



TEAMCENTER

As-Built Manager

Service Lifecycle Management 2412

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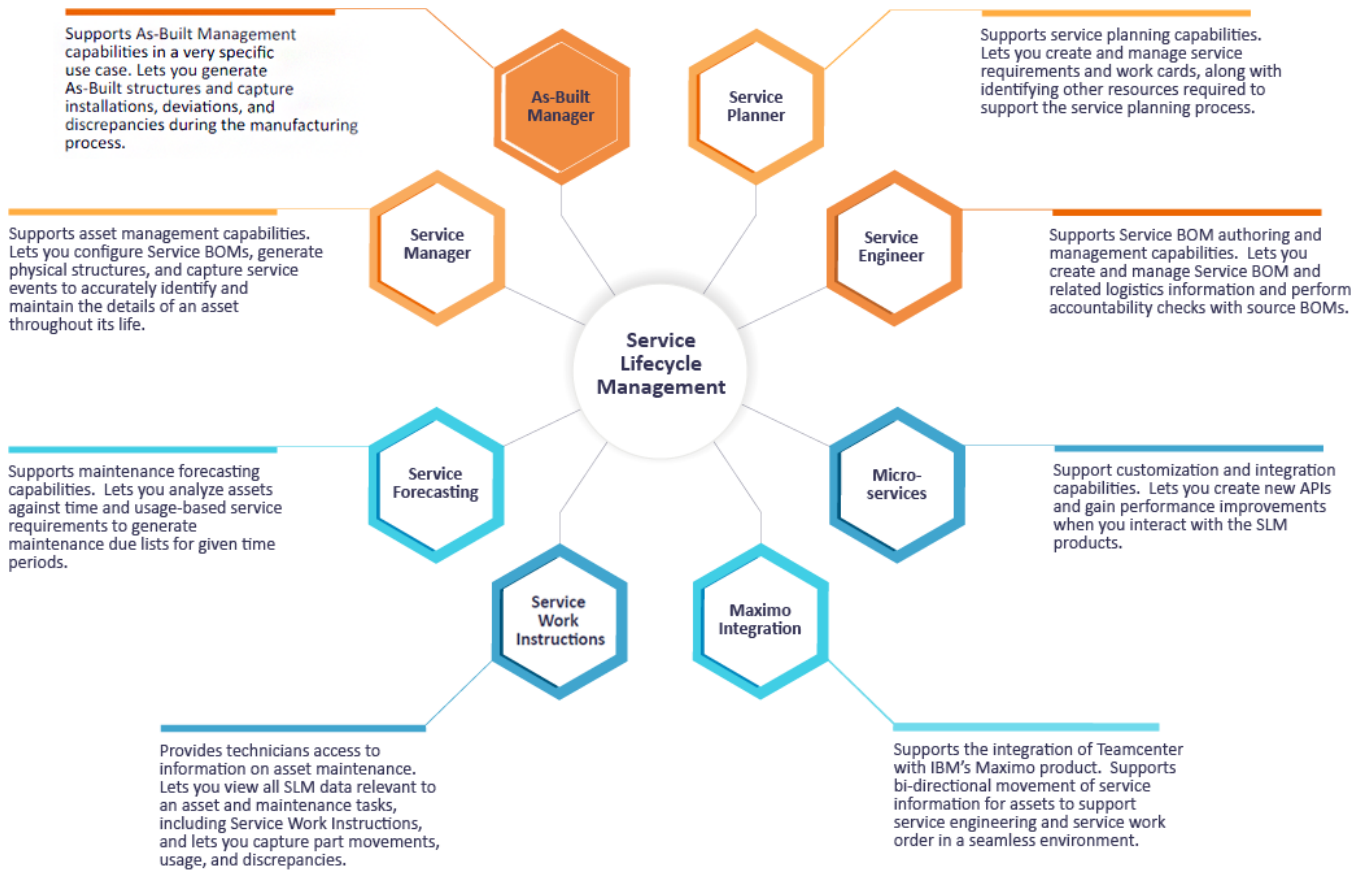
As-Built Manager preferences

SLM core preferences

1. Service Lifecycle Management

As-Built Manager

Capitalize on the re-use of product knowledge from engineering and manufacturing to improve service planning and execution. Provide feedback to engineering to improve product designs for serviceability and reliability. Communicate and coordinate operational activities for greater compliance, faster service, and lower costs.



Service Lifecycle Management products

Select a link below to access the help documentation for each product.

[Service Lifecycle Management on web client](#)

[Service Engineering](#)

[Service Work Instruction](#)

[Service Manager](#)

Service Planner

Maximo Integration

Microservices for Service Lifecycle Management Integration

2. What's new in As-Built Manager

What's new in As-Built Manager 14.1

- Beginning with Teamcenter 14.1, when you create an as-built structure from a neutral structure, you can **control the display of parts** that have a quantity greater than one, in the new structure. This becomes especially important when you work on very large structures and on structures imported into Teamcenter from a CAD system.

For example, a wheel assembly includes multiple nuts. When the structure is imported, each nut is represented by a single line in the neutral structure. The existence of multiple lines for one part clutters the structure, making it difficult to find specific parts throughout the structure.

What's new in As-Built Manager 13.2

- Teamcenter Environment Manager (TEM) is deprecated and will be obsolete in a future version of Teamcenter.
- You now can create as-built structures from **configured neutral structures** in As-Built Manager.

3. Getting started with As-Built Manager

Getting started with As-Built Manager

As-Built Manager is a separately licensed application that is installed as an optional overlay on top of the standard Teamcenter product. This application allows you to manage the as-built configuration of an asset realized from a product definition structure, such as a design or manufacturing structure. You can use As-Built Manager to:

- Create the as-built physical product instantiation for any configured product structure.
- Store and manage additional information about the as-built physical part structure that is not tracked on the product definition structure, such as serial numbers and lot numbers.
- Reconcile the as-built structure with a configured product definition structure to identify parts that are missing, alternates, substitutes, or deviations.
- Compare the as-built structure to the product definition structure or to another as-built structure.
- View the as-designed product structure and the as-built physical structure configuration side-by-side or by using the embedded viewer available in the rich client.
- Import an as-built structure from an external manufacturing execution system (MES) or an enterprise resource planning (ERP) system in PLM XML.
- Export an as-built structure to an Teamcenter Enterprise Service Lifecycle Management system using Data Exchange.
- Manage as-built structures in a Multi-Site Collaboration environment.

Before you begin

Prerequisites

The As-Built Manager application requires a separate license in addition to the standard Teamcenter product license. You must obtain and install the appropriate licenses required to run the As-Built Manager application.

Enable As-Built Manager

As-Built Manager does not need to be enabled before you use it, but you must select this feature and the associated components during installation.

If you have trouble accessing As-Built Manager, see your system administrator; it may be a licensing issue. The As-Built Manager application requires a separate license in addition to the standard Teamcenter product license.

Configure As-Built Manager

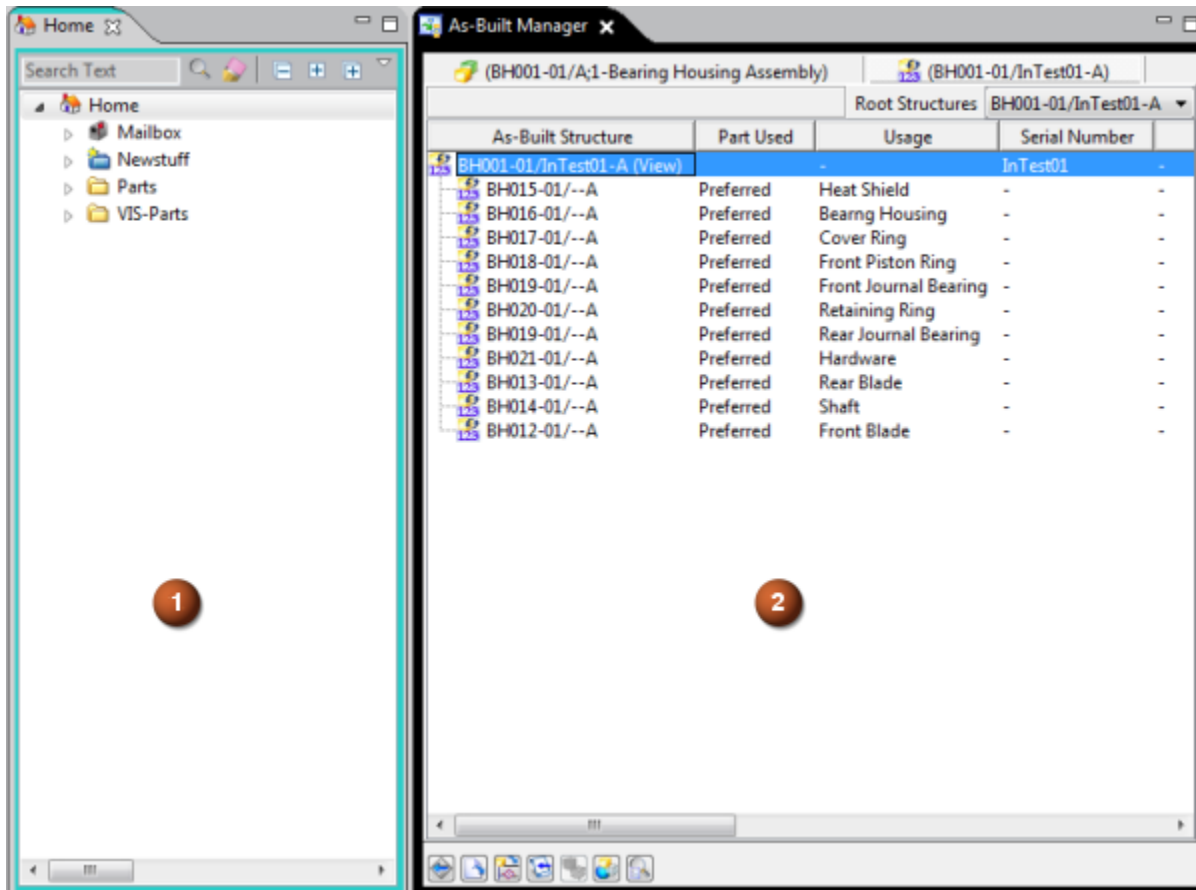
There are additional steps you must perform to configure As-Built Manager before you can use it.

Start As-Built Manager

Click **As-Built Manager**  in the navigation pane.

As-Built Manager interface

As-Built Manager perspective



1 Teamcenter component pane

Shows the Teamcenter folders and components.

2 Data pane

Allows you to view data about the selected line. To display a different data pane, click its tab.

As-Built Manager uses the Teamcenter rich client interface.

Not all of the following menu commands and buttons may be available on your system, as the administrator can hide or reveal only those commands and buttons that are appropriate for your site.

As-Built Manager menus

File menu

Command	Description
New → Workflow Process (Ctrl+P)	Creates a new workflow process.
New → Item	Creates a new item.
New → Folder	Creates a new folder.
New → Dataset	Creates a new dataset.
Duplicate As-Built Manager Structure	Creates a duplicate of the as-built physical structure.
Close	Closes the As-Built Manager application.
Open (Ctrl+O)	Opens the selected structure.
Exit	Ends the rich client session.

Edit menu

Command	Description
Cut (Ctrl+X)	Marks the selected lines for removal and copies the content to the clipboard. Cut lines are only removed once pasted elsewhere in the structure.
Copy (Ctrl+C)	Copies the selected lines to the clipboard.
Paste (Ctrl+V)	Inserts the Clipboard contents below the selected item.
Paste Special	Allows you to specify a relation type rather than using the default paste relation when pasting an object reference into an item or item revision.
Delete	Deletes the selected object from the database.
User Setting	Displays the User Settings dialog box, where you can change your group, role, or volume assignments, and your application logging and journaling options.
Options	Changes your user interface settings that affect all applications, not only As-Built Manager.
Toggle In-Context Mode	Enables or disables editing in context mode, allowing creation of absolute occurrences for the selected assembly.

View menu

Command	Description
Refresh (F5)	Updates the information displayed for a selected line and all of its children.
Refresh Window	Synchronizes the currently displayed as-built structure with the database. The displayed structure refreshes with changes that have been made in other sessions and saved since you loaded the currently displayed as-built structure.
Properties	Displays the properties for the selected item.
Access...	Displays the user access for the selected item.
Show Data Panel	Shows or hides the data pane containing, for example, properties data or the embedded viewer.
Show/Hide Second Structure Panel	Displays a second structure pane below the first. You can set the size of each structure pane by moving the horizontal split bar between the panes. If the second structure pane is displayed, this button hides the lower pane.
Show/Hide Collaboration Panel	Shows or hides the collaboration panel.
Expand	Expands the substructure immediately below the selected lines.
Expand Below	Expands the complete substructure below the selected lines.
Expand Below...	Expands the substructure below the selected lines to a user-selected level. You can also collapse an expanded substructure when you choose this option (hide certain child lines).
Collapse Below	Collapses the complete substructure below the selected lines (hide all child lines).
Pack (Ctrl+Shift+M)	Packs the selected lines so that all lines with the same item revision and find number are displayed as a single line. The actual quantity of lines appended to the node.
Unpack (Ctrl+Shift+N)	Unpacks the selected packed lines so that they are displayed as separate lines, one for each occurrence.
Pack All	Packs all packable lines in the displayed structure.
Unpack All	Unpacks all packable lines in the displayed structure.
Show Unconfigured Variants	Shows or hides unconfigured variant components.
Show Unconfigured Assigned Occurrences	Shows assigned objects that were configured out by the variant rules of the structures from which the objects were assigned. You can only use this command with composition structures.

Command	Description
	<div style="border: 1px solid black; padding: 5px;"> <p>Note:</p> <p>This command does not automatically refresh. Any changes to the assigned objects are not reflected in the structure until you execute this command again.</p> </div>
Show Unconfigured Changes	Shows unconfigured changes. If you hide unconfigured changes, only those changes configured by the current revision rule are visible.
Show Unconfigured By Occurrence Effectivity	Shows or hides components that are not configured when using occurrence effectivity.
Show Untraced Parts	Shows or hides the neutral parts that are not traceable in the physical structure.

Tools menu

Command	Description
Check-In/Out → Check-Out	Checks a selected component out of the database.
Check-In/Out → Check-In	Checks a selected component into the database.
Check-In/Out → Cancel Check-out	Cancels a request checkout action.
Check-In/Out → Transfer Check-out	Transfers a selected, checked-out component to another user.
Check-In/Out → Notification List	Allows you to view or edit the list of users who are informed if the selected component is checked in or checked out.
Check-In/Out → Check-Out History	Allows you to view the history of checkout actions for the selected component.
Id Display Rule → View/Set Current	Allows you to view the ID display rule currently applied to the selected structure or set a different ID display rule.
Id Display Rule → Modify Current	Modifies the ID display rule currently applied to the selected structure.
Id Display Rule → Create/Edit	Creates a new ID display rule or modify an existing ID rule.
Revision Rule → View/Set Current	Allows you to view or set the revision rule for the currently displayed structure.
Revision Rule → Set Date/Unit/End Item	Sets the date, unit number, or end item to configure the structure, if the current rule allows.

Command	Description
Revision Rule → Set Override folder	Sets an override folder to override item revisions that would otherwise be selected by other criteria.
Revision Rule → Modify Current	Modifies the current revision rule and apply the modified rule to the current structure. You can save the change if you have write access to the original rule.
Revision Rule → Create/Edit	Creates or edits a revision rule.
Variants → Configure Variants	Allows you to configure or edit a variant structure for the selected top level module.
Variants → Only Configure Root	Allows you to set to on to only display options for the top-level module, regardless of the line selected. Set to off to configure the structure for a lower level module.
Variants → Search	Searches for an existing variant item.
Variants → Count Modules	Counts the modules defined for the selected variant structure.
Arrangements → View/Set Current	Allows you to view or set the current NX arrangements.
Export → Objects	Exports selected objects in Teamcenter format, STEP format or a new or available application interface. When you export an object in Teamcenter or STEP format, you move all internal data associated with that object.
Export → To PLMXML	Exports the selected structure and its attachments in the PLM XML format to a selected export directory. You must choose the appropriate transfer mode for the destination system. If you export a structure in which substitute components are defined, the substitutes are also exported.
Export → Objects to Excel	Exports the selected structure lines to an Excel spreadsheet.
Import → Templates	Imports a specification, object, or Excel template.
Import → Objects	Imports objects in a Teamcenter format or STEP format to your Teamcenter database.
Import → From PLMXML	Imports objects in the PLMXML format to your Teamcenter database.
Import → Remote	Imports objects from a remote site using Multi-Site Collaboration.
Rebase Physical Part	Updates the physical part to the latest design of the neutral structure.











Command	Description
Compare	Compares two as-built structures or compares the as-built structure to the neutral product structure in separate windows.
Clear	Clears the results of comparing two structures.
Find in Other Structure	Finds the selected object in another structure pane. The search follows the closest match rule if it does not find an exact match.
Rename Physical Part	Allows you to change the part number and serial number of a physical part.
Create Lot	Allows you to create lot information when you select a part defined as a lot part. Lot information includes lot number, manufacturer ID, and lot size.
Create Serial Number Generator	Allows you to create numbering scheme information for a serial number on a neutral part that is defined as a serialized part. The numbering scheme information is used for serial number generation on physical parts generated from that neutral part. For example, you can define a prefix, suffix, or maximum number for the serial numbers generated.
Generate As-Built Manager Structure	Creates a physical as-built structure from the selected neutral structure.
Name Occurrence	Assigns a name to the occurrence for the selected neutral part using the predefined naming rules.
Assign Lot	Assigns a lot number to the selected physical part.
Install Physical Part	Adds or installs a copied physical part into the current as-built structure.
Uninstall Physical Part	Uninstalls and removes the selected lines from the as-built structure completely and does <i>not</i> place them on the clipboard.
Replace Physical Part	Replaces a selected physical part in the current as-built structure with a copied part.
Setup Deviation	Opens the Setup Deviation wizard. Use the Setup Deviation wizard to search for a deviation document to associate to the physical part.
Rebuild Physical Structure	Creates a new build revision of a physical part.
Generate As-Maintained Structure	Generates an as-maintained physical structure from an as-built physical structure.
















As-Built Manager buttons and symbols









Note:

You can add buttons that are not displayed on the main toolbar by right-clicking the toolbar, choosing **Customize**, and selecting the buttons you want to add. Once you have added buttons to the toolbars, they are displayed in future sessions. Consider adding buttons that:

- You use frequently.
- Provide a shortcut to menu commands that are not primary selections, for example, **Tools → Revision Rule → Set Date/Unit/End Item....**

Button	Purpose
These standard buttons are located on the main toolbar at the top of the as-built structure pane.	
	Soft abort If enabled, allows you to terminate the current operation without closing As-Built Manager or losing data.
	Cut Cuts the selected lines from the structure and places them on the clipboard.
	Copy Copies the selected lines in the structure and places them on the clipboard.
	Paste Pastes the components from the clipboard as children of the currently selected (assembly) line in the structure.
	Delete Deletes the selected object from the database.
	Show/Hide data pane Shows or hides the data pane containing, for example, properties data or the embedded viewer.
	Show/Hide the lower structure pane Displays a second structure pane below the first. You can set the size of each structure pane by moving the horizontal split bar between the panes. If the second structure pane is displayed, this button hides the lower pane.
	Show/Hide the collaboration pane Displays or hides the collaboration pane, which provides advanced features for configuring structures. These features relate primarily to Multi-Structure Manager.
	Create lot Allows you to create lot information when you select a part defined as a lot part. Lot information includes lot number, manufacturer ID, and lot size.
	Show untraced parts Shows or hides the neutral parts that are not traceable in the physical structure.

Button		Purpose
	Create serial number generator	Allows you to create numbering scheme information for a serial number on a neutral part that is defined as a serialized part. The numbering scheme information is used for serial number generation on physical parts generated from that neutral part. For example, you can define a prefix, suffix, or maximum number for the serial numbers generated.
	Generate as-built structure	Creates a physical as-built structure from the selected neutral structure.
	Name occurrence	Assigns a name to the occurrence for the selected line using the predefined naming rules.
	View/Set current	Allows you to view or set the revision rule on the current line.
	Configure variants	Allows you to view and configure the variant option values for the selected line.
	Refresh	Updates the information displayed for a selected line and all of its children.
	Find selected in other panel	When you select a component in the BOM in one structure pane and click this button, you can search for the component in the BOM in the other structure pane. The search follows the closest match rule if it does not find an exact match.
	Pack selected line	Packs the selected lines so that all lines with the same item revision and find number are displayed as a single line. The actual quantity of lines appended to the node.
	Unpack selected line	Unpacks the selected packed lines so that they are displayed as separate lines, one for each occurrence.
	Install physical part	Adds or installs a physical part into the current as-built structure.
	Uninstall physical part	Uninstalls and removes the selected lines from the as-built structure completely and does <i>not</i> place them on the clipboard.
	Replace physical part	Replaces the physical part into the current as-built structure.
	Setup deviation	Opens the Setup Deviation wizard. Use the Setup Deviation wizard to search for a deviation document to associate to the physical part.
	Rebuild physical structure	Creates a new build revision of the physical structure.
	Navigation Pane	Displays or hides the navigation pane.

Button		Purpose
	Advanced Search	Allows you to select a search form that includes multiple search criteria relevant to the type of information or object being sought.
<p>The following buttons are located at the bottom left corner of the as-built structure navigation tree pane.</p>		
	Most recently used (MRU) list	Shows a list of your most recently accessed structures. If you select an entry from the list, As-Built Manager loads the structure into the structure pane. You can configure the number of entries shown in the MRU list by right-clicking the button and moving the slider to the desired number.
	Open by name	Browses for and opens a specific structure by name.
	Open structure context by name	Browses for and opens a specific structure context by name.
	Most recently used (MRU) revision rules list	Selects a revision rule to apply to the current product structure from a list of the rules you have used recently. You can configure the number of entries shown in the MRU by right-clicking the button and moving the slider to the desired number.
	List substitute components	<p>Adds or removes substitute components or set the preferred substitute.</p> <p>This button is enabled if the selected line may have substitutes; otherwise, it is disabled.</p>
	Manage global alternates	Shows a list of the global alternates available for the selected line. You can add alternates and select a preferred alternate. The preferred global alternate is indicated by an asterisk.
	Find in display	Searches for matching lines (components) in the displayed product structure by entering an expression. You can search with any combination of the available properties.

The following symbols are displayed at the bottom right corner of the product structure pane and show the current status of the selected line.








Shows if you have write access permissions for the selected line.



Shows if you have delete access permissions for the selected line.



Shows if you have access permissions to change the selected line.

Button	Purpose
	Shows if the item revision represented by the line is currently in a workflow process.
	Shows if the item revision represented by the line is currently checked in or checked out.
	Shows if the item revision represented by the line is currently released.
	Shows if the item represented by the line is currently published.
	Shows if the item or revision represented by the line is currently classified.

What are perspectives and views?

Within the rich client user interface, application functionality is provided in *perspectives* and *views*.

View The basic display component that displays related information in a UI window.

Perspective A collection of one or more views and their layout.

Some applications use a perspective with multiple views to arrange how functionality is presented. Other applications use a perspective with a single view.

You can use the **HiddenPerspectives** preference to prevent the display of some Teamcenter perspectives in the rich client.

If your site has online help installed, you can access application and view help from the rich client **Help** menu or by pressing F1.

Basic concepts for using As-Built Manager

Before creating or modifying the product structure, read **Getting Started with Product Structure**, which describes the basic concepts behind product structure and includes advanced information on how to use and administer it.

To take full advantage of As-Built Manager, you should be familiar with the Teamcenter elements that are used to define and present product structure, the basic process of creating product structure, and how item revisions relate to how you manage default and multiple product views. Product structures are not created or modified in As-Built Manager, but these structures are used as the definition for the as-built structure.

The following are elements of As-Built Manager:


Element	Description
As-built structure	The representation of an individual physical asset. A single neutral structure can result in many as-built structures, one for each physical asset. The as-built structure contains additional asset-specific information and records authorized differences from the product definition.
Deviation document	A document that authorizes the installation of a physical part which is a deviation from the design structure.
Deviated physical part	A physical part installed in a physical structure which is not the preferred part or designated as a valid alternate or substitute to the preferred part.
Deviation workflow	The process flow, reviewer's list, and business validations required to route a deviation document for review and approval.
Lot	Group of physical parts controlled by the same number. A lot number is similar to a serial number. The difference between the two is that the same lot number can identify multiple physical parts, but no more than the total number of physical parts specified by the lot size.
Lot part	Physical part or assembly identified by a lot number.
Neutral part	An item defined in the neutral structure representing a part definition. It can be a part object or any other item type configured as a valid neutral item type in the Business Modeler IDE.
Neutral structure	A hierarchy of neutral parts representing the asset independent product definition structure, such as the manufacturing or design structure.
Part logistics data	Information added to the neutral part that will support the realization of physical parts in as-built or as-maintained representations of the product. For example, part logistics data determines whether the part is traceable, serialized, or lot. Part logistics data is added to each neutral part using the part logistics form.
Physical part	The representation of a built or manufactured physical asset realized from the neutral part. The physical part captures the asset information such as its serial number, manufacturer, lot number. It also inherits the part number from the neutral part from which it is realized.
Physical structure	A structure composed of physical parts.
Physical realization	The relation between a physical part and the neutral part revision that it was realized from.
Serial number generator	A number generator that can be configured on a neutral part to create serial numbers for every instance of a physical part. You can set characteristics for the serial numbers, such as a prefix, suffix, the

Element	Description
	number increment, and the maximum number of characters in the serial number. During the instantiation of the physical structure from the neutral structure, you can choose to automatically assign the serial numbers to the newly created physical parts.
Serialized part	Approved product structure that includes part information.
Usage	Defines the position that the physical part occupies within the as-built structure.


Search for As-Built Manager objects

You can search for the following As-Built Manager objects using advanced search:

- MRO Deviation Document
- MRO Item
- MRO Lot
- MRO Neutral Part
- MRO Physical Part
- MRO Serial Number Generator

1. Choose **Advanced** from the quick **Search** menu at the top of the navigation pane.
2. On the **Search** pane toolbar, click  to select a search type.
3. Click **More** to display the system defined searches.
4. Under **System Defined Searches**, select the object you want to search for.
5. Click **OK**.

The dialog box that contains the object properties appears.

6. Type the values for the object properties that you want to search for.
7. Click the  button to search.

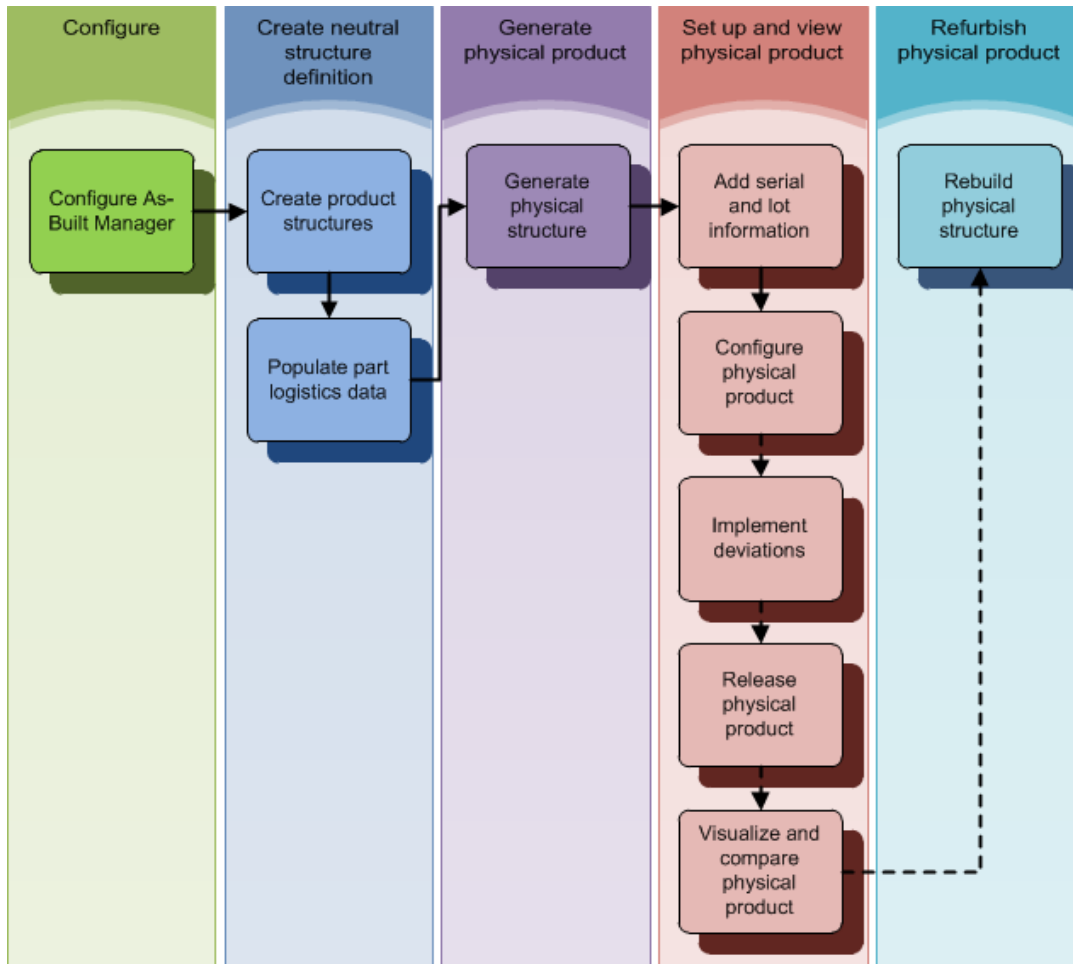
Basic tasks for using As-Built Manager

The basic tasks for using As-Built Manager are:

1. Configuring As-Built Manager by setting global and business object constants, LOVs, and preferences.

2. Creating the neutral structure definition.
3. Generating the physical structure from the neutral structure.
4. Setting up and configuring the physical structure.

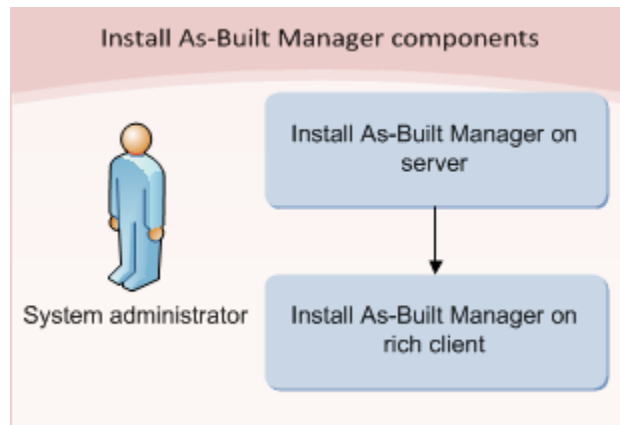
As-Built Manager process task flow



4. Installing and configuring As-Built Manager

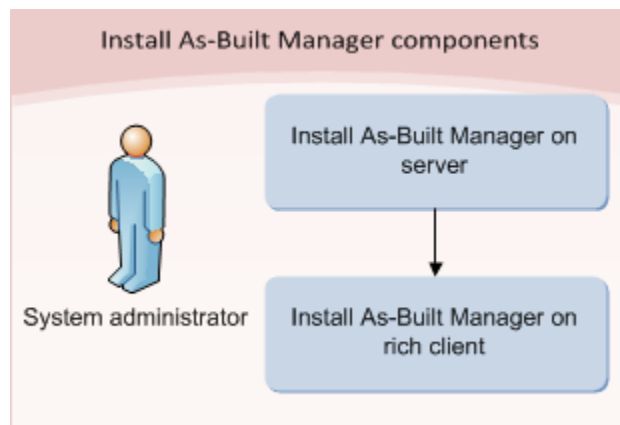
Installing As-Built Manager

As a system administrator, you must install and configure As-Built Manager using Teamcenter Environment Manager (TEM). As the following figure shows, you must install As-Built Manager on the server and on the rich clients that use the application.



Install As-Built Manager

As a system administrator, you must install and configure As-Built Manager using Teamcenter Environment Manager (TEM). As the following figure shows, you must install As-Built Manager on the server and on the rich clients that use the application.



For more information about planning your installation and installing Teamcenter, see *Teamcenter Server Installation on Linux* or *Teamcenter Server Installation on Windows*.

1. Start Teamcenter Environment Manager (TEM).

For more information about launching Teamcenter Environment Manager, see the *Teamcenter Server Installation on Linux* or the *Teamcenter Server Installation on Windows*.

2. Select the appropriate options until you reach the **Features** panel.

Note:

The configuration installed is dependent on the options that you choose in the **Solutions** panel of the TEM installation windows, such as **Corporate Server**, **Rich Client 2–Tier**, and **Business Modeler IDE**. You can also add any of the options available in the **Solutions** panel from the **Features** panel.

3. In the **Features** panel, under **Extensions — Service Lifecycle Management**, select the following features.

Feature	Description	Prerequisite features
As-Built Management	Installs the As-Built Management functionality.	Teamcenter Foundation

4. If you want to configure your system using the Business Modeler IDE:

- a. Click **Next**. Select appropriate options until you reach the **Business Modeler IDE Templates** panel.
- b. In the **Business Modeler IDE Templates** panel, select the following templates.

Template	Description
Teamcenter Foundation	Installs the Teamcenter Foundation template.
As-Built Management	Installs the As-Built templates.

For more information about installing the Business Modeler IDE, see *Teamcenter Server Installation on Linux* or *Teamcenter Server Installation on Windows*.

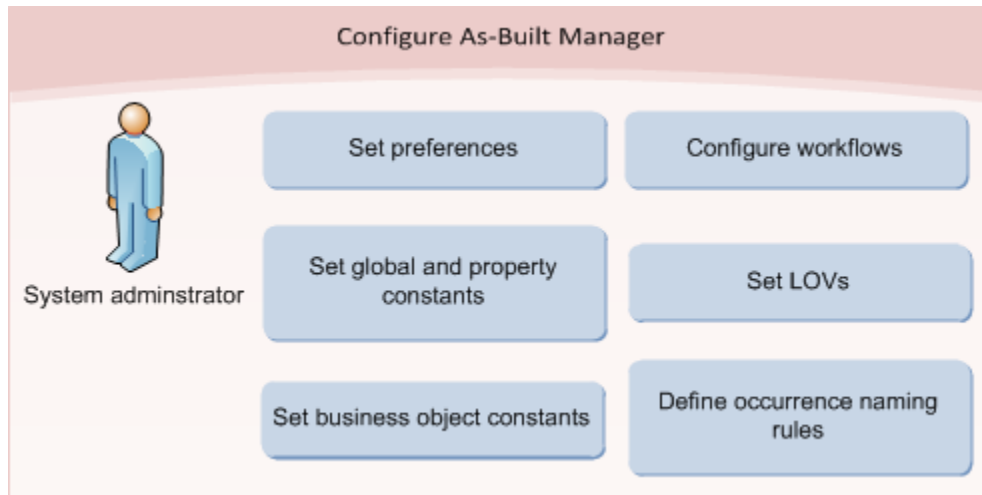
5. Click **Next**.

Select appropriate options until you complete the installation.

For more information, see *Teamcenter Server Installation on Linux* or *Teamcenter Server Installation on Windows*.

Configuring As-Built Manager

The Teamcenter administrator configures the As-Built Manager according to company needs and organization requirements as shown in the following figure.



You can configure:

- As-Built Manager preferences.
- Global and property constants that control part logistics information and define part usage properties.
- Business object constants that identify neutral item types.
- Naming rules for occurrences.
- Lists of values (LOVs) that define deviation authority documents and status lists.
- As-Built Manager workflows.

You use the Business Modeler IDE to configure global and property constants, business object constants, naming rules, and LOVs. An administrator creates and configures a custom template based on the As-Built Manager or other templates provided with the As-Built Manager application. You must deploy the custom template after making the changes.

Setting as-built preferences

As an administrator or Teamcenter user, you can set the Service Lifecycle Management and As-Built Manager preferences according to your needs. Preferences are special environment variables stored in the Teamcenter database and are read during Teamcenter application usage.

Setting as-built global and property constants

Setting as-built global and property constants

Global constants provide consistent definitions that can be used throughout the system. These constants have only one value, either the default value or the value you set. You use the Business Modeler IDE to configure the global constants in the custom template that you define. You must deploy the custom template after making the changes.

You can configure the following as-built global constants:

- **AutoCreatePartLogisticsForm**

Set this value to automatically create part logistics forms and relate them to a neutral item.

- **PartLogisticsFormNamePrefix**

Set this value to automatically create a prefix in part logistics form names.

- **UsageAttributeName**

Set this value to the property of **PSOccurrence** that is to contain the value for the generated physical part's usage.

- **ReuseAuthorizedDeviation**

Set this value to reuse an authorized deviation information when duplicating physical structures.

You can configure the following as-built property constant:

- **InitialValue**

Set this value to set the defaults for the properties of the part logistics form.

Set up automated creation of part logistics forms

As an administrator, you can set the **AutoCreatePartLogisticsForm** global constant to **true** to configure part logistics forms to be automatically created and related to a neutral item during creation. The part logistics form is related to the neutral item with a **References** relation.

Example:

Because a part object by default is classified as a neutral item, a part logistics form is automatically created and related to a newly created part.

Global constant	Default value
AutoCreatePartLogisticsForm	True

Define default values for part logistics form

As an administrator, you can set the defaults for values contained in the part logistics form by setting the property constant **InitialValue** for any of the properties of the **PartLogisticsForm** business object.

Example:

You may want to set the **InitialValue** for the **IsSerialized** property to **True**, to require all physical parts to have a serial number on one system, but not on another system.

Define part logistics form name prefix

As an administrator, you can set the **PartLogisticsFormNamePrefix** global constant to a prefix that is used for part logistics form names.

Example:

If you want part logistics form names to contain the prefix **PL**, set **PartLogisticsFormNamePrefix** to **PL**.

Global constant	Default value
PartLogisticsFormNamePrefix	NULL

Define usage property

As an administrator, you can set the **UsageAttributeName** global constant to the property of **PSOccurrence** that populates the value of the physical part's **usage** when the as-built physical structure is generated.

Example:

You may want to set the **UsageAttributeName** global constant to **ref_designator**. When you set the value of **ref_designator** to **RD1234**, the value of **usage** is populated with that same value **RD1234** for the generated physical part.

The allowed properties are:

- **occurrence_name**
- **ref_designator**

- **seq_no**

Note:

The **seq_no** property corresponds to the value for the **Find No.** property in the Service Manager interface.

Global constant	Default value
UsageAttributeName	occurrence_name

Reuse an authorized deviation

As an administrator, you can set the **ReuseAuthorizedDeviation** global constant to **True** to reuse an authorized deviation when duplicating a physical structure. If the value is set to **True**, the deviated and extra to design parts from the original structure are copied to the duplicated structure.

Global constant	Default value
ReuseAuthorizedDeviation	True

Setting as-built business object constants

Setting as-built business object constants

Business object constants provide default values to business objects that define the behavior for a specific business object. Because these constants are attached to business objects, they are inherited, just like properties. These constants have only one value, either the default value or the value you set. Use the Business Modeler IDE to configure the business object constants in the custom template that you define. You must deploy the custom template after making the changes.

You can configure the following as-built business object constants:

- **IsMRONeutralType**

Set this value to automatically configure which items are defined as neutral items.

- **PhysicalPartTypeForCreate**

Set this value to the physical part type created from a neutral item.

Identify neutral item types

As an administrator, you can set the **IsMRONeutralType** business object constant to **true** to configure which items are defined as neutral items. Physical parts are only generated from neutral items.

Example:

Because **IsMRONeutralType** is **false** for the **document** business object, physical parts cannot be generated from documents.

Business Object Constant	Default value
IsMRONeutralType	false for business object item
IsMRONeutralType	true for business object part

Define physical part types

As an administrator, you can set the **PhysicalPartTypeForCreate** business object constant to represent the physical part type that is generated from a neutral item.

Example:

You may want to create a new neutral item called **Aircraft** to represent an aircraft assembly and a new physical part subtype called **PhysicalAircraft** to represent a physical aircraft assembly. If you set the **PhysicalPartTypeForCreate** business object constant to **PhysicalAircraft** for the neutral item **Aircraft**, the physical part is set to the type **PhysicalAircraft** when the as-built structure is generated.

Business object constant	Default value
PhysicalPartTypeForCreate	Physical Part for business object item

Setting up as-built naming rules

As an administrator, you can create naming rules that define the data entry format for a business object property. A naming rule consists of rule patterns and a counter. Before creating a naming rule, you should be familiar with the pattern and counter formats. After you create a naming rule, you must attach it to the business object property. You use the Business Modeler IDE to create the naming rules in a custom template that you define. You must deploy the custom template after making the changes.

You can configure the following as-built naming rules:

- Automatically name occurrences

You can create a naming rule and attach it to the business object property **occurrence_name** for the **PSOccurrence** business object. This rule automatically names occurrences when a Teamcenter user chooses the **Name Occurrence** command. The naming rule can also be based on conditions.

Setting as-built lists of values (LOVs)

Setting as-built lists of values (LOVs)

As an administrator, you can set LOVs located in LOV folder in the **Extensions** view. LOVs are commonly accessed by Teamcenter users from a menu at the end of a data entry box. After you create a list of values, you must attach it to a property on a business object. You use the Business Modeler IDE to set the LOVs in a custom template that you define. You must deploy the custom template after making the changes.

You can configure the following as-built global LOVs:

- **MRO Valid Deviation Status List**

Set this list of values to configure the approved status list for deviations.

- **MRO Deviation Authority List**

Set this list of values to configure items used to authorize a deviation.

Define valid deviation status list

As an administrator, you can set the **MRO Valid Deviation Status List** LOV to the list of authorized status values used for deviations. The deviated authority item must be at the approved status before a deviated physical part can be installed. You can also configure LOVs.

Example:

You may want to include an additional status value such as **Complete** to validate a deviation.

LOV	Default value	Description
MRO Valid Deviation Status List	TCM Released	Released status

Define deviation authority list

As an administrator, you can set the **MRO Deviation Authority List** LOV to the list of item classes used to authorize a deviation. You can also configure LOVs.

Example:

You may want to use a manufacturing document in addition to a deviation document to authorize deviations.

LOV	Default values	Description
MRO Deviation Authority List	DeviationDoc	Deviation document
	Cm0DevRqst	Deviation request
	ADc0DevRqst	ADS deviation request
	Service Event	Service event

Configuring as-built workflows

As an administrator, you can configure the following workflows to support your as-built installation:

- **Deviation workflow**

The **TCM Release Process** workflow is provided with the **Teamcenter Foundation** feature. You can configure this workflow or create your own to set up the process flow, reviewers, and business validations required to route a deviation document for review and approval.

- **Release as-built structure workflow**

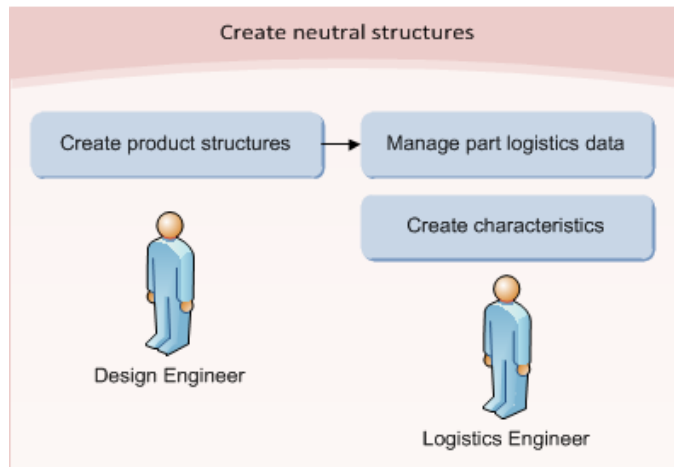
The **Release AsBuilt Structure** workflow is provided with the **As-Built Manager** feature. You can configure this workflow or create your own to set up the process flow, reviewers, and business validations required to release an as-built structure.

5. Creating neutral structures

What is the neutral structure?

The *neutral structure* is the item or part structure representing the asset-independent product definition structure. It provides the basis for the physical structure that is generated from the neutral structure. The neutral structure can be created with Structure Manager, Multi-Structure Manager, or imported from your CAD system.

You can populate the neutral structure in a way that is useful for servicing your physical assets. After populating the neutral structure, you can attach other items or datasets to these neutral structure elements. For example, you can attach documents such as design documents, specifications, and service bulletins.



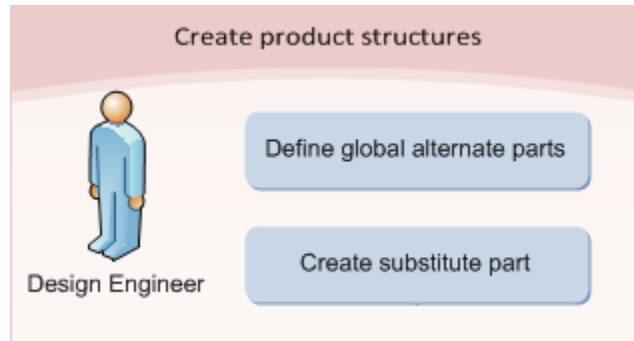
As shown in the figure, the neutral structure tasks include:

- Creating the product structure with valid global alternate and substitute parts by a user such as a design engineer.
- Creating and managing the part logistic data by a user such as a logistics engineer. Part logistics data includes information such as serial and lot definitions and part usages.
- Creating the characteristic definitions by a user such as a logistics engineer.

Creating product structures

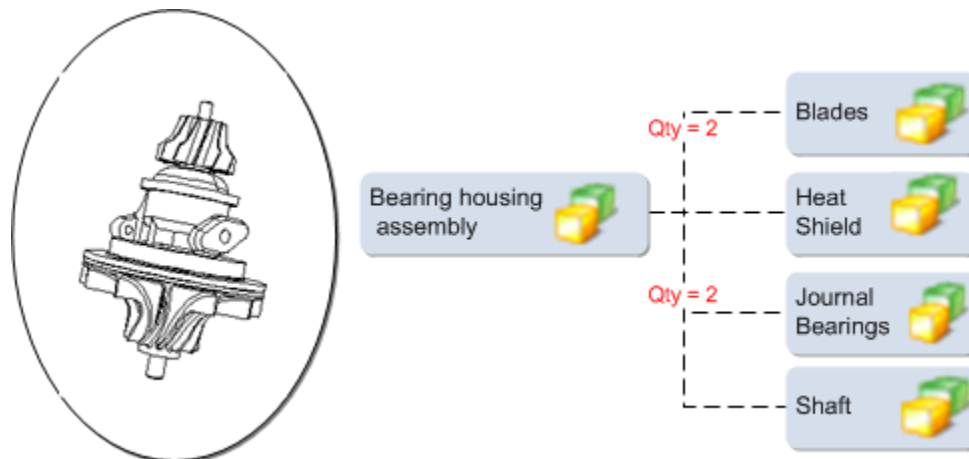
Creating product structures

A user such as a design engineer creates the neutral product structure as well as any substitute or global alternate parts. The following figure shows the product structure tasks.



A neutral structure is the product structure that you create with Structure Manager, Multi-Structure Manager, or import from your CAD system. The product structure, is sometimes referred as the bill of materials (BOM).

The following figure shows an example of a neutral structure for a bearing housing assembly.



Teamcenter allows you to view an indented listing of the assemblies and piece parts that comprise the product structure; the indenting allows you to interpret the relationship between the assemblies and piece parts. The physical structure is generated from the neutral structure.

You can specify *global alternates* of a component, one of which is designated as the preferred global alternate. Global alternates may be used in any product and are not defined in the context of a particular assembly. Global alternates do not require an authorized deviation when installed as a alternate physical part in the as-maintained physical structure.

You can also specify *substitute components*, which are components that can be used interchangeably within an occurrence, typically for manufacturing purposes. The preferred substitute is displayed in the structure. In contrast with global alternates, substitutes may only be used in the context of a particular assembly. Substitute parts do not require an authorized deviation when installed as a substitute physical part in the as-maintained physical structure.




Creating neutral structures

You must create the neutral structure before you can generate the as-built physical structure. After you create the structure, you modify it as necessary to reflect any changes to the product design.

Note:

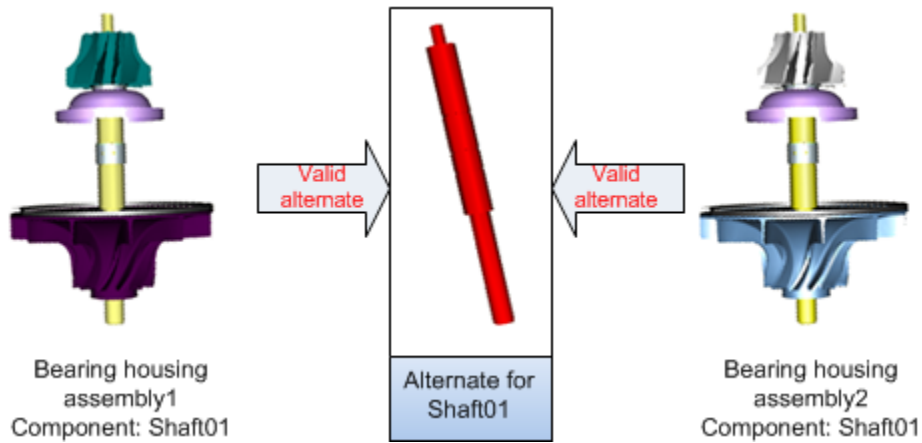
Do not add physical parts to neutral structures in Structure Manager, Multi-Structure Manager, or other BVR applications. Active Workspace cannot handle these types of structures and will produce an error when trying to view them.

The following bill of material is an example of a neutral structure.

-  **BH001/A;1–BH Assembly (view)**
-  **BH012/A;1–Blade Front**
-  **BH013/A;1–Blade Rear**
-   **BH014/A;1–Shaft**
-  **BH015/A;1–Heat Shield**
-  **BH016/A;1–B Housing**
-  **BH017 /A;1–Cover Ring**
-  **BH018 /A;1–Piston**
-  **BH019/A;1–Journal Bearing X 2**
-  **BH020A;1–Retaining Ring**

Defining global alternates

A *global alternate part* is interchangeable with another part in all circumstances, regardless of where the other part is used in the product structure. A global alternate applies to any revision of the part and is independent of any views.

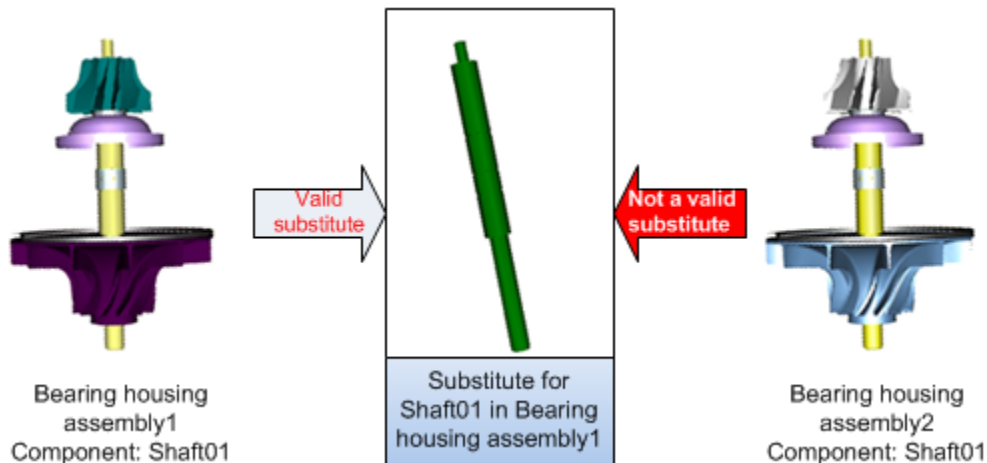


Note:

A global alternate part does not require an authorized deviation when installed as an alternate physical part in the as-maintained physical structure.

Defining substitute parts

A *substitute part* is a part that is interchangeable with a particular component in an assembly. Substitutes are often defined for manufacturing purposes, allowing use of the substitute if the preferred part is unavailable, for example, due to a stock shortage.



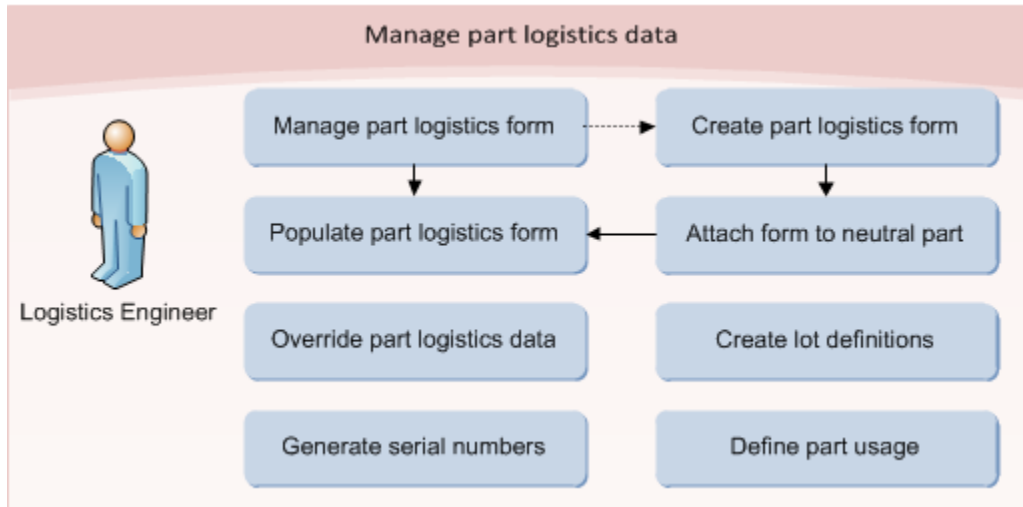
Note:

A substitute part does not require an authorized deviation when installed as a substitute physical part in the as-maintained physical structure.

Creating and managing part logistics data

Creating and managing part logistics data

Part logistics data is the logistical information defined for a neutral structure that is used by the generated physical structure. Part logistics data includes information such as serial and lot definitions and part usages. A user such as a logistics engineer populates the part logistic data before the as-maintained physical structure is generated. The following figure shows the part logistic data tasks.



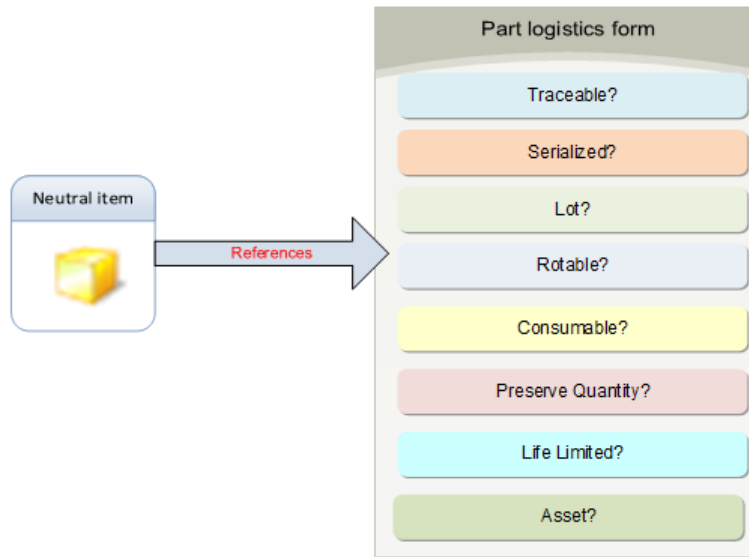
You can create and manage part logistics data by:

- Creating and managing part logistics forms attached to the neutral part.
- Overriding part logistics data in the context of a structure.
- Creating lot definitions for the neutral part used for the generated physical part.
- Creating serial number definitions for the neutral part used for the generated physical part.
- Defining occurrence information for the neutral part that is the part usage for the generated physical part.

Managing part logistics forms

Part logistics form

The *part logistics form* contains some of the logistical information required for the neutral part. It must be attached to the neutral part item using a **References** relation to generate a physical part.

**Note:**

The part logistics form is automatically created and attached to a valid neutral item during neutral item creation, if the **AutoCreatePartLogisticsForm** global constant is **true**. If this constant is **false**, you must manually create and attach part logistics forms to the neutral parts that generate physical parts.

Property	Definition	Default
Traceable	Defines if a physical part will be generated from the neutral part.	true
Serialized	Defines if a physical part requires a serial number.	false
Lot	Defines if a physical part requires a lot number.	false
Rotable	Defines if a physical part can be easily repaired.	false
Consumable	Defines if a physical part can be used and discarded.	false
Preserve Quantity	Defines if one physical part with the quantity defined can represent a multi-quantity neutral part.	false
Life Limited	Defines if a physical part has a finite life.	false
Asset	Defines if a physical part can be tagged as an asset in Maximo and other asset management systems.	false

Note:

This property is specific to an implementation that includes an integration with IBM Maximo or another asset management system.

Manually create a part logistics form

Note:

The part logistics form is automatically created and attached to a valid neutral item during neutral item creation if the **AutoCreatePartLogisticsForm** global constant is **true**. If this constant is **false**, you must manually create and attach part logistics forms to the neutral parts that generate physical parts.

1. From the navigation pane, click **My Teamcenter**.
2. Locate the neutral part you want to create a part logistics form for.
3. Select the neutral part and choose **File** → **New** → **Form**.
4. Select **Part Logistics Form** from the list of forms.
5. Enter the following information for the new form.

Field name	Definition	Valid values
Name	Name for the part logistics form.	Alphanumeric (1–128 characters)
Description	Description of the new form (optional).	Alphanumeric (1–240 characters)

6. Click **OK** or **Apply** to create the new form. Click **Cancel** to exit without creating a new form.

The part logistics form is related to the neutral part with a **References** relation.

Note:

If you created the part logistics form without selecting the neutral part, you must relate the form to the neutral part.

Controlling part definition in Maximo

The following **Part Logistics Form** property settings define how a physical part is identified in Maximo.

Part Logistic Form property settings	Part Status in Maximo
If isTraceable = 1, and if isSerialized = 1, or if isTraceable = 1, and isAsset = 1	Asset
If isTraceable = 1, and if isSerialized = 0, and if isAsset = 0	Spare Part
If isTraceable = 0	Part ignored in Maximo

Display part logistics form properties

To view the part logistics form properties using the **Properties** dialog box:

1. From the tree pane or **Details** table, select the part logistics form that you want to display.
2. Double-click the part logistics form associated to the neutral part.

The properties are displayed.

To view the part logistics form properties using the **Viewer** pane:

1. Select the part logistics form.
2. Click the **Viewer** tab.

The system displays the properties of the part logistics form in the **Viewer** pane.

Edit part logistics form properties


1. From the tree pane or **Details** table, select the part logistics form that you want to display.
2. Double-click the form to display the properties.
3. Click **Checkout and Edit**.
4. Modify the form property values, as required.
5. Click **Save and Check-In** or **Save**.

Edit part logistics data

You edit part logistics data in As-Built Manager by selecting the BOM line for the neutral part and changing the cell data containing the part logistic value. You can also change part logistics data by **editing the part logistic form properties**.

Using As-Built Manager, you can change the following part logistic values:

- **Traceable**
- **Serialized**
- **Lot**
- **Rotable**
- **Consumable**
- **Preserve Quantity**
- **Life Limited**
- **Asset**

1. Open the neutral structure in the **As-Built Manager** view by one of the following methods:
 - From the navigation pane, click **As-Built Manager**, then from the **As-Built Manager** view, click **Open by Name** .
 - If you are viewing the structure in the **Structure Manager** view, right-click the structure parent and choose **Send to → As-Built Manager**.
2. From the **As-Built Manager** view, select the BOM line containing the neutral part.
 - a. Double-click the cell containing the part logistics value.
 - b. Double-click the cell containing the part logistics value and type the new value.

Override part logistics data in context

You can override part logistics data in the context of the top-level or lower level neutral structures. For example, you may override part logistic data to prevent the generation of a physical part in the context of a specific neutral structure. To override the data, you set the neutral structure in context and override the **Traceable** value from **Y**, which is true, to **N**, which is false for that neutral part in the structure.

The following part logistic values can be changed in the context of a neutral structure:

- **Serialized**
- **Traceable**

- **Consumable**
- **Rotable**
- **Preserve Quantity**
- **Life Limited**
- **Asset**

Note:

The part logistic value **Lot** cannot be changed in the context of a neutral structure.

1. Open the neutral structure in the **As-Built Manager** view.
2. From the **As-Built Manager** view, select the bill of materials (BOM) line containing the top-level or lower level parent.
3. Right-click and choose **Toggle in-Context Mode** to set the structure in context.
4. From the **As-Built Manager** view, select the BOM line containing the neutral part.
 - To override the **Traceable** value, double-click the **Traceable** cell. Type the new value.
 - To override the **Serialized** value, double-click the **Serialized** cell. Type the new value.

Note:

A serial number generator may never be assigned to a non-serial part even though it may be marked serialized in context.

- To override the **Consumable** value, double-click the **Consumable** cell. Type the new value.
- To override the **Rotable** value, double-click the **Rotable** cell. Type the new value.
- To override the **Preserve Quantity** value, double-click the **Preserve Quantity** cell. Type the new value.
- To override the **Life Limited** value, double-click the **Life Limited** cell. Type the new value.
- To override the **Asset** value, double-click the **Asset** cell. Type the new value.

Defining parts for tracking

To track physical parts, you must set the **Traceable** value to **true** to generate physical parts from neutral parts. The value can be changed in the part logistics form.

Note:

Physical parts are not generated for traceable neutral parts that are children of nontraceable parts.

Create a lot definition

Create a lot to group physical parts that are associated in some way, for example, from a particular manufacturer.

A *lot* contains a group of physical parts controlled by the same lot number. You can define the maximum number of parts that a lot can contain. Based on this information, you can assign lot numbers to the physical parts that make up the physical structure.

The lot usage value increments for every physical part assigned to that lot. When the lot usage is more than the maximum number of parts available, the lot cannot be used further. You can also define an expiration date for the lot.

Note:


Lots can be assigned only if the part logistics **lot** property is **true** for the neutral part.

1. Open the neutral structure in the **As-Built Manager** view.
2. From the **As-Built Manager** view, select the BOM line containing the neutral part.
3. Right-click and choose **New** → **Lot**.

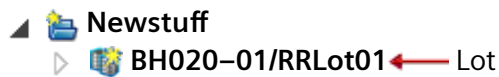
The **New Lot** dialog box appears.

4. Enter the following information for the new lot.

Field name	Definition	Valid values
Lot Number	Unique lot ID number	Alphanumeric (1–32 characters)
Manufacturer's ID	Lot manufacturer ID	Alphanumeric (1–128 characters)
Lot Size	Number of items in the lot	Integer

Field name	Definition	Valid values
	<div style="border: 1px solid black; padding: 5px;"> <p>Note:</p> <p>If you set the lot size value to 0 (zero) or leave it blank, the lot size is set to infinite.</p> </div>	
Expiration Date	Lot expiration date	Click the Set Date  button and select a date from the calendar.

- Click **OK** to create the lot under the **New Stuff** folder. Alternatively, click **Cancel** to exit.



Create a serial number generator

Serialized physical parts have a unique *serial number* for a given **Manufacturer's ID**. For example, you may have two engines with the same serial number but are manufactured by different companies.

You can type the serial number for the physical part or you can optionally create a serial number generator. The serial number generator is defined for the neutral parts and automatically assigns the serial numbers to the newly created physical parts in the as-maintained physical structure.

Note:

Serial numbers can be assigned only if the part logistics **serialized** property is **true** for the neutral part.

- Open the neutral structure in the **As-Built Manager** view.
- From the **As-Built Manager** view, select the BOM line containing the neutral part.
- Right-click and choose **New** → **Serial Number Generator**.

The **New Serial Number Generator** dialog box appears.

- Enter the following information.


Field name	Definition	Valid values
Series Prefix	Prefix for the generated serial number.	Alphanumeric (1–32 characters)
Series Suffix	Suffix for the generated serial number.	Alphanumeric (1–32 characters)
Series Current	Starting numeric value for the generated serial number.	Integer
Series Maximum	Maximum numeric value for the generated serial number.	Integer
Increment	Increment between the generated serial numbers.	Integer
Series Characters	Number of characters for the generated serial number. Numeric values are preceded by zeros to meet the character limit.	Integer

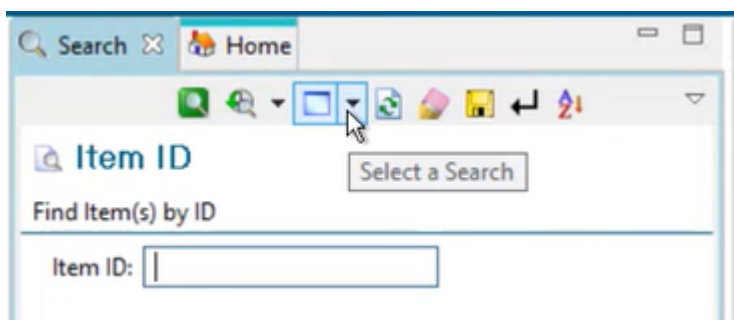
- Click **OK** to create the serial number generator under the **New Stuff** folder. Alternatively, click **Cancel** to exit.



Set or unset generic serial number generator

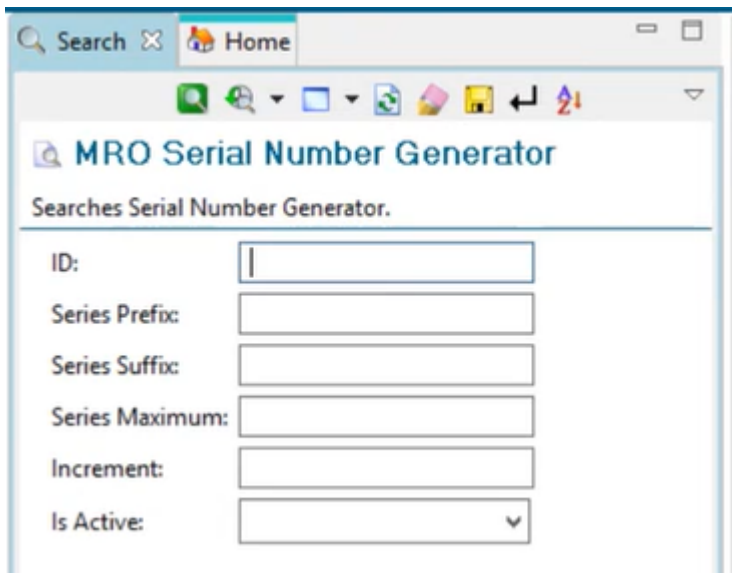
Set a generic serial number generator


- Search for an existing serial number generator using the global search.
- Click **Select a Search** .

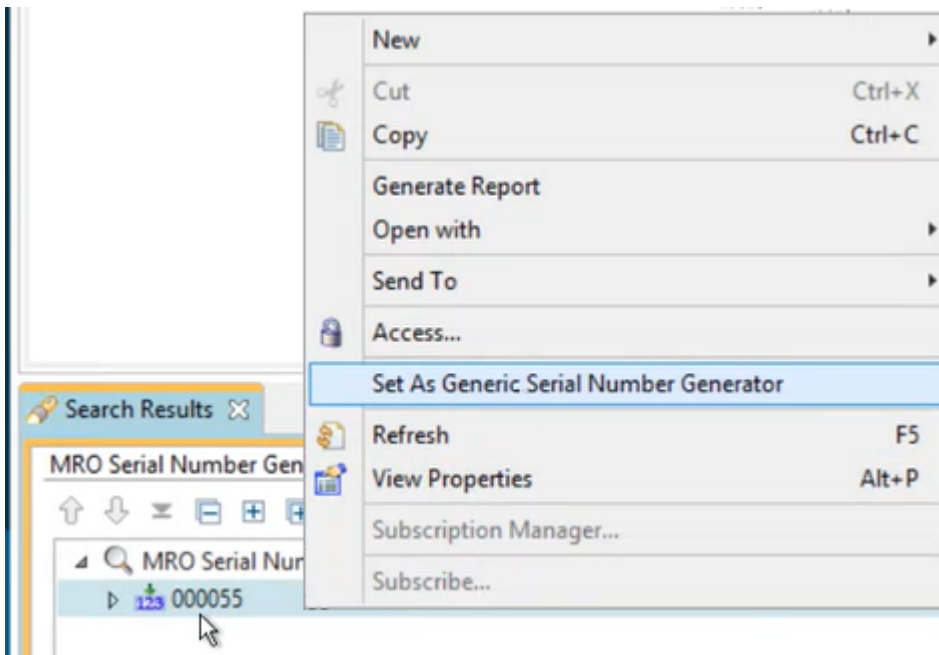


- Select the **MRO Serial Number Generator** search from the list and click **OK**.

4. Add search criteria in the **MRO Serial Number Generator** dialog box.



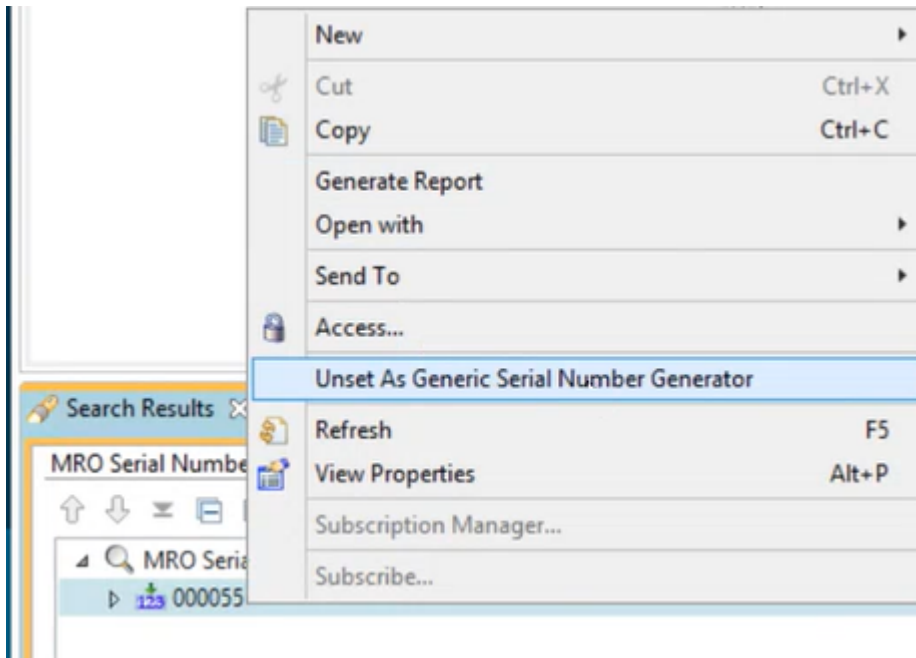
5. Click **Execute Search** .
6. Right-click the desired serial number generator and select **Set As Generic Serial Number Generator**.



If a generic serial number generator is already set, it is now replaced.

Unset a generic serial number generator

1. Search for an existing serial number generator.
2. Right-click any serial number generator and select **Unset Generic Serial Number Generator**.



Note:

Selecting a generic serial number generator that is already set makes the **Unset As Generic Serial Number Generator** option available.

Define part usage

The *usage* of a physical part in an as-maintained structure defines the position that the physical part occupies within the structure. You define the usage of a physical part by:

- Entering a value for the neutral structure occurrence property used to define the physical part **usage**. This can be defined by the **UsageAttributeName** global constant. The default property is set to **occurrence_name**.
 - Defining a naming rule to auto name the occurrences. The **occurrence_name** property can only be used if a naming rule for occurrences has been created.
1. Open the neutral structure in the **As-Built Manager** view.
 2. From the **As-Built Manager** view, select the BOM line containing the neutral part.

3. • If you use an occurrence naming rule:

Right-click and choose **Name Occurrence**.

- If you do not use an occurrence naming rule:

Double-click the **Occurrence Name** cell and type the usage value.

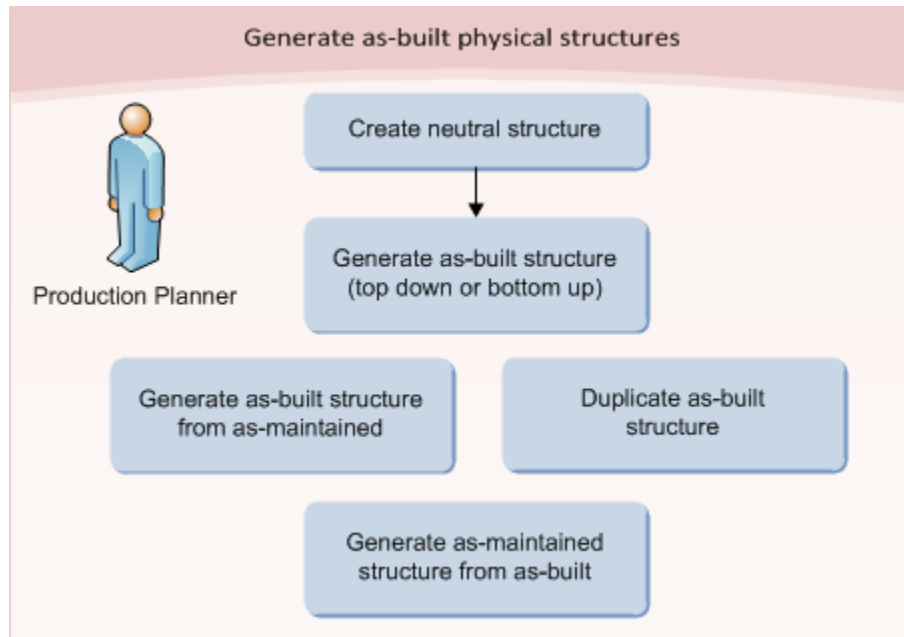
Note:

The **occurrence_name** property is the default property used to set the usage for the physical part. The **ref_designator** or **seq_no** properties can be used only if the **UsageAttributeName** global constant is set to one of those values.

6. Generating as-built physical structures

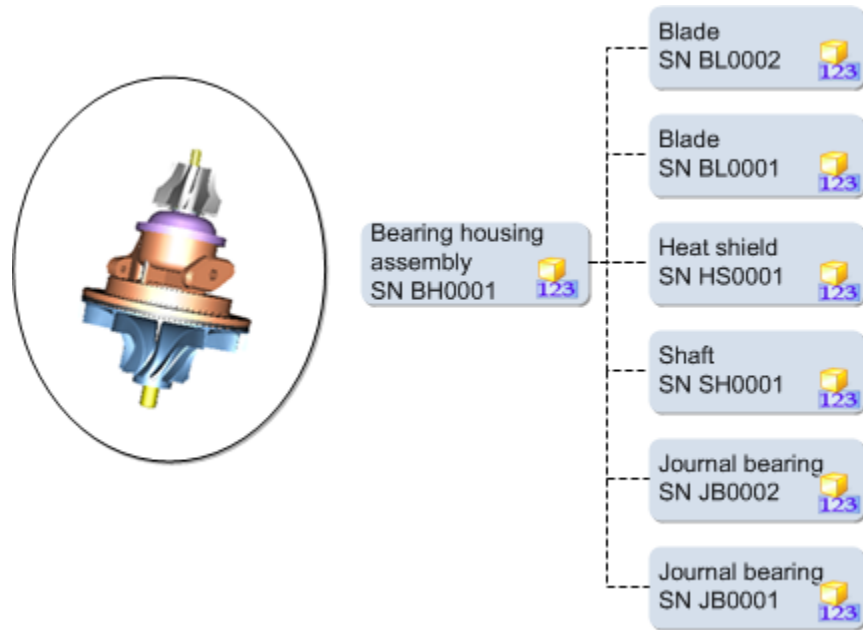
Generating as-built physical structures

A user, such as a production planner, generates the as-built physical structures.

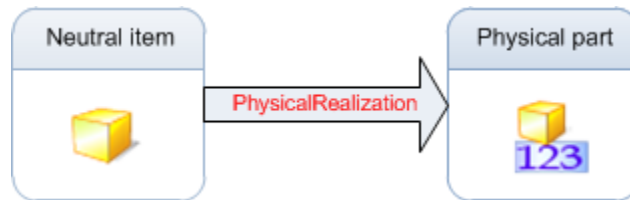


A *physical structure* refers to an asset's product structure information. Each asset that your organization manufactures or owns can be represented by one physical structure. An as-built physical structure evolves as the asset changes over time. This physical structure contains other traceable physical parts that represent the sub-assemblies and components that make up the asset. Each physical part within the structure links back to the neutral part that provides its engineering and logistics definition. Part logistics information includes if a part is traceable and should be included in the physical structure as well as if the part should have a recorded serial number, lot number, or both.

The following figure shows an example of a physical structure for a bearing housing assembly. In this example, all the physical parts are serialized.



The as-built physical structures are precise structures comprising physical part revisions. The physical parts are related back to the neutral parts with a **PhysicalRealization** relation.



The following tasks are required steps before generating an as-built physical structure:

- Create the neutral structure.
- Populate the part logistics information assigned to the neutral parts.

A user such as a production planner can:

- Generate an as-built physical structure top down from the top-level neutral structure.
- Generate an as-built physical structure bottom up by installing physical parts at various levels in the structure.
- Duplicate an as-built physical structure.

- Generate an as-maintained physical structure from an as-built physical structure if you have purchased and have a license for both the As-Built Manager and the Service Manager (as-maintained) applications.
- Generate an as-built physical structure from an as-maintained physical structure if you have purchased and have a license for both the As-Built Manager and the Service Manager (as-maintained) applications.

Note:

The sequence of the parts in the original structure is maintained in the new structure.

Structure alignment maintained from old structure to new structure

There are a number of ways that you generate or duplicate a structure. The order of the parts in the new structure is aligned with the order of the parts in the old structure. The **Find No.** is the value that controls the order.

BOM Line	Quantity	Find No.	Item Description	EOC
CAR0117/A;1-car_assy			car_assy	True
CAR0135/A;1-chassis_pan		10	chassis_pan	True
CAR0116/A;1-rear_wheel x 2	2	20	rear_wheel	True
CAR0131/A;1-left_pinion		30	left_pinion	True
CAR0120/A;1-rack		40	rack	True
CAR0122/A;1-front_spoiler		50	front_spoiler	True
CAR0115/A;1-body		60	body	True
CAR0124/A;1-right_pinion		70	right_pinion	True
CAR0119/A;1-front_spring x 2	2	80	front_spring	True
CAR0121/A;1-front_wheel x 2	2	90	front_wheel	True
CAR0118/A;1-power_pack_assy		100	power_pack_assy	True
CAR0128/A;1-power_pack		10	power_pack	True
CAR0129/A;1-rack_spur_gear		20	rack_spur_gear	True
CAR0127/A;1-gear_set_3		30	gear_set_3	True
CAR0126/A;1-gear_set_2		40	gear_set_2	True
CAR0125/A;1-gear_set_1		50	gear_set_1	True
CAR0134/A;1-rear_axle_assy		110	rear_axle_assy	True
CAR0132/A;1-rear_axle		10	rear_axle	True
CAR0123/A;1-rear_diff		20	rear_diff	True
CAR0133/A;1-rear_drive_gear		30	rear_drive_gear	True

Methods to generate or duplicate a structure:

- Generate an as-built structure from a neutral structure
- Generate an as-maintained structure from a neutral structure
- Generate an as-built structure from an as-maintained structure
- Generate an as-maintained structure from an as-built structure

- Duplicate an as-built structure
- Duplicate an as-maintained structure

The example shows an as-built structure and its duplicate. The order of the physical parts is maintained.

As-Built Structure	Item Type	Part Used
CAR0117/A500-A	Physical Part	-
CAR0135/--A	Physical Part	Preferred
CAR0116/--A	Physical Part	Preferred
CAR0116/--A	Physical Part	Preferred
CAR0131/--A	Physical Part	Preferred
CAR0120/--A	Physical Part	Preferred
CAR0122/--A	Physical Part	Preferred
CAR0115/--A	Physical Part	Preferred
CAR0124/--A	Physical Part	Preferred
CAR0119/--A	Physical Part	Preferred
CAR0119/--A	Physical Part	Preferred
CAR0121/--A	Physical Part	Preferred
CAR0121/--A	Physical Part	Preferred
CAR0121/--A	Physical Part	Preferred
CAR0118/--A	Physical Part	Preferred
CAR0134/--A	Physical Part	Preferred

As-Built Structure	Item Type	Part Used
CAR0117/A300-A	Physical Part	-
CAR0135/--A	Physical Part	Preferred
CAR0116/--A	Physical Part	Preferred
CAR0116/--A	Physical Part	Preferred
CAR0131/--A	Physical Part	Preferred
CAR0120/--A	Physical Part	Preferred
CAR0122/--A	Physical Part	Preferred
CAR0115/--A	Physical Part	Preferred
CAR0124/--A	Physical Part	Preferred
CAR0119/--A	Physical Part	Preferred
CAR0119/--A	Physical Part	Preferred
CAR0121/--A	Physical Part	Preferred
CAR0121/--A	Physical Part	Preferred
CAR0121/--A	Physical Part	Preferred
CAR0118/--A	Physical Part	Preferred

Quantity preserved from neutral structure to new structure

When you create an as-built structure from a neutral structure, you can control the display of parts that have a quantity greater than one, in the new structure. This becomes especially important when you work on very large structures and on structures imported into Teamcenter from a CAD system.

For example, a wheel assembly includes multiple nuts. When the structure is imported, each nut is represented by a single line in the neutral structure. The existence of multiple lines for one part clutters the structure, making it difficult to find specific parts throughout the structure.

Using the property **Preserve Quantity**, you control the way these occurrences are displayed when you create a physical structure.

- If **Preserve Quantity** is set to **True** (1), the parts are displayed in the physical structure as one packed node (2).

Note:


If **Preserve Quantity** is set to **True** on a parent node, all children nodes with multiple occurrences are also packed because they inherit the value from the parent.


An as-built structure generated from a neutral structure with **Preserve Quantity** set to **True** on the **030979/--A-Nut** part:

The screenshot displays two views of the As-Built Manager interface. The top view, titled '(030974/--A-Car)', shows the 'As-Built Structure' with columns: As-Built Structure, Item Type, Part Used, Net Usage, Usage, Serial Number, Lot Number, Part Number, and Installation Ti. The bottom view, titled '(030974/A:1-Car)', shows the 'Neutral Structure' with columns: Neutral Structure, Item Type, Occurrence Name, Net Usage, Preserve Qua..., Unit Of Meas..., Traceable, Serialized, and another column. In both views, the '030979/--A-Nut' part is highlighted with a red box. In the top view, a '2' in a circle points to the 'Net Usage' column for this part. In the bottom view, a '1' in a circle points to the 'Occurrence Name' column for this part.

- If **Preserve Quantity** is set to **False**, the parts are displayed with multiple nodes, one node for each part occurrence.

Generate a partial or entire as-built structure (top down)



1. Open the neutral structure in the **As-Built Manager** view by one of the following methods:
 - From the navigation pane, click **As-Built Manager**. Click **Open By Name**  to open the structure.
 - If you are viewing the structure in the **Structure Manager** view, right-click the structure parent and choose **Send to → As-Built Manager**.
2. Select the top-level part from the neutral structure.

- Right-click the top-level part and select **Generate As-Built Structure** or click the **Generate As-Built Structure** button  on the main toolbar at the top of the **As-Built Manager** pane.

Teamcenter displays the **Generate As-Built Structure** dialog box

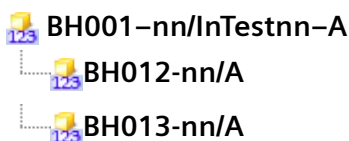
- Enter the following information:









Field name	Definition	Valid values
Serial Number	<p>Serial number for the generated physical part.</p> <p>This field is optional or unavailable in the following situations:</p> <ul style="list-style-type: none"> Optional if a serial number generator is defined for the neutral part. Unavailable if the Serialized property is set to false in the part logistics form that is attached to the neutral part. 	Alphanumeric (1–128 characters)
Lot Number	<p>Lot number for the generated physical part.</p> <p>You must first create the lot for the neutral part.</p> <p>The Lot list is unavailable if the Lot property is set to false in the part logistics form that is attached to the neutral part.</p>	Alphanumeric (1–128 characters)
Manufacturer's ID	<p>Manufacturer of the physical part.</p> <p>The Manufacturer's ID box is automatically populated if you entered a lot number.</p>	Alphanumeric (1–128 characters)
Structure Context Name	<p>The name of the structure context used to store the neutral product configuration information.</p> <p>The structure context name is automatically named with the part number of the neutral part. If the physical part is serialized and you are not using a serial number generator, the structure context</p>	Alphanumeric (1–128 characters)

Field name	Definition	Valid values
	name is automatically named using part number/serial number. You can use these values or type in a new value.	
Manufacturing Date	Manufacturing date for physical structure. The manufacturing date must be <i>before</i> the installation date.	Click the Set Date  button and select a date from the calendar.
Installation Time	Installation time and date for physical structure. The installation time and date must be <i>after</i> the manufacturing date.	Click the Set Date  button and select a date from the calendar.
Number of Levels	Number of levels to be generated for the physical structure. If you want to generate physical parts for the <i>entire</i> structure, type All in the Number of Levels box.	Integer or All
Quantity	Number of physical parts to generate for the top-level part. If it is a lot part, the quantity, if a whole number, is deducted from the lot. If the quantity is not a whole number, it is not deducted from the lot. To set the quantity, the Preserve Quantity property for the neutral part must be set to true .	Number

- If you define the serial number generator in the neutral part, click **True** to enable it. The serial number generator automatically creates serial numbers for the entire as-built physical structure. If you have defined a generic serial number generator, then the serial number will be created for the serialized parts for which serial number generator is not defined, and you will be informed that the generic serial number generator is being used.
- Click **OK** to generate the as-built physical structure or click **Cancel** to exit.

The physical structure is generated from the neutral structure.



-  BH014-nn/SHnn-001-A
-  BH015-nn/A
-  BH016-nn/A
-  BH017-nn/A
-  BH018-nn/A
-  BH019-nn/JBnn-001-A
-  BH019-nn/JBnn-002-A
-  BH020-nn/A

Create configured as-built structure using variants

Configure neutral structures

Service Lifecycle Management supports the creation of physical structures based on specific optional product features. You use the Teamcenter Product Configurator to define various options.

Note:

To learn more about the Siemens Digital Industries Software Product Configurator, refer to the documentation for the **Product Configurator**.

You create a configured neutral structure, or service bill of materials (sBOM), by applying variants before you create as-built and as-maintained physical structures and service plans.

Once the physical structure is created, there is no association to the configured sBOM. This means that any subsequent changes to the sBOM configuration are not reflected in the physical structure.

Create configured as-built structure

You create a configured as-built structure by first configuring variants on the neutral structure, or service bill of materials (sBOM).

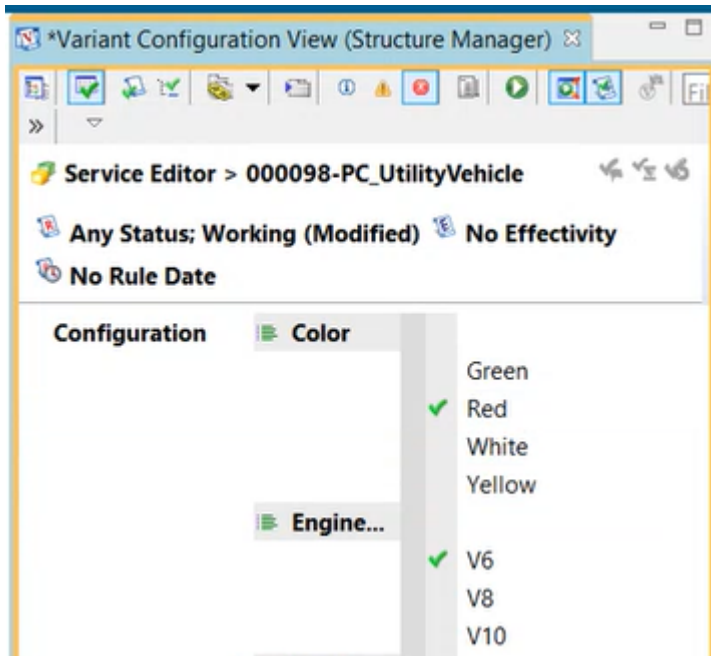
1. Open a neutral structure that contains variants in As-Built Manager.


Neutral Structure	Item Type	Occurrence Name	Quantity	Unit Of Measu...
000099/A;1-Utility_Vehicle	Part			
000100/A;1-Engine	Part	Engine		each
000104/A;1-V6	Part	V6		each
000105/A;1-V8	Part	V8		each
000106/A;1-V10	Part	V10		each
000101/A;1-Body	Part	Body		each
000118/A;1-Color	Part	Color		each
000107/A;1-Red	Part	Red		each
000108/A;1-Green	Part	Green		each
000109/A;1-Yellow	Part	Yellow		each
000110/A;1-White	Part	White		each
000119/A;1-SeatCover	Part	SeatCover		each
000111/A;1-Cloth	Part	Cloth		each
000112/A;1-Leather	Part	Leather		each
000102/A;1-Model	Part	Model		each
000113/A;1-Economy	Part	Economy		each
000114/A;1-Luxury	Part	Luxury		each
000103/A;1-Type	Part	Type		each
000115/A;1-SUV	Part	SUV		each
000116/A;1-Sedan	Part	Sedan		each
000117/A;1-HatchBack	Part	HatchBack		each

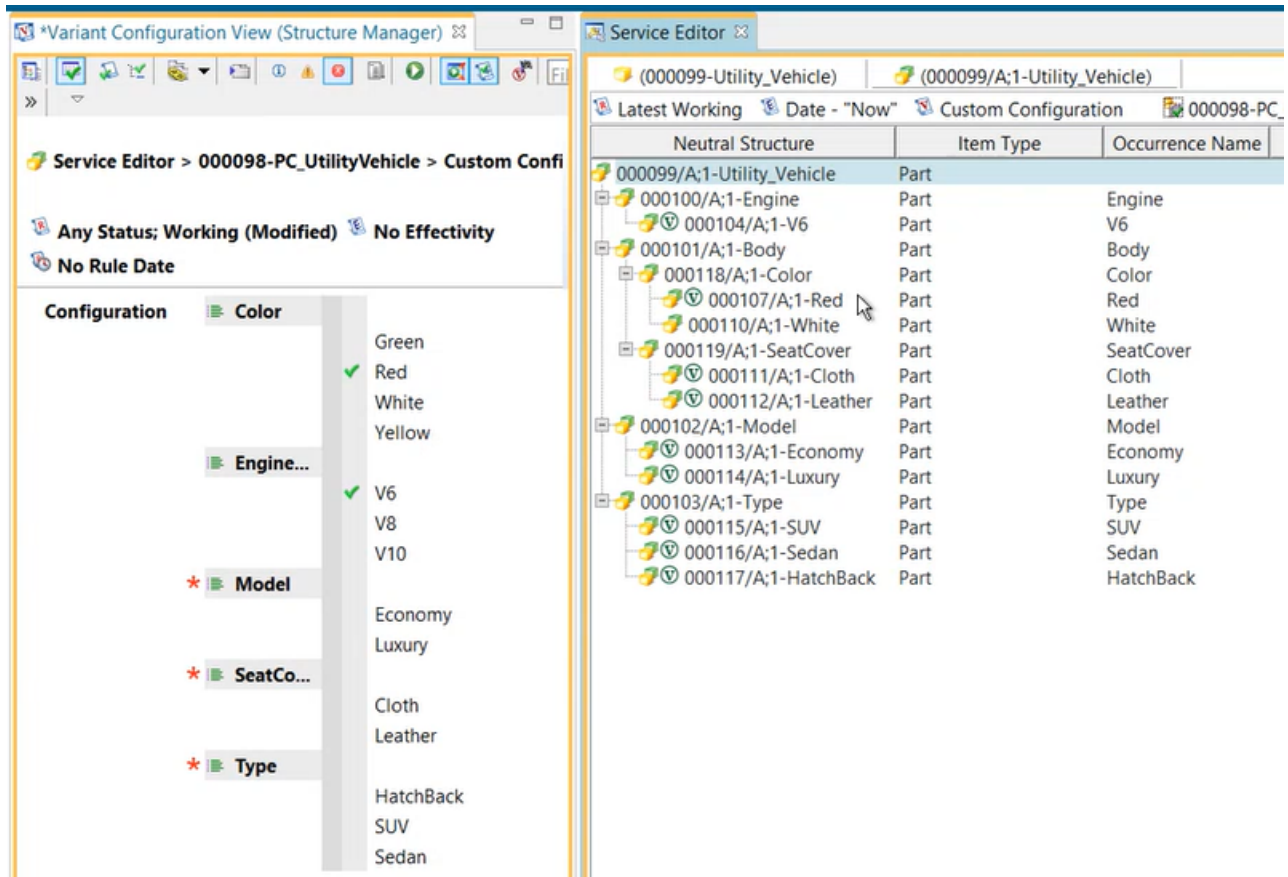
- Apply variants by choosing **Tools** → **Variants** → **Configure Variants**.

The **Variant Configuration View (Structure Manager)** page is displayed. It contains the variants that are included in the sBOM.

- Select the variants you want to apply, such as engine size, color, or model.



4. Click the arrow  to apply the current configuration to the associated structure.
5. To update the sBOM to reflect the chosen variants, choose **View** and click **Show Unconfigured Variants** to deselect it.



- To create the configured as-built structure, right click the root node of the sBOM, and choose **Generate As-Built Structure**.
- Enter the required information in the **Generate As-Built Structure** dialog box and click **OK**.
- (Optional) Right-click the root node and choose **Expand Below** to see all of the parts in the configured as-built structure.

Note:

The as-built structure configuration matches the configuration of the configured sBOM.

Apply saved variant rules to the sBOM

You can also create a configured sBOM by applying saved variant rules.

- Highlight the root node of the sBOM and choose **Tools** → **Variants** → **Apply Saved Variant Rules**.
The **Search and Load Variant Rule(s)** dialog box is displayed.
- Enter search criteria and click **Search**.

- Choose a saved variant rule and click **OK**.

The sBOM is configured according to the saved variant rule.

- To create the configured as-built structure, highlight the root node of the sBOM and right-click, and choose **Generate As-Built Structure**.
- Enter the required information in the **Generate As-Built Structure** dialog box and click **OK**.
- (Optional) Right-click the root node and choose **Expand Below** to see all of the parts in the configured as-built structure.

Note:


The as-built structure configuration matches the configuration of the configured sBOM.

Build an as-built physical structure (bottom up)

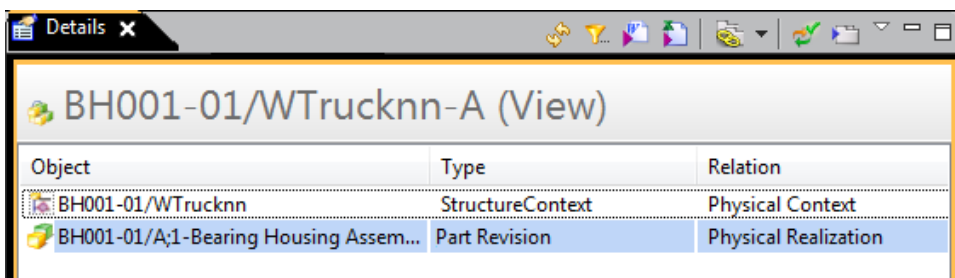
You can build an as-built physical structure by installing existing physical parts in the structure.

View the neutral structure details

You can view the neutral structure and the structure context information from which the physical structure is realized.

- From the navigation pane, click **As-Built Manager**.
- Click **Open by Name**  to open the physical structure or part.
- Select the physical structure parent part.
- Right-click the physical part and choose **Open with** → **Details**.

The **Details** pane appears at the bottom and displays the neutral structure and context information used to generate the physical structure.



Object	Type	Relation
BH001-01/WTrucknn	StructureContext	Physical Context
BH001-01/A;1-Bearing Housing Assem...	Part Revision	Physical Realization

5. In the **Details** pane, select the neutral structure.
6. Right-click and choose **View Properties**.

The properties of the neutral structure from which the physical structure is realized, are displayed.

7. Click **Cancel** to close the properties window.
8. In the **Details** pane, select the structure context.
9. Right-click and choose **Send to → Multi-Structure Manager**.

The neutral structure is displayed in Multi-Structure Manager. Multi-Structure Manager displays the configured variants and options that were used when generating the physical structure.

Duplicate an as-built structure


You can duplicate an as-built physical structure to create a copy of an existing physical structure. The copied physical structure contains the installed alternate, substitute, deviated, and extra to design parts from the original structure.



When you duplicate an as-built physical structure, the following occurs:

Note:

The sequence of the parts in the original structure is maintained in the new duplicated structure.

- The duplicate physical structure uses the same structure context as the original structure.
- The duplicate physical structure is validated for a unique serial number and manufacturing ID, if those values are entered.
- The child parts of the duplicate physical structure inherit the manufacturing ID from the parent.
- The **Part Used** column for all the child parts of the duplicate physical structure is set to **Missing** except in the following cases where the **Part Used** is set to **Preferred**:
 - Parts that do not require a serial or lot number.
 - Serialized parts that have a serial number generator.
- The deviated parts in the original structure are:
 - Copied to the duplicate physical structure, if the **ReUseAuthorizedDeviation** global constant is set to **True**, to reuse the same deviation.

- Ignored and the preferred parts are used in the duplicate physical structure, if the **ReUseAuthorizedDeviation** global constant is set to **False**.
- From the navigation pane, click **As-Built Manager**.
 - Click **Open by Name**  to open the as-built physical structure or physical part that you want to copy.
 - Select the top-level part from the physical structure if you want to duplicate the entire structure or select the physical part if you want to copy only the physical part.
 - Choose **File** → **Duplicate As-Built Structure** or right-click the physical part and choose **Duplicate As-Built Structure**.
 - In the **Duplicate As-Built Structure** dialog box, enter the following information.

Field name	Definition	Valid values
Serial Number	Serial number for the copied physical structure or part. This field is unavailable if the original physical structure or part did not require a serial number.	Alphanumeric (1–128 characters)
Lot	Lot number for the copied physical structure or part. This field is unavailable if the original physical structure or part did not require a lot number.	Alphanumeric (1–128 characters)
Manufacturer's ID	Manufacturer of the physical part. The Manufacturer's ID box is automatically populated if you entered a lot number.	Alphanumeric (1–128 characters)
Manufacturing Date	Manufacturing date for physical structure. The manufacturing date must be <i>before</i> the installation date.	Click the Set Date  button and select a date from the calendar.
Installation Time	Installation date for physical structure. The installation date must be <i>after</i> the manufacturing date.	Click the Set Date  button and select a date from the calendar.
Number of Levels	Number of levels to be generated for the physical structure. If you want to generate physical parts for the <i>entire</i>	Integer or All

Field name	Definition	Valid values
	structure, type All in the Number of Levels box.	

- If you have defined a serial number generator for the neutral part, select the **Use Serial Number Generators** check box to enable it.

The serial number generator **automatically creates serial numbers** for all the parts within the as-built or as-maintained physical structure that have defined serial number generators. If you have defined a generic serial number generator, then the serial number is created for the serialized parts for which the serial number generator is not defined, and you are informed that generic serial number generator is being used.


- Click **OK** to duplicate the physical structure or part.

Generate an as-maintained structure from an as-built structure


If you have purchased and have a license for the As-Maintained Management application, you can generate an as-maintained structure from an as-built structure. The as-built structure must be at a **Released** state.

Note:

The sequence of the parts in the as-built structure is maintained in the new as-maintained structure.

- From the navigation pane, click **As-Built Manager**.
- Click **Open by Name**  to open the released as-built physical structure.
- Select the top-level part from the as-built physical structure.
- Right-click and choose **Generate As-Maintained Structure**.

Teamcenter displays the **Generate As-Maintained Structure** dialog box.

- Click **Set Date**  and select a date from the calendar when the as-maintained structure was created.
- Choose the location where the physical parts are stored.
- Choose the disposition of the physical part.

Note:

If the **Disposition_Propagate_To_Child** preference is set to true, the disposition is also applied to the children parts of the structure.


8. Type the number of levels you want to generate for the physical structure in the **Number of Levels** box. If you want to generate physical parts for the *entire* structure, type **All**.
9. Click **OK** to generate the as-maintained physical structure or click **Cancel** to exit.

Generate an as-built structure from an as-maintained structure


If you have purchased and have a license for the As-Maintained Management application, you can generate an as-built structure from an as-maintained structure. The as-maintained structure must be at a **Released** state.

Note:

The sequence of the parts in the as-maintained structure is maintained in the new as-built structure.

1. From the navigation pane, click **Service Manager**.
2. Click **Open by Name**  to open the released as-maintained physical structure.
3. Choose **Window** → **Show View** → **Service Editor** to open the **Service Editor** view.
4. From the **Service Editor** view, select the top-level part from the as-maintained physical structure.
5. Right-click and choose **Generate As-Built Structure**.

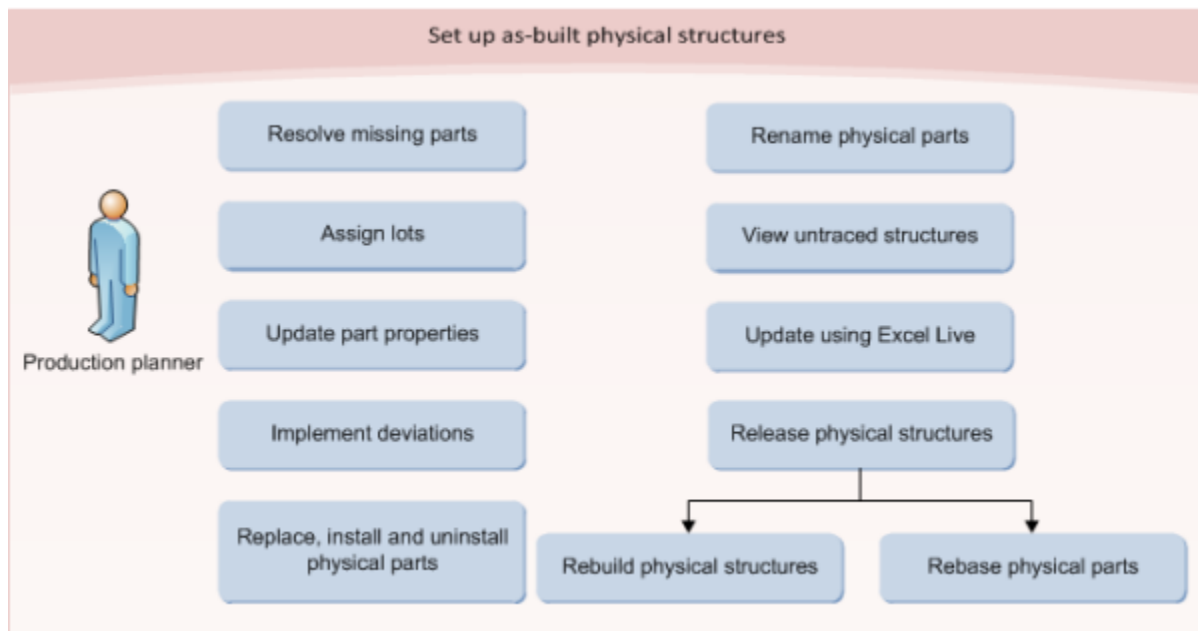
Teamcenter displays the **Generate As-Built Structure** dialog box.

6. Click **Set Date**  to set the rebuild date.
7. Type the number of levels you want to generate for the physical structure in the **Number of Levels** box. If you want to generate physical parts for the *entire* structure, type **All**.
8. Click **OK** to generate the as-built physical structure or click **Cancel** to exit.

7. Setting up as-built physical structures

Setting up as-built physical structures

A user such as production planner manages the as-built physical structure according to organization needs and requirements as shown in the following figure.



You can set up and manipulate physical structures by:

- Updating physical part properties.
- Resolving missing parts by adding serial number, lot, or manufacturing information to the physical part.
- Assigning lot numbers to physical parts.
- Installing and uninstalling physical parts from an as-built structure.
- Renaming as-built physical parts.
- Replacing physical parts in an as-built structure.
- Rebasing physical parts in an as-built structure.
- Deleting physical parts.

- Implementing deviations.
- Releasing as-built physical structures.
- Rebuilding as-built physical structures.
- Updating as-built physical structures using **Excel Live**.
- Viewing untraced structures.

Resolving missing parts

After you generate the as-built structure, a **Missing** status for the **Parts Used** column occurs if there is missing information for the child physical parts. Missing information may include a missing serial number, lot number or manufacturer id for the physical part. When you enter the missing information, the **Parts Used** column is automatically changed to **Preferred**.

A physical part has the **Parts Used** column set to **Missing** for the following conditions:

- The lot number is missing for a lot physical part.
- The serial number is missing for a serialized physical part.
- The manufacturer ID is missing for a nonserialized, nonlot part.
- The lot number or serial number is missing for a serialized lot part.
- The child physical part has been uninstalled from the physical structure.

Update physical part properties

You can update a physical part using either As-Built Manager or My Teamcenter. The physical part properties that can be updated are shown in the following table.


Editable property	Property description	Editable in As-Built Manager	Editable in My Teamcenter
Serial number	Serial number of the physical part.	Yes	Yes
Manufacturer's ID	Manufacturer ID of the physical part.	Yes	Yes
Lot number	Lot number of the physical part.	Yes	Yes

Editable property	Property description	Editable in As-Built Manager	Editable in My Teamcenter
Manufacturing date	The date the physical part was manufactured.	Yes	Yes
Installation date	The date the physical part was installed.	Yes	Yes
Physical Part UID	Unique UID for the physical part. Once the UID is assigned, it cannot be edited again.	Yes	No


From My Teamcenter:

1. Search for the physical part.
2. Right-click the physical part in the results list and choose **Edit Properties**.
3. From the **Checkout** dialog box, click **Yes** to check out the physical part.
4. From the **Edit Properties** dialog box, modify the properties.
5. To save and check in the modified properties, click **Save** and **Check-In**.

From As-Built Manager:

1. From the navigation pane, click **As-Built Manager**.
2. Choose **Window** → **Show View** → **As-Built Manager** to open the **As-Built Manager** view.
3. From the **As-Built Manager** view, click **Open By Name**  to open the physical structure or part.
4. Select the BOM line containing the physical part.
5. Double-click the property cell and type the new value.


Assign a serial number

1. From the navigation pane, click **As-Built Manager**.
2. Choose **Window** → **Show View** → **As-Built Manager** to open the **As-Built Manager** view.
3. From the **As-Built Manager** view, click **Open by Name**  to open the physical structure or part.

4. Select the BOM line containing the serialized physical part with the missing serial number.
5. To add a serial number, double-click the **Serial Number** cell and type the serial number.

The serial property for the serialized physical part is assigned and the **Part Used** column is set to **Preferred**.

Assign a manufacturer ID

1. From the navigation pane, click **As-Built Manager**.
2. Choose **Window** → **Show View** → **As-Built Manager** to open the **As-Built Manager** view.
3. From the **As-Built Manager** view, click **Open by Name**  to open the physical structure or part. Select the physical part.
4. To add a manufacturer ID, double-click the **Manufacturer's ID** cell and type the manufacturer ID.

The manufacturer ID property is set for the physical part and the **Part Used** column is set to **Preferred**.

Assign a lot number


In As-Built Manager, you can assign a lot number to a physical part or change a physical part lot number.

When you assign a lot number to a physical part, the physical part's manufacturer changes to the lot manufacturer.

After you assign a lot number to a physical part, the lot usage property of the specified lot is also updated. Lot usage is a property that tracks the number of physical parts associated to a specified lot.

Note:

You must **create a lot definition** for the neutral part before you can assign a lot number to a physical part.

1. From the navigation pane, click **As-Built Manager**
2. Choose **Window** → **Show View** → **As-Built Manager** to open the **As-Built Manager** view.
3. From the **As-Built Manager** view, click **Open by Name**  to open the physical structure or part.
4. Select the BOM line containing the lot physical part with the missing lot number. Right-click and choose **Assign Lot**.

5. In the **Assign Lot** dialog box, select a lot number from the **Lot** list.
6. In the **Quantity** box, type the number of physical parts to assign to the lot.

If the part is a **Preserve Quantity** part, the quantity is checked against the expected quantity (the quantity from the neutral structure and the nonmissing parts from the occurrence).

- If the quantity is the same as the expected quantity, Teamcenter assigns the lot and marks the physical part as **Preferred**.

If the quantity is a whole number, it is deducted from the lot. If the quantity is not a whole number, it is not deducted from the lot.

- If the quantity is less than expected, a missing part is generated with the remaining quantity.
- If the quantity is greater than expected, Teamcenter displays an error.
- If the identified (nonmissing) parts are installed under the selected missing part and the quantity is not the expected quantity, Teamcenter displays an error.
- If you are assigning a new lot to the selected physical part that already has a lot assigned, the quantity is not changed, only the lot information.

7. Click **OK**.

The lot property for the physical part contains the assigned lot and the **Part Used** column is set to **Preferred**.

Rename a physical part

You can rename an existing physical part to change the following properties:

- **Part number**
- **Serial number**

Note:

You cannot rename a physical part that is released.


When you rename a physical part, the following occurs:

- The new serial number is checked for uniqueness.

- If a physical part is renamed using a different part number, the system does not check the existence of a neutral item with the new part number.
- The physical realization relation remains intact between the original physical part (before renaming) and the original neutral part.

Note:

If you want to relate the physical part or structure to a different neutral configuration, you need to **rebase the physical part**.

1. From the navigation pane, click **As-Built Manager**.
2. Click **Open by Name**  to open the physical part you want to rename.
3. Choose **Tools** → **Rename Physical Part**.

The **Rename Physical Part** dialog box appears.

4. Enter the following information.

Field name	Definition	Valid values
New Part Number	New part number for the renamed physical part.	Alphanumeric (1–128 characters)
New Serial Number	New serial number for the renamed physical part. This field is unavailable if the part did not require a serial number.	Alphanumeric (1–128 characters)




5. Click **OK** to rename the physical part.

Install a physical part

You can install an existing physical part in a physical location at a specified usage into an as-built physical structure.



Note:

- If the installed physical part is not a valid preferred, alternate, or substitute, you must **set up a deviation** to install the deviated part.
- You cannot install a physical part under a released physical part.

1. From the navigation pane, click **As-Built Manager**.
2. From the **As-Built Manager** view, click **Open By Name**  to open the physical structure where you want to install the physical part.
3. Choose one of the following methods to identify the physical part you want to install:
 - a. Copy the physical part you want to install.
 - A. Click **Open By Name**  to open the physical part you want to install.
 - B. Right-click the physical part and choose **Copy**.
 - C. Select the physical structure where you want to install the physical part.
 - D. Right-click the parent and choose **Install Physical Part** or click the **Install Physical Part** button  on the main toolbar at the top of the **As-Built Manager** pane.



The **Install Physical Part** dialog box appears.

The **To Be Installed Physical Part** field is set to the copied physical part.

- E. Select the usage name to set the usage for the installed physical part. If the physical part is an addition to the physical structure, select **Extra to Design** as the usage.
 - b. Search for the physical part you want to install.
 - A. Select the physical structure where you want to install the physical part.
 - B. Right-click the parent and choose **Install Physical Part** or click the **Install Physical Part** button  on the main toolbar at the top of the **As-Built Manager** pane.
- The **Install Physical Part** dialog box appears.
- C. Select the usage name to set the usage for the installed physical part. If the physical part is an addition to the physical structure, select **Extra to Design** as the usage.
 - D. Perform the following steps to search for the physical part to be installed:
 - i. Click  and select **Add**.

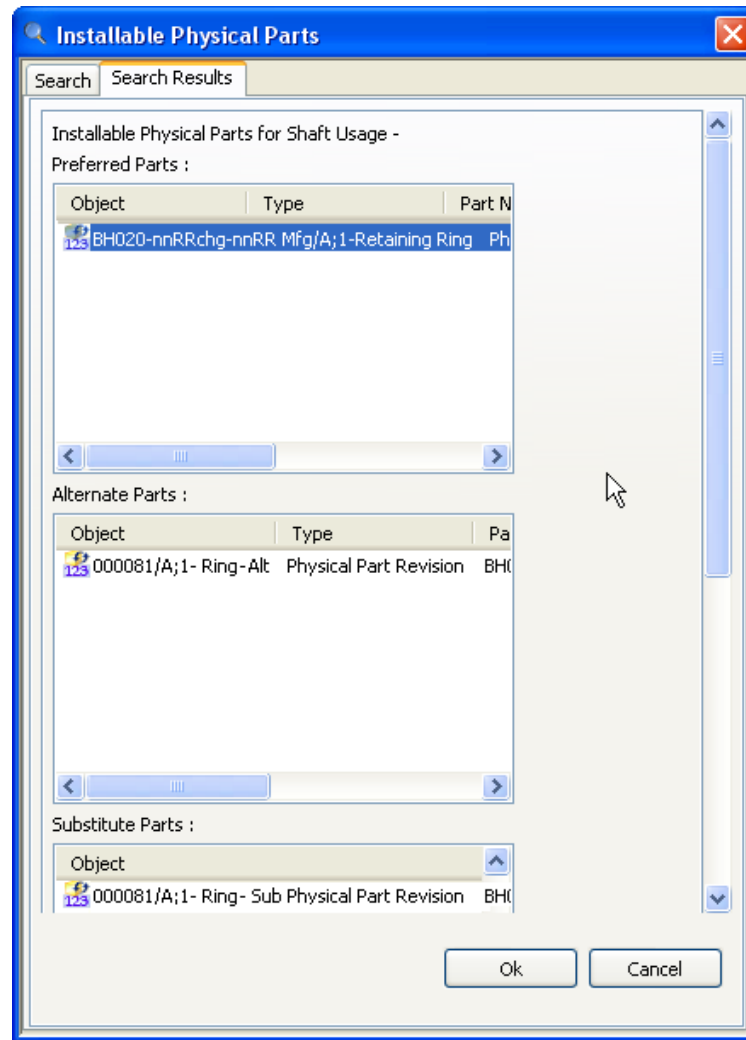
The **Installable Physical Parts** dialog box appears.

- ii. Click the **Search** tab and enter the following information you want to use as filters for searching.

Field name	Definition	Valid values
Part Number	Part number of the physical part.	Alphanumeric (1–128 characters)
Serialized	Value of the serialized property. Click true to search for serialized parts.	Boolean
Serial Number After	Value of the serial number to filter physical parts with serial numbers greater than the value entered.	Alphanumeric (1–128 characters)
Serial Number Before	Value of the serial number to filter physical parts with serial numbers less than the value entered.	Alphanumeric (1–128 characters)
Lot	Value of the lot property. Click true to search for lot parts.	Boolean
Lot number	Lot number of the physical part.	Alphanumeric (1–32 characters)
Manufacturer's ID	Manufacturer of the physical part.	Alphanumeric (1–128 characters)
Manufactured After	Manufacturing date used to filter physical parts with manufacturing dates greater than the date entered.	Click the Set Date  button and select a date from the calendar.
Manufactured Before	Manufacturing date used to filter physical parts with manufacturing dates before the date entered.	Click the Set Date  button and select a date from the calendar.


- iii. Click **Find**.

The results display the valid preferred, alternate, substitute, and deviated physical parts that can be installed.



- iv. Select the physical part from the results and click **OK**.

The **Install Physical Part** dialog reappears with the **To be Installed Physical Part** field set to the selected physical part.

4. Click the **Set Date**  button to set the installation date when the installation occurred.
5. If the **Usage Name** is set to **Extra to Design** in the **Extra to Design Usage Name** box, type the usage name for the installed physical part.
6. Click **OK** to install the physical part.

If the installed **Preferred** part is a **Preserve Quantity** part, the quantity is checked against the neutral structure.

- a. If the quantities match, the physical part is installed in the structure.
- b. If the quantity is greater than allowed, the installation is prevented.
- c. If the quantity is less than allowed, the installation is completed, and a missing part is generated with the remaining quantity.

The **Part Used** column for the physical part is set to one of the following values after installing a physical part:

a. **Preferred**

If the newly installed physical part is a valid preferred physical part for the selected usage, the **Part Used** column is set to **Preferred**.

b. **Substitute**

If the newly installed physical part is a valid substitute, the **Part Used** column is set to **Substitute**.

c. **Alternate**

If the newly installed physical part is a valid alternate, the **Part Used** column is set to **Alternate**.

d. **Deviated**


If the newly installed physical part is an approved deviation from the design and is not a valid substitute or alternate for selected usage, the **Part Used** column is set to **Deviated**.

e. **Extra to Design**

If the newly installed physical part is an approved deviation and does not exist in the design structure, the **Part Used** column is set to **Extra to Design**.

Uninstall a physical part

You can uninstall a child physical part from a parent physical part in the as-built structure.

1. From the navigation pane, click **As-Built Manager**.
2. Choose **Window** → **Show View** → **As-Built Manager** to open the **As-Built Manager** view.
3. From the **As-Built Manager** view, click **Open by Name**  to open the physical structure where you want to uninstall the physical part.






- Select the child physical part. Right-click and choose **Uninstall Physical Part**.

A dialog box is displayed asking you if you are sure you want to uninstall the physical part.

- Click **Yes** to uninstall the physical part.

The physical part is uninstalled from the structure and **Part Used** column is set to **Missing**.

If there is more than one missing part, then a single missing part is created with the total allowed remaining quantity, and the other missing parts are deleted.

As-Built Structure	Part Used
 BH001-nn/MTrucknn-A	Preferred
 BH012-nn/A	Preferred
 BH013-nn/A	Preferred
 BH014-nn/SHnn-001-A	Preferred
 BH020-nn/A	Missing


Replace a physical part



You can replace an existing or missing physical part with a different physical part in an as-built structure. When you replace a physical part, the following occurs:

- The original physical part is removed from the structure and replaced with the new physical part.
- The installation time on the replacement physical part is updated with the date the physical part was replaced.
- The uninstall time on the original physical part is updated with the date the physical part was replaced.

Note:


If the replacement part is not a valid preferred, substitute, or alternate part, you must set up an **authorized deviation**.

- From the navigation pane, click **As-Built Manager**.
- From the **As-Built Manager** view, click **Open by Name**  to open the physical structure where you want to replace the physical part.

3. Choose one of the following methods to identify the physical part you want to use as the replacement:
 - a. Copy the physical part you want to use as the replacement.
 - A. Click **Open by Name**  to open the replacement physical part.
 - B. Right-click the replacement physical part and choose **Copy**.
 - C. Right-click the physical part you want to replace and choose **Replace Physical Part** or click the **Replace Physical Part** icon  on the main toolbar at the top of the **As-Built Manager** pane.


The **Replace Physical Part** dialog box appears.

The **To Be Installed Physical Part field** is set to the copied physical part.

- b. Search for the physical part you want to use as the replacement.
 - A. Right-click the physical part you want to replace and choose **Replace Physical Part** or click the **Replace Physical Part** icon  on the main toolbar at the top of the **As-Built Manager** pane.

The **Replace Physical Part** dialog box appears.



- B. Perform the following steps to search for the physical part to be installed:

- i. Click  and select **Add**.

The **Installable Physical Parts** dialog box appears.

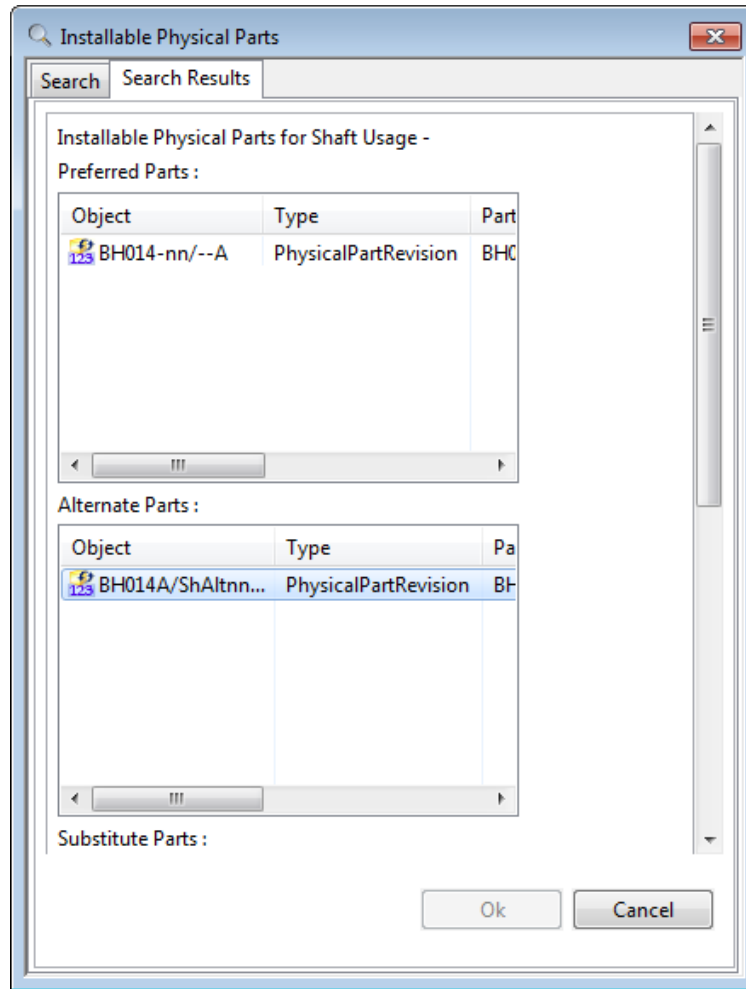
- ii. Click the **Search** tab and enter the following information you want to use as filters for searching.

Field name	Definition	Valid values
Part Number	Part number of the physical part.	Alphanumeric (1–128 characters)
Serialized	Value of the serialized property. Click true to search for serialized parts.	Boolean
Serial Number After	Value of the serial number to filter physical	Alphanumeric (1–128 characters)

Field name	Definition	Valid values
	parts with serial numbers greater than the value entered.	
Serial Number Before	Value of the serial number to filter physical parts with serial numbers less than the value entered.	Alphanumeric (1–128 characters)
Lot	Value of the lot property. Click true to search for lot parts.	Boolean
Lot number	Lot number of the physical part.	Alphanumeric (1–32 characters)
Manufacturer's ID	Manufacturer of the physical part.	Alphanumeric (1–128 characters)
Manufactured After	Manufacturing date used to filter physical parts with manufacturing dates greater than the date entered.	Click the Set Date  button and select a date from the calendar.
Manufactured Before	Manufacturing date used to filter physical parts with manufacturing dates before the date entered.	Click the Set Date  button and select a date from the calendar

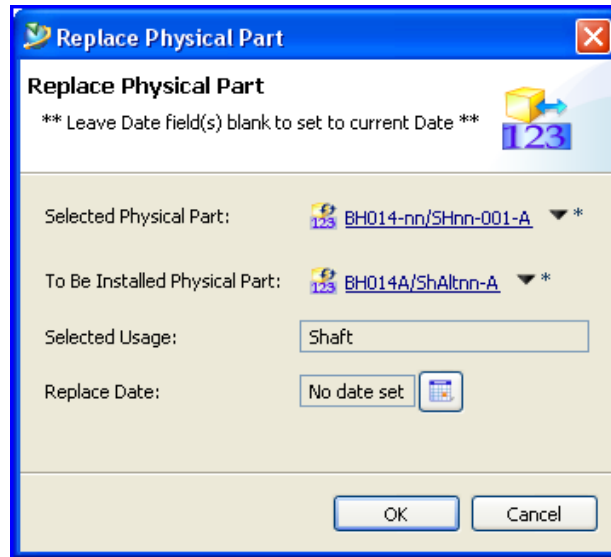
iii. Click **Find**.


The results display the valid preferred, alternate, substitute, and deviated physical parts that can be used to replace the physical part.



- iv. Select the physical part from the results and click **OK**.

The **Replace Physical Part** dialog box reappears with the **To be Installed Physical Part** field set to the selected physical part.



4. Click the **Set Date**  button to set the replace date when the replacement occurred.
5. Click **OK** to replace the physical part.

If the installed **Preferred** part is a **Preserve Quantity** part, the quantity is checked against the neutral structure.

- a. If the quantities match, the original physical part is replaced.
- b. If the quantity is greater than allowed, the replacement is prevented.
- c. If the quantity is less than allowed, the replacement is completed, any existing missing parts are deleted, and a missing part is generated with the remaining quantity.

Rebasing physical parts

Rebasing a physical part relates the as-built structure to a different configuration of a neutral structure. The new rebased structure uses the new configuration for its structure context.

Note:

The physical part must have a **Released** status before you can rebase it.

The following apply to usages in the rebased physical configuration:

- If the component exists in the rebased neutral structure, the rebased physical part is assigned the same usage as specified in the neutral structure.

- If the corresponding usage of a component is not present in the rebased neutral structure, the usage of the rebased physical part is set to extra to design and requires no deviation authorization.
- If the component and usage is new in the rebased neutral structure, the usage of the physical part is set to missing.

Example:

You may want to rebase a physical structure to the same neutral structure but with a different variant.

The original physical structure was generated from the bearing housing assembly neutral structure that contained the regular bearing housing. It was rebased to the bearing housing assembly neutral structure with the heavy duty bearing housing. As the following figure shows, because the rebased neutral structure contains the heavy duty bearing housing, the physical structure now contains a missing part for the heavy duty bearing housing and the regular bearing housing is installed as *extra to design*.

The screenshot displays two SAP tables related to the rebase process of a physical structure.




Table 1: Neutral Structure (BH001-HD/A;1-Bearing Housing Assembly)

Neutral Structure	Occurrence Name	ID In Context (Top L...	Item Type
BH001-HD/A;1-Bearing Housing Assembly (view)			Part
BH012/A;1-Turbine Blade Front	Front Blade	10	Part
BH013/A;1-Turbine Blade Rear	Rear Blade	20	Part
BH014-01/A;1-Shaft	Shaft	30	Part
BH015-01/A;1-Heat Shield	Heat Shield	40	Part
BH016HD/A;1-Heavy Duty Bearing Housing	Heavy Duty Bea...	55	Part
BH017/A;1-Compressor Cover Ring	Cover Ring	60	Part
BH018/A;1-Piston Ring Seal Turbine	Front Piston Ring	70	Part
BH019-01/A;1-Journal Bearing	Front Journal Be...	80	Part
BH019-01/A;1-Journal Bearing	Rear Journal Be...	90	Part
BH020-01/B;1-Retaining Ring	Retaining Ring	100	Part


Table 2: As-Built Structure (BH001-01/BHA-HD01-A)

As-Built Structure	Usage	Part Used	Item Type
BH001-01/BHA-0001-A	-		PhysicalPart
BH012/A	Front Blade	Preferred	PhysicalPart
BH013/A	Rear Blade	Preferred	PhysicalPart
BH014-01/SH01-009-A	Shaft	Preferred	PhysicalPart
BH015-01/HS-01-A	Heat Shield	Preferred	PhysicalPart
BH016/A	Bearing Housing	Extra To Design	PhysicalPart
BH016HD/A	Heavy Duty Bearing Housing	Missing	PhysicalPart
BH017/A	Cover Ring	Preferred	PhysicalPart
BH018/A	Front Piston Ring	Preferred	PhysicalPart
BH019-01/JB01-017-A	Front Journal Bearing	Preferred	PhysicalPart
BH019-01/JB01-018-A	Rear Journal Bearing	Preferred	PhysicalPart
BH020-01/A	Retaining Ring	Preferred	PhysicalPart

Rebase a physical part

1. From the navigation pane, click **As-Built Manager**.
2. Choose **Window** → **Show View** → **As-Built Manager** to open the **As-Built Manager** view.
3. From the **As-Built Manager** view, click **Open by Name**  to open the neutral structure or part to be used to rebase the physical structure or part.
4. Click **Open by Name**  to open the released physical structure or part to be rebased.
5. Click **Show/Hide lower Structure Panel**  located at the top of the application to display the neutral and physical parts or structures using split structure panes.
6. Select the neutral part. If you are rebasing a physical structure to a different neutral structure, select the neutral structure parent part.
7. Select the released physical part. If you are rebasing a physical structure, select the physical structure parent part.
8. Choose **Tools** → **Rebase Physical Part**.

The **Rebase Physical Part** dialog box appears.

9. Click the **Set Date**  button to set the rebase date when the rebase occurred.
10. In the **Structure Context Name** box, type the name of the structure context used to store the neutral product configuration information or use the name that is automatically generated.

The structure context name is automatically created using the part number of the rebased neutral part. If the physical part has a serial number, the structure context name is automatically named as part number/serial number.

11. Click **OK** to rebase the physical part.

Teamcenter checks the quantities of the parts installed in the rebased structure.

- If the quantity is over the allowed limit, the part is changed to a **Extra to Design** part.
- If the quantity is under the allowed limit, the part is shown as installed in the correct position, but a new missing part is generated with the remaining quantity.

Delete a physical part

You can delete a physical part if it has no child physical parts. To delete a physical part with child physical parts, you must delete the last child physical part first and work your way up to the parent physical part.

Note:

You can delete a physical part only from My Teamcenter.

1. In My Teamcenter, select the physical part to delete.
2. Choose **Edit** → **Delete**.

Implementing deviations

Implementing deviations

Deviations occur when you install a physical part that is not a preferred, alternate, or substitute physical part into an as-built structure. An authorized deviation can be used only once. If you uninstall and reinstall a deviated physical part, a new authorization must be created.

The workflow to add a deviated physical part to your as-built structure is as follows:

1. Create the deviation authority item class for the physical part.

By default, the item classes that can be used as a deviation authority item are:

- Deviation document
- Deviation request
- Service event
- Aerospace and Defense deviation request

A deviation authority item class authorizes the installation of a physical part that is a deviation from the design structure. The **MRO Deviation Authority List** LOV determines the list of item classes that can be used to authorize a deviation.




2. Set up the deviation to specify the authorized deviation item class used for the deviated physical part. The authorized deviation item must *not* be released to set up a deviation.
3. Route the authorized deviation item through the appropriate workflow.
4. Install the deviated physical part into your as-built structure.

Create a deviation authority item


1. Click **My Teamcenter**.
2. Choose **File** → **New** → **Item**.
3. From the **New Item** dialog box, select **Deviation Document** and click **Next**.
4. Enter information into all the required fields and click **Finish**.
5. If you do *not* want to create another deviation document, click **Finish**.

If you want to create *another* deviation document, repeat steps 2–4.

Set up a deviation

1. From the navigation pane, click **As-Built Manager**.
2. Choose **Window** → **Show View** → **As-Built Manager** to open the **As-Built Manager** view.
3. From the **As-Built Manager** view, click **Open by Name**  to open the deviated part.
4. Select the deviated part. Right-click and choose **Copy**.
5. From the **As-Built Manager** view, click **Open by Name**  to open the physical structure where you want to install the deviated part.
6. Right-click the parent physical part and choose **Setup Deviation** or click the **Setup Deviation** button  on the main toolbar at the top of the **As-Built Manager** pane.

The **Setup Deviation** dialog box appears.

7. Click  to set the value of **Document Id** and select **Add**.

The **Search** dialog appears.

Note:

The deviation authority item must *not* be released to set up a deviation.

8. Click **Find** to search for the deviation authority item ID using the search dialog box. You can use wildcards for searching.

- Click **OK** to set up the deviation. Alternatively, click **Cancel** to exit.

Send the deviation authority item through the required workflow



- From the navigation pane, select the deviation authority item.
- Choose **File** → **New** → **Workflow Process**.
- In the **New Process Dialog** box, type the process name in the **Process Name** box.
- From the **Process Template** list, select **TCM Release Process**.

Note:


The **TCM Release Process** workflow is provided with the **Teamcenter Foundation** feature. You can configure this workflow or create your own to set up the process flow, reviewers, and business validations required to route a deviation document for review and approval.

- Click **OK**. Alternatively, click **Cancel** to exit.


Install a deviated part

- From the navigation pane, click **As-Built Manager**.
- From the **As-Built Manager** view, click **Open by Name**  to open the deviated part.
- Choose one of the following methods to identify the deviated physical part you want to install:
 - Copy the deviated physical part you want to install.
 - Right-click the physical part and choose **Copy**.
 - Select the physical structure where you want to install the deviated physical part.
 - Right-click the parent and choose **Install Physical Part** or click the **Install Physical Part** button  on the main toolbar at the top of the **Service Manager** pane.

The **Install Physical Part** dialog box appears. The **To Be Installed Physical Part** field is set to the copied physical part.
 - Select the usage name to set the usage for the installed deviated physical part. If the physical part is an addition to the physical structure, select **Extra to Design** as the usage.
 - Search for the physical part you want to install.

- A. Select the physical structure where you want to install the deviated physical part.
- B. Right-click the parent and choose **Install Physical Part** or click the **Install Physical Part** button  on the main toolbar at the top of the **Service Manager** pane.



The **Install Physical Part** dialog box appears.

- C. Select the usage name to set the usage for the installed deviated physical part. If the physical part is an addition to the physical structure, select **Extra to Design** as the usage.
- D. Perform the following steps to search for the physical part to be installed:
 - i. Click  and select **Add**.

The **Installable Physical Parts** dialog box appears.

- ii. Click the **Search** tab and enter the following information you want to use as filters for searching.

Field name	Definition	Valid values
Part Number	Part number of the physical part.	Alphanumeric (1–128 characters)
Serialized	Value of the serialized property. Click true to search for serialized parts.	Boolean
Serial Number After	Value of the serial number to filter physical parts with serial numbers greater than the value entered.	Alphanumeric (1–128 characters)
Serial Number Before	Value of the serial number to filter physical parts with serial numbers less than the value entered.	Alphanumeric (1–128 characters)
Lot	Value of the lot property. Click true to search for lot parts.	Boolean
Lot number	Lot number of the physical part.	Alphanumeric (1–32 characters)


Field name	Definition	Valid values
Manufacturer's ID	Manufacturer of the physical part.	Alphanumeric (1–128 characters)
Manufactured After	Manufacturing date used to filter physical parts with manufacturing dates greater than the date entered.	Click the Set Date  button and select a date from the calendar.
Manufactured Before	Manufacturing date used to filter physical parts with manufacturing dates before the date entered.	Click the Set Date  button and select a date from the calendar.

- iii. Click **Find**.

The results display the valid deviated physical parts that can be installed.

- iv. Select the physical part from the results and click **OK**.

The **Install Physical Part** dialog box reappears with the **To be Installed Physical Part** field set to the selected physical part.

- E. Click the **Set Date**  button to set the installation date when the installation occurred.
- F. If the **Usage Name** is set to **Extra to Design**, in the **Extra to Design Usage Name** box, type the usage name for the installed physical part.
- G. Click **OK** to install the deviated physical part.

The deviated physical part is installed in the structure.

View the deviation authorization information

You can view the authorizing deviation item for a deviated part.

- From the navigation pane, click **As-Built Manager**.
- Select the physical structure containing the deviated part and choose **Send to → My Teamcenter**.
- Click the **Details** tab.

The **Allowed Deviation** relation is displayed.

Object	Relation	Type
123 TEA01/TEAnn	Allowed Deviation	Part
123 BH001-nn/WTrucknn-A	Revisions	Physical Part Revision

4. Select the deviated part.
5. Right-click and choose **Properties on Relation...**

The properties of the **Allowed Deviation** relation are displayed.

Properties

Allowed Deviation

Primary Reference: 123 BH001-nn/WTrucknn

Relation Type: AllowedDeviation

Secondary Reference: 123 TEA01/TEAnn

Consumed: True False

Deviation Authority: DevDoc2-Test Equipment Deviation

Relation Type Name: gk_AllowedDeviation_att

[Show empty properties...](#)

General

OK Apply Cancel

The **Deviation Authority** field shows the deviation authority item used to authorize the deviation.

Release an as-built physical structure

You can release the as-built structure after you finish building it.

1. From the navigation pane, select the as-built structure you want to release.
2. Choose **File** → **New** → **Workflow Process**.
3. In the **New Process Dialog** box, choose **Release AsBuilt Structure** from the **Process Template** list.

Note:

The **Release AsBuilt Structure** option is the standard workflow provided with As-Built Manager. This workflow also validates for any missing physical parts.

You can configure this workflow or create your own to set up the process flow, reviewers, and business validations required to release an as-built structure.

4. Click **OK**. Alternatively, click **Cancel** to exit.

Rebuilding an as-built structure

You can rebuild an as-built physical structure to create a new revision. The new revision of the physical structure represents a new refurbished build of the physical asset. New build revisions are created when the physical parts are at a **Released** state.

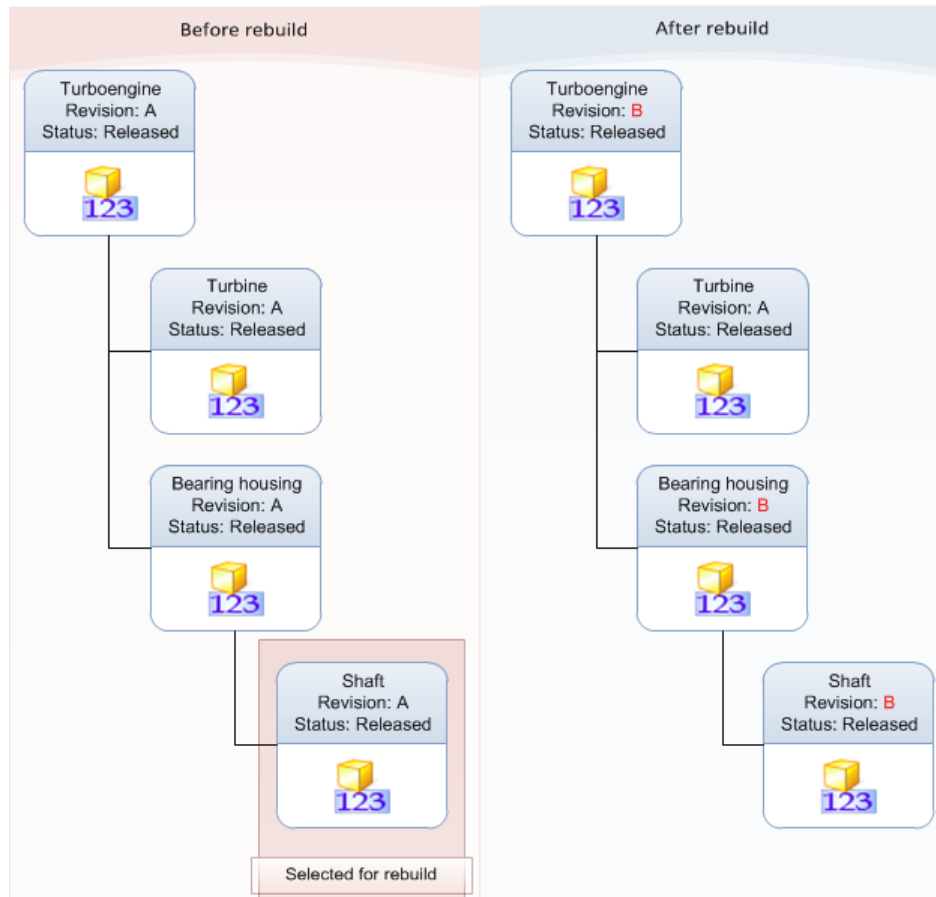
Note:

The **MaturityStatuses** constant defines the release status for rebuilding an as-built physical structure.

When you select a *child* part of a physical structure for rebuild, the following scenarios apply:

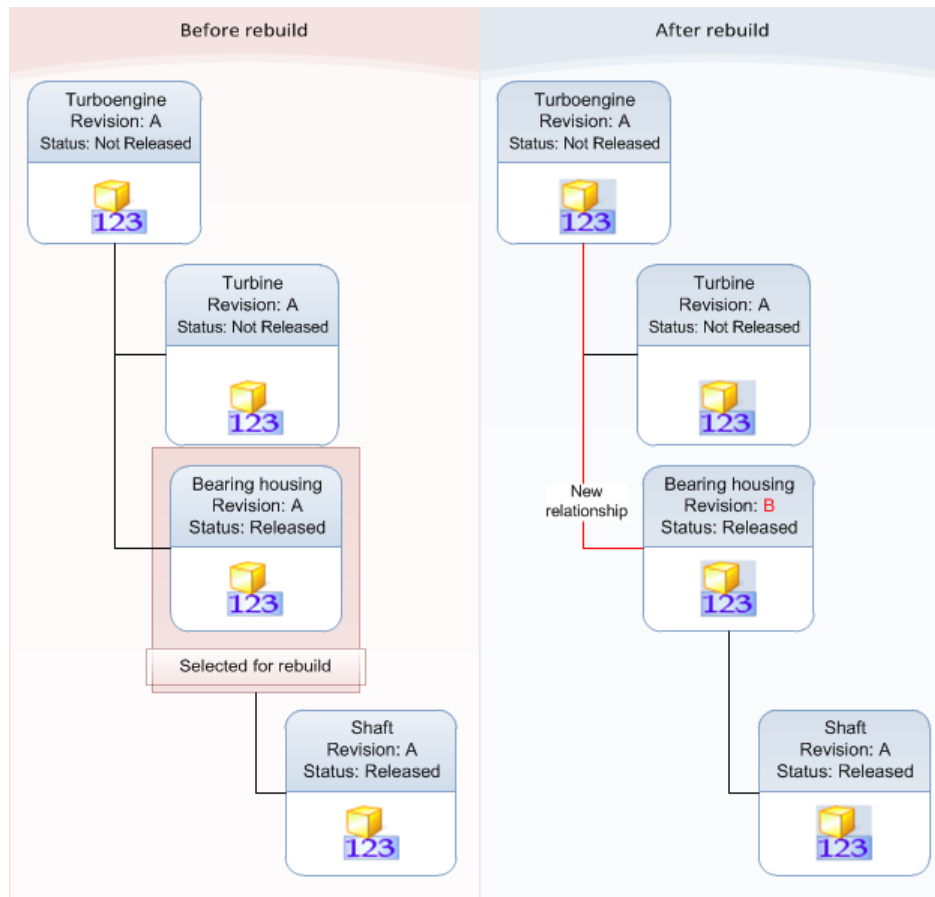
- The structure is traversed upward and new build revisions are created for each parent physical part that is displayed in As-Built Manager and is released.

The following figure shows the shaft as the selected part for rebuild. The parent physical parts for the turboengine and bearing housing are created with a new build revision B.





- While traversing the displayed physical structure upward in As-Built Manager, if any of the physical parts are not released, the rebuild will *not* traverse above the unreleased part revision.
- While traversing the displayed physical structure upward in As-Built Manager, and a parent physical part is not released, the unreleased revision of the parent will be related to the new build revision of the child part. The previous relationship between the child part and the unreleased parent will no longer exist.

The following figure shows the bearing housing as the selected part for rebuild. The parent physical part for the turboengine is not released. A new relationship is created between the new revision B of the bearing housing and the unreleased revision A of the turboengine.

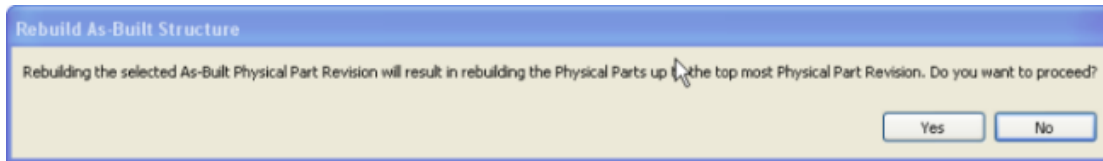


Rebuild an as-built structure


1. From the navigation pane, click **As-Built Manager**.
2. Click **Open by Name**  to open the released as-built physical structure or physical part that you want to rebuild.
3. Select the part from the physical structure.
4. Choose **Tools** → **Rebuild As-Built Structure** or click the **Rebuild As-Built Structure** button  on the main toolbar at the top of the **As-Built Manager** pane.

The **Rebuild As-Built Structure** dialog box appears.

5. If you select a child part of the physical structure, the following dialog box appears:



Click **Yes** to continue.

6. Click the **Set Date**  button to set the rebuild date when the new revision of the physical structure was created.
7. Click **OK** to rebuild the physical structure.



View untraced structures

You can display the parts in the neutral structure that are not traceable in the related physical structure. Parts that are not traceable have the part logistics property **Traceable** set to **False** in context of the parent physical structure and a physical part is not generated for that neutral part.

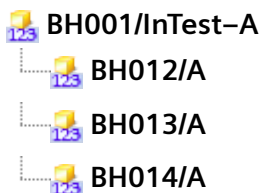
The following occurs when you display an untraced structure in As-Built Manager:

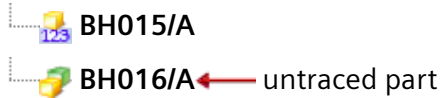
- The untraced parts are displayed as neutral parts in the physical structure.
- Any action that can be run on neutral parts is available on the displayed untraced parts.

When viewing an as-built structure using visualization, you can also display the untraced parts.

1. From the navigation pane, click **As-Built Manager**.
2. Click **Open by Name**  to open the physical structure that you want to display the untraced parts for.
3. Select the parent part of the physical structure.
4. Choose **View** → **Show Untraced Parts** or click the **Show Untraced Parts** button  on the main toolbar at the top of the **As-Built Manager** pane.

The untraced parts are displayed.





Updating structures using Excel Live

You can update physical structures using Excel Live. Teamcenter Extensions for Microsoft Office provides synchronous access to Teamcenter workspace objects through Microsoft Office Excel. With the *live* Excel, Extensions for Office gives Excel direct connectivity to the Teamcenter server and allows you to edit physical structures using Excel.

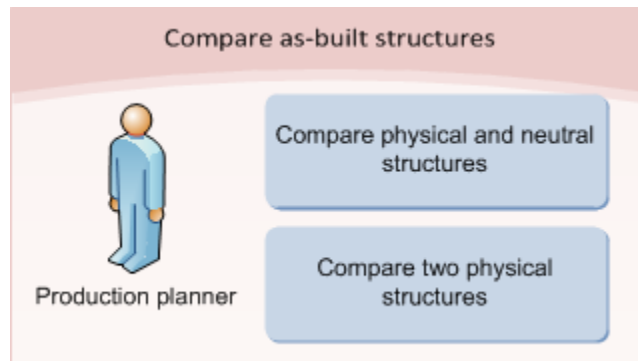
To generate a file in live Excel, you choose the related option when exporting data for selected objects in the Teamcenter rich client. The following occurs after export:

- The data exported to the output file consists of property values for the objects.
- The exported property values are synchronized with the corresponding values in Teamcenter.
- Values that you edit in the output file are changed interactively in Teamcenter.

8. Comparing as-built structures

Comparing as-built structures

As shown in the following figure, a user such as a production planner can compare two physical structures or a physical with a neutral structure to identify changes or differences between two product structures.



For example, you can compare the neutral structure and the physical structure to highlight the missing and nontraceable parts or compare two different installations of the same physical structure to show differences. The differences are displayed using colors that represent full, partial, or no matches between the structures. You can also optionally generate a report summarizing the differences.

Comparing structures with or without context

Comparing with context

As-Built structures can be compared *with* or *without* context.

If you select the **compare (with context)** option, you are comparing the parts in position in the physical or neutral structures. For example, you can use compare with context to determine if the left and right engines were swapped. A compare without context would not detect those differences.

For this comparison to work properly, you must set a value in the **ID in Context** column in the **As-Built Manager** window for the parts in the neutral structure. This comparison is similar to an accountability check between structures described in the *Multi-Structure Manager Guide*. You can select additional properties for comparison and set the context ID to match any source and target line that have the same absolute occurrence identifier.




Set compare with context preferences

To specify the default and additional properties used for comparing as-built structures *with* context, an administrator sets the **DefaultAsBuiltAccCheckProperties** and **AdditionalAsBuiltAccCheckProperties** preferences.

Global constant	Default value
DefaultAsBuiltAccCheckProperties	phbl_part_number phbl_part_used_is
AdditionalAsBuiltAccCheckProperties	phbl_part_usage_name

Perform compare with context



You compare two as-built structures in the **As-Built Manager** view using two separate panes.

- From the navigation pane, click **As-Built Manager** to open the source structure in the bottom pane and the target structure in the top pane.
 - From the navigation pane, click **As-Built Manager**.
 - Choose **Window** → **Show View** → **As-Built Manager** to open the **As-Built Manager** view.
 - From the **As-Built Manager** view, click **Open by Name**  to open the source structure.
 - Click **Show/Hide lower structure panel**  located at the top of the application window to create a new empty (target) pane. The source structure appears in the bottom pane.
 - Click **Open by Name**  to open the second structure in the top pane.
- After you open the as-built structures in the appropriate panes, configure them by setting the revision rule and/or variant rule in each pane.
- Expand and collapse assemblies to define the scope of the comparison.
- Choose **Tools** → **Compare**.
The **Compare** dialog box appears.
- Do one of the following:
 - If you want to reverse source and target as-built structures, select **Flip source and target**.

- To compare as-built structures *with* context, select **Compare (with context)**.
6. Select **Display Options** to change comparison color scheme. When you compare two structures, the results are displayed in a variety of colors that you can change using the display options. To help users who cannot differentiate colors, a tool tip shows the name of the color. If the name is not available, the tool tip displays the RGB (red, green, blue) value.
- Check the display options you require.

Display option	Description
Full match	If all properties of a source object are identical to the properties of a target object, both objects are set to the same background color. The default color is green.
Partial match	If part of the properties of a source object is identical to the properties of a target object, both objects are set to the same background color. The default color is yellow.
Multiple match	If the properties of a source object are identical to the properties of target objects, all objects are set to the same background color. The default color is orange.
Multiple partial match	If part of the properties of a source object is identical to the properties of target objects, all objects are set to the same background color. The default color is pink.
Missing target	If the properties of a source object are not found by target objects, the source object is set to this color. The default color is red.
Missing source	If the properties of a target object do not meet properties of any source objects, the target object is set to this color. The default color is white.

- Change the default color by clicking next to the color. Set the colors by selecting a color swatch, and setting HSB (hue, saturation, brilliance) or RGB (red, green, blue) values.
7. Select **Compare Options** to change properties.
- To compare any source line and target line that have the same absolute occurrence identifier, select the **Treat same ID in context as same** check box. If not selected, the compare does not match lines with different absolute occurrences, even if they share the same absolute occurrence identifier.
 - To match lines in the source and target that have the same properties as those you choose in the **Selected Properties** list, select the **Compare Additional Properties** check box. If not selected, the compare includes only those default options defined by your administrator.

- Use the  button to select the properties from the **Available Properties** list and move them to the **Selected Properties** list. Use the  button to remove the properties from the **Selected Properties** list and move them back to the **Available Properties** list.

8. Click **Check** to begin the comparison. Alternatively, click **Cancel** to exit.

Comparing without context

As-Built structures can be compared *with* or *without* context.

If you choose the **Compare (without context)** option, you can compare structures at the assembly or subassembly levels and set the level or mode of comparison. This comparison is similar to comparing two structures in the **Structure Manager** view described in the *Structure Manager Guide*. When Teamcenter compares the displayed product structures (BOMs); it compares each level that is visible. Consequently, you can compare different views or configurations by expanding the structure to the desired level. Also, if you collapse assemblies in the product structure, the comparison excludes the content of those assemblies. You can use this feature to limit the scope of a comparison.

Set compare without context preferences

- **Property preferences**

To specify the default and additional properties used for comparing as-built structures *without* context, an administrator sets the **DefaultAsBuiltCompareProperties** and **AdditionalAsBuiltCompareProperties** preferences.

Global constant	Default value
DefaultAsBuiltCompareProperties	phbl_part_number phbl_part_usage_name
AdditionalAsBuiltCompareProperties	phbl_part_used_is




- **Display preferences**

Because the display options are unavailable when comparing *without* context, an administrator can change the colors displayed for added and changed occurrences by setting the **PSEAdditionColorPref** and **PSEChangedColorPref** preferences. No colors are displayed for full matches.

Global constant	Default value
PSEAdditionColorPref	red
PSEChangedColorPref	orange

Perform compare without context

You compare two as-built structures in the **As-Built Manager** view using two separate panes.

1. From the navigation pane, click **As-Built Manager** to open the source structure in the bottom pane and the target structure in the top pane.
 - From the navigation pane, click **As-Built Manager**.
 - Choose **Window** → **Show View** → **As-Built Manager** to open the **As-Built Manager** view.
 - From the **As-Built Manager** view, click **Open by Name**  to open the source structure.
 - Click **Show/Hide lower structure panel**  located at the top of the application window to create a new empty (target) pane. The source structure appears in the bottom pane.
 - Click **Open by Name**  to open the second structure in the top pane.
2. After you open the as-built structures in the appropriate panes, configure them by setting the revision rule and/or variant rule in each pane.
3. Expand and collapse assemblies to define the scope of the comparison.

Note:

You compare only the visible structures displayed in the panes.

4. Choose **Tools** → **Compare**.



The **Compare** dialog box appears.

5. Do one of the following:
 - If you want to reverse source and target as-built structures, select **Flip source and target**.
 - To compare as-built structures *without* context, select **Compare (without context)**.
6. Select **Compare Options** to change compare modes.
 - Select the compare mode to set the level of comparison.

Mode	Description
Single Level	Compares only the first levels of the product structures.
Multi Level	Performs a single-level comparison at the top level, and then starts further single-level comparisons on any subassemblies that match between the two product structures. This process is repeated successively down the product structure.
Lowest Level	Compares only the lowest level items of the product structures, ignoring all intermediate assemblies. This is useful for verifying that piece parts are consistent.

7. If you want to display a report window summarizing the differences between the structures, select the **Report** check box.

The **Print** window appears after the compare is complete.

8. To print the report, choose **Print the file** . To save the report to a local text file, from the report window, choose **Saves to a user specified file** . To close the window, choose **Close**.
- In single-level mode and lowest level mode, the reports are flat lists of differences.
 - In multilevel mode, the report is an indented output is produced, showing the parent assemblies of any changed items.
9. Click **Check** to begin the comparison. Alternatively, click **Cancel** to exit.

Clear comparison

- To clear the highlighting colors, choose **Tools** → **Clear**.

Note:

If you start a new comparison before clearing the results of the previous comparison, the existing results are automatically cleared.

Comparing a neutral structure to a physical structure

Comparing as-built physical structures to neutral structures

You can compare an as-built neutral structure with an as-built physical structure. For example, you may want to highlight the following as differences:

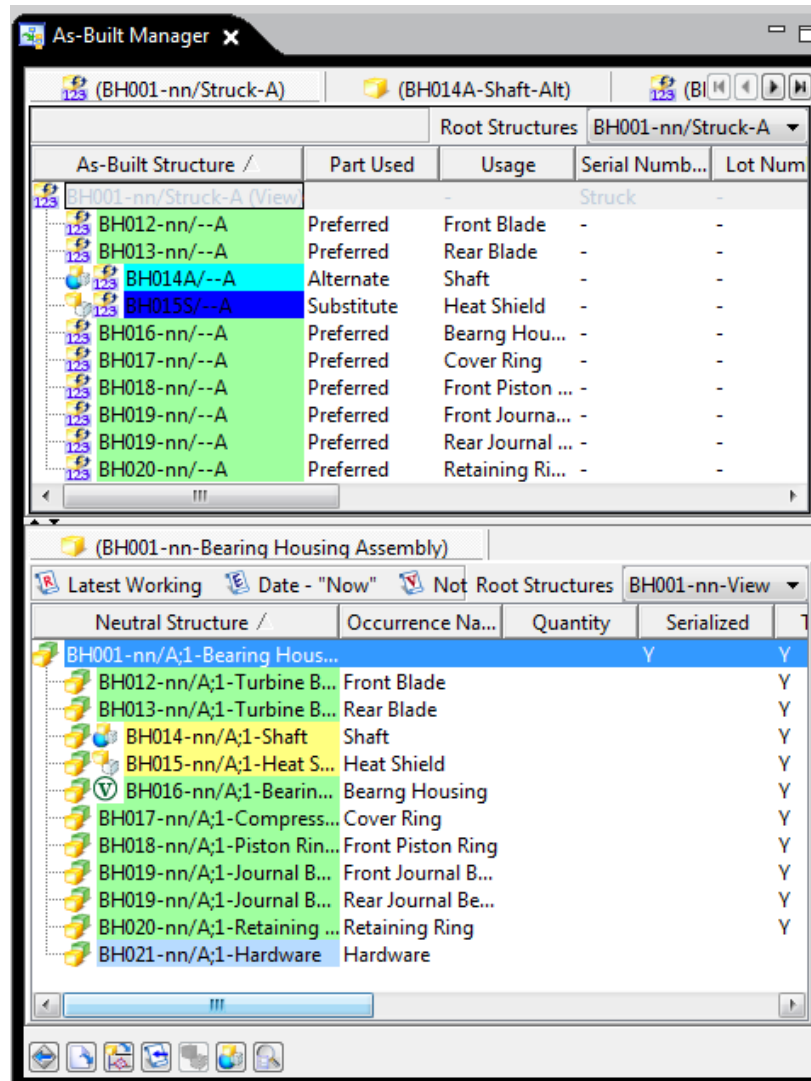
- Nontraceable parts

- Missing physical parts
- Substitute parts
- Deviated parts
- Global alternate parts

Compare with context example between a neutral structure and a physical structure

The following compare information and figure show the result of a compare with context between the neutral structure and the physical structure for the bearing housing assembly.

- Source structure: physical structure in the *top* pane for the bearing housing assembly.
- Target structure: neutral structure in the *bottom* pane for the bearing housing assembly.
- All the display options are selected.



Comparing as-built physical and neutral structures with context

The color green indicates a full match. The following parts show differences.

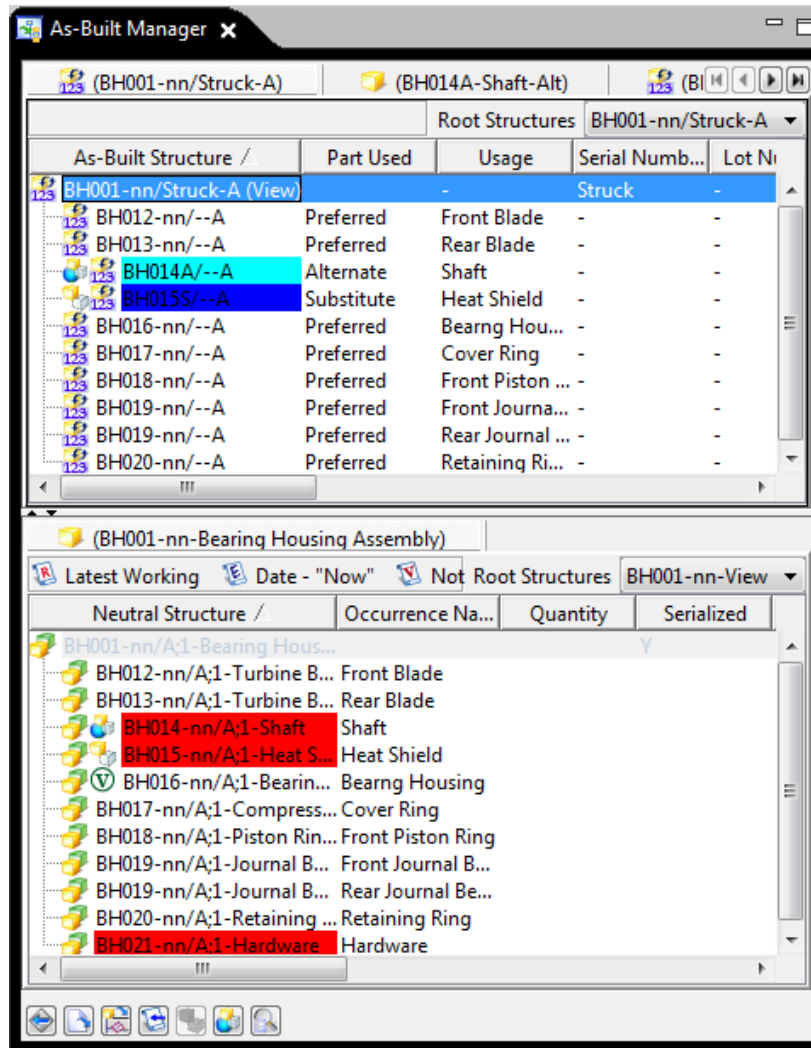
Part ID	Structure	Color	Why?
BH014	Neutral	Yellow indicating a partial match	Some properties are identical because the alternate part for the shaft was installed in the physical structure.
BH014A	Physical	Cyan indicating the physical part is an alternate	The alternate part for the shaft was installed in the physical structure.

Part ID	Structure	Color	Why?
BH015	Neutral	Yellow indicating a partial match	Some properties are identical because the substitute part for the shaft was installed in the physical structure.
BH015S	Physical	Royal blue indicating the physical part is a substitute	The substitute part for the shaft was installed in the physical structure.
BH021	Neutral	Light blue indicating a missing source.	The physical part for the hardware is missing from the source physical structure.

Compare without context example between a neutral structure and a physical structure

The following compare information and figure show the result of a compare without context between the neutral structure and the physical structure for the bearing housing assembly.

- Source structure: physical structure in the *top* pane for the bearing housing assembly.
- Target structure: neutral structure in the *bottom* pane for the bearing housing assembly.
- Display options:
 - Set to **Multi Level**.



Comparing as-built physical and neutral structures without context

No color indicates a full match. Because compare without context compares the parts that are visible and does not compare properties, the following parts show differences.

Part ID	Structure	Color	Why?
BH014	Neutral	Red indicating no match	The alternate part for the shaft was installed in the physical structure.
BH014A	Physical	Cyan indicating the physical part is an alternate	The alternate part for the shaft was installed in the physical structure.

Part ID	Structure	Color	Why?
BH015	Neutral	Red indicating no match	The substitute part for the shaft was installed in the physical structure.
BH015S	Physical	Royal blue indicating the physical part is a substitute	The substitute part for the shaft was installed in the physical structure.
BH021	Neutral	Red indicating no match	The hardware does not exist in the physical structure.

Comparing two physical structures

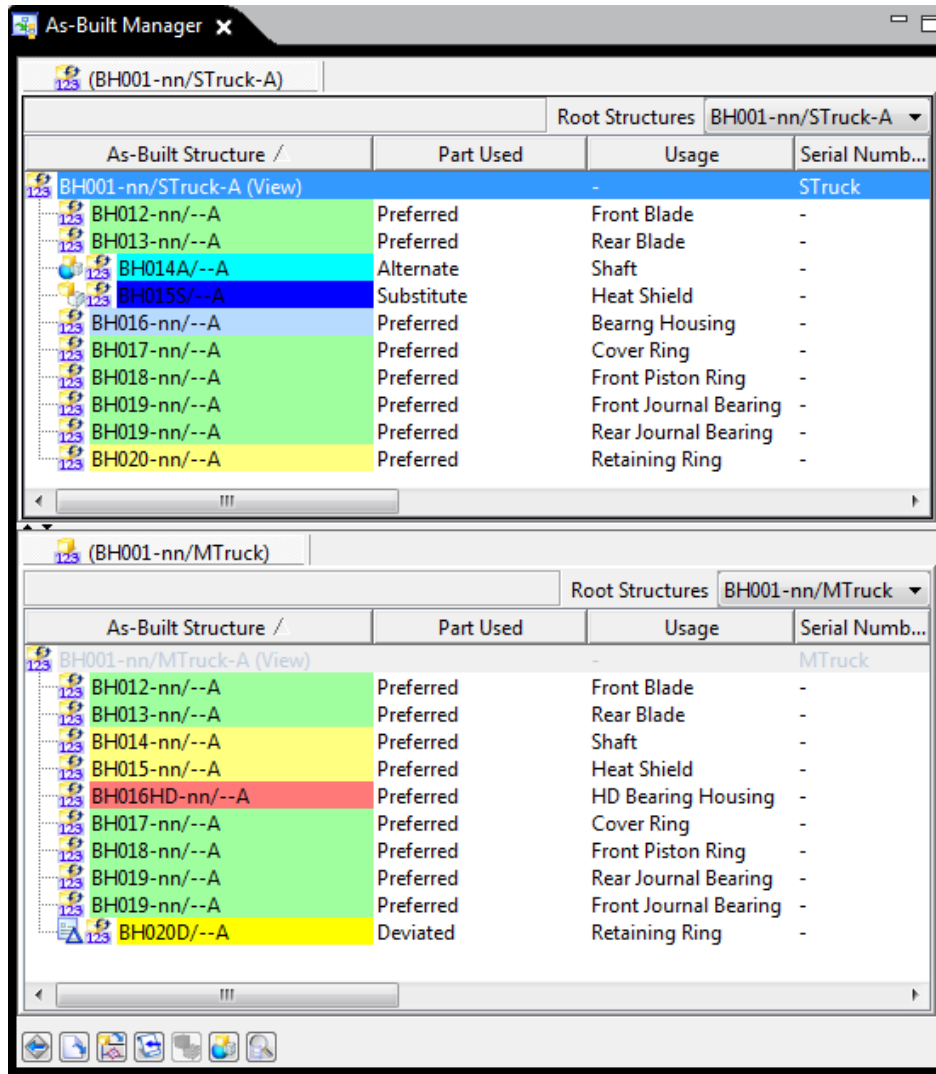
Comparing two as-built physical structures

You can compare two as-built physical structures. For example, you may want to highlight the differences between two installations of the same physical structure.

Compare with context example between two physical structures

The following figure shows the result of a compare with context between two physical structures for the bearing housing assembly.

- Source structure: The bearing housing assembly in the *bottom* pane used in the missile truck. The serial number is set to **MTruck**.
- Target structure: The bearing housing assembly in the *top* pane used in the supply truck. The serial number is set to **STruck**.
- All display options are selected.



Comparing two as-built physical structures with context

The color green indicates a full match. The following parts show differences.

Part ID	Structure	Color	Why?
BH014	MTruck	Yellow indicating a partial match	Some properties are identical because the alternate part for the shaft was installed in the physical structure used in the supply truck.
BH014A	STruck	Cyan indicating the physical part is an alternate	The alternate part for the shaft was installed in the physical structure used in the supply truck.

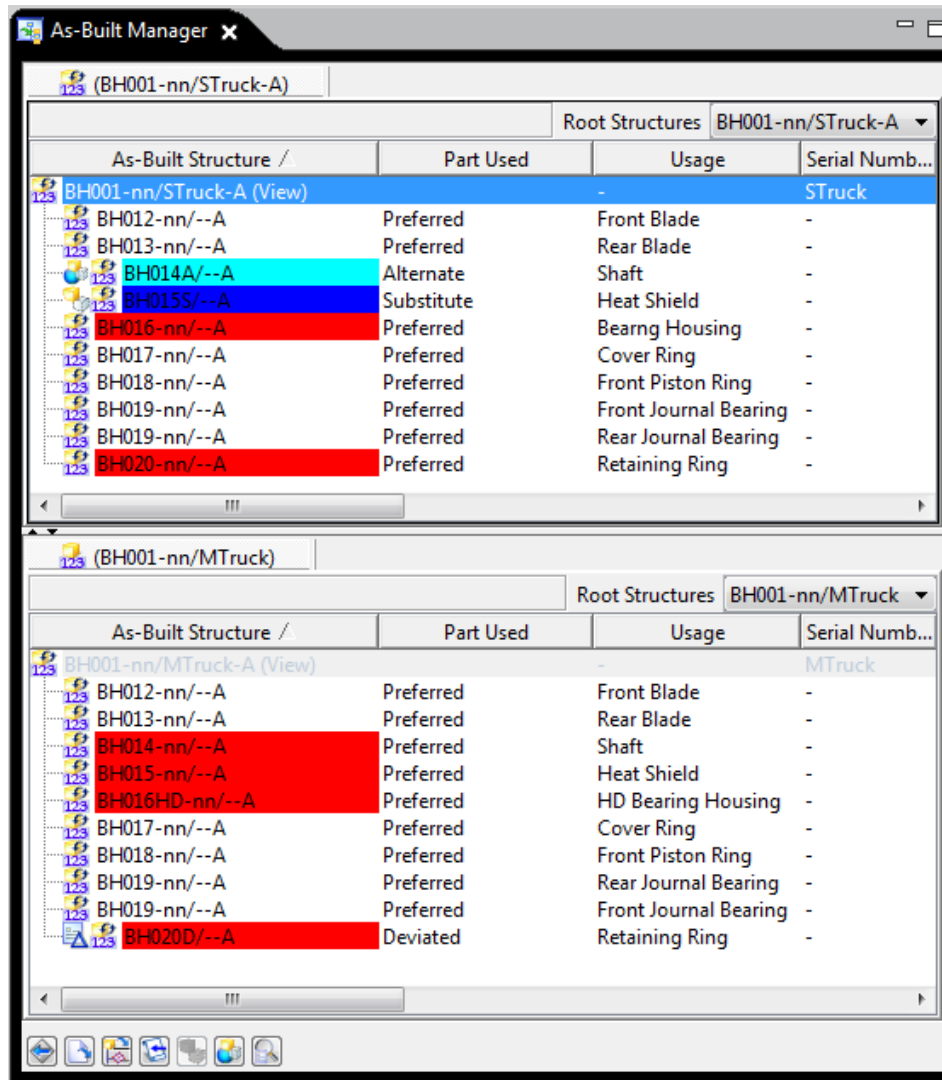
Part ID	Structure	Color	Why?
BH015	MTruck	Yellow indicating a partial match	Some properties are identical because the substitute part for the shaft was installed in the physical structure used in the supply truck.
BH015S	STruck	Royal blue indicating the physical part is a substitute	The substitute part for the shaft was installed in the physical structure used in the supply truck.
BH016	STruck	Light blue indicating a missing source.	The regular bearing housing does not exist in the source physical structure used in the missile truck.
BH016HD	MTruck	Red indicating a missing target.	The heavy duty bearing housing does not exist in the target physical structure used in the supply truck.
BH020D	MTruck	Yellow indicating the physical part is a deviation	The deviated redesigned part for the retaining ring was installed in the physical structure used in the missile truck.
BH020	STruck	Yellow indicating a partial match	Some properties are identical because the deviated redesigned part for the retaining ring was installed in the physical structure used in the missile truck.

Compare without context example between two physical structures

The following figure shows the result of a compare without context between two physical structures for the bearing housing assembly.

- Source structure: The bearing housing assembly in the *bottom* pane used in the missile truck. The serial number is set to **MTruck**.
- Target structure: The bearing housing assembly in the *top* pane used in the supply truck. The serial number is set to **STruck**.
- Display options:

- Set to **Multi Level**.



Comparing two as-built physical structures without context

No color indicates a full match. Because compare without context compares the parts that are visible and does not compare properties, the following parts show differences.

Part ID	Structure	Color	Why?
BH014A	STruck	Cyan indicating the physical part is an alternate	The alternate part for the shaft was installed in the physical structure used in the supply truck.
BH014	MTruck	Red indicating no match	The alternate part for the shaft was installed in the

Part ID	Structure	Color	Why?
			physical structure used in the supply truck.
BH015S	STruck	Royal blue indicating the physical part is a substitute	The substitute part for the shaft was installed in the physical structure used in the supply truck.
BH015	MTruck	Red indicating no match	The substitute part for the shaft was installed in the physical structure used in the supply truck.
BH016	STruck	Red indicating no match	The heavy duty bearing housing is installed in the physical structure used in the missile truck.
BH016HD	MTruck	Red indicating no match	The regular bearing housing is installed in the physical structure used in the supply truck.
BH020	STruck	Red indicating no match	The deviated redesigned part for the retaining ring was installed in the physical structure used in the missile truck.
BH020D	MTruck	Red indicating no match	The deviated redesigned part for the retaining ring was installed in the physical structure used in the missile truck.

9. Visualizing as-built physical structures

Visualizing as-built physical structures

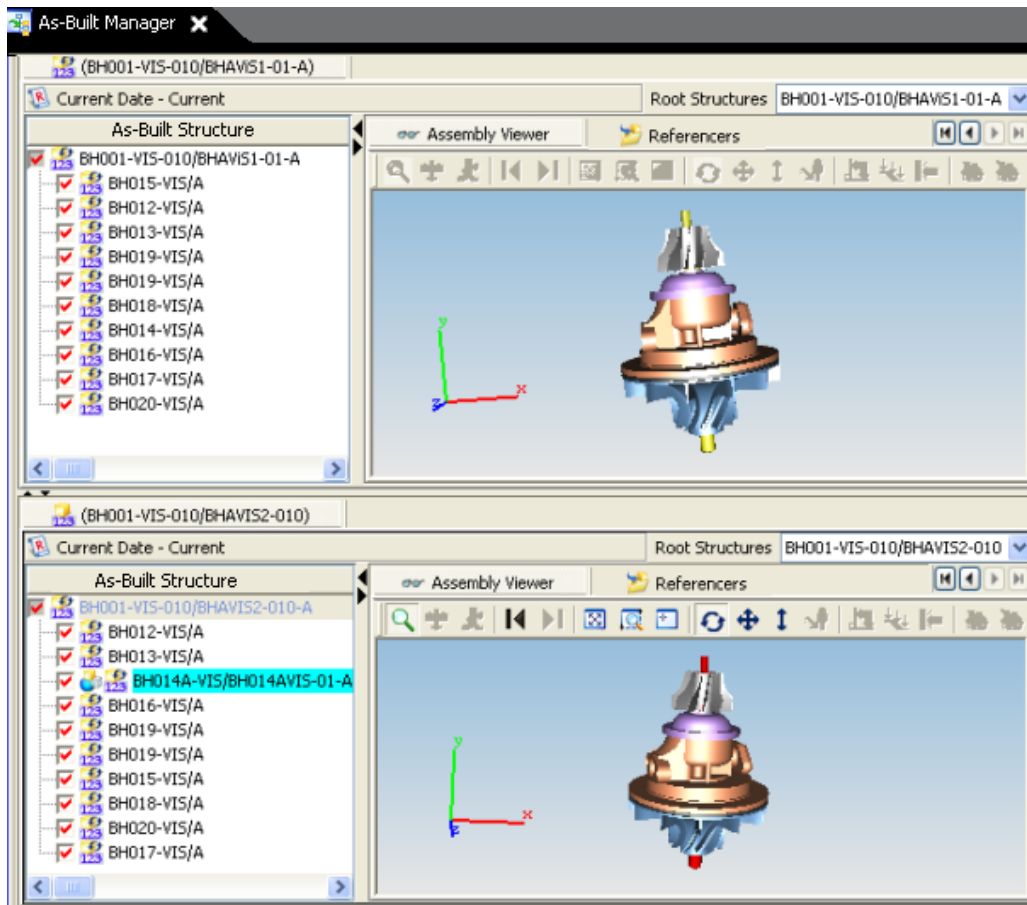
You can visualize the as_built neutral and physical structures from the **As-Built Manager** view with the embedded viewer. You can also view any untraced parts in the as-built physical structure. When you visualize the as-built physical structure, you are looking at the data associated with its linked neutral structure. The visualization data is only associated to the design parts of the neutral structure and not to the related as-built physical structure.

You use the embedded viewer in the **As-Built Manager** view in the same way as the embedded viewer in the **Structure Manager** view. If you want to use the enhanced capabilities of Lifecycle Visualization or the embedded viewer, you must purchase and install the necessary additional licenses.

Note:

Physical parts with **Part Used** status set to **Missing** do not display any visualization.

The following figure shows an example where you can visualize both the neutral and physical structures in the **As-Built Manager** view with a split window. You may want to use a split window to see what the missing physical parts look like by viewing the visualization of their related neutral part item revisions.



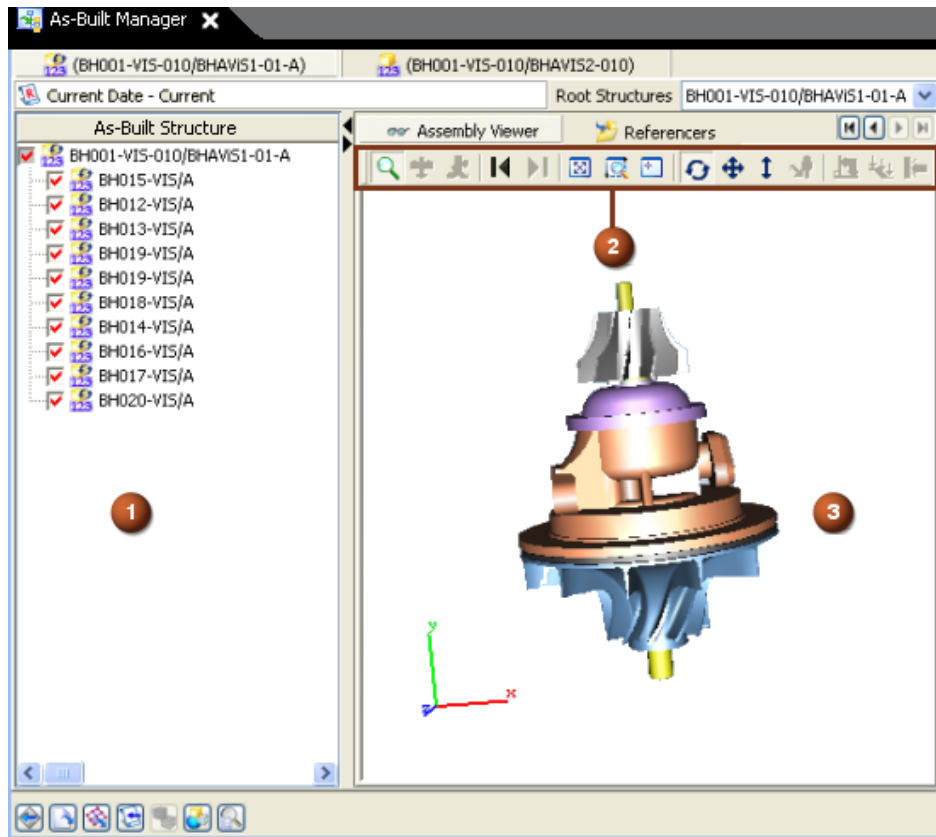
Visualizing as-built neutral and physical structures

Associating image file datasets




To visualize the neutral or as-built physical structure, you must create **DirectModel** datasets containing the image (JT) files. You attach the datasets with the **Rendering** relationship to the neutral part item revisions that compose the neutral structure. When you visualize the physical structure, you are accessing the same datasets attached to its linked neutral structure. A **DirectModel** dataset can contain several JT files with different names, so you should set rules that determine the file to display.

Visualize the as-built structure model

The lines in the project workspace are shown with a check box to the left of the part. You select the check boxes next to the part and assembly names in the assembly tree to choose which parts and assemblies to load and make visible. By default, they are all unchecked.



- | | | |
|---|--------------------------|--|
| 1 | Project workspace | Displays the product structure. |
| 2 | Navigation toolbar | Toolbar used to navigate the 3D model. |
| 3 | Graphical viewing window | Displays the 3D model associated with the product structure. |

1. Open the structure in the **As-Built Manager** view by one of the following methods:
 - From the navigation pane, click **As-Built Manager** and click **Open by Name**  to open the structure.
 - If you are viewing the structure in the **Structure Manager** view, right-click the structure parent and choose **Send to** → **As-Built Manager**.
2. Choose **View** → **Show Data Panel**, or click the **Show/Hide Data Panel** button  on the toolbar.
3. Click the **Assembly Viewer** tab to visualize the 3D models for the as-built assembly structure.
4. (Optional) To view a split window, click **Show/Hide lower Structure Panel**  located at the top of the application.

5. To display or hide entire models, assemblies, or individual parts, you can do any of the following:

To	Do this
View the entire structure	Select the check box for the top-level line in the structure to load the graphics for every line in the structure.
View a selected part of the structure	Select the check boxes only for those lines for which you want to load the graphics.
View only the part	Select the check box for the line for a part.
View an assembly	Select the check box for a line representing the assembly.
Hide the entire structure	Clear the check boxes.

Using the graphics menu

The **Graphics** menu appears when you click the **Assembly Viewer** tab.

Command	Description
Selection → Select All	Selects all the objects displayed in the viewer.
Selection → Select None	Clears any objects currently selected in the viewer.
Selection → Reverse Selection	Selects all objects not selected in the viewer, while simultaneously unselecting any objects currently selected in the viewer.
Visibility → View Selected	Blanks and unblanks objects loaded in the viewer.
<p>Note:</p> <p>The term <i>loaded</i> refers to an object whose JT file has been loaded in the viewer. A loaded object may or may not be visible, depending on whether it has been blanked or unblanked.</p>	
Visibility → Blank Selected	Makes any objects selected in the viewer invisible.
Visibility → Blank All	Makes all objects in the viewer invisible.
Visibility → Unblank All	Makes all objects loaded in the viewer visible.
Visibility → Reverse Blank All	Makes any currently visible objects invisible, while simultaneously making visible any loaded objects which are currently invisible.
Visibility → Unload Selected	Unloads any objects selected in the viewer.
















Command	Description
Edit Color/Translucency	Modifies the color, transparency, and shine of selected objects in the viewer. These settings only apply to the currently loaded objects. The next time the edited object is loaded, the settings revert to the default color and translucency.
Insert	Allows you to insert JT, stereolithography (.stl), and VRML (.wrl) files as reference graphics.
Insert → Insert from File	Inserts a reference graphic from the operating system, using the Open by Name dialog box.
Insert → Insert from Clipboard	Inserts a reference graphics object from the clipboard.
	<p>Note:</p> <p>Only item revisions (not items) can be displayed as reference graphics.</p>
Views → Views Control	Creates, edits, and displays standard views, using the Rotate and Standard Views dialog boxes.
Draw Children	Displays the components of a subassembly. You can also access this command if you right-click in the BOM.
Show Subcomponents	Breaks down solids in the corresponding monolithic JT files and make the subcomponents independently controllable. This function is available only for only leaf and unpacked BOM line nodes.
Hide Subcomponents	Removes all merged subcomponents and the one-level tree from the tree. You can load or unload the monolithic JT file related to this BOM line node in the normal way.
Export 3D File	Exports the current visible objects to a STEP or VRML file.
Replace JT File	Replaces the JT file that represents an item revision. You can choose a replacement file from one of the JT files associated with the current BOM line item.
Transformation → Temporary Transformation	Generates an exploded view for use in technical illustrations.
Transformation → Persistent Transformation	Modifies the physical location of a part (or set of parts) in an owning assembly.
Clearance → Preferences → Calculator Settings	Specifies the precision and nature of the clearance check.
Clearance → Preferences → Clearance Requirements	Defines the clearance conditions based on the metadata of the structure or elements.




Command	Description
Clearance → Preferences → Clearance Results	Adjusts the clearance results preferences to change the appearance and behavior of clearance results.
Clearance → Preferences → Toggle Results Window	Displays the clearance results window.
Performance	Sets rendering, culling and general performance preferences.
Preferences	Sets clearance analysis and general viewer preferences.

10. Navigating the 3D model

When you visualize the 3D model associated to the physical or neutral structure, the 3D navigator toolbar appears at the top of the **Assembly Viewer** window. It is used to manipulate the 3D view.



	Option name	Mode	Use this button to
	Examine	Fly Explore	Enable Examine mode.
	Fly	Examine Explore	Enable Fly mode.
	Explore	Examine Fly	Enable Explore mode.
	Previous View	Examine Fly Explore	Return to the last static view.
	Next View	Examine Fly Explore	Move to the next static view
	Fit All	Examine Fly Explore	Fit all visible parts of the model into the viewing window.
	Zoom Area	Examine Fly Explore	Zoom to a specific area of the model.
	seek	Examine Fly Explore	Center a point of the model. This point becomes the center of rotation.
	Rotate	Examine	Rotate your model in the viewing window.
	Pan	Examine Fly Explore	Pan the model in the plane of the viewing window.
	Zoom	Examine	Move closer to or farther from the model.
	Position	Explore	Choose your position in the model.
	Level	Fly Explore	Align the view to the up vector.
	Terrain Following	Fly Explore	Remain a specified distance above the floor upon which you are moving.
	Collision Detection	Fly Explore	Stop moving through your model when you come into contact with a part.

	Go Home	Explore	Return to the location and position you were at when you last selected Set Home .
	Set Home	Explore	Set the current location and position as the home location.
	Preferences	Examine Fly Explore	Set mode preferences.

11. Sharing As-Built Manager data

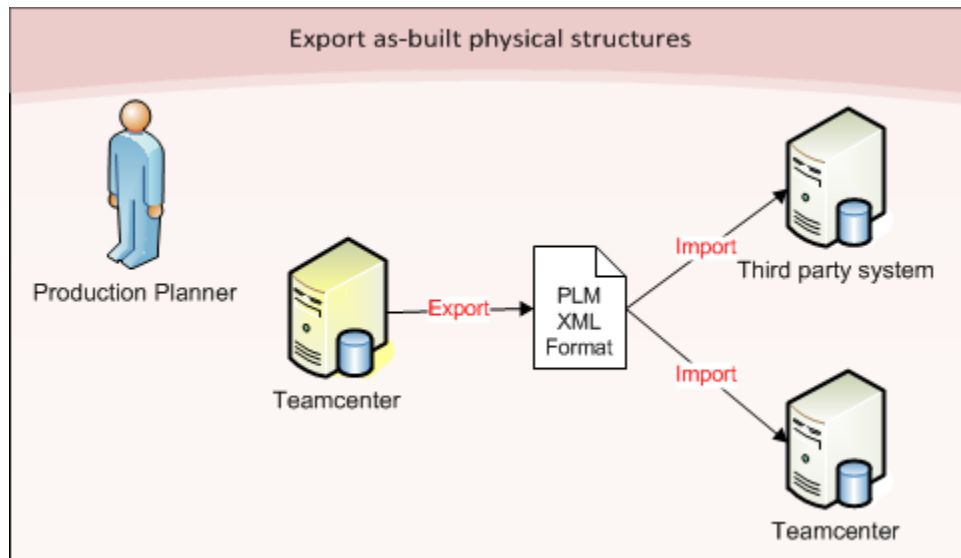
Sharing As-Built Manager data

You can share As-Built Manager data by:

- Importing as-built physical structures from third-party systems or other Teamcenter sites into Teamcenter using PLM XML format.
- Exporting as-built physical structures data from Teamcenter to other Teamcenter sites or third-party systems using PLM XML format.
- Using Multi-Site Collaboration to share As-Built Manager data between multiple Teamcenter sites.

Export an as-built structure

A user such as a production planner can export as-built data from Teamcenter to other Teamcenter sites or third-party systems.



Exported data includes:

- Physical parts with revisions.
- Physical realization information.
- As-built structures including installation date.

- Physical alignment relations.
 - Lot information if assigned to a physical part.
 - Deviation information.
1. Select the physical structure to be exported.
 2. Choose **Tools** → **Export** → **To PLMXML**.

The system displays the **PLM XML Export** dialog box.

3. In the **Export Directory** box, select the directory in which to place the PLM XML file. Click **Browse** to locate the directory.
4. Specify the name of the export file in the **Export Filename** box.
5. Choose a transfer mode from the **Transfer Mode** list.

The transfer mode **AsBuiltDataExport** is provided with As-Built Manager for exporting as-built structure information.

6. (Optional) Click **Select Languages** to display the **Language Selection** dialog box for the languages configured at your site.
 - **Main Language** is the site master language. This cannot be changed.
 - The **Available Languages** box lists the languages you can select as additional languages for export.
 - The **Select Additional Languages** box lists the preconfigured languages for the selected transfer mode.

To select additional languages for export, follow these steps:

- a. Select a language in the **Available Languages** box.
- b. Click the **Add** button **+**.
 - The selected language is added to the **Selected Additional Languages** box.
 - To reorder the languages in the **Selected Additional Languages** box, select a language and use the move **▲ ▼** buttons as required.
- c. Click **OK** or **Apply**.

The languages selected for export are displayed in the **Languages** box.

Note:

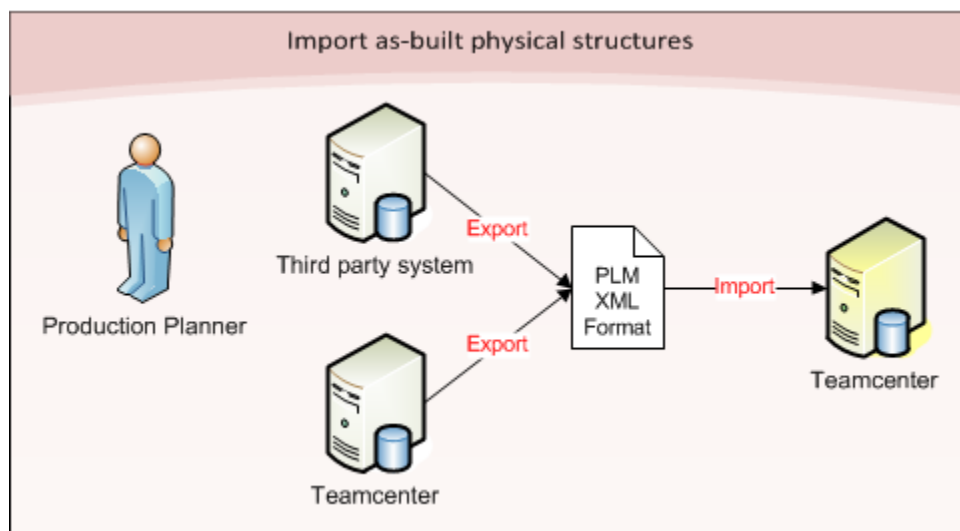
If you change the transfer mode, the **Languages** entries remains unchanged. You can use the **Language Selection** dialog box again to add or remove more languages.

7. (Optional) Select a revision rule to configure the assembly to be exported.
8. If you do not apply a revision rule, only the parent item revision is exported.
9. (Optional) Select **Open PLM XML File** to view the file when the export operation is complete.
10. (Optional) Select the **View Log File** check box to view the log file when the data translation is complete.
11. (Optional) Select the **Perform Export In Background** check box to perform an
12. Click **OK** to export the objects in the **Object List** and close the dialog box.

Importing as-built structures

Importing as-built structures

A user such as a production planner can import as-built data from a third-party systems or other sites into Teamcenter.



You can import as-built physical structure data into Teamcenter from any third-party system if it conforms to the PLM XML schema. Data Exchange creates the as-built structure

using the **RealizedProduct**, **RealizedProductRevision**, **Lot**, **LotRevision**, **RealizedProductUsage**, **AllowedDeviation**, **Deviation**, and **DeviationRevision** elements. Before you import an as-built structure, the neutral structure and the part logistics information must exist on the importing site.

If the occurrence information is provided along with the occurrence name, the alignment relation is created. If the occurrence name is not provided or the occurrence name does not match the neutral part occurrence name, Data Exchange processes the structure relationship without the alignment relation.

If the lot information is provided and the lot is not defined in Teamcenter, Data Exchange creates and assigns the physical part to the new lot. If the lot exists, the physical part is assigned to the existing lot.

Import an as-built structure

Note:

Before you import an as-built structure, the neutral structure and the part logistics information must exist on the importing site.

You can import an as-built structure into Teamcenter from a third-party system by performing the following steps:

1. Choose **Tools** → **Import** → **From PLMXML**.

The system displays the **PLM XML Import** dialog box.

2. Click **Browse**  to the right of the **Importing XML File** box.

The system displays the **Select Object** dialog box.

3. Navigate to the directory containing the file and select the file.

The system displays the file name in the **Directory** name box.

4. Click **Select**.

The system displays the path to the selected file in the **Importing Object** box of the dialog box.

5. Select the transfer mode to be used to configure the import operation.

Note:

The transfer mode **AsBuiltDataImport** is provided with As-Built Manager for importing as-built structure information from a third-party system into Teamcenter.

6. (Optional) Select the **View Log File** check box to view the log file when the data transfer is complete.
7. Click **Apply** to start the import operation and retain the dialog box, or click **OK** to start the import operation and exit the dialog box.

The system imports the data as follows:

- By default, the imported object has no container reference. You can use relevant search criteria to find the imported object and so you can copy it to a folder.
- To have Teamcenter import objects into your **Newstuff** folder, create the **PLMXML_put_objects_in_newstuff_on_import** preference and set the value to **TRUE**. Imported objects are placed in a folder with the same name as the imported XML file.

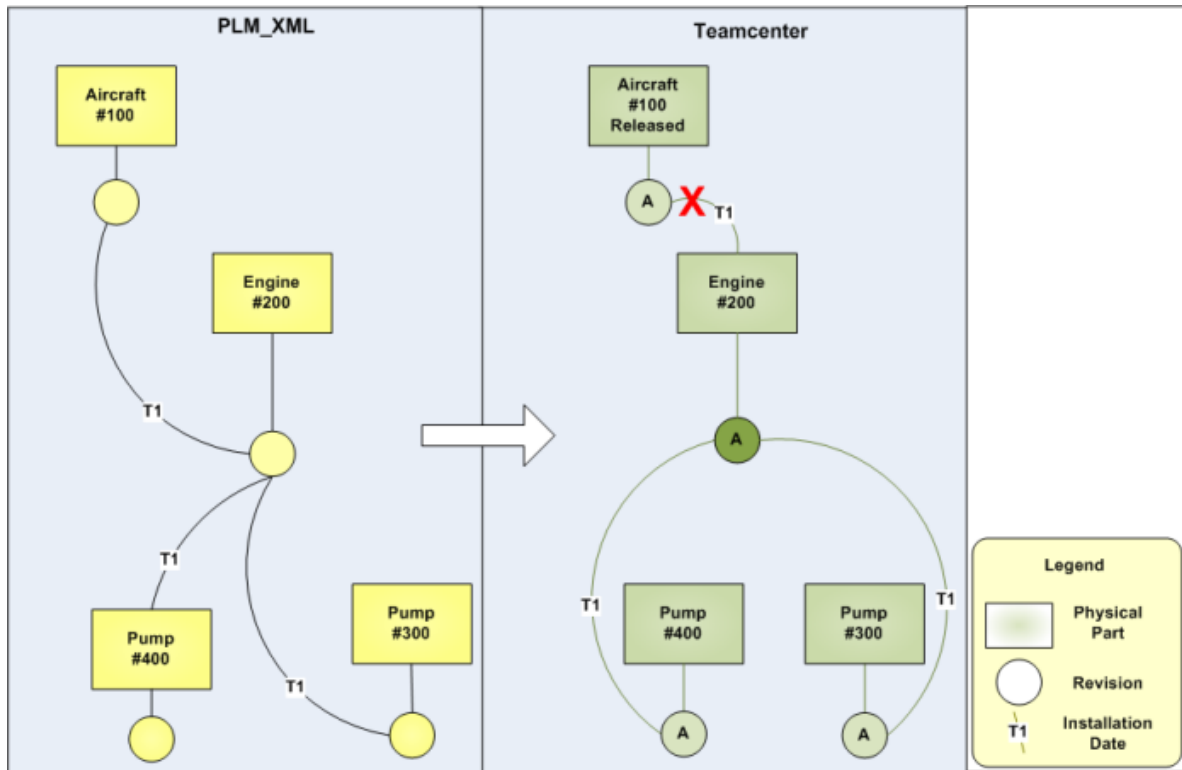
Note:

If object names or IDs are encountered that exceed the character limit for those fields in Teamcenter, the name and/or ID is truncated when imported into Teamcenter. Teamcenter provides 128 bytes for item IDs and names.

Import as-built structure exceptions

When you import an as-built structure into Teamcenter from a third-party system and a physical part has a status of **released** in Teamcenter, the import fails for that physical part. The relationship is not created between the as-built structure parent and the child physical part that is released. The import continues for the remaining components.

As the following figure shows, the relationship between the parent physical part **Aircraft #100** and the physical part **Engine #200** is not created in Teamcenter because **Aircraft #100** has a status of **released**.



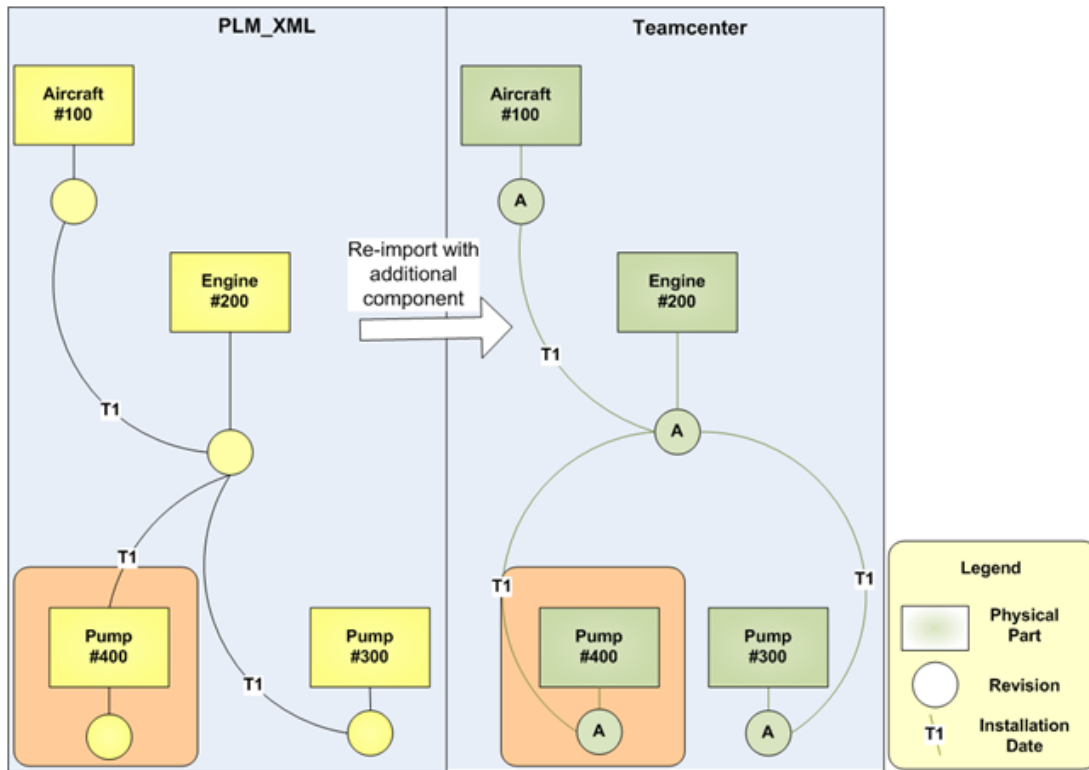
Component physical part is released in Teamcenter

Re-import as-built structure behavior

When you re-import an as-built structure into Teamcenter from a third-party system, be aware of the following behaviors:

- Re-import after physical part is added to as-built structure on third-party system.

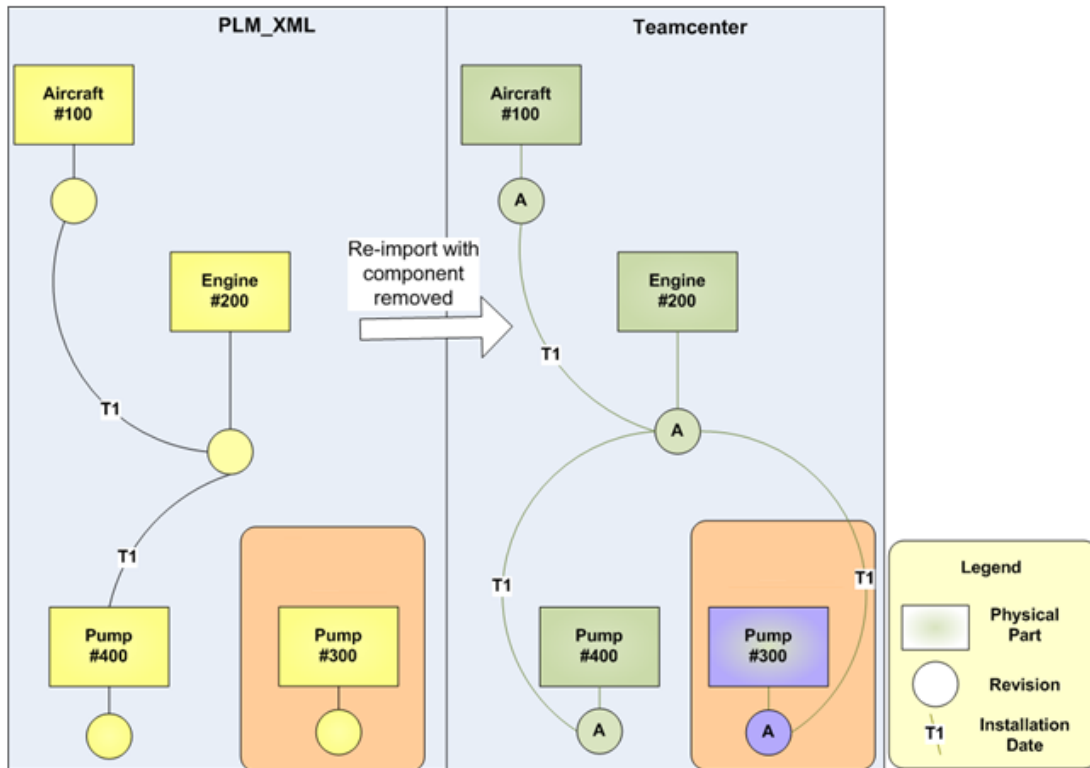
As the following figure shows, when the third-party as-built structure is re-imported with the newly added physical part **Pump #300**, the additional part is imported into Teamcenter.



Re-import into Teamcenter with additional physical part

- Re-import after physical part is deleted from as-built structure on 3rd party system.

As the following figure shows, when the third-party as-built structure **Aircraft #100** is re-imported to Teamcenter with the physical part **Pump #300** removed, the physical part is not removed on Teamcenter.



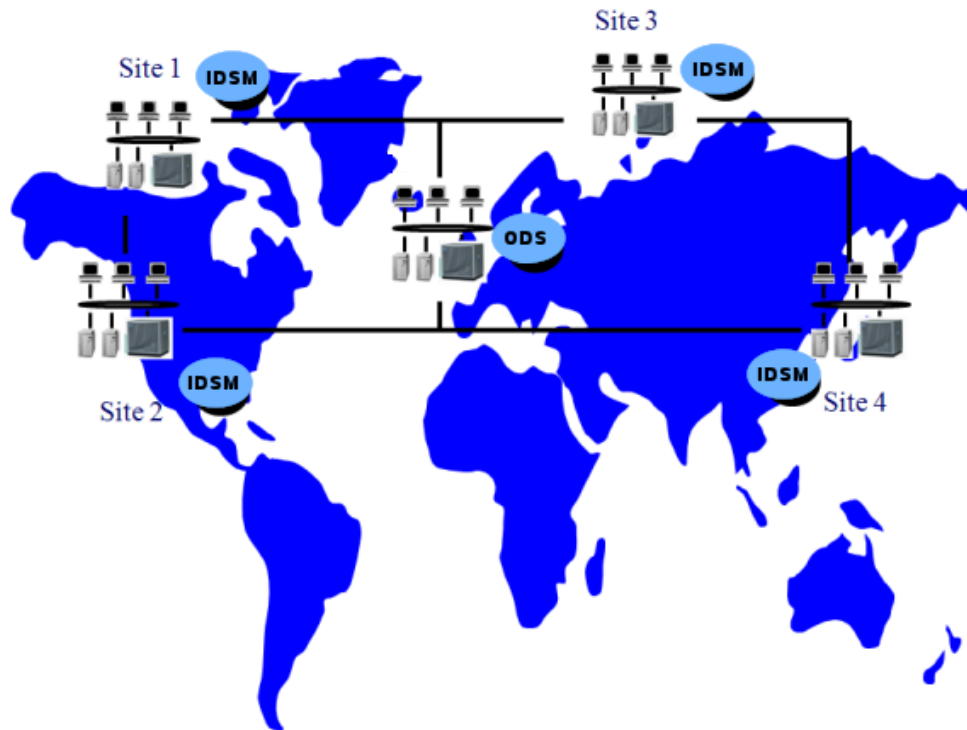
Re-import into Teamcenter with physical part removed

Managing As-Built Manager data for Multi-Site Collaboration

Managing As-Built Manager data for Multi-Site Collaboration

Using Multi-Site Collaboration, you can share As-Built Manager data between multiple Teamcenter sites. Each Teamcenter site has its own independent database with its own set of users and groups, data model, business rules, and business processes.

Data sharing is done through object replication where an exact copy of an object is made at a remote site using remote export and import functions. The replicas are synchronized when the master copy is modified.



The *Object Directory Services* server (ODS) site maintains a record of each object in the entire Multi-Site Collaboration network.

The *Integrated Distributed Services Manager* (IDSM) provides the mechanism used to export an object from the owning site, transmit it over the network, and import it into the destination site.

Multi-Site Collaboration support for as-built structures

When you export as-built structures and related As-Built Manager data using Multi-Site Collaboration, Data Exchange also exports the relations and the related objects. The table summarizes which relations and corresponding related objects are exported for each As-Built Manager object and whether the related object is optional or required.

Exported As-Built Manager object	Exported relation	Exported related object	Optional or required
Item	IMAN references	Part logistics form	Optional
	Has characteristics	Characteristic definitions	Optional
Physical part	Physical characteristics	Characteristic values	Required

Exported As-Built Manager object	Exported relation	Exported related object	Optional or required
		Physical part revision (by creation date)	Optional
	Allowed deviation	Physical Part (Child)	Required
	Contains	Asset group	Required
	Physical part in location	Physical location	Required
	Disposition applicability	Disposition	Required
Allowed deviation	Tag	Deviation document	Required
Physical part revision	Tag	Physical part	Required
	Physical realization	Item revision	Optional
	Physical context	Structure context	Required
	Tag	Lot	Required
	As-built structure	Physical part	Optional
Physical structure	Physical structure alignment	Occurrence	Optional
Lot	Tag	Item	Required
Physical location		Physical location revision by creation date	Optional
Physical location revision	Tag	Physical location	Required
	As-built structure	Physical location	Optional

As-Built Manager actions on stub and replica objects

Data sharing in Multi-Site Collaboration is done by replicating objects to remote databases through export and import functions. In addition, during Multi-Site Collaboration import, Teamcenter uses the persistent object model (POM) to create stubs for all referenced instances on the object. The following table shows the As-Built Manager actions that can be performed on object replicas and stubs.

Actions	Stub	Replica	Exceptions
Name occurrence	No	No	
Create lot	No	Yes	
Create serial number generator	No	No	
Generate as-built structure	No	Yes	If any stubs are found in the neutral structure during generation, the action exits and does not process any partial structures.
Install physical part	No	No	
Uninstall physical part	No	No	
Setup deviation	No	No	
Assign lot	No	No	
Compare	No	Yes	The compared structures should not have any stubs.
Visualization	No	Yes	Visualization is not supported for stubs within the neutral or physical structures.
Display as-built structure	Yes	Yes	Stubs are displayed as remote lines. Structures below stubs are not displayed.
Release physical structure	No	Yes	Structure must be transferred with ownership.
Where installed	No	Yes	



A. As-Built Manager preferences

AsBuiltManagerColumnsShownPref

DESCRIPTION

Specifies the columns displayed in the As-Built structure table.

VALID VALUES

Accepts one or more strings as values. Each string must be a valid BOM line property and a valid As-Built BOM line property.

DEFAULT VALUES

bl_indented_title
bl_item_object_type
phbl_part_used_is
phbl_part_usage_name
phnl_serial_number
phbl_lot_number
phbl_part_number
phbl_installation_time
phbl_mfg_date
phbl_mfgr_org_id
phbl_physical_quantitiy
phbl_physical_uid
bl_item_item_id

DEFAULT PROTECTION SCOPE

Site preference.

AsBuiltManagerShownColumnWidthsPref

DESCRIPTION

Specifies the column widths displayed in the As-Built structure table.

VALID VALUES

One or more integers as values; each integer defines the column width in characters. The first value set in this preference defines the column width of the first value set in the **AsBuiltManagerShownColumnWidthsPref** user preference, and so forth.

DEFAULT VALUES

20
10
10
10
10
10
10
15
15
10
10
15
10

DEFAULT PROTECTION SCOPE

Site preference.

DefaultAsBuiltCompareProperties

DESCRIPTION

Specifies the default As-Built compare properties.

VALID VALUES

Accepts one or more strings as values. Each string must be a valid BOM line property and a valid As-Built BOM line property.

DEFAULT VALUES

`phbl_part_number`
`phbl_part_usage_name`

DEFAULT PROTECTION SCOPE

Site preference.

AdditionalAsBuiltCompareProperties

DESCRIPTION

Specifies the default As-Built compare properties.

VALID VALUES

Accepts one or more strings as values. Each string must be a valid BOM line property and a valid As-Built BOM line property.

DEFAULT VALUES

`phbl_part_used_is`

DEFAULT PROTECTION SCOPE

Site preference.

DefaultAsBuiltAccCheckProperties

DESCRIPTION

Specifies the default As-Built accountability check properties.

VALID VALUES

Accepts one or more strings as values. Each string must be a valid BOM line property and a valid As-Built BOM line property.

DEFAULT VALUES

`phbl_part_number`
`phbl_part_used_is`

DEFAULT PROTECTION SCOPE

Site preference.

AdditionalAsBuiltAccCheckProperties

DESCRIPTION

Specifies the additional As-Built accountability check properties.

VALID VALUES

Accepts one or more strings as values. Each string must be a valid BOM line property and a valid As-Built BOM line property.

DEFAULT VALUES

phbl_part_usage_name

DEFAULT PROTECTION SCOPE

Site preference.

B. SLM core preferences

HierarchicalWSO_HierarchicalWSO_default_relation

DESCRIPTION

Specifies the default relation between two hierarchical workspace objects.

VALID VALUES

Accepts one or more strings as a value. Each string must be a valid Teamcenter object.

DEFAULT VALUES

HWSOStructure

DEFAULT PROTECTION SCOPE

Site preference.

Item_CharacteristicDefinition_default_relation

DESCRIPTION

Specifies the default relation created when a characteristics definition object is pasted under an item object.

VALID VALUES

Accepts one or more strings as a value. Each string must be a valid Teamcenter object.

DEFAULT VALUES

NeutralCharacteristics

DEFAULT PROTECTION SCOPE

Site preference.

ItemRevision_CharacteristicDefinition_default_relation

DESCRIPTION

Specifies the default relation created when a characteristics definition object is pasted under an item revision object. The default value for this preference is **InvalidRelation** to disallow creating a relation between an item revision object and a characteristics definition object.

VALID VALUES

Accepts one or more strings as a value. Each string must be a valid Teamcenter object.

DEFAULT VALUES

InvalidRelation

DEFAULT PROTECTION SCOPE

Site preference.

LogBook_PhysicalPart_default_relation

DESCRIPTION

Defines the default relationship between a log book and a physical part.

VALID VALUES

Accepts one or more strings as a value. Each string must be a valid Teamcenter object.

DEFAULT VALUES

physicalAssetTag

DEFAULT PROTECTION SCOPE

Site preference.

LogBook_WorkspaceObject_default_relation

DESCRIPTION

Defines the default relationship created when workspace object is pasted under a log book. The default value of this preference is **InvalidRelation** to disallow the creation of any relation with a log book.

VALID VALUES

Accepts one or more strings as a value. Each string must be a valid Teamcenter object.

DEFAULT VALUES

InvalidRelation

DEFAULT PROTECTION SCOPE

Site preference.

Lot.SUMMARYRENDERING

DESCRIPTION

Specifies the lot objects summary style sheet registry.

VALID VALUES

Accepts a single string as a value, which must be a valid dataset name.

DEFAULT VALUES

LotSummary

DEFAULT PROTECTION SCOPE

Site preference.

Lot_DefaultChildProperties

DESCRIPTION

Specifies a list of properties that can be used for Lot children.

VALID VALUES

Accepts one or more strings as values. Each string must be a valid Teamcenter relation object.

DEFAULT VALUES

designItemTag

DEFAULT PROTECTION SCOPE

Site preference.

MRONeutralColumnsShownPref

DESCRIPTION

Specifies the columns displayed in the Service Lifecycle Management neutral item structure table.

VALID VALUES

Accepts one or more strings as values. Each string must be a valid neutral BOM line property.

DEFAULT VALUES

bl_indented_title
bl_item_object_type
bl_occurrence_name
bl_quantity
bl_uom
npbl_is_item_serialized
npbl_is_item_lot
npbl_is_item_traceable
npbl_preserve_quantity
npbl_is_item_rotatable
npbl_is_item_consumable

DEFAULT PROTECTION SCOPE

Site preference.

MRONeutralShownColumnWidthsPref

DESCRIPTION

Specifies the column widths displayed in the Service Lifecycle Management neutral item structure table.

VALID VALUES

One or more integers as values; each integer defines the column width in characters. The first value set in this preference defines the column width of the first value set in the **MRONeutralColumnsShownPref** user preference, and so forth.

DEFAULT VALUES

20
15
12
10
10
10
10
10
10
10
10

DEFAULT PROTECTION SCOPE

Site preference.

ManufacturingIdCharsForPhysicalPartIdPref

DESCRIPTION

Specifies the number of characters to use from the manufacturing ID when generating the physical part item ID. The physical part item ID is a combination of characters from part number, serial number, and manufacturing ID properties. The total number of characters for the physical part item ID should not exceed 128 characters. The first entry in the preference is the number of characters to use from the manufacturing ID property for the physical part item ID. The second entry in the preference indicates whether to use the characters from the beginning of the manufacturing ID (a value of 0) or from the end of the part number (a value of 1).

If this preference is not found, the last 40 characters of the manufacturing ID are used.

VALID VALUES

Any positive integers.

DEFAULT VALUES

40
1

DEFAULT PROTECTION SCOPE

Site preference.

MROAlternateColorPref

DESCRIPTION

Specifies the color to use when displaying an alternate physical part.

VALID VALUES

The value can be a standard supported string, an octal number, or a hexadecimal number. The standard strings supported are **black**, **white**, **lightGray**, **gray**, **darkGray**, **red**, **pink**, **orange**, **yellow**, **green**, **magenta**, **cyan**, and **blue**. An example of a hexadecimal number is #50b080, which represents **sea green**.

DEFAULT VALUES

cyan

DEFAULT PROTECTION SCOPE

Site preference.

MRODeviatedColorPref

DESCRIPTION

Specifies the color to use when displaying a deviated physical part.

VALID VALUES

The value can be a standard supported string, an octal number, or a hexadecimal number. The standard strings supported are **black**, **white**, **lightGray**, **gray**, **darkGray**, **red**, **pink**, **orange**, **yellow**, **green**, **magenta**, **cyan**, and **blue**. An example of a hexadecimal number is #50b080, which represents **sea green**.

DEFAULT VALUES

yellow

DEFAULT PROTECTION SCOPE

Site preference.

MROExtraToDesignColorPref

DESCRIPTION

Specifies the color to use when displaying a physical part that is extra to design.

VALID VALUES

The value can be a standard supported string, an octal number, or a hexadecimal number. The standard strings supported are **black**, **white**, **lightGray**, **gray**, **darkGray**, **red**, **pink**, **orange**, **yellow**, **green**, **magenta**, **cyan**, and **blue**. An example of a hexadecimal number is #50b080, which represents **sea green**.

DEFAULT VALUES

orange

DEFAULT PROTECTION SCOPE

Site preference.

MROMissingColorPref

DESCRIPTION

Specifies the color to use when displaying a missing physical part.

VALID VALUES

The value can be a standard supported string, an octal number, or a hexadecimal number. The standard strings supported are **black**, **white**, **lightGray**, **gray**, **darkGray**, **red**, **pink**, **orange**, **yellow**, **green**, **magenta**, **cyan**, and **blue**. An example of a hexadecimal number is #50b080, which represents **sea green**.

DEFAULT VALUES

red

DEFAULT PROTECTION SCOPE

Site preference.

MROSubstituteColorPref

DESCRIPTION

Specifies the color to use when displaying a substitute physical part.

VALID VALUES

The value can be a standard supported string, an octal number, or a hexadecimal number. The standard strings supported are **black**, **white**, **lightGray**, **gray**, **darkGray**, **red**, **pink**, **orange**, **yellow**, **green**, **magenta**, **cyan**, and **blue**. An example of a hexadecimal number is #50b080, which represents **sea green**.

DEFAULT VALUES

blue

DEFAULT PROTECTION SCOPE

Site preference.

PartLogisticsForm.SUMMARYRENDERING

DESCRIPTION

Determines the registration of the summary style sheet for part logistics form objects.

VALID VALUES

Accepts a string as a value. Each string must be a valid style sheet dataset object name.

DEFAULT VALUES

PartLogisticsFormSummary

DEFAULT PROTECTION SCOPE

Site preference.

PartNumberCharsForPhysicalPartIdPref

DESCRIPTION

Specifies the number of characters to use from the part number when generating the physical part item ID. The physical part item ID is a combination of characters from part number, serial number, and manufacturing ID properties. The total number of characters for the physical part item ID should not exceed 128 characters. The first entry in the preference is the number of characters to use from the part number property for the physical part item ID. The second entry in the preference indicates whether to use the characters from the beginning of the part number (a value of 0) or from the end of the part number (a value of 1).

If this preference is not found, the last 40 characters of the part number are used.

VALID VALUES

Any positive integers.

DEFAULT VALUES

40
1

DEFAULT PROTECTION SCOPE

Site preference.

PhysicalContext_relation_primary

DESCRIPTION

Specifies the valid primary object types list for the physical context relation.

Note:

All `<relation_business_object>_relation_primary` preferences are obsolete and are replaced by relation properties. Use the Business Modeler IDE to create and manage relation properties.

For more information about relation properties, see *Configure your business data model in BMIDE*.

VALID VALUES

Accepts one or more strings as values. Each string must be a valid Teamcenter object.

DEFAULT VALUES

PhysicalPartRevision

DEFAULT PROTECTION SCOPE

Site preference.

PhysicalElement_Company_default_relation

DESCRIPTION

Defines the default relationship created when company object is pasted under a physical element class object.

VALID VALUES

Accepts one or more strings as a value. Each string must be a valid Teamcenter object.

DEFAULT VALUES

PhysicalElementOwner

DEFAULT PROTECTION SCOPE

Site preference.

PhysicalPart_Company_default_relation

DESCRIPTION

Defines the default relationship created when company object is pasted under a physical part.

VALID VALUES

Accepts one or more strings as a value. Each string must be a valid Teamcenter object.

DEFAULT VALUES

PhysicalPartManufacturer

DEFAULT PROTECTION SCOPE

Site preference.

PhysicalPart_DefaultChildProperties

DESCRIPTION

Defines the list of properties that can be displayed as children of a physical part.

VALID VALUES

Accepts one or more strings as a value. Each string must be a valid Teamcenter property name.

DEFAULT VALUES

AllowedDeviation
IMAN_master_form
bom_view_tags
revision_list
IMAN_requirement
IMAN_manifestation
IMAN_reference
IMAN_MEView
IMAN_vi_sos
IMAN_external_object_link
PhysicalElementOwner
PhysicalPartManufacturer
TC_WorkContext_Relation
TC_AuditLog
TC_sst_record

DEFAULT PROTECTION SCOPE

Site preference.

PhysicalPartRelationsToExport

DESCRIPTION

Defines the relations that are exported with a physical part when the physical part is secondary in the relation.

VALID VALUES

Accepts one or more strings as values. Each string must be a valid relation class name.

DEFAULT VALUES

Values are added by dependent templates.

The **asmaintained** template adds the following value:

AssetContains

DEFAULT PROTECTION SCOPE

Site preference.

PhysicalPart.SUMMARYRENDERING

DESCRIPTION

Determines the registration for the physical part object's summary style sheet.

VALID VALUES

Accepts a single string as a value, which must be a valid dataset name.

DEFAULT VALUES

PhysicalPartSummary

DEFAULT PROTECTION SCOPE

Site preference.

PhysicalPartRevision_DefaultChildProperties

DESCRIPTION

Determines the properties that can be used as children for the indicated type.

VALID VALUES

Accepts one or more strings as values. Each string must be a valid Teamcenter relation object.

DEFAULT VALUES

PhysicalContext
PhysicalRealization

DEFAULT PROTECTION SCOPE

Site preference.

PhysicalPartRevision.SUMMARYRENDERING

DESCRIPTION

Registers the physical part revision object's summary style sheet.

VALID VALUES

Accepts a single string as a value, which must be a valid dataset name.

DEFAULT VALUES

PhysicalPartRevisionSummary

DEFAULT PROTECTION SCOPE

Site preference.

PhysicalRealization_relation_primary

DESCRIPTION

Specifies the valid primary object types list for the physical realization relation.

Note:

All `<relation_business_object>_relation_primary` preferences are obsolete and are replaced by relation properties. Use the Business Modeler IDE to create and manage relation properties.

For more information about relation properties, see *Configure your business data model in BMIDE*.

VALID VALUES

Accepts one or more strings as values. Each string must be a valid Teamcenter object.

DEFAULT VALUES

`PhysicalPartRevision`

DEFAULT PROTECTION SCOPE

Site preference.

SerialNumberCharsForPhysicalPartIdPref

DESCRIPTION

Specifies the number of characters to use from the serial number when generating the physical part item ID. The physical part item ID is a combination of characters from part number, serial number, and manufacturing ID properties. The total number of characters for the physical part item ID should not exceed 128 characters. The first entry in the preference is the number of characters to use from the serial number property for the physical part item ID. The second entry in the preference indicates whether to use the characters from the beginning of the part number (a value of 0) or from the end of the serial number (a value of 1).

If this preference is not found, the last 40 characters of the serial number are used.

VALID VALUES

Any positive integers.

DEFAULT VALUES

40
1

DEFAULT PROTECTION SCOPE

Site preference.

SerialNumberGenerator_DefaultChildProperties

DESCRIPTION

Specifies the properties list that can be used as children for the indicated type.

VALID VALUES

Accepts one or more strings as values. Each string must be a valid Teamcenter relation object.

DEFAULT VALUES

designItemTag

DEFAULT PROTECTION SCOPE

Site preference.

SerialNumberGenerator.SUMMARYRENDERING

DESCRIPTION

Registers the serial number generator objects' summary style sheet.

VALID VALUES

Accepts a single string as a value, which must be a valid dataset name.

DEFAULT VALUES

SerialNumberGeneratorSummary

DEFAULT PROTECTION SCOPE

Site preference.

TransactionElement_Dataset_default_relation

DESCRIPTION

Specifies the default relation when a dataset is associated with a transaction element.

VALID VALUES

Accepts a single string as a value. It must be a valid Teamcenter relation business object.

DEFAULT VALUES

TC_Attaches

DEFAULT PROTECTION SCOPE

Site preference.

UtilizationViewColumnsShownPref

DESCRIPTION

Specifies the columns displayed in the **Utilization** view in left to right order.

VALID VALUES

Accepts one or more strings as values. The strings are property names from the utilization object.

DEFAULT VALUES

`util_characteristic_name`
`util_unit`
`util_time_since_new`
`util_last_value`
`util_last_recorded_date`

The **asmaintained** template adds the following value:

`util_time_on_parent`

The **serviceeventmanagement** template adds the following values:

`util_time_since_repair`
`util_time_since_overhaul`

DEFAULT PROTECTION SCOPE

Site preference.