Oracle Fusion Cloud SCM

Using Product Development

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Get Help

There are a number of ways to learn more about your product and interact with Oracle and other users.

Get Help in the Applications

Some application pages have help icons ⑦ to give you access to contextual help. If you don't see any help icons on your page, click your user image or name in the global header and select Show Help Icons. If the page has contextual help, help icons will appear.

Get Training

Increase your knowledge of Oracle Cloud by taking courses at *Oracle University*.

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Use *Cloud Customer Connect* to get information from industry experts at Oracle and in the partner community. You can join forums to connect with other customers, post questions, suggest *ideas* for product enhancements, and watch events.

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We welcome your feedback about Oracle Applications user assistance. If you need clarification, find an error, or just want to tell us what you found helpful, we'd like to hear from you.

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Thanks for helping us improve our user assistance!

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1 Develop Products

Overview of Product Development

Oracle Product Development tracks the early development phases of products that are going to be designed or built.

Product Development uses business objects named items, documents, manufacturer parts, change orders, and change requests to build development structures that describe the assembly or product to be manufactured, or the subassembly. Change orders are used to track changes on an item, document, their structure, or on a manufacturer part that's associated with an item, with a revision attachment, or with the attributes of an item or document.

Here are some business objects and features in Product Development:

- **Items and Documents** - Introduce new items or documents to the enterprise, and add information and data to them with easily defined attributes and characteristics;

- **Structures** - Gather items (with associated manufacturer parts) and documents into a structure (Bill of Materials or BOM);

- **Change Orders** - Manage change orders formally and centrally on items, documents, AML, structures, and attachments, and analyze the impact of each change;

- **Quality Issues and Actions** - Quality Actions and Quality Issues from the Quality Management work area can be carried and processed by change orders in Product Development;

- **Searches** - Find items, documents, manufacturer parts, manufacturers, and change orders with simple or advanced searches;

- **Lifecycle Phases and Item Grades** - Differentiate between items with revision-specific lifecycle phases, and with calculated item grades that help evaluate for production readiness;

- **AML** - Manage manufacturer parts with an Approved Manufacturers List (AML) that can be associated with any item or part;

- **Incorporate Pre-production Proposals** - Incorporate Concepts or Requirements from Oracle Innovation Management Cloud applications;

- **Connect to other Applications** - Connect items, documents, and change orders to Project Tasks; and,

- **Hand over to Manufacturing** - Hand over items, documents, and structures to manufacturing, and track them downstream to production and through to commercialization.

Related Topics
- How to Use Clipboard
- Use Tasks Panel to Manage Business Objects
- Items and Documents in Product Development
- Overview of Manufacturers
- Overview of Change Orders and Change Requests

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Overview of Innovation to Commercialization

Product Development's functionality can be broadened by Innovation Management and Product Hub applications. The enterprise can streamline its end-to-end business processes:

- **Innovation and Proposals**: Innovation Management applications;

- **Design and early Development**: Product Development;

- **Manufacturing to Commercialization**: Product Hub.

Innovation Management

Innovation Management is a suite of Supply Chain Management applications that promotes the abilities of the enterprise to build suitable products. Innovation Management includes three compatible applications:

- **Ideas** Workspace: supports and simplifies the innovation process to create, aggregate, and review **ideas** about potential products.

- **Concepts** Workspace: supports defining a product in its conceptual phase, building **requirements specifications**, **concepts**, and **proposals**.

Product Development to Commercialization

The enterprise brings matured concepts, proposals, and requirements specification forward to become products. A product is designed and developed in Product Development, then handed over to Product Hub to be manufactured and commercialized:

- **Product Development** supports item and document creation and enrichment, and building items and documents into structures. A structure is a list of assemblies - of items and manufacturer parts - or a list of documents, both including the design and prototype of the product.

   Using change orders to formally modify items, documents, and structures, the product evolves and moves through initial development stages to readiness for manufacturing.

   Product Development helps users manage Master Organization items and documents, while Product Hub helps users manage Site items.

- **Product Hub** takes the product through stages of manufacturing to commercial release, including multiple versions, packaging, and other downstream processes. Product Hub allows the detailing-out of commercial and operational attributes, and facilitates the management of part catalogs.

Integrations

Product Development integrates with Innovation Management to help streamline product innovation, design, and development processes, and with Oracle Project Portfolio Management to manage development projects.

You can also create integrations with your Computer-Aided Design (CAD) applications to enable items, bills of material and change orders to be managed in Product Development, while continuing to manage CAD designs and data in an on-premise CAD product data management application.

To support CAD integration, web services for Changes, Items and Structures are available. You can use these services to develop integrations between Product Development and Agile Engineering Collaboration, other on-premise CAD product data management applications, or cloud-based CAD applications.

Related Topics

- Overview of Product Development

2 Business Objects and Structures

Overview of Product Development Business Objects

You can manage the design and development of products by using the following building blocks:

- Items

- Documents

- Manufacturer parts and their manufacturers

- Structures

- Formulas

- Change orders and change requests

Items and Documents

You can create items in Product Development or Product Information Management work areas to represent the parts and assemblies of a product. A document is another type of item or part, representing description or specification of items. The specific attributes of each new business object describe the characteristics of the item or document and, taken together, the particular product. In this way, item and document business objects carry the necessary technical and engineering information of the product.

Manufacturer Parts and Manufacturers

A **manufacturer part** is an item produced by a manufacturer. A manufacturer part can be related to any item designed or produced by your company.

You can add the approved manufacturers list (AML) on an item's AML tab. You can also add AML on the **Structure** tab of the item. A document may not be associated with a manufacturer part. An item which is associated with a manufacturer part and belongs to a structure will have an icon next to it on the Structure table that indicates the association with a manufacturer part.

Manufacturer parts are identified with manufacturer part numbers. Oracle Product Development requires a **manufacturer** to be created before you may even create a manufacturer part produced by that manufacturer.

> **Note:** Item grade is calculated for items only, not for documents nor for manufacturer parts. However, the configuration of item grade may allow the AML situation to be considered in the calculation of the item grade.

Structures

A structure is used to define the hierarchy of components that make up an item. It includes all items and supporting documents required for an assembly or subassembly. Each structure specifies the components involved, their quantities, and their relationships to the parent item, ensuring correct representation of the product design and build process.

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Formulas

A formula is used to define how products are created from ingredients. This can be used in real-world manufacturing scenarios more accurately, including multiple outputs and ingredient-level control. They allow manufacturers to specify multiple outputs, including a primary product, and any co-products or by-products that result from the process. The Formula business object captures and maintains details of all products and ingredients defined in the formula.

Change Orders and Change Requests

Change orders and change requests enable you to manage the modifications to an item in your company's design and manufacturing processes.

When a change order is used to formalize the enrichment of an item (adding and modifying item attributes) or the construction of a structure, no further modification on any scale can be effected without an additional change order. Change orders, like items, can be initiated in the Product Development or Product Information Management work areas.

Related Topics

- Items and Documents in Product Development
- Overview of Manufacturers
- Overview of Structures
- What's the difference between an engineering change order and change request?
- Overview of Change Orders and Change Requests
- Overview of Formulas

Overview of Structures

In Oracle Product Development, a Bill of Materials is called a structure.

When you add an item to a parent item, you create a simple structure. As items are added, the structure is always named and referred to by its top-level item.

A structure holds all the items and documents that make up an assembly or subassembly. Items and documents might be in the same structure; there's no restriction on the maximum or minimum number of either type of business object.

Any item on a structure might be associated with one or more manufacturer parts. On the Structure table, an icon next to an item indicates the presence of manufacturer parts. So, a structure populated with items will likely comprise associated manufacturer parts.

A document structure holds all the documents that make up a meaningful document, such as a specification for a product. When you add a document to a parent document, a simple structure is created. A structure of documents will be named and referred to by its top-level document. A document structure might be only one document.

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3 Get Started

Information Tiles on Product Development Overview Page

The information tiles organize information about the business objects in Oracle Product Development. They help you find additional data on favorite items, change orders, and notifications approaching deadlines.

To expand an information tile, click the down arrow icon in the tile. You can then select from, and drill into the information in that tile.

My Favorite Items Information Tile

This information tile organizes items and structures that you've marked as a favorite.

The categories in the tile - **Released**, **Unreleased**, and **Obsolete** - can be similar or parallel with lifecycle phases that are used by your company. The administrator associates these categories with a lifecycle phase type used in your company. For example, your administrator can configure the design and the prototype lifecycle phases as unreleased. When you click each category, you see the items that are currently in the lifecycle phase associated with that category.

My Worklist Information Tile

This information tile filters and collects your notifications about tasks that you must act on. Click each category to see your notifications in that category. Or click the down arrow icon (View My Worklist) to see your entire worklist.

You can filter the notifications to view either pending or all notifications, and also perform actions on notifications. For example, you may be notified to review a change order, and you can approve or reject the change order from here. Actions that aren't available on a selected notification are disabled.

The calculations for the Worklist are based on the **Need-by Date** attribute.

- **Overdue Deadline**: The Need-by Date has already passed.
- **Approaching Deadline**: The Need-by Date is less than 2 days away.
- **Waiting for Review**: The Need-by Date is in 3 days or more, or not specified.

You can select the Pending option to see the changes that you must act on.

> **Note:** The commercial change orders display the approve, and reject buttons. The approval type column isn't populated for new item requests, and it doesn't have the approve or reject buttons.

My Changes Information Tile

This information tile compiles the number of change orders that you created.

- **Open** link shows all change orders in Draft or Open status;

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- **Pending Approval** link shows all change orders in Interim Approval or Approval status, which means changes are yet to be approved or rejected;

- **Approved** link shows all change orders that have been approved, and are therefore ready to be Scheduled or Completed.

To view change orders, click the View My Changes bar (or the down arrow icon). The My Changes page appears. You can use the My Changes page to perform the following:

- Create, edit, or delete change orders and change requests.

- Sort change orders based on date, number, and description.

- Filter change orders based on type, status, cycle time, date when the change was created, and so on.

Related Topics
- Lifecycle Phases in Product Development
- Overview of Change Orders and Change Requests
- Use Tasks Panel to Manage Business Objects

Search

Search for Business Objects

In the Product Development work area, you can search for the following business objects: items, documents, change orders, change requests, manufacturer parts, and manufacturers. You can also perform an advanced search using operators such as Starts with, Equals, or Contains.

Search for Multiple Items or Documents

You can search for multiple items in the same search operation. Before you use this feature, you must deploy extensible flexfields.

In the Advanced Search region of the Manage Items page, use the search operator **In** to search for a list of comma-separated item numbers.

You can copy and paste values from documents, spreadsheets, or reports into the search field. Comma-separated, tab-separated, or new line separated lists are supported, and the text box allows up to 1000 characters including commas.

Related Topics
- How to Use Clipboard
- Deploy Item Flexfields

Use Product Management Search

The Product Management Search page is used for many objects within Product Management.

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You can select the object that's being searched using the selector next to the page title. The search page automatically configures based on the selected object. Item, manufacturer, proposal and change types (change orders and change requests) are the objects that are searchable through this page. You can control the attributes used in search, filters, and how search will behave in the view.

To access the Product Management Search page, in the Product Management work area, click the **Search** tab at the bottom. The Product Management Search page is displayed.

The search page has two main areas:

- *Search Region*, where you specify the search query.

- *Search Results*, where the search results are displayed based on the query run in the Search region.

Search Region

You can enter all search queries in the **Search** text box. This text box combines user entered search data as a query. When you start typing in the **Search** text box, the search provides suggestions based on the data entered. Clicking on a suggestion performs the search.

Autocomplete and Suggestions

Autocomplete provides type-ahead suggestions similar to autosuggest. Autocomplete reduces the number of clicks. The suggestions are presented as you type within the **Search** text box. By default, a set of attributes for each object is configured for autocomplete and keyword search. For example, in item search, the item number and item description attributes are configured for autocomplete and keyword search to support cases where you search for an item number or search for an item using terms within the item description.

Note: Autocomplete and suggestions are enabled by default for Item Number and Item Description attributes.

Autocomplete can provide suggestions for up to the first 20 characters you've typed. If the autocomplete or autosuggest search option provides a suggested match that might not actually be what you're searching for and it's difficult to select a different value, you can disable the autocomplete or autosuggest search option by setting the **Disable Redwood Search AutoComplete** (ORA_EGP_RW_SEARCH_DISABLE_AUTOCOMPLETE) profile option to **Yes**. To enable this option, set it to **No**.

Suggested Filters

You can refine the search by selecting filters and values based on the data in the search results. The first five to seven suggested filters are displayed beneath the **Search** text box. The other suggested filters are available by clicking on the **Filters** action. These are displayed based on the display order in the view. Suggested filters can be enabled only for date and text attributes.

Note: You can't enable suggested filters for long text attributes.

To apply a suggested filter, click it to edit the suggested filter. Click the suggested filter the second time to display a set of values for the filter that you can select. Search and select a value and click anywhere on the page. The suggested filter is applied on the search results and the table refreshes to display the result based on the applied filter.

Note: The counts show how often a specific value occurs. The values are provided through aggregation of the data in the database for the attribute.

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The suggested filter might allow you to select another value, or sometimes you can select one or more values. For example, to search for items for manufacturers `Aero Tech` and `Tech Space`, you can select both and the search results are filtered based on your selection.

The following table provides the various suggested filters.

Filter Type	Filter Name	Description
Filters for Dates/Time	Rolling Period	This filter allows the user to select one or more periods when the view is configured. The periods include: • Previous hour • Previous 2 hours • Previous 24 hours • Previous 48 hours • Previous week • Previous 2 weeks • Previous month • Previous 2 months When the filter is applied in the search user interface, the user can select a period and the display value for the attribute is filtered based on the selection.
	Date Range Selector	This filter allows the user to define a range for date. The date range will be use to filter the display value for the attribute.
Filters for Numbers	Number Facet	This filter presents a set of operators that you can select to filter the display value for the attribute. Filter will display addition fields to support the operator. For example: if the user selects Between, the filter will display fields to enter the Minimum and Maximum values.
Filters for Attributes with List of Values	MultiSelectLOV	This filter displays the value choices bases on usage count and you can search for addition values.
	Checkbox	This filter display values and you can select one value using the checkbox.

The **Filters** action is available beneath the **Search** field at the end. Clicking this displays the **Filters** drawer, where you can select values for the suggested filter. You can apply the search criteria to multiple filters in the drawer and click **See Results** to run the search.

To remove the applied filters, click **Clear**.

> **Note:** Applying multiple suggested filters with specific values selected will be ANDed together as part of the search.

Keyword Search

When the index is created, each attribute is assigned an analyzer, which is used to create searchable content for the attributes. Part of this process is tokenizing the characters in the attributes. Tokens are searchable terms that are part of

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the index record for the object. The tokenizer will create a set of tokens by reviewing the characters and applying rules to separate the characters into tokens. For example, if the description contains: 'CAP, CERAMIC, SMD, 0402, 0.22UF, Y5V, 10V, +80/-20%', the resulting tokens would be 'CAP', 'CERAMIC', 'SMD', 'O402', '0.22UF', 'Y5V', '10V', '+80' and '-20'. Each token is searchable using keyword search.

By default, keyword search is enabled for primary attributes of the objects. For example, for items, keyword search is enabled for item number and item description.

Administrators can turn on the Keyword enable switch for the Item Description attribute for cases where they don't want a match on the Description field. If the Description attribute value is generated using extensible flexfields, the administrator can turn off the keyword search and use suggested filters to search for content within the Description.

All keyword searches use starts with in the searches.

Search Using Special Characters

Some characters in attribute values are considered special characters. Special characters are treated differently in the index ingest process and when searching. Special characters are categorized into two groups:

- **Operators**: These characters are used in search to provide specific operations. For the list operators, see *Search Using Operators*.

- **Separators**: These characters are used to break up a value into searchable terms. For example, in the item number CAP-PRODA-A1, the - hyphen is a separator special character, which the index ingest analyzer uses to break up the item number to searchable terms such as CAP, PRODA, and A1. Other separator characters are space, and coma (,).

The underscore (_)character isn't a separator or an operator. It's considered as any other character in an attribute value. For example, if the item number is 1234-Alpha_LITEON and you enter LITEON, the search fails because the searchable term is Alpha_LITEON.

Search Using Operators

You can use the following operators within the search criteria to perform a keyword search. Operators are enabled by using the Simple Query String Search (ORA_EGP_SIMPLE_QUERY_STRING_SEARCH) profile option. You can set the value to **Yes** to enable operators.

Operator	Description
+	AND operator.
| or space	OR operator. Space character is considered OR operator.
*	When used at the end of a term, signifies a prefix query.
"	Search for a group of terms as a phrase. For example, "220 Micro Farads".
(,)	Wrap a clause for precedence (for example, wind + (capacitor| cap)).
~n	When used after a term (for example, wnid~3), sets fuzziness. When used after a phrase, sets slop.

Search Content Within Item Descriptions Using Phrase Search

You can use double quotes surrounding a group of search terms to find a match closest to the term and to find one or more terms in a specific order. Use phrase search on item numbers to increase the matches when the item number includes special characters such as hyphen.

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For example, if the item description is:

Item Number: CAP-0041 Description: CAP .22 Micro Farads 10mmdx17mml 105s mp LOW Axial y5v 0.05 Ohms 10 Year 100 Celsius -35 Celsius .0017 Amperes 8 % 5 Volt

You can search for "330 Micro Farads", or any other combinations of the terms in the order they appear. When you enter "330 Micro Farads" as the search criteria, the result returns all items that have this phrase. The following screenshot shows multiple items are found that has the phrase *330 Micro Farads* and *Capacitors_DQ_MM_1* is one of the items in the search results.

Search Using Query
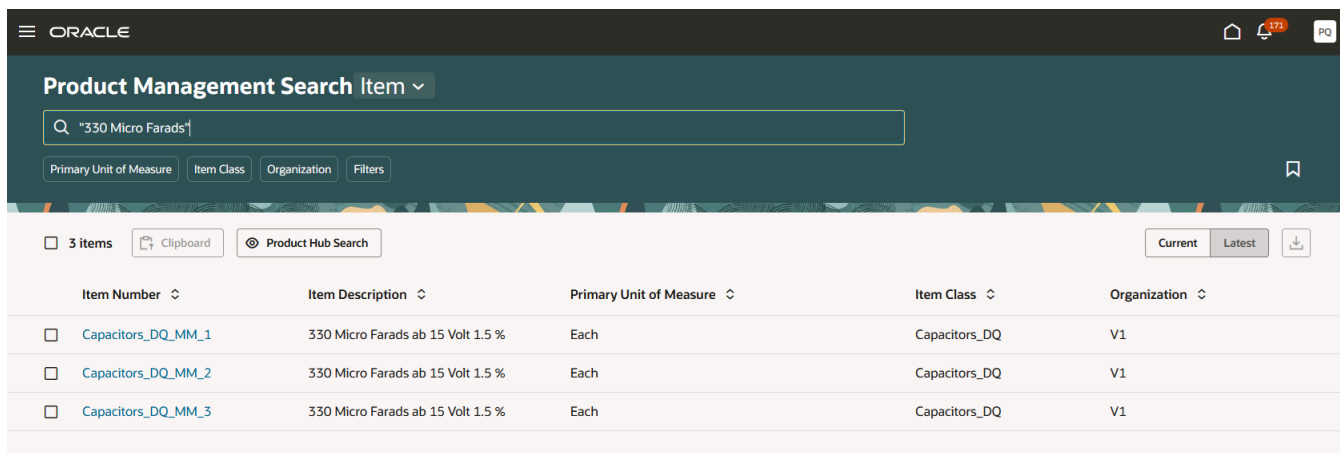
When you don't know the part number, you can use a combination of operators, phrase search, and suggested filters to form a query. For example, the Design Engineer needs a capacitor in the micro farads range and can use 15 volts. The Design Engineer knows that there are one or more item classes for capacitor and uses the Item Class suggested filter to select one of the item classes. Next the Design Engineer enters the following query in the search box:

Cap + "Micro Farads" + "15 Volt"

where:

- Cap is the keyword to do a keyword search for all part numbers starting with Cap
- + is the AND operator
- "Micro Farads" is in phrase search format
- + is the AND operator
- "15 Volt" is in phrase search format

The result of the query returns three parts. Next, the Design Engineer can add additional attributes using the View Selector to refine the part to use.

You can use the operators to construct complex queries by combining them with terms in the **Search** box. The formulated query can also be used with suggested filters. As example, you can select a filter value for an item class such as 'Capacitors' and combine it with terms such as 'Axial', the AND operator '+', and the term 'Micro' to search for all items within the Capacitor item class that use the Axial mounting and are in the Micro Farads capacitor value range.

Use multiple search terms with operators and suggested filters together to form a query.

Expert users can use additional operators to form complex queries.

Search Using Prefix Search

Attributes such as a part number might often use a prefix term as part of the value. The prefix term maybe followed by additional terms often separated by special characters. For example, part number SC-MAKE-IT1 is a base part and the part numbers SC-MAKE-IT1-Body represents the body of the part. You can use the prefix search to find all the part numbers with the prefix SC-MAKE_IT1 by adding a '*' asterisk.

Assume you've a set of part numbers: SC-MAKE-IT1, SC-MAKE-IT1-Body, SC-MAKE-IT1-TOP, SC-MAKE-IT1-CAP, SC-MAKE-IT1-FRAME, and SC-MAKE-IT1-BASE

You can search using SC-MAKE-IT1* to find all part numbers with prefix SC-MAKE-IT1.

Search Using Match Item Number

You can search for the exact item number or multiple item numbers (entered separated by space characters) using the **Match Item Number** filter option. This filter option is always displayed as the first filter under the **Search** field. This filter reduces multiple interactions of search and filters to find an item by matching the complete item number. It returns only the item numbers you enter.

After you enter the item number that you want to search and click the **Match Item Number** filter, the new query engine performs the search based on the Item Number attribute and ignores other attributes that have been enabled for keyword search. The query engine matches the complete item number that's part of the index data.

Item numbers that have special characters including embedded spaces, asterisks (*), or double quotes (") must be wrapped in doubled quotes ("). For example, to search for an item number called Spark Plug, you must enter "Spark Plug" in the **Search** field because it has space as the special character between two words.

You can use other filter options with the Match Item Number search to narrow your search results. For example, if you query items and you use child organizations, a search for an item number will return a row for each organization that contains the item. You can use the **Organization** filter to filter the results based on the master organization.

If item numbers use prefix or set of characters at the beginning to indicate a type of item, the prefix search can be used to search all items that have that prefix. For example, if item number is 152-1234, then 152 is a prefix to indicate that the item is a server. You can use prefix search to search for all item numbers that start with the prefix 152 by adding an asterisk to the end of the string.

Here's a list of operators that you can use with the Match Item Number filter.

Operator	Description
Space	Acts as a separator when searching for multiple item numbers.
Asterisk (*)	When used at the end of search term, signifies a prefix query.
Double quotes (")	Wraps the item number with special characters.

Note: The Match Item Number filter is a permanent filter and can't be removed. This filter won't appear in the **View**.

Search for Proposal Using Proposal Number

You can search for a specific proposal using the **Match Proposal Number** filter on the Product Management Search page.

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Search for a Workflow Using Workflow Number

You can search for a specific workflow using the **Match Workflow Number** filter on the Product Management Search page.

Apply Operators on Filter Options

You can apply operators on filters used for attributes with list of values. This helps to quickly narrow down search results by using the operators on attributes that use list of values. To use the filter, you first select the operator, the filter will redraw and provide addition selections based on the operator.

Here's the list of operators for the filters.

Operator	Description
Is one of	Display rows that contain one or more values when filtering.
Is not one of	Exclude rows with one of more values when filtering.
Is blank	Display rows with the attribute value as blank.
Is not blank	Display rows with an existing attribute value.

Example Use Cases:

- **Is one of**: Show all rows where the Currency attribute value is USD.
- **Is not one of**: Show all rows where the Lifecycle attribute value isn't Design or Prototype to find rows that are released for commercialization.
- **Is blank**: Show all rows where the Temperature Characteristic attribute value is null, that's, filter search for attribute values that aren't populated.
- **Is not blank**: Show all rows where the Product Type attribute has a value.

Search and Filter Multirow Data

You can use filters to refine searches for attributes that have one or more values such as item category assignments or item relationships for items. These attributes are often child objects of the main object. The value selected in the filter returns only those rows with the value. For example, if you select the **Is one of Miscellaneous_1** value for the **Category Name** filter, the result displays the items with this value for the category name.

Related Topics
- Search Results

Search Results

The search results are displayed in the search results region. A table within the search results will display the results as rows. The number of rows isn't limited. The table columns and their order depend on the selected view. The Product Management Search page is optimized to display more rows in the search results, and you can easily scroll down through the results. The count shows the number of rows in the search and is dynamically updated without slowing the search.

- *View Data Presence Indicators*
- *Additional Features*

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- *Search Query Example*

View Data Presence Indicators

The presence indicator indicates that the objects in the row on the search page have additional content.

For example, the **Has Structures** presence indicator displays a structure icon in the column to indicate that the item in this row has a primary structure and you can view the (component) details. Other data presence indicators for components appear only if your administrator has configured them for the selected view. You can add the presence indicators to filters and as columns in the search results. Also, see the related links topic.

The supported presence indicators are:

- Is used in structures
- Has structures
- Has attachments
- Has Product Development Relationships
- Has AML
- Has quality issues
- Has pending changes
- Has GTIN relationship
- Has customer item relationships
- Has category assignments
- Has cross-reference relationships
- Has competitor item relationships
- Has supplier item relationships
- Has source system relationships
- Has related item relationships
- Has supplier associations

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Note:

- Data presence indicators are accessible for structures and AMLs on both child and reference organization items, attachments, quality issues, and quality actions on reference organization items.

- To address performance problems related to data presence indicators for reference organization AMLs, create the profile option EGP_SKIP_DPI_PROPAGATION and set its value to Y. This will stop the application from generating data presence indicators for reference organization items. To update the data presence indicators on the existing reference organization items, run the Add Data Presence Indicator to Index scheduled process.

- To update the correct data presence indicator values, run the Upgrade Product Management Data scheduled process with the following parameters:

    ◦ **Upgrade Process**: Execution

    ◦ **Functional Area**: Item Child Entity Presence Indicator

    ◦ **Feature**: All

    You must wait till the scheduled process completed successfully and then submit the index rebuild job.

- Clicking the presence indicator icon in the workflow search results takes you to the **Affected Objects** tab, only if you have permission to access any of the affected items within the workflow.

Notes on the drawer view:

- On the **Attachments** tab, you must select only a single row to download the attachment.

- The **Pending Changes** tab display change orders and change requests that are pending; it doesn't include released changes.

- The **Product Development Relationships** tab will display the relationships you added through the Product Development work area. When you click the concept component or the requirement specification that's been added as a related object, the parent concept or requirement is opened.

- The **Quality** drawer only displays the open quality objects.

Controlling Drill Down to Other Pages

You can control the behavior of drill down when using the link for the object number in the search results or the **Has Structures** presence indicator through a profile option. The Drill Down in Place (ORA_EGP_PAGE_LAUNCH_CTRL) profile option controls if the Structure page will be launched in new browser tab or launched in same browser tab as the Product Management Search page. The default value is to launch the new page as a drill down in the same browser tab. Use the **Manage Advanced Item Profile Options** task to update the value of the profile.

Controlling Display of Attributes with One to Many Values

You can control the display of attributes that have one to many values such as item category assignments, relationship, or multirow attributes. The Display Data in Redwood Search as One to Many Format (ORA_EGP_RW_SEARCH_ONE_TO_MANY_SPLIT_ROW) profile option controls if the attribute value is displayed by

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showing the one to many values in the same row in the search result table when the value is **Yes**. If the value is **No**, the one to many display shows each value on different rows.

Related Topics
- Display Data Presence Indicator in Search Results

Using Views in Product Management Search

In Product Management Search, views are grouped into two types—system views and personal views. System views are predefined and available in the application by default.

Only administrators can create and modify the system views. All other users can access the system views but can't edit them. Users can create personal views by copying a system view and modifying the columns to suit their requirements. Personal views are associated with only the user who created them. When the user logs in again, they can access the personal views they've created. You can also identify important columns and choose the order in which you want to view these columns for a specific task.

In the Product Management work area, when you click the **Search** tab at the bottom, the Product Management Search page displays based on the default system view. If you've set a personal view as default, then the Product Management Search page will initially display the default view. You can control the display of columns in your personal view. The personal view will maintain the same view settings as the system view from which it was created.

The following screenshot shows the view name that's currently being used.
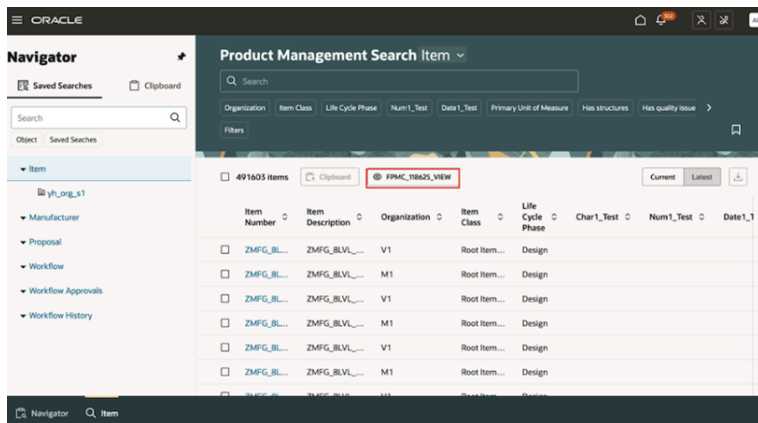
Only the person who created the personal view can use the view. When necessary, the administrator can edit the personal view on the Configure View page. On this page, the administrator can create system views that the business users can use to create their personal views.

Create Personal Views

To create a personal view:

1. Click the current system view name.

   A view selector appears that displays all the enabled system views and the current view name is highlighted.

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2. To create a personal view based on another system view, you must first click the required system view name to make it the current view.

   The Product Management Search page changes to display the column names based on the selected system view. Click the view name and then click the [icon] **Duplicate** icon for the highlighted the view name.

   The Columns drawer slides open on the right side and displays all the attributes (column names) that are configured in the current view.

3. You can show or hide the columns by selecting or clearing the checkboxes, and you can change the order of the columns using the [icon] icon. After you've completed the changes, click **Save As**.

   The Columns drawer displays, where you can specify the details for the personal view.

4. Enter a name for the new personal view. Also, you can select the **Mark as default** checkbox to set the personal view as the default view. Click **Save and Apply** to save the view as a personal view.

Edit Personal Views

To edit a personal view, go to the view selector and click the [icon] **Edit** icon next to the view name. The Columns drawer appears. You can show or hide columns by selecting or clearing the checkboxes and change the order of the columns using the [icon] icon. After you've completed the changes, click **Save**.

Saving Column Spacing

If you change the column spacing in the search results, resave your personal view to save the changes. You can also manage the column spacing on the Configure View page.

Additional Features

The following additional features are available on the Product Management Search page:

- **View selection**: Select another view to change the attributes in the search and the search configuration. You can use the search in the View Selector to find a view by typing the name of the view. All views are created on the View Management page.

- **Clipboard**: Select one or more rows and click **Clipboard** to add them to the clipboard. The items will be available in the application's clipboard and can be added to pages in the work areas. The clipboard is now persisted. This allows to use the fast search on the pages.

  You can add items, manufacturers, and workflows to the clipboard only if you've the required view or manage permissions using the access control list. The tabs available for navigation are based on the view or manage permissions granted to you for the selected workflow, item, or manufacturer.

  To open a specific tab of a workflow in the Clipboard or Recently Visited panel, select the tab from the drop-down list.

- **Hyperlink on the name**: Click this link to view the details.

- **Sort**: Click the small arrows in each column to sort the results in ascending or descending order.

- **Revision selector**: Control the revision for which the search results are displayed. The item index contains current revision and future revision content. You can choose to display either the current or latest content for the item:
  - **Current**: Current effective revision, effective date of the revision is before the current date (system date).
  - **Latest**: Latest revision, if the effective date of the revision is greater than the effective date of the currently effective revision.

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When you switch between **Current** or **Latest** options, the search information you had entered in the **Search** field is removed along with the filters.

- **Export**: Select up to 10,000 rows in the search results and export them to an Excel sheet.

- **Adjust Column Widths**: You can adjust and save column widths for both system and personal views. All users can access system views while personal views are only accessible to the user who has created it and the administrator. Previously, if column width changes were made within a view, you had to redo the same changes when re-accessing the view. From this update onward, the column widths are persisted as part of the saved view for the personal saved search. To change the column width:

  a. Hover on the line between the two column headers. The cursor changes to .

  b. Click and drag the cursor either to the left or the right to adjust the column width.

  c. To save the changes made to the column widths, click the View name, then click the **Edit** icon next to the view name.

     The Columns drawer is displayed on the right side.

  d. Click **Save** to save the column width dimension changes you made on the Product Management Search page.

- **Find Keyword Enabled Attributes When Editing Columns**: You can find a column attribute using the search in the Manage columns drawer. Attributes that are enabled for Keyword Search are displayed with the icon.

- **Filters**: Click **Filters** beneath the **Search** text box to open the Filters drawer, where you can specify the filter value.

- **Clear**: Click **Clear** beneath the **Search** text box to remove the applied filters.

Search Query Example

Here's an example that shows how to perform a search using the Search box with filters.

1. On the Product Management Search page, select **Item** using the arrow next to the page title.
2. In the **Search** text box, type **Capacitor**. As you type this word, suggestions are displayed and the suggested text for autocomplete also appears in grey color. From the displayed suggestions, select **XC1103**.

   The search results are automatically refreshed to display capacitors with the item number XC1103.
3. Click the **Primary Unit of Measure** suggested filter beneath the **Search** text box and select the value **Each**. Click anywhere on the page.

   The selected filter is applied and the search results are refreshed to display XC1103 items with primary UOM as Each.

Search for Workflows, Approvals, and History

You can use the Product Management Search interface to configure and run a search for workflows, workflow approvals and workflow history.

To navigate to the search page, in the Product Management work area, click the **Search** tab at the bottom. On the Product Management Search page, you can select one of the following:

- Workflow
- Workflow Approvals
- Workflow History

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Search for Workflow

Workflow search can be used to configure and run a search for change orders, change requests, problem reports, and corrective actions. You can combine multiple keyword searches along with applied filters to complete the search. For example, you can search for:

- all changes created within a date range.

- all high priority changes in open status assigned to you.

- all changes based on Customer, Supplier, Manufacturer, and Source information.

- data presence indicators for tasks, attachments, and relationships.

- all changes of type New Product Introduction (NPI), and change extensible flexfields of product lines.

Search for Workflow Approvals

You can search for workflow approvals that need your attention by searching for both users and roles with participant types of Approver, Optional Approver, or Reviewer. This is supported for change orders, change requests, problem reports, and corrective actions in open, interim approval and approval workflow status types.

When you've a role as a participant and **Response Required From is One**, use this combination of filter chips to aid your search:
If the approval task hasn't been claimed by any member of the role:

Participants	Participant Role	Activity Type
Role Name	Role Name	Approval

If the approval task has been claimed by one member of the role:

Participants	Participant Role	Activity Type
User (person who has claimed it)	Role Name	Approval

Here are the example use cases for Workflow Approvals search by user role:

- Change and Quality Analyst:
  - Workflows pending approvals from a user or roles
  - High priority workflows pending approval
  - Overdue pending approvals

- Approver or Reviewer:
  - My pending approvals
  - Workflows that need my review

- Manager:
    - Workflows pending approvals from my group
    - High priority workflows pending approval from my group
    - Overdue pending approvals from my group

Participant Elapsed Time in Workflow Approval Search Results

The **Participant Elapsed Time** attribute in workflow approval search results represents the number of days a workflow has been awaiting approval from participants. The elapsed time is measured in days for each participant and reflects the **smaller value** of the following two durations:

- The time since the change most recently entered the workflow status.
- The time since the user was last added as a participant in that workflow status.

The elapsed timer starts when a participant becomes an approver—either when the change first enters the signoff status or when the participant is added as an approver to the signoff status.

The timer increases by one day at a time and pauses in either of the following conditions:

- The approver signs off the change for that status.
- The change exits that workflow status.

If the change enters a specific signoff status multiple times, a separate elapsed duration is recorded for each occurrence.

Search for Workflow History

You can search across change types to find all affected object redlines and updates made to the change header, workflow status, and other workflow entities.

For example:

- To find all workflow edits made by a specific user, Riley Smith, between June 23, 2024, and July 2, 2024, you can filter the search results based on workflow type, author, and date.
- To find all workflow history for a specific affected object, enter the affected object name in the search box.

Tips for Search

When you search for workflows, workflow approvals, or workflow history, you can:

- Select any configured view.
- Based on the configuration of the selected view, you can:
    - search by keywords.
    - apply one or more filters on the search results.
- Show or hide columns in the search results.
- Use the sort function to sort any column.
- Export the selected list of workflows, workflow approvals, or workflow history.
- You can apply filters or remove filters from filter drawer.

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The Workflow Type (on the Product Management Search page) will be filtered to certain change types depending on the work area from where you launch the search; however, you can override the filter to display all change types.

Work Area	Change Types Filtered To
Product Development	Engineering change order, change orders without revision control, engineering change request, design change request
Product Information Management	Commercialization change order
Quality Management	Problem report, corrective and preventive action

Note:

- When you select the object, it will be opened in its respective work area, regardless of the work area from which you've launched the search.

- You can search for multiple changes by entering change numbers separated by space. For example: NPI123 ECO124 ECR156.

Product Lifecycle Management Navigator

You can use the Product Lifecycle Management Navigator to access your saved searches across Product Lifecycle Management objects and add, pin, and copy items, manufacturers, or workflows to and from your clipboard.

With the saved searches for each object, you can quickly navigate to the records you want without re-entering the search criteria. Also, you can refine your search further or create a new saved search.

Tagging lets you organize saved searches and clipboard items for a specific purpose. By assigning tags to relevant objects, you can effortlessly recall these collections when conducting searches, streamlining access to valuable information. You can search for tagged objects using the **Tag** filter and select a tag group.

You can also navigate to a specific detail tab from the clipboard.

To access the Navigator, on the News Feed page, click the **Product Management** icon or click **Product Management Overview** in **Quick Actions**. The Product Management landing page is displayed. Click the **Navigator** tab at the bottom to view the Navigator.

You can pin the Navigator so that it persists in the left-hand panel. When you unpin, it automatically closes. Click the **Navigator** tab to access it again.

Access Saved Searches

In the Navigator's **Saved Searches** tab, you can:

- Easily find and select personal saved searches across objects using the **Filters** option. Filters limit searching saved search based on:
  - Pinned items
  - Object type

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- Tag used for an object

- Run saved searches by clicking the link for the object.

- Use the search to search for saved searches by name

- Use the **Tag** icon and tag the saved search into one of the existing tag groups. You can also create a new tag. When you click the **Tag** icon, a blank field appears. Type the tag name and press **Enter** to create the tag. When you hover or click the **Tag** icon for an object, the associated tag name is displayed.

Note: When you use a saved search in the Navigator, the saved search persist the view with the saved search. If you use the **Saved Searches** icon to select a saved search, the view isn't persisted with the saved search. If the current view doesn't contain attributes for the filters in the saved search, the filters won't be displayed or applied, and can result in a different search results.

Access Clipboard

With the Product Lifecycle Management Navigator **Clipboard** tab, you can:

- Add items, manufacturers, or workflows you want to save and access at a later time. You can select the item, manufacturer, or workflow and launch the detail page.

- Items added to the clipboard will be available in the clipboard in the Product Development and Product Hub work areas.

- Pin clipboard items so that they appear at the top (beginning) of the clipboard for quicker access.

- Use the filters to limit searching clipboard items by:
    - Pinned or not pinned objects
    - Object

- Pinned items are always displayed at the top (beginning) of the clipboard and have their checkboxes selected, followed by objects most recently copied to the clipboard

- Click the **Tag** icon for an object to view the tagged groups.

Related Topics
- Search Region

Reports and Analytics

You can use **Reports and Analytics** in the panel drawer to create reports and analytics about business objects.

Quickly view or run analytics and reports that are related to your work in the Reports and Analytics pane. With the required privileges, you can also create and edit analytics and reports here.

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Use the Item Audit Trail

An audit report is the history of an item, a listing of all actions or modifications that have been made on the item.

Because the audit trail could show a complete history across all items, it's necessary to filter first for the data you need. Your search for items or documents can be restricted by Date, User, Product, Event Type, Business Object Type, and Description.

To use the audit trail, do the following:

1. Use Navigator to go to the Product Management work area. From the list of offerings, click **Product Development**.
2. From the **Tasks** panel tab, click **View Item Audit Trail**.
3. On the **Audit Reports** page, enter the search criteria, including Date, User, and product information, Event Type, Business Object Type, and Description. Also select whether you want to include child objects.
4. Click the **Search** button.

   Review the history in the search results page. To export the search results to a spreadsheet, click the **Export** icon.

Audit Report on Change Orders

To create an audit report on a change order, open a change order, select Actions > Audit and select a status. Then open the Audit Results side tab and check the results.

The report checks for consistency in the item structure, when the change order holding the structure is moving to the Approval status. These consistency checks ensure that child items are in the same or higher lifecycle phase as the parent item; and an Approved parent item doesn't refer to a child item that's still in Draft.

The audit results either show a "no error or warning" message, or show a list of errors and warnings.

How to Use Clipboard

You can copy items and documents to the clipboard and paste them on to other items and documents or affected objects of a change order.

Clipboard

Copy items and documents from the Favorites and Recent Items tabs available on the clipboard to speed up your work. Use the clipboard icon that appears on the Affected Objects tab and Relationships tab to copy items to the clipboard.

The clipboard contains:

- **Clipboard**: a cumulative list of multiple copied items. The most recently copied item appears at the beginning (top) of the list. The contents of the clipboard are now retained when you sign out of the application and sign back in.

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- **Favorites**: a list of items that have been specified as favorites by clicking the Add to Favorites (star) icon in the item header. Click the Refresh icon to display recently added favorites; the most recently added one appears at the start (top) of the list.

- **Recent Items**: a list of items that you've visited. Click the Refresh icon to display recently visited items. The most recently visited item appears at the beginning (top) of the list.

> **Note:** The use of the clipboard is subject to security controls. If you've privileges only to search for and view items, then you can copy and paste the items but not edit them. If you don't have privileges to search for and view items, then you can't copy the items, and they don't appear on the clipboard.

You can quickly create a structure by using an item on the clipboard. Here's how the **Copy** and **Paste** actions work with the clipboard:

- In the source structure, select items or documents and use the Copy icon, or Actions > Copy. The items appear on the clipboard.

- Open the destination structure and click Clipboard on the side panel.

- Review the item (or structure) you want to copy.

- Select the items and drag (move) or use the Paste icon or Actions > Paste.

The following notes about clipboard are applicable to change orders, change requests, problem reports, and corrective actions:

- The clipboard retains its content when you sign out of the application and sign back in.

- The clipboard can hold up to 500 items and you can sort the items by the date you added them, from latest to oldest.

- Select one or multiple items from the clipboard and use the drag and drop (select and move) or paste icon to add them to the Affected Objects tab, Item Structure tab, or Relationships tab.

- The selections you make on the clipboard are deselected when you:
    - add more items to the clipboard.
    - sign out and sign back in.

Points to Remember:

- Note that you must first copy the items to the clipboard, select them from the clipboard, and paste them to the Affected Objects tab or Item Structure tab.

- When you copy the items from the search results table to the clipboard, the items in the clipboard are deselected.

- When you select items on the clipboard and move either to the Favorites or Recent Items tabs and return to the clipboard, the selection persists.

The contents of the clipboard aren't cleared out when you sign out. To remove items from the clipboard, you can select a single item or several items and click **Remove** (the X icon). Click **Clear All** to clear the clipboard.

Pages Where You Can Copy and Paste Items

Here are the pages from which you can copy items and structures:

- Change Order > Impact analysis

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- Item > Item grade
- Item > Where Used

Here are the pages on which you can paste items with the clipboard function:

- Item > Structure table
- Document > Structure table
- Change Order > Affected Object > Structure table
- Change Order > Affected Object table

Copy Items from Product Development to Quality Management

Once you copy items into the clipboard in the Product Development work area, they also appear on the clipboard in the Quality Management work area. So you can copy items and paste them directly into the tables of Affected Objects or Related Objects in:

- Quality issues
- Quality actions

Use the Clipboard to Paste Items into a Change Order

You can use the clipboard to copy and paste items to a change order's affected objects table.

1. Navigate to the Product Development work area.
2. Open an item and click the **Structure** tab.
3. Select the row that you want to copy. Since you can no longer copy and paste directly from the source location to the target location, you must first copy the items to the clipboard.
4. Create a change order in which you want to paste the item.

    o From the Tasks panel drawer, click **Create Change Orders**.

    o From the **Change Type** list, select the type of change order.

    o In the **Name** field, enter a name for the change order.

    o In the **Description** field, enter a brief description.

    o Click **Save**.

5. Paste the item into the change order.

    o In the change order, click the **Affected Objects** side tab.

    o Select the item from the clipboard and click the **Paste** icon to paste the item you copied.

Similarly, **Copy** icons in the Change-Impact Analysis and the Item-Grade tabs, enable you to select and copy multiple items into the clipboard. The **Copy** icon in the Item-Where Used tab lets you copy only a single row. Selecting a row or multiple rows activates the icon and a description of the item appears when you hover over it in the clipboard.

Related Topics
- Watch Video: Use the Clipboard

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Use Tasks Panel to Manage Business Objects

You can use the Tasks side tab to create and manage business objects even when you're performing another task on the interface.

Let's say that you're building a structure and you realize that your structure needs an item that doesn't exist. Then you use tasks side tab to create a new item and add that to the structure. You can add information to any object as you create it; or, you can save it in simple form and add more data later.

Related Topics
- View Item and Document Details
- Overview of Change Orders and Change Requests

Use Reports and Analytics

To create reports and analytics about business objects, click the Reports and Analytics panel tab.

If you have permissions, you can create and edit analytics and reports. You can also add reports and analytics from the Business Intelligence catalog.

To navigate to the Reports and Analytics work area, click **Navigator** > **Tools** > **Reports and Analytics**.

Use the work area to perform an analysis. For example, in a table or graph you can use analyses to:

- Summarize or break down simple, real-time data.
- Make short-term decisions.

Related Topics
- Creating and Administering Analytics and Reports for SCM

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4 Items and Documents

Items and Documents in Product Development

Items and documents have many features in common. Both types of business objects are derived from the same original class type. From the primary Root Item Class, the administrator may create a Root Document Class.

Additional class types may be created based on the root classes. Different class types allow different kinds of items and documents. Items created from the same item class inherit the same template of attributes. Documents created from the same document class inherit the same template of attributes.

The document business object behaves in much the same way as the item business object. A document that contains information or specification about an item or assembly can be added to an item structure. Or, a document structure could be built with documents that contain item requirements or specifications in parallel with every item of an item structure.

The differences between items and documents are:

- Documents can't be associated with manufacturer parts;
- Documents don't use the item grade function and attributes.

Related Topics
- View Item and Document Details
- Overview of New Item Requests

View Item and Document Details

An item's General Information side tab is the starting point to access its basic information. Depending on configuration and company needs, the attributes of an item might number a dozen or go well beyond a hundred.

Here are the side tabs available on items and documents:

Note:
- A blue icon indicating the presence of content appears on the side tab. Additionally, when you hover on the tab, the tooltip displays Has Content.
- Blue icons aren't displayed for those tabs that always have content, or have content calculated upon selecting the tab: General Information, History, and Item Grade.

- **General Information** - the default or cover page of an item or document.

  You can view an item's revision number and the corresponding change order from the **Revision** list on any item page. The current effective revision is marked with an asterisk (*) character.

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> **Note:**
> - ○ Canceled item and document revisions don't appear in the **Revision** list.
> - ○ Previously effective revisions of the item can't be edited.

- **Attachments** - text or graphic files, or URL, with more information about the item or document; attachments can be classified in a category. Includes revision-specific content.

- **Structure** - the Bill of Materials for assemblies, products, and other collections of items and documents. Includes revision-specific content.

- **Quality** - displays those quality issues or quality actions to which this item or document has been added. Includes revision-specific content.

- **Changes** - lists change orders or change requests that the item or document is on.

- **Relationships** - user-set association between any two business objects or structures. Includes revision-specific content.

- **Team** - users and groups who have access to the item or document.

- **Where Used** - displays those item-structures to which this item is added.

- **History** – shows data changes made to audit-enabled item attributes.

Here are the side tabs that are only available on items:

- **AML** - Approved Manufacturers List; manufacturer parts supplied by approved manufacturers are associated with items to be added to structures. Includes revision-specific content.

- **Item Grade** - notifies conditions of risk for the item.

General Information

You can view the fields that are predefined in the application, and the extensible flexfields configured by your administrator. The administrator can decide whether you can view or edit flexfields by assigning privileges to attribute groups and users. The flexfields are defined in the item classification; so, available fields are derived from the item class hierarchy and respective attribute assignments.

You can also add a thumbnail or graphical image of the item.

Here's a description of the key attributes and fields on the general information page:

User Item Type

An attribute that describes the item. For instance, Finished Goods, Freight, or Inventory Type.

> **Note:**
> - Redlines to this attribute are seen on the Edit Item page and on the change order in Simplified Change Management Interface.
> - If you create an item in Product Development, you can't modify User Item Type from Product Information Management.
> - To hide User Item Type in Product Development, use Page Composer.

Unit of Measure

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The Unit of measure attribute is used by various functions and transactions to express the quantity of items. Each unit of measure you define must belong to a unit of measure class.

The administrator uses the Manage Units of Measure task in the Setup and Maintenance work area to add UOMs to the list of available UOMs.

You can update the primary unit of measure on a new item request-enabled item when it's in the Draft status. The item can be a part of a structure and you can change the UOM to any UOM. If the item is part of a structure or has a structure, once you change the UOM, save and close the item, a message informs you that the primary UOM was changed for the item and that this may affect the components in the item structure or any structure where the item is used. After you update the UOM, you must check and manually update items in any impacted structures.

> **Note:** The primary unit of measure won't be editable for approved items on new item request classes and non-new item request classes.

Created From

You can view the **Created From** attribute on the General Information page where you can see the source item from which the current item was copied. You can click the source item name to view details and navigate to the source item. You can also view the details of the **Created From** attribute in the item history. Here, if the source item is deleted, you see an ID as the attribute value instead of the item name.

In the Product Development work area:

- the **Created From** attribute displays the source item name along with the revision.

- when you click the hyperlink, it opens the specific revision of the source item from which the current item was created.

Irrespective of having access to the item, the hyperlink appears in the Created From field. If you don't have access to the source item, an error message appears when you click the hyperlink. If the source item is deleted, a message informs you that no matches were found. If the item wasn't created using Save As, the attribute value for **Created From** is blank.

Product Line Attribute

You can use this attribute to assign the item to a product line in your company. This enhances the supply chain's operational information.
To add product lines, click the plus icon. In the Assign Item to Product Lines dialog box, you can identify which product line is already assigned to an item. You can also search for a product line and sort the available lines.

Note that the product lines are available for selection here only if your administrator has set up the catalog rules for the Product Development functional area as described in the topic: *Functional Area Catalogs Rules*.

Operational Attributes

An enterprise can have hundreds of additional operational attributes for any item or product. These attributes don't need to be displayed on its main development pages, in fact, they may not become relevant until later on the path to commercialization. The administrator defines the visibility of operational attributes in Product Development work area.
You can modify the operational attributes from the Product Information Management work area. Here's how:

Open the item and click the **Specifications** tab. Operational Attributes appear in **Item Organization**.

Change-controlled Item Attributes

These attributes can only be modified through a change order.

Where Used

You can view the other item structures to which the item has been added. You can also use filters to view specific structures. Note that the following data security privileges are required to view the Where Used report: View Item Basic, Maintain Item Basic, and View Item Structure or Maintain Item Structure.

Here are the filters and fields on the Where Used tab.

Show Structure Levels: Filter items based on the level in which this item is used in another structure.

- First level: view first level of the structure in which the item is used.

- Top level: view topmost level of the entire bill of material in which the item is used.

- All levels: view all levels from the item to the topmost level in which the item is used.

  Note that the duplicate components appear only in first and all level views.

Show Items: Filter items based on their approval status in a change order.

- Implemented: view items that are already effective.

- All: view items that are effective and items that are yet to go through the change order approval process.

Filter a large list of items: Use **Query by Example**. Let's say that you want to filter items by a lifecycle phase.

- Click **Query by Example**.

- Enter the filter criteria in the field corresponding to Lifecycle Phase.

Date: This is the reference date used when running the where-used query.

Let's say that the date appears as 7/18/19. Then it's the where used data as on 7/18/19. The table shows how the date differs based on the selected item revision.

Selected Item Revision	Date
Past effective	Revision end date
Current effective	Current date
Pending	Current date
Future effective	Future effective date

Include Substitute Components

Select this to identify where the item is used as a substitute component. Here are the important columns for substitutes:

- **Item**: shows the structure in which the item is used as substitute. The number of structure levels shown in the item depends on what you select in the **Show Structure Levels** filter.

- **Substitute For**: Shows the components for which the context item is marked as a substitute. Appears only if you select **First level** and **Include substitute components** filters.

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Here are some additional details on substitute components:

- You can view substitute components only for first level structure in the UI and all levels in the OTBI report.

- The component number displayed in the **Substitute For** column is read-only.
  When you click the information icon (orange triangle) on the item, a panel that includes links to item entities appears. Note that you'll only see items for which you're granted access.

- You can enable substitute component search by default using the profile option **Include Substitutes in Item Where Used Data**.

- When you select **Include Substitute Components**, the Where Used results are restricted to:
  the master organization and primary structure in Product Development, and to the context item's organization in Product Information Management.

- You can perform a search on primary, alternate, or all structures based on the search filters in Product Information Management.

- The change order details report (in Product Development) includes the following substitute component attributes: Primary UOM, Enforce Integer Requirement, Priority, and Global descriptive flexfields.

Team

At the item class level, your administrator defines users and groups who have access to items and assigns appropriate privileges.

At the item level, you can use the Team tab to add additional users and groups who should have access to the item. Note that you can't delete or modify the users and groups defined by the administrator.

History

You can view the history of data changes made to audit-enabled item attributes. Audit data is presented only for the item that you're currently viewing or editing.

When you click the History tab on an item, you see the changes made in the recent week. You can view data changes made on the following item tabs: General Information, Structure (excluding reference designators and side tabs), AML (except for preliminary items), and Security.

You can also search for audit data by a combination of criteria such as user details, the type of data change (add, update, or delete), a specific field, a specific value in a field, or a specific part of item data such as extensible flexfields. Audit-enabled data can include operational attributes of items, item-level extensible flexfields and flexfield security, item structures, and item structure components. You can also access this data from Navigator > **Tools** > **Audit Reports**.

To see more details in search results, you can select the following:

- **Show User-Related Details**: Shows the user ID in addition to the user name.
- **Show Attribute Details**: Shows the actions that were performed on the attribute (created, updated, or deleted), along with old and new values.
- **Show additional object identifier columns**: Shows additional columns for Context Name and Context Value, to indicate each unique context in which the item is used. For instance, if you add a component to the structure, then the **Context Value 2** column shows the component that was added (if the checkbox is selected).

Additional information:

- The History tab is available only if your implementor has assigned you the appropriate privileges.

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- To view audit data, your audit policy must include the item data attributes that you want to audit. Audit policies are set up using the Manage Audit Policies task in the Setup and Maintenance work area.

Related Topics
- Overview of Structures
- Why am I unable to view the Substitute For column in the structure details?
- Manage Attachments in Items and Change Orders
- Relationships in Items and Documents
- How Item Grade is Calculated
- How Units of Measure, Unit of Measure Classes, and Base Units of Measure Relate to Each Other

Find Attributes on Item Page

You can search for extended flexfield attributes on the item or document page even when the attribute groups are collapsed. You can also find the next attribute that matches your search criteria.

This is useful when you have to find and edit specific item attributes in items and documents that have a large number of extended flexfields. You can also choose to keep attribute groups collapsed by default to ensure faster loading of item and document pages.

Note:
- To keep attribute groups collapsed by default, your administrator must configure the value for the item profile option ACA_ITEM_EFF_DISPLAY to **Collapse All** using the Manage Administrator Profile Values task (in the Setup and Maintenance work area).
- The search doesn't mark up Unit of Measure type attributes in a different color and style.

Here's how you find extended flexfield attributes:

1. Enter the text pattern you're looking for in the **Find attributes** field on the item or the document page, and click the **Next** button.

   Note: Pressing **Enter** won't start the search.

   The attribute matching the text pattern appears in a different text color and style for easy identification.
2. To view the next matching attribute, click **Next**.

   The page automatically scrolls to show you the next attribute that matches the text pattern.

   If a matching attribute is found within an attribute group that's currently collapsed, the group is expanded to show you the attribute.
3. To edit the attribute, move the cursor to the attribute field.
4. To navigate through the attribute search results, click the **Previous** button adjacent to the search field.

Take Action on Items and Documents

Here are the actions available on items and documents:

- **Assign to Change Order** or **Assign to Change Request**: quickly assign the item or document to a new change order or change request.

- **Save As**: create an item or document from the one you're working on.

  The primary unit of measure and item attribute values are copied from the item you're working on; you can modify these values in the **Save As** dialog box.

  The item lifecycle phase is copied from the template defined in the item class. Note that this value is unavailable in the **Save As** dialog box.

- **Delete**: mark an item for deletion and add it to a delete group. You can create a new delete group or add the item to an existing group.

  To confirm the item deletion use Manage Delete Group available in the Tasks panel. The item must meet the deletion constraints so that it's not used in any structure or change order.

  In case you want to again use the item and it can't be deleted due to constraints, you must restore the item.

- **Send Object**: send a message about the business object to another user.

  Messages displaying the list of recipients can be sent to a single or multiple users. This feature works for items, documents, and change orders.

- **Generate Report**: generate an item structure report that displays the main attributes of component items as well as descriptive flexfields and AML. You can configure the attributes that you want to display in the report template.

  > **Note:**
  > - To generate the item structure report, you will require the BI Consumer role and the Generate Item Change Order Report (EGO_GENERATE_ITEM_CHANGE_ORDER_REPORT_PRIV) privilege.
  > - You can generate the report only in Product Development or the Product Information Management work area and not within Oracle Analytics Publisher. Note that the template is configured using Oracle Analytics Publisher.

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- **Download Attachments**: download item and manufacturer part attachments for either first or all structure levels. You can choose from options and specify which attachments you want to include in your download when you select **Download Attachments** from the **Actions** menu of a change.

  If you choose **Single** level and select **Include manufacturer part attachments**, then the root item's attachments including its manufacturer part attachments are downloaded.

  If you choose **All** levels and select **Include manufacturer part attachments**, then the item and its structure attachments including manufacturer part attachments at all structure levels are downloaded.

  > **Note:**
  > - You can only download attachments for the manufacturer parts for which you have permission to access.
  > - Downloaded attachments appear in Zip files with subfolders showing the item structure hierarchy. You can find manufacturer part attachments in the AML subfolder.

- **View Reports**: view the configured Oracle Transactional Business Intelligence (OTBI) reports for the item.

  You can search for specific reports or view the configured reports. You can also view specific context options such as Structures, Where Used, AML, and more.

- **Publish for Analysis**: publish the structure and where used data for analysis in Oracle Transactional Business Intelligence (OTBI).

  To publish data for analysis, click **Actions** > **View Reports** > **Publish**.

  > **Note:** Ensure that all users who need to publish data for analysis have the View Product Management Reports (ACA_VIEW_PRODUCT_MANAGEMENT_REPORTS_PRIV) privilege to view reports. This is true for suppliers as well, if you intend to have them run scheduled processes for structure and component reports directly in OTBI or through the Reports and Analytics side tab.

- **Create Quality Issue**: a quality issue is a defect, deficiency, or a significant variation in an item's expected appearance or performance.

- **Create Quality Action**: a quality action is a necessary activity required to mitigate a quality issue and prevent its further occurrences.

> **Note:**
> - The availability of an action depends on your privileges and the administrative setup.
> - Some of the tasks can also be accomplished from other user interface components.

This action is found only on items (not documents):

- **Refresh Cost**: retrieve the latest costs for the item or structure, and to perform the cost rollup.

Related Topics

- Use Tasks Panel to Manage Business Objects
- Manage Attachments in Items and Change Orders
- Overview of Change Orders and Change Requests

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Review Item and Document Changes

The Changes page contains two subcategories, Pending and Released. When you click the Changes side tab of an item, the Item Changes and Structure Changes tabs appear. They display either the Pending Changes or Released Changes in a table format.

The Item Changes tab displays the pending change orders and change requests of the item. The Structure Changes tab displays the pending change orders across all the items in all the revisions in the structure.

Pending Changes

Displays change orders and change requests that are in the following status: Draft, Open, Interim Approval, Approval, Hold, and Canceled. To view canceled change orders, you must select **Show Canceled Changes**.

Released Changes

Displays change orders that are in the Scheduled, and Completed status.

When to Use Change Orders

Manage item revisions by submitting the item for approval by a change order. Attachments and AML must also be modified through a change order. You can't directly modify a manufacturer or an attachment.

Related Topics

- Create a Change Order and Submit it for Approval

Lifecycle Phases in Product Development

Lifecycle Phases are used as an indicator of the stage for an item or document during the design and development process. Each phase represents a set of standard tasks or deliverables that are required before promoting an item to the next phase.

Each item or document must have a lifecycle phase associated with it. An object from a given class can be assigned to any of the lifecycle phases associated with that class. Before you can create or import items or documents or structures, the appropriate lifecycle phases must be created and assigned to the class used to create that object or structure (or to a parent class of the class used to create the object). When a business object is assigned to a lifecycle phase, that phase is visible as part of the object's attributes. In item or document structures, lifecycle phases name specific processes that are somewhat different - or in any case named differently - than the phases for the objects on the structure.

Four lifecycle phase types are predefined in the application:

- Design;
- Preproduction or Prototype;
- Production;
- Obsolete.

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To change the lifecycle phase of an item, you must assign it to a change order. You can also reinstate the lifecycle phase from obsolete to an earlier one.

The administrator can create names for the lifecycle phases that are particular to your company's processes. There can also be multiple phases based on the same predefined phase; for example, the predefined Production phase can be split into phases named Production and In Manufacturing, each having company-specific meaning in the steps to build and ship products.

Related Topics
- Create a Change Order and Submit it for Approval

Considerations for Lifecycle Phases and Effective Dates

When you change the lifecycle phase or effective date, some restrictions apply.

Restrictions on Promoting Lifecycle Phase

In an item structure containing child items created in the Product Development work area and the Product Information Management work area, there's a restriction when promoting the item lifecycle phase. On promoting the parent item, the application restricts promotion of Product Development items. However, Product Hub items are automatically promoted.

For example, consider the following item structure that includes items in the Prototype lifecycle phase:

Item-1 (created in the Product Information Management work area)

- Item-2 (created in the Product Development work area)
    - Item-3 (created in Product Development)
    - Item-4 (created in Product Development)
- Item-5 (created in Product Development)
- Item-6 (created in Product Information Management)
    - Item-7 (created in Product Information Management)

On changing the lifecycle phase of Item-1 from Prototype to Production, here's what happens:

- Lifecycle phase of child items created in Product Development remains unchanged.
- Lifecycle phase of child items created in Product Information Management changes to production.

Restrictions on Demoting Lifecycle Phase

In an individual item, the application restricts demoting the item lifecycle in the following scenarios:

- Production to Design
- Production to Prototype
- Prototype to Design

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Oracle Fusion Cloud SCM
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Chapter 4
Items and Documents

Restrictions on Future Effective Date

If you set a future effective date for an item in the design lifecycle phase, the application prompts you to select whether you want to change the effective date or retain it. Note that the best practice is to make the item effective on approval. A future effective date might initiate a complex process after the item approval.

Related Topics
- Can I change the lifecycle phase on an obsoleted item?

How Item Grade is Calculated

The Item Grade side tab displays the Item Grade page. The application computes a temporary grade for the item, using standard rules from the industry.

Documents or manufacturer parts don't support the Item Grade function.

Grade Items in Risky Conditions

Grading is computed for all the Items from the entire item structure. It takes into account certain risk conditions of the item and its structure to compute the grade. Risky conditions that merit attention and modification may include the following:

- A child item at leaf node that has no approved manufacturers list (AML).
- A child item that has an unapproved manufacturer part number (MPN).
- A child item which is at a lower lifecycle than its immediate parent item or the structure's top-level item. For example, a bicycle wheel might be at the Production phase of its lifecycle, while the bicycle itself is still in Pre-production: because there are other subassemblies that aren't yet ready for Production, this is appropriate. You wouldn't want the bicycle to have achieved Production phase while its wheel is still in Design. The grade rule provides an alert on the bicycle's Details tile.

Default Rules

Grade computation can be configured to ignore or take into account any of the rules. You can select one to five of these issues to be involved in item grading:

- Lifecycle Mismatch
- Unapproved MPN
- Inactive Items
- Unreleased Items
- No AML

Standards for Grading

These are the default grading standards. The application doesn't count all the instances of violations; it counts an issue or criteria as "1 issue" no matter how many times the issue is violated:

- An item with 0 issues that has an Approved status is graded **A**.

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- An item with 1 issue is graded **B**.
- An item with 2 issues is graded **C**.
- An item with 3 issues is graded **D**.

It can also be configured to use numeric grading, so that the number **5** corresponds with the letter grade "A", **4** with "B", and so on.

Click an element on the **Item Grade** tab to discover what issues or conditions affect its grade.

Configure Action Links to Items from Reports

You can create action links (or deep links) to navigate from Oracle Transactional Business Intelligence (OTBI) reports to specific items.

1. Navigate to the Product Development work area.
2. To create an analysis, click the **Reports and Analytics** side tab and click **Browse Catalog**.
3. To create a report about items and add fields:
   - In the **Catalog** page, from the **New** menu, click **Analysis**.
   - Select **Product Management: Item Revision Real Time** from the **Select Subject Area** menu.
   - From the Subject Areas panel, click **Item** > **Main**. Use the scroll bar to select Item Name, Item ID, and Organization ID. Other columns of data are optional.
4. The Item ID and Organization ID don't' work with a decimal value. To set a non-decimal value for the item ID:
   - Click **Inventory Item ID**. From the menu, click **Column Properties.**
   - In the **Column Properties** dialog, click the **Data Format** tab.
   - Select the **Override Default Data Format** check box.
   - Set the value in **Decimal Places** to a non-decimal value. Click **OK**.
   - Similarly set the **Organization ID** to a non-decimal value.
5. To configure the name column as a URL that opens the selected object in another tab:
   - In **Selected Columns**, select the **Item Name**.
   - From the menu, click **Column Properties**. In the **Column Properties** dialog click the **Interaction** tab.
   - From the **Primary Interaction** menu, select **Action Links** and create a link format.
   - Click the + icon to add an action link.
   - From the **New Action Link** dialog, select **Navigate to a Web Page**.
   - In the **Create New Action** dialog, add the URL. This creates a web page and passes dynamic values to load the selected object. The template of the dynamic URL is:

     **https://\<hostname\>/productLifecycleManagement/faces/deeplink?
     objType=ITEMS&action=EDIT&objKey=itemId=\<INVENTORY_ITEM_ID\>&orgId=\<ORGANIZATION_ID\>**

     Note that:
       - Object Type is Item

- Action is Edit
- Object Key is Item ID

6. To define parameters:

   ○ Click **Define Parameters**. The value for the object key is dynamic and the object ID is retrieved from the report data.
   ○ Click the menu available in the **Values** column and the third row. Select **Column Value** and then select **Item ID**.
   ○ Click the menu available in the Values column and the fourth row. Select **Column Value** and then **Organization ID**.
   ○ To ensure that the URLs work automatically, select the **Fixed** and **Hidden** check boxes in all the rows.

7. In the **Create New Action** dialog, add the reference to **Item ID** in the **URL** field.
8. Click **Options** to open the **Action Options** window.
9. Select the **Open in New Window** check box and click OK. You return to the **Create New Action** window.
10. Click **OK**. You return to the **New Action link** window.
11. Click **OK**. In the **Column Properties** window, select the 'Do not display pop-up if only one addition link is available at runtime check box. This helps when there are multiple links with different actions. Click **OK**.
12. Click **Save Analysis**.
13. Click the **Results** tab. Click a link in the search results and notice that the object opens in a new window.

Related Topics
- Configure Deep Links in Oracle Fusion Cloud Product Lifecycle Management

Generate Item Structure Report

You can generate and view the item structure report from both the Product Development and Product Information Management work areas.

1. Navigate to the Edit Item page of an item.
2. Click **Generate Report** from the Actions menu.
3. In the Item Structure Report dialog, select the fields which must appear in the report.

   ○ Levels - Single or all levels of the structure

   ○ Columns - Main, Main and AML, All

   ○ Templates - Default Item Structure Report. You can also include templates you've configured.

      If you're unable to view the Default Item Structure report template, ensure that you have the following privilege: Generate Item Change Order Report (EGO_GENERATE_ITEM_CHANGE_ORDER_REPORT_PRIV)
   ○ Format - Format of the file here by default is Microsoft Excel.

4. Click **Submit**.
5. Click **OK** to confirm the message which shows the Scheduled Process Request ID.
6. Navigate to **View Scheduled Processes** in the Tasks panel.
7. Enter the **Process Name** or **Process ID** and check the status of the report.
8. Click the output that appears in the **View Output** column.
9. Click the file name or URL in the **Attachments** dialog and you can view the columns and levels that you selected.

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> **Note:**
> - The columns in the item structure report only display the attributes that you have configured in the template.
> - You can generate the report only in Product Development or the Product Information Management work area and not within Oracle Analytics Publisher; configuration of the template is done in Oracle Analytics Publisher.

Related Topics
- Configure the Template for the Item Structure Report with Additional Attributes
- Configure the Template for the Item Structure Report with the Main and AML Attribute

Considerations for Managing Flexfields in Items and Change Orders

Item extensible flexfields and item revision extensible flexfields are handled differently in Product Information Management and Product Development work areas.

Here's what you should keep in mind if you're managing flexfields in both work areas.

Flexfield Type	Product Information Management	Product Development
Item Extensible Flexfield	Available in items and change orders. On selecting a revision, only the current effective values appear.	Available in items and change orders. On selecting a revision, revision-specific values appear.
Item Revision Extensible Flexfield	Appears on the item page where it's configured. Appears in the change line in the classic Product Information Management work area, but not in the Simplified Change Management Interface.	Not supported. Doesn't appear in the item view or change order affected objects view.

Best Practices

Here are some best practices for managing flexfields:

- In Product Development, you can use item extensible flexfields to track different attribute values by revision when specific data isn't explicitly tracked through change control.
- In Product Information Management, you can choose not to include item attributes in change control, but still use item revision extended flexfields to track the difference in values between revisions.

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FAQs About Items and Documents

Why can't I search for items across work areas?

Sometimes you may be unable to search for items by the same criteria using the Manage Items task or unable to navigate to Item Details page from search results in either Product Development or Product Information Management work areas.

In this case, perform the Deploy Item Extensible Flexfields task in the Setup and Maintenance work area, using the Refresh and Deploy Offline option.

Note: You should consult with Oracle Support before running this deployment option in other situations.

Related Topics
- Deploy Item Flexfields

How do I set the parameters used to calculate Item Grade?

Open the Tasks panel, click Manage Configurations. Select the Items tab, and make selections in the Grade and BOM Grade sections.

What's the difference between the terms released and unreleased in the My Favorite Items information tile?

It depends on the item lifecycle phase configured by your administrator.

For example, your administrator can configure the prototype lifecycle phase as unreleased, and the production lifecycle phase as released. Depending on this configuration, the My Favorite Items information tile displays the number of released and unreleased items.

Related Topics
- Configure Item, Document, and Change Management in Product Development

What's the difference between an item and a manufacturer part?

An item is produced or assembled by your company.

A manufacturer part is entirely produced by an outside manufacturer. It's identified by a manufacturer part number.

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How do I configure the display of operational attributes in the Product Development work area?

Open the Tasks panel tab, click Manage Configurations. Select the Items tab, and make selections in the Item Attributes Display Settings section.

Update UOM Values After Creating an Item

You can update the primary unit of measure of a new item request-enabled item, in the draft status.

If the item is a part of a structure, after you update the UOM, you must check and manually update items in any impacted structures.

> **Note:** The primary unit of measure won't be editable for approved items on new item request classes and non-new item request classes. For information about the checks performed when the primary UOM is updated, see Checks Performed for Item Attribute Changes section.

How can I quickly edit the details of an item attachment?

On the item's Attachment side tab, click the Direct Edit icon.

How can I promote or demote an item's lifecycle phase?

To promote or demote the item lifecycle phase in Product Development, use a change order on an engineering item.

In Product Information Management, use the item page or a change order for a commercial item. On the item click **Actions** > **Change Lifecycle Phase**.

> **Note:** You can also change the lifecycle phase of an obsoleted item from update 23A onward.

Can I change the lifecycle phase on an obsoleted item?

You can change the lifecycle phase on an obsoleted item from update 23A onward. Here's how:

In the Product Development work area, assign the item to a change order. On the Affected Objects tab, use the **New Lifecycle Phase** column.

In the Product Information Management work area, use the item page or a change order for a commercial item. On the item click **Actions** > **Change Lifecycle Phase**.

Will attachments I add in Product Development show up in Product Information Management?

The attachment you add for an item Product Development is visible in Product Information Management only if the Product Development item is in a lifecycle phase higher than design.

Note that the attachment appears as an item revision attachment in Product Information Management.

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5 Documents

Create and Edit Documents

You can create documents using the Product Management Search page for items. Here's how:

1. Click the **Create Document** button on the Product Management Search page for items.

   In the Create Document drawer:
   - Select a document class.
   - Update the basic attributes.
   - Select an item template.

   Note that the Create Document option will appear based on the following configurations in the Manage Configurations task (within the Product Development work area):
   - The Enable Document Management option is selected.
   - The Document Class Name field is configured to manage the root document class.

     Also, you must enable the profile option Enable the Redwood page for View Document (ORA_EGP_VIEW_DOCUMENT_REDWOOD_ENABLED).

   > **Note:** You can also create a document from the New document action in Quick Actions on the Product Management landing page.

2. Click **Create**.

Here are some tabs that appear on a document:

- Attributes
- Attachments
- Structures
- Categories
- Relationships

> **Note:** When you create a new item of type document class in Redwood, the UI displays only the Links table in the Relationships tab.

Actions on Documents

You can use the **Actions** button on the document to:

- Assign the document to changes such as change orders, change requests, problem reports, and corrective actions.
- Send notification using Send Object.

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- Navigate to the Spotlight and review the document structure.

Attributes

Here's what you can do on the attributes tab:

- Edit the main and additional attributes such as extensible flexfields.
- Update the Rich Text content in the **Formatted Description** field.

Attachments

Here's what you can do on the attachments tab:

- Add or remove item attachments and item revision attachments on documents.
- Download the attachment files.
- Edit the attachment attributes such as **Title** and **Description**.

Structures

Here's what you can do on the Structures tab:

- Update the structure and component attributes.
- Add and delete items or documents as a component to the structure.
- Add, delete, and update reference designators and substitutes.
- Create structures
  - You must create a primary structure before adding components.
  - You can create structures from existing ones, copy structures, and create alternate structures. You can also use structure header descriptive flexfields, and structure header attachments on engineering items early in the design process.
  - Here's how you create a structure on a document:

    Open the document and navigate to the Structures tab.

    Click the ellipses (three horizontal dots) icon and click **Create Structure**.

    In the New item structure drawer, enter the structure details and click **Apply**.
  After you create a structure, the following actions appear when you click the ellipses (three horizontal dots) icon:
  - Edit Structure (or Structure Details)
    - Click **Structure Details** to open a drawer using which you can edit the structure.
    - You can access structure header descriptive flexfields and attachments on documents.
  - Add to Delete Group and Delete
    - If you've saved the structure, you can't delete it directly. You must click **Add to Delete Group**.
    - If you haven't saved the structure, you can delete it using **Delete**.

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Categories

Here's what you can do on the Categories tab:

- Add new product lines to the document.

- If you have used the 'Product lines' attribute in the classic interface, the same will be visible in the 'Categories' tab in a Product Lines catalog.

Note: You can add only Product lines as Categories for a Document.

Relationships

Here's what you must know about the Relationships tab:

- The relationships you created on the document in the classic interface appear in the Links section on Relationships tab.

- From a document you can create links to other documents, items, change orders, change requests, problem reports, corrective actions, concepts, ideas, items, proposals, and quality actions.

- To create a link, select an object type. The objects corresponding to the organization in which document is created are populated in the **Name** column. On selecting the object, the other fields are populated. To save your changes click **Apply** and click **Save**.

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6 Quality Management in Items

Overview of Quality Issues and Actions

The Product Information Management and Product Development work areas integrate with the Quality Management module to help you gain insight to quality issues and actions related to items.

A quality issue is a defect, deficiency, or a significant variation in a product's expected appearance or performance.

Feature for Product Development users.

Feature for Quality Management users.

A quality action is a necessary activity required to mitigate a quality issue and prevent its further occurrences.

> **Note:** On opening an item in the Product Development work area, the Quality tab displays a blue icon, if the item has quality-related data. And on hovering over the Quality tab, the tooltip displays Quality: Has Content.

The Quality tab displays both these tabs:

- Quality Issues and Quality Actions
- Problem Reports and Corrective Actions.

Overview of Problem Reports and Corrective Actions

The Product Information Management and Product Development work areas integrate with the Quality Management module to help you gain insight to problem reports and corrective actions related to items.

- A problem report is a generic quality incident or problem reported from a customer's perspective.
- A corrective action is an action that you take to address or prevent the problem from occurring again.

You can create problem reports and corrective actions for an item from Product Information Management, Product Development and Quality Management work areas, and from Supplier Portal.

- On opening an item in the Product Development work area, the Quality tab displays a blue icon, if the item has quality-related data. And on hovering over the Quality tab, the tool tip displays Quality: Has Content.
- The Quality tab displays both these tabs:
  - Quality Issues and Quality Actions
  - Problem Reports and Corrective Actions

To use advanced workflow capabilities such as additional controls and group approvals, create and manage problem reports and corrective actions just as you would change types in Product Development.

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This is particularly recommended for engineering design use cases where you capture issues related to items. You then collaborate with suppliers through workflow steps for proper resolution.

These types of problem reports and corrective actions are structured more like change requests. They provide tabs for General Information, Affected Objects, Tasks, Attachments, Workflow, Impact Analysis, Relationships, Security, and History.

By configuring the workflow steps, you can:

- Specify automatic status promotion or demotion

- Define entry and exit criteria

- Control who can perform what action

- Perform impact analysis

- Create and assign tasks to track dependencies.

Create Problem Reports and Corrective Actions

You can create problem reports and corrective actions from the:

- **Create** (+) menu on the Overview page in the Quality management work area

- **Actions** menu of an item in the Product Development work area

- **Actions** menu of an item in the Product Information Management work area

You can see that they appear on the Quality tab of items in the Product Development, Product Information Management, and Quality Management work areas. Remember that the **Create Problem Report** and **Create Corrective Action** options appear on the **Actions** menu only after you create and save an item.

For suppliers the page reloads with the newly created object.

> **Note:** The newly created problem reports and corrective actions automatically display organization data from the item.

The workflow of a problem report or corrective action progresses as specified by the statuses defined by the administrator. For more details, see Set Up Problem Reports and Corrective Actions.

Create 8D Corrective Action.

You can choose to create a corrective action from the following two options in the **Type** drop-down list:

- Corrective Action – action to mitigate a quality issue and prevent its further occurrence.

- 8D Corrective Actions – action that uses the 8D methodology. An investigative dive to find the cause of a problem, a solution to fix it and a method to prevent recurrence.

The 8D methodology involves a systematic investigation into the root cause of a problem to prevent recurrence. It uses a structured, preconfigured template based on 8 disciplines to define the problem, identify the root cause, and run the corrective and preventative action (CAPA) to prevent recurrence.

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Here's a brief description of the eight disciplines:

1. Plan and form team: Create a plan to minimize or mitigate the problem and establish a team of skillful and knowledgeable people
2. Define Problem: define and describe the problem
3. Interim Containment: define and implement containment actions
4. Determine Root Cause: identify the root cause
5. Verify Correction: verify and choose the most effective corrective action
6. Implement Corrective Actions: implement the corrective actions
7. Prevent Recurrence: implement actions to prevent a recurrence
8. Recognize Team Effort: acknowledge and congratulate the collective effort of the team.

Note: Although the change type 8D Corrective Actions is predefined, the attribute visibility setting is read-only. The change type inherits the configuration from its parent change type, Corrective Action.

Create a Corrective Action from a Problem Report

You can also create a corrective action from the Actions menu of a problem report. The corrective action opens in a dynamic tab for editing. For suppliers the page reloads with the newly created object.

While creating a corrective action from a problem report, you can select to copy over the descriptive flexfields, attachments, relationships, and tasks for the problem report. You can also copy over the affected objects including descriptive flexfields to the new corrective action. The corrective action is automatically linked to the problem report in the Relationships tab.

Related Topics

- Overview of Change Type Setup
- Configure Change Orders
- Understand Change Types

Access Quality Objects from an Item Structure

This topic describes how you can navigate from an item to related quality objects.

Note that:

- Blue dot icons appear in the Quality column of components on an item's structure table, to indicate the presence of quality-related data. Data includes quality issues, actions, problem reports, and corrective actions.
- You can click the blue dot icon to navigate to the corresponding object in the side tab view without losing context.

You can access and view quality issues and quality actions for all revisions of an item from the Quality tab. You can access the quality objects from:

- Quality tab in Product Development and Product Information Management work areas.

  Navigate to Item > Quality tab.
- Item structure component's side panel in Product Development work area.

  Navigate to Item > Structure. Select a component and click the Quality tab in the side panel.

- Redline item structure component's side panel in Product Development and Product Information Management work areas.

  Navigate to a Change Order > Affected Object tab. Click the affected object that you want to view. Click the Structure tab and select a component. Click the Quality tab in the side panel.

You can also perform the following actions from the Quality tab:

- Query by Example
- Export to Excel
- Detach the Table

Note: When doing QBE on Severity, enter only the text value, and not the numeric prefix. For example, if severity is '1 High', enter only 'High' in the QBE field.

Attributes that appear on the quality issues and quality actions table are similar to the ones that appear on the **Manage Quality** page.

Note: Users with the item privilege EGP_VIEW_ITEM_PRIV can view the Quality tab on the Item Details page.

Secure Access to Quality Issues and Actions

This topic describes how security is supported in Oracle Quality Management. Use the Security side tab on issues and actions to add users and roles who can view and search for issues or actions.

Security is applied at two levels:

- Functional Security
- Data Security

Functional Security

Functional security defines the functions you can perform and the pages and objects you can access. For example, it defines who can

- enter the quality management work area
- create a quality action
- create a quality issue

The two types of privileges in Quality Management are:

- Manage - lets you create and edit issues and actions
- Review - provides a read-only view of the issues and actions.

Functional security in Quality Management is based on the following privileges:

- Manage Quality Action - (ENQ_MANAGE_QUALITY_ACTION_PRIV)
- Review Quality Action - (ENQ_REVIEW_QUALITY_ACTION_PRIV)

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- Manage Quality Issue - (ENQ_MANAGE_QUALITY_ISSUE_PRIV)
- Review Quality Issue -(ENQ_REVIEW_QUALITY_ISSUE_PRIV)

You can assign these privileges only to the user roles, and not directly to the user.

For example, assign John Smith with a quality analyst role (that contains the Manage Quality Action, Review Quality Action, Manage Quality Issue, Review Quality Issue privileges) to create and edit quality issues and actions. The two privileges are assigned to specific task flows and menu actions.

While setting up functional security, consider:

- the privileges assigned and the user roles to which they're assigned
- the users, the functions they can perform, and the functionality and work areas they can access

Oracle delivers some users, user roles, and privileges which are ready to be used. The users and user roles can be adapted and assigned respective privileges.

Data Security

Data security defines access to specific data (records) and is applied in addition to functional security. For example, even though you can create and manage quality issues (functional security) as a user you may not see the quality issue "ISSUE46", because the data record isn't visible for your user role (data security).

To enable Data security, you can:

- define data security grants for accessing the issue and action tables for specific user actions
- define data security grants for editing in the issue and action Security tab
- define which users and roles can access a specific issue or action by adding them to the Security tab of the issue or action
- define which user can see which quality issues based on inventory organization assignment
- grant permissions to perform changes depending on the status of the object.

Data Security Grants on Tables

Data Security grants on the issue and action tables define each user role. All the users who need to see, update or delete issues and actions, need to be assigned to a user role that grants them access to these data tables with the corresponding user action.

You can grant overall access to the issue and action table, or access to specific user actions like Read or Update.

Note: Data security grants can't be defined for the creation of issues and actions, as the data doesn't yet exist. Hence, creation can only be allowed or prevented through functional security.

Data Security Grants on Application Objects

Data security grants are essential to add and remove users and roles on the Security tab of issues and actions. Hence, you require an additional data grant for application objects on the table FND_OBJECTS for issues and actions.

Data Security Grants Based on Users and Roles on Security Side Tab

The Security side tab for issues and actions makes previously public issues and actions private by assigning them to specific users and roles.

After you add the first user and user role to the Security tab, only respective users and user roles (user assigned to these user roles) have access to these issues and actions. In addition, the Creator and Assignee are automatically granted the privilege to see the issues and actions.

Permissions to Perform Changes Based on the Object Status

Depending on the type of data, you can restrict the user from editing the issue or action even if the appropriate privileges and grants are available. For example, if the quality issue or action is:

- logged as Production Exception

- logged as Inspection Nonconformance

- in a state which prevents editing

You can't edit a record or its relationships; this is to prevent any inconsistencies between production exceptions that you log in manufacturing and the respective quality issues.

You can't delete inspection nonconformances, but you can perform most editing operations.

You can't edit quality issues and actions if they're in certain states, such as waiting for approval, or after approval and closure. This ensures that other quality users can rely on the fact that's issues and actions that they approve or have approved, won't change.

Visibility of Quality Actions and Issues Based on Inventory Organization Assignment

You can assign a specific organization to a quality action or issue to identify where the issue or action has occurred. Note that users who need to create or access quality issues or actions for an inventory organization must also be assigned to that organization. You can do this using the **Manage Data Access for Users** task in the **Setup and Maintenance** work area.

If you're using configured job roles to access quality objects, ensure that these job roles are assigned to the appropriate data security policies in the **Security Console**, specifically **Grant on Inventory Organization**.

The following data security function must be entered for user-defined roles in the **Security Console** for the **Quality Actions Data** privileges:

- **Policy Name**: Grant on Inventory Organization

- **Database Resource**: Inventory Organization

- **Dataset**: Select by Instance Set

- **Condition Name**: Access the inventory organization parameter for table INV_ORG_PARAMETERS for the inventory organizations in which they can operate.

- **Actions**: Manage Quality Organization

Access to Affected and Related Objects

You can add items, manufacturing work order operations, manufacturing resources as affected objects to quality issues and actions. Relate Oracle Innovation Management and Product Development objects like ideas, requirements and change orders to the quality issue and action.

Functional and data securities govern quality issues and actions. So, even though you can view a related idea or an affected item, you can't open it unless you've the appropriate privileges.

For example, to open and see the details of an affected item, you not only are required to have functional privileges to view and manage the item but also have data security grants to the inventory organization.

User and Role Data Security

The security side tab on issues and actions enables you to add users and roles who can view and find this issue or action.

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The creator and assignees can automatically access the issue or action. Users not listed on the security tab can't find or view the issue or action.

Related Topics

- Restrict Available Objects Through Configured Roles

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7 Manufacturers and Manufacturer Parts

Overview of Manufacturers

An Approved Manufacturers List (AML) represents a list of manufacturers, suppliers, or vendors approved by a company for the purpose of procuring manufactured items. You can add manufacturers to the AML tab on an item.

The AML tab on an item captures information about the manufacturers and manufacturer parts associated with the item.

In the Product Development work area, you can do the following:

- Create manufacturer parts.
- Create the manufacturers and associate them with manufacturer parts.
- Secure access to manufacturer parts.
- Assign the manufacturer parts to the items.

For more information on creating a manufacturer and manufacturer part, see the related topics.

Related Topics
- Create a Manufacturer

Create a Manufacturer

You can create a manufacturer from the Product Development work area.

To create a manufacturer from the Product Development work area:

1. From the **Tasks** panel drawer, click **Create Manufacturer**.
2. In the **Create Manufacturer** dialog box, enter the manufacturer name and provide a brief description. Click **Save and Close**.
3. Enter any additional information, if required. Click **Save and Close**.

Create Manufacturer

You can create a manufacturer from the Product Management Search page for Manufacturers.

Additionally, you can use generative AI to generate and fill in the following profile details for manufacturers:

- Description
- Global Revenue
- Headcount Details

- Website

- Classification

- Industry

- Channels

- Brands

- Products

To use generative AI, you must opt in to the feature: Use Generative AI to Populate Manufacturer Profile Attributes.

Here's how you create the manufacturer:

1. On the Tasks panel tab, click **Search Product Management**.
2. Select **Manufacturer** from the **Product Management Search** drop-down list.

   The New Manufacturer drawer appears.
3. Enter the manufacturer details and click **Create**.

   Separate tabs are available for **Company Profile Attributes**, **Location**, and **Additional Attributes**.

   > **Note:**
   > - The Additional Attributes tab displays only required extensible flexfields and is hidden if none are required.
   > - Use business rules to hide one or more of the following tabs: Company Profile Attributes, Location, and Additional Attributes.

   If you're using generative AI, enter the manufacturer name and click **AI Assist** to fill in the profile details. Here are some points on generative AI:

   - The manufacturer name is required to generate the profile details using AI Assist.

   - You can use the AI Assist feature multiple times if required for the same manufacturer name, to get the best desirable response from AI.

   - The Company Profile Attributes and the Country Attribute within Location can be auto-populated using AI Assist feature.
     - When you manually enter values in the company profile attributes while editing a manufacturer and then click **AI Assist**, your existing values will be replaced with AI-generated values. But you can still revert to the previous values by clicking **Cancel**.
4. Save your changes.

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Note:

- After creating the manufacturer, you can select an attachment and view it directly in a viewer without downloading it.

- You can add attachments details and preview them in the side panel. If there are multiple attachments, use the arrows to view each of them.

- The Favorites and Recent Items links to manufacturers will launch the manufacturer page in the Product Development work area.

- You can create an image category for manufacturer objects to categorize image files added to them.

Related Topics

- Set up Manufacturers and Manufacturer Parts

Create a Manufacturer Part

In the Product Development work area, you can create a manufacturer part, and then assign the part to an item.

1. Create a manufacturer part using the following steps:

   o From the **Tasks** panel drawer, click **Create Manufacturer Part**.

   o In the **Create Manufacturer Part** dialog box, select the corresponding manufacturer or search for it.

   o Enter a manufacturer part number and provide a brief description.

   o Select whether you want to activate the manufacturer part, retain it as inactive, or pending. Click **Save and Close**.

   o Enter any additional information. Click **Save and Close**.

2. Assign the manufacturer part to an item, using the following steps:

   o Open the item in which you want to assign the manufacturer part. Click the **Structure AML** tab.

   o Select the row of the item to which you want to assign the manufacturer part.

   o In the side tab, click **AML**, and click **Actions** > **Select and Add**.

   o In the Add AML dialog box, select the manufacturer and the part number.

   o Select whether the part is preferred or alternate. You can assign multiple manufacturer parts to an item.

   o Click **OK** and click **Save**.

   The new manufacturer part is assigned to the selected item.

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You can also create manufacturers and manufacturer parts from:

- The AML tab of the item
- The AML tab in the change order

Manufacturer parts can be associated with an item in a structure. The same manufacturer part can be added to multiple items in a structure. To locate where it's assigned across all items and structures, use the **Where Used** side tab on the manufacturer part.

Create Manufacturer Part

You can create a manufacturer part from the new user interface.

You can create or edit a Manufacturer Part from the following locations:

- Manufacturer MPN tab
- Product Management Landing Page

Create a Manufacturer Part from Manufacturer MPN Tab

Here's how you create a new manufacturer part from the Manufacturer MPN tab:

1. In the Product Management Landing page, search and select the manufacturer.
2. In the MPN tab of the manufacturer, click **Add**.
3. In the New Manufacturer Part side panel that opens, enter the details of the new manufacturer part.
4. Click **Create**.
   A new manufacturer part is created.

Note: When you create a new manufacturer part from the MPN tab, the Trading Partner Type and Manufacturer are defaulted to Manufacturer and Manufacturer Name respectively. Both of these attributes are read-only and can't be changed.

Create a Manufacturer Part from Product Management Landing Page

Here's how you create a new manufacturer part from the Product Management Landing page:

1. In the Product Management page, click **Actions**, and search for **New Manufacturer Part**.
2. In the New Manufacturer Part window that opens, enter the details of the new manufacturer part.
3. Click **Create**.
   A new manufacturer part is created.

Search for Manufacturers

Find manufacturers and manufacturer parts with simple or advanced searches.

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Use the **Add Fields** button on the Manage Manufacturers page to include attributes such as D-U-N-S number, Country, State, City, and so on, in the search criteria. These attributes appear as columns in the search results table.

Use the **Create Saved Search** dialog box to include the attributes such as D-U-N-S number of the manufacturers in the **Saved Searches** list of the Manage Manufacturers page. Save the search with this additional criteria so that it's available in the **Saved Searches** list for reuse.

Search for Manufacturer

You can search for manufacturers using the new interface. Here's how:

1. On the Tasks panel tab, click **Search Products**.
2. Select **Manufacturer** from the Product Management Search drop-down list.
3. On the Product Management Search Manufacturer page, enter the search criteria for manufacturers and select a view.

   The availability of manufacturers in the search results can be managed through access control lists.

To view the details of a manufacturer, click the Manufacturer link in the search results. Here are the tabs that appear on a manufacturer:

- Details

- Location

- Manufacturer Part Number (MPN)

- Attachments

Related Topics
- Overview of Access Control Lists

Search for a Manufacturer Part

Here's how you search for the manufacturer part:

1. Search for the manufacturer on the Product Management Search page.
2. Navigate to the **MPN** tab in the Manufacturer page.

   All the manufacturer parts of the selected manufacturer are listed.

Edit a Manufacturer Part

Here's how you can edit a manufacturer part

1. In the **MPN** tab of the manufacturer page, click the hyperlink in the **Manufacturer Part Number** column to edit an existing manufacturer part.
2. In the side panel drawer, edit the descriptive flexfields and add attachments to the manufacturer part.

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> **Note:** You can download the manufacturer part attachments from the panel drawer.

Access to Clipboard and Recently Visited

You can add manufacturers to the clipboard only if you have the view or manage permissions to those manufacturers using an access control list. From the clipboard, you can navigate to the various tabs of a manufacturer as per the permissions defined in the manufacturer access control list.

View the manufacturers in the recently visited section if you've the view or manage permission on the manufacturer.

Related Topics
- Access Control Lists for Manufacturers

Where Used

Use the **Where Used** side tab on the Manufacturer page to locate where the manufacturer part is used across all items and structures. Additionally, use the **Export to Excel** option in the **Where Used** side tab to share and analyze manufacturer data such as manufacturer part number, description, status, created by, creation date, last updated by, and updated date.

Considerations for Managing AML

If you're using both Product Development and Product Information Management, here are some considerations for managing AML:

- After you create an item and define its AML in Product Development, it will be visible on the item in Product Information Management only when the item is in a higher lifecycle status than Design, such as Prototype or Production. To make changes to the item AML after the item is in production, you must create a change order.

- For commercialization or item master use cases, always use the Trading Partner Item Relationships feature directly in Product Information Management. This relationship enables you to track the manufacturer part number for an internal item in the same way as the AML.

- You can't control Trading Partner Item Relationships using change orders, or use predefined fields to track preference and approval status of manufacturer parts.

- You can delete an AML through import using the **Delete** transaction type in the change order context.

- You can also add an item to a change order using the import batch option and specify an end date for the AML.

  > **Note:** The deletion of AML is recorded in the redline summary.

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Secure Access to Manufacturers

Use the manufacturer-specific privileges to securely access the manufacturer data. These privileges provide granular access control to manage manufacturer data.

Here are the privileges required to secure access to manufacturers:

- Create Manufacturer: You can only create manufacturers with this privilege.
    - Create Manufacturer (EGP_CREATE_MANUFACTURER_PRIV)

      Users who are assigned the Create Manufacturer privilege should also be given the Manage Manufacturer privilege (EGP_MANAGE_MANUFACTURER_PRIV)

- View Manufacturers: You can view all the manufacturers with this privilege.
    - View Manufacturer (EGP_VIEW_MANUFACTURER_PRIV)

- Manage Manufacturers: You can view and edit the manufacturers.
    - Manage Manufacturer (EGP_MANAGE_MANUFACTURER_PRIV)
    - View Feature States Value by Web Service (RCS_VIEW_FEATURE_STATES_WEB_SERVICE_PRIV)

Secure Access to Manufacturer Parts

Use the **Security** tab on the manufacturers and the manufacturer parts to secure access to manufacturer parts. You can add the users and roles (groups) who should have access to manufacturer parts.

Note: You can access the Security tab only if your role has these policies assigned to it:
- EGP_TRADING_PARTNER_ITEMS
- EGP_PRIVATE_TRADING_PARTNERS

Secure Access to All Manufacturer Parts Created for a Manufacturer
Here's how you secure access to all the manufacturer parts created for the manufacturer.

1. Click the **Security** tab on the manufacturer.
2. Deselect the **Public** check box.
3. Click **Create** to configure a person or a group to access manufacturer parts.
4. Select whether you want to grant access to a person or a group, and select the name of the person or the group.
5. Select the privileges you want to provide:

    - **View**: allow users to view the manufacturer part.
    - **Maintain**: allow users to edit the manufacturer part.
    - **Administer**: allow creating new manufacturer parts for the manufacturer.

To allow more persons or groups to access manufacturer parts, repeat the previous steps.
6. Save your changes.
   The security is inherited by all manufacturer parts created from the manufacturer.

> **Note:** To revoke access to a person or group, select the person or group and click the **Delete** button.

Secure Access to Individual Manufacturer Parts

Prerequisite: You must enable security on the trading partner item using **Manage Trading Partner Items** > **Edit Trading Partner**, in the Product Information Management work area. This will allow you to view the Security tab on the manufacturer part (in the Product Development work area).

Here's how you secure access to an individual manufacturer part.

1. Click the **Security** tab on the manufacturer part.
2. Click **Create**.
3. Select whether you want to grant access to a person or a group, and select the name of the person or the group.
4. Select the privilege you want to provide:
   - **View**: allow users to view the manufacturer part.
   - **Maintain**: allow users to edit the manufacturer part.

   > **Note:**
   > - A check box appears in the **Inherited** column if the grant is inherited from the manufacturer.
   > - The Security tab isn't displayed on the supplier portal.

Additional Considerations

- The Security tab on the manufacturer page shows updates made to the Public setting and data grants on the trading partner in the Product Information Management work area. Likewise, such updates to the manufacturer made in Product Development are replicated on the trading partner page in the Product Information Management work area.
- Manufacturer parts inherit the grants added to the parent manufacturer, but the security tab isn't displayed on the manufacturer part. Edit the trading partner item to see these inherited grants and add additional singular grants in the Product Information Management work area. These individual grants apply to the manufacturer part and item AML.

Related Topics
- Data Security for Manufacturers and Manufacturer Parts

Create Manufacturer Part Using Save As

You can use the Save As feature to create a new manufacturer part from the Actions menu on the Manufacturer Part page.

Here's what you can copy over from an existing manufacturer part:

- Attachments

- Additional Information such as descriptive flexfields

- Security Settings

Note:
- You must have the Manage Manufacturer Part privilege to use the Save As feature; if you don't, the Save As option is grayed out.

- If the source manufacturer part is private, then you must have a Maintain grant privilege to use the Save As feature.

Created From

You can track which manufacturer part was used to create a new part using the **Created From** field on the General Information page. This field displays a link to the source manufacturer part from which the current manufacturer part was created. You can click this link to navigate to the original part and view the details.

- The Created From field displays the source manufacturer part name.

- In the Save As dialog box, if you change the manufacturer from the source manufacturer, the Save As dialog box displays the grayed out Security check box. The manufacturer part instance grants aren't copied to the new manufacturer part.

Note: The Supplier Portal doesn't provide the Save As option or display the Created From field on manufacturer parts.

Create OTBI Reports for Manufacturers and Items

You can create reports in Oracle Transactional Business Intelligence (OTBI) for manufacturers, and manufacturer parts along with items.

You can also analyze manufacturers by various criteria such as:

- configured attributes

- location attributes such as Country, State, and City and

- manufacturers without associated manufacturer part numbers.

Related Topics
- Use Reports and Analytics

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FAQs About Approved Manufacturers List

How can I search for manufacturer parts based on specific attributes?

From the Tasks side tab, select Manage Manufacturer Parts.

On the Manage Manufacturer Parts page, you configure the criteria to search for manufacturer parts.

Click **Add Fields** to add more attributes to the search criteria. The attributes appear depending on the descriptive flexfields configured by the administrator.

Why can't I add a manufacturer part to an item?

The item might be assigned to a change order with a pending revision.

Will the approved manufacturers list (AML) I add in Product Development show up in Product Information Management?

The AML you add for an item in Product Development is visible in Product Information Management only if the Product Development item is in a lifecycle phase higher than design.

What's the difference between manufacturers and trading partners?

The Product Development work area uses manufacturers and manufacturer parts.

The Product Information Management work area uses trading partners and trading partner items.

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8 Structures

Overview of Structures

In Oracle Product Development, a Bill of Materials is called a structure.

When you add an item to a parent item, you create a simple structure. As items are added, the structure is always named and referred to by its top-level item.

A structure holds all the items and documents that make up an assembly or subassembly. Items and documents might be in the same structure; there's no restriction on the maximum or minimum number of either type of business object.

Any item on a structure might be associated with one or more manufacturer parts. On the Structure table, an icon next to an item indicates the presence of manufacturer parts. So, a structure populated with items will likely comprise associated manufacturer parts.

A document structure holds all the documents that make up a meaningful document, such as a specification for a product. When you add a document to a parent document, a simple structure is created. A structure of documents will be named and referred to by its top-level document. A document structure might be only one document.

Create Structures

You can create a structure by either selecting and adding existing items, or creating new items. Use the **Actions** and **View** menu on an item to create and modify the structure.

Here's how you create a structure:

1. Open the item and navigate to the Structure tab.
2. To add a new item in the structure, click **Actions** > **Create**.
3. To add existing items to the structure, click **Actions** > **Select and Add**.

Note:
- You can't add a parent component to a child component. This applies to both preliminary structures and affected item structures on engineering and commercialization change orders.

- You can add duplicate components to a structure using Find Number that enables you to differentiate between multiple instances of a component within a structure.

Create an Item and Build an Item Structure

This topic covers how to create an item and build an item structure. A structure contains information on the parent item, components, and descriptive elements.

1. In the Product Development work area, create an item using the following steps:

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- From the **Tasks** panel tab, click **Create Item**.
- In the **Create Item** dialog, select the class in which you want to create items.

  > **Note:**
  > - You can only select an item class for which you've been assigned privileges.
  > - When you create an item in a child item class, the attribute values are applied only from the default template for the child class and not from the item class hierarchy.

- Enter a name for the item and provide a brief description.

  The name and description can be generated automatically by configuring the item class.
- Select the primary unit of measure for the item.
- Enter the value for item attributes.

  Attributes and their values appear only if they're configured for the item class. You can use the predefined values or modify them.
- Click **Save and Close.**

2. To copy existing items that you want to use for building the item structure, do the following:

   - From the **Tasks** panel tab, click **Manage Items**.
   - Enter a criteria to search for existing items and click **Search**.
   - In the search results page, select the items you want to add to the item you created. Note that you can use the control key to select multiple items.
   - Click **Copy** and click **Done**.

     The items are copied to the clipboard.

3. To build the item structure using the items you copied, do the following:

   - In the item that you created, click the **Structure** tab.

     Since you can no longer copy and paste directly from the source location to the target location, you must first copy the items to the clipboard.
   - Select the items from the clipboard and click the **Paste** icon. The items are pasted to the structure.
   - Click **Save**.

4. To create a new item and add it to the structure, do the following:

   - In the item that you created, click the **Structure** tab.
   - Click the **Create** icon.
   - In the **Item Create** dialog box, enter the details of the new item.
   - Click **Save and Close**.

5. To add an existing item to the structure, do the following:

   - In the item that you created, click the **Structure** tab.
   - From the Actions menu, click **Select and Add**.
   - Enter the criteria to search for the existing item and click **Add**.

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> ○ In the **Select and Add** dialog box, select the item.
>
> ○ Click **Apply and Close**.

Structure Details

View and Edit Structure Details

To view the structure component details in a side panel, select a component row on the structure tab of the item.

You can enter the following component details from the side panel: reference designator, additional information, attachments, AML, additional attributes, and substitute components.

The header of the side panel shows the name of the selected component. You can move from one component row to another, and use the side panel to navigate easily between the component details.

> **Note:**
> - You can edit a component from the item structure page, if it's not assigned to any change order.
> - When you perform a Save As from the Actions menu of a structure having substitute components, the substitute components are copied over to the new item structure.
> - You can edit reference designators using the side panel, if your administrator has set the **Reference Designator Range Indicator** to **None**. Otherwise, you can edit them directly in the structure table.
> - If you have added a component to a common structure associated with one or more organizations, and one of those organizations became inactive, the assignment to the inactive organization is skipped, and this information is recorded in the log file.

Icons on Component Rows

The pencil icon in a column indicates that there's additional information that you can view. You can click the icon to navigate to the corresponding tab in the side panel view.

The following icons appear only if you've opted in for the feature User Interface Improvements for Items and Changes.

- A blue dot icon in any of the following columns of a component row - attachments, AML, substitute components, pending changes, and quality - indicates the presence of content. Click the dot icon to navigate to the corresponding tab in the side panel view.

- For quality-related data, the blue dot appears if there's at least one quality issue, quality action, problem report, or corrective action in any workflow status against any item revision. If no issues or actions appear against the item you've chosen, select other revisions and see which ones have issues or actions logged against them. With problem reports and actions, you can see them across all revisions of the item.

- In the redline view of the affected item's structure, the reference designator, and substitute component icons appear in blue when there are redlines.

Note: The structure component attachments, AML, additional attributes, pending changes, and quality tabs on the side panel appear in the read-only mode on engineering change orders.

In the following image, you can see the blue dot icon in the Changes column indicating the presence of content in it. You can click the blue dot to open the Changes side tab for the selected component.
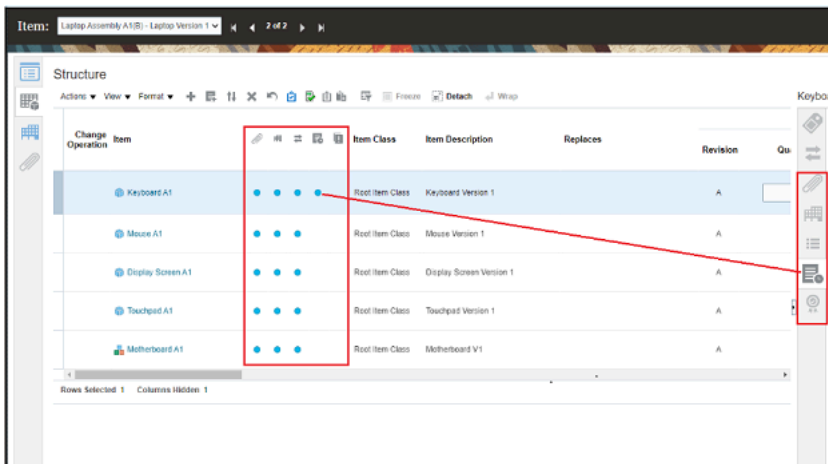
Points to Consider

- The affected item's structure tab on a commercialization change order doesn't include side panel tabs for attachments, or AML. It also doesn't have the blue dot icons for Pending Changes or Quality related data.

- Pending Changes and Quality side panel tabs aren't displayed in the Supplier Portal.

Find Number

You can differentiate duplicate components in an assembly using the Find Number attribute.

The find number identifies a specific instance of an item in a structure. When a duplicate component is added, the application will automatically increment the find number, but you can modify it before you save your changes. Once the item is saved, here's how you can change the find number:

Delete the component and add it again with the new find number.

Or

Use the **Replace** action to replace a component with the same component and provide a different find number.

Example: Consider that a server containing 4 similar processors is positioned at the same level in the structure. Each instance of the processor will have a unique find number. This will allow you to have duplicate instances at the same level in the BOM and differentiate each instance.

Here are some additional details:

- You'll be prevented from creating duplicate find numbers for Model and Option Classes. The **Find Number** column will be displayed and defaulted to 1. Also, you can't add the duplicate component row.

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- You can't create overlapping effectivity dates for the combination of component and find number.

  You must ensure that the date range of the duplicate component is outside the date range of the initial component. Note that the date range is calculated based on the start and end dates of the component.

- Attributes such as Quantity, Basis Type, and Supply Type can have a different value in the duplicate row. Similarly, structure entities such as substitute components and reference designators can also have a different value in the duplicate row.

- Find Numbers are automatically incremented when you add duplicate components in the user interface, but not when you update structures using REST services or import.

- In the item structure import, if the find number value isn't provided, it will be defaulted to 1. If you have a duplicate instance of the component in your structure, you must provide a unique find number value in import. In the absence of the unique find number, the import will create a single component with the find number value defaulted to 1 and the other components won't be created. This is applicable for REST APIs and SOAP Services as well.

- If you perform a **Replace** action to update the New Find Number value using import, it's recommended not to import changes to other attributes in the same import batch.

Here are the best practices and recommendations:

- All existing and new customers should use Item Sequence for sequencing the structure. It's recommended not to use Find Number for sequencing of the structure. Find number should only be used to include duplicate components in a structure.

- Agile PLM customers migrating to Oracle Fusion Cloud should map Agile PLM Find Number to Item Sequence.

- CAD integration customers should map Agile PLM Find Number to Item Sequence.

- Agile PLM MCAD customers using the find number feature must map Find Number to structure component descriptive flexfields.

Suggested Operation Sequence

You can use the **Suggested Operation Sequence** column to record a design engineer's suggestion for the operation sequence of components in a manufacturing work definition. This doesn't have a default value and isn't automatically incremented.

Note: Suggested operation sequence isn't a required value.

Example: In an assembly that includes 3 components, you can suggest an operation sequence for component A as 1, component B as 2, and component C as 3. The manufacturing team can refer to this to specify a sequence for assembly of components (in the manufacturing work definition).

Related Topics
- Can I modify the find number when the item is on a change order?

Key Actions and Features on a Structure Page

Here are some of the key actions and features available on the toolbar or the **Actions** menu on a structure.

- **Fill Up** (Ctrl+U), or **Fill Down** (Ctrl+D), and **Fill Selected** (Ctrl+S): you can quickly fill in attributes when you've added new items (this is also available when modifying a change order).
  - **Fill Up** (Ctrl+U) and

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- ○ **Fill Down** (Ctrl+D) are available when you've selected a consecutive range of rows. Remember that you've to select the table cell and modify the value in the cell for Fill Down and Fill Up to work.
- ○ **Fill Selected** (Ctrl+S) is available when you have used **Control-click** to select nonconsecutive rows.

    Note that the Effectivity Date attribute isn't automatically populated.

- **Search**: Enter the criteria to search for components within the structure. The application performs a search based on the component name and description.

- **Quantity Related**: Select this to validate whether the item structure quantity matches the reference designator count. A message appears in case of quantity mismatch. This is enabled by default in Product Development structures. This action is also available on the reference designator dialog box.

- **Align Quantity**: Select this to automatically update item quantity to match the reference designators count. This action is also available on the reference designator dialog box.

- **Set Quantity Related to No**: Select this to disable the Quantity Related setting that creates a dependency between component quantity and the number of reference designators. If the Quantity Related field is set to No, the application allows a mismatch between the component quantity and the number of reference designators entered for the selected component.

- **Set Quantity Related Field to Yes**: Select this to enable the Quantity Related setting that creates a dependency between component quantity and the number of reference designators. If the Quantity Related field is set to Yes, the application checks whether the specified component quantity matches the number of reference designators entered for the selected component and displays a warning if there's a mismatch.

- **Freeze:** This is useful when you want to work with a large amount of component data spread across multiple columns in the item structure. To freeze a column, select the column and click **Freeze**. Scroll through the columns keeping the frozen column in context. For example, you can keep the item name column frozen and scroll to view all its additional attributes.

Replace a Component

You can replace a component in your item structure, copying over key data from the original component to the replacement component.

You can replace a component from:

- an item structure page in the Product Information Management work area
- a change order's Affected Objects Structure tab in the Product Development work area

How You Replace a Component

1. Depending on your work area, here's how you select the component you want to replace.

   In Product Development,
   - ○ Open the change order that contains the component you want to replace.
   - ○ Click the Affected Objects tab and select the component you want to replace.

   In Product Information Management,

   - ○ Open the item that contains the component you want to replace.
   - ○ Click the Structures tab and select the component you want to replace.
2. Click **Actions** > **Replace**. You can also use the **Replace** icon on the toolbar.

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3. Search for and select the replacement component.

   The original component is redlined and the replacement component appears in green (which is different from the initial color). The original component also appears in the **Replaces** column for your reference.

   End date of the original component becomes the start date of the replacement component.

4. Save your changes.

   In the Product Information Management work area, you can save your changes to the item or save the changes to a change order and route it for approval.

How Start and End Dates are Derived

The table lists how the start and end dates are derived upon replacement.

In Product Development	In Product Information Management
Upon replacement, the end date of the original component and the start date of the replacement component will be the same as the effective date of the affected object. If the affected object is effective on approval, this will be the date when the change order is moved to Scheduled status. If the affected object has a future effective date, this will be the same as the effective date.	Upon replacement, the end date of the original component and the start date of the replacement component will match the date in the **Date** field on the toolbar of the item structure page. If a replacement is to be effective only in the future, select a future date in the toolbar and then perform the **Replace** action. The replacement is visible in the structure when the date selected is after the start date of the replacement component.

What's Copied Over to the Replacement Component

When you replace a component, item sequence, structure component attributes, substitutes, and reference designators are copied over from the original component to the replacement component.

Here are the attributes that are copied over:

Component Attributes

- Item Sequence - Read-only
- Quantity
- Yield
- Comments
- Start Date
- End Date
- Planning Percent
- Check ATP
- Required to Ship
- Required for Revenue

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- Include on Shipping Documents

- Automatically Request Material

- Basis

- Enforce Integer Requirement

- Supply Type

- Component UOM

Substitute Components

- Item

- Description

- Primary UOM

- Quantity

- Inverse Quantity

- Priority

- Enforce Integer Requirement

- Descriptive flexfields

Reference Designator

- Reference Designator

- Description

- Descriptive flexfields

Considerations for Replacing Components

The table shows considerations for replacing components based on the work area.

In Product Development	In Product Information Management	Across Product Development and Product Information Management
• You can't replace a component that's already a replacement for another component in the same change order. • You can use the **Undo Redlines** action to revert the replacement action when the change order is in Open or Interim Approval status, provided you have the permission to perform the action. This permission is defined in the Additional Workflow Controls table in the change type setup. • If you're replacing an item with a document, then the reference designators aren't copied to the replacement. • The replacement attributes are displayed in the Change Order Details report.	• Once a replacement is selected, neither the original nor the replacement component can be edited. • The **Replaces** column is visible by default and retains the record of replaced components even when you enter future dates in the **Date** field. The original component is shown in the **Replaces** column until it's replaced with another component.	• If a component has redlines, for example, the quantity is updated, the component can't be replaced. • If the replacement component selected has a different UOM from the original component, a warning message appears and the quantity is reset to 1. Reference designators and substitute components aren't copied over. The replacement component's UOM will show the item's primary UOM. • If the replacement component was defined as a substitute component of the original component, then it isn't copied to the substitute component table of the replacement component.

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Related Topics
- Items and Documents in Product Development
- Define a Change Order
- View and Edit Change Details

Track Replacements

You can generate the Change Order Details report to track replacements made to structure components using the change order. Here are some points on the report:

- Replacement attributes can't be hidden.

- The **Replaces** column appears in the Structure Changes table showing the original component that was replaced.

- The **Change Action** column shows the replacement component as **Added** and original component as **Disabled**.

- Copied reference designators and substitute components are shown against the row marked **Added**.

- **Change Action** and **Replaces** attributes are shown in the **Pending Component** section.

Add Reference Designators on Items

Reference designators commonly serve as a labeling system to refer to components.

If your administrator has configured reference designators for adding them inline with item components, here's how you add them:

1. Navigate to the Structure tab on the item and select a component in which you want to add reference designators.
2. In the Reference Designator column, click the expansion button '...'
3. In the Reference Designator dialog box, enter the range for designator values.

   For example, if your administrator has selected '+' as a range indicator, you can enter 'A1+ A5' and the application will expand the range to create five reference designators: A1, A2, A3, A4, and A5. The expanded range appears in the side panel once you save your changes.

   Additional options in the Reference Designator dialog box:
   - **Quantity Related**: To validate whether the item structure quantity matches the reference designator count, select this option. A message appears in case of quantity mismatch. This is enabled by default in Product Development structures.
   - **Align Quantity**: If the structure item quantity doesn't match the count of reference designators, select this option and click OK. This would allow automatic update of item quantity, to match the reference designators count.

   Note: You can also access Quantity Related and Align Quantity functions from the toolbar of the Structure tab, and the Actions menu. To modify the details of reference designator, you can use the Reference Designator dialog box or the Reference Designator column.

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4. Click **Save**.

   To view and modify descriptive flexfields, you can use the side panel.

   > **Note:** Modified reference designators appear in italicized red colour after you save your changes.

Related Topics
- Items and Documents in Product Development
- Define a Change Order
- View and Edit Change Details

Delete a Component

When you delete a component, here's how the side panel displays details:

- If you delete a component row, the side panel automatically displays details about the next component.

- If all components are deleted, the parent component detail is displayed.

- When you select multiple components and delete them, the side panel displays details based on the component you select first. For example, if you first select the component named Component_2, then the side panel displays information about the next component named Component_3.

> **Note:** You can't delete a component if the structure is created in the Product Information Management work area. If you want to delete the component from the structure, you must do it from the work area where the structure was created.

Manage Substitute Components

You can add and update substitute components for items, from the contextual side panel on the item structure tab.

Here's how:

1. Launch the item from the Affected Objects tab on a change order.
2. Click the Structure tab on the item.
3. Select the component for which you want to add the substitute.
4. In the side panel, select the Substitute Components tab to add the substitute.

Here are some details on managing substitutes:

- Only the structures of preliminary items (items that have never been released before) can be updated. Similarly, only substitute components in preliminary stage can be updated. Once released, components and substitutes can be updated only through an engineering change order.

- The lifecycle phase of the substitute should be the same or higher than the component. You can add a substitute component belonging to a lower lifecycle to an item, only when a released item with a higher lifecycle phase than design is allowed to be added to a preliminary item by disabling lifecycle validation.

  > **Note:** To disable lifecycle validation deselect the **Enable Lifecycle Validation** check box in the Item Structure Type Details task. To access the task, in the Setup and Maintenance work area select Product Management offering > Functional Area: Structures > Item Structure Type Details.

- If you have a parent item which is preliminary, you can add components that are released or preliminary. In both these cases, you can add substitutes. You can also add substitutes to a sub-assembly.

- You can't add a parent item as a substitute.

- When you add a substitute in the side panel, the quantity is defaulted to the original component value and can be edited.

- Once released to a pre-production lifecycle, only the additional attributes (descriptive flexfields) can be updated in the Product Information Management work area.

- You can identify where an item is used as a substitute by using the where used query on the item structure page.

Related Topics
- View Item and Document Details

View Structures

You can create an item from the Product Management work area and build a structure or search for a structure and view the structure details with the component details appearing in the side drawer.

When you search for structures, you can view structure presence indicators (structure icon) that lets you access the item structure from the search results. You can create a structure by either selecting and adding existing items or creating new items. Here's how you access items.

Navigate to the Product Management work area and do one of the following:

1. Click **Items** from **Actions** on the Product Management Home Page
2. Select **Items** from the Product Management Search drop-down list on the Product Management Search Page.

When you navigate to an item and the structure tab within the Redwood page, you can create a new structure, modify the header structure, and delete an existing structure. After you create the header, you can build and modify the single-level structure by adding one or more components using the search and select icon in the toolbar.

Structure Details

Here's how you access and create a structure:

1. Open the item and navigate to the Structure tab.
2. Click the ellipses (…) button and click **Create Structure**.
3. In the New item structure drawer that appears, select any one of the options:
   - Create new - using the Create new option, you can add Structure Name, Structure Description and the required details in Additional details field and click **Apply**.
   - Create from existing - using the Create from existing option, you can either choose an existing structure or a new structure and fill in the required details and click **Apply**.
   - Create from common - using the Create from common option, you can either choose an existing structure or a new structure and fill in the required details and click **Apply**.

Note: You can't add a parent component to a child component. This applies to both preliminary structures and affected item structures on engineering and commercialization change orders.

You can create items directly within the structure. When building your item structure, you can create new items or documents and add them as a component directly. It then becomes a part of the item structure, and you can edit or modify the component level attributes.

Note: Creating a new component is only supported for the single level structure.

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You can drag and drop (select and move) items from the clipboard or spotlight in the navigator to create a structure. After you add the components, double-click the cell to modify the component level attributes and the component descriptive flexfields. You can use additional indicators to explore subassemblies.

When you select the component, you can:

- Refine your search using filter chips

- Multiselect the item components to add

- Search and select the components to add to a structure and perform a search for another component. You can also select a saved search.
  - The count in the Add button shows you the number of components that you're adding. Click the **Show Selected** button to see the selected components.

> **Note:** To save your search, you must first perform your search, apply the filters, then save your search as personal or system search.

After you add the components, you can modify the following:

- Component level attributes

- Component descriptive flexfields

- Reference designators

- Substitute components

Use **Filter** columns to narrow down the components that require review. The column filter icon appears when you hover over the column header.

Views in Structures

On navigating to the structure, you can choose to view the entire structure or focus on specific levels. The views that you can explore are:

- **Single level**: displays the single level view of all the structure components. Item structures are editable only in the single level. In this release you can create a new item or document and add it directly as a component while building a structure.

- **Multi level**: displays all the levels that are available for the structure components. You can't edit structures in the multi level view.

- **Hierarchy**: displays the details of all the structure components in a tree-format. In the hierarchy view that's available, you can view the entire tree of the structures in read-only mode with separate icons for parent subassembly, item, or document subassembly document, and document. This view is available in the change context and displays redlines for the first-level only. Filter the columns in the Hierarchy view to narrow down on components and focus on the most relevant ones.

- **Summary**: provides us with an aggregate of the components across the entire structure. The summary table contains the item attributes that you can configure for a new Task Flow view - Structure Summary. Click the View Details eye icon to see the detailed component-level attributes in the side drawer, which is the same as that visible when you select the single level, multi-level, or hierarchy views.

Edit Structures

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Right-click the component row of a structure, to use the copy and paste attributes or use the keyboard shortcuts CTRL +C and CTRL+V for the same. You can only copy and paste the attributes that are edited inline and not the ones edited in the side drawer. If you copy consecutive cells that are read-only, only the editable cells will have its values pasted.

Modify single level structures with the spreadsheet-like functionality. Use the fill handle to copy values to multiple components. As in a spreadsheet, select a cell, grab the small square icon in the corner, and drag it in any direction - vertically, or horizontally to fill cells.

To perform bulk edits, select multiple cells and drag up or down (select and move in different directions). To quickly update cells, select multiple cells, right-click and select **Autofill**.

Double-click the descriptive flexfield attribute cell in a component row, which will open the side drawer and modify component descriptive flexfields. When you drag and drop (select and move) an item, remember that only the item is copied and not the structure child entities like component level attributes, reference designators, and substitute components.

Points to Consider

- If you haven't created a structure, you must first create the structure header. This enables the edit capabilities in the grid. Example: You must create a primary structure to add components.

- The primary structure is the default structure view when you navigate to the structure tab. If you've only created an alternate structure and not created a primary structure, you can see a 'No data to display' message when you navigate to the structure tab. Select the alternate structure from the drop-down list to view the components.

Where Used

You can also view the structure and where used report based on the selected context date. For structures, you can select the context date only for the current revision. Regardless of the component revision you choose, the where used report is derived based on the current revision.

- For structure, you can only select the date between the start and end revision date of the current revision.
    - If the current revision is the latest revision, then there's no end date.

- For where used, you can select past or future date.

On selecting **All** view and a specific date, the where used results will display the past, current, future effective, and future pending parent items from that date onwards.

Spotlight

You can add individual components or subassemblies to the **Spotlight** displayed in the Navigator for that transaction. After adding the components, you can (select and move) drag and drop them from the spotlight to another structure. The drag and drop feature is also supported from the clipboard. Select the items by selecting the checkboxes and drag (move) them to the structure tab. Use the **Replace** action to replace one component with another.

The spotlight includes reference designators, substitute components, component level attributes, component level descriptive flexfields when you drag and drop (select and move) the components directly to an item or to an item in change context. When you drag and drop (select and move) components from the spotlight and select the **Copy Details** toggle button, the component level attributes are copied.

You can undo the redlines of both saved and unsaved changes within an item's pending revision. This is applicable for the Structure tab in the change context. The **Undo Redlines** button is enabled when one or more redlined rows are selected.

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Here are some actions you can perform from the structure grid:

- View details of the component on the header, including the lifecycle phase of the item and the revision.
- Create, modify, and delete the structure header.
- Create, modify, and delete the component and its child entities in the structure.
- Replace a component with another component.
- Select different views created by your administrator through **Configure Views**. The view can contain item operational attributes, item extensible flexfields, component level attributes, or component descriptive flexfields.
- Toggle between the single level, multilevel, and hierarchy views.
- View the levels displayed on a structure.
- View the progress indicator when the data is loading.
- Apply filters on the structure (filter supports item and item description).
- Export the selected columns and rows or all.
- Detach the table to view in full screen mode.
- Add component items to the clipboard and spotlight.
- Drag and drop from the clipboard and spotlight.
- View the total count of rows in the structure and the number of selected rows.
- Hide and unhide columns.
- Resize rows and columns.
- Sort columns in an ascending or descending order.
- Select multiple rows, columns, or cells.

Note:
- The Replace action is enabled only on a row that isn't modified, added, or deleted.
- When you initiate the Replace action, before saving, the row—including reference designators, substitute components, and descriptive flexfields—is read-only.

Reference Designators and Substitute Components

You can also add or modify reference designators and substitute components of a component which are additional attributes available in the structure grid. Use these attributes in existing views or to create new views. Select and click the data presence indicator on the reference designator and substitute component columns of a structure to view details in the side drawer. Separate tabs are available for reference designators and substitute components. Global descriptive flexfields are always visible for both reference designators and substitute components in the side drawer. You can modify the reference designator descriptive flexfields in the side drawer. Configure business rules on the standard attributes and descriptive flexfields of reference designators and substitute components.

To add reference designators, double-click the empty reference designator cell, which will open the side drawer. You can add a range, if the range indicator is configured in Manage Item Structure Type Details task, and comma separated values. For more details, see *Configure Reference Designator Options*

- Quantity Related: validates the component quantity against the reference designator values.
- Align Quantity: automatically calculates the quantity based on the number of reference designators and displays it in the quantity column for the component.

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Search for the structure component based on the reference designator. However, remember to include the Reference Designator Search attribute in the views you create to search for components using the reference designator.

After you add the reference designators, you must click **Apply** so that they appear in the table. Modify the description by selecting the pencil icon in each row. You can navigate to the next component using the navigator icons in the side drawer and click the pencil icon to enable the edit mode. To modify an existing reference designator, double-click the cell to navigate to the side drawer and the pencil icon to switch to edit mode. You can only delete reference designators in the Details area of the side drawer for reference designators.

> **Note:** If you've configured range indicators for reference designators before 24D, you must run the Product Management Search Ingest Job.

Use the **Enterprise Scheduler Service** job: **Product Management Search Ingest Job** to ingest the new range indicator and replace the existing range indicator:

- Ingest Object = Item Structure
- Object Type = Reference Designators
- From Date = Enter a date
- To Date = You can select the current date

After this job is completed, the **Enterprise Scheduler Service** job to run Bulk ingest to OSCS job starts automatically. When both jobs are completed, the range indicator will show the latest selected range indicator.

If the range indicator is enabled, you can see the configuration for quantity and the reference designators with the range indicator in the Reference Designator tab.

To add substitute components and descriptive flexfields, double-click the component cell which will open the side drawer. To modify and delete components, click the pencil icon next to the substitute component. You can search for the structure component based on the substitute component.

Side Panel View in a Structure

The drawer appears when you click the presence indicators on the rows of a structure and provides you more information about the structure (component details). You can quickly navigate to the next or previous component row details without closing the drawer using the navigation buttons displayed in the drawer region.

Here's the data you can view and actions you can take from the drawer:

In Product Development	In Product Information Management	Actions
Item Revision Attachments	- Item Attachments - Item Revision Attachments	Download attachments
Pending Changes	Pending Changes	Navigate to change orders or change requests
Quality	Quality	Navigate to open quality issues, quality actions, problem reports, and corrective actions
Product Development Relationships	NA	Navigate to related objects created in the Product Development work area

In Product Development	In Product Information Management	Actions
AML	NA	Navigate to manufacturer parts
Reference Designators	NA	View details of the reference designator and search for specific reference designators
Substitute Components	NA	View details of substitute components

Notes on the side drawer view:

- Has Pending Change: Displays only pending change orders and change requests, not the released changes.
- Has Quality Issue: Displays pending quality issues, quality actions, problem reports, and corrective actions.
- Has Relationships: Displays relationships added through the Product Development work area. When you click the concept component or the requirement specification that you added as a related object, the parent concept or requirement opens.
- Has Item Attachment: Displays attachments that you can download. You must select only a single row to download attachments. Selecting multiple rows will disable the Download button.
- Has Reference Designators: Displays all the details of reference designators. You can even search for specific reference designators.
- Has Substitute Components: Displays all the details of substitute components.

View Revision-Specific Values for Items in Pending Revisions

When you select the revision of an item, the content is displayed with or without the redlines, depending on whether the revision is in the past, current, pending, or future state.

> **Note:**
> - The **Guide Me** button appears when you configure the Page Properties for guided journeys in a structure.
> - You can configure guided journeys for structures that will let you provide relevant instructions or guides to create or modify the structure.

You can select **Edit in Change Order** from the **Actions** menu of a pending revision within the appropriate change order context to edit a pending revision. When you select an item revision, your ability to edit and see redlines depends on whether the revision is:

- **Current** – The revision is editable and doesn't show redlines once updated.
- **Pending** – The revision is editable when you select Edit in Change Order. Redlines are displayed after saving the item.
- **Past** – The revision is read-only and doesn't show redlines.
- **Future Effective** – The revision is read-only and shows redlines until the change becomes effective.

Depending on the selected revision, only the following tabs associated with change control will display content and values specific to that revision. Other tabs will not display any data.

- **Attributes**
    - ○ Each of the following attribute groups will be displayed according to the selected revision:
        - ‑ Basic, Manufacturing, Service, Inventory, Physical Attributes, Sales and Order Management, Purchasing, Planning, and Additional Attributes

- **Attachment**s
    - ○ Item attachments remain consistent across all revisions.
    - ○ Attachments tied to a specific revision are revision specific. When you add an item to a change order, the pending revision also displays the current revision attachments. Deleting an attachment from the pending revision won't remove it from the current revision.
    - ○ When you add an item to a change order, the pending revision also displays the current revision attachments. Deleting an attachment from the pending revision won't remove it from the current revision.
    - ○ Attachments added to a pending revision won't appear in the current revision.

- **Structure**
    - ○ In the structure, the attribute values for both the component and the item displayed correspond to the specific revision you've selected within the context item. If the selected revision is the current revision, then the component will display the current revision, and the item entities will be editable. The values of the following attributes, that are added to the structure table, are dependent on the selected context revision:
        - ‑ Component revision
        - ‑ Component attributes
        - ‑ Component descriptive flexfields
        - ‑ Reference designators
        - ‑ Substitute components
        - ‑ Item operational attributes
        - ‑ Item extensible flexfields

- **Relationships-trading partner items (AML)**
    - ○ Trading Partner Items will be displayed in the context of the selected revision.
    - ○ Other tables aren't revision based and they aren't change controlled.

You can create guided journeys that includes tutorials and best practices to assist users as they work with item structures.

Data for Change Orders Across Pending Item Revisions

Depending on the revision selected (Current, Pending, Past, or Future Effective), the following tabs which are under change control will display content and values for that revision. You can edit a pending revision within the appropriate change order context.

- Attributes

- Attachments

- Structures

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- Relationships

Depending on the change order associated with the item pending revision, the following tabs in the item will either be editable or read-only when you click **Edit Change Order**, from the **Actions** menu as shown in the following table:

Item Tabs	Entities	Engineering Change Order	Non Revision Change Orders	Commercial Change Order with Engineered Flag Set to Y	Commercial Change Order with Engineered Flag Set to N
Attributes	Item Basic Attributes (Main attributes)	Editable (Description, User Item Type, Lifecycle Phase) Read-only (Item Class, Approval Status, Revision, Primary Unit of Measure)	Editable (Description, User Item Type, Lifecycle Phase) Read-only (Item Class, Approval Status, Revision, Primary Unit of Measure)	Editable	Editable
Attributes	Item Operational Attributes	Read-only	Read-only	Editable	Editable
Attributes	Item Extensible Flexfields	Read-only	Read-only	Editable	Editable
Attachments	Item Attachments	Read-only	Read-only	Read-only	Read-only
Attachments	Item Revision Attachments	Editable	Read-only	Read-only	Read-only
Associations	Organizations	Read-only	Read-only	Editable	Editable
Categories	Categories	Read-only	Read-only	Read-only	Read-only

Depending on the change order associated with the item pending revision, the structures and relationships tabs in the item will either be editable or read-only when you click **Edit Change Order**, from the **Actions** menu as shown in the following table:

Item Tab	Entities	Engineering Change Order	Non Revision Change Order	Commercialization Change Order with Engineered flag set to Y	Commercialization Change Order with Engineered flag set to N
Structure	Structure name (flow)	Primary-editable Alternate-read-only	Primary-read-only Alternate-read-only	Primary-read-only Alternate-editable	Primary-editable Alternate-editable

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Item Tab	Entities	Engineering Change Order	Non Revision Change Order	Commercialization Change Order with Engineered flag set to Y	Commercialization Change Order with Engineered flag set to N
Structure	Structure header attributes (Description and Descriptive Flexfields) and attachments	Primary-read-only Alternate-read-only	Primary-read-only Alternate-read-only	Primary-read-only Alternate-read-only	Primary-read-only Alternate-read-only
Structure	Structure Grid Table (Includes Component Details attributes)	Primary-editable Alternate-read-only	Primary-read-only Alternate-read-only	Primary-read-only Alternate-editable	Primary-editable Alternate-editable
Structure	Structure Component Descriptive Flexfields	Primary-editable Alternate-read-only	Primary-read-only Alternate-read-only	Primary-read-only Alternate-editable	Primary-editable Alternate-editable
Structure	Component Level Attributes (Component Material Control, Component Order Management, Component Shipping Details)	Primary-read-only Alternate-read-only	Primary-read-only Alternate-read-only	Primary-editable Alternate-editable	Primary-editable Alternate-editable
Structure	Component Level Attributes (Component Item Details)	Primary-read-only Alternate-read-only	Primary-read-only Alternate-read-only	Primary-read-only Alternate-read-only	Primary-read-only Alternate-read-only
Structure	Reference Designator	Primary-editable Alternate-read-only	Primary-read-only Alternate-read-only	Primary-read-only Alternate-editable	Primary-editable Alternate-editable
Structure	Substitute Components	Primary-editable Alternate-read-only	Primary-read-only Alternate-read-only	Primary-read-only Alternate-editable	Primary-editable Alternate-editable
Relationships	Trading Partner Items > Manufacturer	Editable	Editable	Read-only	Read-only
Relationships	Trading Partner Items > Competitor or Supplier or Customer	Read-only	Read-only	Read-only	Read-only
Relationships	Related Items	Read-only	Read-only	Read-only	Read-only

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Item Tab	Entities	Engineering Change Order	Non Revision Change Order	Commercialization Change Order with Engineered flag set to Y	Commercialization Change Order with Engineered flag set to N
Relationships	Links	Read-only	Read-only	Read-only	Read-only
Relationships	GTIN	Read-only	Read-only	Read-only	Read-only
Relationships	Cross-references	Read-only	Read-only	Read-only	Read-only
Relationships	Spokes system items	Read-only	Read-only	Read-only	Read-only

Compare Structures

You can compare two item structures—a baseline and another structure—using the Compare action on the Structures tab of an item.

The comparison results are shown with filters to help refine your view.

To compare structures:

- On the Structures tab of an item, click **Actions** (three ellipses button) > click **Compare**.
  - The Compare structures drawer appears.

You can select the values for the following attributes for both the baseline and the compared structure:

- Organization Name
- Item Number
- Revision Number
- Structure Type

When you click Compare in the Compare structures drawer, a single-level structure comparison is initiated across both the structures. Note that the columns in comparison results are based on the selected view.

> **Note:**
> - Only two structures and one level of the structure can be compared at a time.
> - You can compare two structures and their components across different organizations, revisions, and structure types.
> - You can compare components and their attributes side-by-side and scroll through the results both horizontally and vertically.

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You can quickly determine the differences between the structures by using the filters such as **All**, **Differences**, **Added**, **Changes**, **Removed**, and **Unchanged** available in the comparison results.

- **All**: shows items that are similar in both structures, missing in the compared structure, highlights difference in the compared structure, and lists any items that are additionally available in the compared structure.
- **Differences**: shows items that are missing in the compared structure, highlights differences in the compared structure, and lists any items that are additionally available in the compared structure.
- **Added**: shows items that are additionally available in the compared structure.
- **Changed**: highlights the differences in the compared structure.
- **Removed**: shows items that are unavailable in the compared structure.
- **Unchanged**: shows items that are similar between both the structures.

You can search for a specific component (across both the structures) in the comparison results by entering the item number in the search box.

When you click **Detach** on the Compare structures page, the comparison results grid expands to an entire page, allowing a better view of the additional rows.

You can scroll through the results both horizontally and vertically and locate the specific cells that interest you.

The comparison results are highlighted with colored icons for better readability and understanding of the differences.

> **Note:**
> - If you have the same components on both the baseline structure and the compared structure, and if at least one of the attribute values present in the current view are different, an edit icon is displayed, and the differences are highlighted in yellow on the cell. The attributes include the Item Sequence.
>
> - If a component exists in the baseline structure, but is missing in the compared structure, a plus icon is displayed with the row highlighted in green.

Perform Guided Task Flow to Mass Replace Components

You can perform a mass replacement of components across multiple structures using a guided task flow. Your administrator can configure the guided task.

You can view all the items where a component is used and replace it with a different component across one or more selected structures. Here's how:

1. On the **Tasks** panel tab click **Perform Guided Tasks**.
2. On the Explore page, search for a component replacement journey and select it or select a component replacement journey appearing on the page.
3. Click **Start This Journey**.
4. Search and select the original component you want to replace and the replacement component. Click **Done**. During the selection, the components will be filtered based on the organization selected in the configuration.
5. Select for one or more structures from the where used list that shows where the original component is used. You can refine the search within the displayed list, if the list returns too many results. Click **Done**.
   Notes:
   - If the replacement component is configured to be routed through an engineering change order, the search results will only include engineering structures created in the Product Development work area.

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- If the replacement component is configured to be routed through a commercialization change order, the search results will include commercial structures created in the Product Information Management work area and engineering structures in the Prototype or Production lifecycle phases. The results will exclude Packaging Structures.
- If the replacement component isn't configured to be routed through any change order at all, the search results will include both engineering structures and commercial structures.

6. Review the summary of the selections from your previous tasks and click **Done** to submit the mass replacement action.

   Notes:
   - You can create a new engineering or a commercialization change order. You also select an existing change that's in the Draft or Open status.
   - Depending on the configuration of the guided task, the changes will be applied directly to the selected structures of the commercial items or added as affected items to the change order through the scheduled process for engineering and commercial items.
   - When the scheduled process is complete, the change order is created in the open status.

     If the guided task isn't configured for the change type, then there's no need to select the change type or create the change order. The replacement will be made directly on the item.
   - When the components are replaced, the reference designators will also get replaced.

7. View the change order status.

   You can view the details such as batch name, change order name, job ID, and job status.

   > **Note:** To view the status of the tasks on a later date, you can click the **View Guided Tasks** link in Product Management Experience in the Tasks panel tab.

Rules About Item Structures

Here are some rules about item structures.

During the Item Lifecycle Phase

- You can't reinstate the parent item in a structure if the child component is marked obsolete.
- You can assign an item in Draft approval status to an item structure.
- A component's lifecycle phase should be the same or higher than the parent assembly's lifecycle phase; this applies to items of lifecycle phase Preproduction or Production only.
- If an assembly is approved, components in the draft status can't be added. This applies to items of lifecycle phase Preproduction or Production only.
- A hand-over of a structure to the downstream processes is triggered by changing the lifecycle phase of the parent item to Preproduction or Production.

When You Create Change Orders

- You can edit an item without going through change management control, only if the item isn't assigned as an affected object to a change order.

- If you're unable to add an item to a structure, here are some of the possible reasons:
    - There's another, later revision of the parent item.
    - The parent item is on a change order with a pending revision.
    - The item was earlier assigned to a change order and the change order is complete. So you're not allowed to modify the item's attributes, structure, AML, or attachments. To modify the item, assign it to a new change order.
    - You're adding a parent component to a child component.
    - If the item is a commercial item, you can't add it to an engineering change order.

- You're restricted from deleting a component (or its parent) if the item is released through an engineering change order, assigned to a pending change, or part of a canceled change. However, you can delete components (and items) assigned to commercialization change orders and that aren't part of a structure on an engineering item using the delete group.

When You Deprecate Items

- You can deprecate an item if it isn't used in another structure.
- A child item can still be active if its parent is obsoleted.
- A child item can't be obsoleted if the parent item is active.

To Calculate Item Grade

- You can add items or other subassemblies to the top-level item. After you add the items, the grade of the top-level item must be refreshed. This results in a display of a newly calculated value of the grade.
- The grade of the entire top-level assembly or item takes into account various statuses of the child items within the structure.
- You must examine a structure to see which items don't have an AML or which ones have pending changes. Based on these conditions, you can decide to improve the grade, and then publish the item for manufacturing readiness.

Import an Item Structure

Importing structures of items is similar to importing regular items. When you intend to collect items in a structure and then import that structure, the regular items must first exist in the application.

If some or all items going into the structure don't exist already in the application, these items must be created or imported before you design and import the structure.

1. Download the Item Structure Import template file from the following guide: Oracle Fusion Cloud SCM File-Based Data Import (FBDI) for SCM.

   This guide contains information about the template.
2. Enter the item information on the EGP_STRUCTURES_INTERFACE tab:
    - Set the Transaction Type to SYNC.
    - Enter a Batch ID such as 200.

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- ○ Enter the Structure Name such as Primary.

- ○ Enter an Organization Code such as 000.

- ○ Enter the Item Name.

In the EGP_SYSTEM_ITEMS_INTERFACE tab, you need not enter the item version start date. The application calculates this value based on item effectivity date in the EGP_ITEM_REVISIONS_INTERFACE tab. In case of multiple item revisions (or effectivity dates), the earliest date is considered.

3. Enter the structure information on the EGP_COMPONENTS_INTERFACE tab:

- ○ Set the Transaction Type to SYNC.

- ○ Enter the same Batch ID as on the EGP_STRUCTURES_INTERFACE tab.

- ○ Enter the Structure Name as Primary.

- ○ Enter the same Organization Code as on the EGP_STRUCTURES_INTERFACE tab.

- ○ Enter a child item in Component Item Name.

- ○ Enter the parent item in the Structure Item Name.

- ○ Enter a number for the component item sequence which determines the order in which child items are listed. In the absence of a sequence number or in case of a duplicate sequence number, the application automatically generates the sequence number.

- ○ Enter a number for the quantity of each item.

4. Generate CSV files:

- ○ Select the **Instructions and CSV Generation** tab and click the **Generate CSV File** button.

- ○ Click **Save** each time the macro prompts to do so.

- ○ Locate the zip file that was generated by the macro.

5. Import the zip file:

- ○ From Navigator, open **File Import and Export**.

- ○ Click the Create New **+** icon.

- ○ Click the **Browse** button and locate the zip file that was generated by the macro.

- ○ In the Account field, select **SCM / item / import**.

- ○ Click **Save and Close**.

6. Load data to interface tables:

- ○ From Navigator, open **Scheduled Processes**.

- ○ Click the **Schedule New Process** button.

- ○ Search for and select **Load Interface File for Import** as the process name.

- ○ Click **OK**.

- ○ Select **Item Import** as the Import Process.

- ○ Select your zip file as the Data File.

- ○ Click **Submit**.

- ○ Note the process number.

- ○ Click the **Refresh** icon on the Scheduled Processes Overview page to watch for the process to complete.

7. While still in Scheduled Processes, click the **Schedule New Process** button.

   ○ Search for and select **Item Import** and click **OK**.

   ○ Enter the same Batch ID that you put in the spreadsheet.

   ○ Select the same organization that you put in the spreadsheet.

   ○ Set the other fields as required.

   ○ Click **Submit**.

   ○ Note the process number.

   ○ Click the **Refresh** icon on the Scheduled Processes Overview page to watch for the process to complete.

FAQs About Structures

How can I view the manufacturer parts used in an item structure?

On the Edit Item page, click the AML tab.

The following subtabs appear:

- Item AML subtab - lists the approved manufacturers for the item.
- Structure AML subtab - lists the manufacturer part numbers used in the structure of the item.

How can I view attachments for all the components of an item structure?

On the Edit Item page, use the Actions menu to download the report containing attachments for all the components of an item structure.

How can I find out when the component is added and removed from the structure?

The start date and end date fields on the item structure page indicate the date when the component was added and removed from the structure.

Why can't I modify the structure?

Because the item structure either has another revision or is on a change order with a pending revision.

How can I reinstate a parent item in a structure that contains obsolete components?

You must first reinstate the obsolete components and then reinstate the parent item.

Can I use a replaced component in another item?

Yes. For instance, you replaced a component because a buyer rejected it based on company regulations. But you can still use the component in another item where the regulations don't apply.

Related Topics
- Replace a Component

How can I remove an obsoleted component from an item structure?

Change the lifecycle phase to Production and remove the component from the item structure. Then change the lifecycle phase to Obsolete.

To change the lifecycle in the Product Development work area you must create a change order and release it. But in the Product Information Management work area you don't have to create the change order.

How can I compare different revisions of the same item?

On the Structure tab of the item, use the Actions menu and select Compare Structure. In the Compare By list, select Revision. You can compare different revisions of the same item or different items.

How can I inform other users about my new item structure?

Select **Send Object** in the **Actions** menu and add the users you want to inform.

In a structure, how can I view the items available in an item class?

Export the item structure using the Export to Excel icon and filter the spreadsheet to view items by the item class.

You can also view the item class on the Structure and Where Used tabs of the item.

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In a structure, how can I manage mismatches in lifecycle phase?

To manage the lifecycle phase for a structure type, use the Enable Lifecycle Phase option available in the Manage Item Structure Type task.

To access the Manage Item Structure Type task, navigate to the Setup and Maintenance work area. Select the Product Management Offering, and Structures functional area.

Select the **Enable Lifecycle Phase** option to manually correct any mismatches in lifecycle phase. Deselect the option to allow creation of item structures with components at a lower lifecycle phase than the parent item.

The changes you make to the **Enable Lifecycle Phase** option don't impact existing structures. For such structures you must manually correct the mismatches in lifecycle phase.

Why can't I access the item structure and edit its AML and attachments?

To view and update the item structure, you must have the Maintain Item Structure security grant assigned to your role.

To edit AML and attachments, you must have the Maintain Item Basic security grant.

Related Topics
- Set Up Data Security for Item Classes

How can I update the effective date of a future-dated component through an import map?

To update a future dated component through the import map, pass the current EFFECTIVITY_DATE as the Structure.Component.Start Date and pass the effective date you wish to update as the NEW_EFFECTIVITY_DATE to the Structure.Component.New Start Date in the import template. Additionally, provide a correct current effective date and time zone in the data file for the component item.

> **Note:** The current effective date passed in the data file must exactly match the current effective date of the component item.

Can I modify substitute components?

Yes. You can modify substitute components using an engineering change order.

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Related Topics
- Manage Substitute Components

Why am I unable to view the Substitute For column in the structure details?

Ensure that you've selected **Include Substitute Components** in the search filter and the **Substitute For** column in **View > Columns**.

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9 Formulas

Overview of Formulas

Formula development includes multi-product support and new attributes for tighter integration with downstream applications. These enhancements allow you to model real-world manufacturing scenarios more accurately, including multiple outputs and ingredient-level control.

You can use the **Structure Item Type** — **Formula** to create product formulas with ingredients. When you select the Formula item type, a new Formulas tab appears on the Item page.
In the Formula grid, you can:

- Easily distinguish products and ingredients: Separate header rows help to distinguish between products and ingredients. You can also view formula details in the hierarchy view, this lets you expand or collapse any formula that contains products and ingredients.

- Associate formula names with co-products and by-products to automatically common the primary product formula structure to the corresponding co-products and by-products: To common the primary product formula structure into co-products or by-products, select the formula name. This enables you to view co-products and by-products separately, making it easier to identify the primary products in which this formula is used as a co-product or by-product.

  Note:
  - When selecting the formula name of a co-product or a by-product, you can only select one that hasn't been before used for that same co-product or by-product.
  - As a best practice, you can choose a formula name other than Primary. This is an optional step. If you choose to leave the formula name blank, commoning will not occur.
  - For co-products and by-products, deleting the formula name from the component table doesn't remove the common formula. To remove it, you must open the formula item and make the change there.

- Associate the formula name with formula ingredients to ensure the correct components are selected during the formula expansion: In the Ingredients section, you can select formula names for rows that are formulas (and not standard items). You can choose any of the existing formula names to associate with the ingredient. The selected formula name identifies which child components are displayed in the multi-level and hierarchy views.

  Note: If the ingredient is a formula and no formula name is specified, the application defaults to the primary product's formula name (if present on the ingredient) when expanding it in the multi-level or hierarchy view. If that formula name doesn't exist on the ingredient, it will not be expanded.

- Apply change controls on formulas: You can redline formula name selections for co-products, by-products, and ingredients. You can also redline the primary product, including formula-specific attributes such as Completion Type. Formula-specific attributes are displayed in the Change Order Summary report. When a redline exists, the report shows both the old and new values for these attributes.

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Formulas Operations

Here's what you can do in the Formula grid:

- Create, edit, and delete the formula header.
- Add, edit, and delete products and ingredients.
- Edit the child entities in the formula.
- Delete primary formulas

Components of Formula

A Formula structure can include both products and ingredients.

Products

Products have a structure item type of Formula.

The product types can be:

1. Primary
2. Co-product
3. By-product

For example, when making tofu, the primary product is tofu, soy milk can be a co-product and okara (soybean pulp) is a by-product.

Ingredients

After you add rows, the product type defaults to Ingredient. A formula item can be a co-product, by-product, or ingredient, whereas a standard item can only be an ingredient.

Create Formula

A predefined item template named Formula is available to support the creation of formula items.

> **Note:** You can create a Formula template with predefined attribute values for item classes. You can edit the template as required to meet your business requirements. For setup details, see Add Predefined Item Templates in*Manage Item Templates*.

Here's how you create a formula:

1. From the Product Management Search page, select **Item**.
2. Click the **Add** icon.
3. Click **Create Item**.
4. On the Create Item page, enter values for the mandatory attributes, and select **Formula** in the **Apply Templates** field.
5. Click **Create**.

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6. Navigate to the **Formulas** tab, click the button with three dots (…) next to the **Search** box, and then choose **Create Formula**.

7. In the New formula drawer, enter a Formula Name, provide a Description, and add any additional details or attachments as required.

   After you create the formula header, the parent formula item is automatically assigned as **Primary Product**.

8. The attributes displayed on the Formulas tab includes:

   - Item Number

   - Item Sequence

   - Product Type

   - Structure Item Type

     > **Note:** The columns displayed in the Formulas tab depend on the selected view. A predefined **Product Management Formula View** includes the following default attributes: Item Number, Item Sequence, Product Type, and Structure Item Type. You can configure your preferred view to include additional attributes that meet your business requirements.

   - The Component level attributes displayed on the Formulas tab includes:
     - Absolute Yield: Displays Absolute Yield (Quantity × Yield) for each component (includes both ingredients and products). This field is read-only.
     - Product Type: This attribute categorizes output as:
       - Primary Product
       - Co-product
       - By-product
       - Ingredient

       This classification helps define outputs more accurately and is essential for downstream traceability.

       > **Note:** After you add ingredients and products, double-click a cell to edit ingredient level attributes.

     - Contribute to Yield (Ingredients only): Select **Yes** to indicate that the ingredient contributes to the total formula yield, or **No** if it doesn't. Use the **Contribute to Yield** attribute for loss items or carriers that don't affect the final product quantity.
     - Completion Type (Products only): Specifies how the product is treated at formula completion. Valid values are **Manual** or **Automatic**. Use the **Completion Type** attribute to ensure consistency in completion logic across downstream manufacturing processes.

   - Component descriptive flexfields. Double-click a cell to edit the component descriptive flexfields.

   - Substitute Components.

   - Reference Designators.

     > **Note:** Support for Reference Designator isn't available.

Related Topics
- Manage Item Templates

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Edit Formula

You can add, edit, and delete formulas and their constituents — products and ingredients.

Here's how you edit the formula:

1. Click the **Select and Add Items** icon in the toolbar to open the Search and Select drawer.
2. In the drawer, search and select to add one or more ingredients to the formula. You can also search for more ingredients or use a saved search.

   You can use filter chips with multi-select to refine your search.

   The count on the **Add** button shows the number of ingredients you're adding. Click the **Show Selected** button to view the ingredients you've chosen.
3. After you add rows, the product type defaults to **Ingredient**. If you don't want to add the row as an ingredient, change the **Product Type** field to **Co-product** or **By-product** before saving your changes.

   Note: While a formula item can be a co-product, by-product, or ingredient, standard items can only be ingredients.

Delete Formulas

To delete a primary formula, add it to the **Delete** group.

Note: Before deleting, ensure that the primary formula isn't referenced in any other structure or formula as a component. You'll get an error message if you try to delete a formula that's used in another formula as co-product, by-product or ingredient. To delete a primary formula, remove the reference and ensure that the primary formula hasn't been used anywhere as a component in structure or ingredient or product in formula.

Additional Actions

Here are some actions that you can perform on formulas:

- Copy and Paste: Copy a cell and paste it into one or more cells within the same column.
- Spotlight: Save a formula to **Spotlight** to view all associated ingredients and products. When you add them as formula components, they default to ingredient.
- Clipboard: Add ingredients and products to the clipboard for easy reuse.

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- Change Control: Change ingredients and products, including some attributes of the primary product, and track changes using redlining.

  > **Note:** When the Engineering flag is set to:
  >   - Yes, the formula item can be included in an engineering change order where you can redline revision attachments.
  >   - No, the formula item can be included in a commercialization change order where you can't redline revision attachments.
  >
  > For more information, see the link provided for Data for Change Orders Across Pending Item Revisions topic in the Related information section of this topic.

- Create a new formula by copying an existing one: In the New formula drawer, select **Create from existing** to copy a formula from the same or another organization into a different formula header.

- Create a common formula: In the target organization, you can reference an existing formula when creating a new formula. Any updates made to the existing formula are automatically reflected in the referenced formula. The referenced formula itself can't be edited.

  In the New formula drawer, select **Create from common** to select an existing formula to be referenced in a new formula.

- Replace ingredients, co-product or by-product.

Import Formula

You can import a formula along with its ingredients when the structure item type is set to Formula. If the items don't already exist in the application, they're created automatically, followed by their formula structure.

You can also use the Import operation to set values for the following attributes:

- Completion Type
- Contribute to Yield
- Component Type
- Basis
- Product Type (applicable only for formulas)

Integrations

REST: Create a Formula item with the Structure Item Type set to Formula, and then add its component items. The Items V2 and Item Structures REST APIs support the creation of Formula item types and their associated structures.

In REST, the Formula Name attribute (CompAlternateBomDesignator) is available in Item Structures. Associating a Formula Name with a co-product or by-product will automatically make it common with the primary product's formula structure.

SOAP: Create a Formula item with the Structure Item Type set to Formula, and then add its component items. The Item and Item Structures V2 SOAP services are now enhanced to support the creation of Formula item types and their associated structures.

FBDI:

- Create a Formula item with the Structure Item Type set to Formula (Code = 6), along with its ingredients before creating the Formula structure.

- Item FBDI supports creating new items with the Structure Item Type set to Formula (Code = 6).

- Item Structure FBDI supports creating a Formula structure. You must create a primary product before you create its structure.

- Use import to define the values for the following attributes:
    - Completion Type
    - Contribute to yield
    - Component Type
    - Basis
    - Product Type (only applicable for formulas)

Business Intelligence Cloud Connector

The new formula related attributes Component Absolute Yield, Component Contribute to Yield, Component Completion Type, Component Product Type and Component Type within structure components are available for Business Intelligence Cloud Connector (BICC) extraction in the formula components - **ComponentsExtractPVO**.

Related Topics
- Data for Change Orders Across Pending Item Revisions

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10 Change Management

Overview of Change Orders and Change Requests

Change orders and change requests let you process changes to items, and documents. Change orders allow you to markup the required changes, and the changes become effective on approval. But change requests don't provide any markup.

> **Note:** Change objects may be referred to generally as change orders, change requests, or changes. However, when being specific about change types that your company may use to create individual change objects, you must differentiate between change order and change request types.

As a product manager you can manage change orders. Your users can:

- Create change orders within predefined change types.
- Author and view product changes.
- Submit changes for review and approval.
- Track change statuses.
- Implement changes on a scheduled date.

To ensure successful and validated completion of change orders, changes are submitted through a formal review and approval workflow.

Change Types

You can create change orders based on the predefined change types setup by your administrator. To create a change type:

In the Setup and Maintenance work area, go to the following:

- Offering: Product Management
- Functional Area: Change Orders
- Task: Manage Change Order Types

> **Note:** For details of all notifications in Product Management, see View Product Management Notifications on the Oracle Help Center.

To use change orders, you must create at least one change type. The change type can be end-dated if it's not used in any change orders that have a workflow in progress.

To create a change type based on predefined types:

In the Setup and Maintenance work area, go to the following:

- Offering: Product Management
- Functional Area: Change Orders

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- Task: Manage Change Order Types

This table provides information on the predefined change types and supported features.

Change Type	Description	Supports Revision Control	Supports Audit Report	Supports Redline Modifications
Engineering Change Order	Used when tracking major changes during the design phase of the item. The revision number is automatically incremented when you make changes.	Yes	Yes	Yes. Displays the following modifications in redline: item detail, EFF, structure, AML and attachment.
Change Order without Revision Control	Used when revision control isn't required or when changes are minimum. For example, replacing an existing manufacturer part with a similar part supplied by another manufacturer.	No	Yes	Yes. Displays the following modifications in redline: AML, EFF, and item detail.
Change Request	Used when suggesting changes for a released item. For example, a supplier could request changes in certain specifications.	No	No	No
Deviation Change Request	Used when deviating from a process or specification for a specific time period. For example, suggesting the use of a substitute component as a temporary means of resolving an issue.	No	No	No
Commercialization Change Order	Used during the commercialization phase of the product. Can be created and edited in Product Information Management. Also available in Product Development as read-only.	Yes	No	Yes
Problem Report	Used to implement Quality Management for engineering design and development through Oracle Product Development Cloud. It's also required to enable supplier collaboration for	No	No	No

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Change Type	Description	Supports Revision Control	Supports Audit Report	Supports Redline Modifications
	issue identification and resolution. A problem report is a type of quality issue, such as a defect, deficiency, or a significant variation in a product's expected appearance or performance. This change type is applicable only for users in the Quality Management work area.			
Corrective Action	Used to implement Quality Management for engineering design and development through Oracle Product Development Cloud. It's also required to enable supplier collaboration for issue identification and resolution A corrective action is a type quality action to mitigate a quality issue and prevent its further occurrence. This change type is applicable only for users in the Quality Management work area.	No	No	No

Note: The 8D corrective action is 'inherited from' the predefined corrective action change type and hence you can't view it in the drop-down list of change types in manage change types.

Related Topics
- Define a Change Order
- View and Edit Change Details
- Create a Change Order and Submit it for Approval
- Use Predefined OTBI Dashboards for Changes and Items

Define a Change Order

Here's the sequence of steps to define a change order.

1. Create the change order, giving it an appropriate name and purpose or description.
2. Assign items and documents that are affected by the change order.

   - Manufacturer parts can't be added to a change order; you must add a manufacturer part's associated or parent item.
3. Edit the item or document and modify their definitions:

   - Update the item or document attributes; or,

   - Modify the structure, in these ways:

       - by adding new structure components;
       - by withdrawing existing structure components; or,
       - by modifying structure attributes.
4. Check the impact of the change by analyzing the impacted products.
5. Adapt the change to impact the intended products only.
6. Define the list of approvers for the change - individual users or user group. If the user group is expanded into a comma separated list, the number of characters in the list should not exceed 2000.
7. Submit the change order for approval.
8. Approvers review and then approve or reject the change.
9. If rejected, rework the change and resubmit for approval.

To add an affected object to the change:

1. Open the Affected Objects panel.
2. Open the **Actions** list and select **Add**. Or use the **+** Add icon.
3. Search for appropriate items or documents.
4. From the returned search results, use the arrow to assign an affected object.
5. Save your modifications.

To change the revision of an affected object on the change:

1. In the row of the affected object, you can make a manual change to the revision.
2. Save your modifications to the business object.

To change the metadata attributes of a business object that's held on a change:

1. Select the affected object.
2. Open the **Actions** list and select **Edit**. The object's Details page displays.
3. Modify object attributes.
4. Save your modifications to the business object.

To change the structure of a business object that's held on a change:

1. Click the affected object.

   The object details page appears.
2. Switch to the item or document structure by clicking the **Structure** icon.
3. **Add** a new item or document structure component. Or, **Modify** or **Withdraw** an existing structure component.
4. Save your modifications to the business object.

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Set Status on Changes

The list of default statuses that can be set from the Change Status button on changes depends on the workflow definition. The workflow in Product Development always has an Approval status.

- **Approval**: Select this status when you create the change order or change request and want to send it to reviewers for their review and approval or return.

- **Hold**: Select this status when the change must be withdrawn from active evaluation and review.

- **Cancel**: Select this status if you must delete the change order.

Related Topics
- Overview of Change Orders and Change Requests
- View Affected Objects and Change Operations

Create a Change Order and Submit it for Approval

Changes are created to modify an item. Use the Product Development work area to create a change order and submit it for approval.

Create a Change Order from Scratch

1. Use the Navigator to go to the Product Development work area.
2. Open the **Tasks** panel tab.
3. Click **Change Order** > **Create Change Order**.
4. From the Create Change Order window, select one of the predefined change types.
5. In the **Name** field, enter a name for the change order.
6. In the **Description** field, enter a brief description of the change order.

   Note: The Create dialog box also shows the required extensible flexfields as well as the ones configured in number assignment rules for the selected change type. For more information on number assignment rules, see the related links.

7. Click **Save and Close**.
8. Click the **Affected Objects** tab and then click Add Item.
9. Search for an item and click **Add** to add it to the list of affected objects.
10. Click **Save**. By default, the change order is in **Draft** status.
11. Click the **Change Status** button to move the Change Order from Draft status to Open status.
12. Click the **Approval** option in the Change Status list to submit the Change Order for approval.
13. Add Approvers, as needed, and click **Submit**.

You can enter other information to the new change or save it and later add more information.

Create a Change Order by Copying an Existing Change Order

From the **Actions** menu in a change order, use **Save As** to create a new change order of the same type or a different type. Here's what you can copy over from the existing change order: descriptive and extensible flexfields, attachments, affected objects, and relationships. Note that you can copy relationships only in engineering change orders and change orders without revision control.

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Create a Change Order from a Change Request

From the **Actions** menu in a change request, use **Create Change Order**. Here's what you can copy over from a change request: affected objects, flexfields and extensible flexfields of affected objects, attachments, and relationships.

Related Topics
- Overview of Change Orders and Change Requests
- Define a Change Order
- Why am I unable to create a change order?
- Rules and Rule Sets

Manage Change Orders and Change Requests

You can search for and perform actions on changes using the Manage Change Orders and Manage Change Requests pages.

You can filter changes based on type and use other criteria to narrow your search results to the most relevant results. You can also use the **Add Fields** button to add more fields to the search criteria. The fields you add can be configured to appear as columns in search results.

> **Note:**
> - To configure the fields appearing in search results, click **View** > **Show more columns**.
> - When you search for the Change Request change type, the search results also include deviation requests.

Here are some actions you can perform from the Manage Change Orders and Manage Change Requests pages:

- Add new change orders or duplicate existing ones.
- Delete change orders by adding them to a delete group. You can delete change orders that are in the **Draft** status. You can delete change orders that are in the **Canceled** status too, but a canceled change order with even one scheduled or completed line can't be deleted.
- Manage the change order workflow by using change order actions: Promote, Demote, Hold, Release Hold, and Cancel.
- Generate change order details report.

Here are some details on the Manage Change Orders and Manage Change Requests pages:

- **Search Filter**

  You can use this filter to search by a change type. The default search filter is set to **All Change Types**.
- **Saved Search**

  The default saved search is titled Application Default. This is executed when you select a change type.
- **Manage Watchlist**

Use the Watchlist to track important business objects. The watchlist is categorized by the functional areas. Each item on the Watchlist page is made up of descriptive text followed by a count. Click the watchlist item to navigate to the object of interest.

You can create your own watchlist items based on saved searches. Click the **Manage Watchlist** icon on the Manage Change Orders or Manage Change Request page. In the Manage Watchlist dialog box, select the check box **Include Saved Searches** to add the saved searches to the watchlist.

You can use the Watchlist page in the Set Preferences work area (**Navigator** > **Tools** > **Set Preferences**) to determine which categories and items to show or hide in the watchlist.

You can create watchlists for corrective actions and problem reports.

Related Topics
- Using Common Features Guide

View and Edit Change Details

A change order's General Information side tab is the starting point to access its basic information.

Here are some side tabs available on change orders (and change requests).

- **General Information**: the default or cover page of a change order.
- **Affected Objects**: items or documents that are the subject of the proposed change or modification.
- **Attachments**: text or graphic files, or URL, with more information about the change order; attachments are classified in a category.
- **Workflow**: the sequence of statuses through which the change order advances.
- **Impact Analysis**: impacted assemblies are those that are impacted by modifications to items or structures on this change order.
- **Relationships**: association between change order and another business object.
- **Security**: add team members to the change order; search and select by Person (user name) or by Role.

  When the role is expanded into a comma separated list, the number of characters in the list should not exceed 2000.
- **History**: a table showing the sequence of actions performed on the change order.

Content Presence Indicators

When you open a change order, you can view blue side tabs, indicating the presence of content in them.

Icons for tabs that always have content or have content that is calculated upon selection are always gray in color. They include the General Information, Workflow, History, and Item Grade tabs.

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General Information Tab

When you open a change order, the General Information tab is displayed. You can fill in attributes for the change order. The change order number can be filled in during creation, or, depending on the configuration, it can be automatically generated.

This tab can also include the following additional fields:

- Attributes such as descriptive and extensible flexfields set up by your administrator. Depending on the configuration, you can enter up to 4000 characters in the descriptive flexfield.

- Trading Partner Reference attributes such as Customer, Supplier, Manufacturer, and Source are associated to changes such as change orders, change requests, problem reports, and corrective actions. These attributes also appear for supplier portal users.

Note:

- Change types that are created based on a predefined change type inherit the attribute visibility configuration of the parent change type.

- Use the Manage Change Header Attributes action in Additional Workflow Controls to allow or disallow participants from modifying the general information.

- Affected objects in engineering change orders and change orders without revision control can include engineering objects.

- Affected objects in commercialization change orders can include engineering objects that are ahead of the design lifecycle phase, and non-engineering objects.

Attachments Tab

Click the **Attachments** side tab, the Attachments page displays. Files can be associated with this change order using the **+** Add icon or **Actions > Add**. If you select a listed attachment, the **X** Delete icon and **Actions > Delete** are enabled.

When you want to modify an attachment, you must first distinguish the purpose and place where the attachment appears. An attachment on a change order is a document that further explains something about the change order itself. This attachment can be modified directly, as long as the change order is in an editable status; there's no need for an additional change order.

Attachments on items are managed with the mechanism of a change order, in which proposed modifications to the attachment are described, reviewed, and approved, much like proposed modifications to the item's design or attributes.

Related Topics

- Secure Access to Changes
- Terminate and Restart a Workflow
- Replace a Component
- Configure Change Types

Edit Released Engineering Items

You can edit released engineering items by assigning them to a change order or using change order import. To modify the entire structure that contains the released item, you must also assign the parent item.

If you're using change order import, you can modify the following: item general information, structure components, reference designators, substitute components, and AML. This isn't applicable for commercial items and commercialization change orders. For more information, see the related topic on Item Batch Change Order Options.

Before you edit released engineering items, note that:

- You don't have to route the items through a change order if you're modifying the following:
    - Preliminary engineering items that have never been added to a change order.

      For example, you can modify the AML through import map without a change order, if the item hasn't been assigned to any change order.
    - Item extensible flexfields and operational attributes that aren't change-controlled.

    - Attachments on the item.

- You must use a change order to modify released engineering items or structures through FBDI also.

- To avoid enforcing change control during migration or mass update, set the profile option EGP_CONVERSION_MODE to **Yes**. Remember to set it back to **No** after the process is complete.

Related Topics
- Item Batch Change Order Options

Modify Assignee

If your workflow is stuck due to absence of the assignee, you can modify both assignee role and default assignee.

You can modify these fields on the following objects: change orders, change requests, problem reports, and corrective actions if they're stuck.

Before you modify the assignee role or the assignee, here's what you need to know:

- It's recommended that you always populate the **Assignee Role** field on the General Information tab so that the **Assigned To** user can add approvers during the approval workflow.

- The **Assignee Role** field can be edited in the Draft and Open statuses. If the object is in interim or approval status, you must terminate the workflow.

- To modify the **Assignee Role** and **Assigned To** fields, you must have the Manage Assignee privilege. You must also have permission to manage change header attributes as defined in the Additional Workflow Controls table in change type setup.

- If the assignee role isn't defined, the new assignee must have the BPMWorkflowAdmin privilege to terminate the workflow and reassign.

- If the assignee role isn't defined and the new assignee wants to reassign or delegate a task from BPM Worklist, the new assignee must have the BPMWorkflowSCMAdmin privilege to view all the approval tasks in Administrative Tasks.

- You can't edit the **Assignee Role** or **Assigned To** fields for objects that were added prior to the support of Additional Controls in update 20B.

- Only the **Assigned To** user can see the Terminate and Restart actions in the Actions menu. Ensure that a user name is provided in the **Assigned To** field.

Note: If you have modified the assignee's user name during a change order or new item request workflow, an error message appears. To resolve the error, terminate and restart the workflow.

Related Topics
- Configure Default Assignee for Quality Issues and Actions

Take Action on Changes

Here are some of the actions available on the **Actions** menu of a change in the Product Development work area:

- **Change Order Details Report**: generate a report of the change order. You can choose a template, format, and locale. To generate this report, you must have the following roles:

  BI Consumer and EGO_GENERATE_ITEM_CHANGE_ORDER_REPORT_PRIV_OBI.

  Note: If the column width in a multi-row table on the report exceeds the page width, the content is truncated in the PDF format. It's recommended to use the HTML format in such cases.

- **Delete**: mark the change order for deletion and add it to a delete group.

  You can create a new delete group or add the change order to an existing group. Note that you must perform this action from the Product Information Management work area.

  You must then confirm the deletion using Manage Delete Group available in the Tasks panel. The change order must meet the deletion constraints so that the affected object isn't used in any other structure.

  In case you want to again use the change order and it can't be deleted due to constraints, you can restore the change order using **Actions** > **Delete** on the Edit Delete Group page.

- **Send Object**: works for items, documents, and change orders. A message about the business object is sent to another user.

  Messages displaying the list of recipients can be sent to a single user or multiple users. If there's a need to restrict a user from viewing the recipient list, it's recommended to send notifications to a single user.

- **Audit**: create an audit report on a change order. Select **Audit**, and select a status from the fly-out list. This generates the audit. (Which statuses are displayed depends on workflow definition.) Now, click the **Audit Results** side tab. The audit checks for any problem or violation of the entry or exit criteria on the Status changes in the workflow of the change order. The Audit Results lists all these as well as more general issues with the change order.

- **Download Attachments**: appears on the list when this change order has one or more attachments. Selecting the action opens a dialog box. You can choose from options and specify which attachments you want to include in your download.

- **Publish**: publish engineering change orders to an XML report. A process ID is generated for each report. To view the report, click **Tasks > View Scheduled Process** and enter the process ID.

- **Move Change Lines**: move the selected affected objects to a new change order within the same organization.

- **View Reports**: view and launch preconfigured reports for change orders.

Related Topics
- View and Edit Change Details
- Move Change Lines
- Cancel Change Lines
- Replace a Component
- Where can I approve or reject a change order?
- Manage Attachments in Items and Change Orders

Change Order Details Report

You can view the Change Order Details Report in a Microsoft Excel format, where you get to see information organized in separate tabs for detailed analysis.

The Change Order Details Report provides you information about the change order (Name, Type, Description) along with Line Item details (Item Details, Current and New Revision, Status), and Item Changes (Additional Attribute Changes). You can generate the report from a change.

You can analyze the information provided in multiple sheets, which display change attributes (including extensible and descriptive flexfields), all the redlines made on the affected items, along with the change order header and attachment-related information.

Select the **Change Order Detail Report** option from the **Actions** menu of a change to generate the report. On the Change Order Report page, you can see these details:

- Template: ChangeOrderSummaryReport.xls
- Output Format: Excel (mhtml)

  Click **Go**.

Download the report in the .xls format and because it contains Macros, you must first unblock the security to run Macros. Here's how:

- Right-click the .xls file and select **Properties**.
- Select **Unblock** in the **Security** section on the General tab.

Note: If you open the report without unblocking the security settings, it prevents Macros from running, leading to discrepancies in the report.

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Here are the sheets available in the Excel-based report:

Name of the Sheet	What it Displays
Change Order Information	Change header attributes, and descriptive flexfields and extensible flexfields on changes.
Affected Items	Affected item attributes with revision-specific redlines and lifecycle phase changes.
Item Attribute Redlines	Redlined attributes with the old and new attribute values for comparison.
Item Stucture Redlines	Item structure and its attribute redlines excluding reference designators and substitutes.
Item Structure - Reference Designator Redlines	Reference designator redlines on components.
Item Structure - Substitute Component Redlines	Substitute component redlines.
Item AML Redlines	AML (Approved Manufacturers List) attachment redlines.
Item Attachment Redlines	Redlines made on the affected item's attachment attributes.
Item Organization Redlines	Organization related redlines made on affected items.
Item Supplier Association Redlines	Redlines made on the supplier associations of an affected item.
Item Packs Redlines	Information on the item packs linked to an affected item, along with its redlines.
Change Attachments	Updates made on the attachments linked to the change order.
Change Tasks	All the tasks created for the execution of the change order.
Change Relationships	The objects that have been linked to the change object as a relationship.

Report Features

Change actions on all the sheets are color coded for clarity and better comprehension.

- When you add data, the cell is color coded in green.
- When you delete data, the cell is color coded in red. A red strikethrough appears against the deleted text.
- When you update data, the cell is color coded in yellow.

If you redline an attribute the old and new values are populated in adjacent columns, with the old value showing up first (to your left) and the new value after that (to your right). The redlined attribute appears with a strikethrough (in red color) and the column header changes color (turns yellow).

All the new sheets listed in the table may not be available for all the changes. Here are some examples:

- A change request won't include any redline information sheets because you can't redline any fields in the change request.

- If there's no information related to the change in a particular sheet, that sheet is automatically hidden in the report.

Only the data available for you in the UI is included in the report you generate, for a change. If you're restricted from viewing certain data in the UI, the same restriction will apply to the data in the report.

Points to Consider

- The **Change Order Details Report** is enabled for engineering change orders, change orders without revision control, commercialization change orders, change requests, problem reports, and corrective actions.

- **Item Main**, **Item Structure Attributes**, and **Item Basic** are attribute columns that are populated in the Item Packs Redline sheet.

- The data security applicable for the UI of the change applies to all sheets in the report, except for the **Item Attachment Redlines** and **Change Attachments** sheets.

Related Topics
- How to Add Additional Attributes to a Change Order Details Report

Add or Remove Participants from Future Status

You can add or remove participants from a future status in the workflow when the change is in draft, open, interim approval, approval, or scheduled status. Note that this depends on the permissions assigned in the additional workflow controls table.

Your participants include reviewers, approvers, and optional approvers.

To add participants to a future status, you must select the future status in the workflow and click **Add** in the Participants section.

> **Note:**
> - Your participants receive notifications which can be configured by your administrator.
> - A Claim button appears on the approval notification when multiple reviewers are added. If one of the reviewers claims the task, the others don't see any action buttons on the notification.

Current Change Status	For Future Approval Status	For Future Scheduled Status	For Future Completed Status
Open	Add or remove users and roles such as approvers, optional approvers, and reviewers.	Add or remove users and roles such as reviewers.	Add or remove users and roles such as reviewers.
Approval	N/A	Add users and roles such as reviewers.	Add users and roles such as reviewers.

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Related Topics
- Actions You Can Control

Add or Remove Participants in Current Status

You can add or remove approvers in the interim approval and approval status. You can add or remove participants of type reviewers when the change is in draft, open, approval, and interim approval, scheduled, or completed statuses.

You can add roles as approvers or reviewers while approvals are in progress.

Note:
- Participants include reviewers, approvers, and optional approvers.
- This is applicable for change orders, change requests, problem reports, and corrective actions.
- Adding participants depends on the permissions assigned in the additional workflow controls table.

Here are some additional details:

- The newly added participants receive notifications. You're restricted from adding a role that has more than 40 members to the approval workflow if the **Response Required From** field is set to **All**. This happens when you promote the change. Also, automatic promotion is prevented. You'll see a new entry in the action log and a notification is sent to the analyst.
- Optional approvers can't be added when approval is in progress.
- Only the change analyst can remove approvers or reviewers in the current approval status.
- You can't add the same user as reviewer and approver.
- You can also remove a person or role from the participants list as long as there's at least one person or role remaining as an approver. Only the change analyst can remove participants.
- You can't remove approvers who have already approved or rejected the change.
- You receive an FYI notification if you're removed as an approver or reviewer in the current interim approval or approval status, and if you're removed from the approval group.
  - You can see the comments provided during the removal action in the notification.

  Note:
    - In BPM Worklist configuration, it's recommended that you make commenting mandatory when rejecting a change order so that rejection comments are captured.
    - Comments are visible in the rejection notification for change orders, change requests, problem reports, and corrective actions.

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Related Topics
- Why am I unable to add or remove approvers during the change order approval?
- Actions You Can Control
- View Product Management Notifications

Cancel Change Lines

If a change order is stuck due to an unforeseen reason, review the details in the History and Workflow tabs. Depending on the workflow, you can cancel the change order or change lines (or affected objects).

Here are some things you need to know before you cancel change orders and change lines:

Manually Cancel the Change Order

Use the Cancel Change Order action. Then the application cancels all change lines except the ones that are complete; the change order status is set to Canceled.

> **Note:** To cancel a change order in the interim approval or approval status, you need the reschedule change order privilege.

Manually Cancel the Change Line

Use the **Cancel** action.

If you cancel change lines in a Scheduled change order which is stuck because the operation post process job is stuck, a message appears that the change line is implemented and the line will be set as Completed, not Canceled. An entry is made in the change history and an FYI notification is sent.

Auto Cancellation of the Change Line

If the application detects an error when implementing or activating the change line, the change line gets canceled automatically. If this happens you notice:

- an entry in the History tab indicating which change line is automatically canceled.
- the change line status appears as Canceled.

To proceed with the change line, you can move it to another change order.

Factors that Determine Whether you Can Cancel Change Lines

The following factors determine whether you can cancel change lines or not.

- the header status in a change order
- the progress on the header status.
- If you aren't the analyst (assignee), you must be assigned with the BPMWorkflowScmAdmin privilege, regardless of the permissions defined in the additional workflow controls table.

> **Note:** If you modify the assignee, you must assign the BPMWorkflowScmAdmin privilege to the new assignee.

When Can I Cancel Change Lines?

The table shows the criteria to cancel change lines:

Header Status	Progress on the Header Status	Change Line Status	Cancel Change Lines?
Draft	Draft	Draft	Yes
Cancel	Cancel	Cancel	Not applicable
Open	Open	Open	Yes
Open	Open	Hold	Yes
Open	Open	Canceled (one line canceled)	Not applicable

Header Status	Progress on the Header Status	Change Line Status	Cancel Change Lines?
Interim Approval	Interim Approval	Submitted for Approval	Yes
Interim Approval	Interim Approval	Approved	Yes
Interim Approval	Interim Approval	Rejected	Yes
Interim Approval	Interim Approval	Terminated workflow	Yes
Interim Approval	Interim Approval	Terminated Hold	Yes
Interim Approval	Interim Approval	Canceled (one line canceled)	Not applicable
Approval	Approval	Submitted for Approval	Yes
Approval	Approval	Approved	Yes
Approval	Approval	Rejected	Yes
Approval	Approval	Terminated workflow	Yes
Approval	Approval	Terminated Hold	Yes
Approval	Approval	Canceled (one line canceled)	Not applicable
Scheduled	Scheduled	Scheduled	Yes
Scheduled	Scheduled	Failed	Yes
Scheduled	Scheduled	Canceled (one line canceled)	Not applicable
Completed	Completed	Failed	No
Completed	Completed	Canceled	No
Completed	Completed	Completed	No
Interim Approval	Failed	Approved	Yes
Interim Approval	Failed	Submitted for Approval	Yes
Approval	Failed	Submitted for Approval	Yes

Header Status	Progress on the Header Status	Change Line Status	Cancel Change Lines?
Approval	Failed	Approved	Yes
Open	Canceled	Canceled (all lines canceled)	Not applicable
Interim Approval	Canceled	Canceled (all lines canceled)	Not applicable
Approval	Canceled	Canceled (all lines canceled)	Not applicable
Scheduled	Canceled	Canceled (all lines canceled)	Not applicable
Completed	Canceled	Canceled (all lines canceled)	Not applicable

Related Topics
- Why did the Scheduled change order get promoted automatically?

Move Change Lines

Here are a few scenarios in which you can move change lines or affected objects:

- The change order is stuck. Depending on the header status, you can move the change line to a new change order and proceed with the change.

- The change order is automatically canceled. Depending on the header status, you can still move the lines to a new change order.

Here are the factors that determine whether you can move change lines:

- The header status in a change order.

- The progress on the header status.

- The configuration for the move change lines action in Additional Workflow Controls for the change type.

  If you're on update 21C or later, note that this action isn't controlled by the Reschedule Item Change Order privilege.

The images show where the header status and the progress status are displayed:

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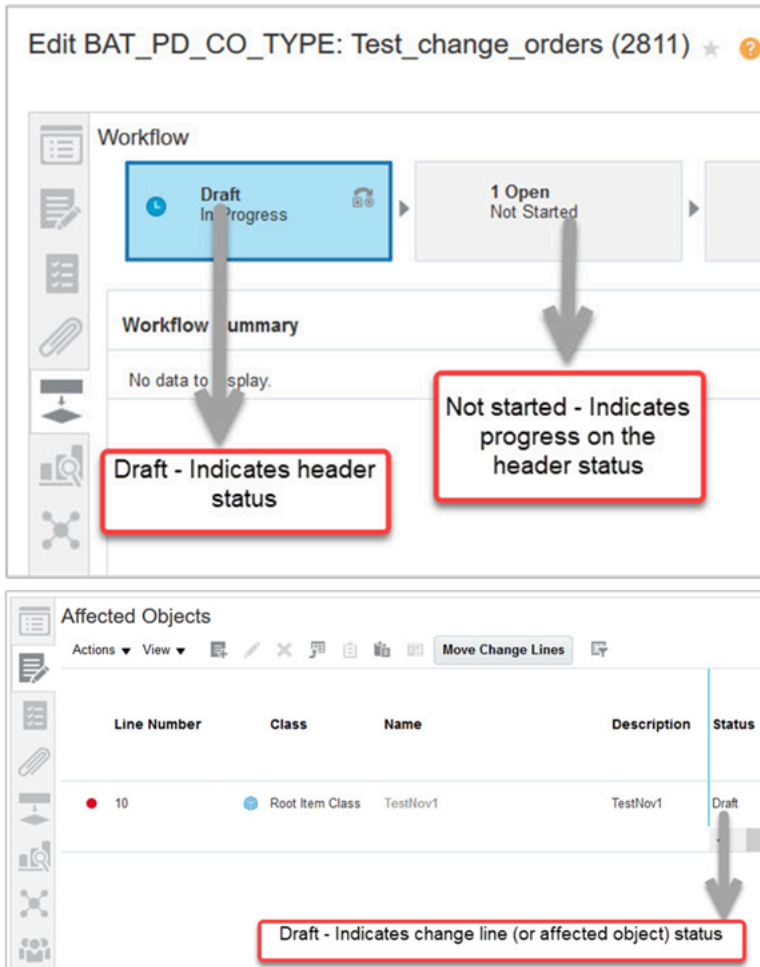
When Can I Move Change Lines?

The table shows the criteria for moving change lines:

Header Status	Progress on the Header Status	Change Line Status	Move Change Lines?
Draft	Draft	Draft	Yes
Cancel	Cancel	Cancel	Yes
Open	Open	Open	Yes
Open	Open	Hold	No
Open	Open	Canceled (one line canceled)	Yes
Interim Approval	Interim Approval	Submitted for Approval	Yes

Header Status	Progress on the Header Status	Change Line Status	Move Change Lines?
Interim Approval	Interim Approval	Approved	No
Interim Approval	Interim Approval	Rejected	No
Interim Approval	Interim Approval	Terminated workflow	Yes
Interim Approval	Interim Approval	Terminated Hold	No
Interim Approval	Interim Approval	Canceled (one line canceled)	Yes
Approval	Approval	Submitted for Approval	No
Approval	Approval	Approved	No
Approval	Approval	Rejected	No
Approval	Approval	Terminated workflow	No
Approval	Approval	Terminated Hold	No
Approval	Approval	Canceled (one line canceled)	Yes
Scheduled	Scheduled	Scheduled	No
Scheduled	Scheduled	Failed	Not applicable
Scheduled	Scheduled	Canceled (one line canceled)	Yes
Completed	Completed	Failed	No
Completed	Completed	Canceled	Yes
Completed	Completed	Completed	No
Interim Approval	Failed	Approved	No
Interim Approval	Failed	Submitted for Approval	No
Approval	Failed	Submitted for Approval	No
Approval	Failed	Approved	No

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Header Status	Progress on the Header Status	Change Line Status	Move Change Lines?
Open	Canceled	Canceled (all lines canceled)	Yes
Interim Approval	Canceled	Canceled (all lines canceled)	Yes
Approval	Canceled	Canceled (all lines canceled)	Yes
Scheduled	Canceled	Canceled (all lines canceled)	Yes
Completed	Canceled	Canceled (all lines canceled)	Yes

Move Duplicate Change Lines

Here are some guidelines before you move duplicate change lines:

- If you need to move two or more duplicate change lines from one change order to another, you must select all lines and move them in a single action. You can't move such lines one at a time.

- If a change line is canceled in the target change order, then you can't move the same item again as a change line to the target change order. You must remove the canceled change line or move it to a different change order before you move the same item to the target change order.

Related Topics
- Actions You Can Control

Understand Role Expansion in Change Orders

In the change order's Approvers table, roles are expanded to show all members of the role only in certain cases.

- If the approver is a role and **Response Required From** is set to **All**, the role is expanded to show all its members.

- If the change is promoted to approval and the role has more than 40 members, it won't be expanded. You must delete the role to submit the change for approval.

- If only one response is required on a user-defined approval and roles have been added as approvers, the roles aren't expanded to show their members.

In either case, all members of the role receive notifications on completion of the change workflow, and you can track who signed off. Note that the Assignee field in the notification is also not expanded to show all role members.

Edit Reference Designators on Changes

You can enter reference designators directly inline on the structure tab of the affected object, or in the side panel view.

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If your implementor has configured a range indicator for reference designators, you can enter a reference designator range instead of entering each value.

Here's how you edit reference designators:

1. Navigate to the structure tab of the affected object on a change order.
2. Select the component for which you want to add or edit reference designators.
3. Edit reference designators directly in the **Reference Designator** column.

   Here's what you need to know:

   ○ To enter multiple values, use a comma-separated list of values, or a range, or a mix of both. For example, if your administrator has selected '+' as the range indicator, you can enter 'A1+A5' and the application will expand the range to create five reference designators: A1, A2, A3, A4, and A5.
   ○ You can click the expansion button '...' next to the reference designator cell to open a dialog box where you can view and edit the expanded values for the reference designators. The expansion button is only available for the row that's being edited. You can also enable or disable the quantity check and align quantity from this dialog box.
   ○ Use the drop-down list in the side panel to filter reference designator redlines. It includes the following options: **All**, **Added**, **Deleted**, **Modified** or **Unchanged**. By default, **All** is selected.
   ○ You can't edit the reference designators in the side panel, you can only edit the descriptive flexfields.
4. Click **Save**.

Manage Tasks in Change Orders and Change Requests

You can create a checklist of tasks related to the change order (or change request) and assign work to individuals.

You can make it compulsory for certain tasks to be completed by specified users before the change order can progress to a status.

Here are some more details on tasks:

- Your ability to manage tasks depends on the permissions for the Add Tasks, Remove Tasks, and Update Tasks actions in Additional Workflow Controls for the change type.

- You can mark the status of a task and assign tasks even after the change order is complete. Use this to manage post-completion tasks such as documentation or qualification of contract manufacturers. Note that only the change assignee can manage tasks in Completed status.

- The task can't be set as required if the **Complete Before Status** is one of the following: blank, first Open status, Scheduled, or Completed.

  Note: Status first Open indicates the first open status in case your administrator has configured additional open statuses.

Here are some examples of tasks:

- Prepare Functional Specification document.

- Review and update cost attributes of affected objects.

- Define regulatory attributes.

- Publish information to Marketing and Sales.

The Tasks table includes the following fields that let you specify task details:

- **Sequence**: Determines the order in which the tasks are performed. By default, this increments by 10.

- **Required**: Indicates that the task is compulsory for the change order to progress. If a task is compulsory, then a **Complete-Before Status** must be specified.

- **Assigned To**: Specifies the person to whom the task is assigned.

- **Assigned By**: Specifies the user who assigned the task.

- **Assigned On**: The date and time when the task was assigned.

Note: If the same task has been assigned by different users, the **Assigned By** and **Assigned On** fields show details of the latest assignment.

- **Start-by Status**: The status at which the tasks should be initiated. Includes current and future statuses, and a blank value. Use the blank value when you want the task to being irrespective of the change status.

- **Complete-Before Status**: The status before which the task should be completed. Includes future statuses and a blank value. Use the blank value to leave this field blank when **Start-by Status** is set to **Completed**.

- **Need-by-Date**: Indicates the date on which the tasks should be completed.

- **Task Status**: Can be updated only by the task assignee or the change analyst.

Copy Existing Tasks to New Change Orders

You can create a new change order based on an existing one, and copy over the tasks. Use the **Save As** action (in the change order). Tasks in the newly created change order are reset to the Open state.

Related Topics

- Why am I unable to update the task status in the change order?
- Understand Change Order Statuses

Secure Access to Changes

To secure a change order (or change request) from unauthorized access, you can add the users or roles who should have access to it.

To add users or roles:

- Click the Security tab in a change order.

- From **Actions**, click **Add**.

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> **Note:**
> - If you're unable to add users, you must review privileges assigned to your role or create a data security policy for change orders. For more information, see related topics.
> - You can also secure extensible flexfields appearing on the change order. For more information see the related topics.

Users in the Product Development and Product Information Management work area can view and approve change orders, whereas users in the supplier organization can only view and publish change orders.

Here are some things you need to know about a new change order:

- Until you restrict access, change orders can be accessed by all users including supplier portal users.
- If a new user or group is added to restrict access, the change order creator and assignee are added automatically.
- To remove the creator and assignee, use the **Delete All** option.

To enable users to view or approve change orders, an administrator must also provide the necessary privileges.

When you search for a change order using any criteria, the search results show only the change orders that you're allowed to view.

Track Modifications Made to the Security Tab

You can track modifications made to the Security tab of a change order (or change request) by using the View Item Audit Trail report. Use the report to see who added or deleted entries in the list of users and roles.

1. From the Tasks panel tab, click **View Item Audit Trail**.
2. On the Audit Reports page, select the search criteria:

   - In Product, select Product Hub.
   - In Business Object Type, select **Change Object Security**.
   - Click **Search**.

You can also use the History tab on a change to audit edits made to a change. For more information, see the related topic on change history.

Related Topics
- View Change History
- Troubleshoot Issues in Change Objects
- Secure Extensible Flexfields on Change Types

View Change History

You can use the history tab on changes to audit edits made on the changes.

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You can also perform a comprehensive audit on the changes by opting in to the feature Track Affected Object Redlines and Other Updates on Changes. You can then filter audit entries by any column (on the history tab) other than **Date**. Once you opt in, history records are written for add, update, and delete action on:

- Change header general attributes, descriptive flexfields, and extended flexfields.
- Affected object redlines.
- Tasks.
- Relationships.
- Security.
- Actions performed on affected objects.

History **isn't tracked for** change attachments, affected object attachments, and supplier organization redlines.

Here are the key columns in the history table:

- Audit Type: Classification of audit.
- Action Type: Classification of audit action.
- Status: Status of the change at the time the audit row is written.
- Affected Object: Affected object that has been redlined.
- Affected Object Sequence: Sequence of the affected object that has been redlined.
- Entity Type: Name of the tab or the attribute group.
- Entity: Entity keys, if applicable.
- Action: Action on the change.
- Attribute Name: Name of the attribute that has been added, deleted, or updated.
- Old Value: Previous value of the updated attribute.
- New Value: New value of the updated attribute.
- Comment: Shows additional information about an action.
- Author: Shows **System** when an action is performed by the application. Shows the user name when the action is performed by a user.

Here are some considerations when you opt in for the feature Track Affected Object Redlines and Other Updates on Changes:

- You will require the privilege View Change History (EGO_VIEW_CHANGE_HISTORY_PRIV) for a comprehensive understanding of actions performed on changes.
- You must migrate history on existing changes using the Upgrade Product Management Data scheduled process, or they will not be visible.

  During the migration, rows may have missing data in certain columns, which depends on the availability of the data prior to the migration.

- The History table displays 25 rows per page, but you can use **Query By Example** to refine the history records or you can use **Export to Excel** to download all the rows.

- When you create or add an affected item to a change, a single row containing audit details is recorded in the history table.

- You can import change history using the change FBDI template, and the application won't run any validations while importing the data.

- In the Product Information Management work area, you must opt in for the feature **Use Simplified Change Management Interface** to view the enhanced history tab resulting from the feature **Track Affected Object Redlines and Other Updates on Changes**.

  If you opt in for the feature on simplified change management after you have opted in for the feature on track affected objects for some time, you must run the Upgrade Product Management Data scheduled process to migrate the change history.

Related Topics
- Upgrade Product Management Data

Impact Analysis in Change Orders

You can launch an impact analysis from the Impact Analysis side tab on a change order or change request.

Start the impact analysis from an impacted product. Use either of the following:

- From the Impacted Product panel look into the details for a specific impacted product.

  Filter the multilevel item structure of the product, to see only that part of the item structure that is impacted by the change. Thus, it is easier to focus on the relevant part of a larger item or document structure.

- Go to the Affected Object panel, select a specific affected object, and start an impact analysis from the toolbar icon or Actions menu.

View the list of impacted products, and analyze why the product is impacted. Understand how many affected objects impact the product. Adapt the change definition to achieve the intended list of impacted products. The impact analysis opens the affected assembly and displays where the modified object exists in the impacted structure. The change order originator and reviewers may use this impact information for decisions about the proposed changes.

Change Order Notifications

Notifications are sent to assignees throughout the lifecycle of the change order.

For a detailed list of new item request notifications, notification types, and recipients, see *View Product Management Notifications* available on the Oracle Help Center.

Here's when the notifications are sent:

- When a change order is submitted, notifications are sent out to assignees, approvers, and the requester.
- When you start a step, notifications are sent to each of the assignees of the step.
- When the change order is approved or rejected, a notification is sent to the creator, and approver.

Notifications are of the following types:

- Task notifications are sent out to the assignees of each task.
- FYI notifications are sent to the creator, assignee, requester, and approver of change order lines and headers when it moves to Scheduled or Completed Status.

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Important Considerations about Notifications:

- FYI notification is sent if you're removed as an approver or reviewer for the change that's in the current interim approval or approval workflow status.

- FYI notifications are sent to all the removed participants of the approval groups.

- FYI notification shows who has rejected the change order approval request and the rejection comments for the same.

- Comments are visible in the rejection notification for change orders, change requests, problem reports, and corrective actions.

  You can see the comments provided when you're removed as a workflow participant.

Note:
- If the approval notifications are delayed ensure that approvers have the following role: EGO_GENERATE_ITEM_CHANGE_ORDER_REPORT_PRIV_OBI

- The assignee in the notification refers to the users who are part of the approval groups. If your role is designated as the workflow status participant, the Assignee field of the FYI notifications displays your role, instead of your user name.

- Sometimes, unanticipated issues prevent the workflow from getting completed as expected, and terminating a workflow maybe inevitable. You can stop an approval routing workflow, even if it isn't completed using Terminate Workflow. Related notifications, if any, are removed from the assignees' work lists.

- In BPM worklist configuration, it's recommended that you make commenting compulsory when rejecting a change order so that the rejection comments are captured.

Note:
- Workflow participants (approvers, optional approvers, and reviewers) don't receive FYI notifications for change workflow events that aren't relevant to them.

  Only participants added to the current and previous workflow statuses receive notifications when:

  - The change is rejected or completed.

  - Autopromotion fails.

- Participants added to future workflow statuses or skipped workflow statuses don't receive FYI notifications for these events.

- If the change moves through a status and is demoted, participants of the status through which the change moved will receive a relevant FYI notification.

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Note:

- The number of affected objects displayed in an email notification depends on a threshold.

  If the number of objects exceeds this threshold, a link to the change order page is provided so that you can navigate to the object and view the full list.

  For change order approval task notifications, the threshold is 25.

  For FYI notifications, the threshold is 100.

- A predefined request comment notification is associated with the **Open** status. The change order can't move to the next status until this notification has a response. The notification is then sent automatically to the assignee and the requester.

  This automatic notification can be bypassed by removing the assignees. If the notification is bypassed and the BPEL process is set to automatically promote, then the change order automatically moves to the next status. Otherwise, you need to manually move the change order to the next status.

- Change order notifications aren't sent for the following actions:
  - Skip Current Assignment
  - Suspend
  - Create Subtask
  - Request Information
  - Route Task
  - Add Comments

Related Topics

- What Change Orders Modify
- Understand Change Order Statuses
- View Change Order Notifications

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Notifications

You can view notifications for change orders, change requests, problem reports, and corrective actions. You can review, approve and reject workflow requests in both the in-app and email notifications.

> **Note:** You can view the details in a workflow notification according to the access permissions defined in the workflow access control list. The information displayed in the notification matches the content of the workflow in the Redwood interface.

Here are the notification types:

- Approval and Review
- FYI
- Requires comment

Approval and Review Notifications

The following attributes are available in all notifications:

- Organization
- Description
- Assignee
- From
- Assigned Date
- Task Number

Change Approval Notifications

Here are the attributes shown in change approval notifications:

- In the Header details section:
    - Change Number: A link that opens the details of the change order in a new page.
    - Requester Comments: Comments submitted by the requester.
    - Activity Type: An optional approval or approval notification.
    - Response Required From: Response required from either one assignee or from all the assignees.
    - Expiration Date
    - Approval Status
    - Sign Off As: The assignee is either an individual or part of a role.
- The Line details section has two parts:
    - Affected Objects that includes the affected item number, item description, the old and new revisions (if changed) of the item and the old and new lifecycle phases (if changed) of the item.
    - Impacted Products that includes the impacted item number, item description, item revision, item lifecycle phase, and the number of affected objects.

> **Note:** Impacted Products are shown only in Change Order notifications.

Review Notifications

Let's look at the attributes shown in the review notifications:

- In the Details section:
    - Change Number: A link that opens the change details in a new page.
    - Comments: Comments submitted by the requester.
    - Priority
    - Reason
    - Change Status

- The Affected Objects section includes the affected item number, item description, the old and new revisions (if changed) of the item, and the old and new lifecycle phases (if changed) of the item.

Important Considerations

- To include configured attributes, you've to reconfigure your Oracle Business Intelligence Publisher (BIP) notification using the new template and add your preferred attributes.

- The application uses the configured BIP template:
    - Change Order Participant Notification Report
    - New Item Request Participant Notification Report

- To display additional attributes in the notification, you've to configure the new template.

FYI Notifications

The following attributes are available in notifications:

- Organization: when applicable
- Object Number or Object Name
- Status of the notification
- Assignee
- Assigned Date
- Task Number: when applicable

Change FYI Notifications

Here are the attributes supported in the Change FYI Notifications

- In the Details section:
    - Object Number: Link that opens the change details in a new page, depending on your profile option.
    - Object Description
    - Approval Status
    - Need-By Date

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- Priority

- Reason

- Comments: This is conditional. Comments provided by you're displayed only when the object is approved, deleted, rejected or canceled.

- <Rejected/Approved/Removed/Canceled> By: User who made the action.

- Reject Reason: The reason is shown only when object is rejected.

- The Affected Objects for Change section: includes the Affected Item Number, Item Description, Item Class, Effective Date, Item Status, Status, Request Id. This section isn't available in the Task Assigned Notifications.

- The Tasks section: includes task name, description, Required, Start-by Status, Complete Before Status, Task Status, Assigned To, Need-by Date, Assigned By, Assigned On. This is shown only in Task Assigned Notifications.

- When promotion fails, the Message section displays the following message: Error in workflow, see object action log for more details.

Send Object FYI Notifications

Let's look at the attributes in the Send Object FYI Notifications.

- In Contents section:
  - Object Type
  - Sent By
  - Recipients
  - Object Number or Object Name
  - Notification Type
  - Message: Message displays the comments you've provided when you send the notifications.

Assigned Notifications

You can now view the details in Assigned Notification. Click the link in your notification to review the details, or review the details in your email notification.

Here are the details that are available in the Assigned Notification:

- In the Details section:
  - Object Number: Link that opens the change details in a new page, depending on your profile option.
  - Object Description
  - Assignee
  - Assigned Date
  - Approval Status
  - Need-By Date
  - Priority
  - Reason
  - Task Number

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- The Affected objects for Item (for New Item Request) section: includes the Affected Item Number, Item Description, Item Class, Effective Date, Item Status, Status, Request Id.

Important Considerations

- After you've opted in, the application automatically uses the new predefined Oracle Analytics Publisher Template:
  - Workflow Notification Report
  - Workflow Item Send Notifications Report
  - Send Object Notification Report
  - Workflow Send Object Notification Report

- To display additional attributes in the notification, you must configure the new predefined template. Configuration is only available in change orders, change requests, problem reports, corrective actions, and items.

Requires Comment Notifications

You can view requires comment notifications for change orders, change requests, problem reports, and corrective actions when the status changes from draft to open and the **Skip Request Comment** option (on the change type) is deselected. This is supported in both the in-app and email notifications.

Once the comment is submitted, an FYI notification with task completion details is sent to the assignee. Depending on the configuration, change orders, change requests, problem reports, and corrective actions can be moved from open to the next status either automatically or manually.

The application automatically uses the predefined Oracle Analytics Publisher template: Workflow Required Comment Notification Report.

The following attributes are available in notifications:

- Organization
- Object Number: Link that opens the change details on a new page
- Description
- Assignee
- From: Only appears when an action is required
- Assigned Date
- Outcome: Only appears when a task is completed
- Approval Status
- Need-By Date
- Task Number
- Priority
- Reason

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Publish Change Orders

Publication enables you to schedule and publish engineering change orders.

You can publish engineering change orders as an XML package. Use filters to select the type of change data you want to publish, including attachment files.

> **Note:** You can retrieve the publication files from Oracle WebCenter Content programmatically, or by using the **File Import and Export** option available in Tools of the Navigator.

Here's how you publish an engineering change order:

1. In the Product Development work area, select an engineering change order in the **Completed** status.
2. Open the change order that you want to publish. Click **Actions** > **Publish**. You can also choose the publication action from the Manage Change Orders page.
3. Select the entities that you want to publish in the Change Publication Criteria box. You can choose either some or all the entities from the list.
   - Affected objects
   - Header attachments
   - Affected object redlines only
   - Affected object attachments
   - Affected object structures
   - Affected object AML

   > **Note:** The Include attachment files check box is enabled only when you select an entity that includes attachment.

4. Click **Publish**. A confirmation box is displayed with the process number.
5. To see the report, click **Tasks** > **View Scheduled Process**.
6. Enter the Process Id in the View Scheduled Processes window.
7. Click **View Output** to download the published engineering change order. The output is available in a zip file format. Click the file to download it.

> **Note:** You can automate the publishing of engineering change orders using SOAP web services. You can also use the Item Publication event - `PublicationJobCompleted` to determine if a change order is published and automate the additional steps.

Related Topics
- Refer to support note: Doc ID 1334471.1 Sample Soap Requests for Use in WebCenter Content (WCC/UCM) 11g Calls to the GenericSoapService
- Refer to support note: Doc ID 2885473.1 Invoke, monitor and download the change order publication using SOAP Web services

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View Published Change Order Reports

You can access the published file in XML format from the Oracle WebCenter Content.

Publication files for change orders are published to the FAImportExport Security Group root folder in Oracle WebCenter Content instead of the Contribution Folders location to avoid any limitation in the number of files that can be stored.

Use a Change Order to Redline an Item Structure

Redlining is the process of marking modifications to an item or structure that must be approved to be implemented. This topic describes how to use a change order to redline an item structure.

To use a change order to redline an item structure:

1. Use Navigator to go to the **Product Development** work area.
2. From the Tasks panel tab, click **Create Change Orders**.

   - From the Change Type list, select a type of change order.
   - In the Name field, enter a name for the change order.
   - In the Description field, enter a brief description.
   - Click Save and Close.

3. Click the **Affected Objects** side tab.

   - On the change order, click **Select and Add** to search for and add the affected object so that you mark it for modification.
   - Go to the **Structure** tab. From the results, select an item row.
   - Go to the X icon and select Withdraw to withdraw the item from the structure.
   - Click OK.

4. Now you must add a new item to the Structure.

   - Click the **Create** icon.
   - Select a class from the **Class** list.
   - In the dialog, enter a name in the **Name** field.
   - Enter a description in the **Description** field.
   - Click **Save and Close**.

     You can view the saved modifications in the summary of changes.

Use a Change Order to Add a Manufacturer Part to an Item

This procedure creates a change order, adds an item, and associates the item with a manufacturer part.

1. Use Navigator to go to the Product Management work area. From the list of offerings, click Product Development.
2. Create a change order, using the following steps:

   - From the **Tasks** panel tab, click **Create Change Order**.
   - In the **Create Change Order** dialog, select a change type. Click **Save and Close**.
   - Enter the following details for the change order: number, name, and description.
   - Select the priority.
   - Click **Save and Close**.

3. Add the item as an affected object to the change order, using the following steps:

   - Click the **Affected Objects** side tab and click **Select and Add**.
   - Enter the item name and click **Add**.

4. After the item is added as an affected object, select the item and click **Edit Affected Object**.
5. Edit the item to add the manufacturer part, using the following steps:

   - On the **Edit Item** page, click **AML**.
   - Click **Select and Add** to add the manufacturer part as a recommendation.
   - Select the manufacturer name, part number, status, and context. Click **OK**.

     The manufacturer part is highlighted and includes a plus icon to indicate that it's a new assignment.

     > **Note:** The change order must be approved for the manufacturer part to be implemented.

   - Click **Save and Close**.

How Application Validates Change Assignee

When you promote or demote a change order (or change request) to the next status, an additional check validates whether the assignee is an active user. This check is performed for each status up to Approval status.

If the assignee isn't an active user, the promotion doesn't proceed. Demotion will proceed, and an entry is added in the action log.

During manual or automatic promotion to Open status, if the application detects that the person who initially requested the change is an inactive user, the change isn't promoted.

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During demotion, if the assignee is found to be an inactive user and Skip Request Comment is disabled, the Request for Comment notification isn't sent. A corresponding entry is created in the action log. In this case, the user must choose an active user as the assignee and then promote the change manually.

What actions can I take as an assignee on a pending change?

You can take the following actions as a change assignee on a pending change.

- Remove participants while approvals are in progress - includes approvers, optional approvers and reviewers.
- Terminate and restart the workflow.
- Cancel the change as long as it isn't completed.
- Reschedule the **effectivity date** of the change.

How Revision is Calculated for Engineering Change Orders

Here's how the next higher item revision number in an engineering change order is calculated.

In releases prior to 20D, only the past, current effective, or future effective (change order is scheduled) revisions were considered.

From release 20D onward, all revisions (past, current effective, future effective, and pending) are considered when searching for the highest existing revision number. Instead of retrieving the item revision with the furthest future effectivity date, the application retrieves the item revision that was created most recently.

Here's how this impacts application behavior (from release 20D onward):

- The item revision identified as the base revision for new revision calculation changes because the application evaluates the creation date of the item revision instead of the effective date. In case the calculated item revision is already used, the application doesn't blank out the item revision number, but continues to increment the new item revision number until it finds an unused number, so the user doesn't have to enter a number manually.
- The algorithm to calculate the next higher revision number supports up to 18 characters.

Note: When you add an item as an affected object to a change order, its revision is automatically bumped up. But revision field remains blank when the bump-up mechanism fails to calculate the next higher revision in the following actions: Assign to Change Order on an item, and Save As on a change order for creating an engineering change order. When you access the Attachments tab on the change order, a message informs you to specify the new revision before you can view attachments. If you don't specify the revision, you're prompted to specify it when you promote the change order for approval.

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How Item Approval Privilege is Validated at Role Level

Make sure any role that you add as an approver, or a parent role, has the Approve Item Change Order privilege assigned.

When a role is assigned in the approvers panel of a change order (or change request), and the change is submitted for approval, the application checks whether the Approve Item Change Order privilege (EGO_APPROVE_ITEM_CHANGE_ORDER_PRIV) is assigned to the role (directly or through role inheritance). If it isn't, an error is shown.

FAQs About Change Management

How do I add an item or document as an affected object?

Open the item or document and select **Assign to Change Order** from the **Actions** menu.

What's the difference between an affected object and a change line?

Both the terms indicate an object affected by the change order.

Affected object is used in the Product Development work area and Simplified Change Management Interface.

Change line is used in the Product Information Management work area.

How can I create a new change order based on an existing change order?

You can use the **Save As** action to create a new change order. In the Create Change Order dialog box, you must select the change type for the new change order.

Here's what you need to know before you before using the **Save As** action:

- Depending on the work area, you can choose to copy over the existing descriptive and extensible flexfields, contextual attributes, attachments, tasks, and affected objects.
- In the Product Information Management work area, you can save the change order to any type of commercialization change order.
- In the Product Development work area, you can save the change order to an engineering change order or change order without revision control.
- To copy over the descriptive and extensible flexfields select the **Additional Information** option in the **Save As** dialog box.

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What's the difference between Withdraw and Remove?

Use Withdraw, to delete a component that was added before the item was assigned to the change order.

Use **Remove**, to delete a component that was added after the item was assigned to the change order.

How can I view the list of change orders that are on hold or canceled?

You can use OTBI to generate a report listing change orders that are on hold or canceled.

How do I add items or documents to an existing change order?

With a change order open, click the Select and Add button to add existing items or documents, or click the Create button to add new business objects.

What's the difference between cancel and terminate actions in a change order?

Use cancel to stop further processing of the change order. You can still move the change lines to a new change order and retain redlines.

Use terminate to temporarily pause the workflow and resume it in the same change order.

Related Topics
- Terminate and Restart a Workflow
- Cancel Change Lines

Why am I unable to modify the change order?

The change order is in an Interim Approval status and the Allow Updates option on the Interim Approval status has been disabled. Or, you only have privileges to view the change order.

Where can I approve or reject a change order?

Use one of the following to approve or reject the change order:

- Bell icon

- The change order page

- Home page of the Product Development work area

  Select the My Changes information tile. Click **Approve** or **Reject** appearing against the change order.

- Email notification

- BPM Worklist

  You can approve multiple change orders from BPM Worklist. But the signature policy for change orders must be disabled.

- In Things to Finish section on the home page

Related Topics
- Configure the Signature Policy for Change Order Approval

How can I edit a pending revision in the context of a change order?

Select Edit in Change Order from the Actions menu of a pending revision in the context of a change order to modify it. The changes made will be redlined.

Why am I unable to edit the change order?

If the change order is created in Product Information Management, you can't edit that in Product Development. Conversely, the change order created in Product Development can't be edited in Product Information Management.

Can I modify the find number when the item is on a change order?

You can modify the find number when the change is in draft or open status. Here's how:

Delete a component and add it again with a different find number.

Or

Use the **Replace** action to replace a component with the same component and provide a different find number.

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How can I find out who acted on a change order and the changes they made?

Open the History tab of a change order or change request to see the sequence of actions recorded for that object. You can see who has performed each action along with the time stamp and the details about each action.

For example, you can see who approved the change order and the approval comments. You can also perform a comprehensive audit on changes by opting in for the feature Track Affected Object Redlines and Other Updates on Changes.

Related Topics
- View Change History

Why did the change order approval prompt for a comment and password?

Your administrator configured the comment and password fields as compulsory for the purpose of audit. Enter your sign-in password.

How can I restart the change order workflow which is on hold when the approval is in progress?

From the **Actions** menu, click **Restart Workflow**.

Note: You can't restart the workflow using **Continue**.

What's the difference between an engineering change order and change request?

Both the change types permit you to route items and documents through a workflow.

The engineering change order lets you markup the required changes and the changes become effective on approval. But the change request doesn't provide any markup.

Why did the Scheduled change order get promoted automatically?

Since the Autocomplete on Cancel option is enabled by default from update 23A, all scheduled change orders move to the Complete status on cancellation of the last change line. This is applicable to new and in-progress change orders.

Let's say that the first three change lines are complete, and the last change line is stuck in the Scheduled state. You cancel the scheduled change line, and the change order moves to the Completed status.

Related Topics
- Create Problem Reports and Corrective Actions
- Understand Change Types

Why did the change order fail on approval?

Open the History tab of the change order to review the sequence of actions on that change order. Depending on the action performed, the application displays a comment.

For example, if you try to promote two change orders simultaneously and the effective dates are less than 30 minutes apart, then a comment appears advising you to maintain a time difference of more than 30 minutes. You can also see the Workflow tab to review the change order status.

Related Topics
- Cancel Change Lines

Why am I unable to add or remove approvers during the change order approval?

You must be assigned with the add participants and remove participants actions in the additional workflow controls for the change type.

Additionally, the value of **Response Required From** (in the change type) must be set to **All**.

How can I add roles as approvers or reviewers while approvals are in progress?

In the Search and Select: Users and Roles dialog box, you've two options: Person or Roles. After you select the participant, the Add Participant page is displayed.

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In this page, you can do the following:

- Change Activity Type to either Approval or Review.

- Change Response Required From to One or All.

- Add comments. These comments appear in the notifications sent to the new approvers or reviewers.

Note:
- You can only remove individual users if the user is part of a role and the response required from that role is set to All.

- You can't add Activity Type = Optional approval when the approval is in progress. This is the existing behavior.

- You can't send different comments to approvers and reviewers in a single Submit action.

- When the change assignee is modified, the new assignee:
  - won't receive the notification that the workflow is complete.
  - can't perform BPM worklist actions such as reassignment on the current approval notifications.

Why did the change order workflow restart automatically?

If the schedule processor job is stuck in the initial run and it doesn't require any user intervention, the application restarts the job. It restarts up to 5 times with increasing time gaps in between each job.

You don't need to manually search for unsuccessful change orders that weren't processed due to locked affected objects.

Note: An item can be simultaneously updated from different sources. A record can be updated through the user interface, while another update could be triggered through a web service or scheduled process. This results in locking issues, and the jobs can't be complete successfully. In such scenarios, the application restarts the subsequent job after some wait time and attempts to complete the job.

How can I remove a participant from the change workflow?

In the Change Status dialog box, select the participant and click **Delete**. You can also perform this action from the Participants section on the change Workflow tab.

Note:
- Your ability to remove a participant depends on the permissions assigned in additional workflow controls for the change type.

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How can I do a bulk upload of change order attachments?

You can do a bulk upload of change order attachments using REST services.

Here are a few things to keep in mind:

- The change order must be in draft, open, or interim approval status, and
- In the change type, the **Allow Updates** option must be selected against the status.

Refer to the REST API for Oracle Fusion Cloud SCM guide for more information about using these REST APIs.

Why am I unable to update the task status in the change order?

You can only update the status for the tasks that are assigned to you. But your change analyst can update the status for all tasks.

How many objects can I add to a change order or new item request?

The default limit is 50 and the maximum is 100. Your administrator can change the default limit for:

- The number of change lines or affected objects in change orders, and
- The number of items in new item requests.

Here are some additional details:

- When you exceed the limit while adding items through the user interface, an error message appears.
- When you import a large number of items in a batch, you can choose to automatically split items and create new change orders or new item requests.

Related Topics

- Item Batch Change Order Options
- Item Batch New Item Request Options
- Configure the Limit for Objects in Change Orders and New Item Requests

Can I set a default priority for my change order or new item request?

Yes. You must set the default priority for a change type or a new item request type. The priority is inherited when you create a new change order (based on the type) or new item request.

Use the following tasks from the Product Management Offering in the Setup and Maintenance work area:

- Manage Change Order Types

- Manage New Item Request Type Details

To set the default priority, use the **Priority** field.

What actions can I take on a change order when it's in the Completed status?

As a change analyst, you can take the following actions when the change order is in the Completed status:

- Manage change header attachments

- Manage change header attributes

- Manage relationships

- Manage security

- Add tasks

- Remove tasks

- Update tasks

- Move change lines

Related Topics
- Move Change Lines

In a change type, can I configure additional controls for the Draft status?

No. But you can configure additional controls for Open, Approval, Interim Approval, Scheduled, and Completed status.

Related Topics
- Control Actions by Participants

How can I know whether the entire change order (or new item request) was rejected or if a few items were rejected?

The approval notification provides details of whether the entire change order (or new item request) was rejected, or if a few items in the change order (or new item request) were rejected.

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How can I set the reason code field on a change as a required field?

You can opt in to the Simplified Change Management Interface feature and then use Page Composer to edit the Reason Code field component and set it as required.

Related Topics
- Watch Video: Use Page Composer to Modify Interface Pages

Where are the change header attributes and change descriptive flexfield attributes displayed?

In the Product Development work area and Simplified Change Management Interface, the change header and descriptive flexfield attributes are available on the General Information tab of the change order.

Examples of change header attributes: Number, Name, Description, and Reason Code.

How do I know whether my approval is required or optional for a change order?

In the approval notification, the **Activity Type** field indicates whether you're an approver or an optional approver.

Why should I claim the change order approval?

The **Claim** action enables you to review and approve the change order before another user in the role attempts the approval.

This is because your administrator assigned the change order approval to a role and set the value of **Response Required From** as **One**. So one response from a user in the role is sufficient for approval. Note that an approval notification is sent to all users in the role.

Can I create a change order without adding affecting objects?

Although you can create a change order without adding affected objects, you can't route it for approval. But you can create a change request without adding affected objects and route it for approval.

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Can I configure extensible flexfields for a change order?

You can configure extensible flexfields for a change type so that these fields appear at the header level on the change order.

Related Topics
- Configure Extensible Flexfields for Change Types

Why am I unable to edit the extensible flexfields on the change order?

Your ability to edit flexfields depends on the following:

- You must have the Manage Change Order privilege.

- Permission for the Manage Change Header Attributes action (in the additional workflow controls table) must be set to All or Additional Information. For example, if you are the creator of the change, the **Creator** column for this action must be set to All or Additional Information.

- You must be assigned both view and edit privileges on the Edit Context page.

- In the Security tab of the change type, your role or user ID must be assigned the same view and edit privileges (that was assigned on the Edit Context page). For more information, see the related topics.

Related Topics
- Secure Extensible Flexfields on Change Types

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11 Affected Objects and Redlines

View Affected Objects and Change Operations

The Affected Objects page provides the following views:

- Redline Summary
- Manage Affected Objects

You can toggle between the Redline Summary View and the Manage Affected Objects view.

Redline Summary View

Displays links to Affected Objects and Change Operations.

Affected Objects provides a summary of redlines for each object. For instance, when you replace a component, the summary tab shows that the original component redlined and the replacement component in green (which is different from the initial color).

Change Operations provides a detailed list of modifications that have been done during the progress of a change order.

If you modify both an attribute of an affected object and its structure, two change operations are displayed in this view.

Change operations are recorded on items, AMLs, structures, attachments, and reference designators.

The table shows the change operations recorded on object types.

Object	Change Operations Recorded
Item and Attachment	Modifications
Structure	Modifications and withdrawals
Reference Designator	Additions, withdrawals, and modifications.

Manage Affected Objects View

To perform an action on affected objects, select the affected objects and click the **Actions** drop-down list.

> **Note:** When you update an affected object directly on the item page, a message appears informing you to use an existing change order or create a new one to update the item.

Here are some additional details about affected objects:

- The presence of a **Has Redlines** icon (or a red dot icon) against an affected object indicates that the item has redlines.

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- To filter a large list of affected objects, you can use **Query by Example**.

- **View Scheduling and Activation Reports**: You can view the process ID of the change order scheduling and activation processes; it includes hyperlinks to reports in the first 72 hours of report generation. Later on, only the IDs appear.

- **View Additional Item Details:**

  In the Affected Objects table, each item appears with an information icon (orange triangle) to indicate that additional information is available. You can click it to bring up a panel with details such as item name, class name, description, status code, revision code, and primary UOM. You can also drill down directly to item details using the hyperlinks in this panel without losing the change context.

- **Fill in Attributes:**

  You can quickly replicate a just-modified attribute or attributes in the Affected Objects tables on change orders, change requests, problem reports, and corrective actions. To do so, use the following actions:
    - **Fill Up** (Ctrl+U)
    - **Fill Down** (Ctrl+D)
    - **Fill Selected** (Ctrl+S)

  For example, you modified the value of an attribute, but you have more items with the same attribute that need the same change.

  To populate similar changes in a consecutive range of rows, use actions **Fill Up** (Ctrl+U), and **Fill Down** (Ctrl+D). Remember that you've to select the table cell and modify the value in the cell for Fill Down and Fill Up to work.

  To populate changes in nonconsecutive rows, select the required rows and then select **Fill Selected** (Ctrl+S) from the actions menu.

Freeze Structure Columns on Change Orders

You can select and freeze a single column or a group of columns on the change affected objects structure table. This enables you to easily work with data in large item structures and review different parameters against the item number while retaining the context of the frozen column. Note that you can only scroll through the columns to the right of the frozen columns or scroll through the columns that come after the frozen columns.

You can't freeze individual columns within an attribute group (for example, Component Details, Purchasing); you must select the complete attribute group. This is applicable on the structure view of commercial items and on the structure view of affected objects on changes. Here's how you freeze a column:

- Click the **Affected Objects** tab on the change order and then click the item.

- Click the **Structure** tab of that item.

- Select the column you want to freeze and click **Freeze**.

Related Topics
- Can I edit context specific attributes (or descriptive flexfields) on a change order?
- Replace a Component

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Redlines in Change Orders

Redlines are the individual changes on items and on reference designators that display mark-up. They're indications of recommended, modifications, additions, or deletions (withdrawals).

Any modification to a single item attribute is counted as one redline. The same is true whether you're adding or withdrawing an element to a structure.

Any modification to an existing structure attribute counts as a single redline. So, modifying the content of the reference designator attribute is one redline, and changing a second attribute counts as a second redline.

Redline information for item extensible flexfield attributes are shown in the **Additional Information** tab, next to the Summary tab. The Additional Information tab appears only when redline information exists for extensible flexfields.

Note: Validations aren't executed on extensible flexfield attributes that aren't redlined in a change order.

Merge Redlines Through Import

You can incorporate redlines coming in through import into existing affected items on a change order. This helps in reducing the number of outstanding changes, stuck changes, and overall change order cycle time. This is supported for engineering change orders and change orders without revision control.

You can import redlines and merge these with existing redlines on engineering items that are assigned to a change order. You can do this as long as the change is in draft or open status. The following modifications can be merged:

- Item general information
- Item structure components
- Reference designators
- Substitute components
- AML

For more information, see the related topic.

Redlines in Multi-Row Attributes

When you delete a row in an attribute, the row is immediately removed. However after you save the changes, the row appears as redlined.

Undo Redlines

In structures and AMLs, you can undo redlines resulting from addition, deletion, and modification of components and manufacturers

Here's how you undo redlines in a structure.

1. Open the change order and navigate to the item structure page.
2. Select the rows in which you want to undo the redline and click **Undo Redline**.

    An Undo icon appears against the rows you selected.

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The following screenshot shows the icon against redlines from deletion, modification, and addition:
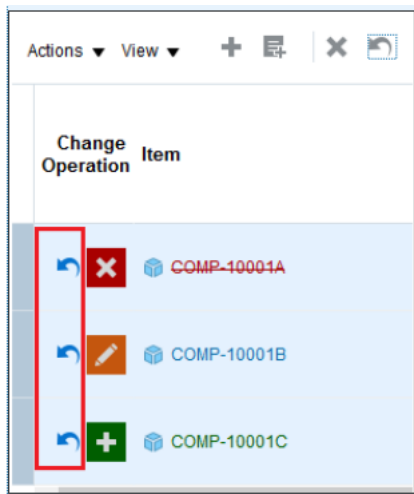
> **Note:** You can also cancel the undo redline action. Select the row in which you want to cancel the undo action, and again click **Undo Redlines**.

3. Click **Save**.

> **Note:** The undo action is complete only after you click **Save**.

Troubleshoot Missing AML Redlines

Prior to update 23D, AML redlines weren't being captured correctly on a few change orders because the date attribute values weren't synchronized. From update 23D onward you can run the Upgrade Product Management Data scheduled process to resolve this issue:

To update start date values for AML, run the Upgrade Product Management Data scheduled process with the following settings:

- Upgrade Process: Execution
- Functional Area: Item Relationships
- Feature: Update start dates on AML and display redlines
- Commit size: 10

To see which AMLs need to be fixed, you can run the same job with the upgrade process set as Analysis instead of Execution.

Related Topics
- Item Batch Change Order Options

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Effective Date and Revision for Affected Objects

You can specify an effective date for an affected object or set the use-up date (defined in Supply Planning) as the effective date. An affected object can become effective on completion of the workflow, or on a future date.

Revisions for Affected Objects

Here's what you need to know about revisions for affected objects.

- If an object is assigned to multiple change orders, each revision must have different effective dates. For example,

  Revision B resulting from change order B001, can be effective January 1.

  Revision C resulting from change order C001, can be effective January 6.

- When assigning an affected object to a change order, you select the particular revision that you want to modify, and also enter the new revision for the modified object.

- The revision you want to modify includes either of the following:
  - Revision that's currently effective. Note that you can't select a revision that's pending approval.
  - Revision that's scheduled to be effective in future and resulting from a change order in the Scheduled status.

Effective Date for Affected Objects

Here's what you must know about the effective date:

- The effective date for the modified version must include a date that's in-between the existing effective dates. For example, revision B can be effective January 1 and revision C can be effective January 6. So the modified version can include an effective date January 4.

- To ensure that item rules run effectively when you update rows in the affected objects table, the application prompts you to save changes to lifecycle phase and effective dates separately.

  Note: If you modify the effective date after you modify the lifecycle phase while saving the change order, the application prompts you to save lifecycle phase changes before saving the effective date. If you first modify the effective date, the application prompts you to save the effective date changes before saving the lifecycle phase changes.

- When you use the **Fill Down**, **Fill Up**, and **Fill Selected** functions to save effective date changes across multiple rows, the changes are automatically saved separately. So you won't see a validation message if you modify lifecycle phase values immediately after that.

Set Use-Up Date as the Effective Date

When you remove or replace a component, you can view and select a use-up date specified in a supply plan as the effective date for the affected object. The use-up date calculation helps you identify the optimal effectivity dates for structure components that are being removed or replaced on engineering and commercialization change orders.

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Here's how you set the use-up date when you remove (or replace) a component:

1. Click the Affected Objects tab on the change order.
2. Open the affected object that contains the component you want to remove (or replace).
3. Navigate to the Structure tab.
4. Select the component you want to remove and click **Actions** > **Remove**.
5. Click **Save and Close**.
6. Click **Actions** > **Calculate Use-up Date** on the Affected Objects tab.

   The Select Use-Up date dialog box appears with the use-up dates defined in the referenced plans for the component (in the Supply Planning work area).
7. Select the use-up date and click **OK**.

   The date you select is populated in the **Effective Date** column on the Affected Objects tab. If you manually update the effective date, any existing values for Plan Name and Use-Up Item are cleared out.
8. Save your changes.

Some additional considerations:

- The **Calculate Use-Up Date** action is only visible if the **Supply Chain Planning** offering is enabled.
- If you've enabled **Supply Chain Planning** but aren't using Planning use-up dates, the **Calculate Use-Up Date** action won't retrieve any use-up dates.
- The **Plan Name** and **Use-Up Item** columns are hidden by default. You can use **View** > **Columns** to show these columns if you're using planning use-up dates.
- When you add the effective date using the **Calculate Use-Up Date** action, the time is set to 00:00:00, because Use-Up Date is a date-only attribute.
- The affected item's effective date automatically changes to Effective on Approval if the specified effective date is in the past by the time the final approver (for the final approval status) approves the change order. If this happens, the Plan Name and Use-Up Item values are cleared out.
- If you update the affected object's lifecycle phase, you must first save the lifecycle phase change before updating the effective date using **Calculate Use-Up Date**.

Related Topics
- Overview of Supply Chain Planning Work Areas
- View a Plan

Resolve Revision Conflicts

An affected object can be assigned to multiple change orders.

When you add an item as an affected object to a change order, its current revision appears in the Old Revision column and you can provide the new revision in the New Revision column.

If the same item is already assigned to another change order, another revision is created in parallel. When you complete one of the change orders, the application detects a conflict for the other change order. When this happens, you're prompted to resolve the conflict.

Here are some examples to show you what causes revision conflicts and how to resolve them.

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Scenario 1

Let's say you've assigned the same item to two change orders, CO1 and CO2.

- CO1 is in Open or Draft status and is set to be effective on a future date.

  Old Revision is **A** and **New Revision** is **B**.

- CO2 is set to be effective immediately.

  Old Revision is **A** and **New Revision** is **C**.

  Now you approve and complete CO2.

Later, when you complete CO1 which has its old revision set as *A*, the application detects a conflict because CO2 is already effective with revision as **C**. A message appears asking you whether you want to change the old revision value.

If you click **Yes**, CO1 is put on hold and a batch job is created to correct the revision. On successful completion of the job, the initial revision on CO1 is changed to **C**, hold on CO1 is removed, and you can then promote CO1.
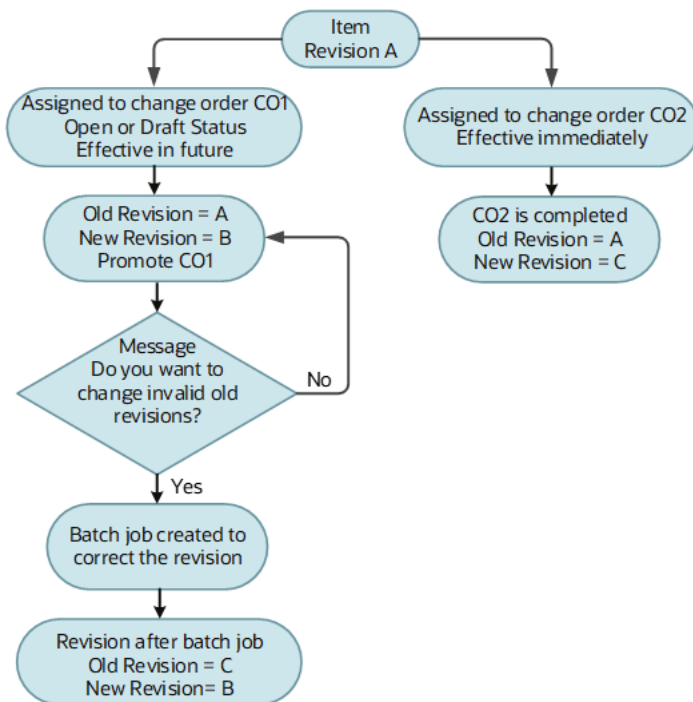
Here's an image that shows old and new revisions before you resolve revision conflicts.

Here's an image that shows old and new revisions after you resolve revision conflicts.

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The flowchart shows how revision conflicts are resolved when one of the change orders is in open or draft status:

Scenario 2

Let's say you've assigned the same item to two change orders, CO1 and CO2.

- CO1 is in Approval or Interim approval status and is set to be effective on a future date.

  Old Revision is **A** and **New Revision** is **B**.

- CO2 is set to be effective immediately.

  Old Revision is **A** and **New Revision** is **C**. Now you approve and complete CO2.

Later, when you complete CO1 which has its old revision set as **A**, the application detects a conflict because CO2 is already effective with revision as **C**. A message appears informing you to demote the change order to open status and resolve revision conflicts.

To demote CO1 to open status, click **Change Status** > **Open**.

> **Note:** From this step onward, the process is similar to the previous scenario.

To resolve revision conflicts:

From the Affected Objects tab on CO1, click **Actions** > **Resolve Revision Conflicts**.

Change order CO1 is put on hold and a batch job is created to correct the revision. On successful completion of the job, the initial revision on CO1 is changed to **C**, hold on CO is removed, and you can promote CO1.

How to Resolve Conflicts Manually

Click **Actions** > **Resolve Revision Conflicts**, on the affected objects tab of the change order. Note that in the scenarios listed in this topic, you select the change order which is open, draft, approval, or interim approval status.

What's Carried Forward in the Resolved Revision

The modifications made to AML, description and structure are carried forward from the valid old revision to the new revision (when conflicts are resolved). Note that attachments aren't carried forward.

FAQs About Affected Objects and Redlines

How do I know whether an affected object has redlines?

Navigate to the Affected Objects tab of the change order to identify redlines.

- The presence of a **Has Redlines** icon (or red dot icon) against an affected object indicates that the item has redlines.

- Click the item to open it. If any of its side tabs contain redlines, the side tab icons are highlighted for easy reference. For example, the **Structure** icon changes to a **Structure-Has Redlines** icon with a blue highlight.

Related Topics
- View Affected Objects and Change Operations

Can I edit context specific attributes (or descriptive flexfields) on a change order?

Yes. In the Affected Objects tab on a change order, use the Context Segment drop-down list to select the segment configured for the change type. The configured attributes appear next to the segment.

> **Note:** If you're a supplier portal user, you can view the context specific attributes depending on the change type configuration.

Related Topics
- Configure Context Specific Attributes for Change Types

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12 **Workflows**

Workflows in Product Development

Workflows provide a mechanism to submit change orders and change requests for review and approval. You can use workflows to manage business objects such as items and documents.

The type of the change order determines the kind of workflow. You define entry criteria for the workflow to enter a particular status; define exit criteria for advancing the change order to the next status.

The Workflow tab in a change order documents the progress of status changes. To view the details of a status, select the status.

The History tab records the sequence of actions performed on the change order.

After the edits are made to attributes and structure, the change order can be submitted to a formal workflow to be approved. Once the change order is approved, the item's revision is changed according to the scheme defined by the administrator using the system's automatic naming.

Related Topics
- Define a Workflow
- Approve or Reject a Workflow
- How can I learn of problems with the statuses in my change order's workflow?
- Why is the change order workflow status in the wrong place in the order sequence?

Define a Workflow

When the administrator defines a change type, the process includes the definition of the workflow that will be available when you create a change order of that type.

Define the Sequence of Statuses

You can define individual status to be used in the workflow, but each status must be derived from standard Status Types:

- Open
- Interim Approval
- Approval
- Scheduled
- Completed

Every workflow has at least the following statuses by default:

- Open

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- Approval

- Scheduled

- Completed

You can define multiple status of the types Open and Interim Approval. However, the statuses of type Approval, Scheduled, or Completed can each occur only once in a workflow.

A workflow for a change order always begins in Draft status after it has been created.

Transition of Status

To execute a status transition, use the change status option in the change order workflow.

If there is a problem in changing a workflow's status, running an Audit Report of the change order may indicate issues with status Entry and Exit criteria.

Hold and Cancel Statuses

A workflow can be put on **Hold** with the Hold status option. Later this workflow could be resumed by moving it to another status.

A workflow can be canceled with the Cancel status option. However, once the **Cancel** status is set, this workflow can't be resumed.

Review the Change Order Workflow

You can use the change order workflow tab to review the workflow status, date when the status changed, and details on approvals.

The Approvers panel shows whether the approval is assigned to a role or a user. In case of approvals assigned to a role, the panel also shows whether the approval is required from one or all users.

Approve or Reject a Workflow

To approve or reject a change, click the Approve or Reject button on the Workflow page. You can also request more information, reassign, escalate, or suspend the change.

Note that these buttons are displayed only if the opened change order is waiting for approval. If a change order is eligible for approval, a task notification appears in the Worklist panel.

To view more details about the change order, open the task details from the Worklist panel.

When you request more information from a user, the user must submit the information using **Actions** > **Submit Information** (available on the change) so that the change can be approved.

> **Note:** If a message appears during the approval informing you that the action is invalid or the user doesn't have the privilege, review the change history. Identify if more information was requested from a user. The change can be approved once the user submits the information.

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Rejection Reasons for Workflows

Approvers of a workflow can select one or more rejection reasons when rejecting the workflow from the workflow object, in-app notification, and the overview page.

This applies to all workflow types - change orders, change requests, problem reports, and corrective actions. The selected reasons will be displayed in the History tab and in the workflow history.

> **Note:** You can't specify rejection reasons from your email notification.

You can add **Rejected Reason** as an attribute to your Oracle Transactional Business Intelligence (OTBI) report for approval details.

Related Topics
- Workflow Rejection Reasons

Terminate and Restart a Workflow

If an approval workflow for a change order is stuck, you can terminate and restart the workflow.

You can terminate and restart the workflow in an engineering change order, change order without revision control, and engineering change request.

> **Note:** Only the **Assigned to** user sees the terminate and restart actions in the **Actions** menu.

Here are some scenarios in which the approval can be stuck:

- Approver has resigned from the company.
- Approver is mistakenly added and doesn't want to approve the change.
- Approver is on leave and a vacation rule hasn't been set up.
- Something unanticipated prevents the workflow from being approved as planned.

To terminate the approval workflow, use the **Terminate Workflow** action from the **Actions** list. This action is only available for the change order assignee.

When you terminate the workflow:

- It stops and remains in the Interim Approval or Approval status.
- Previous approval notifications for which the approvers haven't responded are removed. Notifications are removed from: BPM Worklist, worklist information tile in the Product Development work area, and bell notification.

You can modify the list of approvers and restart the workflow. Use the **Restart Workflow** action from the **Actions** list. When you use this action:

- The workflow restarts from the status it was terminated.

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- New approval notifications are sent.

FAQs About Workflows

What's the difference between One and All in an Approval type status?

For an Approval type status, on the Header Approval row, you can select One or All for the Response Required From property.

One: Only one of the assigned approvers must approve the change order for it to advance.

All: All assigned approvers must approve the change order for it to advance.

How can I learn of problems with the statuses in my change order's workflow?

Run an audit and obtain the audit report. In the change order, click Actions > Audit, and select a name on the menu. Then click the Audit Results side tab.

Why is the change order workflow status in the wrong place in the order sequence?

It might be due to an incorrect sequence number specified in the Manage Change Order Types task (available in the Product Management offering).

Why did the change order go back to the Open status when rejected from the Approval status?

The Automatic Demotion Status property on the Approval status was set to Open by the administrator.

Why can't I promote or reschedule a change order I created using an import map?

Change orders that are generated from item import maps are automatically approved.

However, the change order won't be promoted or rescheduled if the effective dates of some affected objects in the change line are less than 30 minutes apart. Ensure that there is a time difference of at least 30 minutes between the effective dates of the affected objects before promoting or rescheduling the change line.

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13 Workflows—New

Create and Edit Workflows

You can use the Product Management Search Workflows page to search for workflows such as change orders, change requests, problem reports, and corrective actions.

The workflow header attributes on the page header persist across all the tabs, providing context for the workflow. Here are some actions you can perform on the workflow.

- Search across workflow attributes.
- Use filter chips for header attributes, additional attributes, and extensible flexfields.
- Use the spotlight to quickly navigate through the affected objects.
- Redline the item directly in the change order context.
- Drag (select and move) items from the clipboard or spotlight to the Affected Objects tab.
- Preview attachments.
- View the workflow statuses and approvals in one table.
- Manage participants for multiple statuses in the same page.
- Use filter chips on tasks and relationships.
- Click the workflow links in OTBI reports to open the workflow in Redwood.

You can also perform additional actions using the **More Actions** (...) button.

Create Workflow

You can create workflows in multiple ways:

- Click the **Add** (+) icon from the Product Management Search pages for Workflow, Workflow Approvals, and Workflow History.
- Use the links available in **Actions** on the Product Management home page.

  If you're editing an item that has a needs approval rule, you can either create a new change order or add the item to an existing change order.

  If you're editing an item, you can also use the **Assign to** action to assign the item to a new or existing change order, change request, problem report, or corrective action.

Identify Workflow Status Using Color Codes

You can identify the workflow status by the color codes in the workflow search results and the status shown next to the workflow title.

View and Modify the Required Descriptive and Extensible Flexfields

You can view and modify the required descriptive and extensible flexfields attributes when you create the change order from Product Management Search page, move the affected objects, or assign the item to a change order. Both global and context sensitive descriptive flexfields can be set as required.

> **Note:** The workflow deep links in the OTBI reports open the workflow in Redwood when profile option (ORA_ACA_WORKFLOW_REDWOOD_ENABLED) is set to **Yes**.

The following header attributes are hidden by default for change orders and change requests, but you can display them using business rules:

- Supplier Site
- Reported By
- Reported Date

You can access data in the following tabs on a workflow:

- Attributes
- Affected Objects
- Attachments
- Workflow and Tasks with sub-tabs
    - Activities
    - Tasks
- Relationships
- History

Navigate to a Redwood Page Using Link in Notification

You can navigate to a Redwood page by clicking the change number link on the notification. To use this feature, set the profile option ORA_ACA_WORKFLOW_REDWOOD_ENABLED to Y.

Create a Duplicate Workflow

You can create a new workflow based on an existing one in Product Management. Use the workflow page-level action named **Duplicate**.

Click **Duplicate** to open the Duplicate <workflow name> drawer.

In the drawer, you can select a different change type. For example, you can create a change order from a change request or a change request from problem report. You can also select which entities— **Attributes**, **Affected objects, Affected object additional attributes, Attachments, Tasks, Relationships**, and **Relate to workflow**—you want to include or exclude when copying them to the new workflow. All entities are selected by default. Except for **Relate to workflow**, the others are organized into tabs within the new workflow.

If the **Relate to workflow** remains selected, then a relationship will be created between the source and the new workflow.

Attributes

You can search for attributes across sections, which can be accessed directly by selecting a filter chip. Includes filter chips for General Information, Additional Attributes and Extensible Flexfield pages:

- Additional Attributes
    - Includes global descriptive flexfields followed by context sensitive descriptive flexfields.
    - Includes the Migrated attribute (Yes/No) that indicates if a workflow was migrated using import.

     ◦ To edit context-sensitive descriptive flexfields on a change line, navigate to the context-sensitive segment, select the relevant attribute section, and create or update values in the Additional Attributes drawer.

> **Note:**
>
>   ◦ In the Main section of the Attributes tab, the visibility of the Source, Customer, Supplier and Manufacturer attributes depends on the workflow type.
>
>   ◦ To view change line context sensitive descriptive flexfields in the **Additional attributes** drawer, you must change the Context Display Type to List of Values in the Descriptive flexfield setup page.

You can create extensible flexfield attribute groups as pages if you want the filter chips to appear on the Workflow Attributes tab. Here's how:

- Access the Manage Extensible Flexfields task in the Setup and Maintenance work area.

- Search for the flexfield code **EGO_CHANGE_EFF** and edit the Change Extended Attributes.

- In **Change Type Details**, select the **Add** (+) button to create a new page for the selected change type. You can edit the **Display Name** as you'd like it to appear in the filter chip.

- In the table, use the **Add** (+) button to add your extensible flexfields to the newly created page.

Affected Objects

Here are some tasks you can perform on the Affected Objects tab.

- Select affected objects using the **Select and Add Items** icon (the item picker).

- Drag and drop (select and move) items from the clipboard or spotlight to the affected objects tab.

- Search affected objects table to filter rows.

- Edit the new revision, new lifecycle phase, and effective date directly inline.

    ◦ You can also use copy and paste to edit these attributes.

- Edit descriptive flexfields in a drawer (side panel).

- Export all the affected object lines or just the selected ones.

- Cancel lines.

- Move lines.

- Copy selected affected objects to the clipboard.

Here are some additional details on affected objects:

- If your administrator has set up an access control list, your access to affected objects will depend on the permissions specified in that list.

- When you click an affected object number link on a change order, change request, problem report, or corrective action, it appears in the workflow context, enabling you to view the affected object and easily return to the change request, problem report, or corrective action.

- You must edit the affected object lifecycle phase and effective date separately.

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- When you add an affected object to an engineering change order, the new revision is automatically updated through REST APIs, and during import. However, the revision isn't automatically incremented in the following scenarios:
    - The affected item is included in another change order that is currently in Scheduled status.
    - The existing revision doesn't not follow a standard or recognizable pattern, making it unclear what the next revision should be. For example, if the initial revision is set as .001 or Z.

Data Presence Indicators

Here are the presence indicator icons appearing on the tabs of an affected object.

Icon ⦿ indicates Has Content
Icon 🔴 indicates Has Redlines

The presence indicator for redlines is also visible in Spotlight if any of the change controlled entities have been redlined. Here's a list of fields for a change type on which presence indicators are available:

- Engineering change order
    - Attributes
    - Attachments
    - Structures
    - AMLs

- Change order without revision control
    - Attributes
    - AMLs

- Commercialization change order
    - Attributes
    - Structure
    - Associations

Note: To upgrade the data presence indicators introduced for change orders in update 25D, you must run the following scheduled process.
- Upgrade Product Management Data
- Functional Area: Changes
- Feature: Update data presence indicators for affected items

Fill up and fill down

You can select a cell, grab the small square in the corner, and drag it vertically or horizontally to fill adjacent cells (or select and drag cells) to modify affected objects.

To perform bulk edits, select multiple cells and drag them up or down.

To quickly update cells, right-click a cell and select **Auto Fill**.

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> **Note:** When you copy and paste objects or do a bulk update of effective dates to update the same effective date on more than 10 change lines, a scheduled process is triggered to update the dates on click of **Save**. The change order is put on Hold status until effective dates on change lines are updated.

Resolve Revision Conflicts

When there are revision conflicts on the affected objects in the change order, you can resolve them using the **Resolve Revision Conflict** action available on the **Affected Objects** tab. Additionally, the application will prompt you to address any conflicts when you attempt to change the workflow status to **Approval** or **Interim Approval**.

> **Note:**
> - If your administrator has set up an access control list for items, your access will depend on the permissions specified in that list.
>
> - When you click an affected object number link on a change order, change request, problem report, or corrective action, it appears in the workflow context, enabling you to view the affected object and easily return to the change request, problem report, or corrective action.
>
> - You must edit the affected object lifecycle phase and effective date separately.
>
> - When you add an affected object to an engineering change order, the new revision is automatically updated during import. However, the revision isn't automatically incremented in the following scenarios:
>
>   - The affected item is included in another change order that is currently in Scheduled status.
>
>   - The existing revision doesn't follow a standard or recognizable pattern, making it unclear what the next revision should be. For example, if the initial revision is set as .001 or Z.

Permissions for Adding Affected Objects When Access Control List is Configured

On the workflow object:

- Go to Affected Objects tab and add the affected object.

  You will require the Manage Permission on Affected Objects.

On the item object:

- Click Actions on an item. You will require the View or Manage permission on the item.

- Select Assign to Change Order and Save to change order.

To create a new change order, you will require the Create Permission.

To assign the item to an existing change you will require the Manage permission on the Affected Objects Tab for the specific workflow.

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Open an Affected Item in Change Context

When you open an item in the context of a change order, here's what you must know:

- A hyperlink **Change order <name> Context** appears along with the page title to indicate that you're in the change order context. Clicking this link will take you to the previous page you were on, either the **Affected Objects** page or the **Pending Item Revision** page.

- You can use the drop-down list (next to the change order name) to select the other affected objects, while viewing an object in the change order context.

Configure the Send Object Action

You can use business rules (in Oracle Visual Builder Studio) to configure the following fields that appear in the Send Object action.

- Messages

- Roles

- Users

Undo Redlines

In structure and AML tabs in a change context, you can undo the redlines of both saved and unsaved changes of an item's pending revision. The **Undo Redlines** button is enabled when one or more redlined rows are selected. An **Undo** icon appears against the selected rows.

Here's how you undo redlines in a structure:

1. Open the change order and navigate to the item structure page.
2. Select the rows in which you want to undo the redline and click Undo Redlines.
3. You can cancel the undo redline. Select the row you want to cancel the undo action on, and again click Undo Redlines.

The undo action is complete only after you click **Save**. Note that the action is only displayed in the pending revision context.

Reschedule Change Lines

You can reschedule the change lines on a change order in the scheduled status, by updating the effective date and clicking **Reschedule**.

Publish Workflows

To publish workflows, on the workflow click **Actions** > **Change Publication Criteria**.

Here are some additional details:

- You can publish engineering and commercialization change orders, and change orders without revision control as an XML package by selecting all or one of the following entities:
  - General Information
  - Affected objects
  - Header attachments
  - Affected object redlines only
  - Affected object attachments
  - Affected object structures

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- Affected object AML

- You can publish change orders in any status.

- You can't publish :
  - Structures on affected objects for change orders without revision control.
  - Attachments and approved manufacturers lists (AMLs) for commercialization change orders.

Edit Context Sensitive Descriptive flexfields

You can edit the context sensitive descriptive flexfields on change lines, navigate to the context sensitive segment of the change line, and click the specific attribute section to create or update the values in the **Additional attributes** drawer.

Add Attachments on Change Lines

You can add attachments to the change lines on workflows such as change orders, change requests, problem reports, and corrective actions.

Calculate Use-Up Date

You can calculate the use-up date and update effective dates on components.

If you've enabled the Supply Chain Planning offering, you can use the Calculate Use-Up Date action on the change order's affected objects table to view and select the use-up dates defined in the planning application. This helps you calculate the optimal effective dates for structure components that are being removed or replaced on engineering and commercialization change orders.

View Redline Information in Item Context

You can leverage the item page level action **Red Lines Only** to view item redlines quickly.

Selecting **Redlines Only** will only display tabs that have redlined data on the selected revision, and only display the redlined fields within each tab. In the **Redlines Only** mode you can select the action **Show All** to return to the standard view that displays all tabs and fields.

The Redlines Only action will still be selected when you navigate between items and item revisions in the following ways.

- Navigate between affected object revisions.

- Navigate between the items in spotlight.

- Select pending revisions on the item.

Change the Item Class on Pending Changes and Enable Needs Approval Rule

You can modify the item class in a pending change. The modification will appear as a redline and be recorded in the change history. Additionally, you can configure a needs approval rule so that an item class change automatically triggers a change order.

> **Note:** You can't redline other fields when you redline an item class.

Attachments
Undo Redlines

Here are some tasks you can perform on this tab.

- Add attachments.
- Preview attachments in a drawer (side panel).
    - Use the arrows to scroll through multiple attachments.
- Search for and filter attachments.
- Download attachments.

Access to Download and View Attachments from Workflows

Access to download and view attachments can be secured by your administrator using an access control list. To download and view attachments, navigate to the workflow page, click More Actions > Download Attachments. For more details, see *Access Control Lists for Workflows*

Workflow and Tasks

Displays the workflow statuses with the following color coding:

- Green- Completed statuses
- Blue- Current status
- Gray- Future statuses

The current status is selected by default (in the workflow status diagram on the Workflow and Tasks tab), or you can click the status to see the corresponding activity for that status.

You can configure business rules to show and hide column attributes on workflows, and show or hide the Activity and Tasks subtabs.

Activity Subtab

- By default, displays the activity for the current status. You can remove the status filter chip to see all statuses for the workflow in the activity table.
- Use filter chips to refine the results.
- Use the **Manage Participants** button to open a drawer where you can add participants for current or future statuses.
    - Select current or future status.
    - Enter participant names to get a list of users or roles with matching names and use checkboxes to select users.

    Use the checkbox or highlight a name to delete it.

Tasks Subtab

You can add and edit tasks using a drawer.

- By default, displays all open tasks.
- Supports filtering.
- Includes **Completed Date**.

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Relationships

You can create relationships using a drawer. You can add filters on:

- Relationship Type

- Object Type

- Status

- Revision (Item relationships only)

You can create rules between workflow objects.

- Add rules in the drawer using the + icon.

- View rules in the drawer using the eye icon.

You can also configure business rules to show and hide column attributes.

History

You can add filters on:

- Audit Type

- Action Type

- Status

- Author

- Date (using Date Range)

- Action

You can also export all or selected history rows.

Workflow Actions

Here are some actions you can perform on the workflow:

Spotlight

- Click More Actions (...) and select the **Spotlight** action to copy all affected objects to the spotlight tab of the Navigator.

- Click the item number link in the **Spotlight** tab to see the item and its redlines in the change context.

For change requests, problem reports, and corrective actions, the affected items are in read-only mode, as you can't perform redlines.

Change Status

Use the **More Actions** (...) button to change the status of the workflow. You can also add participants while changing the status.

Comment character count is visible as you type your comment.

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Related Topics
- Configure Context Specific Attributes for Change Types

Generate Workflow Summary Report

You can generate a summary report for the workflow.

From the **Actions** menu on the workflow, click **Generate Summary Report**.

In the report, you can only see items for which you have one of the following permissions: Discover, View, or Manage. The report displays only workflow attributes. To access redline-related data, you must navigate directly to the affected object.

> **Note:** The Generate Summary Report action will honor the access control list only when it's launched from Redwood.

Perform Guided Task Flow to Mass Replace Approvers or Assignees

You can use the guided task flow to perform a mass replacement of an approver or assignee. To do this, you must have the necessary permissions granted through the access control list, along with additional workflow controls.

Here's how you replace approvers and assignees:

1. Navigate to the Product Management work area.
2. In Actions click Guided Tasks.
3. Select the task configured by your administrator for replacing approvers or assignees.
4. Select replacement user.
5. Search for and select the user (approver or assignee on the workflow object) you want to replace and the replacement user.

   You'll be prompted to select the user you want to replace and the user that you want to replace it with (that's the replacement user).
6. Select one or more workflow objects from the result.

   You can view the list of workflow objects where the user is being added as an approver or assignee. You can choose one or more workflow objects for which you want to perform the replacement. You can further refine your search by filtering the results of the where used query. You can view the total number of workflow objects returned based on the query.

   Note that only workflow participants associated with the current status are displayed, and replacements can only be made within this status. Additionally, the current status must be Open, Interim Approval, or Approval.

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Replacements can't be made if the status is Draft, Scheduled, or Complete. Similarly, assignees can be replaced only when the workflow status is Open, Interim Approval, or Approval.

For example, if you're trying to replace John Doe, who's an approver in the Approval status, the replacement won't take place if the current status of the change order is Open. The replacement can only occur once the change order has reached the Approval status, and you run this guided task at that point.

7. Review and submit.

You can review and submit the task for replacement.

8. View replacement status.

Generate Change Approval Summary Using Generative AI

You can use the Generate button on workflow objects within the Redwood page to create a formatted change summary.

The generated summary is included to the workflow's formatted description field and is supported for the following workflow objects:

- Change orders
- Change requests

The **Generative AI** feature will create a common section across change orders and change requests, and provide an overview based on the object description and additional details. This will include:

- Main Attributes: Reason Code, Priority, Status
- Configured Descriptive and Extensible Flexfields
- Affected Object Number, Lifecycle Phase, Revision, and Status
- Workflow Attachment updates

Another section specific to change orders and change requests is also generated.

Change orders will include a section titled Summary of Changes and will provide Affected Object Redline information:

- Structure Component change action, Item Number Quantity, Item Sequence, Lifecycle Phase and Revision
- AML change actions, Manufacturer Part Number, Manufacturer, Manufacturer Part Number Status, AML Status
- Substitute Component change action, Item Number, Item Sequence Lifecycle Phase, and New Item Number
- Reference Designator change action
- Attachment change action
- Workflow Attachment updates

Change requests will include a section titled Affected Items and Relationships and will gather information from the following:

- List of affected items
- List of relationships detailing Name, Type, Description, Relationship Type, and Relationship Status.

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> **Note:** This feature is enabled by default and to disable the Generate button, set the predefined profile option
> ORA_ACA_WORKFLOW_GENAI_FORMAT_DESC to No.

Points to Consider

- To get the best desirable response from AI, you can run the Generative AI feature several times, if required, for the same workflow object.

- Using sentence format in the Workflow Description field ensures an accurate summary.

- Providing descriptive and extensible flexfield attributes with appropriate names and values will result in a detailed summary.

- The response time of the prompt depends on the number of attributes, including descriptive and extensible flexfields, as well as the number of affected items, and redlines.

- When you manually enter values in the Formatted Description field while editing a workflow object, and then click Generate, your existing values will be replaced with AI-generated values. However, you can still revert to the previous values by clicking Cancel on the section edit.

Related Topics
- Update Prompts Using the HCM Experience Design Studio Tool

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Relationships in Items and Documents

In an item or a document, you can add related objects for the item you are working on.

When you set a relationship from one business object to another (or manufacturer part or change order), the association is established in both objects; that is, both objects display the name of the other, related object as a live link. Click the link to open the related object in its own dynamic tab.

There is no differentiation or hierarchy to relationships.

Use the Add icon **+** or **Actions** > **Add**; the **Add Relationships** dialog appears. You will only see objects for which you have privileges. You can click the **Refine** button to bring the familiar fields for Advanced or Basic searches. The Search list provides available types of objects that can be searched; the default is Items.

Some details about each item returned on the search appear on mouse hover-over, including the item's Name, Revision, and Lifecycle Phase. Only the latest revision of any item is returned on the search.

If you select an associated object, the Delete icon **X** and **Actions** > **Delete** are enabled.

Relationships with Business Objects in Other Applications

The administrator may have set up object types from other compatible applications on your system. These external object types may be listed on the Relationships Search list. For instance, if there are Oracle Cloud Innovation Management applications configured on your system, object types such as Concepts, Requirements, and Ideas are available for your search.

Product Development items are specifically available for relationships with Innovation Management business objects. If a relationship is established between a requirements specification or requirement and an item, and the requirement is modified in any way, the relationship link to the requirement in the item is then tagged with an indicator with the label **Has changed**. (The indicator or icon displays this tool tip.)

A relationship may also be established to an object in another, external application. However, you may find your privileges to modify such an object are more constrained than objects from Product Development. See your administrator.

CAD for Cloud Integration

The CAD for Cloud integration enables functional users in the CAD development process to coordinate and relate designs in Agile PLM to items in Product Development. You can relate a design in Agile PLM to an item in Product Development with the Publish Workbench tool on the Affected Files tab of a design file change order. You can also remove the relationship. Once a design object is successfully related to a Product Development item, the relationship between the two objects is included on the Relationships tab of the design in Agile PLM. It also appears on the item's Relationships table in Product Development.

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Relationships in Change Orders

You can use the Relationships tab in change orders to track relationships created automatically or manually between change orders and other objects.

Here are a few examples:

Example 1: Let's say a change order is created from a quality action. Then a relationship is automatically created between the change order and quality action.

Example 2: Let's say a change order is affected by a quality action. Then you can manually create a relationship between the change order and quality action.

> **Note:**
> - From update 23C onward, you can add, update, or delete relationships in canceled change orders. This means you can also delete a canceled change order after deleting its relationships.
>
> - You can make changes only on the Relationships tab, not on any other tab.
>
> - It's not recommended to add new relationships to canceled change orders.

Relationship Type

You can select a Relationship Type (on the Relationships tab) after the relationship is created. Here are the relationship types:

Fulfills, Fulfilled by, Impacts, Impacted by, Verifies, Verified by, Validates, Validated by, Tracks, and Tracked by, and Split by import.

Note that **Split by import** appears selected if the change is created through import and is split during import. A relationship is automatically created between change orders split during import.

Add Rules to Validate Relationships

Let's say a quality issue is raised against a defective part, a quality analyst raises a quality action. The defective part contains a defective structure. So a change order is created from the quality action and a relationship between the change order and quality action is automatically created.

When the defective part is fixed and released through the change order, the quality action is resolved. This change order's release indicates that the quality action is validated.

For additional validations, you can create rules.

To add a new rule, click the plus (+) icon on a change order's Relationships tab. The rule specifies the status that the change order must be in (or reach) for the quality action to move to an appropriate state. You can change or delete the rule.

The default rules are: release of the pertinent change order is the only means to validate the related quality actions; validation of the pertinent quality actions is the only means to close the quality issue.

Relationship Rules for Changes, Problem Reports, and Corrective Actions

You can create relationship rules between change orders, change requests, problem reports, and corrective actions.

Use these rules to change the status of one object when the status of a related object is changed to a specific value. For example, you can create a rule to close a corrective action when a related change order is implemented. Here the 'source' object on which the rule is defined is the change order, and the 'target' object that the rule should act upon is the related corrective action.

You create relationship rules using the **Add Rule** button on the Relationships tab of the source object. Before you create a rule, the target object must be added as a related object on this tab.

When you add a rule, it lists the source object and then the target object.

Rule Syntax: When <source object name> moves to <status name> status, Move <target object name> to <status name> status.

Rule example: When ECO 567657 moves to Completed status, move corrective action Keyboard Malfunction to Closed status.

When the rule is triggered and the target object moves to the specified status, you'll see the action recorded in the History tab of the target object.

Considerations:

- A relationship can only have one rule. However, this feature supports one-to-one, one-to-many, and many-to-many relationship rules between the source and target objects.

- You can add or delete rules on both the source and target objects as required.

> **Note:** Users with permissions for the Manage Relationships action in **Additional Workflow Controls** set to **Yes** can add relationship rules.

On the Relationships tab of a change object:

- Click the **+** icon to create a rule.

- Click the **pencil** icon to edit the relationship rule.

- Click the **X** icon to delete the rule.

The rule doesn't trigger if the target object:

- hasn't reached the status just before the status specified in the rule.

- is canceled.

Here are some points you must remember while choosing the target and source objects and setting rules:

- The source object status can be in any status type except Scheduled.

- The target object status can be in any status type except Scheduled or Completed.

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- If a rule fails, you can manually move the target object forward.

- Approval steps won't be skipped.

- The target object moves to the specified status even if you don't have access to edit the target object.

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15 **Attachments**

Manage Attachments in Items and Change Orders

The Attachments side tab on an item displays a list of documents or graphics or other files that have been attached to the item. The application tracks changes to attachment file attributes such as name and description.

Attachments on items are subject to change control. You must create a change order to authorize and approve modifications to attachments. Also, you can't modify an attachment on a released item without a new change order.

You can download item attachments for either first or all structure levels by using the **Download** action on an item page.

Here's what you need to know before you download attachments:

- You can download the following attachment types: text, URL, and file. The application manages special characters and duplicate file names in the attachment title.

- The content of a text attachment is stored in a text file, and the file name is composed of the text attachment title with the suffix .txt.

- If the title information is unavailable or the title contains special characters, then the file name is composed as TEXT.txt.

- To distinguish multiple instances of the same file name, the application adds a number (#) to the file name. For example, TEXT.txt, TEXT(1).txt, TEXT(2).txt.

- A similar behavior is available for attachments of type URL. However, the standard file name is URL.txt.

- To distinguish multiple instances of the file name of type DOC, the application adds a number (#). For example, FILE.doc, FILE(1).doc, FILE(2).doc.

  Note: If the download for an item attachment fails, you can use the application severity and Enterprise Scheduler Service logs to identify attachments with missing file extensions, the file path, and the associated components.

Attachment Redlines

The modifications to item attachments are called redlines. Redline information for an item is captured in its Attachments page. The Redline Summary panel displays the attachment modifications. Attachment modifications are counted in Change Operations.

Change Order Attachments

An attachment on a change order is a document that further explains something about the change order.

You can select **Download Attachments** from the Actions menu of a change and choose from the following options to specify which attachments you want to include.

- From **Affected Objects** you can download:
    - Redlined: Includes only the redlined (added, created, or modified) attachments of affected objects
    - All: Includes all attachments of affected objects

- o None: Excludes attachments of affected objects

- From **AML** you can download
    - o Redlined (default option): Includes only redlined (added, created, or modified) manufacturer part attachments
    - o All: Includes all the manufacturer part attachments
    - o None: Excludes manufacturer part attachments

    If you select **None** for both affected objects and AML, the **Submit** button is disabled.

The **Download Attachments** action also appears in the change history.

Actions on Attachments in a Change Order

Once the item holds an attachment, the Attachment page actions include:

- Check In
- Check Out
- Cancel Checkout

To associate files with items, use the Add icon **+** or **Actions** > **Add**.

If you select a listed attachment, the Delete icon **X** and **Actions** > **Delete** are enabled.

If you find the attachments Add icon **+** or **Actions** > **Add** is disabled, possible reasons are: the item has another, later revision; or, the item is currently on a change order.

Related Topics
- View Affected Objects and Change Operations

Considerations for Managing Attachments in Items and Change Orders

Attachments are handled differently in Product Information Management and Product Development work areas.

Here's what you should keep in mind if you're creating and managing attachments in both Product Information Management and Product Development.

Product Information Management	Product Development
Supports item-level and item revision-level attachments.	Supports only item revision-level attachments.
Item and item revision-level attachments can be edited through the item, but not through a commercial change order.	After an item is released, item revision attachments can only be edited by redlining through a change order.

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Product Information Management	Product Development
Item revision attachments don't flow to the next revision.	Item revision attachments flow automatically to the next revision, unless deleted.
Item images are stored and shared as item-level attachments.	Item images are stored and shared as item-level attachments.

> **Note:** When you add an attachment to an item in Product Development, it will be visible on the item in Product Information Management only if the item is in a higher lifecycle status than Design. Note that the attachment appears in Product Information Management as an item revision-level attachment, not as an item-level attachment.

Best Practices

Here are some best practices for managing attachments:

- Use item-level attachments to associate unstructured content and additional details with an item. These attachments aren't revision-specific; they apply to all revisions of an item.

- Given that these item-level attachments aren't change controlled, always use the actions available on the Attachments panel from the Product Information Management work area to manage changes to these attachments.

- Always add attachments to a change order using the **+Add** button on its Attachments tab to ensure proper association and auditing. Avoid adding attachments directly from notifications.

FAQs About Attachments

How do I attach files to an item or change?

On an item, document, or change, click the Attachments side tab and then click the Add Attachment icon.

You can optionally associate the file to an attachment category. Attachment categories defined by your administrator are displayed in the drop-down list for selection. The default attachment category is Miscellaneous.

Related Topics
- Attachment Categories for Changes
- Attachment Categories
- Manage Attachment Security

Why can't I attach files to an item or document?

You need to attach some files to an item or document, but the Add icons on the Attachments tab are grayed out. The item or document either has another Revision or is on a Change Order currently.

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How can I view redlined attachments for a change order?

On the Edit Change Order page, select **Download Attachments** from the **Actions** menu of a change and choose from the given options to specify which attachments you want to include.

Related Topics
- Manage Attachments in Items and Change Orders

Will attachments I add in Product Development show up in Product Information Management?

The attachment you add for an item Product Development is visible in Product Information Management only if the Product Development item is in a lifecycle phase higher than design.

Note that the attachment appears as an item revision attachment in Product Information Management.

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16 Roll Up Costs

Overview of Cost Rollups in Product Development

As part of product design and development, design engineers need estimated costs of a product or its components and assemblies. During new product development, users build products by using new items and by reusing existing items.

For existing items, costs may have been captured in a costing solution, such as Oracle Cloud Costing. This company can use costs captured in the costing solution to estimate the costs of the product during product design and development. For new items, and for existing items that have no set cost, design engineers must provide a high-level estimate of costs directly to each item.

> **Note:** Documents aren't supported by cost rollups.

Display Costs in Product Development

The following capabilities are supported for cost rollups. Existing or "historical" items in Cloud Costing may provide costs to Product Development, but the cost rollup functions don't depend on being connected to a deployment of Costing.

Costs in the Costing solution are based on an inventory organization. To support this, Product Development can determine what inventory organization to use, to retrieve costs. This option can be disabled if the company doesn't deploy Costing. By default, the inventory cost organization is the same as the default Product Development organization, which is the Master Organization.

The **Material Cost**, **Overhead** Cost, and **Total Cost** fields are on the General Information page of an item. On a structure - a subassembly or top-level assembly - choose **Refresh Cost** from the list; this retrieves from Costing the latest costs of all child items and performs the rollup.

Display Costs for a Leaf Item

The Material Cost of an existing item may be retrieved from Costing.

- If the item had a cost in Costing, the Material Cost of the item in Product Development is Read Only.

- If an item had no cost in Costing, or it's created in Product Development, its Material Cost may be entered, and it remains an editable field.

- For a leaf item, Overhead Cost and Total Cost are always Read Only fields.

  > **Note:** The leaf item appears at the end of the entire structure.

- Let an item be an assembly, which has a user-entered Overhead Cost; should it become a leaf item, its Overhead Cost is no longer displayed.

Display Costs for a Structure

Determining the cost of a structure, or assembly, depends on the completeness of the data on the child items of the top-level item.

- Material Cost of an assembly is rolled up from the child items. Material Cost is a Read-Only field for an assembly in PD.

- Overhead Cost for a subassembly or top-level assembly can be entered manually, and it remains an editable field.

- Let there be a leaf item, which has a user-entered Material Cost; should it become an assembly (top-level or otherwise), its Material Cost is no longer displayed.

- An assembly's costs may be incomplete because not all of its child items have been assigned costs. To indicate that the assembly cost is incomplete, a warning icon is displayed next to the Total Cost attribute.

Business and Validation Rules

This topic lists various rules that govern cost rollups in Product Development.

Business Rules of Cost Rollups

This table displays the Material Cost, Overhead Cost, Total Cost and several conditions of Status and Revision for an Item or a Structure and indicates if the field can be edited or is Read Only.

Item Type	Item Status	Item Revision	Material Cost	Overhead Cost	Total Cost
Leaf	Not Released (new item in preliminary state)	Initial (Rev A)	Editable (unless cost came from Costing)	Not editable	Not editable
Leaf	Released	Latest	Editable (unless cost came from Costing)	Not editable	Not editable
Leaf	Released	Not latest	Not editable	Not editable	Not editable
Leaf	Pending change order	Any pending rev	Editable (unless cost came from Costing)	Not editable	Not editable
Assembly	Not Released (new item in preliminary state)	Initial (Rev A)	Not editable	Editable	Not editable
Assembly	Released	Latest	Not editable	Editable	Not editable
Assembly	Released	Not latest	Not editable	Not Editable	Not editable
Assembly	Pending change order	Any pending rev	Not editable	Editable	Not editable

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Item Type	Item Status	Item Revision	Material Cost	Overhead Cost	Total Cost

Validation Rules of Costs

Rules that apply to the expression of costs.

- If the user can enter the cost, it must be a positive value (that is, $0 or greater).

- Users may enter any number of digits after the decimal; however, the application only displays four digits after the decimal.

FAQs About Roll Up Costs

Can an item's material cost be edited, even if it is retrieved from costing?

The material cost cannot be overwritten by the user.

However, if the original cost record has been deleted in Costing, that item no longer has a cost, the material cost of the leaf item can be edited in Product Development. The original material cost will be removed in the Product Development item.

Can a cost be specific to a revision?

Yes, if you set the cost of an item in Revision A at $10, and create a Revision B and set the cost to $12, the item's rev A displays as $10 and rev B displays as $12.

Does costing capture revision specific costs of items?

No.

Costing provides costs based on effectivity dates. When Product Development retrieves costs from Costing for a leaf item, it will use that cost for all revisions of the item, regardless of the item's effectivity date. If a leaf item has a cost of $15 from Costing, the amount will carry to any future revisions of the same item - as long as it's still a leaf item. If the cost of the item changes in Costing to $20, the next rollup in Product Development displays the cost of that leaf item as $20, which would carry to future revisions of the item.

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What happens if an item with a material cost becomes a structure?

If this occurred in the same revision, the original material cost is removed and becomes read-only for the structure or assembly.

Note that it could still be stored in the schema so that it can be used in a future release. If this occurred in a newer revision, the material cost remains visible for the previous revision of the item, when it was a leaf item. In the new revision, the material cost is rolled up from the child items.

Can costs be redlined through a change order?

No, costs can't be redlined through a change order.

What formula is used to calculate total cost?

Material Cost of an assembly is always the rollup of the total costs of its children, including the quantity.

For example, if the total cost of a child item is $10, and there are 5 of these in the structure or assembly, the material cost of that assembly is $50.

- Total Cost of a leaf item = Material + Overhead (although Overhead will always be 0)
- Total Cost of an assembly = Rolled up Total Costs from the children + Overhead

What happens if the Inventory Cost Organization of an item is changed to another organization?

When you change the organization of an item, the next time you roll up that item, the cost from the new organization is used.

If the item, with its original organization, had a cost from Costing, but the new organization doesn't have it, the cost for the item in Product Development is deleted. This lets you to manually provide a new cost.

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17 Manage Objects from Supplier Portal

View Items on Supplier Portal

As a supplier portal user, you can view the following side tabs on items:

- **General Information** - the default or cover page of an item.

  You can view an item's revision number and the corresponding change order from the **Revision** list. Note that canceled item revisions don't appear in the list.

- **Attachments** - text or graphic files, or URL, with more information about the item.

- **Structure** - the Bill of Materials for assemblies, products, and other collections of items.

- **AML** - approved manufacturers list; represents a list of manufacturers, suppliers, or vendors approved for the purpose of procuring manufactured items.

- **Changes** - lists changes that the item is on.

- **Quality** - problem reports, or corrective actions to which this item is added.

- **Where Used** - displays those item-structures to which the item is added.

- **History** – shows data changes made to audit-enabled item attributes.

Content Presence Indicators

The following content presence indicators help you quickly access item and component details:

- A blue icon indicating the presence of content appears on the item's side tabs. Additionally, when you hover on the tab that has content, the tooltip displays Has Content.

  > **Note:** The General Information tab icon isn't displayed in blue since it always has content.

- Blue dot icons on structure component rows indicate the presence of pending changes and quality-related data. You can click the blue dot to navigate to the corresponding details in the side tab.

- For quality objects, the blue dot appears if there is at least one quality issue, quality action, problem report, or corrective action in any workflow status against any item revision. Note that the object can be pending or released.

  When you click the blue dot on quality objects, only problem reports and corrective actions appear in the Quality side tab. You can only see and navigate to those objects for which you have access.

Create Problem Reports and Corrective Actions

You can create problem reports and corrective actions from the:

- **Create** (+) menu on the Overview page in the Quality management work area

- **Actions** menu of an item in the Product Development work area

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- **Actions** menu of an item in the Product Information Management work area

You can see that they appear on the Quality tab of items in the Product Development, Product Information Management, and Quality Management work areas. Remember that the **Create Problem Report** and **Create Corrective Action** options appear on the **Actions** menu only after you create and save an item.

For suppliers the page reloads with the newly created object.

Note: The newly created problem reports and corrective actions automatically display organization data from the item.

The workflow of a problem report or corrective action progresses as specified by the statuses defined by the administrator. For more details, see Set Up Problem Reports and Corrective Actions.

Create 8D Corrective Action.

You can choose to create a corrective action from the following two options in the **Type** drop-down list:

- Corrective Action – action to mitigate a quality issue and prevent its further occurrence.
- 8D Corrective Actions – action that uses the 8D methodology. An investigative dive to find the cause of a problem, a solution to fix it and a method to prevent recurrence.

The 8D methodology involves a systematic investigation into the root cause of a problem to prevent recurrence. It uses a structured, preconfigured template based on 8 disciplines to define the problem, identify the root cause, and run the corrective and preventative action (CAPA) to prevent recurrence.

Here's a brief description of the eight disciplines:

1. Plan and form team: Create a plan to minimize or mitigate the problem and establish a team of skillful and knowledgeable people
2. Define Problem: define and describe the problem
3. Interim Containment: define and implement containment actions
4. Determine Root Cause: identify the root cause
5. Verify Correction: verify and choose the most effective corrective action
6. Implement Corrective Actions: implement the corrective actions
7. Prevent Recurrence: implement actions to prevent a recurrence
8. Recognize Team Effort: acknowledge and congratulate the collective effort of the team.

Note: Although the change type 8D Corrective Actions is predefined, the attribute visibility setting is read-only. The change type inherits the configuration from its parent change type, Corrective Action.

Create a Corrective Action from a Problem Report

You can also create a corrective action from the Actions menu of a problem report. The corrective action opens in a dynamic tab for editing. For suppliers the page reloads with the newly created object.

While creating a corrective action from a problem report, you can select to copy over the descriptive flexfields, attachments, relationships, and tasks for the problem report. You can also copy over the affected objects including descriptive flexfields to the new corrective action. The corrective action is automatically linked to the problem report in the Relationships tab.

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Related Topics

- Overview of Change Type Setup
- Configure Change Orders
- Understand Change Types

View Changes on Supplier Portal

As a supplier portal user, you can view the changes for which you're granted access.

Here are some of the side tabs available on change orders:

- **General Information** - the default or cover page of a change order.

  The General Information tab displays the cover page details including the trading partner reference attributes like Customer, Supplier, Manufacturer, and Source. The trading partner reference attributes exposed to the business user are displayed in the supplier portal.

- **Affected Objects** - items and structures (including components) that are the subject of the proposed change or modification. Items can contain problem report, or corrective action.

  To view the structure, open the affected object and click the Structure tab.

- **Attachments** - text or graphic files, or URL, with more information about the change order. As a supplier portal user, you can only view attachments for which you're assigned permissions.

Content Presence Indicators on Affected Object Structure

Content presence indicators on the structure tab of the affected object provide quick access to changes and quality-related data.

Here's what you need to know:

- Blue dot icons on structure component rows indicate the presence of pending changes and quality-related data. You can click the blue dot to navigate to the corresponding details in the side tab.

- For quality objects, the blue dot appears if there is at least one problem report, or corrective action in any workflow status against any item revision. Note that the object can be pending or released.

  When you click the blue dot on quality objects, only problem reports and corrective actions appear in the Quality side tab. You can only see and navigate to those objects for which you have access.

Submit Change Requests from Supplier Portal

If you're a supplier portal user, you can submit change requests to suggest changes to a released item.

You can also initiate the change request workflow by changing the status from Draft to Open. Once the request is open, the change analyst receives a notification.

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Note:

- The change analyst (or change request assignee) is configured by the administrator as part of the change type setup.

- If you're unable to manage changes from the supplier portal, ensure that you have relevant privileges. For more information, see the related topics.

Here's how you submit a change request from Supplier Portal:

1. In **Products**, click **Manage Item Change Requests**.
2. On the Manage Item Change Requests page, click **Actions** > **Create Change Request**.
3. Enter details of the change request, and click **Save and Edit**.
4. To change the status of the request from Draft to Open, click **Change Status** > **Open**.
5. Click **Save and Close**.

   When you receive a notification to approve the status change, enter comments to help the change analyst review the request.

Related Topics

- Overview of Change Orders and Change Requests
- Configure Supplier Portal Users
- Troubleshoot Access to Objects on Supplier Portal

Publish Change Orders from Supplier Portal

As a supplier portal user, you can publish engineering change orders into an XML report. You can then use the report to integrate change order data with another application, or for another purpose.

After publishing is complete, the process number including hyperlinks to reports appears in the first 72 hours of report generation. Later on, only the process number appears.

Here's how you publish a change order from Supplier Portal:

1. In **Products**, click **Manage Item Change Orders**.
2. On the Manage Item Change Orders page, open an engineering change order that you want to publish. You can select more than one change order.
3. Click **Actions** > **Publish**. Note that you can only publish engineering change orders.
4. In the Change Publication Criteria dialog box, select the entities you want to publish and click **Publish**.

   A process ID is generated for each change order. You can also monitor the publication status from the Manage Item Change Orders page.

   Here are some additional details about entities:

   - The **Include attachment files** check box is enabled only if you select the change attachment entity. Select this check box to include the attachment files (digital assets) along with the attachment metadata when you publish.
   - By default, the **Change general information** entity is always selected for publishing and you can't change this setting.

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View Objects from Supplier Portal

As a supplier portal user, you can access the **Product Management Search** page (a Redwood page) to search for objects that have been enabled by your administrator.

You can add the objects to clipboard, access objects using the Recently Visited panel, and use the Saved Searches panel.

Also, you can access to guided journeys if your administrator has configured it for you.

To access **Product Management Search**, click the Product Management card after logging in to the supplier portal.

When you navigate through the objects on the supplier portal, the content appears based on access control lists or business rules (configured using Oracle Visual Builder Studio).

> **Note:**
> - The search pages are compliant with a web application firewall and support single sign-on bypass.
> - The object pages appearing on supplier portal show the same tabs that are visible to other users by default, unless they're explicitly hidden through configurations.

Configure Users to Access Product Management Search Page on Supplier Portal

Here's what you must do:

- Opt in to the feature Redwood: Enable the New Supplier Portal Home Page Experience.
- Configure a view for supplier portal users with the **Application** field set to **Supplier Product Management**. Configure views for item search, workflow search, and structures to ensure that supplier portal users can see only the attributes relevant to them.
- Secure items by clearing the Public option for all item classes where it's selected.
- Secure access to changes such as (such as change orders, change requests, problem reports, and corrective actions). To do this, you must add users to the Security tab on changes (from the classic interface). This is because supplier portal users can view all changes that don't have any users added in the Security tab of the change. In short, all such changes will be visible to all supplier users.
- Hide tabs on workflows according to your business requirements by using business rules configured in Visual Builder Studio. This is to avoid supplier portal users from viewing all actions and tabs across all workflows available to other internal users.

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Note:

- The Additional Workflow Controls configured in the Portal User column as part of the change type setup will also be applicable on Redwood pages. Note that:

    - Supplier portal users can be granted a higher-level access by adding a new role and assigning permissions to that role through additional workflow controls.

    - Between the permissions in the Portal User column and the new role, the functionality that's higher of the two will be applicable.

        For example, for the Promote Manually action, if the Portal User is set as No, and New Role is set as To next status, the portal user can promote the workflow to the next status. If you don't want the permission in Portal User column to be applied, you can set all actions in that column as No.

- Supplier portal users can't navigate to the Product Management landing page like any other users of Product Management.

- Supplier portal users won't have access to the Navigator icon available for the other application pages.

- If you're configuring a view for supplier portal users, set the **Application** as **Supplier Product Management**.

18 Analyze Objects with OTBI

Why Use OTBI Reports

Use OTBI (Oracle Transactional Business Intelligence) reports to view embedded real-time analytics, reports, and dashboards based on real-time transactional data in Oracle Fusion applications.

To access reports and analytics from the Product Development work area, click the Reports and Analytics side tab.

Related Topics
- Overview of Transactional Business Intelligence

Use Predefined OTBI Dashboards for Changes and Items

With additional dashboards in OTBI (Oracle Transactional Business Intelligence), you can view analyses for PLM objects.

Navigate to **Oracle Transactional Business Intelligence > Dashboards > Supply Chain Management > Change Orders Dashboard or PLM Details Dashboard**.

Use the **Change Orders** dashboard to analyze the count, cycle time, and aging metrics of change orders, change requests, problem reports and corrective actions and drill-down to view detailed reports. By default, the dashboard will display data from the current year and the previous year. You can view the status, and the remaining or pending approvers to approve the change orders using change order approval reports. Use the **PLM Details** dashboard to search for items using various attribute filters. Use the link in the dialog box with available reports, set up by the administrator, to view the OTBI report results page.

Publish Items for Analysis in OTBI

To make data available for reports, you must first publish the data for analysis in OTBI (Oracle Transactional Business Intelligence). You can publish the item structure and where-used data.

Here's how:

- On the item page, click **Actions** > **View Reports > Publish**.
  Or
- On the item search results page, select the items you want to publish. Then click **Actions** > **Publish for Analysis**.

The analysis on items and structures provides critical decision-making information.

Note that you must these privileges:

Manage Item (EGP_MANAGE_ITEM_PRIV) and Manage Change Order (ACA_MANAGE_CHANGE_ORDERS_PRIV) along with

Monitor Product Management Workflow Objects
(ACA_MONITOR_PRODUCT_MANAGEMENT_WORFLOW_OBJECTS_PRIV)

> **Note:** To see the descriptive flexfields in OTBI, you must run the scheduled process - Import Oracle Fusion Data Extensions for Transactional Business Intelligence and to populate data in Structures and Components and Where Used subject areas, you must run the scheduled process - Run Scheduled Process for Populating Subject Areas.

Related Topics

- Overview of Creation and Administration of SCM Analytics and Reports
- SCM Subject Areas in Oracle Transactional Business Intelligence
- How You Create and Edit Reports

FAQs About OTBI

How can I add the publish date and time in a report?

Navigate to **Tools** > **Reports and Analytics** > **Browse Catalog**. Open a report and expand **Views** in the side panel.

- In the Compound Layout page, select the Title attribute and click **Edit**.
- Select **Display Date and Time** from the **Started Time** drop-down list and click **Done**.

The report will display the last publish date and time.

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19 New Item Requests

Overview of New Item Requests

In Product Development, items are usually created with create dialog or various add item features on items, structures, and change orders.

There's a more formal process of item creation called the New Item Request process. The administrator can establish a Product Development item class that requires the new item request process to be followed.

In the new item request process, a new item is validated and approved before it's made available to enrichment processes and structure-building in Product Development. The validation steps take place in the Product Information Management work area.

A new item request may be appropriate for a product that will go through the complete manufacturing or commercialization phases. A less formal process may be appropriate for a more preliminary, design phase of product innovation.

Your enterprise may use either the formal new item request process, or the informal processes for the development of new items and structures.

Related Topics
- Create New Item Requests
- When can items be added to a new item request?
- Set Up New Item Requests

New Item Request Process

The formal process of item or structure creation requires the new object to go through a workflow. The item creation may be initiated in Product Development, but it passes over to Product Information Management for the analysis and approval process.

When a development item is created in Product Development, and it's going to be oriented through new item request, a product manager or item analyst is notified of the item. When the new item request process is triggered, the item is routed to assignees, who are informed what needs to be considered based on the item class setup.

The stages of the workflow are:

- **Open** - submitted
- **Definition** - when the assignees respond
- **Scheduled**
- **Completed**

The item is routed for approval, only after it has passed through the Completed status.

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For an item that's undergoing the new item request process, the **Approval Status** attribute - on the **General Information** tab - displays the new item request number along with its approval status. This lets a Product Development user identify those items that are engaged in the new item request process.