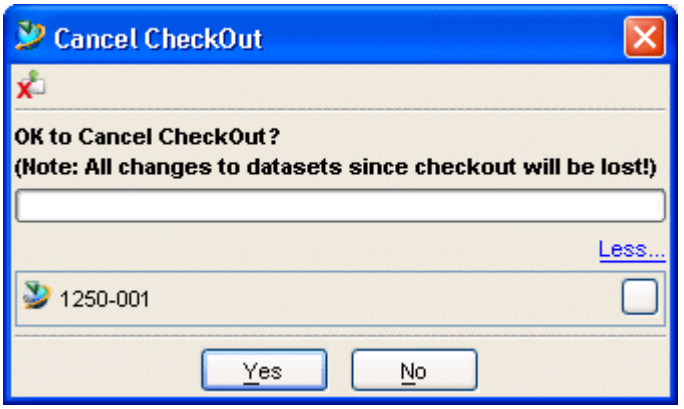
Cancel checkout

When you cancel checkout, the system unlocks the checked-out dataset and returns the data to the original condition it existed in before it was checked out.

Note

You can only cancel the checkout of datasets.

1. Select the dataset whose checkout you want to cancel.
2. Choose **Tools→Check In/Out→CancelCheckOut**.
3. Click the **More** link.

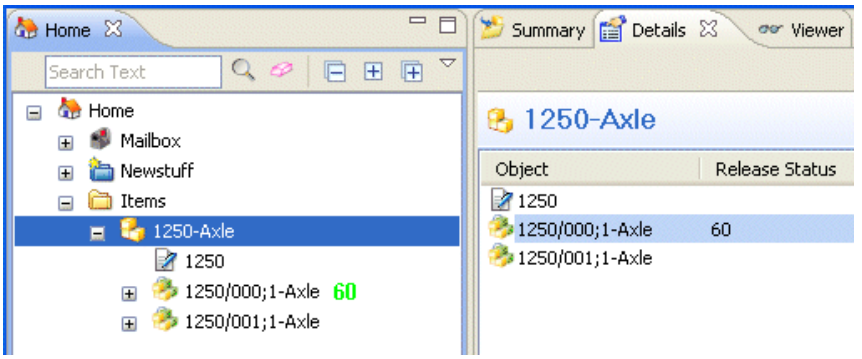


4. Click **Yes**.

States of release

A status type (release status) can be set on almost any data, after a process is completed. The release status property of the object informs you about the function or purpose of the data. An object's release status properties include the release status name and the release status date.

The following shows an example of release status:



Data in the system can be in one of three life cycle states:

- **Statused** (numerical value)
  Data stored with item revisions that have obtained this status are considered production data. The data is generally in a write-protected mode, meaning it cannot be changed unless a new revision letter is created. Teamcenter Express provides a built-in release status (10 to 90) to be used as designated by your company.

- **In-process**
  The object is in a workflow process.

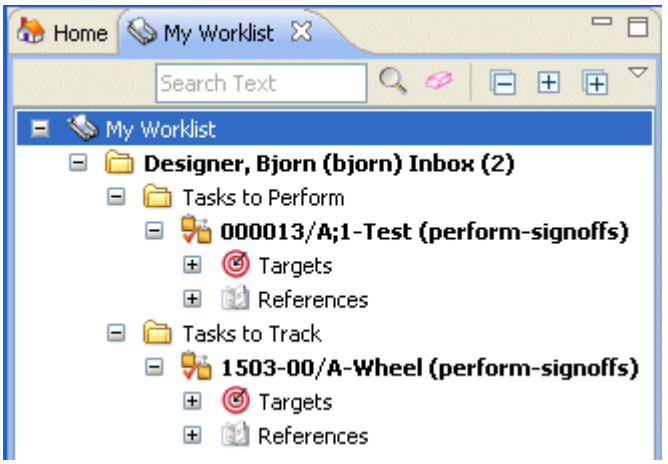
- **Working** (empty value)
  If the item revision has no value for status, it is working data, meaning that someone is working on the data contained in the item revision.

Working with My Worklist

Use the worklist to perform electronic workflow processes. The worklist contains two folders:

- **Tasks to Perform** folder contains tasks that you must review and approve or reject, as needed.
- **Tasks to Track** folder contains tasks you assigned to other users for processes you initiated.

The only tasks you see in your worklist are those tasks you must perform or those tasks for which you are responsible.



Key points

The following are key points about working in the worklist.

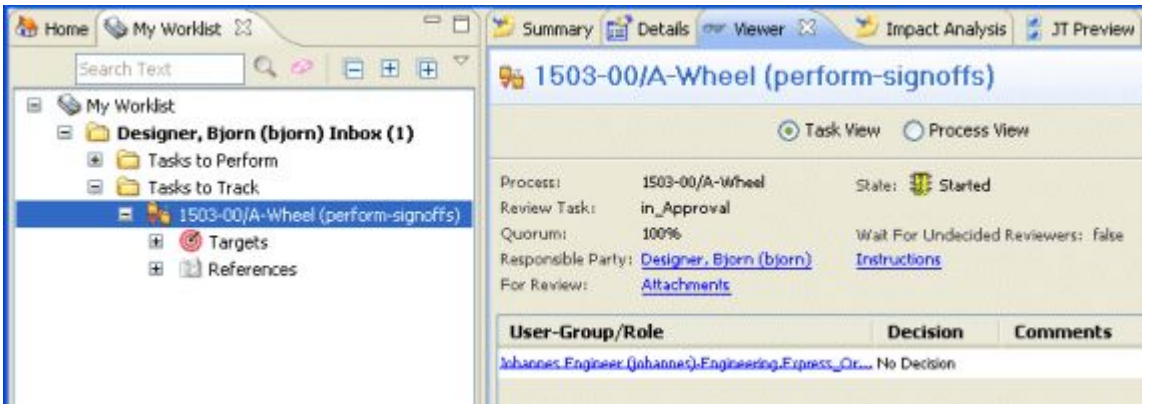
Use the worklist to:

- Access tasks.
- Receive new task notification.
- Gain access to the process window.
- Assign users to review the data.

When working with the worklist, the **Viewer** view provides two views, task and process, as explained in the next sections.

Viewing task information

The **Task View** option in the **Viewer** view gives you a focused view of the selected task. The Task View window shows key information about the task in the form of links that provide access to dialog boxes where you can view or modify the task information.



Use the Task View pane to perform several operations, as explained next.

View or reassign a responsible party

1. From the Task View window, click the link to the right of **Responsible Party**.

   The system displays the **Assign Responsible Party** dialog box.

   Note

   The default responsible party is the task originator.

2. Assign the responsible party.

3. Click **OK**.

View task instructions

1. From the **Task View** window, click the *second* link to the right of **Responsible Party**, labeled **Instructions**.

   The system displays the **Instructions** dialog box.

2. View the task instructions the assigned user must perform to complete the task.

3. Close the dialog box.

View attachments

An attachment is an object associated with a process. There are two kinds of attachments:

- **Target objects**

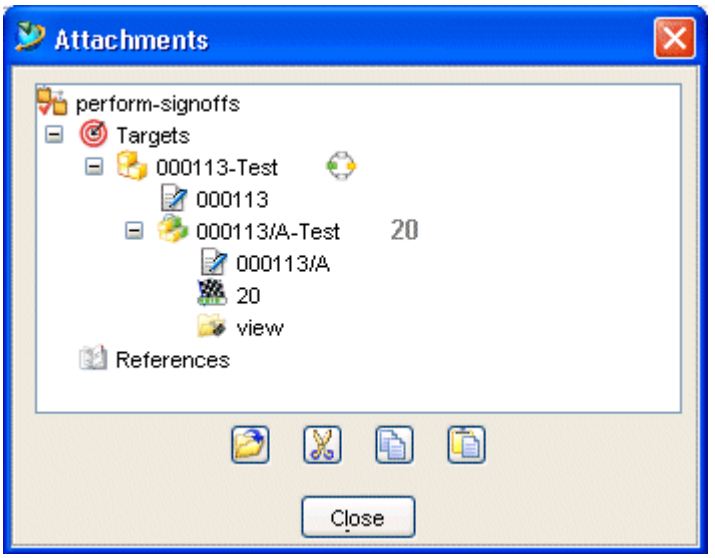
  Any objects that are released through a process. Target objects are assigned a release status when the process completes.

- **Reference objects**

  Objects required to provide information to persons performing tasks. Reference objects do not get a status change when the process completes.

1. From the **Task View** window, click the link to the right of **For Review**, labeled **Attachments**.

   The system displays the **Attachments** dialog box, which lists the target and reference objects for the selected task.



2. Close the dialog box.

View user, group, and role assignments

View the user group and role assigned to complete the task and, if appropriate, delegate the task to another user group/role.

1. From the **Task View** window, click the link under the **User-Group/Role** column.

   The system displays the **Delegate Signoff** dialog box.

2. Make any changes as needed.

3. Click **OK**.

View or modify decision

1. From the **Task View** window, click the link under the **Decision** column.

   The system displays the **Signoff Decision** dialog box for the task.

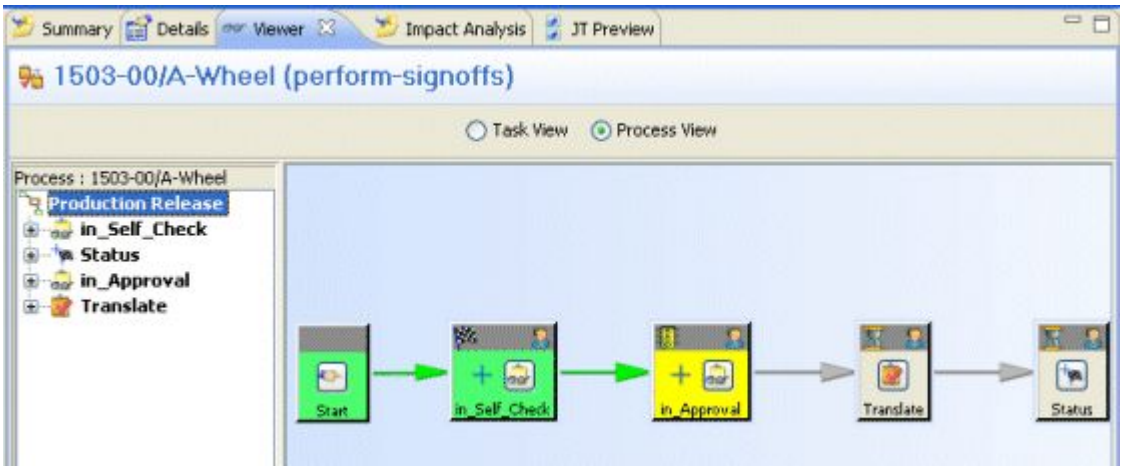
2. Select a decision.

3. (Optional) In the **Comments** box, type any comments.

4. Click **OK**.

Viewing process information

The **Process View** option in the **Viewer** view gives you a graphical display of the overall process as it moves through the different stages of release.



A **Review task** is a task template that includes **select-signoff-team** and **perform-signoffs** subtasks. Each of these subtasks contain their own dialog box for executing the respective processes. In the example figure, the **in_Approval** task is a review task.

Note

The green arrow indicates which task is active in the process.

Initiate a process

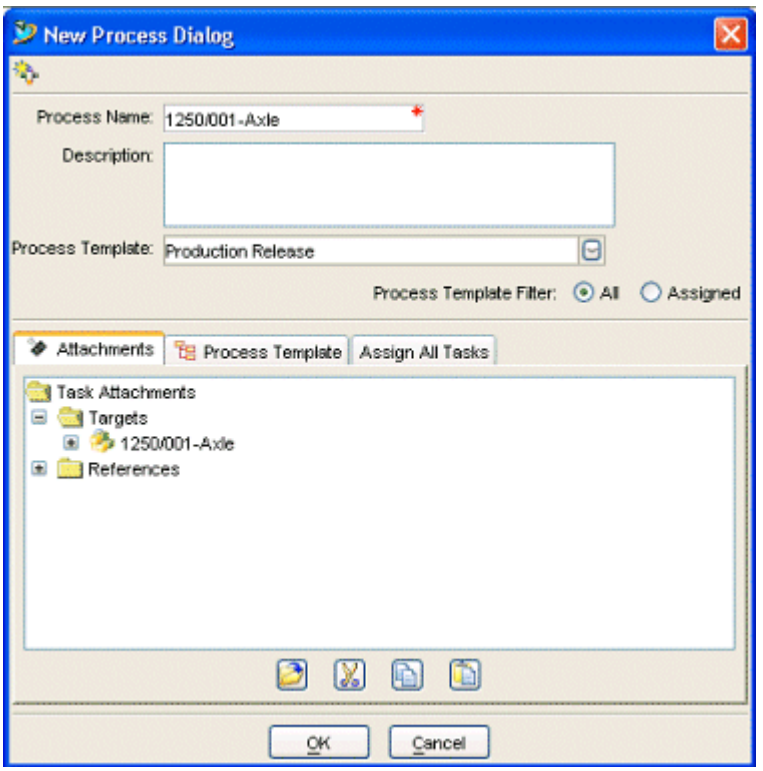
1. Select the revision object you want to put through a process.

2. Choose **File→New→Workflow Process**.

   Tip

   You can also use the Ctrl-p key combination to access the **New Process** dialog box.

   The system displays the **New Process** dialog box and places the selected object on the list as a target.



3. The **Process Name** box is populated with a name based on the object you selected. You can, however, change the text in this box. The process name should be short and descriptive.

4. (Optional) In the **Description** box, type a description for the process.

5. From the **Process Template** list, select a process template.

   For a description of the process templates, see *Process templates provided with Teamcenter Express*.

6. Click **OK**.

Process templates provided with Teamcenter Express

Process template	Purpose	Approval	Status
Development Release	Signifies that the development work is complete.	Initiator Checker	30
Engineering_ Order	Allows the initiation of an engineering order and the completion of the work it describes.	Initiator Manager Checker	60
Obsolescence Process	Allows parts to be obsoleted.	Initiator Checker	90
Production Release	Signifies that the product is ready for production (can be used in conjunction with the Development Release template).	Initiator Checker	60
Status Change	Allows assignment of status.	Checker	60

Activity: Initiate the workflow process

 This activity takes about five minutes.

In this activity, you initiate the workflow process. First, you verify that the data is checked in.

Step 1: Verify that the data being released, **1250-000/000-Axle** item revision, is checked in.

☐ In My Teamcenter, search for **1250-000-Axle**.

Tip

In the **Item ID** box, type **1250-000**.

☐ Copy **1250-000-Axle** into the **Items** folder.

– Copy **1250-000-Axle**.

– Close the **Search** view.

– Paste **1250-000-Axle** into the **Items** folder.

☐ Expand the **Items** folder to locate the part for release, **1250-000-Axle**.

☐ Expand the item to show the **1250-000/000-Axle** item revision.

☐ Expand the **1250-000/000-Axle** item revision.

☐ Select the item revision.

☐ Choose the **Details** view and review the **Checked Out** column.

If the data is checked out, you see a **Y** in the **Checked Out** column.

Step 2: Initiate the **1250-000/000-Axle** item revision for release.

☐ Choose **File→New→Workflow Process**.

The value in the **Process Name** box defaults to the name of the object you selected for release.

The system automatically pasted the **1250-000/000-Axle** item revision into the **Process Name** box with a relation of **Target** shown in the **Attachments** tab.

☐ From the **Process Template** list, select **Production Release**.

☐ Click **OK**.

The item revision now has in-process status, and the system displays the in-process symbol to the right of the item revision name.

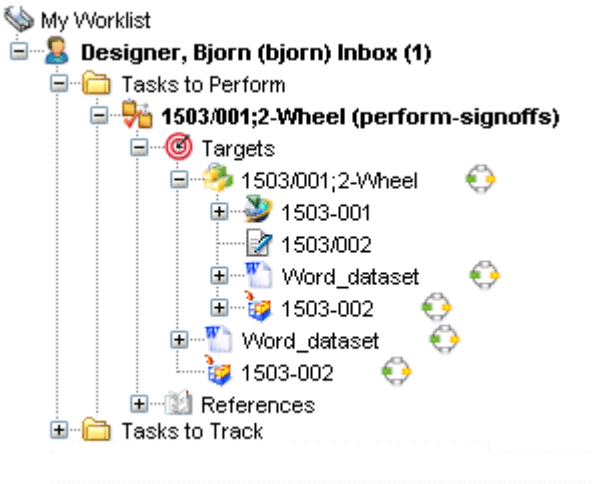
This concludes the activity.

Perform a review task

Once the designer submits data for review, the system distributes the **perform-signoffs** task to the appropriate user's worklist.

1. From your worklist, expand the **Tasks to Perform** folder.

2. Select the **perform-signoffs** task.



Note

Before you perform a signoff, make sure your group and role settings are correct.

3. From the **Task View** window, click the link under the **Decision** column.

   The system displays the **Signoff Decision** dialog box for the task.

4. Do *one* of the following:

   - Click **Approve** and then click **OK**.

     The system does *one* of the following:

     – If you are the only approver, or last required approver, the process moves to the next steps.

     – If you are one of multiple approvers, and other approvers have not approved yet, the **perform-signoffs** task moves to the **Tasks to Track** folder.

   - Click **Reject** and then click **OK**.

     Selecting **Reject** rejects the signoff of the task. This means that your decision does not count toward the approval/signoff of the task. If the quorum requires all signoffs to approve, selecting **Reject** stops the process.

     Depending on how the process is designed, selecting **Reject** does *one* of the following:

     – Removes the **perform-signoffs** task from the worklist and returns the process to a previous task.

     – Moves the **perform-signoffs** task to the **Tasks to Track** folder but keeps the current review task the active process task.

Activity: Perform a review

 This activity takes about 15 minutes.

In this activity, you perform a review to validate the target objects and then submit the task to a checker. Target objects are any objects that are released through a process. Target objects are assigned a release status when the process completes.

Step 1: Locate and view your task.

- ☐ Click the **Inbox** button  .
- ☐ Expand **Designer, Bjorn (bjorn) Inbox** and then expand the **Tasks to Perform** folder.

  The system displays a **perform-signoffs** task in your folder.

Step 2: Approve the data.

☐ Select the **perform-signoffs** task.

☐ Choose the **Viewer** view.

☐ To see where the process goes after you approve the data, click **Process View**.

☐ In the **Process View** window, select the top node of the task tree, **Production Release**.

The system shows the entire process flow.

☐ Click **Task View**.

☐ In the **Decision** column, click the **No Decision** link.

The system displays the **Signoff Decision** dialog box.

☐ Click **Approve**.

☐ Click **OK**.

The system removes the **perform-signoffs** task from your **Tasks to Perform** folder and replaces it with a **select-signoff-team** task.

Step 3: Assign Johannes Engineer as checker.

☐ Select the **select-signoff-team** task.

☐ Select ***/Checker/1**.

☐ From the **Organization** list, expand **Checker** and select **Johannes Engineer (johannes)**.

☐ Click **Add**.

The system adds Johannes to the */Checker/1 list.

☐ Click **Apply**.

The system places the task in your **Task to Track** folder, as well as in Johannes's **Task to Perform** folder.

Note

In the next section, you learn how to monitor a process after it leaves your worklist.

Step 4: Log on as Johannes (ID is **johannes**, password is **johannes**) and approve the task to release the object.

- ☐ *To speed up the simulation, we log you off and log you back on (as Johannes Engineer).*
- ☐ Go to your worklist.
- ☐ Expand **Johannes Engineer (johannes)**, and then from the **Tasks to Perform** folder, select the **perform-signoffs** task.
- ☐ Choose the **Viewer** view.
- ☐ In the **Decision** column, click the **No Decision** link.
- ☐ Click **Approve** and then click **OK**.

  The system releases the item revision with a status of 60. Note, however, that because you are logged on as Johannes, the item revision is not visible to you. To see the status change, search the database for the **1250-000/000-Axle** item revision and verify that it is released.

  Tip

  In the **Item ID** box, type **1250-000**.

This concludes the activity.

Following a process after it leaves your worklist

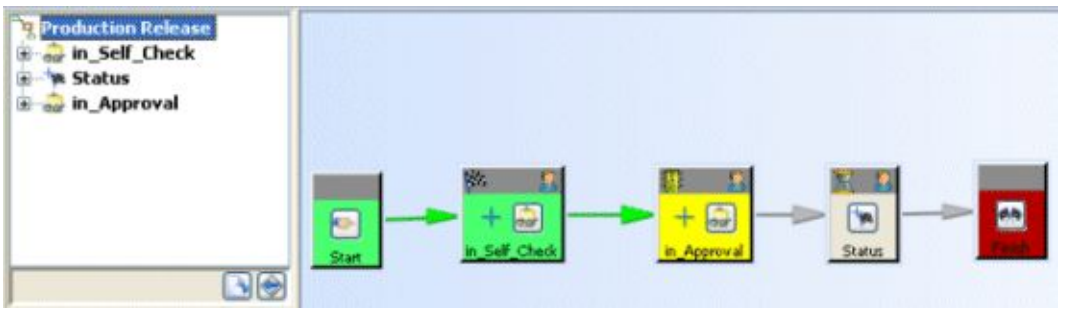
To monitor a process after it leaves your worklist, use Workflow Viewer or the audit file, as explained next.

Launch Workflow Viewer

Use Workflow Viewer to track jobs that are currently in a workflow process (even if you are not a participating member of the process). Workflow Viewer has all of the features of the **Viewer** view in My Teamcenter plus some added capability.

1. In My Teamcenter, select any data identified as in-process ( ).
2. Right-click and choose **Send To→Workflow Viewer**.

   The system displays the Workflow Viewer.



In the Workflow Viewer, you can view the following elements of a workflow process:

- Task flow
- Task status
- Task attachments
- Participants
- Participants dispositions

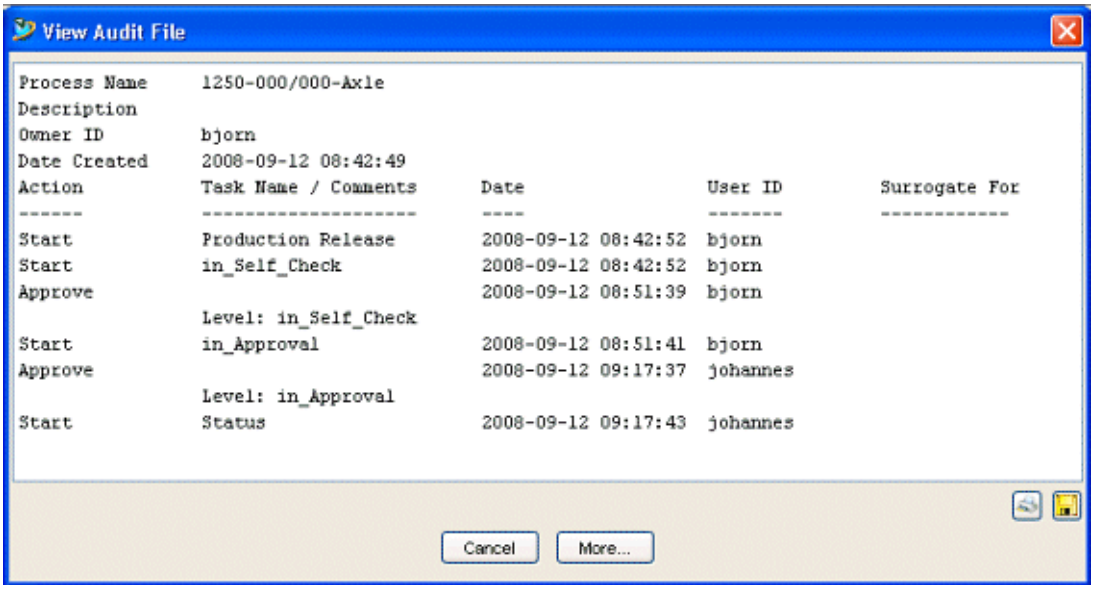
View the audit file

The audit file is a record of all user involvement during the workflow process.

1. In My Teamcenter, select any data identified as in-process ( ) or any data that went through a process.

2. Choose **View→Audit→File**.

   The system displays the audit file for the selected task.



Delegate tasks

Use the Out of Office Assistant to forward your tasks to another user's worklist while you are out of the office.

1. Click the **Inbox** button  .

2. Choose **Tools→Out of Office Assistant**.

   The system displays the **Out of Office Assistant** dialog box.

3. Specify how long you will be unavailable and who should perform your tasks in your absence.

4. Click **OK**.

Key points

The following are key points about the Out of Office Assistant:

- The worklist redirects tasks assigned to you during your absence to the selected user.

- System administrators can modify any user's Out of Office Assistant settings.

Summary

Use either the manual method or the workflow method to release status.

When using the workflow method, use the worklist to access tasks, get new task notification, and gain access to the process window. The only workflow objects that you see in your worklist are those tasks that you must perform or those tasks for which you are responsible.

Data in the system can be in one of the following life cycle states:

- Statused (numerical value)
- In-process 
- Working (empty value)

As data flows through a process, you work with two kinds of attachments:

- Target objects
- Reference objects

When working with the worklist, the **Viewer** view provides two views:

- Task view
- Process view

From the worklist, you can choose **Tools→Out of Office Assistant** to forward your tasks to another user's worklist while you are out of the office.

Lesson

11 Viewing product data

Purpose

The purpose of this lesson is to demonstrate how to translate CAD files and documents, and how to use the rich client Lifecycle Visualization application to create markup information from 2D and 3D visualization data.

Objectives

After you complete this lesson, you should be able to:

- Translate CAD files and documents.
- Locate and view 2D and 3D visualization data using rich client Visualization.
- Use rich client Lifecycle Visualization to create 3D markup data.
- View 3D markup data in the thin client.
- Create 2D markup data in the thin client.

Help topics

Additional information for this lesson can be found in:

- *2D/3D Viewing Guide*
- *DHTML Thin Client Help*

Translating CAD files and documents

If Express Translation Services (ETS) is installed and configured at your site, My Teamcenter displays the **Translation** menu. Use the **Translation** menu to translate CAD files into a format that can be viewed using Teamcenter Express Visualization or Teamcenter Visualization. For example, you can translate NX files to formats such as JT and CGM, and Solid Edge files to formats such as JT and IGS. Moreover, you can translate MSOffice documents to PDF. For a complete list of formats to which you can translate files, see the online help.

Note

The commands available on this menu vary depending on the ETS configuration implemented at your site.

In Teamcenter Express, you can translate data either manually (on-demand translation) or using workflows, as explained next.

Translate data manually

1. In My Teamcenter, select one or more CAD datasets or MSOffice documents.

2. From the **Translation** menu, select a translation option.

   When the translation is complete, the system places the translated files under the appropriate item revision. The translation job can take a few minutes.

   Note

   If the dataset is incompatible with the translate option you selected, the system displays an error message.

3. Monitor the translation status as explained in this lesson, in *Monitor translation status*.

4. When the translation job is complete, click  to view the results.

Translate data using workflows

When you release an object, you have the option of translating data as part of the release process. The two workflow processes that release parts, **Production Release** and **Engineering Order**, are the ones that support translation. Your system administrator sets the translation preferences for your company.

To translate data using a workflow, follow the same procedures as you would when sending data through a workflow, but remembering to use the **Production Release** or the **Engineering Order** processes. For a detailed example of sending data through a workflow, see *Activity: Initiate the workflow process* in *Lesson 10, Releasing data*.

Monitor translation status

To monitor translation status, choose **Translation→Translation Request Administration**.

1. After you have sent data through the translation process, choose **Translation→Translation Administrator Console**.

2. Use the **State**, **Service**, and **Priority** lists to set the criteria corresponding to the requests for which you are searching.

3. Click **Query**.

   Note

   For more information about the options available in this dialog box, see *My Teamcenter Guide*.

   The system shows the status of your translation job. Every time you click **Query** the system refreshes the dialog box and displays the latest status.

   Note

   The first row in the status table shows the most recent translation job.

Activity: Translate a Microsoft Word file to PDF

 This activity takes about 10 minutes.

In this activity, you translate a Microsoft Word file to PDF.

Step 1: Create a text dataset.

- ☐ From the **Items** folder, select the **1503/001-Wheel** item revision.
- ☐ Choose **File→New→Dataset**.
- ☐ Click the **More** link and select **MSWord**.
- ☐ In the **Name** box, type **Word_dataset**.
- ☐ Click **OK**.
- ☐ Expand the **1503/001-Wheel** item revision and double-click the MSWord dataset.

  The system opens the MSWord dataset.
- ☐ In the box outlined with a gray box, type **Creating a text dataset**, and then click the **Save** button.
- ☐ Close Microsoft Word.

Step 2: Translate the Microsoft Word file.

- ☐ Choose **Translation→Translate**.
- ☐ Click **OK**.

Step 3: Monitor the translation status.

☐ Choose **Translation→Administrator Console – ALL**.

The system displays the translation status in the **Request Administration Console** dialog box.

☐ To see the latest status, click the **Refresh All** button  .

When the status is **COMPLETE**, the translation job is done and the system creates the PDF.

Note

When working in Teamcenter Express, the translation job takes several minutes.

☐ Close the **Request Administration Console** dialog box.

☐ Double-click the **Word_dataset** PDF file.

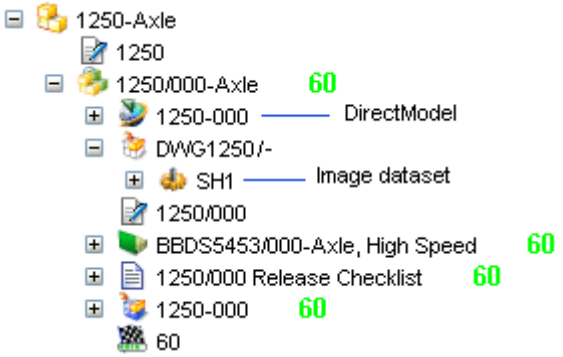
The system displays the PDF file in Acrobat Reader.

☐ Close Acrobat Reader.

This concludes the activity.

Where is the visualization data?

2D and 3D visualization data exists as dataset objects within an item revision.



There is no limitation of dataset types that may contain visualization data. Some of the more common dataset types that you can expect to provide visualization data include:

Common 3D visualization dataset types:

- **DirectModel**

Common 2D visualization dataset types:

- **UGMASTER**
- **UGPART**
- **DrawingSheet**
- **Image**
- **SEDraft**
- **ACADDWG**

View 2D data

1. Select the image dataset you want to view.
2. Choose the **Viewer** view.

   Rich client Lifecycle Visualization displays the 2D image.

View 3D data

1. Select the **DirectModel** dataset you want to view.
2. Choose the **Viewer** view.

   Rich client Lifecycle Visualization displays the 3D image.

Activity: Locate and view visualization data

 This activity takes about 10 minutes.

In this activity, you view an item's 2D and 3D visualization data using the rich client Lifecycle Visualization application.

Step 1: View the 2D visualization data.

- ☐ In your **Items** folder, expand the **1250-Axle** item.
- ☐ Expand the **1250/000-Axle** item revision.
- ☐ Expand the **DWG1250** UGPART.
- ☐ Select the **SH1** image dataset.

☐ Choose the **Viewer** view.

After a moment, the rich client Lifecycle Visualization viewer displays the CGM (2D) file of the part drawing.

☐ To display the **2D Markup** toolbar, right-click the Lifecycle Visualization toolbar and select **2D Markup**.

Step 2: View the 3D visualization data.

☐ From the object tree, select the **DirectModel** dataset.

The rich client Lifecycle Visualization viewer displays the JT (3D) file of the part model.

☐ Right-click the Lifecycle Visualization toolbar and select **3D Measurement**.

This concludes the activity.

Creating 3D markup data

Markup is text or graphical elements that you draw in the Viewer using rich client Lifecycle Visualization. 3D markups are created on 3D layers of static JT component parts or assemblies (**DirectModel** datasets).

Engineering checkers may use 3D markup to communicate comments on engineering designs to the design engineers.

Key Points

The following are key points about creating 3D markup data:

- To store the 3D markup data, the system creates **DirectModel 3D markup** datasets from the **DirectModel** datasets.
- Teamcenter Express uses the **DirectModel 3D markup** datasets to manage 3D markup data.
- You can create multiple **DirectModel 3D markup** datasets and associate them with a single JT part or assembly.
- Each **DirectModel 3D markup** dataset can contain multiple markup layers.

Creating 3D markup data involves the following steps:

1. View the **DirectModel** dataset.
2. Create the 3D markup annotation for a 3D markup layer.
3. Save the 3D markup layer.
4. Save the 3D markup dataset.

Activity: Create 3D markup data in the rich client

This activity takes about 15 minutes.

In this activity, you create 3D markup for **1250-Axle**.

Step 1: Create a 3D markup annotation and a 3D markup layer.

- ☐ Right-click the Lifecycle Visualization toolbar and choose **3D Markup**.
- ☐ On the 3D Markup toolbar, click the **Enable Markup** button .
- ☐ Click the **Text** button .
- ☐ To attach the markup text to a point on the model, so it rotates with the model, click the **Anchor Mode** button .
- ☐ Click in the center of the model.

  The system displays the **Markup Text** dialog box.
- ☐ Click **Free Text**.

  The system displays the **Edit Free Text** dialog box.
- ☐ Click **Add**.

☐ In the **Text** box, type **Example 3D Markup**.

☐ Click **OK**.

☐ Click **OK** again.

Step 2: Save the 3D markup layer.

☐ Right-click the Lifecycle Visualization toolbar and choose **Create markup**.

☐ On the **Create markup** toolbar, click the **Save 3D Layers** button  .

The system displays the **Create Markup 3D Dataset** dialog box.

☐ In the **Dataset Name** box, type **Layer1_3D_Markup**.

☐ Click **OK**.

The system informs you that it is saving the layer.

☐ Click **OK** again.

The system saves the markup layer and displays it under the **DirectModel** dataset.

☐ Expand the **DirectModel** dataset to see the markup layer.

Step 3: Save the markup dataset in Teamcenter Express.

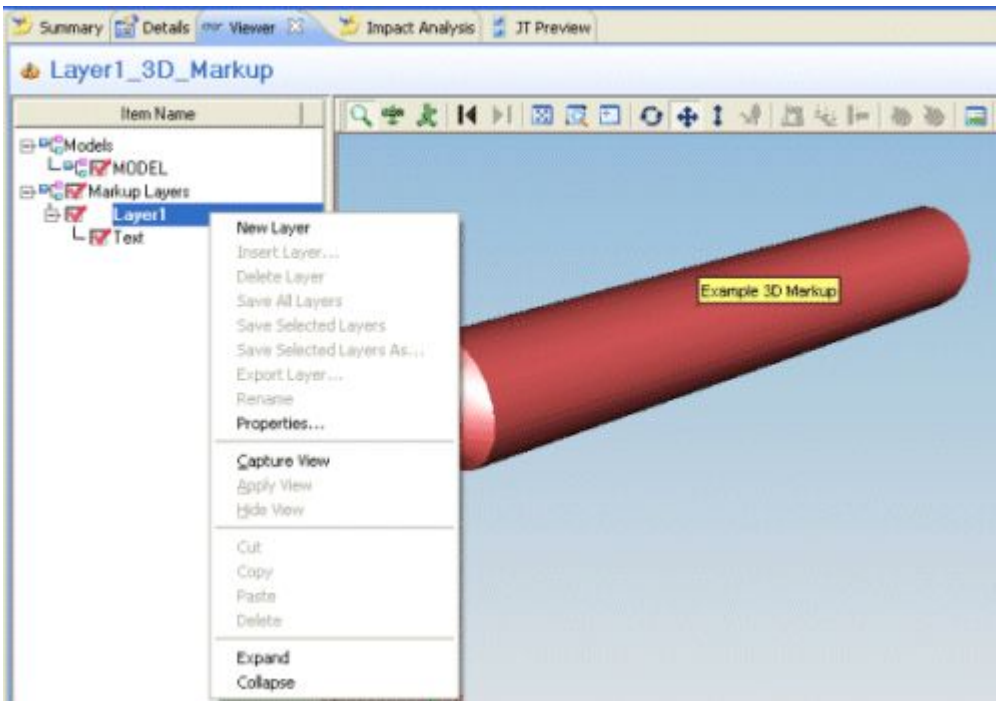
☐ Choose **File→Save**.

This concludes the activity.

Working with 3D markup layers

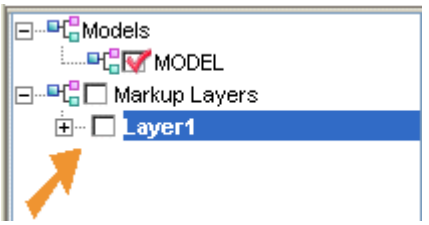
The following are some key concepts about working with 3D markup layers:

- To manage existing layers or add more layers, right-click a layer in the **Markup Layers** list.



- To display options for modifying the markup layer content, right-click in the **Viewer** view. Depending on where your cursor is positioned when you right-click, the system displays different menus and options.

- To turn on and off the display of annotation layers, select the check box next to the annotation layer name.



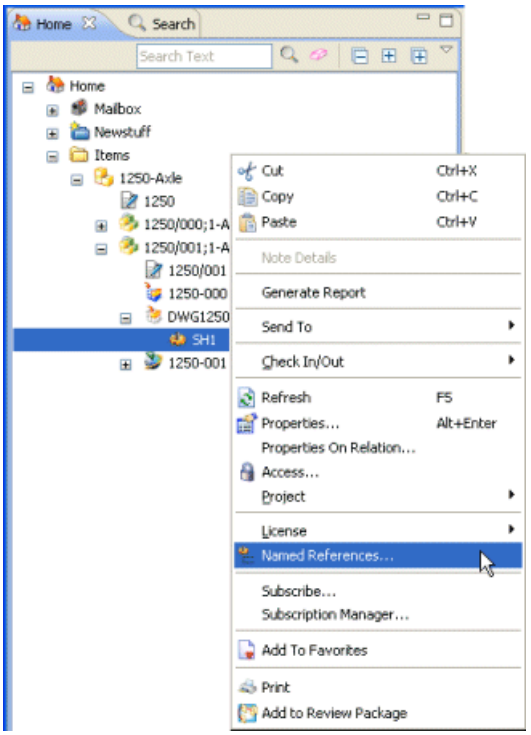
- Remember to save any new annotation layers or modified annotation layers.

- Deleting a markup layer is a two-step process: first you remove the named references, then you delete the layer.

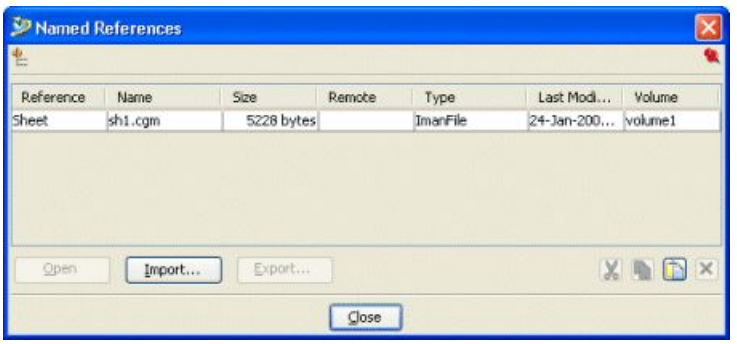
Delete a layer

1. Remove the named reference for the layer from the **DirectModel** 3D markup dataset.

   a. Right-click the **DirectModel** 3D markup dataset and choose **Named References**.



   The system displays the **Named References** dialog box.



   Note

   A 3D markup layer is stored as a VPL-formatted file.

   b. In the **Named References** dialog box, select the layer you want to delete and click the **Cut** button.

   The system removes the layer from the **Markup Layers** list.

   c. Close the **Named References** dialog box.

2. Delete the layer.
   - Click the **DirectModel** 3D markup dataset and then, from the toolbar, click the **Delete** button  .

Viewing 3D markup

After creating the 3D markup in the rich client, you can view it in the thin client, as shown in *Activity: View the 3D markup in the thin client*. You can also create markup in the thin client, as shown in *Activity: Create 2D markup data in the thin client*.

To learn more about the thin client, see *Thin client interface*.

Activity: View the 3D markup in the thin client

 This activity takes about 10 minutes.

In this activity, you view in the thin client the 3D markup you created in the previous activity.

Step 1: Launch the thin client.

- ☐ In the Web browser **Address** box, type the address of the Teamcenter Express application server (**http://***tcx3train*:*8080*/**tc/webclient**) and press the Enter key.

  The system displays the **Teamcenter Login** page.

- ☐ Type your user name and password (**bjorn/bjorn**).

- ☐ Click **Login**.

  The system opens the **Home** folder in My Teamcenter.

Step 2: Install Lifecycle Visualization.

- ☐ Choose **Help→Installations→Teamcenter Visualization**.

- ☐ When prompted to save or run the setup file, click **Run**.

- ☐ When you see a security message warning of an invalid publisher, click **Run**.

  The Lifecycle Visualization installation begins.

- ☐ When the installation is complete, click **OK**.

Step 3: View the 3D markup.

- ☐ Expand the **Items** folder.

- ☐ Expand the **1250-Axle** item.

- ☐ Expand the **1250/001-Axle** item revision.

☐ To the right of **Layer1_3D_Markup**, click the **View** link.

Note

The first time you launch Lifecycle Visualization, the system prompts you to open or save a **some.vvi** file. When prompted, click **Open**.

The system displays the markup.

This concludes the activity.

Create 2D markup data

Drafting checkers may use 2D markup to communicate comments on the accuracy of an engineering drawing.

Although 2D *visualization* data can be associated with various dataset types, 2D *markup* data can only be associated with the following dataset types:

- **DrawingSheet** 
- **Image** 

2D markup is stored as a **Markup2D** dataset associated with either an **Image** or **DrawingSheet** dataset.

Creating 2D markup data involves the following steps:

1. View the 2D Image or **DrawingSheet** dataset.
2. Create the **Markup2D** dataset.
3. Create the annotations for the 2D markup layer.
4. Save the 2D markup layer.
5. Save the **Markup2D** dataset.

Activity: Create 2D markup data in the thin client

 This activity takes about 15 minutes.

In this activity, you create 2D markup data for the **DWG1250/-** image.

Step 1: View the 2D visualization data.

☐ In thin client, click the **View** link to the right of **SH1**, nested under **DWG1250/-**.

The system displays the **Enter Network Password** dialog box.

☐ Type your user ID and password and click **OK**.

The Viewer displays the CGM (2D) file of the part drawing.

Step 2: Create annotations for the markup layer.

☐ On the **Markup** toolbar, click the **Unrestricted Text** button  .

The system adds a new layer in the **Markup Layers** listing.

☐ Click in the upper left corner of the graphics area.

The system displays the **Text Editor** dialog box.

☐ In the **Text Editor** dialog box, type **Example 2D Markup** and then click **OK**.

The system places your annotation in the graphics area. It also adds some symbols next to the name of the new markup layer, indicating that you must save the layer.

Step 3: Save the new markup layer.

☐ Choose **File→Layers→Save All Layers**.

The displays the **New Markup Dataset** dialog box.

☐ Type a name for the layer, in this case **test**.

☐ Close the **Teamcenter Visualization Mockup** dialog box by clicking the **x** on the right side.

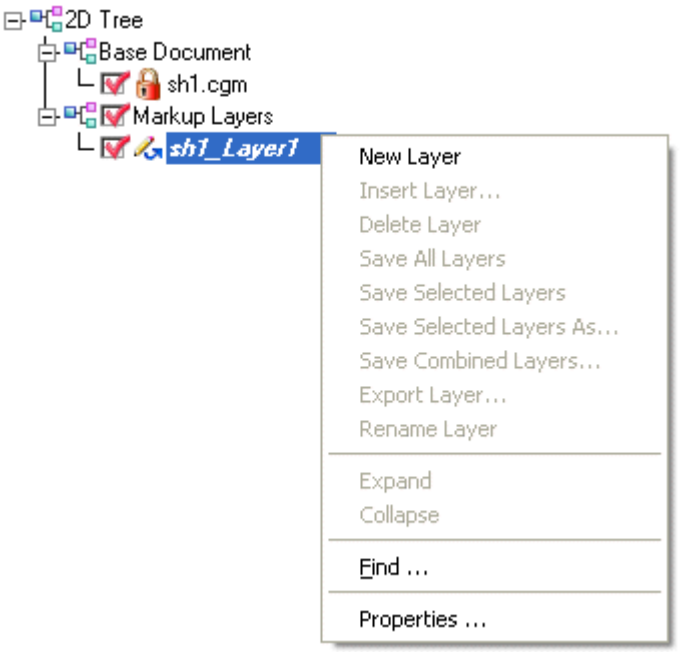
This concludes the activity.

Working with 2D markup layers

The following are some key concepts about working with 2D markup layers:

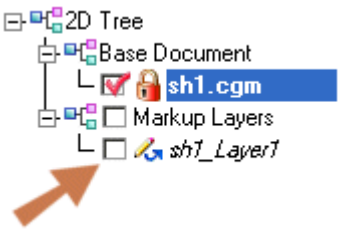
- The annotation is listed as a layer in the layer list and is a CGM formatted file.

- Right-click a layer in the layer list to manage existing annotation layers or add more annotation layers.



- Remember to save any new annotation layers or modified annotation layers. The symbols to the left of the layer indicate that save is required.

- You can turn on or off the display of annotation layers by selecting the check boxes to the left of the annotation layer name.



Procedural considerations

The following are some details about working with markup datasets.

When can markup data be created?

Markup data can be created for 2D and 3D visualization datasets at any time during the data life cycle. For a review of Teamcenter Express life cycle states, see *Lesson 10, Releasing data*.

Who can create a new markup dataset?

Generally, there are no restrictions to limit who can create a markup dataset for a visualization dataset. You can have numerous independent markup datasets for a single visualization dataset, each having been created by a different user.

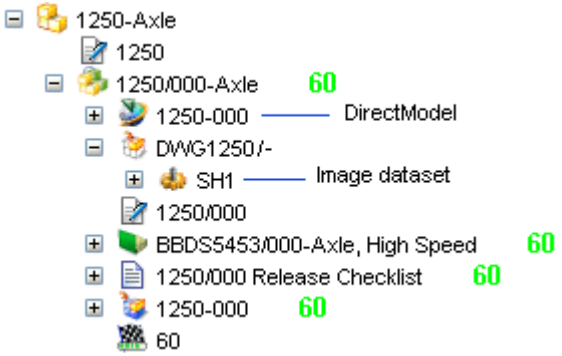
Who can define layers within a markup dataset?

Generally, there are restrictions to limit who can add annotation layers to a single markup dataset. Some examples of who can create annotation layers within a markup dataset include:

- Only the creator of the markup dataset.
- All members of the same group as the markup dataset creator.
- Only defined roles within the group that owns the markup dataset.

Summary

2D and 3D visualization data exists as dataset objects within an item revision.



- To view the data using rich client Lifecycle Visualization, with the **Viewer** view active, simply select the dataset in the object tree.

- Markup datasets can only be created and associated with the following dataset types:

  DirectModel

  DrawingSheet

  Image

- 3D markup data is stored as a **DirectModel 3D markup** dataset that is associated with a **DirectModel** dataset.

- 2D markup data is stored as a **Markup2D** dataset that is associated with either an **Image** dataset or a **DrawingSheet** dataset.

Lesson

12 Managing engineering orders

Purpose

The purpose of this lesson is to describe the process of managing an engineering order within Teamcenter Express.

Objective

After you complete this lesson, you should be able to:

- Create an engineering order.
- Complete the engineering order request and submit it to the Engineering Order workflow.
- Approve or reject the engineering order request and route it to the corresponding branch in the workflow.
- Perform the changes to the product and submit the engineering order for the final checking.
- Specify the checker and approve the engineering order.

Help topics

Additional information for this lesson can be found in *Getting Started With Teamcenter Express*.

Engineering orders

Engineering order is the process of controlling changes to a product's definition and configuration. Engineering order provides an auditable history of the objects used in a process, making an object's various usages traceable. Your site can use engineering order to propose, incorporate, review, and approve changes, as well as to track and report change history and to notify members of your organization of changes.

Your company's business process determine the point in the product life cycle when an engineering order begins. Regardless of when an engineering order process starts at a company, it is usually an ongoing process that continues until the end of the product's life cycle.

Typically, the change process begins with the creation of an engineering order, which acts as a template of the different change processes to be used at your site. Change requests are then created by users using engineering order workflow process, as needed. When the change requests have been completed and approved, change notices are typically created.

Figure 12-1 illustrates the engineering order process.

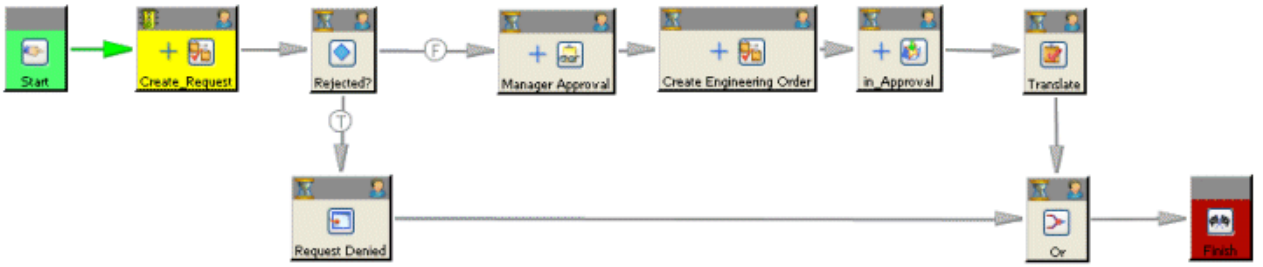


Figure 12-1. Engineering order process

When you create an engineering order, the system automatically creates forms for the change request and change notice details and four folders that store data related to the change. Table 12-1 describes the engineering order folders ( ). You can add a reference part or other data (for example, a Microsoft Word document from your **Home** folder, a part from an engineering database, a capture of the Viewer's display, a markup of data, and so on) to the engineering order using copy and paste techniques. This helps to complete the engineering order request.

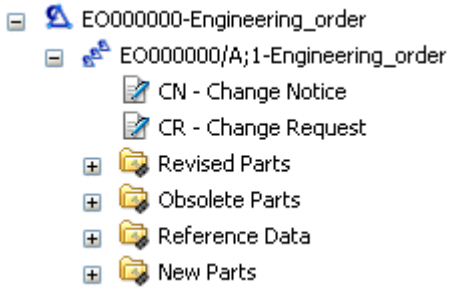


Table 12-1. Engineering order folders

Folder name	Description
New Parts	Holds the new item revision, if any, resulting from the change to the revised item revision; it is released with the engineering order. This assembly is the final solution to the problem the engineering order is correcting. For example, if the revised item revision is a mount screw that has been decreased, then the entire mounting assembly is the solution assembly. At the end of the engineering order process, the system attaches a release status to the new parts. When the engineering order is released, the new parts, and all of their components, are authorized for production. The **New Parts** folder cannot contain objects that have already been released. A new part can be: • A new component that replaces an old component in the parent assembly, which has been placed in the **Revised Parts** folder. • A new assembly that has never been released. Do not confuse new parts with revised parts. These two types of objects are mutually exclusive. The revised part is the final product. New parts are supplementary objects that are involved in the solution the engineering order is bringing about.

Table 12-1. Engineering order folders

Folder name	Description
Obsolete Parts	Holds the item revision being replaced by the revised parts. Typically, the obsolete item is the latest released version of the object on which the revised part is based. Therefore, if the obsolete item is rev A, the revised item is rev B.
Reference Data	Holds reference data, which is data that pertains to the engineering order, such as a document. Reference data can be used to associated data related to the engineering order, such as documents, parts, and so on. Information in this folder does not get a status.
Revised Parts	Holds the item revision revised by the engineering order; it is the item revision being released. A revised part can be either an assembly, or a piece part. At the end of the engineering order process, the system attaches a release status to the revised parts. When the engineering order is released, the revised parts, and all of their components, are authorized for production.

Activity: Initiate an engineering order

 This activity takes about 10 minutes.

In this activity, you initiate an engineering order, which involves the following steps:

- Creating an engineering order for a part
- Completing the engineering order request

Step 1: Create an engineering order for the **1113-000-Hub** item.

☐ Select the **Home** folder.

☐ Choose **File→New→Item**.

The system displays the **New Item** dialog box.

☐ From the list of types on the right, select **Eng_Order** and then click **Next**.

☐ In the **Item ID** box, type **EO000000** and press the Enter key.

Tip

To be sure you type the item ID correctly, you may want to just copy the item ID from the procedure into the **Item ID** box.

☐ In the **Revision** box, type **A** and press the Enter key.

☐ In the **Name** box, type **Change1** and press the Enter key.

☐ Click **Finish**.

The system creates the engineering order, **EO000000-Change1**.

☐ Close the **New Item** dialog box.

Step 2: Complete the engineering order request.

- ☐ Expand the engineering order object and the engineering order revision .
- ☐ Double-click the **CR-Change Request** form.
- ☐ Click the **Check-Out and Edit** button.
- ☐ When asked to verify that you want to check out the form, click **Yes**.
- ☐ In the **Description** box, type **Engineering Order** and press the Enter key.
- ☐ Click **Check-In**.
- ☐ Search for the **1113-000-Hub** item.

  Tip

  In the **Item ID** box, type **1113-000**.

- ☐ Close the **Search** view.
- ☐ In the **Search Results** view, expand the **1113-000-Hub** item.
- ☐ Select the **1113-000/A-Hub** item revision and click the **Copy** button.
- ☐ In your **Home** folder, under the engineering order item revision, select the **Obsolete Parts** folder and click the **Paste** button.
- ☐ Expand the **Obsolete Parts** folder.
- ☐ Create a new item revision, **1113-000/B-Hub**.

  Tip

  Select the **1113-000/A-Hub** item revision and choose **File→Revise**.

  The system places the new revision under the **1113-000-Hub** item.

- ☐ Copy the new item revision, **1113-000/B-Hub**, and paste it into the **Revised Parts** folder.
- ☐ Expand the **Revised Parts** folder to verify that the system copied the item revision.

This concludes the activity.

Activity: Complete an engineering order

This activity takes about 20 minutes.

In this activity, you complete the engineering order, which involves the following steps:

- Starting the Engineering Order workflow process
- Approving the task and routing it to a manager
- As the manager, approving the engineering order request, and then routing it to the corresponding branch in the workflow
- Performing changes to the product, and then submitting the engineering order for the final checking
- Specifying a checker for the engineering order
- As a checker, approving the engineering order

Step 1: Start a workflow process to manage the engineering order.

☐ Select the **EO000000/A-Change1** engineering order revision and choose **File→New→Workflow Process**.

The system displays the **New Process** dialog box.

☐ From the **Process Template** list, choose **Engineering_Order**.

☐ Click **OK**.

Step 2: Approve the task and route it to a manager, **Bill Manager**, in the **Engineering** group.

☐ Open your worklist, expand the **Tasks to Perform** folder and click the **(perform-signoffs)** task.

☐ Choose the **Viewer** view.

☐ Click **No Decision**.

☐ Click **Approve** and then click **OK**.

The system displays a new (**select-signoff-team**) task in the **Tasks to Perform** folder.

☐ Select the (**select-signoff-team**) task to display it in the Viewer.

☐ Under the **Signoff Team→Profiles** list, select **Engineering.Express_Organization/Manager/1**.

☐ From the **Organization** list, expand **Manager** and select **Bill Manager (bill)**.

☐ Click **Add**.

☐ Click **Apply**.

The system routes the workflow to the approver's worklist, in this case, Bill.

Step 3: Log on as Bill (**bill/bill**), approve the engineering order request, and then route it to the corresponding branch in the workflow.

☐ *To speed up the simulation, we log you off and log you back on (as Bill Manager).*

☐ Open your worklist, expand the **Tasks to Perform** folder and click the **(perform-signoffs)** task.

☐ In the **Viewer** view, click **Attachments**.

The system displays the **Attachments** dialog box.

☐ Expand the engineering order to see its contents.

☐ Close the **Attachments** dialog box.

☐ Click **No Decision**.

☐ Select **Approve** and click **OK**.

☐ *To speed up the simulation, we log you off and log you back on (as Bjorn Designer).*

☐ Open your worklist, expand the **Tasks to Perform** folder, and click the **select-signoff-team** task.

☐ Choose the **Viewer** view.

☐ To display the active users in the system, under the **Profiles** list, click ***/Author/1**.

☐ From the **Organization** list, expand **Author** and select **Designer, Bjorn (bjorn)**.

☐ To add yourself as a reviewer, click **Add**.

☐ Click **Apply**.

The system sends the workflow to the selected reviewer's worklist, in this case, you.

Step 4: Perform the changes to the product, and then submit the engineering order for the final checking.

☐ In your worklist, click the **select-signoff-team** task.

☐ In the **Viewer** view, click **Attachments**.

☐ In the **Attachments** dialog box, expand the engineering order item.

☐ Close the **Attachments** dialog box.

☐ Click **No Decision**, click **Approve** and click **OK**.

The system displays a new **(select-signoff-team)** task in the **Tasks to Perform** folder.

Step 5: Specify the checker for the engineering order.

☐ Select the **(select-signoff-team)** task.

☐ To display the active checkers in the system, from the **Profiles** list, click ***/Checker/1**.

☐ From the **Organization** list, expand **Checker** and select **Johannes Engineer (johannes)**.

☐ Click **Add**.

The system adds the user to the **Profiles** list.

☐ Click **Apply**.

The system sends the workflow to the selected checker's worklist, in this case, Johannes.

Step 6: As the checker from the **Engineering.Express_Organization** group, approve the engineering order.

☐ *To speed up the simulation, we log you off and log you back on (as Johannes Engineer).*

☐ In your worklist, expand the **Tasks to Perform** folder and click the **(perform-signoffs)** task.

☐ In the **Viewer** view, click **Attachments**.

☐ In the **Attachments** dialog box, expand the engineering order item revision.

☐ Expand the **Obsolete Parts** and **Revised Parts** folders.

☐ Close the **Attachments** dialog box.

☐ Click **No Decision**, click **Approve**, and click **OK**.

The system releases the engineering order with a status of 60. However, because you are logged on as Johannes, the engineering order is not visible to you. To see the status change, search the database for the engineering order.

Tip

In the **Item ID** box, type **EO000000**.

This concludes the activity.

Summary

In this lesson, you learned:

- What an engineering order is.
- How to complete an engineering order process.

Lesson

13 Working with MS Office documents

Purpose

The purpose of this lesson is to teach you how to manage Microsoft Office documents in Teamcenter Express.

Objective

After you complete this lesson, you should be able to:

- Create a document in MS Word and save it to the Teamcenter database.
- Initiate workflow from MS Word.
- Approve workflow using MS Outlook.

Help topics

Additional information for this lesson can be found in:

- *Getting Started With Teamcenter Express*
- *Teamcenter Integrations for Microsoft Office Guide*

Managing MS Office documents in Teamcenter Express

Manage Teamcenter Express workspace objects in real time with Teamcenter Integrations for MS Office. You can access Teamcenter Express directly through Teamcenter Integration for MS Office, in the following applications:

- In MS Office 2003, MS Word, Excel, and PowerPoint
- In MS Office 2007, MS Word, Excel, and Outlook

> **Note**
>
> In this training, you learn about the Teamcenter Integration for MS Office 2007.

The integration is independent of the Teamcenter rich client and thin client. You can work with Teamcenter Integrations for MS Office while either client is running. Or, you can work solely through the integration without running Teamcenter Express.

Benefits of using Teamcenter Integration for MS Office 2007

After you log on to the database, you can do the following Teamcenter tasks using MS Word, Excel, and Outlook:

- Create and manage folders
- Create and manage items and item revisions
- Create and manage datasets
- Create links to workspace objects
- Create and manage forms
- Search for Teamcenter objects
- Embed workspace objects
- Sign off on items
- Synchronize MS Office document properties with Teamcenter forms
- Submit items to workflow

Activity: Manage MS Office documents

 This activity takes about 20 minutes.

In this activity, you draft a project plan for an upcoming project, and then, using the workflow functionality, you submit that document to your manager for approval.

Step 1: Create a document.

- ☐ Start MS Word 2007.
- ☐ Click the **Teamcenter** tab.

  The system displays the Teamcenter ribbon.
- ☐ On the **Teamcenter** ribbon, click **Browse**.

  The system displays the **Teamcenter Login** dialog box.
- ☐ Type your user ID and password and click **Login**.

☐ Click the **Home** folder, and then click the **Items** folder.

☐ Select the **1504-Wheel** item. This is the item with which you want to associate your project plan.

☐ In the MS Word document, type the text shown next and then press the Enter key.

Project Plan for the 1504-Wheel Item

Step 2: Save the document.

- ☐ On the **Teamcenter** ribbon, click **Save As**.
- ☐ Click **Dataset**.

  The system displays the **Teamcenter Save As** dialog box.
- ☐ To expand the **Home** folder, click the triangle to the left of it.
- ☐ In the same way, expand **Items** and **1504–Wheel**.
- ☐ Click the **1504/000–Wheel** item revision.

☐ In the **File name** box, type **1504_info** and then click **Save**.

Step 3: From MS Word, send the item revision that includes the document to the Production Release workflow.

- ☐ Close the document (**MS Office** button® **Close**).
- ☐ On the **Teamcenter** ribbon, click **Open**.

  The system displays the **Teamcenter Open** dialog box.
- ☐ Navigate to and select the **1504/000-Wheel** item revision.

  Note that the item revision contains the document you created.
- ☐ From the right side of the dialog box, double-click the document.
- ☐ Click the **Teamcenter** tab.
- ☐ On the **Teamcenter** ribbon, click **New Process**.

  The system displays the **New Workflow Process** dialog box.
- ☐ From the **Process Template** list, select **Production Release**.
- ☐ Click **OK**.
- ☐ On the **Teamcenter** ribbon, click **Browse**.
- ☐ Click **Designer, Bjorn (bjorn) Inbox**.
- ☐ Click **Tasks to Perform**.
- ☐ Click the arrow to the right of the **perform signoffs** task.
- ☐ Click **Approve**.
- ☐ Click the arrow to the right of the **select signoff team** task.
- ☐ On the right side, click the **Select Signoff Team** button.
- ☐ From the **Signoff Team** list, click ***/Checker/1**.
- ☐ From the **Organization Profiles** list, expand **Express Organization→Engineering→Checker**.
- ☐ Select your manager, **Johannes Engineer**.
- ☐ In the middle of the dialog box, click the green arrow.
- ☐ Click **OK**.

☐ Minimize MS Word.

Step 4: Approve the document. Unlike in the rich client, when you send an item revision for approval, the system first gives you the task to review the item revision, and once you sign off on it, it sends the task to your designated checker, in this case your manager (Johannes Engineer).

☐ Start MS Outlook.

☐ From the Teamcenter ribbon, click **Browse Teamcenter**.

☐ Type your user name and password (**johannes/johannes**).

☐ Expand **Inbox→Tasks to Perform**.

☐ Right-click the task you want to approve, **1504/000-Wheel** and select **View/Perform task**.

☐ On the right side of the window, click **Approve**  .

The system deletes the task from your task list.

This concludes the activity.

Summary

In this lesson, you learned how to:

- Manage Teamcenter Express in MS Office.
- Create documents in MS Word or MS Excel and save them to the Teamcenter database.
- Initiate workflow in MS Word or MS Excel and approve workflow using MS Outlook.

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Inside Cover

Reference chart tear outs

These tear outs are provided for your convenience.

Teamcenter Express cPDM student profile

Name_____ **Date**
_____

Employer_____

Please answer the following questions as honestly as you can. Your answers help us provide training that meets your needs.

1. Job title:
   _____

2. Current responsibilities:
   _____

   _____

   _____

3. How long have you held these responsibilities? Years _____

4. How long have you been working with CAD/CAM and cPDM systems? Years _____

5. What other cPDM systems are you familiar with?
   _____

   _____

6. What other CAD/CAM systems are you familiar with?
   _____

   _____

7. What do you model in CAD (castings, assemblies, and so on)?

   _____

   _____

   _____

   _____

   Additional comments:

   _____

   _____

   _____

Teamcenter Express cPDM course agenda

Day 1 Morning

Introduction	Course overview
Lesson 1	Introducing Teamcenter Express
Lesson 2	Getting started with Teamcenter Express rich client
Lesson 3	Finding and viewing data

Afternoon

Lesson 4	Creating data in Teamcenter Express
Lesson 5	Viewing product structure
Lesson 6	Sharing data outside of Teamcenter Express

Day 2 Morning

Lesson 7	Performing where-used and where-referenced searches
Lesson 8	Editing product structure
Lesson 9	Planning and tracking your work
Lesson 10	Releasing data

Afternoon

Lesson 11	Viewing product data
Lesson 12	Managing engineering orders
Lesson 13	Working with MS Office documents