Oracle Fusion Cloud SCM

Implementing Product Management

25A

Oracle Fusion Cloud SCM
Implementing Product Management

25A

G17768-01

Copyright © 2011, 2025, Oracle and/or its affiliates.

Author: Lisa Brown, Venkat Karthik, Mark Sawtelle, Dhruba Jyoti Pokhrel, Shruthi Bollamma

Contents

Get Help i

1 Overview of Product Management 1
Overview of Implementing Product Management 1
Overview of Product Lifecycle Management and Product Hub 3
Licensed Features 4
Overview of Implementation Tasks 7
Roadmap for Setting up Innovation Management 9
Roadmap for Setting up Product Development 9
Roadmap for Setting up Product Hub 10
Roadmap for Setting up Supplier Portal 11

2 Item Organizations 13
Setup Tasks for Item Organizations 13
Item Organizations 13
Organization Trees 14
Item Definition Organization and Reference Organization 14
Considerations While Creating Item Definition Organization and Reference Organization 15
Convert a Reference Organization to a Definition Organization 17
What's an item organization? 18

3 Items and Documents 19
Setup Tasks to Define Items 19
Manage Item Templates 21
How Units of Measure, Unit of Measure Classes, and Base Units of Measure Relate to Each Other 22
Item Lifecycle Phases 24
Set Up Item Lifecycle Phases 25
Define Product Child Value Sets 26
Attachment Categories 26
Manage Attachment Security 26
Operational Attributes Controls 30
Manage Transactional Attributes 31

How You Manage Operational Attribute Groups 33
Configure Extensible Flexfields or User-Defined Attributes 34
Item Attribute Groups and Attributes 44
Create an Attribute for an Item Class 44
Configure Attributes in Item and Change Order Context 47
Configure Attribute Groups for Product Development 49
Create Data Privileges for Attribute Groups 49
Create Rules to Automatically Generate Fields for Items 50
Create a Rule Set for an Item Class Attribute 51
Item Classes 54
Item Class Descriptive Flexfields 56
Default Item Class 56
Overview of Item Status 57
Precedence of Applying Attribute Values to Items 59
Set Up Data Security for Item Classes 60
Identify Opportunities to Optimize Item Class Setup Using Diagnostic Test 63
Check Dormant Data Inconsistencies Using Diagnostic Report 64
Configure the Template for the Item Structure Report 65
Set Default Tab and Subtab for an Item 71
Setup Task to Manage Item Types 73
FAQs for Item Classes and Attribute Groups 73
Cross-Reference Types 73
Item Descriptive Flexfields 74
Overview of Import Items 75
Related Item Subtypes 76
Item Revision Descriptive Flexfields 77
Trading Partner Item Descriptive Flexfields 77
Build Item Keyword Index 78
How You Migrate Item Keyword Index Values to Another Server 79
Item Keyword Search Scheduled Process Actions 79
Item Publication 80
Set Up Document Classes 88
Configure Reference Designator Options 89
Secure Structures 90
Enable Display of Use-Up Date 91
FAQs for Defining Items 92

4 Catalogs 99
Setup Tasks to Manage Catalogs 99
Catalog Descriptive Flexfields 99
Category Descriptive Flexfields 100
Create Catalogs 100
Manage Catalogs 101
Functional Area Catalogs 102
Functional Area Catalog Rules 102
Assign Catalogs and Categories Using Item Rules 130

5 Manufacturers 135
Set Up Manufacturers and Manufacturer Parts 135
Upgrade Manufacturers 135
Configure Descriptive Flexfields for Manufacturer Parts 136
Configure Descriptive Flexfields for Approved Manufacturers List 136
Configure Extensible Flexfields for Manufacturers 137
Data Security for Manufacturers and Manufacturer Parts 138

6 New Item Requests 141
Set Up New Item Requests 141
New Item Request Workflow 141
Configure Entry and Exit Criteria for New Item Requests 143
Configure Automatic Promotion and Demotion in New Item Requests 146
Configure the Definition Workflow for a New Item Request 147
Configure the New Item Request Approval Phase 148
Troubleshoot Access to New Item Requests 150
FAQs for New Item Requests 150

7 Change Orders 153
Setup Tasks to Define Changes 153
Understand Change Types 154
Manage Change Reasons 156
Manage Change Priorities 157
Understand Change Order Statuses 157
Configure Change Types 159
Configure Automatic Promotion and Demotion 185

Configure Interim Approval and Approval Status 186
Configure Context Specific Attributes for Change Types 187
Import and Export Change Type Configuration 189
How to Add Additional Attributes to a Change Order Details Report 191
Configure the Limit for Objects in Change Orders and New Item Requests 193
Troubleshoot Issues in Change Objects 193
Debug Failed Processes 197
FAQs for Change Orders 200

8 Access Control Lists 205
Overview of Access Control Lists 205
Who Should Have Access 208
Object Conditions 209
Permission Sets 209
Teams 211
FAQs for Access Control Lists 212

9 Product Rules 215
Overview of Product Rules 215
Rules and Rule Sets 215
Define Rule Sets and Item Rules 218
Example of Creating an Item Rule Set and Rules 224
Item Rule Data Types 233
Item Rule Syntax 234
Item Rule Multirow Attribute Group Functions 236
Item Rule Numeric Functions and Operators 237
Item Rule Production Value Functions 240
Item Rule String Functions 241
Item Rule Logical Functions and Operators 245
Item Rule Expressions with Business Entities 250
Item Rule Utility Functions 253
Item Rule Object Functions 255
Item Rule Service and REST Functions 258
GTIN Assignment Rule 261
Attributes Supported for Item Rules 263
Analyze Rule Impact 271
How You Use Custom Object Data in Rules 275

How You Route Item Changes Through Change Types Using Rules 277
How You Integrate With REST Services Using Rules 279
Diagnostic Test for Rules 281
Examples of Assignment and Validation on Items 282
Assignment and Validation on Changes 290
Blending Rules 296
FAQs for Product Rules 306

10 Product Spoke Systems 309
Setup Task for Product Spoke Systems 309
Product Spoke Systems 309

11 Advanced Catalogs 313
Setup Task to Manage Catalog Mappings 313
Catalog Mappings 313

12 Product Management Search 315
Overview of Product Management Search 315
Configure Index 315
Configure Views 323
Use Product Management Search 332
Access Key Product Management Information and Tasks Using Product Management Landing Page 340
Product Lifecycle Management Navigator 341

13 Profile Options and Profile Values 343
Item Profile Options 343
Advanced Item Profile Options 344
Set Profile Values 345

14 Item Mass Update Configuration 351
Setup Task for Item Mass Update Configuration 351

15 Imports 353
Overview of Importing Items 353

Import Data Using FBDI 354
Monitor Item Imports 360
Import Formats 360
Import Data Using Import Maps 361
Import Catalogs with FBDI 362
Import Regional Information 363
Migrate PLM Objects Using FBDI 364
Automate Data Import and Publication 381
FAQs for Defining Imports 385

16 Guided Task Flows 391
Overview of Guided Task Flows 391
Enable Guided Task Flows 391
Configure Guided Task Flows 393

17 Audit History 399
Setup Tasks for Audit History in Product Management 399
Audit Trail 399
Enable Auditing for Configured Objects 401
Objects You Can Enable for Audit in Oracle Product Hub 401

18 Product Lifecycle Management 407
Define Product Innovation 407
Define Product Development 409
Configure Integrations for Product Development 419

19 Workflow and Approval Management 423
Overview of Workflow and Approval Management 423
Best Practices for Managing the Workflow 423
Set Up the Workflow 424
Configure Approval Tasks Using BPM Worklist 425
Task Assignment and Routing 427
Approval Groups and Header Stages 428
Change Order Approval Required Rules 429
Configure the Signature Policy for Change Order Approval 430
Examples of Entry and Exit Criteria 431

Approval Rules 432
Actions for Reviewers and Approvers 458
Overview of BPM Workflow Notifications 459
Configure Workflow Notifications 460
Comments in Notifications 461
Configurable Email Notifications 462
FAQs for Workflow and Approval Management 476

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 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 Support

You can get support at *My Oracle Support*. For accessible support, visit *Oracle Accessibility Learning and Support*.

Get Training

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

Join Our Community

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.

Learn About Accessibility

For information about Oracle's commitment to accessibility, visit the *Oracle Accessibility Program*. Videos included in this guide are provided as a media alternative for text-based topics also available in this guide.

Share Your Feedback

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.

You can email your feedback to *oracle_fusion_applications_help_ww_grp@oracle.com*.

Thanks for helping us improve our user assistance!

1 Overview of Product Management

Overview of Implementing Product Management

To start an implementation of Product Management, the implementation consultant must opt into the offerings applicable to your business requirements.

Refer to the Oracle Fusion Cloud Applications Using Functional Setup Manager guide to manage the opt-in and setup of your offerings.

Product Management Cloud Offering

Configure how you create and manage items, catalogs and related processes, as well as the structures in a product lifecycle.

Use this offering to configure services that support the following work areas:

- Ideas
- Concepts
- Product Development
- Product Information Management

Note: Before you begin to set up Product Management, you must perform implementation tasks that are common to Oracle Fusion Cloud SCM offerings.

In the Setup and Maintenance work area, tasks are grouped within functional areas. Each functional area has a list of setup tasks. Complete the setup tasks for the functional areas that are applicable to the services you have subscribed to. These tasks are described in more detail in subsequent chapters. This table lists the offering and the associated functional areas.

For the full list of functional areas and features in this offering, use the Associated Features report that you review when you plan the implementation of your offering.

Functional Area	Description
Product Requirements and Ideation Management	Enables your organization to set up processes that can manage new ideas and requirements for a product.
Concept Design Management	Enables your organization to set up processes that can manage conceptual design of a product.
Product Development	Enables your organization to set up processes for product development.
Product Management Business Intelligence Analytics (if your users require BI Reports for Product Development)	Enables your organization to set up processes for using business intelligence analytics for product management.

Functional Area	Description
Item Organizations	Enables your organization to set up and manage item organizations.
Items	Enables your organization to set up and manage items.
Catalogs	Enables your organization to set up and manage catalogs.
Structures	Enables your organization to set up and manage item structures.
Item Mass Update	Enables your organization to set up processes for mass update of items.
Advanced Catalogs	Enables your organization to set up processes for managing catalog mappings.
New Item Requests	Enables your organization to set up processes for managing new item request type and managing task configurations for BPM Worklist.
Change Orders	Enables your organization to set up processes for managing change orders types.
Product Rules	Enables your organization to set up processes for creating and managing item rule sets.
Audit Trails	Enables your organization to set up processes for managing audit policies.
Product Spoke System	Enables your organization to set up processes for managing source systems, trading community source systems, lookups, and descriptive flexfields.
Item Batches	Enables your organization to set up processes for managing item classes.
Data Pool Integration	Enables your organization to set up processes for managing review codes, rejections codes, correction codes, and synchronize item data.
Suppliers for Product Management	Enables your organization to create suppliers in Procurement, and manage supplier type lookups.
Supplier Portal	Enables your organization to manage suppliers' portal.

Related Topics

- Plan Your Implementation

Overview of Product Lifecycle Management and Product Hub

Oracle's Product Lifecycle Management (PLM) solutions, along with Product Hub, can be configured to work together in order to deliver comprehensive Innovation to Commercialization capabilities across the entire product value chain. Product Lifecycle Management consists of the Innovation Management and Product Development cloud services.

- **Oracle Innovation Management**: Streamlines new product development and introduction processes with the following functional areas:
    - **Product Requirements and Ideation Management**: Allows employees and stakeholders to collaborate on product innovation ideas and record requirements. Product managers can integrate requirements with concepts in Concept Design Management.
    - **Concept Design Management**: Offers a collaborative design workspace for product architects, designers and executives to generate, capture, analyze, and approve product concepts that address product strategy goals. Approved concepts can then be transferred directly to external PLM solutions for prototype planning, detailed design and product introduction.
- **Oracle Product Development**: Enables you to manage product data and change orders while balancing cost.
- **Oracle Product Hub**: Centralizes product data across heterogeneous systems so that it can create a blended product master record that's clean, standardized, accurate, and current. From products that you manufacture internally to finished goods that you source from suppliers, Product Hub enables you to aggregate, enrich, and share product data for various manufacturing and omni-channel commerce processes. Use robust business rules and workflows to make sure the data that you share across the enterprise is clean, complete, and valid. Rapidly commercialize products that use centralized product information for manufacturing, marketing, and sales across global manufacturing sites, sales channels, and trading partners.

Deploy each cloud service with configurations based on your required level of control and configuration.

Deployment Option	Deployed By	Level of Control and Configuration	Speed of Adoption and Agility
Private Cloud	Oracle deploys and manages for you in an exclusive private cloud	Medium	Medium
Oracle Public Cloud	Oracle provides a subscription-based service	Low	High

Related Topics

- Innovation Management Functional Areas

Licensed Features

Oracle offers the Product Management Cloud Service license that includes the Product Hub and Product Lifecycle Management (PLM) features. PLM contains Product Development, Innovation Management, and Quality Management modules.

In case you have licensed other Cloud services such as SCM Cloud services, ERP Cloud services, Sales and Service Cloud, and so on but have not licensed the Product Management Cloud Service, then you have access to only the basic item management capabilities.

Here's the basic item management capabilities.

Task	Limitations
Create Item	Applicable only for root item class without item extensible flexfields (EFFs). Item supplier association isn't allowed. Style or SKU items aren't allowed.
Manage Items	Applicable only for root item class without item EFFs. Item supplier association isn't allowed. Style or SKU items aren't allowed. Mass updates are applicable only for basic item master objects.
Manage Catalogs	Includes only catalogs that are required for use with other ERP, SCM, or CX applications. For the purpose of ERP and SCM Cloud service, if you want to address localization and financial requirements, the following price supplement is applicable: Oracle Fusion ERP and SCM Cloud service customers can define multiple product catalogs in the Item Master in addition to the functional catalogs to represent any country specific localization requirements pertaining to financial or tax classification without requiring a Product Management Cloud Service license. Any use of advanced catalog management capabilities or features such as catalog security, catalog sharing, and catalog assignment through rules for these catalogs requires a Product Management Cloud Service license.
Create Item Structure	Pack structures aren't allowed.
Browse Items	Applicable only for root item class without item EFFs. Mass updates are applicable only for basic item master objects.
Manage Trading Partner Items	
Manage Item Relationships	Spoke system item reference isn't allowed. GTIN relationships isn't allowed.

Task	Limitations
Manage Audit Reports	Applicable only for basic item master objects.
OTBI	Applicable only for basic item master objects.
Web Services (SOAP and REST)	Applicable only for basic item master objects.
File Based Import (FBDI only)	Applicable only for basic item master objects.
Manage Item Class Manage Item Attribute Groups and Attributes / Manage EFFs (for items)	These aren't available. Instead use manage default item class.
Other Setup Tasks	Applicable only for basic item master objects.

The basic item master objects include the following:

- Item Operational (predefined) attributes
- Item DFFs
- Item Revisions
- Item Attachments
- Related Item Relationships
- Trading Partner Item Relationships
- Cross Reference Relationships
- Item Organization associations
- Item Structures
- Item Category assignments
- Item Catalogs
- Item Categories
- Trading Partner Items

Prior to Product Management Cloud Service license, there were two licenses:

- Product Hub Cloud Service (includes Product Hub features)
- Product Development Cloud Service (includes Product Development features)

These two licenses were later combined to a single license called the Product Management Cloud Service.

If you have Product Hub Cloud Service, Product Development Cloud Service, or Product Management Cloud Service license, then you can access all the basic item management capabilities without any limitations. Additionally, you can access the following tasks:

- Create Pack
- Manage New Item Requests
- Manage Change Orders
- Manage Item Rule Sets

- Analyze Rule Set Impact
- Manage Worklist
- Manage Item Batches
- Review Supplier Uploads
- Manage Spoke System (includes Publication Options)
- Manage Import Maps (includes Smart Spreadsheet)
- Manage Data Pool Subscription
- Review Data Pool Messages
- Manage Products (Supplier Portal) (Requires Product Hub Portal Cloud service or Product Management Cloud service)
- Manage Item Class
- Manage Item Attribute Groups and Attributes / Manage EFFs (for items)

Note: The last two tasks include setting item class hierarchy, configuring Item EFFs, managing data quality, and configuring Style/SKU.

If you have licensed Product Hub Cloud Service, Product Development Cloud Service, or Product Management Cloud Service, then you must enable the **Data Governance** and **Data Consolidation** options under the **Product Management** Offering in the **Setup and Maintenance** work area. Some of the preceding functionalities will work correctly only when these options are enabled. Conversely, if you have not licensed these cloud services, then don't enable these options.

The Product Management Cloud Service license also includes the following advanced features and capabilities:

- Item class hierarchy (beyond the pre-defined root item class)
- Extensible Flexfields (EFF)
- Data security
- New item request
- Change workflows
- Import workbench
- Mass update
- Audit history
- Advanced catalog management
- Publication framework
- Item business rules
- Global Trade Item Number (GTIN)
- Spoke system relationships
- Packaging hierarchy
- Global Data Synchronization Network (GDSN) subscription framework

Overview of Implementation Tasks

This topic outlines the sequence of setup tasks for implementing Product Management.

The sequence of tasks is split across the cloud service administrators and application implementation consultants.

Tasks for the Service Administrator	Description
Step 1- Create a Primary Implementation User	For your consultants to access and begin your implementation process, create the primary implementation user for your lead consultant. Once completed, this user can create additional users for the rest of the implementation team. **Tip:** Oracle recommends that you set up your implementation users in the Test environment first. Migrate them to Production after they have been tested and validated. To create the primary user, follow these instructions: 1. Sign in with your user ID and password. 2. Select **Navigator**> **Security Console**. 3. Click **Users**. 4. Click **Add User Account**. 5. Provide the user attributes and click **Add Role**. 6. To provision the new user with roles, search for a role that includes the Application Implementation Management duty role. Select it and click **Add Role Membership**. 7. Add the **Roles** that has the Security Management duty role, at minimum. 8. Close the window. Notify your primary implementation team member that their user ID has been created. Give them their initial password. **Note:** Oracle recommends that security administrators don't assign these predefined roles directly to users. Instead, make a copy of a predefined role, remove the privileges that your users don't need, and assign users the role that contains only the privileges they need.
Step 2- Create Implementation Projects	Optionally, create **Implementation Projects** in the **Setup and Maintenance** work area.
Step 3- Set up Key Implementation Users and Security Profiles	After your environments are provisioned, you as the service administrator have sufficient security abilities to create three implementation users with the necessary roles.

Tasks for Application Implementation Consultant	Description
Step 4- Create Data Roles and Assign Security Profiles	You can secure data by provisioning roles that provide the necessary access rights. Data roles apply explicit data security policies on job and abstract roles. Create and maintain data roles in the Authorization Policy Manager.

Tasks for Application Implementation Consultant	Description
	Assign a predefined security profile to relevant job or abstract roles using the Oracle Human Capital Management (HCM) setup task **Manage Data Role and Security Profiles**. The following job and duty roles are shipped with the product. You can copy these to create additional roles as necessary: Innovation Management: • Product Design Engineer: Concept Development Duty • Product Design Manager: Concept Management Duty • Product Manager: Product Proposal Management Duty • Idea Management Duty Product Development: • Product Manager: Product Development Duty • Idea Management Duty Product Hub: • Product Manager • Product Data Steward **Note:** Oracle recommends that security administrators don't assign these predefined roles directly to users. Instead, make a copy of a predefined role, remove the privileges that your users don't need, and assign users the role that contains only the privileges they need.
Step 5- Create End Users	To create end users, follow these instructions: 1. Sign in with your user ID and password. 2. Select **Navigator**> **Security Console**. 3. Click **Users**. 4. Click **Add User Account**. 5. Provide the user attributes and click **Add Role**. 6. To provision the new user with roles, search for the relevant role and click **Add Role Membership**. **Note:** Innovation Management includes additional steps.
Step 6- Perform Common Application Configuration	For more detailed information on common implementation tasks for all SCM products, see **Oracle Fusion Cloud SCM: Implementing Common Features for SCM** guide.

Related Topics

- User and Role Synchronization: Explained
- Overview of Configuring Offerings

Roadmap for Setting up Innovation Management

The Innovation Management configuration tasks are as follows:

Task List	Description
Define Product Requirements and Ideation Management • Manage Product Idea Classes • Manage Product Idea Statuses • Manage Product Requirements Classes • Manage Product Requirements Statuses • Manage Product Requirements and Ideation Lookups	Use this task list to configure ideas, and requirements specifications.
Define Concept Design Management • Manage Product Concept Classes • Manage Product Concept Component Classes • Manage Product Concept Statuses • Manage Product Concept Lookups	Use this task list to configure concepts and concept components.

Related Topics

- Class Management in Oracle Innovation Management
- Innovation Management Lookups

Roadmap for Setting up Product Development

The Product Development configuration tasks are as follows:

Task List	Description
• Manage Item Organizations • Manage Organization Trees	Use these tasks to define item organizations for Product Management.
• Manage Item Classes	Use these tasks to define items.

Task List	Description
• Manage Item Attribute Groups and Attributes • Manage Lifecycle Phases	
• Manage Change Order Types • Manage Change Order and New Item Request Header Descriptive Flexfields • Manage Change Order Entry and Exit Rule Sets	Use these tasks to define change orders.
• Manage Structure Component Descriptive Flexfields • Manage Product Development Lookups	Use these tasks to define structure component and lookups.

Related Topics

- Setup Tasks to Define Items
- Setup Tasks for Item Organizations
- Setup Tasks to Define Changes
- Product Development Lookups

Roadmap for Setting up Product Hub

In the Setup and Maintenance work area, tasks are grouped in functional areas. You can view and implement them through the Product Management offering. These tasks are described in more detail in subsequent chapters.

Task List	Description
Define Item Organizations for Product Management	You must define at least one item organization in order to take any actions with items. You can optionally set up organization trees to create a hierarchy of organizations to be used in various places throughout the application.
Define Items	There are several required and optional setup tasks that must be completed prior to working with items including: • Item Profile Options: These are defined for you. You should review these settings to confirm they meet your business needs. • Lifecycle Phases: You must create lifecycle phases and those must be assigned to the item class used to create the items or to a parent item class of the item class used to create the item. • Product and Child Value Sets: Required for creating item rules. • Attachment Categories: You can optionally define attachment categories. • Attributes and Attribute Groups: Create attributes and assign them to attribute groups.

Task List	Description
	• Item Classes: You must create at least one item class before you can create items. • Various Flexfield tasks: These are optional tasks used to gather additional item data. • Deploy Item Flexfields: You must deploy flexfields after you create a new item class or make changes to any flexfields. • Item Statuses: These are seeded for you. • Item Types: 37 types have been seeded for you. You can edit or create additional types. • Cross Reference Types: Optional task for defining cross references between two items. • Download Import template, Upload Item Data, Load Interface File, Import Items, Monitor Item Imports: Use these tasks if you are importing you item data into Product Hub. • Item Subtypes: Optional task for defining item subtypes.
Manage Functional Area Catalogs	The setup task in this task list is used to define functional area catalogs. Non-Product Hub customers use the Manage Functional Area Catalog task to create and manage catalogs. Product Hub customers complete these tasks in the Product Information Management work area.
Define Change Orders	Creating change order types is required before you can create change orders. You must also define the task configurations and manage the approval groups. You can optionally define change reasons, priorities and statuses.
Define Product Rules	You must create rules and rule sets if you plan on using product rules for validating or assigning data to items.
Define New Item Requests	Similar to defining change orders, you must set up task configurations and approval groups prior to creating new item requests.
Define Product Spoke Systems	This task list is used to define spoke or source systems.
Define Advanced Catalogs	Product Hub customers can use this task list to define catalog mappings.
Define Item Mass Update Configuration	Used to create import formats and assign them to an item class.
Define Item Import Batch Configuration	Used to create import batch formats and assign them to an item class.
Define Audit History for Product Management	You can optionally define audit policies if you want to track who made what changes and when they were made.

Roadmap for Setting up Supplier Portal

Product data stewards need to carry out the following tasks before supplier users can begin managing their products in Product Hub Portal.

Required Setup	Description
Associate the Job Role with the Supplier User	All supplier users need to be assigned the Supplier Product Administrator job role for accessing Product Hub Portal. **Note:** Oracle recommends that security administrators don't assign these predefined roles directly to users. Instead, make a copy of a predefined role, remove the privileges that your users don't need, and assign users the role that contains only the privileges they need.
Define Spoke Systems	Separate spoke systems must be setup for every supplier who uploads product data.
Item Class Security	Item class security needs to be setup for the supplier users who upload product data. On the Edit Item Class page Security tab, the Supplier Product Administrator job role needs to be given item data privileges similar to other job roles such as the Product Data Steward.
Define a Default Catalog	The default catalog must be set using the Manage Advanced Item Profile Option task.
Create Catalog Category Mappings	Mappings between the categories of the default catalog and item class need to be setup for deriving the item class of supplier products.
Set up Item Extensible Attributes for Product Hub Portal	Use the Edit Item Class task in the Setup and Maintenance work area to expose item extensible attributes to suppliers. Attributes are selected on the Product Hub Portal subtab in the Pages and Attribute Groups tab of the Edit Item Class task.
Set up Import Maps	Import maps are used to allow suppliers to import their product data with generated pre-defined templates. Import Maps must be set to External in order for suppliers to access the associated templates.

Note: Supplier and Supplier User setup is handled in Oracle Fusion Cloud Procurement. For more information, see the Oracle Fusion Cloud Procurement Implementing Procurement guide.

2 Item Organizations

Setup Tasks for Item Organizations

You must create item organizations before you can create items in Oracle Product Hub. These tasks are completed in the Setup and Maintenance work area.

Task	Description
Manage Item Organizations	Item organizations are used when the organization does not have dependencies on business units or legal entities.
Manage Organization Trees	In Product Hub, organization hierarchies (trees) are used across some of the mass change flows, including the Assign to Organization, Assign Items to Supplier Organization, and Create Item Structure from Common flows.

Item Organizations

Item organizations are used to control the availability of attributes for items and item security. Item security is based on a combination of the item class, group or person, and the organization.

The item organization structure is similar to the inventory organization structure, except the item organization structure does not have an association with a business unit or legal entity.

Product Management can be configured with two different organization structures:

- *Item Organizations*: An organization structure that doesn't have dependency on business units or legal entities. Adding the business unit and location is for reference only and doesn't support transactional processes.
- *Inventory Organizations*: An organization structure that requires business units and legal entities. Used by the supply chain management and procurement applications.

An item organization defines an item when inventory balances aren't stored and inventory storage or inventory movement is not reflected in the Oracle Fusion Cloud Applications. For example, you would use an item organization in a retail scenario, if you need to know the items that are listed by and sold through each retail outlet even though inventory and transactions are recorded in another system. Item organizations are also used to control the availability of attributes for items and item security. The item organization structure is similar to the inventory organization structure, except the item organization structure is not required to have an association with a business unit or legal entity. The item organization also does not have the required inventory organization-level attributes.

Item organizations can be changed by administrators to an inventory organization by updating the necessary attributes. There is no difference in the way items are treated in these two types of organizations except that there cannot be any financial transactions in the downstream applications (such as the logistics applications) for items that are assigned to an item organization.

For customers who have licensed only Oracle Product Hub, item organizations are sufficient.

To create an item organization:

1. Enter *Organization Information*: Item organizations are identified by a name and organization number. Each organization has a location which is defined by the location address. Locations are entered using the Manage Locations task. Optional information such legal entity and business unit can also be entered.
2. Enter the *Item Master Organization*: If this is the first item organization being created, it should be a master organization. To make this a master organization, enter the organization name again. If the new item organization is a child organization of an existing master organization, then enter the name of the master organization.
3. Enter the *Starting Revision*: Changes to the organization can be tracked through revisions and are usually represented by a letter or number or combination of the two.

Organization Trees

Organization trees are used to create a list of organizations for use in some of the mass change flows.

In some implementations, customers may have a specific set of organizations that they use in their business and may want to retain that list. You can define an organization tree to represent the list of hierarchies that you want to use. In Oracle Product Hub, organization trees are called organization hierarchies.

In Product Hub, organization hierarchies are used across some of the mass change flows, including Assign to Organization, Assign Items to Supplier Organization, and Create Item Structure from Common. In the mass change flows, if you want to select a set of items and assign them to a specific set of organizations, then you have the option of selecting each organization individually or selecting an organization hierarchy that represents the list of organizations. Item hierarchies are created in the Setup and Maintenance work area using the Manage Organization Trees task.

Item Definition Organization and Reference Organization

An item definition organization is an item organization that stores the item attribute values. A reference organization is an item organization that collects the item attribute values from the item definition organization.

Currently, you have to model every location as an organization. Most of the item attributes are similar within a group of organizations. Typically, all locations within a group have the exact values for the item attributes. For example, if one million items are present in the Item Master, several million records are stored in the database. You create multiple records in the database and most of the data have duplicate records. It increases the time to query a record and it becomes difficult to maintain the database. To avoid this situation, you can model your organizations into two groups, namely item definition organization and reference organization. By doing so, the attribute values of items in the reference organization are derived from the item definition organization. This method reduces the total number of records in the database.

You can define the item definition organization on the Manage Inventory Organization Parameters setup page. You can define the reference organization using the Item Grouping Behavior attribute on the Manage Inventory Organization Parameters setup page.

Benefits of Modeling Definition Organizations

When you model your organizations into definition organizations and reference organizations, you have the following benefits:

- Reduction in the data migration time
- Reduction in item data volume for large, complex organizations
- Reduction in data maintenance effort. Any attribute change to a definition organization is available to all the reference organizations automatically.
- Reduction in the number of item rules
- Reduction in the data audit effort. You need to audit only the definition organizations.
- Improvement in the performance of item query, keyword searches, and transactions for large, complex organizations

Related Topics

- Considerations While Creating Item Definition Organization and Reference Organization

Considerations While Creating Item Definition Organization and Reference Organization

When you create an item definition organization, you must consider how you want to manage the organization in your item-organization setup. In a reference organization, all item data are read-only. All item data comes from the associated definition organization.

The following list includes some of the item data that are read-only:

- Attachments
- Attributes
- Category and Category Assignments
- GTIN
- Item Structures
- Source System Cross References
- Spoke Systems
- Trading Partner Items

Consider the following points related to item definition organizations and reference organizations when you:

- Create an organization
- Update an existing organization
- Convert an organization to a definition or a reference organization
- Set up a manufacturing plant

Create an Organization

Consider the following points when you create an organization:

- The default value for the Item Definition Organization field is the value that you select in the Master Organization field.
- If the item attributes don't vary for the newly created organization, then select the organization from where you would reference the item records as the value for the item definition organization.
- If your business requires item attributes to vary in the newly created organization, then use the same organization as the item definition organization. For example, if you create Vision Germany as the new organization for your business, then set Vision Germany as the item definition organization.
- When you create a new reference organization, associate an existing item definition organization with the reference organization. After the association, a new row is created in the EGP_ITEM_ORG_ASSOCIATIONS table for every item that's assigned to its item definition organization.

Upgrade Existing Organizations

When you upgrade from a previous release to a new release, consider the following points related to organizations:

- Update all master and child organizations of item organizations, and materials management organization in SCM, and define the item definition organizations to itself.
- Update existing item definition organization to a reference organization. This will reduce the records in the EGP_SYSTEM_ITEMS_B table.

Convert a Definition Organization to a Reference Organization

To convert a definition organization to a reference organization, the organizations and items must meet certain conditions. If the conditions aren't met, then the validation checks result in an error and the conversion fails.

You can't convert a definition organization to a reference organization if any of the following conditions are met:

- The revision code or effective date for an item are different in the reference and definition organizations
- The supplier-organization association for an item is different in the reference and definition organizations
- The item-category assignments for organization-controlled catalogs are different in the reference and definition organizations
- The status of change order for an item is anything other than Completed or Failed
- The structures are common from an organization other than definition organization.
- The definition organization is a manufacturing plant.

Convert a Reference Organization to a Definition Organization

You can edit your items in a definition organization only. If you want to edit any items in a reference organization, then you have to first covert the reference organization to a definition organization. After the conversion, you can maintain a copy of the item record in the new definition organization. You initiate the conversion through a scheduled process and there are no validation checks for the conversion.

Change a Definition Organization of an Associated Reference Organization

You can convert a definition organization to a reference organization only after you have realigned all its associated reference organizations to another definition organization. You can also convert all the associated reference organizations to a definition organization. If you don't reassign the associated reference organization before the conversion, you will receive error messages depending on the validation checks, and the conversion will fail. However, if a reference organization is a manufacturing plant, you can't realign its definition organization to another definition organization.

Set Up a Manufacturing Plant

Consider the following points when you set up a manufacturing plant:

- You can define a new manufacturing plant either as a definition organization or a reference organization. However, if you're looking for the following capabilities in your organization, then don't set up a manufacturing plant as a reference organization:
  - You want to calculate manufacturing lead times and update the lead-time values for items.
  - You want organization-specific supply subinventory for an item.
  - You want organization-specific serial-control attributes and lot-control attributes for an item.
- You can convert a manufacturing plant that's a reference organization to a definition organization. However, you can't convert a manufacturing plant that's a definition organization to a reference organization.

Related Topics

- Item Definition Organization and Reference Organization
- Convert a Reference Organization to a Definition Organization

Convert a Reference Organization to a Definition Organization

You can edit your items in a definition organization only. If you want to edit any items in a reference organization, then you have to first covert the reference organization to a definition organization.

After the conversion, you can maintain a copy of the item record in the new definition organization. You initiate the conversion through a scheduled process and there are no validation checks for the conversion.

Converting an organization is a two-part process. In the first part, you convert the organization from a reference organization to a definition organization. In the second part, you grant appropriate permissions to the converted organization.

This procedure covers both the parts.

1. From the Setup and Maintenance work area, select the following:
   - Offering: Product Management
   - Functional Area: Inventory Organizations
   - Task: Manage Inventory Organizations

2. Search for the organization of your interest.
3. Select the organization from the Results table, and click **Actions** > **Process Item Grouping Change**.
4. From the **Item Grouping Behavior** drop-down list, select **Definition Organization**.
5. Click **Submit** to initiate a scheduled process.
6. Return to the **Setup: Product Management** page.
7. Click the Items functional area, and then click the **Manage Item Classes** task.
8. Grant the required privileges for the organization that you have just converted. For example, you can grant the Maintain Item Basic privilege for basic item privileges in the newly converted definition organization.

Now, you can edit items in this organization.

What's an item organization?

Item organizations contain only definitions of items. Use item organizations in implementations when the storage or movement of inventory doesn't need to be physically or financially tracked.

For example, in a retail implementation you can create an item organization to contain only the definitions of items that are listed by and sold through each retail outlet, while a different system tracks the physical inventory and transactions of those items. If Oracle Fusion Cloud Inventory Management is installed, you can change an item organization to an inventory organization.

3 Items and Documents

Setup Tasks to Define Items

Before you can define items in Oracle Product Hub, you must complete several tasks in the Setup and Maintenance work area.

Task	Description
Manage Item Profile Options	Profile options manage configuration data centrally and influence the behavior of applications.
Manage Advanced Item Profile Options	This task is used by Product Hub. If you don't install Product Hub, you don't need to define these options.
Define Units of Measure	Units of Measure must be created before you can create or import items.
Manage Lifecycle Phases	Item Lifecycle Phases are used as an indicator of the stage for an item within the lifecycle process. Each phase represents a set of tasks and deliverables that are required before promoting an item to the next phase.
Manage Product and Child Value Sets	In Product Hub, value sets are primarily used to define attributes that have a specific set of values. Each value set is associated with one or more attributes in the same attribute group or in a different attribute group.
Manage Attachment Categories for Product Management	Used to create attachment categories and associate them with item classes.
Manage Operational Attribute Groups	Operational attributes determine the behavior of the item with respect to various applications outside of Product Hub, such as Oracle Fusion Cloud Purchasing or Oracle Fusion Cloud Inventory Management.
Manage Item Attribute Groups and Attributes	Used to determine how the attributes appear in the user interface, as well as how they're used in the application.
Manage Item Classes	Item classes are created at the root item class or within a parent item class, and inherit values based on selections made when defining the item class. For Product Hub customers, the Manage Item Classes task is used to create and manage item classes, user defined attributes and data security.
Manage Item Class Descriptive Flexfields	Descriptive flexfields appear in the user interface as additional information and can also appear in search results tables.
Deploy Item Flexfields	After you associate attribute groups and pages with an item class, you must deploy flexfields to view the pages or attribute groups at runtime. The metadata that was created for the attribute group isn't synchronized with the production data in Product Hub until the flexfield is deployed.

Task	Description
Manage Item Statuses	Item statuses are used to define the state an item is in and based on the state, the default values for item operational attributes.
Manage Item Types	Item types are date effective and are made active or inactive by adjusting the start and end dates.
Manage Cross Reference Types	Cross-References provide the functionality to map additional information about an item in the form of a value and cross-reference type. For example, the cross-reference can map a relationship between an item and an old part number.
Manage Item Descriptive Flexfields	Used to define descriptive flexfields that are specific to items.
Download Import Template	Each template includes table-specific instructions, guidelines, formatted spreadsheets, and best practices for preparing the data file for upload.
Upload Item Data	After you have created the CSV file, the next step in the Import process will upload the CSV Zip file to the designated location within Oracle WebCenter Content.
Load Interface File through Scheduled Process	Once the CSV file is uploaded to Oracle WebCenter Content , you use the Load Interface File for Import scheduled process to move the data from Oracle WebCenter Content folder to the interface tables.
Import Items	The Item Import task creates an Enterprise Scheduled Service (ESS) process that takes the data that's loaded in the interface tables and uses the import process to move the data to the production tables.
Monitor Item Imports	Use this task to monitor the ESS process status in the search results table
Manage Related Item Subtypes	A related item is an item relationship between two existing items. How the two items are related is defined by a subtype.
Manage Item Revision Descriptive Flexfields	Use descriptive flexfields associated at Item Revision level to capture item revision information whose values may differ between revisions of the same item.
Manage Item Relationship Descriptive Flexfields	Item types are date effective and are made active or inactive by adjusting the Start Date and End Date.
Manage Trading Partner Item Descriptive Flexfields	When defining descriptive flexfields associated with trading partner items, you must use certain prefixes when naming the context segments, in order for the segments to be displayed for the respective trading partner type.
Define Item-Specific UOM Conversions	After you define units of measure, define the conversions used for items.

Related Topics

- How can I create a new item structure type?

Manage Item Templates

Use item templates to assign attribute values during item creation in Oracle Product Hub.

An item template is a defined set of attribute values. When you apply an item template to an item in an organization, you insert the attribute values into the item definition. The defined attribute values from the item template automatically populate the appropriate item attribute fields.

Item templates are specific to an item class and an organization. The templates are inherited in a hierarchical item class and apply to all child item classes. Item templates can contain values for predefined attributes and user-defined attributes.

In addition to predefined item templates, you can create item templates, if required. You can also copy existing item templates to multiple organizations.

Key considerations:

- Attribute values aren't validated in the template. Hence, a template with invalid combinations of attribute values may be set up.
- Attributes that aren't set in the template won't be applied to an item when the template is applied during item creation in transactional item flows.
- If an attribute value is left blank or set as null in the template, then the attribute value won't be applied to the item when the template is applied.
- If attribute values are set in the template, they are applied to the item even if the user doesn't have read or edit privileges for such attributes at the item level.
- Templates can be applied sequentially, overwriting any previous values that were set by the template.
- Applying templates sequentially may result in invalid combinations of attribute values. Hence, caution is advised when defining templates that could overwrite other attribute values.
- Don't set the status in the template because this may result in the status attribute values being overwritten by the templates, leading to an invalid combination of attribute values.

Create Item Templates

You can select a predefined item template to apply to an item. You can also create item templates in an organization. To create item templates, use the Manage Item Classes task available for the Product Management functional area in the Setup and Maintenance work area.

You can also edit or delete item templates as required.

If you haven't specified attribute values in the template, those values won't be applied when the template is applied during item creation. If there are hidden attributes in the templates, and if you don't want the values from the hidden attributes to be applied on the item, then make sure you don't provide any values for these hidden attributes. Also, the attributes itself may have default values. Therefore, if such attributes are hidden in the template, then when the template is applied to item, the values from the hidden attributes will be applied on the item.

Copy Item Templates

You can copy multiple existing item templates to multiple organizations simultaneously.

Copy the item templates as follows:

1. In the Setup and Maintenance work area, select the following:
    - Offering: Product Management
    - Functional Area: Items
    - Task: Manage Item Classes
2. Select the item class with the item template to copy, and click **Edit**.
3. In the Templates and Formats tab of the Edit Item Class page, select the item templates to copy, and click **Copy**.
4. In the Copy Templates dialog box, search and select the organizations where the templates are to be copied, and click **OK**. You can also search and select an organization hierarchy, in which case the template will be copied to all organizations in the hierarchy.

You can specify a default item template in an organization. To do so, select the **Default** check box for an item template in the Templates and Formats tab. The item template is used by default when you create an item.

Add Predefined Item Templates

If the predefined item templates do not automatically appear in an organization, you can add them manually.

Add the item templates as follows:

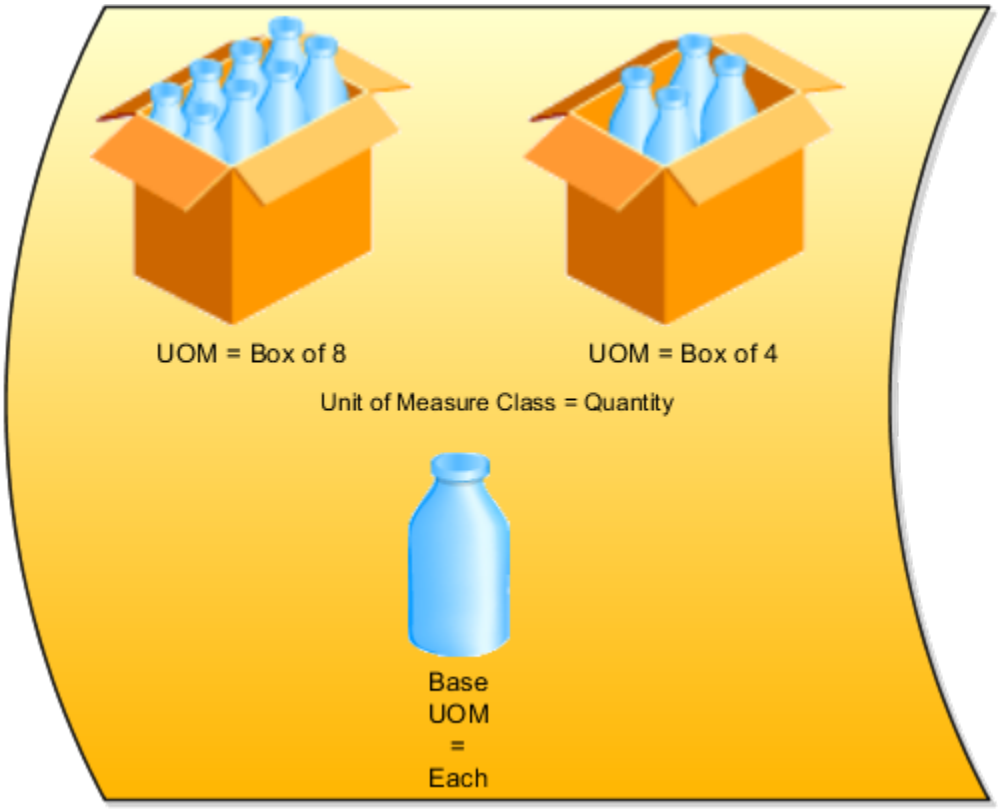
1. In the Edit Item Class page, click **Actions** > **Add Predefined Templates**.
2. In the Add Predefined Templates dialog box, search and select the organization in which to add the item templates, and click **OK**.

Related Topics

- Create Items

How Units of Measure, Unit of Measure Classes, and Base Units of Measure Relate to Each Other

Units of measure, unit of measure classes, and base units of measure are used for tracking, moving, storing, and counting items.



Units of Measure Classes

Units of measure classes represent groups of units of measure with similar characteristics such as area, weight, or volume. For example, Ounces, Grams, and Milligrams could all be units of measure for a class called Weight.

Units of Measure

Units of measure are used by a variety of functions and transactions to express the quantity of items. Each unit of measure you define must belong to a unit of measure class.

Base Units of Measure

Each unit of measure class has a base unit of measure. The base unit of measure is used to perform conversions between units of measure in the class. The base unit of measure should be representative of the other units of measure in the class, and must be the smallest unit. For example, you could use cubic inches as the base unit of measure for a unit of measure class called volume.

Primary Units of Measure

Primary units of measure represent the UOM that is most often used for an item. The primary UOM of the item may or may not be the base unit of measure. It also may not be the smallest UOM of the item class. For example, your business sells boxes of surgical gloves. While each glove may be the smallest unit, your company is concerned with the number of boxes ordered.

Related Topics

- How to Assign Base Units of Measure to Unit of Measure Classes

Item Lifecycle Phases

Item Lifecycle Phases are used as an indicator of the stage for an item within the lifecycle process. Each phase represents a set of tasks and deliverables that are required before promoting an item to the next phase.

Each item must have a lifecycle phase associated with it.

Four lifecycle phase types are predefined in the application: Design, Preproduction or Prototype, Production and Obsolete. You can use the predefined phase types to create new values for the lifecycle phases.

Companies can use different terms to describe the same item lifecycle phase. For example, the phases named Production and In Manufacturing both refer to the lifecycle phase during which an item can be used to build and ship products.

Lifecycle phases are associated with item classes. The items in an item class can be assigned to any of the lifecycle phases associated with that item class.

Note:

- The lifecycle phase of a child item is not automatically promoted when the parent item is promoted.
- The best practice is to make items Effective on Approval, if they are in the design lifecycle phase.

Before you create or import items, create lifecycle phases. Assign phases to the item class used to create the items. You can also assign them to a parent item class of the item class used to create the item. When an item is assigned to a lifecycle phase, that phase is visible as part of the item's attributes. In item structures, lifecycle phases are used to control specific processes.

Effective Date in the Design Lifecycle Phase

The effective date for items in the Design lifecycle phase can't be modified.

If the item is in the Design lifecycle phase, the item on the change order is effective on approval.

If a future effective date is set for the affected object in a change order, a warning message appears with the following buttons:

- Continue: To continue with the future effective date.
- Edit: To cancel the current Save action, return to edit mode and correct the future effective date.

Change the Lifecycle Phase

In the Product Information Management work area, you can change the lifecycle phase directly on the item or by assigning it to a change order for a commercial item.

In the Product Development work area, you can change the lifecycle phase of an item by assigning it to a change order.

Set Up Item Lifecycle Phases

Item lifecycle phases represent the stages that an item or product goes through in its lifecycle. For example, for an item that can be used in production, the representative lifecycle phase is Production.

Companies may use different terms to describe the same item lifecycle

Four lifecycle phase types are predefined in the application: Design, Obsolete, Preproduction or Prototype, and Production. You can use the predefined phase types to create new values for the lifecycle phases.

Lifecycle phases are associated with item classes, and the items in an item class can be assigned to any of the lifecycle phases associated with that item class. Before you create or import items, you must create lifecycle phases and assign those phases to item classes. When an item is assigned to a lifecycle phase, that phase is visible as part of the item's attributes. In item structures, lifecycle phases are used to control specific processes.

To set up lifecycle phases:

1. In the Setup and Maintenance work area, use the **Manage Lifecycle Phases** task:
    - Offering: Product Management
    - Functional Area:
    - Task: Manage Lifecycle Phases
2. Click the Create Lifecycle Phase button.
3. Enter values in the following fields:
    a. Sequence
    b. Phase (name of lifecycle phase)
    c. Phase Code
    d. Select Phase Type
4. Save and close the Manage Lifecycle Phases page.
5. Associate the lifecycle phase with one or more item classes.
    a. In the Setup and Maintenance work area, select the Product Management offering.
    b. On the Setup: Product Management page, search for and click the Manage Default Item Class task.
    c. Click on the Lifecycle Phases Tab. This tab contains all lifecycle phases that are associated with the root item class.
    d. Associate the lifecycle phase to the root item class.
        i. Click the Lifecycle Phase tab.
        ii. Click on Add Icon. The Search and Add: Lifecycle Phases dialog is displayed.
        iii. Search for the Lifecycle Phase that you created.
        iv. Click the OK button to associate the lifecycle phase with the item class.
6. Click the Save and Close button to save the changes.

Define Product Child Value Sets

The Manage Product Child Value Sets task uses the same page as the Manage Product Value Set task.

A child value set is used to define variants for stock-keeping units or SKUs. A SKU contains the common properties for an item. For example, a shirt can be produced with sizes; small, medium, and large. The variant is used to represent the sizes of the shirt.

You define child value sets as follows:

- Create a value set with validation type of independent, for example *All Sizes*.
- Select the new value set in the **Manage Product Value Sets** results table, for example All Sizes.
- Click **Manage Values**, create several values, for example Small, Medium, Large, Extra Large.
- Create a value set with validation type of Subset and enter the first value set you created for the independent value set, for example: Plus Sizes.
- Select the value set Plus Sizes in the **Manage Product Value Set** result table.
- Click **Manage Values** and then click the **Add** icon. The dialog will show a list of values based on the value set named Plus Sizes. Select two of them. The value set Plus Sizes is a child of All Sizes.

Attachment Categories

The basic tab of the Manage Item Class task is used to associate attachment categories to specific item classes.

The Attachment Categories region allows for the creation and management of attachment categories for the items created within the item class. To classify item attachments, associate attachment categories with item classes. Associated attachment categories are inherited down through the item class hierarchy.

Related Topics

- Attachments
- Attachment Entities
- How Attachment Entities and Attachment Categories Work Together
- What's an attachment category?

Manage Attachment Security

The privileges for accessing the attachments of an item are by default inherited from business objects.

You can further define the security of item attachments so that different users can have access to the same item but only have access to certain categories of attachments to that item. For example, there may be multiple categories of objects (such as specifications, drawings, or financial documents) attached to an item. There may be multiple users such as buyer, design engineer, or accountant who have access privileges to the item. Though they all may have the

same access to the item itself, their access to the attached objects may need to be restricted by attachment category. By default, all job roles are granted access to the predefined attachment category Miscellaneous.

Any security policy defined for an attachment category is enforced on all business objects to which the attachment category is associated only if those business objects are enabled for attachment security.

To provide attachment security, perform the following tasks:

- These tasks aren't specific to attachment security, but are required prerequisites, to be performed once for each attachment category:
    - Create attachment categories.
    - Assign the attachment categories to item classes.
- These tasks are specific to attachment security:
    - Define data security policies, which apply to attachment categories.
    - Enable data security policies for selected business objects.

Creating Attachment Categories

Attachment data security is implemented by using attachment categories. Attachment categories affect access to attachments through the item classes for the items being edited. Attachment data security can be assigned individually at the user level. It can also be assigned at the group level through job roles. You create attachment categories using the Manage Attachment Categories task in the Setup and Maintenance work area. You associate each attachment category with attachment entities that represent business objects: items, item revisions, catalogs, categories, and trading partner items.

Assigning Attachment Categories to Item Classes

You assign attachment categories to item classes using the Manage Item Classes task in the Setup and Maintenance work area. While editing an item class, you associate it with one or more attachment categories for which you want to provide security. This association is required only for attachment categories that are associated with attachment entities at the item level and item revision level. Since attachment categories are inherited down through the item class hierarchy, you can associate an attachment category with all item classes by assigning it to the Root Item Class.

Defining Data Security Policies

A data security policy is defined by a set of allowable actions on a database resource (such as an attachment category) for a job role. When that role is provisioned to a user, the user has access to the data defined by the policy. That is, an attachment data security policy defines who (defined as a job role) can perform what operations (such as read, update, or delete) on which set of attachment categories, according to a defined condition.

To define a data security policy for an attachment category:

1. Sign in as IT security manager.

2. In the Setup and Maintenance work area, go to the following:
    - Offering: Product Management
    - Functional Area: Users and Security or Application Extensions
    - Task: Manage Data Security Policies

    The Security Console is automatically launched by the Manage Data Security Policies task. You can also open the Security Console directly from the Navigator.
3. On the General subtab of the Administration tab of the Security Console, click **Manage Database Resources**.

    A database resource defines an instance of a data object. A data object is a table, view, or flexfield.
4. On the Manage Database Resources and Policies page, search for the **Display Name** equal to **Application Attachment Category**. The category appears in the search results, with an Object Name of FND_DOCUMENT_CATEGORIES

    The data security policies defined for the selected database resource appear in the Policies Details region.
5. In the Search Results region for the selected database resource, select **Edit** from the Actions menu.
6. On the **Condition** tab of the Edit Data Security page, select **Create** from the Actions menu.
7. In the **Create Database Resource Condition** dialog box, name the condition and specify the attachment categories in scope for the data security policy.

    The following table suggests values for an example condition:

Field	Value
Name	IPDrawings
Display Name	IPDrawings
Description	IP Drawings-Restricted to R&D
Condition Type	**SQL predicate** You can also specify the condition as a filter on a table or view.
SQL Predicate	`category_name in ('Sketches')` The SQL predicate consists of a query on the table or view named by the database resource (in this example, FND_DOCUMENT_CATEGORIES). The category name specified in the predicate must exactly match the name that you specified when you created the attachment category.

8. On the **Policy** tab of the Edit Data Security page, select **Create** from the Actions menu.
9. On the General Information tab of the **Create Policy** dialog box, specify the module. By default, the **Module** field is the module associated with the database resource for which you're creating the policy.
10. On the **Role** tab of the Create Policy dialog box, select `fscm` in the **Application** list, then search for and select the role names to be assigned the new policy.

11. On the **Rule** tab of the Create Policy dialog box, select Multiple Values in the **Row Set** field, then search for and select in the **Condition** field for the name of the condition that you created, such as the example here, Secured Attachments for Product Hub.
12. On the **Action** tab of the Create Policy dialog box, move actions from the **Available Actions** list to the **Selected Actions** list to specify the actions that are applicable to the data secured on the database resource, which you want to grant to the roles you selected.
13. On the Edit Data Security page, click **Submit** to update the database resource FND_DOCUMENT_CATEGORIES.
14. On the Manage Database Resources and Policies page, click **Done**.

Enabling Attachment Data Security for Business Objects

You can enable and disable attachment security at the level of business objects. When you enable attachment security for a specific business object, then attachment security is enforced for every attachment category assigned to the business object. Note that, by default, all job roles are granted access to the predefined attachment category `Miscellaneous`.

To enable your data security policies on attachment categories:

1. Sign in with implementation consultant privileges.
2. In the Setup and Maintenance work area, go to the following:
    - Offering: Product Management
    - Functional Area: Application Extensions
    - Task: Manage Applications Core Attachment Entities
3. On the Manage Attachment Entities page, you will search for and select each of the attachment entities that you previously assigned to the attachment categories that you created. Attachment entities represent business objects: items, item revisions, catalogs, categories, and trading partner items.

    Enter one of the following attachment entity names in the **Entity Name** field and click **Search**. The attachment category that you created should appear in the Attachment Categories region for the selected attachment entity.

Business Object Attachment Association Level	Attachment Entity Name
Item Level	ITEM_ENTITY
Item Revision Level	ITEM_REVISION_ENTITY
Trading Partner Level	EGP_TRADING_PARTNER_ITEMS
Catalog Level	CATALOG_ENTITY
Category Level	CATEGORY_ENTITY

4. For each selected attachment entity in the search results, click **Enable Security**.
5. When you have enabled security on all the desired attachment entities, click **Save and Close**.

6. On the Setup page, search for and open the Run User and Roles Synchronization Process task from the Initial Users functional area.
7. Submit the scheduled process to complete enabling security on attachments.

Related Topics

- Attachment Entities
- How Attachment Entities and Attachment Categories Work Together
- What's an attachment category?
- How Data Resources and Data Security Policies Work Together
- Securing Attachments

Operational Attributes Controls

Operational attributes determine the behavior of the item with respect to various applications outside of Oracle Product Hub, such as Oracle Fusion Cloud Purchasing or Oracle Fusion Cloud Inventory Management. Operational attributes are stored in the Items data table.

In the Setup and Maintenance work area, use this navigation to specify the control level for operational attributes:

- Offering: Product Management
- Functional Area: Items
- Task: Manage Operational Attributes Groups

For each listed operational attribute group, you select the control level for each of the group's attributes. You can control the operational attributes at the master organization level or at the organization level. You can define operational attributes as part of a new item request.

You can also control the decimal precision of all numeric operational attribute values. All numeric item-operational attributes have the maximum decimal digits precision value of three by default. You can specify the precision up to three digits after the decimal point. For example, 8.724 is a valid item operational value, but 8.7241 is an invalid value.

Note: You can't change the default value for the decimal precision in the Mass Updates page.

You can define some item operational attributes as key flexfields. Key flexfields allow you to capture a structured value for an attribute. Some examples of key flexfields are part number, job code, and account code.

Examples of operational attributes with the attribute groups they belong to:

- Inventory = Shelf Life Days
- Order Management = Shippable
- Purchasing = Negotiation Required
- Receiving = Allow Substitute Receipts

Manage Transactional Attributes

A transactional attribute is an attribute that gets its value during a transaction at runtime instead of during setup at design time. Use it when you can't predict what value the attribute will have at runtime.

What makes a transactional attribute different from other types of attributes is that a transactional attribute doesn't usually have a set of predefined values. Instead, the value of a transactional attribute is often different for each transaction, and you usually don't know what that value is until your end user does the transaction.

Here are some examples where you might want to use a transactional attribute:

- Greeting cards. The text is unique each time that you have a transaction for that item.
- Digital artwork. Your customer uses a color picker to pick a color for the item from over 16 million different values.
- Auto service. You record the mileage and the license plate number each time you service your customer's car. The mileage is unique for each transaction. The license plate number is unique for each customer.
- Window shades. The height and width of each shade is unique for each customer.

An application that's downstream of the Product Information Management work area captures the value for the transactional attribute during the actual transaction. For example, Oracle Order Management is a downstream application. Let's say you sell configurable greeting cards where your customer can select different card sizes, style, artwork, font, the greeting, and so on. The Order Entry Specialist, an end-user, creates a sales order in Order Management, adds a greeting card to an order line, and uses a transactional attribute to enter a unique greeting that the customer dictates. The greeting is different for each card.

Use a transactional attribute when you can't predict what value the attribute will have at runtime, or when maintaining values for it isn't realistic. In the digital art example, you could theoretically create a list of values that contains the 16,777,216 possible color values, but that's not realistic. Instead, consider each of those values as unique, and use a transactional attribute to capture it at runtime.

Sometimes you have to make a judgment call on whether to use a transactional attribute. In the window shade example, assume you sell shades in 1/8" increments, from 8 inches up to 120 inches wide. Instead of using a transactional attribute for the width, you could use an inches attribute and a fractions attribute. The list of values for the Inches attribute would contain 112 values, and the list of values for the Fraction attribute would contain 8 values. That's a realistic scenario.

Note

- You must associate each transactional attribute with a value set.
- You specify a transactional attribute on the item class.
- You use the item class to specify attributes for the transactional attribute. Here are some of the attributes of a transactional attribute.

Attribute	Description
Required	Specify whether the downstream application must include a value for the transactional attribute.
Default Value	Specify the default value of the transactional attribute.

Attribute	Description
Value Set	Value set that you can use with the transactional attribute.
Read Only	Specify whether the downstream application can only read the transactional attribute or can change its value too.
Hidden	Specify whether to show or hide the transactional attribute.
Active	Specify whether the attribute is active or not active.

A transactional attribute is also known as a transactional item attribute, or TIA. They mean the same thing.

Inheritance

Transactional attributes are inherited across the item class hierarchy. If you change the parent item class, then the child item class immediately inherits that change. For example:

- Metadata of a transactional item attribute is part of a domain. If you modify the metadata in the child item class, then you'll break the inheritance. Any change you make at the parent item class for the transactional item attribute won't get inherited. Multiple records with same date range can exist if they belong to different domains. For example, the transactional item attribute **Memory** is associated with a **Domain** and order capture. Each of the domains may use a different set of metadata for its own purpose. So, two different records can exist for the same date range. You would enter only a start date for a transactional attribute. Product Information Management will automatically calculate the end date according to the next Date Effective value.
- You can modify the Start Date or the metadata of a future effective record. If the starting date has already occurred, then you can't modify the record.

Pages and Attribute Groups

Use pages and attribute groups to structure your data.

- Combine and sequence attribute groups into pages.
- There's no limit on the number of attribute groups that you can associate with a page
- Create a page for an item class and inherit it further down in the item class hierarchy.
- Add an attribute group to pages sequentially. Use the sequence to determine how to display attribute groups in an item.
- Add an attribute group for an inherited page in a child of the item class.

A Functional Item page is another type of page that you can use to to associate a page in the application. The application scope identifies the application that uses these pages.

Data Quality

You can associate attributes for the purpose of standardization and matching, to be performed when items are created. You restrict the attributes to be processed for standardization or matching or both. Selecting Standardization allows the data quality engine to return the standardized values for these attributes. Matching allows the data quality engine to return any existing items which matches the value of these attributes and are potential duplicates.

Lifecycle Phases

Sequential lifecycle phases enable you to track and control the lifecycle phases of items. Each phase represents a set of tasks and deliverables that are required before promoting the item to the next phase. You can associate lifecycle phases to an item class which are created elsewhere. Lifecycle phases are inherited down the item class hierarchy and new lifecycle phases can be added to child item classes. For example, the lifecycle phases for a computer component item class might be: Concept, Prototype, Production, and Retirement.

Templates

Template is a defined set of attribute values used during item creation. When you apply a template to an item, you overlay or default-in the set of attribute values to the item definition. For example, every time users in a particular organization create new items, the attributes, as defined and approved by the organization appear in the appropriate fields. No user guesswork is required, and time is saved during the creation of items with a similar form, fit and function. Templates are created for each item class. Templates are specific to organization. Templates are inherited down the item class hierarchy. You can define both operational attributes and user defined attributes for each template.

Search and Display Format

Search formats provide a convenient way to save frequently used search criteria. Search formats created at item class will be available to all users. Search formats are always created in the context of item class. Display formats enable you to predefine search display views. You can use these views to look at different sets of item attributes that are returned by the search. Display formats created at item class will be available to all users. Display formats are always created in the context of item class.

Import Format

An import format identifies the base and user-defined attributes in an item class that are imported into the application using a spreadsheet. Consequently, when you import item business entities from a spreadsheet, the items are all imported into the particular item class defined in the import format. These imported item business entities inherit all the attribute groups defined for the specific item class. You can't edit the layout of an import format once its created.

Related Topics

- Item Attributes

How You Manage Operational Attribute Groups

You view operational attribute groups and define their control level for the attributes associated with them on the Manage Operational Attribute Groups page.

Attribute groups are listed in the **Operational Attribute Groups** table. Select an attribute group, and attributes associated with it are listed in a lower table.

In the **Controlled At** column, you define the organization level (master and child) at which selected attribute will be controlled.

Configure Extensible Flexfields or User-Defined Attributes

User-Defined Item Attributes and Attribute Groups

User-defined attributes are based on extensible flexfields. Create an attribute group to determine which attributes are used at runtime. Extensible flexfields or user-defined attributes aren't available to customers who only license Product Model.

User-defined attributes can have a static or dynamic list of valid values, or a range of values. You can define the values for user-defined attributes when you create the item and the values remain the same for the life cycle of the item.

You can save user-defined attributes within attribute groups. You can associate user-defined attributes with items by adding attribute groups to item classes.

For example, items that are part of the Small Gasoline Engines item class include the following specifications:

- RPM
- Power
- Oil and fuel mixture
- Weight

You can define an attribute for each of these specifications and then group these attributes together as the Engine Performance attribute group.

You can create attribute groups on the Manage Attribute Groups page.

Note:

- Avoid creating similar names for the item class and flexfield attribute groups. Distinct names help ensure that rules run without error.
- Avoid using ItemCategory in the Display Name and API name fields for extensible flexfields and extensible flexfield attribute groups created on items.
- For user-defined attributes, you can optionally define validation rules to be applied when the user inputs data.
- When you create an attribute group, make sure you specify the API name.

An attribute group can be a single row, multirow, or variant.

Multirow attribute groups enable you to associate multiple sets of attribute values with the same object instance. It gives you the ability to store multiple additional attributes that are dependent on the item, organization, attribute group, and a unique value within the attribute group.

For example, if your item is a book, you can create an attribute group named Chapters that contain the following attributes:

- Chapter number
- Name
- Number of pages

You can associate multiple rows of Chapters with a book, while Name and Number of pages require a single row each. The Chapter number attribute is identified as a part of the unique key.

Note: Don't add more than 20,000 rows of data to a multirow attribute group for a single item. For optimal performance, it's recommended not to add more than 1000 rows. If you've to add more rows, consider configuring additional multirow attribute groups or custom objects.

After you create the attribute group and attributes, perform these tasks to complete the extensible flexfield setup:

- Associate the attribute to the item class using the Manage Item Class task.
- Deploy the attribute using the Deploy Item Extensible Flexfields task.

Tip: Sets of user-defined attribute groups can be organized on a single page that can then be linked from the **Specifications** tab.

Related Topics

- Create Extensible Flexfields or User-Defined Attributes
- Associate Attribute Groups and Pages to Item Classes
- Overview of Extensible Flexfields
- Item Specifications and Attributes
- Additional Item Attributes

Create Extensible Flexfields or User-Defined Attributes

You can create user-defined attributes or extensible flexfields from the Product Management offering in the Setup and Maintenance work area.

To create extensible flexfields, follow these steps:

1. Create an attribute group.
2. Create attributes within the group and a corresponding value set for each attribute.
3. Deploy the item attributes.
4. Associate the attribute group to the item class.
5. Create pages and link attribute groups to pages.

6. Deploy the item attributes.

You can now view the attribute groups in the item master record. Each of these steps are described in detail in separate topics.

For more information on creating extensible flexfield, see User Defined Attribute Groups and Attributes (Extensible Flexfields-EFFs) Setup White Paper (Doc ID 1992317.1) on My Oracle Support at https://support.oracle.com.

Related Topics

- User-Defined Item Attributes and Attribute Groups
- Associate Attribute Groups and Pages to Item Classes
- Deploy Item Flexfields

Create Item Attribute Groups and Attributes

Create item attribute groups and attributes using the Manage Item Attribute Groups and Attributes task from the Setup and Maintenance work area.

Follow these steps to create item attribute groups:

1. In the Setup and Maintenance work area, use the **Manage Item Attribute Groups and Attributes** task:
    - Offering: Product Management
    - Functional Area: Items
    - Task: Manage Item Attribute Groups and Attributes
2. On the Manage Attribute Groups page, create an attribute group and specify its context usage as **Item**.

You can provide the attribute group with view or edit privileges, or both. For each user-defined attribute, you can optionally define validation rules to be applied when the user enters any data.

> **Note:** When creating or editing attribute groups, or when creating new item classes associated with attribute groups, you must redeploy the extensible flexfield.

Redeploy Extensible Flexfield

Redeploy the extensible flexfield so that the attribute group is available in the application.

1. Search for the flexfield code named EGO_ITEM_EFF in the Manage Attribute Groups page.
2. In the search results, select the row that contains the flexfield code EGO_ITEM_EFF and click **Deploy Flexfield**.
3. After the deployment is complete, check the Deployment Status and Deployment Date columns to verify that the extensible flexfield deployed successfully on the current date.

Related Topics

- Create an Attribute for an Item Class
- Why do I need to modify the Database View Name Prefix field?

Associate Attribute Groups and Pages to Item Classes

Pages, in the item class context, are a way to present attribute groups as convenient clusters in Oracle Product Hub UIs.

For example, if you've multiple trade related attribute groups for an item class (example, root item class), you can create a page (example, Trade Control Page) and assign multiple attribute groups of your choice (example, trade related attribute groups such as Tariffs and Quota).

You can assign a display sequence for the attribute groups within a page to specify the order in which the attribute groups must display on that page. When this page is presented in the Product Hub UI (example, Edit Item Page), the attribute groups of the page (example, Tariffs and Quota) will be displayed contiguously.

In an item class, if an attribute group isn't assigned to any page associated with the item class, then that attribute won't be accessible through the UI. However, even if all attribute groups of an item class aren't associated with any of the pages, you can access them through APIs and item rules.

You can add multiple pages to an item class. You can also add pages for an item class with no attribute group assigned to it.

Every child item class (example, Textiles) inherits the:

- Attribute groups and the pages that were associated with its parent item class.
- Attribute groups and pages that were inherited by the parent item class.
- Additionally, you can associate attribute groups (example, REACH) specific to a child item class (example, Textiles) and:
    - Add it to the new page created in the child item class

      Or
    - Assign it to a page (example, Trade Control Attributes) inherited from the parent item class (example, Root Item Class).

Such inherited pages in a child class context will include a cumulative collection of attribute groups (Tariffs, Quota, and REACH) inherited by the child item class, and the attribute groups assigned to the child item class.

Additionally, any page (example, Trade Control Attributes) you've created in the Root Item Class can be assigned to a pre-defined Usage (such as, Eligibility) of a pre-defined Functional Area (example, Order Capture).Only pages assigned to a specific functional area and usage are available to view and use within that application. For example, only pages associated with Configurator functional area are available to view and use in the Configurator modeling environment.

Note: You can perform the Functional Item Pages assignments only at the Root Item Class level.

Attribute groups can be used to:

- Implement a large monolithic complex business rule into a collection of simple item rules that work in tandem by using the attribute groups as temporary variables during computations.
- Support complex integration needs for item data with external systems.

To associate attribute groups and add pages to an item class:

1. Open the **Manage Item Classes** task from the Product Management offering in the Setup and Maintenance work area.

2. Search for an item class for which you want to configure the attribute groups.
    a. In the **Pages and Attributes** tab, select **Attribute Groups**.
    b. Associate attribute groups applicable to the item class using the **Select and Add** action. You can remove the association of the attribute groups, if required.
    c. Save the item class page.
3. In the **Pages and Attributes** tab, select **Pages**.
    a. Select the page for which you want to configure attribute groups or create a new page.
    b. Assign an attribute group to the page.
    c. Specify the sequence of attribute groups.
4. In the **Pages and Attributes** tab, select **Functional Item Pages**. This can be performed only at the Root Item Class level.
    a. Select the usage of the functional area of your interest and then, pick the relevant page from the pick list available in the **Item Page** field.
    b. Save the item class page.

    > **Note:** For UI details of the Functional Item Pages in the associated functional area (example, Order Capture), see the user documentation of the respective Oracle Fusion Cloud application (example, Order Management).

You've associated the user-defined attribute groups (extensible flexfields) and pages to the item class. To view the user-defined attributes in the item page, you must deploy the extensible flexfields.

Deploy Item Flexfields

After you associate attribute groups and pages with an item class, you must deploy flexfields in order to view the pages or attribute groups at runtime.

The metadata that was created for the attribute group isn't synchronized with the production data in Product Hub until the flexfield is deployed.

To deploy item flexfields:

1. In the Setup and Maintenance work area, use the Deploy Item Extensible Flexfields task:
    - Offering: Product Management
    - Functional Area: Items
    - Task: Deploy Item Extensible Flexfields
2. Search for the **Flexfield Code** value `EGO_ITEM_EFF`.

    All flexfields for Product Hub are created within the flexfield code EGO_ITEM_EFF.
3. Select the desired flexfield in the search result and choose a deployment option from the **Actions** menu:
    - **Deploy Flexfield**: Online incremental deployment. The deployment process begins immediately. Only the flexfield setup that changed is deployed.
    - **Deploy Offline**: Allows the deployment to be scheduled. The flexfields are deployed, one at a time, in the order that you deploy them to the queue. Because all Product Hub flexfields use the same flexfield code, the process deploys all of the attribute groups and attributes for all of the context usages at the same time. You can't select individual attribute groups or item classes for deployment. You should deploy offline if the flexfield changes impact 30 or more item classes.

- **Refresh and Deploy Offline**: Use this option if the first two options result in errors.

  Note: You should only run this option if it's specifically recommended by Oracle support.

To see the effects of these deployment options, you must sign out and sign back in.

Manage Multiple Values for Extensible Flexfield Attributes

When populating the values for an extensible flexfield attribute using Oracle Product Hub and Oracle Product Development user interfaces, you can assign multiple values to one field itself. This negates the need for adding one row each for the attribute value. To avail this feature, the attribute should have been configured with the display type called **Multiple Select List of Values** (referred to as multiselect enabled attribute).

When you navigate to a multiselect enabled attribute and click the drop-down list, the values of the associated value set will be displayed as a List Of Values (LOV) of check boxes. From the LOV, you can choose multiple values applicable to the item by selecting the check box. When you navigate out of the field, all the values you've selected will be displayed in the field as a concatenated string using semi-colon as the delimiter. Similarly, in the edit mode, if you navigate back to the field and click the drop-down list, the concatenated values will be displayed as an LOV of check boxes with a tick mark for the selected values.

Additionally, **All** is available as an entry in the LOV. If you select **All**, then all the values in the drop-down list will be automatically selected and the field will display the value **All** instead of the concatenated list of selected values.

You must have the following privileges assigned to your role to access this feature:

- View Item (EGP_VIEW_ITEM_PRIV)
- Edit Item (EGP_MANAGE_ITEM_PRIV)

To redline multiselect item flexfields on change orders, you need the preceding privileges along with the Monitor Product Management Workflow Objects (ACA_MONITOR_PRODUCT_MANAGEMENT_WORFLOW_OBJECTS_PRIV) and one of the following:

- View Change Order (ACA_VIEW_CHANGE_ORDERS_PRIV)
- Manage Change Orders (ACA_MANAGE_CHANGE_ORDERS_PRIV)

This feature is available in the following UIs.

Work Area	UI Name	Additional Information
Product Information Management	Edit Items page	
Product Information Management	Edit Affected Object Details page	Edit Commercialization Change Order and select Affected Object
Product Development	Edit Items page	
Product Development	Edit Affected Object Details page	Edit Change Order and select Affected Object

Other than the preceding UIs, there's no change in how the data is populated or accessed (example, item import, item rules, and web services) or reported (example, publications and BI reports). For example, even if you've assigned four

values (example, Forest Green, Ocean Blue, Wine Red, and Warm Yellow as colors) for the multiselect enabled attribute in a single row or field, for the purpose of all other functionalities, it's considered as four rows (one row for each color) of the multirow attribute group.

You can redline multiselect enabled attributes on change orders. Values that were deselected are displayed in red text with a strikethrough. Values that are newly selected are displayed in green text.

Important Notes

- You can't modify an attribute of an existing attribute group to leverage this feature, even if the attribute group isn't associated with any item class.
- If an attribute group contains multiple attributes including the multiselect enabled attribute, the attribute group will be rendered as a set of fields similar to a single row attribute group. In such cases, the data will be stored similar to a multirow attribute group with the values of the attributes other than the multiselect attribute repeated across all the rows.
- The attribute group with multiselect enabled attributes can't be accessed via Product Hub's Supplier Portal UIs. However, the same attribute groups can be populated by the suppliers using the REST resources and smart spreadsheets.
- In an attribute group with multiselect-enabled attribute, any non-multiselect enabled attribute that's marked as **Required** will be considered as required only if the multiselect enabled attribute has at least one value populated. This means, in the UI, if all the values of a multiselect enabled attribute is deleted or removed, then when saving the changes, the value in all other attributes in the attribute group will be deleted.
- After you configure a new attribute group and assign it to an item class, you must perform the **Deploy Item Extensible Flexfield** task.

Enable Multiple Select List of Values

To enable the Multiple Select List of Values feature:

1. In the **Setup and Maintenance** work area, go to the **Manage Item Attribute Groups and Attributes** task.
2. Configure a new attribute group with the following key configurations:
    - **Translatable**: Not selected.
    - **Behavior**: Select **Multiple Rows**.
    - **Context Usage**: Select **Item**.

    > **Note:** The multiselect enabled attribute must be the first attribute in the attribute group. Regardless of its enabled status, there can be only one multiselect enabled attribute in the attribute group.

    When creating an attribute, specify the following:
    - **Data Type**: Select **Character**.
    - **Display Type**: Select **Multiple Select List of Values**.
    - **Unique Key**: Select this check box.

    The associated value set must have the following configuration:
    - **Validation Type**: Select **Independent**.
    - **Value Data Type**: Select **Character**.
    - **Value Subtype**: Select **Text** or **Translated Text**.

Configure Extensible Flexfield Data Security

You can configure data security for extensible flexfields. The IT security manager has access to the Security Console that manages security. Use the relevant job role to create data security privileges on the required item extensible flexfield tables.

Here's the process to setup data security for the extensible flexfield attributes. You can use the nontranslatable and translatable tables to:

1. Create data privileges for extensible flexfield attribute groups using the Security Console.
2. Associate data privileges to extensible flexfield attribute groups from the Setup and Maintenance work area.
3. Re-deploy the user defined attribute group flexfields.
4. Grant users access to item extensible flexfield attribute groups. The data privileges can be granted to users at two different levels:
    - Item class level: All items associated with the item class will be granted access.
    - Item instance level: The data security is setup for a single item.

Creating Data Privileges for Extensible Flexfield Attribute Groups

When creating the privileges, the best practice is to create a unique privilege for both the view and maintain privileges.

To create data privileges for extensible flexfield attribute groups:

1. Log in to the Oracle Applications Cloud as an IT Security Manager.
2. Click the **Navigator** icon, and from the **Tools** menu, click **Security Console**.
3. Click **Administration**.

   The Administration page is displayed.
4. On the **General** tab, click **Manage Database Resources**.

   > **Note:** If you don't see **Manage Database Resources**, then you must have the **Enable Database Resource Management** privilege enabled for your role. By default, it isn't enabled for any role.

5. In **Search**, enter **Item** in the **Display Name** field, and click **Search**.
6. In the Search Results, select the database resource for the object, for which you want to create a data privilege. For example, to create the privilege for the Item Data Level (EGO_ITEM_EFF_B non-translatable table), select the row for EGO_ITEM_EFF_B.
7. Select **Edit** from the **Actions** menu.

   The Edit Data Security page is displayed.
8. Click the **Actions** tab.
9. Click the **Add Row** icon to create the required data privileges for this table.
10. Enter the **Name** of the data privilege, **Display Name**, and **Description**. In this example, you're creating data privileges for the Item Data Level non-translatable table. Create two privileges, one securing view access to the attribute group and another securing edit (maintain) access to the attribute group.

    > **Tip:** To determine whether a privilege is for viewing or editing, when naming privileges append a V or M to the name to indicate view or maintenance usage.

11. Once the required privileges are created, submit the changes. A confirmation window indicates the success of the update.

12. Log off from the Security Console.

> **Note:** You can create different sets of privileges for each extensible flexfield table. Also, you can create as many individual privileges based on the attribute groups if you want to secure each attribute group with a different set of privileges.

Associating New Privileges with Extensible Flexfield Attribute Groups

Once the extensible flexfield data privileges are created in the Security Console, associate the privileges with extensible flexfield attribute groups. To do this:

1. Log into Oracle Applications Cloud as an implementation consultant.
2. In the **Setup and Maintenance** work area, go to the **Manage Item Attribute Groups and Attributes** task:
    - Offering: Product Management
    - Functional area: Items
    - Task: Manage Item Attribute Groups and Attributes
3. On the Manage Attribute Groups page, search for the attribute group that must be secured.
4. In the search results table, select the attribute group and click **Edit**.

   The Edit Attribute Group page is displayed.
5. In the **Context Usages** section:
    - From the **View Privilege** column drop-down list, associate the view data privilege that was created in the Security Console with this data level.
    - From the **Edit Privilege** column drop-down list, associate the maintain data privilege that was created in the Security Console with this data level.

   > **Note:** Don't use the same privilege for the **View Privilege** and **Edit Privilege** for the attribute group.
6. Click **Save and Close**.
7. Deploy the flexfields.
8. Click **Submit**.

Re-deploy User Defined Attribute Group Flexfields

After the privileges have been assigned to the attribute group, you must re-deploy the flexfields for the user defined attributes. This process will synchronize the attribute group changes with the Product Hub application tables.

> **Note:** Check with your Administrator prior to deploying the flexfields.

To re-deploy the user defined attribute group flexfields:

1. In the **Setup and Maintenance** work area, go to the **Deploy Item Extensible Flexfields** task:
    - Offering: Product Management
    - Functional area: Items
    - Task: Deploy Item Extensible Flexfields
2. On the Deploy Item Extensible Flexfields page, search for the **Flexfield Code** as EGO_ITEM_EFF.
3. In the search results table, click **Deploy Flexfield**.

   This process running time is based on the number of user definable attribute groups defined for items

Granting User Access to Item Extensible Flexfield Attribute Group at Item Class Level

After associating privileges with the user defined attribute groups and these attribute groups are re-deployed, users are granted the attribute privileges to ensure they are able to view and maintain those attributes for the items. For data security, both the terms actions and privileges are used.

You can grant access to users at the item class level if the same set of users manage items within the item class. This allows easy and limited maintenance of grants.

To add the data privileges to the item class level security:

1. In the Setup and Maintenance work area, go to the **Manage Item Classes** task:
    - Offering: Product Management
    - Functional area: Items
    - Task: Manage Item Classes
2. On the Manage Item Classes page, search and click the item class for which you want to apply data security.
3. On the Edit Item Class page, click the **Security** subtab.
4. Click the required person or the group for which you want to assign the data privileges.
5. Scroll down and in the **Actions** region, click the **Select and Add** icon.
   The Select and Add: Actions dialog box is displayed.
6. Search and select the required data privileges, click **Apply**, and then click **OK**.
7. Click **Save and Close**.

Grant User Access to Item Extensible Flexfield Attribute Group at Item Level

To add the data privileges to the item level security:

1. In the Product Information Management work area, go to the **Manage Items** task.

   > **Note:** At the item level, this allows a more granular control of granting access at individual item level. The navigation and access to manage item level security remains the same as for operational attributes.

2. On the Manage Items page, search and select the item for which you want to apply data security.
   The Edit Item page is displayed.
3. Click the **Actions** menu and then click **Manage Item Security**.
4. Click the required person or the group for which you want to assign the data privileges.
5. Scroll down and in the **Actions** region, click the **Select and Add** icon.
   The Select and Add: Actions dialog box is displayed.
6. Search and select the required data privileges, click **Apply**, and then click **OK**.
7. Click **Done**.
8. On the Edit Item page, click **Save and Close**.
   The data privileges are applied to the item.

Related Topics

- Data Security Privileges for Accessing Items
- Data Security Privileges for Creating Items
- Data Security Privileges for Viewing Items
- Data Security Privileges for Updating Items

Item Attribute Groups and Attributes

Attribute groups are a logical group of attributes that are displayed in their own subregion of the user interface page at runtime.

Attribute groups can be either single-row or multiple-row. The selected behavior determines how the attributes appear in the user interface, as well as how they are used. Each attribute group is associated with one or more item classes.

To create an attribute group and attribute, you use **Manage Item Attribute Groups and Attributes** task from the Product Management offering in the Setup and Maintenance work area.

Note: Avoid using a comma (,) in the **Internal Name** field on the **Create Attribute Group** page.

Create an attribute group and specify its context usage as item. You can provide the attribute group with view or edit privileges, or both. Choose the behavior of attribute as either single-row or multiple-row:

- **Single-row attribute group**: Contains a collection of attributes that appear as separate fields in a region named for the attribute group. For example, a single-row attribute group named Processor contains the attributes appropriate for a processor. When these attribute groups are displayed in the user interface, the attribute fields for each group are arranged compactly within a region titled with the name of the attribute group. Attributes can be multiple data types.
- **Multiple-row attribute group**: Attributes appear as columns in a table that represents the attribute group. Each row in the table is considered an attributes group. The attributes is collection of values specified by the columns in the table. The table appears in the user interface within a region titled with the attribute group name, such as MSRP Price. No other fields appear in the table. For example, a multiple-row attribute group named MSRP Price contains the attributes Country, MSRP, and Currency. Each row of the table describes an MSRP price, and is a value of the MSRP Price attribute group.

When you configure an attribute group, you can assign privileges. Using these privileges you control the user's ability to view or edit attributes in the following: view or edit Item tasks, change order impact analysis, and item structure report. To do this, select the view and edit privileges for the attribute group in Context Usage.

Within the attribute group, create an attribute and a value set. For example, create an attribute group named Cost and Compliance and within that add attribute named Material Cost. Using value sets, define the set of currencies applicable to item cost. After you create attribute groups and attributes, complete these tasks:

- Associate the attribute to the item class by using the Manage Item Class task
- Deploy the attribute by using the Deploy Item Flexfields task

Related Topics

- Overview of Descriptive Flexfields
- Product Value Sets: Explained

Create an Attribute for an Item Class

This topic provides a text equivalent for the video about creating an attribute.

Configure attribute groups as follows:

1. In the Setup and Maintenance work area, go to the following:
    - Offering: Product Management
    - Functional Area: Items
    - Task: Manage Item Attribute Groups and Attributes

    New attributes are created within an attribute group and then associated with the item class where the attributes must appear.
2. Let's create a new attribute group.
    - On the Manage Attributes Group page, click **Create**.
    - Enter a name. It's automatically populated to the other required name fields.
    - In the **Database View Name Prefix** field, the automatically populated value is derived from the **API name** field. The Database View Name Prefix needs to be unique, so modify the default prefix enough to make it unique, using up to 15 characters.
    - In the **Behavior** field, choose the behavior of attribute as either **Single Row** or **Multiple Rows**.

      Select **Single Row** if you want the collection of attributes to appear as separate fields, and only allow one set of responses.

      Select **Multiple Row** if you want the collection of attributes to appear as columns in a table, and allow multiple sets of responses.
    - In **Context Usage**, set the context usage to specify whether the attribute group applies to the item directly, to the item revisions, or to the item suppliers. In this case, select item.
    - Click **Save**.
3. Let's create an attribute in the attribute group.
    - In attributes, click **Create.**
    - Enter a name. It's automatically populated to the other required name fields.
    - In Date Type, set a data type to suit your purpose. In this case, select **Number**.
4. Let's create a new value set.
    - Click **Create Value Set**.
    - Add a name for the value set and enter the module as Product Development.
    - In Validation Type, select **Format Only**.
    - In Value Data Type, select **Number**.
    - In Precision, set the maximum number of digits users can enter.
    - In Scale, set the maximum number of digits allowed after the decimal point.
    - In Minimum Value and Maximum Value, enter the range which must fit the precision and scale.
    - Save and close all objects.

5. In the Setup and Maintenance work area, go to the following:
    - Offering: Product Management
    - Functional Area: Items
    - Task: Manage Item Classes
6. Let's add the attribute group you created to an item class:
    - In the Manage Item Classes page, open the item class to which you want to add the attribute group.

      Select the **Pages and Attributes Group** tab.
    - Search for the attribute group you created and add that attribute group.
    - Click **Save and Close**.

      The attribute appears on the Pages sub-tab.
    - On the Pages sub-tab, select Product Development so that the attribute group appears only in Product Development work area (and not in the Product Information Management work area).
    - In Attribute Groups, click **Select and Add**.

      Search for the attribute group you created and add that attribute group and click **Save**.
    - Click **Save and Close**.

      Close the Manage Item Classes task so you can deploy the new attribute group.
7. In the Setup and Maintenance work area, go to the following:
    - Offering: Product Management
    - Functional Area: Items
    - Task: Deploy Item Extensible Flexfields
8. Search for item attributes and click **Deploy Flexfield**. Wait until the process is completed and then click **OK**.
9. Sign out of the application and sign in to the Product Development work area.

   To test the attribute you created, create a new item.
    - From the **Tasks** panel tab, click **Create Item**.
    - In the Create Item dialog select an item class which is a subclass of the item class you modified in a previous step.
    - Enter the other details of the item. Click **Save and Close**.

      On the Edit Item page, you will notice the attribute group and attribute you created in a previous step.
    - Enter the value of the attribute and click **Save**.

Related Topics

- Why do I need to modify the Database View Name Prefix field?

Configure Attributes in Item and Change Order Context

You can configure attributes, and multirow extended flexfields (EFFs) as follows:

- Attributes controlled by change orders - can be modified only through a change order.
- Attributes that aren't controlled by change orders - can be modified through the item page in the Product Development work area, or a change order.

  For example, you can use this feature to update multi-row extended flexfield attributes without creating an engineering change order.

Note: This topic is applicable only for item level extended flexfields in Product Development.

Properties of attributes differ based on their configuration. This table shows how the properties differ when you view them in the item page context and the change order context.

Attribute Type	In Item Page Context	In Change Order Context
Attributes controlled by change orders	Editable only in the initial item revision and if the item isn't yet assigned to the change order. All revisions display revision-specific values.	Editable depending on the change order status.
Attributes controlled by change orders	The following revisions are editable: • Revision which is already effective. • Revision which is scheduled to be effective in future.	Editable depending on the change order status.
Attributes controlled by change orders	All revisions display the value which is already effective; even previous revisions don't display revision-specific values. For example, revisions A, B, and C show the same value. **Note:** The previously effective revisions aren't editable even during the execution of scheduling jobs.	All revisions display revision-specific values. For example, revisions A, B, and C show different values based on changes you actually made to the attribute.

Here's how you configure attributes and EFF attributes to be controlled by the change order:

1. In the Setup and Maintenance work area, go to the following:
    - Offering: Product Management
    - Functional Area: Product Rules
    - Task: Manage Item Rule Set
2. Create a new rule set and specify how you want the attribute to be modified:
    - On the Manage Rule Sets page, click **Create**.
    - Enter the details of the rule set.
    - Composite: Select **No**.
    - Type: Select **Validations**
    - Association Type:

      To modify attributes through the change order only, set **Association Type** as **Attribute Group**.

      > **Note:** You can't modify the **Association Type** after you save the rule set.

    - Click **Save and Continue**.
3. Create a new rule in the rule set you created in the previous step:
    - On the Edit Rule Set page, click **Rules**.
    - To create a new rule, click **Create**.
    - Sequence: Enter 10.
    - Severity: Select **Needs approval**.

      Note that **Needs approval** is mandatory for attributes that are controlled by change orders. Any other setting will prevent users from viewing previous revisions of the item.
    - Click **Ok**.
4. Enter the details of the new rule:
    - In Validation Condition enter the criteria for validation.
    - For example, enter !changed([Item].[your attribute group]).
    - Validate the rule.
    - Click **Save and Close**.
5. Add the new rule set to the master rule set.
    - On Manage Rule Sets, search for the master rule set.
    - Open the master rule set.
    - Add the rule set you created in a previous step.
    - Click **Done**.

Configure Attribute Groups for Product Development

For Product Development you can configure the attributes groups displayed as part of item, document, and change order.

You specify the attribute groups for an item class and set the display sequence of attribute groups. This configuration affects attribute groups appearing on: item details page, create item dialog, change order affected object, change order impact analysis, and item structure report. Attribute groups created for an item class at a higher level are inherited to child classes. Additionally, you can create attribute groups specific to a child class.

Configure attribute groups as follows:

1. In the Setup and Maintenance work area, go to the following:
    - Offering: Product Management
    - Functional Area: Items
    - Task: Manage Item Classes
2. Search for an item class in which you want to configure attribute groups.
    - In the **Pages and Attributes** tab, select **Attribute Groups**.
    - Create new attribute groups or modify the existing attribute groups, as required.
3. In the **Pages and Attributes** tab, select **Pages**.
    - Select the page for which you want to configure attribute groups or create a new page.
    - Assign an attribute group to the page. Also specify the sequence of attribute groups.
4. In the **Pages and Attributes** tab, select **Functional Item Pages**.
    - Select the page you created or modified in the previous step and assign it to Product Development.

Note: You must deploy item flexfields after you create or modify attributes.

Related Topics

- Deploy Item Flexfields

Create Data Privileges for Attribute Groups

User defined attribute groups are supported by following tables at the following data levels:

Non-translatable tables:

- Item Data Level - EGO_ITEM_EFF_B
- Item Revision Data Level - EGO_ITEM_REVISION_EFF_B
- Item Supplier Data Level - EGO_ITEM_SUPPLIER_EFF_B

Translatable tables:

- Item Data Level Translatable - EGO_ITEM_EFF_VL
- Item Revision Data Level Translatable - EGO_ITEM_REVISION_EFF_VL
- Item Supplier Data Level Translatable - EGO_ITEM_SUPPLIER_EFF_VL

To create data privileges for attribute groups:

1. Select **Navigator**> **Security Console**.
2. Click **Manage Database Resources**.
3. Enter the criteria to search for an object (or database resource) and click **Search**.
4. Select object for which you want to create data privileges.
5. From the **Actions** menu, select **Edit**.
   The **Edit Data Security** page appears.
6. Click the **Actions** tab.
7. Click **Add** to create a new data privilege.
8. Enter the name of the data privilege, display name and description.
9. Click **Submit**.

If the Manage Database Resources button is disabled, follow these instructions to enable the button:

1. Select **Navigator** > **Security Console**.
2. Search for the relevant role and edit that role.
3. In **Functional Security Policy**, click **Add Function Security Policy**.
4. Search for the Enable Database Resource Management privilege.
5. Click **Add Privilege to Role** and click **Next**.
6. In **Summary and Impact Report**, click **Save**.

Create Rules to Automatically Generate Fields for Items

You can automatically generate the following fields during item creation: item name, and item description.

1. In the Setup and Maintenance work area, use the following to configure a rule set:
   - Offering: Product Management
   - Functional Area: Product Rules
   - Task: Manage Item Rule Sets
2. Create a rule set. In the Create Rule Set dialog:
   - Association Type: Select Item class.
   - Association Name: Select an item class for which you want to automatically generate fields during item creation.
   - Click **Save and Continue**.

   The Edit Rule Set page appears.
3. Depending on the purpose of the rule, define the **Return Type** as either **Item Number** or **Item Description**. Here is a sample rule that concatenates two extended flexfield attributes and uses the resulting text as the value for the item description.

```
[Item].[Descriptions].[Description 30 Characters]+" "+[Item.[Descriptions].[Description 45 Characters]
```

4. Click **Save and Close**.
5. Use the following to configure an item class:
    - Offering: Product Management
    - Functional Area: Items
    - Task: Manage Item Classes
6. Search for and open the item class you modified in a previous step.
7. On the Item Management tab:
    - Click Number Generation. In **Item Number Generation Method**, select **Rule Generated**.
    - Click Description Generation. In **Item Description Generation Method**, select **Rule Generated**.
8. Click **Save and Close**.

Create a Rule Set for an Item Class Attribute

In this example, you're an administrator creating validation rules that can be triggered when creating an item.

Prerequisites:

- Create an attribute group named Region.
- Add an attribute named Country. In the list of countries add Germany, USA, and India.

1. In the Setup and Maintenance work area, select the following:

   Offering: Product Management

   Functional Area: Product Rules

   Task: Manage Item Rule Sets
2. Here's how you create a rule set named Assign ITU Region to assign values based on an attribute:
    a. On the Manage Rule Sets page, click **Create**.
    b. In the Create Rule Set dialog box, enter the following:

       Display Name: Assign ITU Region.

       Type: Assignments.

       Association Type: Attribute Group.

       Association Name: Search for and select an attribute group named Region.
    c. Click **Save and Continue**.
3. In the Edit Ruleset page, click **Create** to create a rule based on a validation criteria.
4. In the Create Rule dialog box, enter the details of the rule. Here we create a rule so that the value is assigned to an existing attribute.
    a. Name: Assign ITU Region.

       Return Type: Select Generic. This is required to select an attribute group you created in a previous step.

       Target Attribute Group: Select Region. This is the attribute group you created in a previous step.

Target Business Entity: Item.

Target Attribute: Select ITU Region. This is the attribute group you created in a previous step.

Results of this rule will be entered into this attribute.

Click **OK**.

b. Assign ITU Region: Details

- Primary IF Expression: Enter true, so that the secondary if expression is validated.
- IF Expression: Right-click and select **Insert Attribute**. In the Insert Attribute dialog box, select the following to create an expression based on Region and Country.

  Business Entity: Item.

  Attribute Group: Select the group named Region.

  Attribute: Select an attribute named Country.
- Click **Insert**. The following expression is inserted:

  ```
  [Item].[Region].[Country]
  ```
- Here's how you create a rule based on Country equals Germany. Modify the expression to form the following:

  ```
  [Item].[Region].[Country]==Germany
  ```
- Return Value: Enter 1. If the user selects Germany, then the application automatically enters the value 1 in the ITU Region field.
- Create two other expressions. Copy the expression you created and click **Add Rule**.
- Modify the expression to form the following:

  ```
  [Item].[Region].[Country]==USA
  ```

  ```
  [Item].[Region].[Country]==India
  ```
- For country = USA, enter **Return Value** as **2**.
- For country = India, enter **Return Value** as **3**.
- Click **Hide User Message** because a user message isn't required in this scenario.
- Click **Save**.
- To validate the expression you created, click **Validate.**.
- Resolve any validation errors. Click **Save and Close**.

5. Here's how you create a validation rule so that users enter a band range for a radio that they're developing after they select a country:

    a. In the Edit Ruleset page, click Create to create a rule based on a validation criteria. In the Create Rule dialog box, enter the details of the rule.

    Name: Band Range

    Sequence: 10

    Severity: Reject.

    Select Stop further processing when rejected.

    Click OK.

    b. Band Range: Details

    - IF Expression: Right-click and select **Insert Attribute**. In the Insert Attribute dialog box, select the following to create an expression based on Region and Country.

      Business Entity: Item.

      Attribute Group: Select the group named Region.

      Attribute: Select ITU Region.
    - Click **Insert**. The following expression is inserted:

      ```
      [Item].[Region].[ITU Region]
      ```
    - Modify the expression as:

      ```
      !isNull[Item].[Region].[ITU Region]
      ```

      The application checks for the opposite of isNull.
    - Validation Condition: Right-click and select **Insert Attribute**. In the Insert Attribute dialog box, select the following:

      Business Entity: Item.

      Attribute Group: Select the group named Region.

      Attribute: Band Range.
    - Click Insert. The following expression is inserted:

      ```
      [Item].[Region].[Band Range]
      ```
    - Modify the expression as:

      ```
      !isNull [Item].[Region].[Band Range]
      ```
    - User Message: For example, `Enter a band range.`
    - To validate the expression you created, click **Validate**.
    - Resolve any validation errors. Click **Save and Close**.

6. To enable the new rule sets, you must add new rule sets to the master rule set. Here's how:
    a. In the Manage Item Rule sets page, search for and open the master rule set.
    b. In the Master rule set page, click **Select and Add**.
    c. Search for the rule sets you recently created and add them.
    d. Click **Save and Close**.

Related Topics

- Configure New Item Request Workflow

Item Classes

Item classes are created under the root item class, or within a parent item class, and inherit values based on selections made when defining the item class.

To create and manage item classes, user-defined attributes, and data security, use the **Manage Item Classes** task in the Setup and Maintenance work area:

- Offering: Product Management
- Functional Area: Items
- Task: Manage Item Classes

You can define item classes in a hierarchy where the child levels indicate the sublevels or types of the parent item class. All items are created within an item class. The item class hierarchy can be used to control processes for some levels of the hierarchy.

You can also use item classes for classification purposes and in some cases, item creation may not be allowed. By optionally setting the **Item Creation Allowed** attribute to No, item creation in an item class can be prevented. However, a child item class of that item class can be set to allow for item creation.

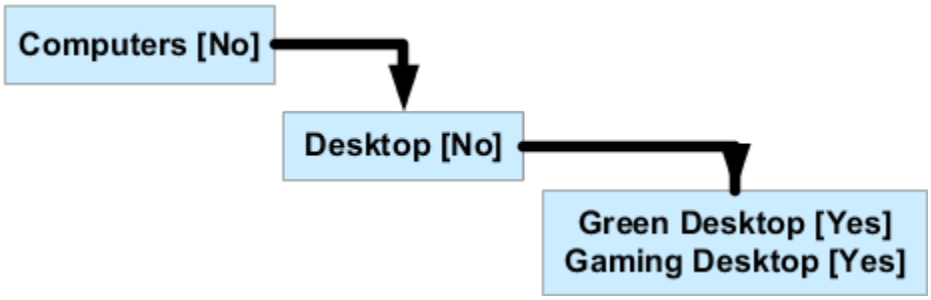
Note:

- When you create an item class, make sure you specify the API name.
- Avoid creating item classes with names such as Item, ItemCategory, ItemRevision, ItemSupplier, RevisedItemLineApproval, ChangeObjectApproval, Evidence, and Certificate. Or creating similar names for the item class and flexfield attribute groups. Distinct names help ensure that rules run without error.
- There's no limitation on the number of item classes that can be defined. However, it is recommended that you don't create more than 1000 item classes and make sure that the maximum depth of the item class hierarchy is 15. Most classifications don't require more than five levels.
- If you plan to add BPM rules in your workflow approvals for changes and new item requests, it's recommended that you limit the number of item classes to 300.

If you need to create large number of item classes, then:

- Deploy EFFs incrementally as you set up your item classes. Don't wait till you have set up all the classes to deploy.
- Before creating the lower-level classes, ensure that you have identified and associated the attribute groups and attributes to the higher-level classes. This is because any changes made to the higher-level classes automatically results in the re-deployment of the lower-level classes due to inheritance.

For example, the following figure illustrates the Desktop item class as a child of the Computers item class and both are set to not allow item creation.



The Green Desktop and the Gaming Desktop item classes are children of the Desktop item class and are set to allow item creation. Optionally, you can specify a date on which an item class becomes inactive. The inactive date of a child item class must not be a past date and must be earlier than the inactive date of a parent item class. Also, all children of a parent item class with an inactive date must be made inactive at the same time or earlier.

Note: Product Development doesn't support the versioning of item classes.

When setting up definition steps for a new item request at the item class, you can identify various item details as required, at each step. The definition of the entire entity or just specific attributes can set as required. This ensures that the item information required for a downstream step is defined and available for use.

You can define data security on an item class. All child items and item classes of the item class inherit the data security specified. Consider the following while creating and managing data security for item classes:

- Item classes have a **Public** check box, which when selected indicates that all items in the item class are public. All new item classes, including its child items and child item classes, are public by default, and don't require data security to be set. To make a child item private, you must deselect the Public check box in the Data Security dialog box.

  Data security is not enabled for public item classes. When editing an item class, on the **Security** tab, in the **Actions** section, click **Actions: Select and Add**, Data Security won't be available in the Basic or Advanced search for any of the predefined attributes except for user-defined attributes.
- Depending on your settings for the Public check box, if a parent item class or a parent root item class is public, all new item classes created within it are public by default. Similarly, item classes created within a private item class or a private root item class are private.
- When a parent item class is made public or private, the child items and child item classes inherit the updated data security setting of the parent.
- Private item classes can't have child item classes that are public.
- Public item classes can have child item classes that are private or public.
- In the case of private items, you can search for and view only the items you have access to.

- For extensible flexfield attribute groups, you must set the data security for public and private item classes. The data security controls which EFF attribute groups are visible to specific users, user groups, or organizations.
- You must set data security at the item class level to restrict access to user-defined attributes, and to values for public and private items.

You can control the creation, view, and update of items by associating a role with the item class and assigning it to a principal or group of users. Security allows a person or a group to have privileges to an item of an item class in each organization. This role is inherited. Therefore, if you have the privilege in a parent item class, you will automatically have the same privilege in the child item classes.

Item Class Descriptive Flexfields

User-defined attributes are used to configure additional attributes to support your organization's requirements. Descriptive flexfields appear in the user interface as additional information and can also appear in search results tables.

If you need to add only shallow and small numbers of individual data fields, consider using descriptive flexfields. For example, you may want to use a descriptive flexfield to capture different address fields (represented as context-sensitive segments) for different countries (represented as contexts). Address fields, though they may differ in number per country, are usually all at the same hierarchy level. For table layouts, if you have data that require a different context segment value per row, and that context segment value has different respective context-sensitive segments (in terms of type and number), then you must use descriptive flexfields, not extensible flexfields.

You cannot group attributes using descriptive flexfields. For example, if you wanted to define a maximum CPU speed and a minimum CPU Speed for an item, you have to specify an attribute called Maximum CPU Speed and another called Minimum CPU Speed. You couldn't have a grouping called CPU Speed and have two child attributes called Maximum and Minimum.

With descriptive flexfields, you can define many contexts for an object but you can display only one context at a time. For example if the context value is a State, then the context segment called "Capital" would have different values depending on the value of the context. If the descriptive flexfields have only one context, the context selector can be hidden in the user interface. You can define descriptive flexfields on items, structures, catalogs, categories, new item requests, and change orders.

Default Item Class

There are two ways to work with a default item class, depending on whether or not you're able to use Oracle Product Hub.

With Product Hub

You can designate a single item class to be the default item class selection when users search for or create items in the Product Information Management work area. This item class is then defaulted in flows where users have to explicitly select an item class.

To begin, identify an item class that's heavily used in your enterprise. You can then designate it as the default. Here's how:

1. In the Setup and Maintenance work area, use the **Manage Item Classes** task:
    - Offering: Product Management
    - Functional Area: Items
    - Task: Manage Item Classes
2. Query the item class to be used as the default.
3. On the Edit Item Class page, select **Default Item Class**.

Subsequently, the item class designated as the default becomes the item class selected by default:

- In the **Item Class** field in the Create Item dialog box, when users create items
- In the item class query field in the page header, when users search for items on the Manage Items page

Other considerations:

- For new installations of Product Hub, the Root Item Class is selected as the default item class.
- For updated installations of Product Hub, you can select any other item class to designate it as the default item class.
- Whenever a new item class is selected as the default, the previously selected default item class is automatically deselected.

Without Product Hub

For non-Product Hub customers, the Manage Default Item Class task is used because these customers can't create additional item classes nor can they create user defined attributes such as extensible flexfields. You can access this task from the Product Management offering in the Setup and Maintenance work area. An exception to this rule is that Product Development customers can create additional item classes and extensible flexfields. The Manage Default Item Class task launches an edit page for the Root Item Class.

The Manage Default Item Class task has three tabs:

- Basic: Item Class descriptive flexfields and attachment categories are defined on this tab.
- Item Management: Item number generation method is defined using this tab.
- Lifecycle Phases: The lifecycle phases that the items assigned to this item class will use are defined on this tab.
- Item Templates: The item templates that are used to create items are defined on this tab.

Related Topics

- Item Classes

Overview of Item Status

Every item has an Item Status attribute. By setting the item status, you can change the default values for a subset of operational attributes referred to as status-controlled attributes of the item, according to how the status has been set up.

Set Up Item Statuses

You can use predefined item statuses, and also define your own statuses.

To create, edit or delete item statuses, use the **Manage Item Statuses** task:

- Offering: Product Management
- Functional Area: Items
- Task: Manage Item Statuses

The predefined item statuses are:

- Active
- Inactive

For each item status, the **Details** section of the Item Statuses page contains the operational attribute groups and status-controlled attributes governed by the selected item status. The same set of status-controlled attributes applies to all statuses. You define how the item status affects each attribute.

The defined status-controlled attributes are listed under the reference for the **Item Status** attribute, which is a member of the Item Main specifications. Examples of status-controlled attributes are Build In WIP, Customer Orders Enabled, and Invoice Enabled. All of the status-controlled attributes have the values Yes and No.

Whenever a defined status is applied to an item by a user, the value of each of the status-controlled attributes in this list is set to the value you choose here, subject to the usage you select. Note that the affected attribute value in the item might not be different after the item status is applied.

To set the values and usages for the status-controlled attributes, in the Details table, set the **Attribute Value** control to **Yes** or **No**, then set the **Usage**. The usage values are:

- Defaulted - Lets you override the value during the import and update of an item.
- Inherited - Sets the values of the item status-controlled attributes when the status value changes. You can't override the value.
- None -The item status attribute values won't be changed.

Any change made to an item status isn't applied automatically to existing items. The change will be applied when the item status value is next changed while editing the item.

The **Controlled at** field isn't editable and is populated from the value set on the Manage Attribute Groups page.

Apply Item Statuses

You can use an item status to change the default values for status-controlled attributes.

To set the item status of a particular item, select a value of the **Item Status** field on the Edit Item page for the item.

When you change the item status of an item, that status can change the default values of the status-controlled attributes of the item, depending on how the item status has been set up. In turn, the status-controlled attributes can change the value of certain operational attributes, which can affect the actions that you can perform on the item.

Related Topics

- Interdependent Item Attributes
- Item Main Specifications

Precedence of Applying Attribute Values to Items

When an item is created, the attribute value for an item is determined by the following precedence:

1. The value from the item template is applied. It's applicable only if the attribute was configured to use the **Defaulted** option for **Usage** in the **Manage Item Statuses** task.

   The **Defaulted** option indicates that the status attributes can be updated independently of the status. So, when such attributes are applied by the template, the values will change. However, when the option for **Usage** indicates that the status attributes are **Inherited**, the status attribute values can't be updated by applying the template.
2. The effect of the value based on the **Item Status** field is applied.
3. The value entered by the end user is applied. The value may be entered through the UI, FBDI, import maps, web services, or REST APIs.
4. The value derived from rules is applied.

For example, assume that:

- The defined item status **MyActive** sets the value of the attribute **Stocked** to **Yes** and the **Usage** to **Defaulted**. It also sets **Taxable** to **Yes** with **Usage** set to **Inherited**.
- An item template named **MyTemplate** sets the value of the attribute **Stocked** to **No** and **Taxable** to **No**. This doesn't set the **Status**.
- An item template named **MyTemplateWithStatus** sets the value of the **Status** to **MyActive**, **Stocked** to **No**, and **Taxable** to **No**.

Example 1:

At runtime:

1. An item is created by using the item template named **MyTemplate**. The value of **Stocked** is set to **No** and **Taxable** is set to **No**.
2. The user edits the item and sets the **Item Status** field to **MyActive**. The value of **Stocked** and **Taxable** changes to **Yes**.
3. The user can now change the value of **Stocked** to **No** because this attribute is set to **Defaulted** for **MyActive** item status. However, the value of the **Taxable** attribute can't be changed independently because this attribute is set to **Inherited** for **MyActive** item status.

Example 2:

1. An item is created by using the item template named **MyTemplateWithStatus**. The value of **Stocked** is set to **No** and **Taxable** is set to **No** in the beginning.
2. The user edits the item and sets the **Item Status** field to **MyActive**. The value of **Stocked** and **Taxable** changes to **Yes**.

Setting the status for a template adds complexities associated with status and inter dependent attributes. Oracle doesn't recommend to set the status for a template. The preceding example provides the sequence of applying the status, template, and user defined attribute values.

Set Up Data Security for Item Classes

Before you can create or view items in the Product Information Management or Product Development work areas, you must define data security for items. You define data security in item classes for each pairing of roles to organizations and of users to organizations.

If the **Public** check box is checked on an item class, then data security setup isn't required. For more details on how public item classes work, refer to the related topic on item classes listed here.

Initially, you must define data security in the root item class and the master organization for both the Product Manager and the Product Data Steward roles. If you created an implementation user to create items in the Product Information work area, then you must assign the Product Manager and Product Data Steward roles to that user, and you must assign that user to the master organization. (Assign the appropriate role or roles and organizations to any additional users you create to control what each user is allowed to do in the application.) You can assign all of the actions to the Product Manager and Product Data Steward role for the master organization to allow all users with these roles to have complete access to item data.

> **Note:** Oracle recommends that security administrators don't assign these predefined roles directly to users. Instead, make a copy of a predefined role, remove the privileges that your users don't need, and assign users the role that contains only the privileges they need.

The following table describes the specific actions that you must assign to both the Product Manager and the Product Data Steward roles for the root item class and the master organization you created. (When you create additional organizations, you must define data security for each organization that these roles are assigned to.)

Actions	Description
Maintain Item Asset Maintenance Group	Allows access to edit item asset management specifications. Does not encompass view privilege.
Maintain Item Attribute	Allows access to edit item user defined attribute specifications. Does not encompass view privilege.
Maintain Item Basic	Allows access to edit item basic information including attachments, organizations, suppliers, relationships, and other related information.
Maintain Item Costing Group	Allows access to edit item costing specifications. Does not encompass view privilege.
Maintain Item General Planning Group	Allows access to edit item general planning specifications. Does not encompass view privilege.
Maintain Item Inventory Group	Allows access to edit item inventory specifications. Does not encompass view privilege.
Maintain Item Invoicing Group	Allows access to edit item invoicing specifications. Does not encompass view privilege.

Actions	Description
Maintain Item Lead Times Group	Allows access to edit item lead times specifications. Does not encompass view privilege.
Maintain Item MRP And MPS Group	Allows access to edit item MRP and MPS specifications. Does not encompass view privilege.
Maintain Item Order Management Group	Allows access to edit item order management specifications. Does not encompass view privilege.
Maintain Item Pack	Allows access to edit item packs. Does not encompass view privilege.
Maintain Item People	Allows management of user access to items in the enterprise. Does not encompass view privilege.
Maintain Item Physical Group	Allows access to edit item physical specifications. Does not encompass view privilege.
Maintain Item Primary Group	Allows access to edit item primary specifications. Does not encompass view privilege.
Maintain Item Process Manufacturing Group	Allows access to edit item process manufacturing specifications. Does not encompass view privilege.
Maintain Item Purchasing Group	Allows access to edit item purchasing specifications. Does not encompass view privilege.
Maintain Item Receiving Group	Allows access to edit item receiving specifications. Does not encompass view privilege.
Maintain Item Revision	Allows access to create and manage item revisions. Does not encompass view privilege.
Maintain Item Service Group	Allows access to edit item service specifications. Does not encompass view privilege.
Maintain Item Structure	Allows access to create and manage item structures. Does not encompass view privilege.
Maintain Item Structure Group	Allows access to edit item structure specifications. Does not encompass view privilege.
Maintain Item Web Option Group	Allows access to edit item web option specifications. Does not encompass view privilege.
Maintain Item Work In Process Group	Allows access to edit item work in process specifications. Does not encompass view privilege.
View Item Attribute	Allows access to view item user-defined attribute specifications.
View Item Basic	Allows access to query and view item basic information including attributes, attachments, organizations, suppliers, and relationships.
View Item Pack	Allows access to view item packs.
View Item Structure	Allows access to view item structures.

Actions	Description
Create Item Class Item	Allows access to create items within an item class.
Read	Read
Update	Update

For initial start up, define the data security at the root item class level and define the complete set of actions for the person or groups. Data security defined at the root item class level is inherited by all new item classes created. To define data security for an item class and organization:

1. In the Items functional area of the Product Management offering, use the **Manage Item Classes** task.
2. Select the **Root Item Class** row and click on the **Edit** icon.
3. Click on the Security tab. The item class people and Actions tables are initially empty.
4. To add a new row, click the **Add** icon in the item class people table.
5. In the **Principal** field, choose Group or Person.
6. In the **Name** column, click on the **Search** link.
7. Enter for the role name and click on the button. The results show all combinations of the roles Product Manager or Product Data Steward and the organizations to which they were assigned.
8. Select the organization that you created when performing the setup tasks for item organizations.
9. Define the actions that the Product Data Steward and Product Manager roles can perform by adding actions to the Actions table.
    a. Click on the Select and Add icon to launch the Select and Add Actions dialog.
    b. Perform a search for each of the following terms, select all of the returned actions, then click apply:
        - Maintain
        - View
        - Create
    c. After selecting all of the appropriate actions, click **OK** to close the dialog.
10. Repeat this process to define item class security for the Product Manager role.
11. **Save** your changes.

Assign Privileges to View Item History

To enable users to view the history of an item and all its child objects, you must assign the following privileges:

- View Item Basic data privilege – this privilege controls who can view the item and its attributes.
- View Selected Item Audit History functional security privilege – this privilege controls who can access the History tab on the item.

Related Topics

- Item Classes
- Data Security

Identify Opportunities to Optimize Item Class Setup Using Diagnostic Test

Oracle Product Hub offers an integrated collection of item class setup objects to model your product information in a hierarchical structure, where you can inherit the extensible flexfield (EFF) attributes from the parent node to the child node. Most of the setup objects are shared by other setup objects. For example, a value set may be shared by multiple EFF attributes. In some cases, the configuration choices may cause sub-optimal performance and cause potential problems. You can do the following:

- Diagnose issues primarily caused by product configuration related to item classes, its component's EFFs, value sets, and values.
- Maintain an optimized item class setup and track disabled attributes and inactive value sets.

To identify opportunities to optimize item class setup, in the **Run Diagnostics Tests** work area, search and run the **Product Hub Diagnostics – Item Classes** diagnostic test.

> **Note:** To include the **Attribute Group Profile – Details** and **Value Set Profile – Details** sections, run the diagnostic test with the **Include Attribute Group Details** option set to **true**.

To view all the details pertaining to the test:

1. When the **Execution Status** is displayed as **Completed**, click the **View Test Results** icon in the **Report** column. The test details are displayed.
2. Click the link in the **Execution ID** column. The Product Hub Diagnostics - Item Classes page is displayed that provides all the diagnostic test reports.

The diagnostic report has eight sections:

- Count Of Item Classes and Their Components: Provides a count of item classes, attribute groups, and EFF attributes defined in Product Hub.
- Count Of Attribute Groups by Key Characteristics: Provides a count of attribute groups based on their key characteristics. The count includes only the attribute groups that are currently in enabled state.
- Item Classes Profile – Summary: Provides a list of all the item classes defined in Product Hub. This list is ordered based on the item class hierarchy. It includes the count of single-row attribute groups (SR AG), multi-row attribute groups (MR AG), disabled attribute groups (Disabled AG), and the total count of attribute groups (Total AG) associated to the item class.
- Attribute Group Profile – Summary: Provides a list of all the attribute groups defined in Product Hub. In addition to the key characteristics of the attribute groups, the profile includes the view and edit privileges associated with them.
- Attribute Group Profile – Details: Provides a list of all the attributes groups and all their attributes along with the value set name associated with the attributes defined in Product Hub. This list is ordered based on the attribute group name.
- Value Set Profile – Details: Provides the list of all the value sets defined in Product Hub. This list is ordered based on the value set name.
- List of Non-Active Values: Provides a list of attribute values that have passed the end date or disabled. This list is ordered by the value set name ascending and the Last Updated By descending order. The Last Updated Date

and Last Updated By values may not directly correspond to the occurrence of end-dating or inactivating the value.

- List of Disabled Attributes: This list is ordered based on the attribute group name ascending and attribute name ascending order. The Last Updated Date and Last Updated By values may not directly correspond to the occurrence of disabling the attribute.

The data is presented as a table In each section. You can copy the table and paste it into a compatible tool such as word processors or spreadsheets to leverage their native functionalities such as sorting, filtering, and formatting as applicable.

Related Topics

- Run Diagnostic Tests
- View the Status and Result of a Diagnostic Test

Check Dormant Data Inconsistencies Using Diagnostic Report

During the lifecycle of an item, you can make changes to the configurations such as converting a non-mandatory attribute of an item extensible flexfield (EFF) attribute group into mandatory attribute to suit the changing business needs.

Similarly, you can also disable or end date a specific value of a value set during the value's lifecycle. In some rare cases, these configuration changes may introduce data inconsistency in existing items. For example, at the time of item creation, it may have Null value for a non-mandatory attribute. If this is converted to a mandatory attribute, then the item is likely to result in data inconsistency. Such data inconsistency is dormant until the item is accessed through Oracle Product Hub's standard functionalities.

Additionally, under rare circumstances, due to technical issues, some items may have duplicate data rows for single row EFF attribute group.

You can run the **Product Hub Diagnostics Dormant Data Inconsistencies in Items** diagnostic report (available in the Run Diagnostics Tests work area) to periodically review such dormant data inconsistencies and resolve the issues, and thus avoid potential runtime errors.

The report contains the following sections that provide details of the data and tips for resolution as applicable:

- Items with missing values for mandatory attributes
- Items with inactivated values
- Items with duplicate data rows for single row EFF
- Items with duplicate data rows for EFF rows for translated data

In each section of the report, the data is presented as a table. You can copy the table and paste it into a compatible tool such as word processors or spreadsheets to leverage their native functionalities such as sorting, filtering, and formatting as applicable.

To review a specific attribute group, specify the attribute group name in the **Attribute Group Name** parameter of the report. If no value is specified, then all attribute groups are included in the report.

To review a specific attribute within an attribute group, specify the attribute group name in the **Attribute Group Name** parameter and the attribute name in the **Attribute Name** parameter of the report. If no value is specified, then all the attributes of the attribute group are included in the report.

It is also recommended that you periodically review the following sections in the in the **Product Hub Diagnostics – Item Classes** diagnostic test report available in the Run Diagnostics Tests work area:

- **Disabled Attributes – Summary** section - To eliminate the dormant data inconsistencies.
- **Non-Active Values – Summary** section - To avoid stuck change orders.

Configure the Template for the Item Structure Report

Overview of Configuring the Template for the Item Structure Report with Attributes

You can make a copy of the template for the item structure report and configure the copy with additional attributes or the Main and AML attribute in the Product Development or Product Information Management work area.

To make a copy of the template and configure it, you must do the following:

1. Download the template for the item structure report.
2. Configure the template with additional attributes or the Main and AML attribute.

   > **Note:** For the template with the Main and AML attribute, you must choose the attributes you want in the report.

3. Upload the configured template for the item structure report.
4. Verify the changes to the template that's configured with additional attributes or the Main and AML attribute.

> **Note:** Oracle recommends the use of Mozilla Firefox when a browser is required for these procedures.

Related Topics

- Download the Template for the Item Structure Report
- 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
- Upload the Configured Template for the Item Structure Report
- Verify the Configured Template for the Item Structure Report

Download the Template for the Item Structure Report

You must download the template for the item structure report so that you can make a copy of the template and configure it with additional attributes or the Main and AML attribute.

Before you start

For detailed information about downloading templates, refer to the documentation for the Oracle Analytics Publisher.

Here's what to do

1. In the Oracle Transactional Business Intelligence Catalog, expand **Shared Folders** > **Supply Chain Management** > **Product Management** > **Items** > **Structures**.
2. Click **Edit** for the Item Structure Report.
   The Item Structure Report page opens.
3. Click **Edit** for the Default Item Structure Report.
   A dialog box opens with options to save the `DefaultItemStructureReportTemplate.rtf` file.
4. Save the file as `UserDefined_ItemStructure.rtf`.

> **Note:** You can save the file with any name that you choose.

Related Topics

- Overview of Configuring the Template for the Item Structure Report with Attributes
- 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
- Upload the Configured Template for the Item Structure Report
- Verify the Configured Template for the Item Structure Report

Configure the Template for the Item Structure Report with Additional Attributes

You can configure the template for the item structure report with additional attributes by following the procedure in this topic.

Before you start

Ensure that the BI Publisher plug-in is enabled in Microsoft Word.

Here's what to do

1. In the Oracle Transactional Business Intelligence Catalog, expand **Shared Folders** > **Supply Chain Management** > **Product Management** > **Items** > **Structures** > **Data Models**.
2. Click **Edit** for the Item Structure Report Data Model.
   The Item Structure Report Data Model page appears.
3. In the Data Model pane, click **Properties**.
   The properties for the data model are displayed.
4. In the Attachment section, in the **Sample Data** field, click **sample.xml.**
   A dialog box appears with options to save the `sample.xml` file.
5. Select the location where the `sample.xml` file must be saved, and click **Save**.
6. In Microsoft Word, open `UserDefined_ItemStructure.rtf`.
7. On the BI Publisher tab, click **Sample XML**.
   A dialog box opens.
8. Go to the `sample.xml` file, select it, and click **Open**.

9. In the confirmation dialog box that appears, click **OK**.
10. Insert the header and data fields, and change the default/displayed text for the fields as required.
11. In the fields, insert the values displayed in this table:

Header Field	Data Field
`@effLabel`	`ITEM_EFF`
`@label`	`AML_DFF`
`@label`	`MPN_DFF`
`@label`	`COMPONENT_DFF`

12. Set the properties for the header and data fields for each attribute type on the Advanced tab in the BI Publisher Properties dialog box.

Attribute Type	BI Publisher Property for Header Field	BI Publisher Property for Data Field
AML Descriptive Flexfield	`<?split-column-header:AML_DFF_ATTR?> <?split-column-width-unit:5?> <?split-column-width:10?> <?@Label?>`	`<?split-column-data:AML_DFF_ATTR?> <?AML_DFF?> <?end?>`
Component Descriptive Flexfield	`<?split-column-header:COMPONENT_DFF_ATTR?> <?split-column-width-unit:5?> <?split-column-width:10?> <?@Label?>`	`<?split-column-data:COMPONENT_DFF_ATTR?> <?COMPONENT_DFF?> <?end?>`
Item Extensible Flexfield	`<?split-column-header:ITEM_EFF_ATTR?> <?split-column-width-unit:5?> <?split-column-width:10?> <?@effLabel?>`	`<?split-column-data:ITEM_EFF_ATTR?> <?ITEM_EFF?> <?end?>`
MPN Descriptive Flexfield	`<?split-column-header:MPN_DFF_ATTR?> <?split-column-width-unit:5?> <?split-column-width:10?> <?@Label?>`	`<?split-column-data:MPN_DFF_ATTR?> <?MPN_DFF?> <?end?>`

13. Save the `UserDefined_ItemStructure.rtf` file.

> **Note:** Ensure that the `UserDefined_ItemStructure.rtf` file is backed up to the Custom folder because modified templates are deleted after upgrades and must be manually copied from the Custom folder after upgrades.

Related Topics

- Overview of Configuring the Template for the Item Structure Report with Attributes
- Download the Template for the Item Structure Report
- Configure the Template for the Item Structure Report with the Main and AML Attribute
- Upload the Configured Template for the Item Structure Report
- Verify the Configured Template for the Item Structure Report

Configure the Template for the Item Structure Report with the Main and AML Attribute

You can configure the template for the item structure report with the Main and AML attribute by following the procedure in this topic.

If your template for the item structure report must have the Main and AML attribute, you must configure the template with the approved manufacturer list (AML) and manufacturer part number (MPN) descriptive flexfield attributes.

Before you start

Ensure that the BI Publisher plug-in is enabled in Microsoft Word.

Here's what to do

1. In the Oracle Transactional Business Intelligence Catalog, expand **Shared Folders** > **Supply Chain Management** > **Product Management** > **Items** > **Structures** > **Data Models**.
2. Click **Edit** for the Item Structure Report Data Model.
   The Item Structure Report Data Model page appears.
3. In the Data Model pane, click **Properties**.
   The properties for the data model are displayed.
4. In the Attachment section, in the **Sample Data** field, click **sample.xml.**
   A dialog box appears with options to save the `sample.xml` file.
5. Select the location where the `sample.xml` file must be saved, and click **Save**.
6. Update the `sample.xml` file with attribute data under the `<PublisherAMLVORow>` tag.
   For example, if you're adding an MPN descriptive flexfield attribute called MPN Condition, here's how it should display:

   ```
   <PublisherAMLVORow>

   <MPN Condition>Value of MPN Condition</MPN Condition>
   ```

7. In Microsoft Word, open `UserDefined_ItemStructure.rtf`.
8. On the BI Publisher tab, click **Sample XML**.
   A dialog box opens.
9. Go to the `sample.xml` file, select it, and click **Open**.
10. In the confirmation dialog box that appears, click **OK**.

11. Set the properties for the header and data fields for each attribute type on the Advanced tab in the BI Publisher Properties dialog box.

Attribute Type	BI Publisher Property for Header Field	BI Publisher Property for Data Field
AML Descriptive Flexfield or MPN Descriptive Flexfield	<user-defined display value of descriptive flexfield attribute>	<user-defined code of descriptive flexfield attribute>

12. Save the `UserDefined_ItemStructure.rtf` file.

> **Note:** Ensure that the `UserDefined_ItemStructure.rtf` file is backed up to the Custom folder because modified templates are deleted after upgrades and must be manually copied from the Custom folder after upgrades.

Related Topics

- Overview of Configuring the Template for the Item Structure Report with Attributes
- Download the Template for the Item Structure Report
- Configure the Template for the Item Structure Report with Additional Attributes
- Upload the Configured Template for the Item Structure Report
- Verify the Configured Template for the Item Structure Report

Upload the Configured Template for the Item Structure Report

After you configure the template for the item structure report with additional attributes or the Main and AML attribute, you must upload the template.

Before you start

For detailed information about uploading templates, refer to the documentation for the Oracle Analytics Publisher.

Here's what to do

1. In the Oracle Transactional Business Intelligence Catalog, expand **Shared Folders** > **Supply Chain Management** > **Product Management** > **Items** > **Structures**.
2. In the drop-down list for the Item Structure Report, click **Customize**.

   A copy of the Item Structure Report is created in Shared Folders > Custom > Supply Chain Management > Product Management > Items > Structures.
3. Click **Add New Layout**.

   The options for creating a layout and uploading or generating a layout appear.
4. In the Upload or Generate Layout section, click the **Upload** icon.

   The Upload Template File dialog box opens.
5. In **Layout Name**, enter a name of your choice.
6. Click **Browse** to open the File Upload dialog box, go to the `UserDefined_ItemStructure.rtf` file, select it, and click **Open**.
7. In **Type**, select **RTF Template**.
8. In **Locale**, select **English**.

9. Click **Upload**.
   Your changes are reflected in the Item Structure Report that's saved in Shared Folders > Custom > Supply Chain Management > Product Management > Items > Structures.

Related Topics

- Overview of Configuring the Template for the Item Structure Report with Attributes
- Download the Template for the Item Structure Report
- 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
- Verify the Configured Template for the Item Structure Report

Verify the Configured Template for the Item Structure Report

After you upload the configured template for the item structure report with additional attributes or the Main and AML attribute, you can verify your changes.

Before you start

Ensure that you have the privileges for generating the item structure report.

Here's what to do

1. In the Product Development or Product Information Management work area, on the Tasks panel tab, in Items, select **Manage Items**.
   The Manage Items page appears.
2. Search for an item that preferably has data for the `UserDefined_ItemStructure.rtf` file, and open the item.
3. Click **Actions** > **Generate Report** > **Item Structure Report**.
   The Item Structure Report dialog box opens.
4. In **Levels**, select **Single** to generate the report for a single level or **All** to generate the report for all levels.
5. In **Columns**, do one of the following:
   - If you configured the template with additional attributes, select **All**.
   - If you configured the template with the Main and AML attribute, select **Main and AML**.
6. In **Templates**, select the layout name that you provided while uploading the `UserDefined_ItemStructure.rtf` file.
7. In **Format**, select **Microsoft Excel Workbook File**.
8. Click **Submit**.
   A process ID is generated and displayed in a confirmation message.
9. Copy the process ID.
10. Click **OK**.

11. If you're in the Product Development work area, perform these steps:
    a. On the Tasks panel tab, in Scheduled Processes, select **View Scheduled Processes**.

       The View Scheduled Processes tab opens.
    b. When the value in the **Status** column for the submitted process is Succeeded, in the **View Output** column, click the **Output** icon.

       The Generate Structure Report dialog box opens.
    c. Click the link to display more files.

       The Attachments dialog box opens.
    d. In the **File Name or URL** column, click the structure report.

       A dialog box opens for saving the file.
    e. Specify the location and name for the saved file, and click **Save**.
12. If you're in the Product Information Management work area, perform these steps:
    a. Go to the Scheduled Processes work area.
    b. In the Search section, search for the copied process ID.
    c. When the value in the **Status** column for the submitted process is Succeeded, click the process.
    d. On the Process Details tab, click the link to display more files.

       The Attachments dialog box opens.
    e. In the **File Name or URL** column, click the structure report.

       A dialog box opens for saving the file.
    f. Specify the location and name for the saved file, and click **Save**.
13. Verify that the file reflects your changes to the configured template for the item structure report with additional attributes or the Main and AML attribute.

Related Topics

- Overview of Configuring the Template for the Item Structure Report with Attributes
- Download the Template for the Item Structure Report
- 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
- Upload the Configured Template for the Item Structure Report

Set Default Tab and Subtab for an Item

You can set the default tab and subtab in the View Item, Create Item, and Edit Item pages using the Page Composer extensibility functionality. This allows your users to land in a more commonly used tab instead of navigating to the required tab after selecting a task. For example, you can set the **Specifications** tab as the default tab on the page. This tab will always display by default on the item page instead of the **Overview** tab. Similarly, you can also set the **Supplier Associations** subtab as the default on the **Associations** tab. This subtab will always display by default on the **Associations** tab instead of the **Organizations** subtab.

Here's an example that shows how to set the **Supplier Associations** as the default subtab when the **Associations** tab is clicked.

1. Inside the Sandbox, go to **Tools** and click **Page Composer**.
2. Click the **Structure** tab. A panel displays at the bottom of the page.

3. Click on the tab that you want to edit.
4. Expand **<>panelTabbed:above** and double-click **switcher**. A message is displayed asking whether you want to edit.
5. Click **Edit**. The Component Properties dialog box is displayed.
6. Modify the **Default Facet** name to the facet name of the tab that you want to set as the new default.
7. Click **Apply** and then click **OK** to save the changes.
8. To modify the default subtab, you must edit the corresponding default subtab component and change the default facet name of the subtab to the required facet name. Repeat steps 4, 5, and 6.

For information about Sandbox and Page Composer tool, see Oracle Fusion Cloud Applications: Configuring and Extending Applications guide, available on the Oracle Help Center.

Facet Names for Main Tabs and Subtabs

Here's the table provides the facet names for the main tabs and subtabs.

Main tab/Subtab	Facet Names
Main tabs in the item page	• OVERVIEW • SPECIFICATIONS • STRUCTURES • ATTACHMENTS • ASSOCIATIONS • RELATIONSHIPS • CATEGORIES • ITEMPEOPLE
Subtabs under the Structure tab	• ITEM_STRUCTURES • WHERE_USED • PACKS
Subtabs under the Associations tab	• ORGANIZATIONS • SUPPLIER
Subtabs under the Relationship tab	• RELATED_ITEMS • TP_ITEM_XREFS • GTIN • ITEM_XREFS • SYS_ITEM_XREFS

Setup Task to Manage Item Types

Item types are managed using the Manage Item Types task from the Product Management offering in the Setup and Maintenance work area.

There are 32 predefined item types and you can edit them or create additional item types.

Item types are date-enabled and are made active or inactive by adjusting the Start Date and End Date.

To benefit from the use of item types, you must enable them by selecting the check box.

FAQs for Item Classes and Attribute Groups

Why do I need to modify the Database View Name Prefix field?

Database View Name Prefix is a mandatory attribute of attribute groups whose value must be unique, but which might not be unique by default.

The database view name prefix is a mandatory attribute of attribute groups that's currently reserved for future use. However, the value must be unique. When you create or edit an attribute group, the value of the **Database View Name Prefix** field is generated automatically from the first 10 characters of the **API name** field's automatically generated value. The Database View Name Prefix needs to be unique, but the automatically generated name might not be unique. Consequently, you need to modify the default prefix enough to make it unique, using up to 15 characters.

Related Topics

- Create an Attribute for an Item Class
- Create Item Attribute Groups and Attributes

Cross-Reference Types

Cross-references provide the functionality to map additional information about an item in the form of a value and cross-reference type.

For example, the cross-reference can map between an item and an old part number, where the value is the value for the old part number and the type is Old Part Number. Cross-reference types are part of item relationships where the item relationship type is cross-reference. There are no values seeded for cross-reference types. You define the values using the **Manage Cross Reference Types** task. Cross-reference types are date-enabled and can be made active or inactive by adjusting the values of the start date and end date. To use the item relationship for cross-reference, you must enable cross-reference types by checking the **Enable** check box.

Item Descriptive Flexfields

You can use descriptive flexfields to capture additional information about items beyond what is provided by the predefined set of operational attributes in Oracle Product Hub.

Item Descriptive Flexfields

If you are not using Product Hub, then you cannot create user-defined attribute groups and attributes. However you can use descriptive flexfields associated at Item level to create fields to capture information about items. Like other descriptive flexfields, item descriptive flexfields have context segments and context-sensitive segments whose values are validated on entry by value sets. You can define the value sets to control what values users can enter in a descriptive flexfield segment. Examples of information that you might capture are size and volumetric weight.

Manage this flexfield type by using the Manage Item Descriptive Flexfields task available in the Setup and Maintenance work area.

Item Revision Descriptive Flexfields

Use descriptive flexfields associated at Item Revision level to capture item revision information whose values may differ between revisions of the same item.

Manage this flexfield type by using the Manage Item Revision Descriptive Flexfields task available in the Setup and Maintenance work area.

Item Relationship Descriptive Flexfields

When defining descriptive flexfields associated with item relationships, you must use certain prefixes when naming the context segments, in order for the segments to be displayed for the respective relationships.

The prefixes required for naming the context segments are listed in the following table, with their corresponding item relationship types. For example, if you define an item relationship descriptive flexfield with a context segment named `RELATED_RELATIONSHIP_ATTRIBUTES`, then the value segments of this context will be displayed for Related Item Relationships when users conduct transactions in that context. For another example, when users navigate to a UI of a particular object, such as a Competitor Item, they see the contexts whose internal name has the prefix `COMP`.

Relationship Type	Prefix for Context Segment
Competitor Item Relationship	COMP
Customer Item Relationship	CUST
Item Cross-reference Relationship	XREF
GTIN Relationship	GTIN
Manufacturer Part Number Relationship	MFG

Relationship Type	Prefix for Context Segment
Related Item Relationship	RELATED
Source System Item Relationship	SYS

Manage this flexfield type by using the Manage Item Relationship Descriptive Flexfields task available in the Setup and Maintenance work area.

Trading Partner Item Descriptive Flexfields

When defining descriptive flexfields associated with trading partner items, you must use certain prefixes when naming the context segments, in order for the segments to be displayed for the respective trading partner type.

The prefixes required for naming the context segments are listed in the following table, with their corresponding trading partner types. For example, if you define a trading partner item descriptive flexfield with a context segment named `COMP_TPI_ATTRIBUTES`, then the value segments of this context will be displayed for Competitor Item when users conduct transactions in that context.

Trading Partner Type	Prefix for Context Segment
Competitor Item	COMP
Customer Item	CUST
Manufacturer Item	MFG

Manage this flexfield type by using the Manage Trading Partner Item Descriptive Flexfields task available in the Setup and Maintenance work area.

Related Topics

- Overview of Descriptive Flexfields
- Considerations for Managing Descriptive Flexfields
- Overview of Flexfields
- Manage Item Relationships

Overview of Import Items

Item Management provides the ability to create and management item data through two methods: the Product Information Management work area and a process to import items from files located in a specific folder in Oracle WebCenter Content.

The objects listed below are supported through both methods:

- Items
- Item revisions
- Item category assignments
- Item associations
- Item relationships
- Item flexfields
- Item translatable flexfields
- Item revision flexfields
- Item revision translatable flexfields
- Item supplier flexfields
- Item translatable supplier flexfields
- Item style variant attribute value Sets
- Trading partner items

Note: You must license Oracle Product Hub to use certain flexfields.

The following is an overview of the item import process:

1. Download the item import template file from the Oracle Fusion Cloud SCM File-Based Data Import (FBDI) for SCM.
2. Enter data in tabs within the item import template file.
3. Generate CSV (ZIP file).
4. Upload to Oracle WebCenter Content.
5. Move the data into Item Management interface tables.
6. Import data to Item Management product tables.

Related Topics

- Organize Your Data in the FBDI Spreadsheet Import Template
- Generate the CSV File
- Upload the CSV File to Oracle WebCenter Content
- Load Data from Oracle WebCenter Content to Interface Tables
- Import Data from Item Management Interface Tables to Item Management Production Tables
- Oracle Fusion Cloud SCM File-Based Data Import (FBDI) for SCM

Related Item Subtypes

A related item is an item relationship between two existing items. How the two items are related is defined by a subtype.

Multiple subtypes for related items are predefined, and you can define additional subtypes using the **Manage Related Item Subtypes** task.

Predefined values are:

- Accessories
- Collateral
- Complimentary
- Conflict
- Cross-Sell
- Fulfillment
- Impact
- Mandatory Change
- Merge
- Migration
- Optional Change
- Option charge
- Prerequisite
- Promotional upgrade
- Repair to
- Service
- Split
- Substitute Supersede
- Upsell
- Warranty

Item Revision Descriptive Flexfields

Use item revision descriptive flexfields to capture item revision information whose values may differ between revisions of the same item.

Manage this flexfield type by using the Manage Item Revision Descriptive Flexfields task in the Setup and Maintenance work area.

Trading Partner Item Descriptive Flexfields

When defining descriptive flexfields associated with trading partner items, you must use certain prefixes when naming the context segments, in order for the segments to be displayed for the respective trading partner type.

The prefixes required for naming the context segments are listed in the following table, with their corresponding trading partner types. For example, if you define a trading partner item descriptive flexfield with a context segment named

COMP_TPI_ATTRIBUTES, then the value segments of this context will be displayed for Competitor Item when users conduct transactions in that context.

Trading Partner Type	Prefix for Context Segment
Competitor Item	COMP
Customer Item	CUST
Manufacturer Item	MFG
Supplier Item	SUPP

Manage this flexfield type by using the Manage Trading Partner Item Descriptive Flexfields task in the Setup and Maintenance work area.

Build Item Keyword Index

Keyword search lets you find items quickly that you're looking for. Before you can use the keyword search in the Product Information Management work area, you must build the index.

1. In the Setup and Maintenance work area, select the **Manage Item Keyword Search Attributes** task.
    - Offering: Product Management
    - Functional Area: Items
    - Task: Manage Item Keyword Search Attributes
2. Select the attributes that you want to use in the indexing process.
3. Click **Index** from the global header region and choose from these indexing options:
    - **Create Index**: Lets you start the indexing process using the current configuration of attributes, organizations, and languages.
    - **Schedule Indexing**: Lets you schedule the indexing process. The indexing is run based on your selections on this page.

      This initiates the indexing process.

Note: To see and edit data in the Indexed Organizations and Languages section, you must have the Manage Item Keyword Search Organizations and Languages (EGP_MANAGE_ITEM_KEYWORD_ORG_LANGU) privilege.

Understand Indexing Statuses

When you initiate the indexing process, you get these statuses in the Indexing Status column:

- Completed: The index has run and completed successfully. The Last Indexed value indicates the date and time the index completed.

- Pending: Changes have been made to the index configurations and index needs to be rerun.
- Running: The indexing process is currently running.
- Scheduled: The indexing process is scheduled to run.

The status is displayed for each attribute on the Manage Item Keyword Search Attributes page. One or more attributes can be a part of a scheduled process. If you cancel a scheduled process, then some of the attributes may still show the status as **Addition in Progress**. By the time you cancel the scheduled process, some of the attributes may already be included in the index.

How You Migrate Item Keyword Index Values to Another Server

You can migrate item-keyword-index setup values to another server using the Manage Item Keyword Search Attribute setup task. Before you migrate the index values, you must migrate the organization and languages to the target server.

You can access the setup tasks here:

- Offering: Product Management
- Functional Area: Items
- Task: Manage Item Keyword Search Attribute

The setup task migrates the organizations first, but it will not migrate the languages. You must install the languages manually on the target server. You can use either the CSV or the XML format to migrate your organizations and languages. After the organization and languages are migrated to the target server, then you can use the Manage Item Keyword Search Attributes task to build your index on the target server.

Item Keyword Search Scheduled Process Actions

The Item Keyword Search scheduled process is used to create and maintain the Item Keyword Search index.

You can use the following actions for the scheduled process:

Note: Before you use CREATE, DROP, and REBUILD actions, consult with Oracle Support.

- CREATE: Creates the index, if not present. This action indexes all items in the instance.
- DROP: Drops the index. Use this action only when the index is damaged and it needs to be indexed from the beginning.
- UPDATE: This action checks if any additions or deletions have been made to the list of keyword attributes using the Manage Keyword Attributes task. This action will reindex either all rows or the affected rows, depending on whether predefined attributes have been added or deleted.
- REBUILD: This action will reindex all rows. Use this action only when the index is damaged and it needs to be rebuilt. The process of rebuilding the index takes a longer time to complete.
- SYNC: This action processes the index changes in the queue.

After adding a new language to the Keyword Search Index, you must run the Item Keyword Search scheduled process with the SYNC action. If you don't run the schedule process with the SYNC option, you don't get an index search result. The scheduled process can't find the items because they are not yet indexed.

You don't have to enter values for any of the remaining fields on the page.

During an upgrade, if you have scheduled this scheduled process before the upgrade, you must cancel the scheduled process and resubmit it after the upgrade.

Item Publication

Publish Item Objects

Publication enables you to schedule and publish item objects automatically to each spoke system.

Here are the high-level steps to publish item objects from Oracle Product Hub to a spoke system:

1. Define publication options for a spoke system.
2. Define the schedule and parameters for the scheduled process.
3. Access the payload generated by the publication scheduled process.

Now, let's discuss these steps in detail.

Define Publication Options for a Spoke System

You can set the options that govern the publication of item objects using the Manage Spoke Systems task.

1. From the Setup and Maintenance work area, use this navigation to open the **Manage Spoke Systems** task:
    - Offering: Product Management
    - Functional Area: Product Spoke Systems or Item Batches
    - Task: Manage Spoke Systems

    You can also select the Manage Spoke Systems task in the Product Information Management work area.
2. Search for and select a spoke system, then select **Edit** from the Actions menu to open the **Edit Spoke Systems** page.
3. Click the Publication Options tab.
4. Select the Publication Criteria region for the object that you want to publish, one of:
    - Item
    - Item class
    - Catalog
    - Trading partner item
5. Within the publication criteria for the Item object, you can select which child entities of the item you want to publish, such as attachments, trading partner items, structures, and so on.

6. Save the page for the spoke system to save the publication options that you set.

When you publish the spoke system:

- One or more XML files are created, for the objects that you selected for publication.
- The publication content includes the complete category-classification path for an item-category assignment. The category-classification path is also published in the publication payload as a part of the item-category assignment.

Publish Deleted Item Data

You can publish deleted content for items, item category assignments, and item suppliers to support integration with external systems. You can use the publication functionality to publish either updated or deleted item data.

To configure the publication system to publish the deleted item data, select the **Include deleted items** option on the **Publication Options** tab for the spoke system. The Publication Transaction Type attribute in the publication payload will indicate if the item data is updated or deleted. Integration logic can use this attribute to support deleting the item content in external systems.

Deleted data that is published involves the following:

- Parent item record including all child objects associations to the item record are deleted. For example, if the item has an item category assignment to Catalog=Purchasing and to Category=Misc. and if the item is deleted, the item category assignment will be deleted, but the catalog and category won't be deleted. In this case, the transaction type displays Deleted and the child objects that are in scope (extensible flexfields, item category assignments, and item supplier associations).
- Child object or association is deleted, the parent object isn't deleted. For example, the item category assignment for Catalog=Electronics, to Category=Computer is deleted from the item, then this assignment content is deleted but the item isn't deleted. In this case, the item record will have transaction type as Updated and the child object will have transaction type as Deleted.

The content supported for the deleted data is:

- Items
- Item extensible flexfields: Extensible flexfields that are used to extend an item object and the translated extensible flexfields data.
- Item category assignments: Child object of the item which contains the catalog and categories assigned to the item.
- Associations: Supplier Organizations, the supplier associated with the item.

Define the Schedule and Parameters for the Scheduled Process

Publish the item objects using the Product Hub Publication Job scheduled process.

1. From the Scheduled Processes work area, click **Schedule New Process**.
2. Open the **Product Hub Publication Job** schedule process.

3. Define the **Publish Items** parameter as **Yes** to publish your items. You need to configure all the parameters in the Process Details dialog box. Here are the most relevant parameters:

Schedule Process Parameters	Description
Spoke System	Name of the external spoke system where you want to publish items, item classes, or catalog information.
Publish from Date	Publishes records of objects from a start date. Specify the start date.
Publish to Date	Publishes records of objects to an end date. Specify an end date. Use this parameter with the Publish from Date parameter.
Process Sequentially	Specifies the publication jobs to run sequentially when there is more than one job. Otherwise, the jobs run in parallel with each other.

4. (Optional) Click the **Advanced** button and schedule the process to run at a later date and time.
5. Submit the scheduled process.

The scheduled process publishes the objects of each spoke system.

Publication processes can be a recurring or a one-time event. Let's say you're setting up an integration to a legacy application, where you're publishing new items that are created in Oracle Product Hub. You would want to set up the scheduled publication job to run each night.

The scheduling frequency is based on the integration requirements and the availability of the applications that integrate with Product Hub to receive and process the data. For example, you may have a situation where Oracle Product Hub is feeding new item information to an ERP application. The application is available only for a brief period to accept the feed. So, you must plan the schedule process accordingly.

You should review the log files for additional details:

- The log file for the **Product Hub Preprocessing Publication Job** scheduled process contains the parameters that were used to run the job, plus record counts of what's published.
- The log file for the **Product Hub Publication Job** scheduled process contains the identifier dDocName (which corresponds to the **Content ID** in Oracle WebCenter Content) and the name of the compressed file containing the publication files.

You can view the errors identified during publication from the log files of the scheduled process.

- If an item record in the publication fails, the publication process doesn't publish the failed record but it does publish the remaining item records.
- The publication process updates the log file with additional information about the publication failure including the item number, rule name, and any error message that you have configured for the rule definition. Using this information, you can trace any publication errors and fix them.

- The publication log file also:
  - Contains additional information to clarify publication exceptions.
  - Displays rule exception messages that you have created during the rule definition.
  - Displays exception messages based on the exception type during publications.
  - Includes publication subjob exceptions.

Define Profile Options to Publish Items

If you're publishing over 1000 items or records, you can consider changing the values of the publication profile options to optimize the publication process.

CAUTION: These profile options control all publication processes. Use care when and if you modify these settings.

You can control of the size of the publication payload to match the requirements of applications and processes. To control the payload size, use the **Manage Advanced Item Profile Options** task in the Setup and Maintenance work area to modify the values of one or more of these profile options:

1. In the Setup and Maintenance work area, use the **Manage Advanced Item Profile Options** task:
   - Offering: Product Management
   - Functional Area: Items
   - Task: Manage Advanced Item Profile Options
2. Update one or more of the profile options in this table:

Profile Option Code	Profile Option Name	Purpose
EGI_PUBLICATION_ITEMS_PER_PAYLOAD	Number of Items per Payload for Publication	Number of items in each XML file. This profile option determines the number of items to be used per payload in the publication process. The predefined value is 500. If a value more than 500 is specified, then 500 is used.
EGI_PUBLICATION_NUMBER_OF_PAYLOADS	Number of Parallel Payloads for Publication	Number of publication subprocesses that are launched in the extraction process. This profile option determines the number of parallel payloads to be used in the publication process. The predefined value is 10.

Profile Option Code	Profile Option Name	Purpose
EGI_PUBLICATION_SIZE_OF_ZIP_FILE	Size of the Publication Payload File in Megabytes	This profile option controls the overall size of the publication .zip file, in megabytes. The recommended value is 500 MB or lower. The .zip file can contain more than one XML file for an item object. This profile option lets you chunk large publication jobs into multiple XML files.

Related Topics

- How can I chunk the data of the publication process?
- How can I modify the values of the item publication profile options?

Access Payload Generated by the Publication Scheduled Process

You can access the XML payload of the publication scheduled process from Oracle WebCenter Content.

The log file for the **Product Hub Publication Job** scheduled process contains an entry that identifies the output file for the publication. The identifier dDocName in the log file corresponds to the **Content ID** field of the user interface of Oracle WebCenter Content.

You can use File Import and Export tool to retrieve the published file. You can also locate your publication file using the GET_SEARCH_RESULTS search service of the Core Content Server for Oracle WebCenter Content, using these criteria:

- The value of dDocName from the log file
- The FAFusionImportExport Security Group

Here's an example of a search criteria expression for GET_SEARCH_RESULTS that uses information from the scheduled process log file:

```
IdcService=GET_SEARCH_RESULTS
dDocName = UCMFA00019982
```

Related Topics

- GET_SEARCH_RESULTS search service of the Core Content Server, in the Oracle Fusion Middleware Services Reference for Oracle WebCenter Content guide
- Overview of Files for Import and Export

What's Published in the Publication Payload

This table lists the payload that's published for a spoke system. The Publication Criteria column specifies what you define in the spoke system and the Options column specifies the published content.

Publication Criteria	Options
Objects	• Items • Item classes • Item catalogs • Trading partner items
Item entities	• Attributes The attributes are selected by default, and they include: o Item main attributes o Operational attributes • Attachments of type URL • Supplier site organizations association • Item category assignments • Pack hierarchies • Item relationships: o Global trade item number (GTIN) o Related items o Cross-references • Structures: o All o Primary • All pack items All items with a pack type, regardless of membership in a hierarchy, are published whenever a change to the pack occurs. • Item selection rules Add rules that select certain items. • Item validation rules Select an existing validation rule set.
Item class entities	• Item class attachment categories • Item class attribute groups • Item class descriptive flexfields • Data quality attributes • Product hub portal attributes groups • Item class pages • Item class lifecycle phases • Item class page attribute group • Item class translation content

Publication Criteria	Options
	• Item overview attribute groups • Supplier attribute groups • Transactional attributes • Transactional attributes translation content
Item catalog entities	• Catalog translation content • Catalog attachments • Catalog descriptive flexfields • Categories • Category translation content • Category attachments • Category descriptive flexfields • Category item assignments
Trading partner item entities	• Trading partner items for customers • Trading partner items for suppliers • Trading partner items for manufacturers • Trading partner items for competitors • Item relationships for related items • Trading partner item attachment • Trading partner items descriptive flexfields • Linked trading partner item relationship for Manufacturer Part Number and Supplier Part Number relationship

Extended Item Data

You can use the Request ID and Object Version Number attributes to improve integration capabilities. The values are provided in the object headers of the published XML.

- The value of **Object Version Number** is used by integrated solutions to indicate whether the object is newly created or is updated. A value of `1` indicates that the object was newly created. Each time the object is updated, the value is incremented by 1.

  The XML attribute name is: `ObjectVersionNumber`
- The value of **Request ID** is generated when content is imported through the item batch infrastructure, and is published as part of the publication payload. You can use the ID to filter the published items.

  The XML attribute name is: `RequestId`
- Here's an example of a payload, edited to focus on `ObjectVersionNumber` and `RequestId`:

```
<:ns1:Item ...>
 <:ns1:ItemNumber>TJG_Pack1_020<:/ns1:ItemNumber>
...
 <:ns1:Pack>
 <:ns14:ItemNumber>TJG_Pack1_020<:/ns14:ItemNumber>
...
```

```
 <:ns14:ObjectVersionNumber>2<:/ns14:ObjectVersionNumber>
 <:ns14:RequestId>51412<:/ns14:RequestId>
...
 <:ns14:PackComponent>
 <:ns14:ComponentItemNumber>TJG_Base1_020<:/ns14:ComponentItemNumber>
...
 <:/ns14:PackComponent>
 <:/ns1:Pack>
<:/ns1:Item>
```

Here are the entities on which RequestId and ObjectVersionNumber are added in the publication payload:

- Catalog
- Category
- Item
- ItemCategory
- ItemCrossReference
- ItemRevision
- ItemSupplierAssociation
- ItemSupplierEffCategory
- Pack
- RelatedItem
- Structure
- SupplierItemXref
- SysItemXref
- TradingPartnerItem

Common Structure

The `CommonStructure` record represents common structure among items.

The publication structure record contains a record named `CommonStructure`. This record shows details of each item that the master structure was copied from or created from, enabling integration logic to add a copy of the master structure to each item.

The `CommonStructure` record enables integration to update the referencing common items from the changes in the referenced master common item, for scenarios where the target system for the integration requires a copy of the master item structure at each of the items that reference the master item structure.

Here's an example of a publication payload, edited to focus on `CommonStructure` records, which are highlighted here by doubled asterisks (`**`):

```
 <Items ... >
<ns1:Item ... >
 <ns1:OrganizationCode>V1</ns1:OrganizationCode>
 <ns1:ItemNumber>STR_Header_Primary</ns1:ItemNumber>
 <ns1:ItemDescription>STR_Header_Primary-Desc</ns1:ItemDescription>
 ...
 <ns1:Structure ... >
 <ns14:BillSequenceId>300100544404018</ns14:BillSequenceId>
 <ns14:OrganizationCode>V1</ns14:OrganizationCode>
 <ns14:ItemNumber>STR_Header_Primary</ns14:ItemNumber>
 <ns14:StructureName>Primary</ns14:StructureName>
```

```
 <ns14:Description>Primary Structure for Common Publication</ns14:Description>
 <ns14:CommonItemNumber>STR_Header_Primary</ns14:CommonItemNumber>
 <ns14:CommonOrganizationCode>V1</ns14:CommonOrganizationCode>
 <ns14:SourceItemNumber>STR_Header_Primary</ns14:SourceItemNumber>
 <ns14:SourceOrganizationCode>V1</ns14:SourceOrganizationCode>
 ...
 <ns14:Component ... >
 ...
 <ns14:ComponentDFF>
 ...
 </ns14:ComponentDFF>
 </ns14:Component>
 <ns14:StructureDFF>
 ...
 </ns14:StructureDFF>
** <ns14:CommonStructure>
 <ns14:BillSequenceId>300100544406846</ns14:BillSequenceId>
 <ns14:Description>Primary Structure for Common Publication</ns14:Description>
 <ns14:ItemId>300100544403990</ns14:ItemId>
 <ns14:OrganizationId>204</ns14:OrganizationId>
 <ns14:ItemNumber>STR_Header_Common_1</ns14:ItemNumber>
 <ns14:OrganizationCode>V1</ns14:OrganizationCode>
 <ns14:ItemDescription>STR_Header_Common_1_Desc</ns14:ItemDescription>
 ...
 </ns14:CommonStructure>
** <ns14:CommonStructure>
 <ns14:BillSequenceId>300100544406933</ns14:BillSequenceId>
 <ns14:Description>Primary Structure for Common Publication</ns14:Description>
 <ns14:ItemId>300100544403992</ns14:ItemId>
 <ns14:OrganizationId>204</ns14:OrganizationId>
 <ns14:ItemNumber>STR_Header_Common_2</ns14:ItemNumber>
 <ns14:OrganizationCode>V1</ns14:OrganizationCode>
 <ns14:ItemDescription>STR_Header_Common_2-Desc</ns14:ItemDescription>
 ...
 </ns14:CommonStructure>
 </ns1:Structure>
</ns1:Item>
</Items>
```

Related Topics

- Define Publication Options for a Spoke System
- Common Structures

Set Up Document Classes

Here's how you create a document class.

1. In the Setup and Maintenance work area, select the following:
    - Offering: Product Management
    - Functional Area: Items
    - Task: Manage Item Classes
2. Select an item class in which you want to create the document class.
3. Click **Actions** > **Create**.
4. In the Create Item class dialog box, enter the details of the document class. Click **Save and Close**.

Here's how you enable the document class.

1. Navigate to the Product Development work area.
2. From the **Tasks** panel tab, click **Manage Configurations**.
3. On the Settings tab, you can enable document management and select the root document class.

Related Topics

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

Configure Reference Designator Options

Instead of editing reference designators in the side panel, you can configure reference designators so that users can edit reference designators directly in the structure table. This is available on:

- The item structure tab in Product Development.
- The structure tab of the affected object on a change order.

The Structure tab allows users to enter reference designators for each structure component. Reference designators are used to specify the location of an assembly or a component.

As an administrator, you can configure the following to standardize reference designator updates for your business.

- Specify a default setting for quantity validation
- Configure a range indicator for reference designators

Configure Default Setting for Quantity Validation

You can configure whether the Quantity Related option for reference designators is enabled or disabled by default across engineering and commercial items. When you create new structures, the quantity related value defaults from this setting.

1. In the Setup and Maintenance work area, go to the following:
    - Offering: Product Management
    - Functional Area: Structures
    - Task: Manage Item Structure Type Details
2. In the Manage Item Structure Type Details page, enable or disable the Quantity Related option. It's enabled by default. Note that users can still enable or disable the Quantity Related option from the structure tab or affected objects table.
3. Click **Save and Close**.

> **Note:**
>
> - To avoid failures in item structure or change order integrations that are based on SOAP or REST API, see support note *2815282.1* on My Oracle Support.

Configure Reference Designator Range Indicator

Specify what range indicator must be used to indicate a range of reference designators. Users can use this indicator to specify a range instead of typing in each value in the range. In the side panel view, the range is automatically expanded

to show all values in the range. For example, a user can type in RX01-RX05 and the values are expanded to RX01, RX01, RX03, RX04, RX05.

In the Manage Item Structure Type Details page, select a value from the list for Reference Designator Range Indicator. The default value is **None**.

Note:

- If the **Reference Designator Range Indicator** is set to **None**, your users can manage reference designators using the side panel on the item structure.
- Ensure that the special character you select for the **Reference Designator Range Indicator** isn't being used as a part of the naming convention in existing reference designators. For example, if you select a hyphen ('-') as the range indicator, and existing reference designators use the naming convention RX-01, RX-02 and so on, this can result in conflicts when users specify a range (RX-01-RX-10.)
- The selected range indicator can’t be used on reference designators entered through clients such as import, REST or SOAP services. These clients don't support the capability of expanding and collapsing reference designators.
- The range indicator is used both on the item structure tab in Product Development and the structure tab of the affected object on a change order. Enabling the range indicator for item structures will also enable it on change orders.

Secure Structures

Use the **View Item Structure** data privilege to control who can view specific subassemblies within your item and document structures or download related attachments.

Use this data privilege to ensure that users can only see and work on the components and subassemblies for which they're assigned access. If you don’t have this data privilege on a structure, you can’t view its structure tab. If you don't have this privilege on one of the subassemblies in the structure, then you can't expand that subassembly or view its components.

Here's an example of how this privilege restricts access to a particular subassembly CPU ZX00 in the structure for Laptop ZX00.

- Laptop ZX00
  - Monitor ZX00 - Access granted, you can expand structure level to view components within it.
    - Circuit Board ZX00
    - Camera AQ
  - CPU ZX00 - Access restricted, you can't expand structure level.

    - Keyboard AQ
        - Keyboard Keys AQ
        - Casing ZQ

This restriction is applied when you do the following:

- View the structure in the item structure tab
- Export the structure to Excel from the Item Structure tab
- View the Structure AML sub-tab on the Item AML of the subassembly in the Product Development work area
- View the structure in the Item Structure Report.

  > **Note:** To view the report, you'll need the privilege Generate Item Change Order Report (EGO_GENERATE_ITEM_CHANGE_ORDER_REPORT_PRIV).

- Download structure attachments.
- View the structure in the summary view in the Product Information Management work area.

Considerations:

- You can inherit the **View Item Structure Data** privilege from an item class or assign it per item using the **Security** tab.
- When rendering structures, subassemblies or components are visible only if you have the **View Item Basic** data privilege.
- The View Item Structure data privilege isn't enforced on the Where Used tab.
- In the Product Information Management work area, the **Component Details** tab in the Summary View of the item structure displays the entire structure and doesn't honor the **View Item Structure** privilege.

Enable Display of Use-Up 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.

To make the relevant use-up dates available for selection on selecting the **Calculate Use-Up Date** action (on the Affected Objects tab of the change in the Product Development work area), you must do the following:

- Ensure that the Supply Chain offering is enabled and in Implemented status.
    a. In the Setup and Maintenance work area, select the Supply Chain Planning offering.
    b. Click **Actions** > **Edit Implementation Status**. Make sure the implementation status is set to **Implemented**.

- Indicate which supply plan is to be referenced.
    a. In Supply Chain Planning, go to the Supply Planning work area.
    b. Use the Manage Plans task to find and open the plan you want to reference.
    c. On the Edit Plan Options page, select the **Use as a reference plan for fulfillment systems** checkbox.

d. Save your changes.

FAQs for Defining Items

What are item classes?

The item class hierarchy provides a logical classification and grouping of similar products, and also acts as a template for product definition by enabling the association and inheritance of data elements and policies that are shared by products.

How can I create an item class?

To create an item class, select a parent item class on the Item Class Search Results page and select Create. Provide the required information, and optionally include additional details, such as attribute groups, pages, templates, and search and display formats.

Are there any restrictions when specifying the item class code?

The item class code is the read-only internal name that's generated after you enter the name of a new item class.

If you plan to define approval rules for new item requests or change orders based on the item class, the item class code should not end with a numeric character. For example, if you use the item class code XYZ1 in the approval rule, it will fail to execute correctly.

Related Topics

- Create an Approval Rule

How can I create item class templates?

Create a template for item class and then define the Overview and Specification tabs of the item class template.

What's lifecycle validation?

Lifecycle validation enforces compatible lifecycle phases between parent and component items in an item structure, at the structure name level.

For example, an item in the Design lifecycle phase can only have component items that are in the same lifecycle phase or the next phase. The only exception is for items in the Obsolete lifecycle phase, because this is considered the end of life for an item. Items in the Obsolete lifecycle phase cannot be added to a new structure.

The lifecycle phases for a computer component lifecycle might be:

- Concept
- Design
- Prototype
- Production
- Retirement (Obsolete)

What number generation methods are available?

The available number generation methods are: Sequence Generated, User-Defined, and Rules.

Related Topics

- Generate Numbers and Descriptions with Rules

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.

What's the difference between lifecycle phase types and lifecycle phases?

Lifecycle phase types are predefined and describe the type of lifecycle phase. The predefined values are Design, Obsolete, Preproduction or Prototype, and Production.

You can create lifecycle phases by selecting one of the predefined lifecycle phase types.

What does the All Values Required field, in the Definition Workflow Details table on the Item Management tab of the Edit Item Class task mean?

When checked, all attributes of the associated entity specified on that row must be populated by the assignee in order to for the workflow to proceed to the next step of the definition workflow.

For example, if the associated entity is Physical Attributes, then all attributes in the attribute group must be populated by the assignee in the New Item Request workflow step.

Can mandatory definitions be inherited?

If the association is inherited and you have not selected the **All Values Required** check box, then inherited-required attributes from parent will be displayed in a read-only format in the selected list and you can move additional required attributes from available list to selected list.

If the association is inherited and you have selected the **All Values Required** check box, then **All Values Required** is read-only and inherited attributes are placed in the selected list, also in a read-only format.

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 can I create a new item structure type?

Use the Manage Item Structure Type Details task to create a new item structure type.

The new structure type appears in the Name drop-down list in the Create New Item Structure dialog box. To access the task, go to the following:

- Offering: Product Management
- Functional Area: Structures
- Task: Manage Item Structure Type Details.

How can I create items in both master and child organizations?

You can create an assignment rule that automatically creates an item in the child organization, after you create the item in the master organization.

Here's how you create the assignment rule and add the rule set.

1. In the Setup and Maintenance work area, select the following:
   Offering: Product Management
   Functional Area: Product Rules
   Task: Manage Item Rule Sets
2. Here's how you create a rule set:
   a. On the Manage Rule Sets page, click **Create**.
   b. In the Create Rule Set dialog box, enter the following:
      Display Name: enter a name for the rule set. For instance, Associate Items.
      Type: Assignments.
      Association Type: Item Class.
      Association Name: Search for and select an item class in which you want to create items. Note that items in child organization will be created in this class.
   c. Click **Save and Continue**.
3. In the Edit Ruleset page, click **Create** to create a rule based on your criteria.
   Name: Ruleset for assignment.
   Return Type: Select Organization.
   Click **OK**.
4. In Ruleset for assignment: Details, enter the following:
   Primary IF Expression: true
   Then Expression: assignedToOrg("enter master organization code")
   Return Value = "enter child organization code"
5. To validate the expression you created, click **Validate**.
   Resolve any validation errors. Click **Save and Close**.
6. To enable the new rule set, you must add it to the master rule set. Here's how:

a. In the Manage Item Rule sets page, search for and open the master rule set.
b. In the Master rule set page, click **Select and Add**.
c. Search for and add the rule set you created.
d. Click **Save and Close**.

7. To check if the item is created in the child organization:

a. Create the item in the master organization.
b. Click the Associations tab on the item.

The item should also appear in the child organization

Can I change the UOM deviation factors after I create an item?

Yes, in some cases the editing of the deviation factors is allowed after the item creation under certain conditions that won't impact downstream applications.

The attributes can be modified only if the new value is more than the value that the attribute is currently set to. For example, if your current positive deviation factor is set to 1.0 you can change it to a value greater than 1.0 such as 1.5, but not to a lower value, such as 0.5. This table demonstrates the changes you can make.

Attribute	Current Value	New Value	Allowable
+ Deviation Factor	1.0	1.5	Yes
+ Deviation Factor	1.0	0.5	No
- Deviation Factor	0.5	1.2	Yes
- Deviation Factor	0.5	.002	No

How can I modify the default value for the User Item Type attribute?

To modify user item type, go to the following:

- Offering: Product Management
- Functional Area: Items
- Task: Manage Item Classes

Open the item class for which you want to modify the user item type, and select the **Templates and Formats** tab. You can modify the User Item Type attribute in the Edit Item Template section.

Note: To create new user item types, you can use the **Manage Item Types** task to add new lookup values to the **EGP_ITEM_TYPE** lookup type.

4 Catalogs

Setup Tasks to Manage Catalogs

Before you create functional area catalogs and associate items with them, you must complete several tasks in the Setup and Maintenance work area> Product Management offering> Catalogs functional area.

Note: Catalogs functional area is shared with other offerings as well. For example, the Manufacturing and Supply Chain Materials Management offering also uses the Catalogs functional area. If you have enabled multiple offerings, then any change in the setup tasks within the Catalogs functional area will reflect across all other offerings that use this task.

Task	Description
Manage Catalog Descriptive Flexfields (optional)	Descriptive flexfields can only have one context available at a single time.
Manage Category Descriptive Flexfields (optional)	Descriptive flexfields can only have one context available at a single time.
Manage Functional Area Catalogs	Each functional area can have a set of rules to define how a catalog should be configured to support the functional area. When a catalog is created and assigned to the functional area, it is validated against the functional area rules. For example, many of the Supply Chain Management applications participate in a process that automatically assigns an item being created to the default category in a functional catalog. Also, if no catalog is assigned to the functional area, the functional area is skipped in the automatic assignment process. This task is only necessary if catalogs are to be used with other SCM products such as procurement or inventory.

Catalog Descriptive Flexfields

Descriptive flexfields are available at the catalog level to allow the user to define attributes for catalogs.

For example, a customer wants to add attributes to the catalog to identify the usage of the catalog in their business process. An attribute called Usage is created as a descriptive flexfield for the catalog. The values are defined indicating what processes the catalog data is used in, such as new product development.

You create descriptive flexfields using the Manage Catalog Descriptive Flexfields task in the Setup and Maintenance work area> Product Management offering> Catalogs functional area.

Note: The Catalogs functional area is shared with other offerings as well. For example, the Manufacturing and Supply Chain Materials Management offering also uses the Catalogs functional area. If you have enabled multiple offerings, then any change in the setup tasks within the Catalogs functional area will reflect across all other offerings that use this task.

Category Descriptive Flexfields

Descriptive flexfields are available at the category level. You can define category attributes in all those catalogs that use attributes.

For example, a customer wants to add attributes to the category to identify the packaging types for the items assigned to the category. An attribute called Packaging Type is created as a descriptive flexfield for the catalog. The values for this flexfield indicate what the packaging type is, such as a box or a case.

You create descriptive flexfields using the **Manage Category Descriptive Flexfields** task in the Setup and Maintenance work area> Product Management offering> Catalogs functional area.

Note: The Catalogs functional area is shared with other offerings as well. For example, the Manufacturing and Supply Chain Materials Management offering also uses the Catalogs functional area. If you have enabled multiple offerings, then any change in the setup tasks within the Catalogs functional area will reflect across all other offerings that use this task.

Create Catalogs

Item catalogs provide a mechanism to classify or group a set of items together based on a common meaning. Catalogs can have a flat or single-level structure of categories or have hierarchical structure categories.

For example, the item catalog Engine describes a group of categories that make up an engine such as engine block, carburetor, or ignition.

The items are assigned to the categories and represent components that make up the part of the engine. For example, spark plugs are a component of the ignition category.

Catalogs can be hierarchical and can contain a hierarchy where parent and child relationships between the category are used for classification. A catalog can also contain only one level without any hierarchy where the catalog is a list of categories.

You can create a browsing category by selecting the **Restrict category to item assignment only** check box. In addition, you can configure the category to allow both categories to be associated to it in a hierarchy and items can be assigned to it.

You can assign any catalog to a functional area. The functional area rules automatically validate the catalog assignment. If the catalog assignment do not conform to the functional area rules, then the assignment fails and you receive an error message.

Functional area catalogs are primarily used to support Oracle Fusion applications, specifically the applications that require integration between the functional area catalog and the process within the application. For example the Purchasing functional area catalog is integrated with the Procurement processes to allow the items assigned to the categories in this catalog to be used to support the purchasing processes.

Product catalogs are used to support additional processes and integration with external applications.

Create functional area catalogs using the **Manage Functional Area Catalogs** task in the Setup and Maintenance work area or the **Manage Catalogs** task in the Product Information Management work area.

1. Open the **Manage Catalogs** or **Manage Functional Area Catalogs** task.
2. Click the **Create** button. The Create Catalog dialog box opens.
3. Select a value for the **Functional Area** field. The Functional Area Parameters and Rules region expands. If the catalog requires a default category, the Default Category region opens as well.
4. Fill in the mandatory fields for the catalog.
5. Click Save and Continue to save your settings. The Edit Catalog page opens.

Create product catalogs using the Manage Functional Area Catalogs task in the Setup and Maintenance work area or the Manage Catalogs task in the Product Information Management work area:

1. Open the **Manage Catalogs** or **Manage Functional Area Catalogs** task.
2. Click the **Create** button. The Create Catalog dialog box opens.
3. Do not select any value for the **Functional Area** field. The Functional Area Parameters and Rules region expands. If the catalog requires a default category, the Default Category region opens as well.
4. Fill in the mandatory fields for the catalog.
5. Click Save and Continue to save your settings. The Edit Catalog page opens.

Manage Catalogs

You can edit a catalog after it has been created, using the Manage Functional Area Catalogs task in the Setup and Maintenance work area or the Manage Catalogs task in the Product Information Management work area.

1. Open the **Manage Catalogs** or **Manage Functional Area Catalogs** task.
2. Search for the catalog that you want to edit.
3. Click the catalog name link that you want to edit. The Edit Catalog page opens.
4. Make your changes to the catalog, and then save and close the page.

Category Hierarchy Tab

In this tab, you can create and maintain the category hierarchy. In addition, you can assign items, view the usage of the category in other catalog, and edit the descriptive flexfield attributes for the category, catalog, or both.

Selecting a category will open the category detail region. This regions contains three additional tabs for the item category assignments, category details, and category attachments.

Catalog Detail Tab

The Detail tab contains the catalog name and description, an image, the selection of the default category, the start and end date for the catalog and the catalog descriptive flexfields. The start and end date controls the catalog life cycle.

The default category selector is available for all catalogs. Some functional areas support automatic assignment of items to a category. Such functional areas require the default category based on the predefined rules. In addition, you can

also add rules to assign the item automatically to a category. In such cases, the functional area may or may not use the default category in the rule.

The Public check box is used to enable data security for catalogs and categories. By default, the Public check box is selected for a new catalog. You can clear the check box to make this catalog private. You can also change a private catalog back to a public catalog by selecting the check box.

Catalog Attachments

The Attachments tab is used to add attachments related to the catalog such as related documents or images.

Functional Area Catalogs

Functional areas represent products or functionality of the product.

Each functional area can have a set of rules to define how a catalog should be configured to support the functional area. When a catalog is created and assigned to the functional area, it's validated against the functional area rules. For example, many of the Supply Chain Management applications participate in a new item process which automatically assigns an item being created to the default category in a functional catalog. Also, if no catalog is assigned to the functional area, the functional area is skipped in the automatic assignment process.

Functional Area Catalog Rules

This reference topic describes how predefined rules are applied to each of the predefined functional areas that can be assigned to catalogs.

A functional area represents one or more application level processes that use catalog data. Each functional area has a set of predefined rules that constrain the form, fit, and function of a catalog assigned to the functional area to meet the integration requirement of the functional area process. Catalogs that aren't assigned to a functional area aren't constrained by any rules and use the parameters in the user interface to control catalog behavior.

One or more functional areas can be assigned to a catalog. When you examine a catalog, you can see which functional areas the catalog might be assigned to.

A catalog can be assigned to one or more functional areas if the catalog being assigned meets the functional area rules. For example, the Inventory functional area and the Purchasing functional area might use the same catalog, and therefore that catalog is assigned to both functional areas.

Each owner of a functional area defines its specific rules and the Product Management application enforces the rules for any catalog that's created in the context of the functional area. In addition, if a catalog is assigned to a functional area, the catalog is validated against the functional area's rules.

A functional area rule can be implemented as a single parameter, or as an expression containing specific logic that's coded in the application. Some parameters are available to you in the user interface, such a choice list or button, so that you can view or change them. Some components in the user interface might be set to a specific value, or be disabled based on the rules.

This topic describes the available functional areas that you can assign to your catalogs, and how their predefined rules determine what effect your catalogs will have.

A functional area can only be assigned to one catalog at a time, though multiple functional areas can be assigned to the same catalog. Reassignment of a functional area to a catalog is allowed for some functional areas based on their rules, and is coded in the application. The reassignment action is available for functional areas that allow reassignment without validation.

Other topics describe how to create catalogs. When assigning a catalog functional area to a catalog, remember that:

- To assign a functional area to a new catalog: In the Create Catalog dialog, select a value from the **Functional Area** list. You can't assign a functional area that's already assigned to an another catalog.
- To assign a functional area to an existing catalog: On the Manage Catalogs page, select the catalog and click **Assign**. In the Assign to Functional Area dialog, select a value from the **Functional Area** list. You can't assign a functional area that's already assigned to an another catalog.
- The functional areas assigned to a catalog are displayed in the **Functional Area** field in the Functional Area Parameters and Rules region of the Edit Functional Area Catalog page.
- To work with catalogs in general, go to the Manage Catalogs page, which you can reach by either of these ways:
    - In the Product Information Management work area, use the **Manage Catalogs** task.
    - In the Setup and Maintenance work area, use the **Manage Functional Area Catalogs** task:
        - Offering: Product Management
        - Functional Area: Catalogs
        - Task: Manage Functional Area Catalogs
- To find the catalog assigned to a functional area, open the Search filters on the Manage Catalogs page and add a search field for Functional Area, then search for that specified functional area. The search results display the catalog assigned to that functional area, if any.

Available Functional Areas

Here are the currently predefined functional areas:

- Inventory
- Purchasing
- Planning
- Service
- Cost
- Order Entry
- Asset Management
- Product Reporting
- GDSN Syndication for UDEX
- GDSN Syndication for GPC
- Distributed Order Orchestration
- Supplier Products and Services
- VAT Invoices for China
- Supply Chain Financial Flow Orchestration

- Supply Chain Orchestration
- Product Development
- Quality Inspection Management

How Rules Are Applied To Functional Area Catalogs

In this section, we'll explain how predefined parameter settings affect functional area catalogs.

Parameters Used For Defining Functional Area Rules

This table describes the parameters that are used to control the behavior of the predefined functional areas, and how each parameter constrains or affects the behavior. Some of the parameters also apply to catalogs that haven't been assigned to a functional area. Some of the parameters can be controlled on the pages for creating and editing catalogs, some are controlled elsewhere.

Functional Area Rule	Definition	Where Presented in User Interface
Assign items to leaf-level categories only	Allows items to be assigned to the lowest (or leaf) level of a category hierarchy. This parameter is ignored when the **Enable hierarchy for catalog** parameter is set to No, meaning that the catalog must be at a single level.	Create Catalog dialog Details tab, and Functional Area Parameters and Rules region, of Edit Functional Area Catalog page Applies to all catalogs, with or without assignment to a functional area.
Enable duplicate category names	Allows duplicate category names across multiple catalogs. However, the category code must be unique for each category. For catalogs with hierarchy, category names can't be duplicated within the same level of the hierarchy.	Predefined per functional area. This is a coded rule that's applied to specific functional area, no user interface control. Displayed read-only in Functional Area Parameters and Rules region of Edit Functional Area Catalog page
Allow multiple item category assignments	Allows items to be assigned to one or more categories in the same catalog.	Create Catalog dialog Details tab, and Functional Area Parameters and Rules region, of Edit Functional Area Catalog page Applies to all catalogs, with or without assignment to a functional area.
Enable deletion of item category assignments	Allows item assignments to be deleted for a category.	Predefined per functional area. This is a coded rule that's applied to specific functional area, no user interface control. Displayed read-only in Functional Area Parameters and Rules region of Edit Functional Area Catalog page
Enable hierarchy for catalog	Allows the catalog to have a hierarchy of categories within its categories. All functional area catalogs have this parameter selected by default when created. If the catalog is created in the context of a functional area, or assigned	Predefined per functional area. This is a coded rule that's applied to specific functional area, no user interface control.

Functional Area Rule	Definition	Where Presented in User Interface
	to a functional area, this rule can be set by the functional area.	Displayed read-only in Functional Area Parameters and Rules region of Edit Functional Area Catalog page
Enable date-level control for item category assignments	Allows the start date and end date of a category of the catalog to be used in processes. Item category assignments are date effective.	Predefined per functional area. This is a coded rule that's applied to specific functional area, no user interface control. Displayed read-only in Functional Area Parameters and Rules region of Edit Functional Area Catalog page
Default category required	Requires that a category must exist for the catalog and be selected as the default category. The default category is used in the automatic assignment process for items.	Predefined per functional area. This is a coded rule that's applied to specific functional area, no user interface control. The **Default Category** is selected in list in the Details tab of the Edit Functional Area Catalog page Applies to all catalogs, with or without assignment to a functional area.
Controlled at (logic driven)	Determines whether the catalog is controlled at the master level or the organization level: • Master Level: All items in all organizations of the master organization are assigned to the item. The items assignment for the child organizations are implied in the user interface and might not be shown. • Organization Level: An item in a single organization is assigned to the category. Once you set the Controlled At attribute to this level, you can't change the Controlled At value back to Master Level. See the separate table of expressions for the Controlled At parameter for each functional area.	The **Controlled At** parameter in: Create Catalog dialog Details tab of the Edit Functional Area Catalog or Edit Catalog pages Applies to all catalogs, with or without assignment to a functional area.
Catalog assignment change (logic driven)	A logic expression associated with a functional area determines whether a catalog assigned to functional area can be removed from the functional area due to functional area processes that use the catalog data. See the separate table of expressions for catalog assignment changes for each functional area.	Predefined per functional area. This is a coded rule that's applied to specific functional area, no user interface control.
Catalog data security enabled	Data security is enabled for the catalog and categories within the catalog. If the catalog is private, a data security grant must be defined for this type of catalog for users to access it.	No user interface control.

Functional Area Rule	Definition	Where Presented in User Interface
Automatic assignment of items	Determines that items being created are automatically assigned to the default category for a catalog. The assignment is based on the value Yes being entered for certain attributes of certain attribute groups that are associated for this purpose with the functional area assigned to the catalog. See the separate table of functional areas that participate in the automatic assignment of items process.	Predefined per functional area. This is a coded rule that's part of a process outside the creation of a catalog or the assignment of a catalog to a functional area. No user interface control.
Restrict category to item assignment only	Restricts the use of the default category in a functional area catalog to being the category to which new items are assigned. If the **Enable hierarchy for catalog** parameter is selected, then this parameter prevents the creation of child categories.	Create Category dialog Category details on Hierarchy tab of Edit Functional Area Catalog page

NOTE: Note: functional rules that are logic driven means that the rule is derived through an expression.

Expressions for the Controlled At Parameter for Each Functional Area

A functional area can have a specific set of logical constraints that are validated or enforced for the catalog when the catalog is assigned. During catalog creation, the value of the **Controlled At** parameter can be set to a value, or disabled based on the functional area rules. The logic for the Controlled At parameter uses the control level that's defined with the Manage Operational Attributes Groups task in the in the Setup and Maintenance work area. In that task, operational attribute groups are set up to be controlled at either the master level or the organization level.

> **Note:** In order for a catalog to be assigned to a functional area, the controlled-at level for a certain attribute of the items to be added to the catalog must agree with the controlled-at level of the catalog itself. The attributes that regulate each predefined functional area are specified in the following table.

Functional Area	Expressions
Inventory	For the Inventory attribute group: Inventory Item attribute, if the operational attribute control value is Master Level then both master and org controlled catalogs can be assigned.
Purchasing	If the Purchasing attribute group, Purchased attribute or Order Management attribute group internal ordered attribute control value is organization level, then organization-controlled catalogs can be assigned.
Quality Inspection Management	Catalog can be master controlled or organization controlled.
Planning	If the MPS and MRP planning attribute group, planning method attribute control value is organization level, then organization level-controlled catalogs can be assigned. If the MPS and MRP planning attribute group, planning method attribute control value is master level, then both master and organization-controlled catalogs can be assigned.

Functional Area	Expressions
Service	Either master or organization controlled.
Cost	If the Costing attribute group, costing enabled attribute control value is master level, then both master level and organization level-controlled catalogs can be assigned. If the Costing attribute group, costing enabled attribute control value is organization level, then and organization level-controlled catalogs can be assigned.
Order Entry	If the order management attribute group, customer ordered attribute control value is master level, then both master level and organization level controlled catalogs can be assigned If the order management attribute group, customer ordered attribute control value is organization level, then and organization level controlled catalogs can be assigned.
Asset Management	Either master or organization controlled.
Product Reporting	Master level only.
GDSN Syndication for UDEX	Master level only.
GDSN Syndication for GPC	Master level only.
Distributed Order Orchestration	Either master or organization controlled.
Supplier Products and Services	Either master or organization controlled.
VAT Invoices for China	Master level only.
Supply Chain Financial Flow Orchestration	Either master or organization controlled.
Supply Chain Orchestration	Either master or organization controlled.
Product Development	Either master or organization controlled.

Expressions for Catalog Assignment Changes for Each Functional Area

A functional area can have an associated logic expression that validates whether a catalog assigned to the functional area can be changed.

Functional Area	Expressions
Inventory	Catalog assignment change isn't allowed if an item assignment exists with INVENTORY_ITEM_FLAG = Y

Functional Area	Expressions
Purchasing	Catalog assignment change isn't allowed if an item assignment exists with PURCHASING_ITEM_FLAG = Y or INTERNAL_ORDER_FLAG = Y
Quality Inspection Management	Catalog can be reassigned if no items are assigned to categories in the catalog.
Planning	CategorySetId change isn't allowed if an item assignment exists with ((MRP_PLANNING_CODE <> 6))
Service	Catalog assignment change isn't allowed if an item assignment exists with INVENTORY_ITEM_FLAG = Y
Cost	Catalog Assignment change isn't allowed if an item assignment exists with COSTING_ENABLED_FLAG = Y
Order Entry	Catalog assignment change isn't allowed if an item assignment exists with INVENTORY_ITEM_FLAG = Y
Asset Management	Change allowed
Product Reporting	Change allowed
GDSN Syndication for UDEX	Catalog assignment change isn't allowed if an item assignment exists with GDSN_OUTBOUND_ENABLED_FLAG = Y
GDSN Syndication for GPC	Catalog assignment change isn't allowed if an item assignment exists with GDSN_OUTBOUND_ENABLED_FLAG = Y
Distributed Order Orchestration	Change allowed
Supplier Products and Services	Change allowed
VAT Invoices for China	Change allowed
Supply Chain Financial Flow Orchestration	Change allowed
Supply Chain Orchestration	Change allowed
Product Development	Change allowed

Functional Areas that Participate in the Automatic Assignment of Items Process

A functional area can be enabled for an automatic process which assigns items to a default category in the catalog assigned to the functional area. This process is triggered when an item is created. Logic seeded as part of the functional area controls whether the item is automatically assigned to the default category for the catalog.

For example: If the **Purchased** attribute in the Purchasing attribute group has a value of Yes and the **Internal Ordered** attribute in the Order Management attribute group has value of Yes, then the new item is assigned to the default category in the functional area catalog for Purchasing.

Functional Area	Attribute Group Name	Attribute Name	Attribute Internal Name	Expression
Inventory	Material Control	Inventory Item	INVENTORY_ITEM_FLAG	Inventory: Material Control attribute group, Inventory Item attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Inventory.
Purchasing	Purchasing	Purchased	PURCHASING_ITEM_FLAG	Purchasing: Purchasing attribute group, Purchased attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Purchasing.
Planning	General Planning	Inventory Planning Method	MRP_PLANNING_CODE	Planning: General Planning attribute group, Inventory Planning Method attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Planning.
Cost	Costing	Costing Enabled	COSTING_ENABLED_FLAG	Manufacturing: Costing attribute group, Costing Enabled attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Cost.
Order Entry	Order Management	Customer Ordered	CUSTOMER_ORDER_FLAG	Sales and Order Management: Order Management attribute group, Customer Ordered attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Order Entry.
Asset Management	Asset Management	Asset Item Type	EAM_ITEM_TYPE	Service: Asset attribute group, Enable Asset Tracking attribute has a value of Yes, then the new item is assigned to the default category in the

Functional Area	Attribute Group Name	Attribute Name	Attribute Internal Name	Expression
				functional area catalog for Asset Management.
Service	Service	Contract Item Type	CONTRACT_ITEM_TYPE_CODE	Service: Service attribute group, Enable Contract Coverage attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Service.

Summary of Functional Area Catalog Parameter Details

Functional Area Parameters Embedded in Catalog Details

The following table lists, for all the available functional areas, the predefined settings for the parameters shown in the Functional Area Parameters and Rules region of the Edit Functional Area Catalog page. These parameters are displayed on that page as check boxes that are selected or deselected, and their values are represented here as **Yes** or **No**, respectively.

> **Note:** Be sure to consult the table provided in the section on functional area parameters outside of catalog details, for the rest of the parameters.

Functional Area	Assign items to leaf level categories only	Allow multiple item category assignments	Default Category Required	Controlled At (logic driven)	Catalog Assignment Change (logic driven) Assign action
Inventory	Unchecked and disabled in UI.	Unchecked and disabled in UI.	Yes	For Inventory attribute group: Inventory Item attribute, if the operational attribute control value is Master Level then both Master and Org controlled catalogs can be assigned.	Catalog assignment change isn't allowed if an item assignment exists with INVENTORY_ITEM_FLAG = Y
Purchasing	Unchecked and disabled in UI.	Unchecked and disabled in UI.	Yes	If the Purchasing attribute group, Purchased attribute or Order Management attribute group internal ordered attribute control value is organization level, then organization-controlled catalogs can be assigned.	Catalog assignment change isn't allowed if an item assignment exists with PURCHASING_ITEM_FLAG = Y or INTERNAL_ORDER_FLAG = Y
Quality Inspection Management	No	No	No	Either master or organization controlled	Yes

Functional Area	Assign items to leaf level categories only	Allow multiple item category assignments	Default Category Required	Controlled At (logic driven)	Catalog Assignment Change (logic driven) Assign action
Planning	Unchecked and disabled in UI.	Unchecked and disabled in UI.	Yes	If MPS and MRP planning attribute group, planning method attribute control value is organization level, then organization level-controlled catalogs can be assigned. If MPS and MRP planning attribute group, planning method attribute control value is master level, then both master and organization-controlled catalogs can be assigned	CategorySetId change isn't allowed if an item assignment exists with ((MRP_PLANNING_CODE <> 6))
Service	Unchecked and disabled in UI.	Unchecked and disabled in UI.	Yes	Either master or organization controlled	Catalog assignment change isn't allowed if an item assignment exists with INVENTORY_ITEM_FLAG = Y
Cost	Unchecked and disabled in UI.	Unchecked and disabled in UI.	Yes	If the costing attribute group, costing enabled attribute control value is master level, then both master level and organization level-controlled catalogs can be assigned. If the costing attribute group, costing enabled attribute control value is organization level, then and organization level-controlled catalogs can be assigned.	Catalog Assignment change isn't allowed if an item assignment exists with COSTING_ENABLED_FLAG = Y
Order Entry	Unchecked and disabled in UI.	Unchecked and disabled in UI.	Yes	If the order management attribute group, customer ordered attribute control value is master level, then both master level and organization level controlled catalogs can be assigned	Catalog assignment change isn't allowed if an item assignment exists with INVENTORY_ITEM_FLAG = Y

Functional Area	Assign items to leaf level categories only	Allow multiple item category assignments	Default Category Required	Controlled At (logic driven)	Catalog Assignment Change (logic driven) Assign action
				If the order management attribute group, customer ordered attribute control value is organization level, then and organization level controlled catalogs can be assigned	
Asset Management	Unchecked and disabled in UI.	Checked and disabled in UI.	Yes	Either master or organization controlled	Change allowed
Product Reporting	Unchecked and disabled in UI.	Checked and disabled in UI.	Yes	Master level only	Change allowed
GDSN Syndication for UDEX	Unchecked and editable in UI.	Checked and disabled in UI.	Yes	Master level only	Catalog assignment change isn't allowed if an item assignment exists with GDSN_ OUTBOUND_ ENABLED_FLAG = Y
GDSN Syndication for GPC	Unchecked and editable in UI.	Checked and disabled in UI.	Yes	Master level only	Catalog assignment change isn't allowed if an item assignment exists with GDSN_ OUTBOUND_ ENABLED_FLAG = Y
Distributed Order Orchestration	Unchecked and disabled in UI.	Unchecked and disabled in UI.	Yes	Either master or organization controlled	Change allowed
Supplier Products and Services	Unchecked and editable in UI.	Checked and disabled in UI.	No	Either master or organization controlled	Change allowed
VAT Invoices for China	Unchecked and editable in UI.	Unchecked and disabled in UI.	No	Master level only	Change allowed
Supply Chain Financial Flow Orchestration	Unchecked and disabled in UI.	Checked and disabled in UI.	Yes	Either master or organization controlled	Change allowed
Supply Chain Orchestration	Unchecked and disabled in UI.	Checked and disabled in UI.	Yes	Either master or organization controlled	Change allowed

Functional Area	Assign items to leaf level categories only	Allow multiple item category assignments	Default Category Required	Controlled At (logic driven)	Catalog Assignment Change (logic driven) Assign action
Product Development	Unchecked and editable in UI.	Checked and disabled in UI.	No	Either master or organization controlled	Change allowed

Predefined Functional Area Parameters

The following table lists, for all of the available functional areas, the predefined settings for the parameters that are set or stored outside of the Edit Functional Area Catalog page.

Note: Be sure to consult the table provided in the section on functional area parameters embedded in catalog details, for the rest of the parameters.

Functional Area	Controlled At (logic driven)	Catalog Assignment Change (logic driven)	Catalog Data Security Enabled	Enable duplicate category names	Enable deletion of item category assignments	Enable hierarchy for catalog	Enable date level control for item category assignments
Inventory	For Inventory attribute group: Inventory Item attribute, if the operational attribute control value is Master Level then both Master and Org controlled catalogs can be assigned.	Catalog assignment change isn't allowed if an item assignment exists with INVENTORY_ITEM_FLAG = Y	No	No	No	No	No
Purchasing	If the Purchasing attribute group, Purchased attribute or Order Management attribute group internal ordered attribute control value is organization level, then organization-controlled catalogs can be assigned.	Catalog assignment change isn't allowed if an item assignment exists with PURCHASING_ITEM_FLAG = Y or INTERNAL_ORDER_FLAG = Y	No	No	No	No	No
Quality Inspection Management	Catalog can be master controlled, or organization controlled	Catalog can be reassigned if no items are assigned to	No	No	Yes	No	No

Functional Area	Controlled At (logic driven)	Catalog Assignment Change (logic driven)	Catalog Data Security Enabled	Enable duplicate category names	Enable deletion of item category assignments	Enable hierarchy for catalog	Enable date level control for item category assignments
		categories in the catalog.					
Planning	If MPS and MRP planning attribute group, planning method attribute control value is organization level, then organization level-controlled catalogs can be assigned. If MPS and MRP planning attribute group, planning method attribute control value is master level, then both master and organization-controlled catalogs can be assigned.	CategorySetId change isn't allowed if an item assignment exists with ((MRP_PLANNING_CODE <> 6))	No	No	No	No	No
Service	Either master or organization controlled	Catalog assignment change isn't allowed if an item assignment exists with INVENTORY_ITEM_FLAG = Y	No	No	No	No	No
Cost	If the costing attribute group, costing enabled attribute control value is master level, then both master level and organization level-controlled catalogs can be assigned. If the costing attribute group, costing enabled attribute control value	Catalog Assignment change isn't allowed if an item assignment exists with COSTING_ENABLED_FLAG = Y	No	No	No	No	No

Functional Area	Controlled At (logic driven)	Catalog Assignment Change (logic driven)	Catalog Data Security Enabled	Enable duplicate category names	Enable deletion of item category assignments	Enable hierarchy for catalog	Enable date level control for item category assignments
	is organization level, then and organization level-controlled catalogs can be assigned.						
Order Entry	If the order management attribute group, customer ordered attribute control value is master level, then both master level and organization level controlled catalogs can be assigned If the order management attribute group, customer ordered attribute control value is organization level, then and organization level controlled catalogs can be assigned.	Catalog assignment change isn't allowed if an item assignment exists with INVENTORY_ ITEM_FLAG = Y	No	No	No	No	No
Asset Management	Either master or organization controlled	Change allowed	No	No	No	No	No
Product Reporting	Master level only	Change allowed	No	No	No	No	No
GDSN Syndication for UDEX	Master level only	Catalog assignment change isn't allowed if an item assignment exists with GDSN_ OUTBOUND_ ENABLED_FLAG = Y	No	Yes	No	Yes	No

Functional Area	Controlled At (logic driven)	Catalog Assignment Change (logic driven)	Catalog Data Security Enabled	Enable duplicate category names	Enable deletion of item category assignments	Enable hierarchy for catalog	Enable date level control for item category assignments
GDSN Syndication for GPC	Master level only	Catalog assignment change isn't allowed if an item assignment exists with GDSN_ OUTBOUND_ ENABLED_FLAG = Y	No	Yes	No	Yes	No
Distributed Order Orchestration	Either master or organization controlled	Change allowed	No	No	No	No	No
Supplier Products and Services	Either master or organization controlled	Change allowed	No	Yes	No	Yes	No
VAT Invoices for China	Master level only	Change allowed	No	Yes	No	Yes	No
Supply Chain Financial Flow Orchestration	Either master or organization controlled	Change allowed	No	No	No	No	No
Supply Chain Orchestration	Either master or organization controlled	Change allowed	No	No	No	No	No
Product Development	Either master or organization controlled	Change allowed	No	Yes	No	Yes	No

Individual Functional Area Catalog Parameter Details

Rule Details for Functional Area: Inventory

The following table describes all the parameters used to define rules for this function area catalog.

Rule	Definition
Assign items to leaf level categories only	Unchecked and disabled in UI.
Allow multiple item category assignments	Unchecked and disabled in UI.
Default Category Required	Yes

Rule	Definition
Restrict category to item assignment only	Unchecked and disabled in UI.
Controlled At (logic driven)	For Inventory attribute group: Inventory Item attribute, if the operational attribute control value is Master Level then both Master and Org controlled catalogs can be assigned.
Catalog Assignment Change (logic driven)	Catalog assignment change isn't allowed if an item assignment exists with INVENTORY_ITEM_FLAG = Y
Catalog Data Security Enabled	No
Automatic Assignment of Items	Inventory: Material Control attribute group, Inventory Item attribute has a value of 'yes', then the new item is assigned to the default category in the functional area catalog for Inventory.
Enable duplicate category names	N/A for single level catalog.
Enable deletion of item category assignments	No
Enable hierarchy for catalog	No
Enable date level control for item category assignments	No

Rule Details for Functional Area: Purchasing

The following table describes all the parameters used to define rules for this function area catalog.

Rule	Definition
Assign items to leaf level categories only	Unchecked and disabled in UI.
Allow multiple item category assignments	Unchecked and disabled in UI.
Default Category Required	Yes
Restrict category to item assignment only	Unchecked and disabled in UI.
Controlled At (logic driven)	If the Purchasing attribute group, Purchased attribute or Order Management attribute group internal ordered attribute control value is organization level, then organization-controlled catalogs can be assigned.
Catalog Assignment Change (logic driven)	Catalog assignment change isn't allowed if an item assignment exists with PURCHASING_ITEM_FLAG = Y or INTERNAL_ORDER_FLAG = Y

Rule	Definition
Catalog Data Security Enabled	No
Automatic Assignment of Items	Purchasing: Purchasing attribute group, Purchased attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Purchasing.
Enable duplicate category names	N/A for single level catalog.
Enable deletion of item category assignments	No
Enable hierarchy for catalog	No
Enable date level control for item category assignments	No

Rule Details for Functional Area: Quality Inspection Management

The following table describes all the parameters used to define rules for this function area catalog.

Rule	Definition
Assign items to leaf level categories only	Unchecked and disabled in UI.
Allow multiple item category assignments	Unchecked and disabled in UI.
Default Category Required	No
Restrict category to item assignment only	Unchecked and disabled in UI.
Controlled At (logic driven)	Catalog can be master controlled, or organization controlled
Catalog Assignment Change (logic driven)	Catalog can be reassigned if no items are assigned to categories in the catalog.
Catalog Data Security Enabled	No
Automatic Assignment of Items	N/A
Enable duplicate category names	N/A for single level catalog.
Enable deletion of item category assignments	Yes
Enable hierarchy for catalog	No

Rule	Definition
Enable date level control for item category assignments	No

Rule Details for Functional Area: Planning

The following table describes all the parameters used to define rules for this function area catalog.

Rule	Definition
Assign items to leaf level categories only	Unchecked and disabled in UI.
Allow multiple item category assignments	Unchecked and disabled in UI.
Default Category Required	Yes
Restrict category to item assignment only	Unchecked and disabled in UI.
Controlled At (logic driven)	If the Purchasing attribute group, Purchased attribute or Order Management attribute group internal ordered attribute control value is organization level, then organization-controlled catalogs can be assigned.
Catalog Assignment Change (logic driven)	Catalog assignment change isn't allowed if an item assignment exists with PURCHASING_ITEM_FLAG = Y or INTERNAL_ORDER_FLAG = Y
Catalog Data Security Enabled	No
Automatic Assignment of Items	Purchasing: Purchasing attribute group, Purchased attribute has a value of Yes', then the new item is assigned to the default category in the functional area catalog for Purchasing.
Enable duplicate category names	N/A for single level catalog.
Enable deletion of item category assignments	No
Enable hierarchy for catalog	No
Enable date level control for item category assignments	No

Rule Details for Functional Area: Service

The following table describes all the parameters used to define rules for this function area catalog.

Rule	Definition
Assign items to leaf level categories only	Unchecked and disabled in UI.
Allow multiple item category assignments	Unchecked and disabled in UI.
Default Category Required	Yes
Restrict category to item assignment only	Unchecked and disabled in UI.
Controlled At (logic driven)	If the Purchasing attribute group, Purchased attribute or Order Management attribute group internal ordered attribute control value is organization level, then organization-controlled catalogs can be assigned.
Catalog Assignment Change (logic driven)	Catalog assignment change isn't allowed if an item assignment exists with PURCHASING_ITEM_FLAG = Y or INTERNAL_ORDER_FLAG = Y
Catalog Data Security Enabled	No
Automatic Assignment of Items	Purchasing: Purchasing attribute group, Purchased attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Purchasing.
Enable duplicate category names	N/A for single level catalog.
Enable deletion of item category assignments	No
Enable hierarchy for catalog	No
Enable date level control for item category assignments	No

Rule Details for Functional Area: Cost

The following table describes all the parameters used to define rules for this function area catalog.

Rule	Definition
Assign items to leaf level categories only	Unchecked and disabled in UI.
Allow multiple item category assignments	Unchecked and disabled in UI.
Default Category Required	Yes
Restrict category to item assignment only	Unchecked and disabled in UI.

Rule	Definition
Controlled At (logic driven)	If the Purchasing attribute group, Purchased attribute or Order Management attribute group internal ordered attribute control value is organization level, then organization-controlled catalogs can be assigned.
Catalog Assignment Change (logic driven)	Catalog assignment change isn't allowed if an item assignment exists with PURCHASING_ITEM_FLAG = Y or INTERNAL_ORDER_FLAG = Y
Catalog Data Security Enabled	No
Automatic Assignment of Items	Purchasing: Purchasing attribute group, Purchased attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Purchasing.
Enable duplicate category names	N/A for single level catalog.
Enable deletion of item category assignments	No
Enable hierarchy for catalog	No
Enable date level control for item category assignments	No

Rule Details for Functional Area: Order Entry

The following table describes all the parameters used to define rules for this function area catalog.

Rule	Definition
Assign items to leaf level categories only	Unchecked and disabled in UI.
Allow multiple item category assignments	Unchecked and disabled in UI.
Default Category Required	Yes
Restrict category to item assignment only	Unchecked and disabled in UI.
Controlled At (logic driven)	If the Purchasing attribute group, Purchased attribute or Order Management attribute group internal ordered attribute control value is organization level, then organization-controlled catalogs can be assigned.
Catalog Assignment Change (logic driven)	Catalog assignment change isn't allowed if an item assignment exists with PURCHASING_ITEM_FLAG = Y or INTERNAL_ORDER_FLAG = Y
Catalog Data Security Enabled	No

Rule	Definition
Automatic Assignment of Items	Purchasing: Purchasing attribute group, Purchased attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Purchasing.
Enable duplicate category names	N/A for single level catalog.
Enable deletion of item category assignments	No
Enable hierarchy for catalog	No
Enable date level control for item category assignments	No

Rule Details for Functional Area: Asset Management

The following table describes all the parameters used to define rules for this function area catalog.

Rule	Definition
Assign items to leaf level categories only	Unchecked and disabled in UI.
Allow multiple item category assignments	Unchecked and disabled in UI.
Default Category Required	Yes
Restrict category to item assignment only	Unchecked and disabled in UI.
Controlled At (logic driven)	If the Purchasing attribute group, Purchased attribute or Order Management attribute group internal ordered attribute control value is organization level, then organization-controlled catalogs can be assigned.
Catalog Assignment Change (logic driven)	Catalog assignment change isn't allowed if an item assignment exists with PURCHASING_ITEM_FLAG = Y or INTERNAL_ORDER_FLAG = Y
Catalog Data Security Enabled	No
Automatic Assignment of Items	Purchasing: Purchasing attribute group, Purchased attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Purchasing.
Enable duplicate category names	N/A for single level catalog.
Enable deletion of item category assignments	No

Rule	Definition
Enable hierarchy for catalog	No
Enable date level control for item category assignments	No

Rule Details for Functional Area: Product Reporting

The following table describes all the parameters used to define rules for this function area catalog.

Rule	Definition
Assign items to leaf level categories only	Unchecked and disabled in UI.
Allow multiple item category assignments	Unchecked and disabled in UI.
Default Category Required	Yes
Restrict category to item assignment only	Unchecked and disabled in UI.
Controlled At (logic driven)	If the Purchasing attribute group, Purchased attribute or Order Management attribute group internal ordered attribute control value is organization level, then organization-controlled catalogs can be assigned.
Catalog Assignment Change (logic driven)	Catalog assignment change isn't allowed if an item assignment exists with PURCHASING_ITEM_FLAG = Y or INTERNAL_ORDER_FLAG = Y
Catalog Data Security Enabled	No
Automatic Assignment of Items	Purchasing: Purchasing attribute group, Purchased attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Purchasing.
Enable duplicate category names	N/A for single level catalog.
Enable deletion of item category assignments	No
Enable hierarchy for catalog	No
Enable date level control for item category assignments	No

Rule Details for Functional Area: GDSN Syndication for UDEX

The following table describes all the parameters used to define rules for this function area catalog.

Rule	Definition
Assign items to leaf level categories only	Unchecked and disabled in UI.
Allow multiple item category assignments	Unchecked and disabled in UI.
Default Category Required	Yes
Restrict category to item assignment only	Unchecked and disabled in UI.
Controlled At (logic driven)	If the Purchasing attribute group, Purchased attribute or Order Management attribute group internal ordered attribute control value is organization level, then organization-controlled catalogs can be assigned.
Catalog Assignment Change (logic driven)	Catalog assignment change isn't allowed if an item assignment exists with PURCHASING_ITEM_FLAG = Y or INTERNAL_ORDER_FLAG = Y
Catalog Data Security Enabled	No
Automatic Assignment of Items	Purchasing: Purchasing attribute group, Purchased attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Purchasing.
Enable duplicate category names	N/A for single level catalog.
Enable deletion of item category assignments	No
Enable hierarchy for catalog	No
Enable date level control for item category assignments	No

Rule Details for Functional Area: GDSN Syndication for GPC

The following table describes all the parameters used to define rules for this function area catalog.

Rule	Definition
Assign items to leaf level categories only	Unchecked and disabled in UI.
Allow multiple item category assignments	Unchecked and disabled in UI.
Default Category Required	Yes
Restrict category to item assignment only	Unchecked and disabled in UI.

Rule	Definition
Controlled At (logic driven)	If the Purchasing attribute group, Purchased attribute or Order Management attribute group internal ordered attribute control value is organization level, then organization-controlled catalogs can be assigned.
Catalog Assignment Change (logic driven)	Catalog assignment change isn't allowed if an item assignment exists with PURCHASING_ITEM_FLAG = Y or INTERNAL_ORDER_FLAG = Y
Catalog Data Security Enabled	No
Automatic Assignment of Items	Purchasing: Purchasing attribute group, Purchased attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Purchasing.
Enable duplicate category names	N/A for single level catalog.
Enable deletion of item category assignments	No
Enable hierarchy for catalog	No
Enable date level control for item category assignments	No

Rule Details for Functional Area: Distributed Order Orchestration

The following table describes all the parameters used to define rules for this function area catalog.

Rule	Definition
Assign items to leaf level categories only	Unchecked and disabled in UI.
Allow multiple item category assignments	Unchecked and disabled in UI.
Default Category Required	Yes
Restrict category to item assignment only	Unchecked and disabled in UI.
Controlled At (logic driven)	If the 'Purchasing' attribute group, 'Purchased' attribute or 'Order Management' attribute group internal ordered attribute control value is organization level, then organization-controlled catalogs can be assigned.
Catalog Assignment Change (logic driven)	Catalog assignment change isn't allowed if an item assignment exists with PURCHASING_ITEM_FLAG = Y or INTERNAL_ORDER_FLAG = Y
Catalog Data Security Enabled	No

Rule	Definition
Automatic Assignment of Items	Purchasing: Purchasing attribute group, Purchased attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Purchasing.
Enable duplicate category names	N/A for single level catalog.
Enable deletion of item category assignments	No
Enable hierarchy for catalog	No
Enable date level control for item category assignments	No

Rule Details for Functional Area: Supplier Products and Services

The following table describes all the parameters used to define rules for this function area catalog.

Rule	Definition
Assign items to leaf level categories only	Unchecked and disabled in UI.
Allow multiple item category assignments	Unchecked and disabled in UI.
Default Category Required	Yes
Restrict category to item assignment only	Unchecked and disabled in UI.
Controlled At (logic driven)	If the Purchasing attribute group, Purchased attribute or Order Management attribute group internal ordered attribute control value is organization level, then organization-controlled catalogs can be assigned.
Catalog Assignment Change (logic driven)	Catalog assignment change isn't allowed if an item assignment exists with PURCHASING_ITEM_FLAG = Y or INTERNAL_ORDER_FLAG = Y
Catalog Data Security Enabled	No
Automatic Assignment of Items	Purchasing: Purchasing attribute group, Purchased attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Purchasing.
Enable duplicate category names	N/A for single level catalog.
Enable deletion of item category assignments	No

Rule	Definition
Enable hierarchy for catalog	No
Enable date level control for item category assignments	No

Rule Details for Functional Area: VAT Invoices for China

The following table describes all the parameters used to define rules for this function area catalog.

Rule	Definition
Assign items to leaf level categories only	Unchecked and disabled in UI.
Allow multiple item category assignments	Unchecked and disabled in UI.
Default Category Required	Yes
Restrict category to item assignment only	Unchecked and disabled in UI.
Controlled At (logic driven)	If the Purchasing attribute group, Purchased attribute or Order Management attribute group internal ordered attribute control value is organization level, then organization-controlled catalogs can be assigned.
Catalog Assignment Change (logic driven)	Catalog assignment change isn't allowed if an item assignment exists with PURCHASING_ITEM_FLAG = Y or INTERNAL_ORDER_FLAG = Y
Catalog Data Security Enabled	No
Automatic Assignment of Items	Purchasing: Purchasing attribute group, Purchased attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Purchasing.
Enable duplicate category names	N/A for single level catalog.
Enable deletion of item category assignments	No
Enable hierarchy for catalog	No
Enable date level control for item category assignments	No

Rule Details for Functional Area: Supply Chain Financial Flow Orchestration

The following table describes all the parameters used to define rules for this function area catalog.

Rule	Definition
Assign items to leaf level categories only	Unchecked and disabled in UI.
Allow multiple item category assignments	Unchecked and disabled in UI.
Default Category Required	Yes
Restrict category to item assignment only	Unchecked and disabled in UI.
Controlled At (logic driven)	If the Purchasing attribute group, Purchased attribute or Order Management attribute group internal ordered attribute control value is organization level, then organization-controlled catalogs can be assigned.
Catalog Assignment Change (logic driven)	Catalog assignment change isn't allowed if an item assignment exists with PURCHASING_ITEM_FLAG = Y or INTERNAL_ORDER_FLAG = Y
Catalog Data Security Enabled	No
Automatic Assignment of Items	Purchasing: Purchasing attribute group, Purchased attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Purchasing.
Enable duplicate category names	N/A for single level catalog.
Enable deletion of item category assignments	No
Enable hierarchy for catalog	No
Enable date level control for item category assignments	No

Rule Details for Functional Area: Supply Chain Orchestration

The following table describes all the parameters used to define rules for this function area catalog.

Rule	Definition
Assign items to leaf level categories only	Unchecked and disabled in UI.
Allow multiple item category assignments	Unchecked and disabled in UI.
Default Category Required	Yes
Restrict category to item assignment only	Unchecked and disabled in UI.

Rule	Definition
Controlled At (logic driven)	If the Purchasing attribute group, Purchased attribute or Order Management attribute group internal ordered attribute control value is organization level, then organization-controlled catalogs can be assigned.
Catalog Assignment Change (logic driven)	Catalog assignment change isn't allowed if an item assignment exists with PURCHASING_ITEM_FLAG = Y or INTERNAL_ORDER_FLAG = Y
Catalog Data Security Enabled	No
Automatic Assignment of Items	Purchasing: Purchasing attribute group, Purchased attribute has a value of Yes, then the new item is assigned to the default category in the functional area catalog for Purchasing.
Enable duplicate category names	N/A for single level catalog.
Enable deletion of item category assignments	No
Enable hierarchy for catalog	No
Enable date level control for item category assignments	No

Rule Details for Functional Area: Product Development

The following table describes all the parameters used to define rules for this function area catalog.

Rule	Definition
Assign items to leaf level categories only	Checked and enabled in UI and set to Yes.
Allow multiple item category assignments	Enabled and set to Yes.
Default Category Required	No
Controlled At (logic driven)	Master level
Catalog Data Security Enabled	No
Enable duplicate category names	N/A for single level catalog.
Enable deletion of item category assignments	No
Enable hierarchy for catalog	Yes

Rule	Definition
Enable date level control for item category assignments	No

Use the Setup and Maintenance work area (in the Product Management offering) to associate a catalog to a functional area; you need to do this only once.

> **Note:** You can have only a single association at any given time. If you create an additional category and associate it to the same functional area, the previous assignment is automatically removed. And, the existing items associated with the old product lines won't function properly.

Related Topics

- Create Catalogs
- Catalog Formatting

Assign Catalogs and Categories Using Item Rules

You can define rules that assign items to catalogs and their categories, and rules that validate those assignments.

Catalog and Category Assignment Rules

You can define assignment rules that automatically assign items to one or more catalogs and categories when a condition is satisfied. The condition can be based on attribute values, organization assignments, or other catalog assignments.

The following table summarizes an example of an item rule that:

- Is defined in a rule set that's associated with an item class for items that represent garments.
- Tests whether an item has an attribute Size equal to `xs` and an attribute Material equal to `Wool`
- If the result of the test is true, then assign the item to the category `Winter` in the catalog `KidsWear`.

Field	Value
Name	Catalog assignment
Description	Auto assignment of item to catalog/category based on given attributes.
Return type	Catalog category
Primary If Expression	True

Field	Value
Secondary If Expression	`[Item].[Properties].[Size] == "XS"` `AND [Item].[Properties].[Material] == "Wool"`
Return Value	`Catalog[KidsWear].Category[Winter]`
User Message	XS, Wool item is assigned to Winter Category under KidsWear Catalog.

Catalog and Category Reassignment Using Rules

Item rules can reassign items to different categories, depending on the scenario.

- If a catalog allows multiple item category assignments, then a reassignment rule creates a new item assignment to a category, even if the item is already assigned to a different category.

  If a catalog doesn't allow multiple item category assignments, then the reassignment rule:

  - Changes the existing category assignment for the item, if an assignment exists
  - Creates a new category assignment for the item, if an assignment doesn't exist
  - Example: a rule assigns item A100 to an existing Category Y in Catalog A, where A100 is currently assigned to Category X. Catalog A doesn't allow multiple item category assignments. The result is:
    - Item A100 is reassigned to from Category X to Category Y.
    - If Catalog A had allowed multiple item category assignments, then item A100 would have been newly assigned to Category Y and would have also remained assigned to Category X.

Assign Catalog Categories Using Variables and Expressions as Return Value

You can create rules that can fetch values from variables and expressions, and assign items to catalog categories using the syncCatalogCategory( ) function. Rules derive catalog and category codes from attributes dynamically and assign items to catalog categories. You can pass attributes or functions that get values from custom objects or services as arguments of the syncCatalogCategory function.

Note: You can use the syncCatalogCategory( ) function only in the Return Value of the category assignment rule.

Use the following syntax for including expressions in the syncCatalogCategory() function:

```
SyncCatalogCategory(Expression1, Expression2, Previous())
```

where:

- `Expression1` - Returns catalog code
- `Expression2` - Returns category code
- `Previous()` – Returns the previous category assignment row that must be updated

You can specify the expressions in the following ways as the return value of a category assignment rule:

- `SyncCatalogCategory(Expression1)`: Creates a new catalog category assignment by assigning the item to the default category of the catalog returned by `Expression1`.
- `SyncCatalogCategory(Expression1, Expression2)`: Creates a new category assignment by assigning the item to the catalog and category returned by `Expression1` and `Expression2`, respectively.
- `SyncCatalogCategory(Expression1, Expression2, Previous())`: Re-assigns the category assignment row from `Previous` to `Expression2`. If the expression for `Previous()` evaluates to null, then it creates a new category assignment row.

Note:

- Catalog assignment rules won't delete existing catalog assignments.
- Single row and multi row attributes are also supported

Examples:

- Example 1: Item is assigned a catalog whose code is derived from A1 and category whose code is derived from A2. This is a new catalog category assignment.

```
SyncCatalogCategory([ITEM].[AG1].[A1], [ITEM].[AG1].[A2])
```

- Example 2: Use concatenation:

```
SyncCatalogCategory([ITEM].[AG1].[A1], [ITEM].[AG1].[B1]+"_"+[ITEM].[AG1].[B2])
```

- Example 3: Use other functions:

```
SyncCatalogCategory(getCustomObjectValue("Catalog_obj", "CatalogCode", "Target_Market", [Item].
[Market_Spec].[TM]), InvokeWebservice("Cat_API", [Item].[AG].[C]))

SyncCatalogCategory(InvokeRestGet("CAT_REST", toMap("q", "ItemNumber=AS544"), "CATS[0].CLG_CODE", ) ,
 subString( [Item].[AG].[C], 2, 4) )
```

- Example 4: Update an existing category assignment. The category code returned by the `Previous()` function is used to identify the existing category assignments that must be updated. If the value returned by the `Previous()` function is Null, then the rule creates a new category assignment.

```
SyncCatalogCategory([ITEM].[Catalog_Details].[Catalog_Code] , [ITEM].[Catalog_Details].[Category_Code],
Previous([ITEM].[Catalog_Details].[Category_Code]))
```

Catalog and Category Validation Rules

You can define validation rules that validate catalog or category assignments based on attribute values, or on an assignment to other catalogs or an organization assignment.

The following table summarizes an example of an item rule that:

- Is defined in a rule set that's associated with an item class for items that represent garments.
- Tests whether an item is assigned to the category `Summer` in the catalog `LadiesWear`
- If the result of the test is true, and the item is in the specified category then validate that the item isn't also assigned to the category `Summer` in the catalog `Kids`

Field	Value
Name	Catalog assignment validation
Description	Validate catalog assignments
Severity	Reject
If Expression	`assignedtoCatalog(Catalog[LadiesWear].Category[Summer])`
Validation Expression	`!assignedtoCatalog(Catalog[Kids].Category[Summer])`
User Message	Ladies wear products can't be assigned to Kids wear catalog.

When you create a validation rule to verify a catalog category assignment, you can use variables and expressions for the category argument in the assignedToCatalog( ) function. Using these expressions, the rule derives category codes and validates whether the item is assigned to the category. You can also pass attributes or functions that get values from custom objects or services as category arguments in the function.

For example, assignedToCatalog(Catalog[Channel_Auto], [Item].[Category_Info].[Cat_Code]). This function derives the category code from an attribute dynamically and performs validation.

You can use string functions like Substring, Decode, and so on that can return category codes in the function. You must provide the catalog code in the catalog argument of the function. You can't use variables for the catalog argument.

Related Topics

- Rules and Rule Sets
- Item Rule Logical Functions and Operators
- Item Rule Utility Functions

5 Manufacturers

Set Up Manufacturers and Manufacturer Parts

You must create manufacturers in the application before you create manufacturer parts produced by the manufacturer. Manufacturer parts (manufacturer items) can be related to items.

The items on a structure can be sourced with parts from the approved manufacturers list (AML).

Manufacturer parts are identified with manufacturer part numbers (MPNs).

Here's what you can do on manufacturers:

- Create and update standard attributes and location descriptive flexfields using Manufacturer REST API.
- Configure manufacturer pages using business rules. See the related topic for more information.

Here's what you can do on manufacturers and manufacturer parts:

Configure descriptive flexfields and data security policies for manufacturers and manufacturer parts.

Related Topics

- Data Security for Manufacturers and Manufacturer Parts
- Overview of Redwood Application Extension

Upgrade Manufacturers

After opting in to the Upgrade Manufacturer Management feature, you can perform a mass upgrade of all your existing manufacturers.

After the upgrade, any manufacturers that are created using hubOrganizations REST API, or import will automatically be upgraded as each manufacturer is opened, until a subsequent upgrade is performed.

Manufacturers created with the new REST API don’t have to be upgraded.

Users without Manage or View Manufacturer privileges can’t search or navigate to manufacturers.

To run on-demand manufacturer upgrade scripts, use the Enterprise Scheduler Service job **Upgrade Product Management Data** with the following selected:

- Upgrade Process: Execution
- Functional Area: Manufacturer
- Feature: Upgrade Manufacturer Management

The manufacturers that aren't visible on the Manage Manufacturers page until the upgrade scheduler process is run include:

- Manufacturers created before opt in.

- Trading partner of type Manufacturer created with the hubOrganizations REST API.
- Manufacturers created using import.

Related Topics
- Upgrade Product Management Data

Configure Descriptive Flexfields for Manufacturer Parts

You can add descriptive flexfields for manufacturer parts. Here's how:

1. In the Setup and Maintenance work area, go to the following:

   Offering: Product Management

   Functional Area: Trading Partner Items

   Task: Manage Trading Partner Item Descriptive Flexfields
2. In the Manage Trading Partner Item Descriptive Flexfields page, click **Edit**.
3. Click **Actions** > **Create** in the Global Segments area.

   Add fields in the Context Segment, and the Context Sensitive Segments area.
4. Click **Save and Close** and then click **Deploy Flexfield**.

Related Topics
- Overview of Descriptive Flexfields
- Overview of Flexfield Deployment

Configure Descriptive Flexfields for Approved Manufacturers List

You can add descriptive flexfields for manufacturer parts and display these in Add AML and Edit AML pages.

Here's how:

1. In the Setup and Maintenance work area, go to the following:
   - Offering: Product Management
   - Functional Area: Items
   - Task: Manage Item Relationship Descriptive Flexfields
2. In the Manage Item Relationship Descriptive Flexfields page, select EGP_ITEM_RELATIONSHIPS_DFF and click **Edit** .
3. In the Context Segment and the Context Sensitive Segment areas, enter applicable values.
4. Select the **Required** check box to ensure that the selected context segment descriptive flexfield has values.

5. Click **Manage Contexts** to configure the context definitions and segments.

   > **Note:** Add MFG_ as prefix for the **Context Code** field in the Manage Contexts page in order for the segments to show up in the AML context.

6. Click **Save and Close** and then click **Deploy Flexfield**.

Configure Extensible Flexfields for Manufacturers

You can set up extensible flexfields for manufacturers. However, to view the flexfields on manufacturers, you must enable the feature **Search Items Using the New User Interface**.

1. Access the Manage Extensible Flexfields task in the Setup and Maintenance work area.
2. Search for the flexfield code EGO_MANUFACTURER_EFF.

   In the search results, edit the row pertaining to manufacturer extended attributes.

   Note that you can use the **Name** and **Description** columns to identify manufacturer extended attributes.
3. To create extensible flexfields:
   a. Click **Manage Contexts**.
   b. On the Manage Contexts page, click **Create**.
4. To assign extensible flexfields to manufacturers:

   a. In the Details section, click **Select and Add**.
   b. Search for the flexfields you want to add and click **Apply**.
5. Save your changes and close the page.
6. Click **Deploy Flexfield** on the Manage Extensible Flexfields page.

Here are some details on extensible flexfields for manufacturers:

- You must set the profile value for EGP_MANUFACTURER_REDWOOD_ENABLED to Y, if you configure the manufacturer extensible flexfields as required. This is because you can't view and edit extensible flexfields in the Product Development and Product Information Management work areas if the profile value is set to N.
- Data security isn't available for the extensible flexfields added on manufacturers.
- If you're unable to view the extensible flexfields after selecting **All Manufacturers** on the Edit Extensible Flexfield: Manufacturer Extended Attributes page, try either of these options to resolve the issue:
  - Sign out and sign in again.
  - Navigate to the setup task for item extensible flexfields or change extensible flexfields. Select the item or change and then navigate back to the Edit Extensible Flexfield page for manufacturers.
- You can't use business rules to configure the Location or Attachments tables.
- You can use the XML format to export and import both value sets and extensible flexfields at the same time. If you're using the CSV format, you must first export and import value sets and you can then export and import the extensible flexfields.
- You can migrate the extensible flexfields to different environments using the Export and Import features in the Setup and Maintenance work area.

Add Extensible Flexfields to OTBI

For manufacturer extensible flexfields to be available in OTBI, you must:

1. Edit the context and select the **BI Enabled** option in Business Intelligence.
2. Run the scheduled process Import Oracle Fusion Data Extensions for Transactional Business Intelligence.

   You can select the **ERP** parameter instead of **All**, when running the manufacturer extensible flexfields OTBI update to have the job run more quickly.

Data Security for Manufacturers and Manufacturer Parts

The privileges for manufacturer parts are managed through the Manufacturer Security tab in the Product Development work area or through the Manage Trading Partner and Trading Partner Item task available in the Product Information Management work area.

Data security that's applied at the manufacturer level applies to all manufacturer parts for that manufacturer. If data security is enabled for a given manufacturer, all manufacturer parts associated with that manufacturer inherit the data grants from the manufacturer.

Note: This is available only if you opt in to the feature - Upgrade Manufacturer Management.

You must create data security policies for the following:

- HZ_PARTIES (Trading Community Party)
- EGP_TRADING_PARTNER_ITEMS
- EGP_PRIVATE_TRADING_PARTNERS

Here are the data security policies that enable access to a manufacturer along with associated manufacturer parts.

1. Sign in to Security Console.
2. Search for the role. Click **Actions** > **Edit Role**.
3. On the Edit Role page, click **Data Security Policies**.
4. Click **Create Data Security Policy**. In the Create Data Security Policy page, enter the following values:

   For HZ_Parties
   a. Policy Name: Enter a unique name for the policy.
   b. Data Resource: Search for and add the resource named HZ_PARTIES (Trading Community Party).
   c. Data Set: Select All values.
   d. Actions: Select all the actions.
   e. Click **OK** and click **Next**.

   EGP_TRADING_PARTNER_ITEMS:
   a. Policy Name: Enter a unique name for the policy.
   b. Data Resource: Search for and add the resource named Application Object (FND_OBJECTS).
   c. Data Set: Select by instance set.

d. Condition Name: Select For Business Object Application Object specified by the Grant parameter PARAMETER1 for a specific grant for Table FND_OBJECTS.
e. Parameter1: EGP_TRADING_PARTNER_ITEMS.
f. Actions: Select all the actions.
g. Click **OK** and click **Next**.

EGP_PRIVATE_TRADING_PARTNERS:

a. Policy Name: Enter a unique name for the policy.
b. Data Resource: Search for and add the resource named Application Object (FND_OBJECTS).
c. Data Set: Select by instance set.
d. Condition Name: Select - For Business Object Application Object specified by the Grant parameter PARAMETER1for a specific grant for Table FND_OBJECTS.
e. Parameter1: EGP_PRIVATE_TRADING_PARTNERS.
f. Actions: Select all the actions.
g. Click **OK** and click **Next**.

5. Save your changes.

Related Topics

- Create and Edit Trading Partner Items
- Manage Item Relationships

6 New Item Requests

Set Up New Item Requests

Before you create new item requests, you must complete these tasks in the Setup and Maintenance work area for the Product Management offering:

Task	Description
Manage Item Classes	Enable an item class for the new item request and configure the definition workflow.
Manage Change Order and New Item Request Header Descriptive Flexfields	Manage the header-level descriptive flexfields for change orders and new item requests.
Manage New Item Request Type Details	Configure the new item request type.
Manage Task Configurations for Supply Chain Management	Configure the approval workflow for the new item request.
Manage Approval Groups for Supply Chain	Configure approval groups for the new item request approval.

Note: Line level descriptive flexfields aren't supported in new item requests.

Configure the Limit for Items in New Item Requests

You can restrict users from adding large number of items in new item requests. See the related topics for more information.

Related Topics

- Configure the Limit for Objects in Change Orders and New Item Requests

New Item Request Workflow

You can execute tasks on predefined statuses for new item requests, but you can't create or delete statuses or workflows. You can also process item approvals for master and child organizations concurrently.

Predefined Workflow Statuses

Here are the predefined statuses for new item requests:

- Open
- Definition
- Approval
- Scheduled
- Completed

Open

As an assignee, you can add items and attachments.

As an administrator, you can configure whether a request comment notification sent to the user is required. If it's required, the new item request can't move to the next status until the assignee responds to the notification.

Here's how you configure the request comment notification:

1. In the Setup and Maintenance work area, use the following:
    - Offering: Product Management
    - Functional Area: New Item Requests
    - Task: Manage New Item Request Type Details
2. In the Open status, use the **Skip Request Comment** option.

Definition

As an administrator, you can configure the definition workflow at the item class level. Based on the definition steps, a notification is sent to assignees for defining the item. Once the item is defined, it can be promoted to approval status manually or automatically approved by the BPEL process.

As a definition task assignee, you can define item information such as specifications, structures, packs and so on. But you can't add additional items in this status or create a new workflow.

Approval

Approval notifications are sent to approvers based on whether the assignment method is rules-based, or user defined. Once the approval is granted, the new item request can't be modified.

Scheduled Status

After all the necessary approval is received, the new item request is automatically promoted to the Scheduled status.

Completed

After the new item request is scheduled, a job is triggered and status is automatically changed to Completed.

> **Note:** To view the last updated date for new item requests created before update 22D, see the **Completed On** column in the definition workflow section.

Process Child and Master Organization Item Approvals Concurrently

You can use a commercialization change order to enrich child organization items while a new item request is in progress for the master organization item. You can initiate the commercialization workflow processes without waiting for the new item request process to complete.

Here are some details on processing child and master organization items concurrently:

- When you add an unapproved child organization item to a change order, the item's **Approval Status** will be based on the completion status of the new item request for the master organization.
  - If the change is completed but the new item request isn't completed, the Approval Status of the child item is set to **Approved** when the new item request is completed.
  - If the change isn't completed before the new item request is completed, the approval status of the child item is set to **Change Order in Progress** until the change order is completed. Once the change is completed, the approval status will change to **Approved**.
- Impact on configured rules:
  - If the new item request for the master organization item is completed before the change order for the child organization item is approved, rules that are based on child organization approval status (Status = Approved) won't be triggered. It's recommended that you use change order entry and exit criteria to validate child item data. You must reconfigure entry and exit criteria to validate data on child organization items that are approved after the master organization items.
  - You can use configured rules to validate child organization item approval status (Status= 'Change Order in Progress'). Rule-related errors are recorded in the action log of the new item request.
- If you remove an unapproved child organization item from a pending change order, either by deleting or canceling the change order, then the child item must be added to a new change order to route it for approval. Once the child organization item has been added to a change order, it can't be approved through the new item request process.
- If an unapproved child organization item is on multiple change orders, the first child organization change order that becomes complete after the master organization new item request is complete will set the child organization item to Approved.
- You can't add unapproved items to a change order through import.
- If you haven't added an unapproved child organization item to a change order, then the new item request for the master organization item will approve both the master and child items.
- You can't add unapproved master organization items to a change order.

Related Topics

- Configure the Definition Workflow for a New Item Request
- Why did the workflow stop responding?
- Why is my approval rule not working in a new item request?

Configure Entry and Exit Criteria for New Item Requests

You can configure the criteria that govern when a new item request can exit a workflow status or enter into the next status.

Here's a summary of steps:

1. Define the criteria in a validation rule set.
2. Assign the criteria to a workflow status in the new item request type.

Define the Criteria in a Validation Rule Set

You can define rule sets that validate the entry and exit criteria for new item requests. Criteria can be based on attributes or descriptive flexfields.

Here are business entities that can be used in the rule sets:

Business Entity	Provides Access To
Change Header	Descriptive flexfield segments on new item request header rows. The attribute group Change Header Main, which contains attributes corresponding to the basic attributes of a new item request header: Priority, Reason, Need-by Date, Requested By, and Description.
Change Line	Descriptive flexfield segments (but not attributes) on new item request lines.

Example: Define two product rules that allow the new item request workflow to exit from a status only if its Reason is Cost and Priority is High.

1. In the Setup and Maintenance work area, go to the following:
    - Offering: Product Management
    - Functional Area: Product Rules
    - Task: Manage Item Rule Sets
2. Click **Create** to create a rule set.
3. In the Create Rule Set dialog, do the following:
    a. Composite: Select **No**.
    b. Type: Select **Validations**.
    c. Association Type: Select **New item request**.
    d. Association Name: Select **New item request**.
    e. Click **Save and Continue**.
4. On the Rules tab, click **Create** to create a rule for the rule set.

5. In the Create Rule dialog, here's how you create a rule to enforce Cost as a compulsory field:
    a. Sequence: Enter the sequence number in which you want to execute this rule. This is required in case you have multiple rules. For example, enter 10

       Severity is automatically set to Reject.
    b. Click **OK**.
    c. Here's how you create the rule expression:

       If Expression: Right-click and select **Insert Attribute** to insert an attribute that applies to the new item request.

       Business Entity: Select **Change Header**.

       Attribute Group: Select **Change Header Main**.

       Attribute: Select Reason.

       Click **Insert**. The following expression is inserted:

       ```
       [ChangeHeader].[ChangeHeaderMain].[Reason]
       ```
    d. Modify the expression to form the following comparison expression:

       ```
       isNull([ChangeHeader].[ChangeHeaderMain].[ReasonCode])||[ChangeHeader].[ChangeHeaderMain].
       [ReasonCode]!= "COST"
       ```
    e. In the Validation Condition field, enter false.
    f. User Message: Just to be clear, it's recommended to add a user message such as:

       ```
       You must set the reason as cost.
       ```
    g. To validate the rule's syntax, click **Validate**.
    h. Click **Save**.
6. Similar to the rule set you created for cost, you must create a rule set for priority that results in the following expression:

   ```
   isNull([ChangeHeader].[ChangeHeaderMain].[Priority])||[ChangeHeader].[ChangeHeaderMain].[Priority]!=
    "HIGH"
   ```

   User Message: Just to be clear, it's recommended to add a user message such as:

   ```
   You must set the priority as high.
   ```

Assign the Criteria to the New Item Request Workflow

After defining a rule set that validates the entry and exit criteria, you can assign that rule set to a new item request status.

The status types that can have entry or exit criteria are listed in the table:

Status Type	Entry Criteria?	Exit Criteria?
Open	No	*Yes*

Status Type	Entry Criteria?	Exit Criteria?
Definition	*Yes*	*Yes*
Approval	*Yes*	No

Here's how you associate the entry and exit criteria with the new item request type:

1. In the Setup and Maintenance work area, use the following:
    - Offering: Product Management
    - Functional Area: New Item Requests
    - Task: Manage New Item Request Type Details
2. Click the Workflow tab and select the workflow status for which you want to setup the entry and exit criteria.
3. Select the entry and exit criteria in the **Entry Criteria** and **Exit Criteria** columns.

    Note that the rule set you created in a previous step appears in the entry and exit criteria columns.
4. Click **Save and Close**.

Related Topics

- New Item Request Workflow
- Item Rule Syntax
- Create New Item Requests

Configure Automatic Promotion and Demotion in New Item Requests

You can configure a new item request for automatic promotion and demotion based on the workflow status.

The table shows which statuses require user configuration to enable automatic promotion, which statuses have automatic promotion enabled by default, and which statuses can be set for automatic demotion.

Automatic Promotion and Automatic Demotion	Open	Definition	Approval	Completed
User configuration required during set up for automatic promotion	Yes	Yes	No	No
Default automatic promotion	No	No	Yes	No

Automatic Promotion and Automatic Demotion	Open	Definition	Approval	Completed
Status in which new item request can be enabled for automatic demotion	No	No	Yes	No

Configure the Definition Workflow for a New Item Request

Before you create a new item request, you must enable an item class for a new item request and configure the definition workflow in an item class. The configuration will apply to all items created from the item class.

Here's how you configure the definition workflow:

1. In the Setup and Maintenance work area, select the following:
    - Offering: Product Management
    - Functional Area: Items
    - Task: Manage Item Classes
2. Click **Create** to create a new item class.
    a. Enter the details of the item class.
    b. Click **Save and Add Details.**
3. Click Item Management.
4. In New Item Request, select **Enable new item request**.
   All items created from this item class will be enabled for the new item request workflow.
5. Expand Definition Workflow Details, and click **Add Row**.
    a. **Sequence number**: Enter the sequence number for the step.
       To create a parallel flow, you can add multiple rows of the same step sequence number with different tasks.
    b. **Assignee type**: Select **Person** to assign the new item request to a single user.
       Select **Role** to assign the new item request to a group of users.
    c. **Response Required From**: If you select **One** and **Assignee Type** as **Role**, only one user with that role needs to complete the assigned task.
       If you set it as **All**, all users with that role must complete the task.
    d. **Assigned To**: If you select **Role** in the **Assignee Type** field, here you must select the role to which you want to assign the definition task.
       If you select **Person** in the **Assignee Type** field, here you must select the user who will be assigned to the definition task.
    e. **Business Entity** and **Associates Entity**: Select the entities that you want your users to define as part of definition workflow. Note that you can't configure item descriptive flexfields for the definition workflow.

f. **All Values Required**: Select this to make it compulsory for users to enter all attributes values during the definition phase.

   For example, if the associated entity is Physical Attributes, then all attributes in Physical Attributes must be populated by the assignee during the definition phase.

g. **Required Definition Values**: Click and select the required attributes for the definition task. The availability of this field depends on the business entity.

h. Click **Save and Close**.

How Control Role Expansion Impacts Definition Workflow

Here's what you need to know about the feature Control Role Expansion: New Item Request Definition:

- If only one response is required from an assignee and a role is added as the assignee, the role isn't expanded to show its members. All members of the role receive definition notifications, and you can track the task owner and task status in the workflow details section on the new item request. The **Assigned To** field in the notification isn't expanded to show all role members.
- If the definition assignee is a role and **Response Required From** is set to **All**, the role is expanded to show all its members. It's recommended to limit the number of members in a role to less than 50.
- Notifications will be sent to all the assignees added directly or inherited from the role hierarchy, whether the response is required from all or one.
- The **Owner** column isn't automatically populated for new item requests created before update 22C. To populate this column, you can run the following Enterprise Scheduler Service job: Upgrade Product Management Data. Note that this is a one-time activity. The **Owner** column is automatically populated for new item requests created after you opt in to this feature or after update 22C.

Impact on Ongoing Definition Workflows

For pending new item requests that are already in Definition status, here's what you need to know:

- If a task was assigned to a role and **Response Required From** was set to **One**, the role is expanded.
- For all the incomplete definition tasks assigned to roles, you can use the **Go to Task** icon on the notification to continue the definition tasks (on a pending new item request) or you can terminate and restart the definition workflow.

Configure the New Item Request Approval Phase

You can configure the new item request approval as user defined or rules based. User defined approval lets you add users or user groups as approvers, without specifying any conditions. Rules-based approval lets you create complex rules for managing the workflow.

During the approval phase, approval notifications are routed to the approvers (or participants). Notifications can be addressed to individual users or to multiple users in a predefined user group. Users can approve or reject the new item request from the notification.

Best Practices for Approval

Here are some best practices for assigning the new item request approval to a role:

- It's recommended that you limit the number of users in the role to 50.
- When the role is expanded into a comma separated list, the number of characters in the list should not exceed 2000.

How Role Expansion Works

In the new item request'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 only one response is required on a user-defined approval and roles have been added as approvers, the roles are not expanded to show their members.

In either case, all members of the role receive notifications on completion of the new item request 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.

How You Configure the Approval

Here's how you configure the approval in a new item request type:

1. In the Setup and Maintenance work area, use the following:
    - Offering: Product Management
    - Functional Area: New Item Requests
    - Task: Manage New Item Request Type Details
2. Click the Workflow tab and select the approval phase.
3. Select the automatic demotion status for approval.
4. Select the entry criteria for the new item request to proceed to the next status.
5. **Assignment Method**: Select User Defined or Rules Based.

   User defined approval lets you add users or user groups as approvers, without specifying any conditions.

   Rules-based approval lets you create complex rules for managing the workflow. You use the BPM Worklist to create complex approval rules based on item, attributes, or attribute groups.

   > **Note:** New item approval rules are defined and managed through the Approval Management Engine. For information on how approval rules are defined and managed, see the Oracle Cloud Developing SOA Applications with Oracle SOA Suite guide.

6. **Response Required From**: Select **One** or **All**.

   If you set **Response Required From** as **One** and the new item request is assigned to a role, only one user with that role needs to complete the task.

   If you set it as **All**, all users with that role must complete the task.

   You can also configure optional approvers.
7. Click **Save**.

Related Topics

- New Item Request Workflow
- Configure Approval Tasks Using BPM Worklist
- How to Automate New Item Request Approval
- Can I set a default priority for my change order or new item request?

Troubleshoot Access to New Item Requests

If your users are unable to view or manage new item requests, ensure that the relevant privileges are added to the role. To edit the role, use Security Console.

The table lists the privileges required to view and manage new item requests, and the corresponding privilege code.

Privilege	Privilege Code and Description
Approve New Item Request	EGO_APPROVE_NEW_ITEM_REQUEST_PRIV
Manage New Item Request	EGO_MANAGE_NEW_ITEM_REQUEST_PRIV Provides access to Manage New Item Requests in the Tasks panel tab. Also, users with this privilege can create, edit, and delete new item requests.
View New Item Request	EGO_VIEW_NEW_ITEM_REQUEST_PRIV Users with this privilege can only view new item requests.
Monitor New Item Request Summary	EGO_MONITOR_NEWITEMREQUEST_SUMMARY_PRIV Provides access to the Overview tab on a new item request.
Item Inquiry	ORA_EGP_ITEM_INQUIRY_DUTY

FAQs for New Item Requests

How can I configure new item request definition steps?

You can define the new item request definition steps using the Manage Item Classes task in the Product Management offering.

Related Topics

- Configure the Definition Workflow for a New Item Request
- How many objects can I add to a change order or new item request?

Why am I not receiving the notification for the new item request?

To get the notification for approval for the new item request you must have the BI Consumer privilege. This privilege is required even if you've the role for definition stage approval.

Can I disable new item requests for an item class?

You can disable new item requests for an item class using the **Enable New Item Request** setting in the Manage Item Classes task.

You can disable this setting only if all the items of that class are in approved status. If you've items pending approval, you can either cancel the open new item requests and delete the draft items, or approve the new item requests before changing the setting.

How do I know which definitions are mandatory when defining an item or viewing notifications?

To view the mandatory definitions:

When defining an item, use the **View Required Definitions** link.

From notification and **New Item Request Details** page, click **Details**.

Can I mark certain attributes or business entities as mandatory for the user in a new item request?

Yes. When setting up the definition steps for New Item Requests at the Item Class, you can mark various item details as mandatory, at each step. This ensures that item information required for a downstream step is defined and available for use.

How can I set the sequence of attribute groups appearing in the new item request definition notification?

Using the Manage Item Classes task, navigate to the Definition Workflow Details in Item Management. You can set the sequence only for user defined attribute groups.

Related Topics

- Configure the Definition Workflow for a New Item Request

7 Change Orders

Setup Tasks to Define Changes

Before you can create change orders, you must complete these tasks in the Setup and Maintenance work area (for the Product Management offering):

Task	Description
Manage Change Reasons	Change reasons are used to categorize and establish the cause or reason for a change. Change reasons are required for creating changes.
Manage Change Priorities	Change priorities are used to identify the criticality of changes. Change priorities are required for creating changes.
Manage Change Statuses	Change statuses enable you to manage a change through its life cycle.
Manage Attachment Categories	Create attachment categories for change types.
Manage Change Order Types	All changes are assigned a change type. You must create at least one change type based on predefined change types.
Manage Change Order and New Item Request Header Descriptive Flexfields	Manage the header-level descriptive flexfields for change orders and new item requests. You can create entry and exit criteria using descriptive flexfields.
Manage Change Order and New Item Request Line Descriptive Flexfields	Manage the line-level descriptive flexfields for change orders. Note that Line-level descriptive flexfields for new item requests aren't supported.
Manage Extensible Flexfields	Configure extensible flexfields for a change type so that the fields appear at the header level on change orders, change requests, problem reports, and corrective actions.
Manage Task Configurations for Supply Chain Management	Define the task configurations for the change approval workflow.
Manage Approval Groups for Supply Chain Management	Define approval groups for the change approval workflow.

Note:

- The tasks listed in the table are applicable for change orders, change requests, problem reports, and corrective actions.
- Using Groovy scripting you can only access global descriptive flexfields. Create actions, triggers, and conditions based on the values of the global and contextual descriptive flexfields. You can't use Groovy scripting to access contextual descriptive flexfields on change orders.

  Refer to the Oracle Fusion Cloud Applications Groovy Scripting Reference guide for more information on Groovy scripting.

Understand Change Types

A change type includes default attributes and defines the change workflow. The application includes predefined change types based on which you can create change orders and new change types.

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
- 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
All Change Types	Used to indicate the hierarchy of change types and the inheritance of extensible flexfields across change types. Although this appears in the UI, you can't create changes using this type.	NA	NA	NA
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, extensible flexfields, structure, AML, and attachment.

Change Type	Description	Supports Revision Control	Supports Audit Report	Supports Redline Modifications
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, extensible flexfields, 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 Product Development. It's also required to enable supplier collaboration for 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.	No	No	No

Change Type	Description	Supports Revision Control	Supports Audit Report	Supports Redline Modifications
Corrective Action	Used to implement Quality Management for engineering design and development through Product Development. 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 inherits attributes from its parent, the predefined Corrective Action change type.
- Changes made to a change type won't be applied to any existing change orders (created from the change type).

Related Topics

- Configure Entry and Exit Criteria for Change Objects
- Can I set up a default reason for a change order?
- Can I set a default priority for my change order or new item request?
- Create Problem Reports and Corrective Actions

Manage Change Reasons

Change reasons are used to categorize and establish the cause or reason for a change. Change reasons are required for creating change orders.

You can define processes and rules around change reasons so that change orders with safety related reasons get priority over other change orders, or get routed through different approval level.

The predefined values for change reasons are: Cost, Quality, and Safety. To define additional values:

In the Setup and Maintenance work area, navigate to:

- Offering: Product Management
- Functional Area: Change Orders
- Task: Manage Change Reasons

Note: Opting in to the Use Simplified Change Management Interface feature lets you use Page Composer to make the Reason Code field compulsory.

Manage Change Priorities

Change order priorities are used to identify the criticality of changes and are required for creating change orders.

You can define processes and rules around change priorities so that change orders with a high priority get prioritized over other change orders. You can also route high priority change orders through a different approval workflow.

The predefined values for change priorities are: High, Medium, and Low. Additional priorities can be added, modified, or deleted. To define change priorities:

In the Setup and Maintenance work area, go to the following:

- Offering: Product Management
- Functional Area: Change Orders
- Task: Manage Change Priorities

Note: The additional priority (or the Lookup Code field) can include up to 30 characters.

Understand Change Order Statuses

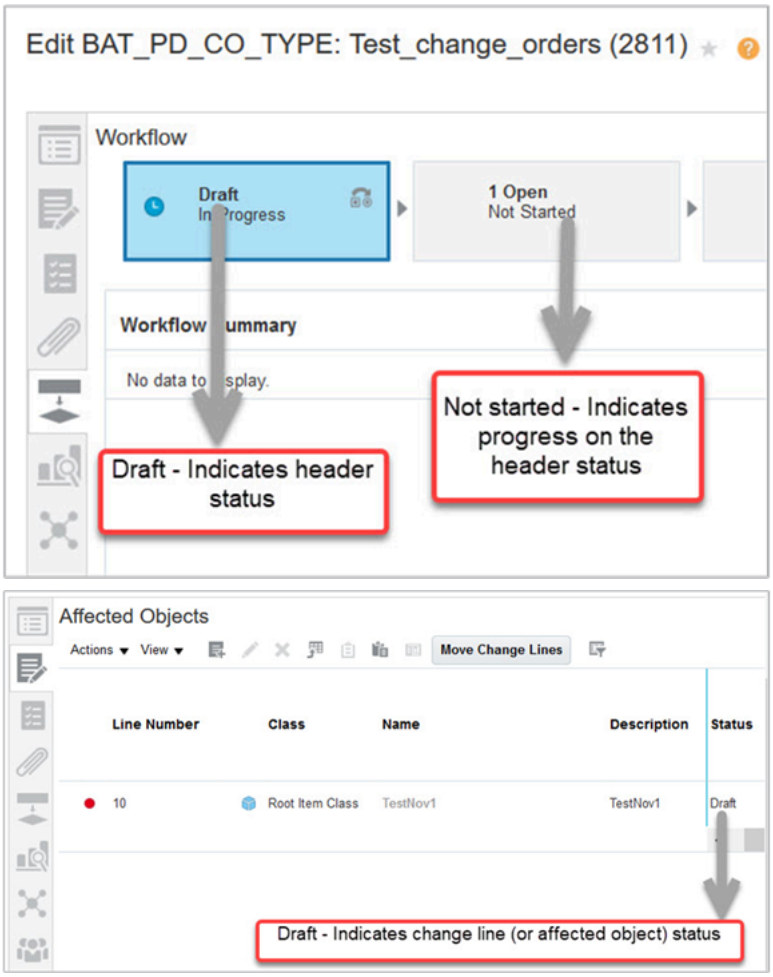
Change statuses enable you to manage a change order through its workflow.

You manage the progression of a change order through its workflow by promoting it (or sometimes demoting it) to the next in a series of change statuses. For each change type, you define a set of applicable statuses.

The change status types are:

- Open
- Interim Approval
- Approval
- Scheduled
- Completed

The following images show where the header status and the progress status are displayed:



As an administrator, you can create statuses of each change type and assign a name. You can apply different statuses to each change type to form workflows unique to each status type.

If you use autopromote and autodemote in the same workflow, ensure that you don't autodemote the change order to the same status from which it was automatically promoted. For example, in a workflow consisting of Open, Approval, Scheduled, and Completed status:

Don't autopromote from Open to Approval and don't autodemote from Approval to Open (when the approval is rejected).

It's recommended that in the same workflow, create an additional status between Open and Approval as follows:

Open, Rework (type Open), Approval, Scheduled, and Completed.

Then, set autopromote and autodemote as follows:

- Autopromote from Open to Approval
- Autodemote from Approval to Rework (when the approval is rejected)

Draft Status

By default, the Draft status is the first status for all change orders irrespective of the change type. You can't configure Draft and it doesn't appear in the workflow. In this status, you can modify the change order.

Open Status

In Open status, you can make the following changes to the change order: add specific items and modify attribute values, select priority and reason, and provide description and optional supporting documents. You can have more than one open status in the change order workflow. For example, Open, Interim Approval, Open, and Interim Approval.

Interim Approval Status

You can optionally add one or more Interim Approval status, to accommodate multiple approval flows or progressively approve change orders in your organization.

Approval Status

Change orders can be routed to a list of approvers based on configuration in the change type. The approval can be user defined, rules based, or managed by a web service. Depending on the type definition, more than one person can approve. If the approval is rule-based, then approvers are defined in approval groups in the BPM worklist and approval groups are associated with rules. Only user-defined approvers are defined at the type level. In a user-defined workflow, approvers can also be added at run time by either the initiator or the Assigned To person.

Scheduled Status

When a change order is approved, it's automatically promoted to a Scheduled status. After the change order is scheduled, it can't be demoted or canceled. The change order remains scheduled until all the affected objects have reached their effective date.

Completed Status

When the effective date of items in the change order is reached, the changes defined in the change order become effective in production. When all item lines in the change order are effective, the change order is completed. The change order can't be reopened or canceled once in this status.

Note:

- To use this feature in the Product Information Management work area, you must enable the Simplified Change Management interface.
- From update 23A onward, the **Autocomplete on Cancel** option is enabled by default in the change type. So, when the last change line is canceled manually and all the other change lines are either in the Completed or Canceled status, a scheduled change order automatically moves to the Completed status.

Configure Change Types

Overview of Change Type Setup

You can create and configure a change type based on predefined change types.

Change objects that you create from the change type inherit properties such as default assignee, entry and exit criteria, automatic promotion and demotion, attribute configuration, and so on.

For example, you can create a change type named Circuit Board to manage the approval of all circuit boards. You can then create a change order by selecting the change type as Circuit Board. The change order inherits properties such as default assignee, entry and exit criteria, automatic promotion and demotion, and so on.

You can configure change types using the Manage Change Order Types task. Here's how you access the task.

In the Setup and Maintenance work area, go to the following:

- Offering: Product Management
- Functional Area: Change Orders
- Task: Manage Change Order Types

The change types are listed in the following hierarchy on the Manage Change Order Types page:

- First or top level (All Change Types) - includes predefined and copied change types. Note that you can't create changes using All Change Types. This is only used to indicate the hierarchy of change types and the inheritance of extensible flexfields across change types.
- Second level - predefined change types.
- Third level - change types copied from predefined change types.

  Additionally, you can only add alphanumeric characters and underscores in the **Internal Name** field on the change type. (You can't use hyphens when you create a new change type.)

Here are the tabs that appear on a change type:

- **Policy** - configure the following: number generation method, item effective date, autocomplete settings for canceling the change, commenting options when users remove change participants, assignee role, default assignee, change priority, and change reason.
- **Workflow** - use additional workflow controls to control actions by change participants.
- **Propagation Rules** - cascade item structure changes from source to target organizations in commercialization change orders.
- **Creators** - define which user roles can create change orders (or change requests).
- **Attributes** - control the visibility of trading partner reference attributes and configure extensible flexfields for a change type.

Change Policy

Here's what you can configure from the Policy tab of a change type.

Number Generation Method

- **Sequence Generated**: You can provide the Prefix, Starting Number, Increment, and Suffix for change order numbers for the change type.
- **Rules Generated**: The user must associate a configured rule set, which creates change numbers in the sequence defined in the function.
- **User-Defined**: Define your own number generation methods.

Item Effective Date

Specify how many days after change order creation the item changes should become effective. Or, specify that the changes become effective immediately after the change order is approved. This option sets the default item effective date when a change order is created, which can be modified before the change order is submitted. If the effective date for an item is empty, the item change becomes effective immediately upon approval of the change order.

> **Note:** It's the effective date of the specific items in a change order that decides their production effectivity, not the item effective date for the change order, which is used to set the default effective date of affected objects (or change lines) in the change order.

Autocomplete on Cancel

Update 23A onward, the **Autocomplete on Cancel** option for the change type is enabled by default. So, a change order in the scheduled state automatically moves to the completed state if the last change line is canceled manually. Note that all change lines must be either canceled or completed for the change order to move to the Complete or Canceled status.

This is applicable to both new and in-progresses change orders.

Note:

- For a change order to move to the completed status on cancellation of the last change line, at least one change line must be in the completed status.
- If all the change lines in a change order are in the canceled status, then on cancellation of the last change line the change order would be canceled.

Mandate Comments Before Removing Participants

You can choose a commenting option to enforce, allow, or prevent entering of comments when users remove workflow participants. You can remove participants:

- for a future change status,
- for the current change status, and
- while routing the change to an approval status.

Here are the commenting options:

- **Required**: Enforce users to enter comments.
- **Optional**: Make it optional for users to enter comments.
- **Not Applicable**: Don’t provide an option to enter comments.

Assignee Role and Default Assignee

You can configure a default assignee for a change type. This assignee is inherited by changes created from the change type. For example, change orders, change requests, problem reports, and corrective actions.

For change orders and requests, the default assignee is likely a change analyst.

For problem reports and corrective actions, the default assignee is likely a quality analyst. The default assignee is notified about status changes and approvals to keep the object on track.

Note: If you're configuring the change type for supplier portal users, it's recommended to select a default assignee. Otherwise it could result in stuck change orders.

Here are the possible ways of configuring an assignee in the change type:

- Select only the default assignee. Later, you can modify the assignee while creating the change such as change order.
- Select a role and an assignee within the role as the default assignee. Later, you can modify the assignee while creating the change.

You can modify both role and assignee when the change is in draft and open statuses. Note that:

- You must provide the Manage Assignee privilege and also the permission to manage change header attributes (defined in the Additional Workflow Controls table in change type setup).
- It's recommended that you grant the creator and the requester the ability to edit the change header attributes during Interim Approval and Approval statuses. This will allow them to modify the assignee in case the current assignee becomes unavailable during these statuses.

Priority

You can set the default priority for the change type.

Reason

Select the default reason for the changes created from the change type.

Attachment Categories

For the attachment categories to appear for selection in the Attachments tab of a change in Product Development, you must first create them and associate them to a change type in the Setup and Maintenance work area.

For more information, see *Attachment Categories for Changes*

Propagation Rules

You can create propagation rules to propagate (or cascade) item structure changes from source to target organizations in commercialization change orders.

Here's an example: Let's say that you've different models of a mobile phone manufactured across locations. You want the microphone structure to be similar across all models. Then you can create a propagation rule so that when you create a change order on the microphone in your central R&D lab, similar change orders with redlines are automatically created across all manufacturing locations.

Before you create propagation rules, here's what you need to know:

- Propagation is applicable only for commercialization change orders.
- Only item structure changes can be propagated.

Additionally, make sure that the structure components you want to propagate (from source organization) are also available in target organizations.

Here's how you create propagation rules:

1. From the Setup and Maintenance work area, select the following:
    - Offering: Product Management
    - Functional Area: Change Orders
    - Task: Manage Change Order types
2. Select the change type in which you want to set up propagation and click **Edit**.
3. In the change type page, click the Propagation Rules tab.
4. To add a source organization from which you want to initiate propagation click **Actions** > **Add** and select the organization.
5. To add target organizations in which you want to propagate changes click **Actions** > **Select and Add**. You can add specific organizations or an organization hierarchy.

    To add an organization:

    - In the **Select and Add: Organizations** dialog box, select **Organization**. Enter the search criteria and click **Search**.
    - In the search results, you can select multiple organizations and click **OK**.

      If you add multiple organizations, they appear in Propagation Rules separated by a comma.

    To add an organization hierarchy:

    - In the **Select and Add: Organizations** dialog box, select **Organization Hierarchy**. Enter the search criteria and click **Search**.
    - You can expand organization hierarchies and select the required hierarchy. Changes will be propagated to organizations in this hierarchy.
    - Click **OK**.
6. On the edit change order type page, click **Save**.

    Once you create the rule, you can modify these fields:

    - **Default**: If you've created more than one rule, select the default rule for propagation.
    - **Autopropagate**: Select this to automatically propagate changes so that your users need not click the **Propagate** button on the change order's Propagation tab. When the change order in your source organization reaches the scheduled status, a change order is created automatically in the target organization in the Open status.
    - **Status of Propagation**: Status of the source change order at which propagation is initiated. You can only select **Scheduled**.
    - **Status of Propagated Change**: Status at which the change order is created in the target organization. You can only select **Open**.

Creators

You can define which user roles can create change orders (or change requests) for a change type. Only members of the roles you specify as creators can create change orders based on the change type.

If you don't specify any roles as creators, all users can create change orders of that type.

Attributes

Use the Attributes tab (on a change type) to configure the visibility for trading partner reference attributes and to view the extensible flexfields defined for the change type.

Header Attributes

Configure the visibility for trading partner reference attributes such as Customer, Manufacturer, Supplier, and Source that appear on the General Information tab of a change. For each attribute, you can choose one of these visibility options:

- **Blank**: The attributes aren't visible for any user.
- **Internal**: The attributes are visible for users in Product Development, Product Information Management, and Quality Management work areas.
- **Internal and External**: The attributes are visible for internal and supplier portal users. The default value is blank.

> **Note:** You can configure the attribute visibility only for predefined change types. Although the 8D Corrective Action is a predefined change type, it's a child of the Corrective Action change type in the hierarchy. You can't directly edit the attribute visibility on the 8D Corrective Action type.

Attribute Groups

In the Attribute Groups section, you can view the extensible flexfields defined for the change type.

Although you can add and remove extensible flexfields to existing pages using the Attribute Groups section, you must use the Manage Extensible Flexfields task to add and remove them.

To create new pages to which you can add extensible flexfields, you must use the Manage Extensible Flexfields task. However, you must first create flexfields using either the **Manage Change Attribute Groups and Attributes** setup task or the **Manage Contexts** button on the **Manage Extensible Flexfields** task.

Here's the recommended process to create and deploy flexfields:

- Access the Manage Extensible Flexfields task in the Setup and Maintenance work area. Search for the flexfield code EGO_CHANGE_EFF and edit Change Extended Attributes.
- Create extensible flexfields:

  Click **Manage Contexts**. On the Manage Contexts page, click **Create**.

  Here you create Contexts (Attribute Groups) and Segments (Attributes) that you can add to specific change types.
- Assign extensible flexfields:

  After saving and closing Manage Contexts, you can add flexfields to change types, save your changes, and assign the saved flexfields to a page you create on the Pages tab (so the attributes are visible in the UI). You can also remove flexfields. See the related topic for more information.

- Deploy extensible flexfields:

  After saving and closing your changes, click **Deploy Flexfield**. All additions, removals, or modifications of flexfields and flexfield pages must be deployed so that users can view and use them from the UI.

The **Inherited** column shows whether the flexfields are inherited.

The **Associated Category** column shows the change type for which the flexfields are defined.

Related Topics

- Configure Extensible Flexfields for Change Types

Configure Extensible Flexfields for Change Types

You can configure extensible flexfields for a change type so that these fields appear at the header level on change orders, change requests, problem reports, and corrective actions.

You can configure extensible flexfields at the following levels:

- **All Change Types** - this is at the top level of change types and includes predefined as well as copied change types. Extensible flexfields added at this level are inherited by predefined and copied change types.
- **Predefined change types** - this is the second level of change types. Extensible flexfields added at this level are inherited to change types copied from the predefined change types.

  > **Note:** Predefined change types include Engineering Change Order, Commercialization Change Order, Change Order Without Revision Control, Change Request, Deviation Request, Problem Report, and Corrective Action.

- **Change types copied from predefined ones** - this is at the third level. Extensible flexfields added at this level aren't inherited to any other level.

Where the Extensible Flexfields are Available

- Manage pages on change orders, change requests, problem reports and corrective actions
- Create and edit pages on change orders, change requests, problem reports, and corrective actions
- Change order details report
- OTBI reports
- Change audit report (if they're configured in Product Hub audit policy)
- Rest APIs
- SOAP services
- Number assignment and validation rules

> **Note:** If you opt in to this feature, deploy extensible flexfields, and then opt out, the flexfields won't be available on the Create, Manage and Edit pages for change orders, change requests, problem reports, and corrective actions. But they will still be accessible through REST API, SOAP services, and import.

Inheritance of Flexfields Across Change Type Hierarchy

- Extensible flexfields are inherited down the hierarchy of change types.

  If you add them at the first (or top) level, they're automatically inherited at the second and third levels of the hierarchy. If you add them only to the second level, they're automatically inherited to the third level. So you can't manually add them at two different levels.

  For example, if you add the flexfields to the predefined Engineering Change Order change type which is at the second level, you can't also add the same to All Change Types which is at the first level. You'd have to delete them from the second level and then include them at the first level so that they're automatically inherited to the second level.
- When you duplicate a change type that's copied from a predefined change type, the extensible flexfields added on the source change type won't be copied over to the new change type.

Considerations for Flexfields Setup

- It's recommended to use the Manage Extensible Flexfields task to add or remove extensible flexfields.

  Although you can add or remove flexfields on the Attributes tab of the Edit Change Order Type page, you'll have to use the Manage Extensible Flexfields task to add flexfields to the Pages tab (so they're visible in the UI), remove them, and deploy them.
- The multiselect context segment must be the first attribute in the multirow attribute group on the **Edit Context** page. You can have only one multiselect context segment in an attribute group.
- When you edit a multirow attribute group with a multiselect enabled attribute, if all the values of the multiselect attribute are deleted, then while saving the changes, the values in all other attributes in the multirow attribute group will be deleted.
- You can't have the same values for these attributes:
  - Internal Name field on the item class.
  - Code field on the item extensible flexfields attribute group.
  - Internal Name field on the change type.
  - Code field on the change extensible flexfields attribute group.
- The **Associated Category** column on the Pages tab (of the Edit Extensible Flexfield task) shows **All Change Types** even when you select a predefined or copied change type. Use the Associated Contexts tab to see the correct category.
- If you haven't opted in to the feature Use Simplified Change Management Interface, but have opted in to this feature, you won't be able to see extensible flexfields in the Product Information Management work area.
- You can use XML format to export and import both value sets and extensible flexfields at the same time. If using CSV format, you must first export and import value sets, and then export and import the extensible flexfields.
- Change order details report:

  If the column width in a multirow extensible flexfields 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.

  If the extensible flexfields are added in the Associated Contexts tab and not on the Pages tab of the Edit Extensible flexfields page, they appear in the change order details report only if they've a default value.

Add Extensible Flexfields for a Change Type

You can add extensible flexfields for a change type so that flexfields appear at the header level on change orders, change requests, problem reports, and corrective actions.

Here are the types of fields (or display types) supported in the Product Development and Product Information Management work areas:

- Text field
- Drop-down list - appears as a list of values from which you can select a value. It supports a smaller number of values.
- List of values - appears as a list of values from which you can select or also perform a search to select the value.
- Date and time
- Multiple select list of values - note that this is supported only for PLM (Product Lifecycle Management) users.

Prerequisites:

- It's recommended that you create contexts (attribute groups) and context-sensitive segments (attributes) before adding flexfields for the change type.
- Ensure that flexfields are deployed successfully.

After you've taken care of these prerequisites, follow these steps:

1. In the Setup and Maintenance work area, access the Manage Extensible Flexfields task using the **Search** option in the Tasks panel tab.
2. Search for the flexfield code **EGO_CHANGE_EFF**.
3. Select the flexfield in the search results and click **Edit**.
4. Expand **All Change Types**.
5. Select the change type for which you want to configure extensible flexfields.
6. Add extensible flexfields:

   Click the Associated Contexts tab in the Details section. The inherited flexfields appear in this section if you select a predefined change type or copied change type.

   To add additional flexfields:

   - Click **Actions** > **Select and Add**.
   - In the Select and Add dialog box, search for and select the flexfields. Click **OK**.
   - Click **Save**.
7. Click the Pages tab in the Details section.
8. Select or create the page where you want to place the flexfields.

   With the page row still selected, add the flexfields in the Associated Contexts Details section.

   > **Note:** You can also migrate the extensible flexfields to different environments using Import and Export.
9. Click **Save and Close**.
10. Click **Deploy Flexfield**.

Add Extensible Flexfields to OTBI

To make extensible flexfields available in OTBI, here's what you must do:

- Edit the context sensitive segment and select the **BI Enabled** option (in the Business Intelligence section on the Edit Segment page).
- Run the scheduled process Import Oracle Fusion Data Extensions for Transactional Business Intelligence.
- Select **ERP** as the parameter instead of **All** to complete the process faster.

Related Topics

- Overview of Flexfields
- Overview of Extensible Flexfields
- Flexfield Segment Properties
- How Flexfield Segments are Rendered on Pages

Secure Extensible Flexfields on Change Types

You can control which users or roles can view or edit extensible flexfields on changes by configuring data security for extensible flexfields.

Here's a summary of steps:

1. Create data privileges to control viewing and editing of extensible flexfields using Security Console.
2. Associate data privileges with the flexfield context from the Manage Context page for changes.
3. Deploy flexfields.
4. Configure data security on the change type.

Note: If you're duplicating a change type, you must first save it to view the inherited data security on the Security tab.

Create Data Privileges for Extensible Flexfields on Changes

1. Sign in to Security Console.
2. Click the Administration tab and click Manage Database Resources.
3. On the Manage Database Resources and Policies page, search for EGO_CHANGE_EFF_B.

   Select the row from the search results, and click **Edit**.
4. On the Create Database Resource page, click the Action tab.
5. Click **Actions** > **Add Row** to create the required data privilege.

   Examples:

   Create Ext_Flex_View to define a privilege to view data.

   Create Ext_Flex_Edit to define a privilege to edit data.

   Note: To identify whether a privilege is for viewing or editing, suffix View or Edit.
6. Save your changes.

Associate Data Privileges to Each Flexfield Context

1. In the Setup and Maintenance work area, access the Manage Extensible Flexfields task using the Search option in the Tasks panel tab.
2. Search for the flexfield code **EGO_CHANGE_EFF**.
3. Edit the change extensible flexfield context.
4. Click **Manage Contexts.**
5. Search for and open a context with which you want to associate the data privileges.
6. In the Context Usages section, associate the data privilege (created in Security Console).
    a. **View Privilege** drop-down list: Select the data privilege created for providing view access on flexfields.
    b. **Edit Privilege** drop-down list: Select the data privilege created for providing edit access on flexfields.
7. Save your changes.
8. Deploy flexfields.

Configure Data Security on the Change Type

1. In the Setup and Maintenance work area, go to the following:
    - Offering: Product Management
    - Functional Area: Change Orders
    - Task: Manage Change Order Types
2. Search for and select the change type for which you want to configure data security. Click **Edit**.
3. Click the Security tab on the change type.
4. Add the user or role (group) for whom you want to configure security on this change type. Save your changes.
5. Select the user or role you added in the previous step.
6. In the Actions on Extensible Flexfields section, click **Actions** > **Select and Add**.

   The data privileges (or actions) you created in Security Console appear in this section.

   Select the action that you want to provide to the user or role.
7. Save your changes.

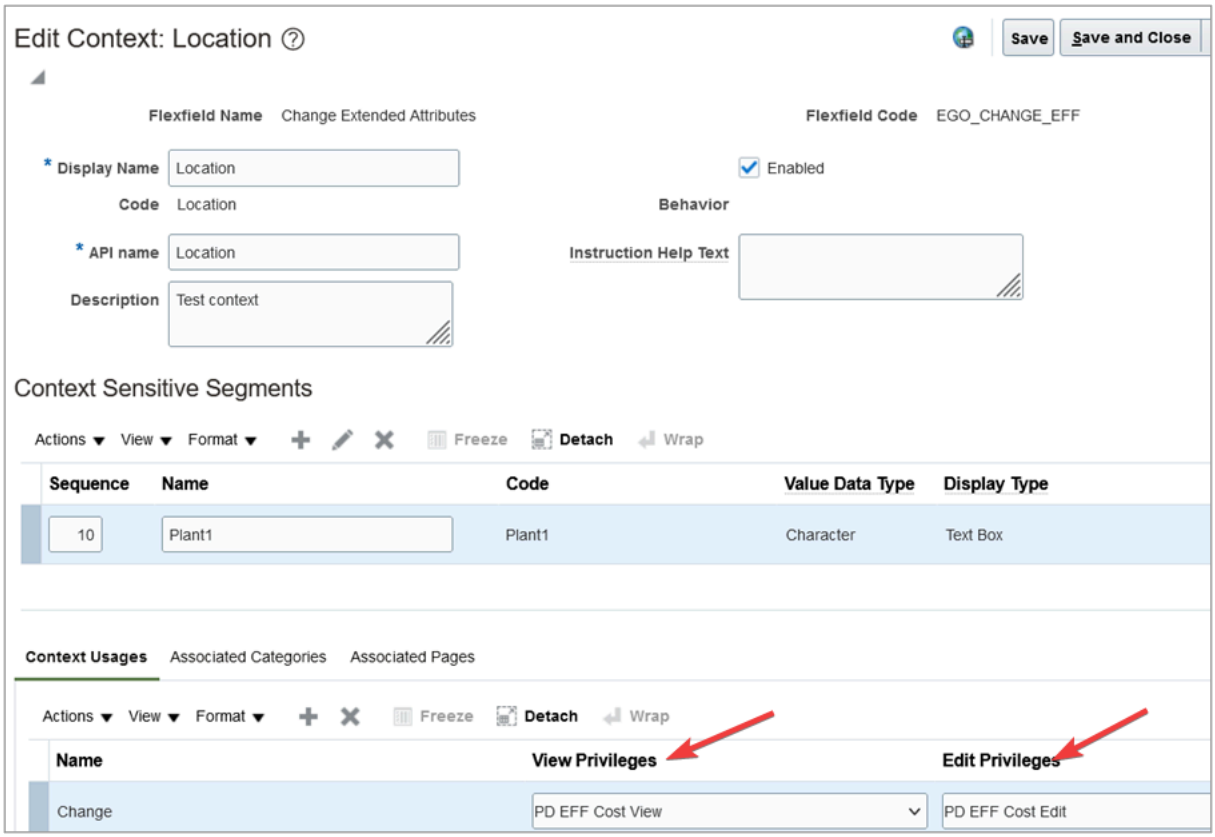
   Your user's ability to view or edit extensible flexfields depends on the privileges assigned to the user or role through Security Console, privileges assigned for the context and change type, and permission for the Manage Change Header Attributes action in the additional workflow controls table. The table shows the privileges required to view extensible flexfields.

Security Console	Edit Context Page	Change Type Set Up
Ensure that the user or role has these privileges: View Change Order View Change Request View Problem Report View Corrective Action	In the **View Privileges** column on the Context Usages tab, select the view privilege you created. For example, Ext_Flex_View.	In the Actions on Extensible Flexfields section on the Security tab, assign the same view privilege (that you assigned on the Edit Context page).

The table shows the privileges required to view and edit extensible flexfields:

Security Console	Edit Context Page	Change Type Set Up
Ensure that the user or role has these privileges: Manage Change Order Manage Change Request Manage Problem Report Manage Corrective Action	In the **View Privileges** and **Edit Privileges** columns, select the view and edit privileges you created. For example, Ext_Flex_View and Ext_Flex_Edit.	In the Actions on Extensible Flexfields section on the Security tab, assign the same view and edit privileges (that you assigned on the Edit Context page). Set Manage Change Header Attributes action in Additional Workflow Controls to **All** or **Additional Information**.

This image shows where you select view and edit privileges on the Edit Context page.



Related Topics

- Overview of Flexfields
- Overview of Extensible Flexfields
- Flexfield Segment Properties
- How Flexfield Segments are Rendered on Pages

Attachment Categories for Changes

You can use attachment categories to control access to certain types of attachments on change orders, change requests, problem reports and corrective actions.

You can define the attachment category at the following levels:

- All Change Types
- Predefined change types
- Change types copied from predefined ones.

For the attachment categories to appear on a change in the UI, you must first create an attachment category and then associate it with a change type.

To create an attachment category:

Navigate to the Setup and Maintenance > Product Management and search for **Manage Attachment Categories** from the Tasks panel.

1. Click **Manage Attachment Categories** and in the page that opens, click **Actions > Create**.
2. Enter a Category Name and User Name of your choice and set the module as **Changes**.
3. Click the + icon to create an attachment entity.
4. In the Select and Add: Attachment Entities dialog, add EGO_ENGINEERING_CHANGES_B as an entity.
5. Click **Save & Close**.

To associate the attachment category to a change type:

Navigate to Setup and Maintenance > Product Management > Change Orders > Manage Change Order Types. Use the **Manage Change Order Types** task to associate attachment categories to the change type.

1. Open a change type (for example, ECO).
2. Navigate to the Policy tab.
3. From the **Attachment Categories** section, click Create and select the attachment category that you created earlier.

When the user clicks **Category** in the **Add Attachments** panel of the Attachments tab on a change order in Product Development, the added attachment categories appear in the drop-down list. Attachment categories are inherited down the hierarchy of change types.

Related Topics

- What's an attachment category?
- How Attachment Entities and Attachment Categories Work Together
- Attachment Entities

Configure Additional Workflow Controls

Overview of Additional Workflow Controls

You can use additional workflow controls to control actions by participants in a change workflow.

You can add up to five roles as participants so that users with the configured role can take specific actions on changes. For instance, you can allow users with the role Engineer to manage affected objects.

In short, you can control which actions change participants can perform at each status in the workflow. You can also use Additional Workflow Controls to edit the attributes of the changes through the standard option of Manage Change Header Attributes.

Related Topics

- Overview of Change Type Setup
- Control Actions by Participants
- Configure Automatic Promotion and Demotion

Control Actions by Participants

You can control which actions users can perform at each status in the workflow.

Here are the default participants whose actions you can configure:

- Creator - is the creator of the change order.
- Analyst - is the default assignee you can configure for the change type. You can change the analyst when you create the change order (or another change such as change request).

  If you don't configure the default assignee, the user who creates the change order becomes the analyst.
- Requester - is the user who requested the change order.
- Portal user - is the supplier portal user.
- Approver - is the approver of the change order.
- Other Users - are users other than creators, analysts, requesters, portal users, and approvers; they're users with the Manage Item Change Order privilege.

Add Controls for Roles

In addition to the default controls in the Additional Workflow Controls table, you can add more controls to govern actions by configured roles. You can add up to five configured roles as participants and control what actions they can perform for each status in the change workflow. A new column is added to the table for each role you add.

Here are some examples of roles you can add:

- Add the role Change Analysts and permit this role to perform all actions permitted for the Analyst (who is the change assignee). This will allow all change analysts to perform the same actions as the change assignee.
- Add a Product Data Managers role and allow access only to manage affected objects and change header attachments. This allows users in charge of product data to make updates to affected object attributes, and attach a document to the change header (for example, a summary of changes).

- Add an Operations Management role and allow access to edit change orders that are in Scheduled and Completed status. This allows operations managers to make updates to the change header attachments after the change has been approved. For example, documentation or packaging information.

  > **Note:** Oracle recommends that security administrators don't assign these predefined roles directly to users. Instead, make a copy of a predefined role, remove the privileges that your users don't need, and assign users the role that contains only the privileges they need.

1. In the Setup and Maintenance work area, go to the following:
   - Offering: Product Management
   - Functional Area: Change Orders
   - Task: Manage Change Order Types
2. Select the change type for which you want to add new roles and click **Edit**.
3. Click the Workflow tab and select a status.
4. In the Addition Workflow Controls Table, click **Add Controls for Roles**.
5. In the Add Roles dialog box, select the role name and enter a display name. Click **OK**.
6. Click **Save**.

   This creates a new column in the table for the role you added. Now you can define action permissions for the role.

   > **Note:** You must perform these steps for each workflow status and new role.

Related Topics

- Actions You Can Control

Actions You Can Control

For a change type, you can define what actions participants can perform at each status in the workflow. You can also reorder the display sequence of actions that appear in the additional workflow controls table.

Based on your business requirements, you can allow or disallow actions for the following participant types:

- Creator
- Analyst
- Requester
- Other Users
- Portal User

Note:

- For tighter and enhanced security, set all actions for **Other Users** to **No** and instead add five specific roles for users who can access change types.
- If you configure an **Assignee Role** in the change type, it's recommended that you add the selected role (to the Additional Workflow Controls table) to allow assignees take action on the changes.
- Except for the Analyst (assignee), all other users need the BPMWorkflowScmAdmin privilege to cancel, terminate, and restart change orders. It's recommended that you always specify the assignee role in addition to the assignee so that anyone in that role can cancel or terminate the change order in case the default assignee is unavailable.

Assign Permissions for Each Action

1. In the Setup and Maintenance work area, go to the following:
    - Offering: Product Management
    - Functional Area: Change Orders
    - Task: Manage Change Order Types.
2. Select the change type for which you want to assign permissions and click **Edit**.
3. Click the Workflow tab and select a status.
    - The additional workflow controls appear in the side panel.
4. For each action, select the applicable permissions.
5. Click **Save**.

Reorder the Display Sequence of Actions

Here's how you reorder the display sequence of actions.

1. In the Setup and Maintenance work area, go to the following:
    - Offering: Product Management
    - Functional Area: Change Orders
    - Task: Manage Standard Lookups
2. In the Lookup Type field, search for **ORA_EGO_CO_WORKFLOW_CONTROLS**, and expand Lookup Codes.
3. In the Display Sequence column, you can reorder the sequence of actions.
4. Save your changes.

Actions in Open Status

Here are the actions in Open status for creator, analyst, requester, other users, and portal user.

Note:

- Participants include reviewers, optional approvers, and approvers.
- Use the Manage Change Header Attributes action to allow or disallow participants from modifying the general information on a change.
- You can only import and export configurable attributes that are listed in the Attributes tab for the predefined change types.

Action	Creator	Analyst	Requester	Other Users	Portal User
Promote Manually	To next status	To any status	To next status	No	No
Add Participants for Current Status	Yes/No	Yes/No	Yes/No	Yes/No	No
Remove Participants for Current Status	Yes / No	Yes / No	Yes / No	Yes / No	No
Manage Change Header Attributes	No / All / Standard / Additional Information Standard attributes include Name, Description, Reason code, Priority, Need-by-date, and Requested by. Additional information includes descriptive flexfields.	No / All / Standard / Additional Information	No / All / Standard	No / All / Standard / Additional Information	No / All / Standard / Additional Information
Manage Change Header Attachments	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No
Manage Affected Objects	Yes / No	Yes / No	Yes / No	Yes / No	No
Cancel Change Orders or Lines	Yes / No	Yes / No	Yes / No	Yes / No	No
Hold or Release	Yes / No	Yes / No	Yes / No	Yes / No	No
Move Change Lines	Yes / No	Yes / No	Yes / No	Yes / No	No
Add Participants for Future Status	Yes / No	Yes / No	Yes/No	Yes / No	No

Action	Creator	Analyst	Requester	Other Users	Portal User
Remove Participants for Future Status	Yes / No	Yes / No	Yes/No	Yes / No	No
Manage Security	Yes / No	Yes / No	Yes / No	Yes / No	No
Manage Relationships	Yes / No	Yes / No	Yes / No	Yes / No	No
Add Tasks	Yes / No	Yes / No	Yes / No	Yes / No	No
Remove Tasks	Yes / No	Yes / No	Yes / No	Yes / No	No
Update Tasks	Yes / No	Yes / No	Yes / No	Yes / No	No

Note: In update 22B, the action names for Add Approvers for Future Status and Remove Approvers for Future Status have been changed to Add Participants for Future Status and Remove Participants for Future Status.

Actions in Interim Approval Status

Here are the actions in Interim Approval status for creator, analyst, requester, other users, approver, and portal user:

Action	Creator	Analyst	Requester	Other Users	Approver	Portal User
Promote Manually	No / To next status / To any status	No / To next status / To any status	No / To next status / To any status	No / To next status / To any status	No / To next status / To any status	No
Demote Manually	No / To previous status / To any status	No / To previous status / To any status	No / To next status / To any status	No / To previous status / To any status	No / To next status / To any status	No
Add Participants for Current Status	Yes / No	Yes / No	Yes/No	Yes / No	Yes / No	No
Remove Participants for Current Status	No	Yes / No	No	No	No	No
Manage Change Header Attributes	No / All / Standard / Additional Information Standard attributes include Name, Description, Reason code, Priority, Need-by-date, and Requested by.	No / All / Standard / Additional Information	No / All / Standard / Additional Information	No / All / Standard / Additional Information	No / All / Standard / Additional Information	No / All / Standard / Additional Information

Action	Creator	Analyst	Requester	Other Users	Approver	Portal User
	Additional information includes descriptive flexfields.					
Manage Change Header Attachments	Yes / No	Yes / No	Yes/No	Yes / No	Yes / No	Yes / No
Manage Affected Objects	Yes / No	Yes / No	Yes/No	Yes / No	Yes/No	No
Terminate or Restart Approval	No	Yes	Yes/No	No	No	No
Cancel Change Orders or Lines	Yes / No	Yes / No	Yes/No	Yes / No	Yes / No	No
Hold or Release	Yes / No	Yes / No	Yes/No	Yes / No	Yes / No	No
Move Change Lines	Yes / No	Yes / No	Yes/No	Yes / No	Yes / No	No
Add Participants for Future Status	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	No
Remove Participants for Future Status	No	Yes / No	No	No	No	No
Manage Security	Yes / No	Yes / No	Yes/No	Yes / No	Yes / No	No
Manage Relationships	Yes / No	Yes / No	Yes/No	Yes / No	Yes / No	No
Add Tasks	Yes / No	Yes / No	Yes/No	Yes / No	Yes / No	No
Remove Tasks	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	No
Update Tasks	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	No

Actions in Approval Status

Here are the actions in Approval status for creator, analyst, requester, other users, approver, and portal user:

Action	Creator	Analyst	Requester	Other Users	Approver	Portal User
Demote Manually	No / To any status /To previous status	No / To any status /To previous status	No / To any status /To previous status	No / To any status /To previous status	No / To any status /To previous status	No
Add Participants for Current Status	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	No
Remove Participants for Current Status	No	Yes / No	No	No	No	No
Manage Change Header Attributes	No / All / Standard / Additional Information Standard attributes include Name, Description, Reason code, Priority, Need-by-date, and Requested by. Additional information includes descriptive flexfields.	No / All / Standard / Additional Information	No / All / Standard / Additional Information	No / All / Standard / Additional Information	No / All / Standard / Additional Information	No / All / Standard / Additional Information
Manage Change Header Attachments	Yes / No	Yes / No	Yes/No	Yes / No	Yes / No	Yes / No
Terminate or Restart Approvals	No	Yes	No	No	No	No
Cancel Change Orders or Lines	Yes / No	Yes / No	Yes/No	Yes / No	Yes / No	No
Hold or Release	Yes / No	Yes / No	Yes/No	Yes / No	Yes / No	No
Move Change Lines	Yes / No	Yes / No	Yes/No	Yes / No	Yes / No	No
Add Participants for Future Status	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	No
Remove Participants for Future Status	No	Yes / No	No	No	No	No
Manage Security	Yes / No	Yes / No	Yes/No	Yes / No	Yes / No	No

Action	Creator	Analyst	Requester	Other Users	Approver	Portal User
Manage Relationships	Yes / No	Yes / No	Yes/No	Yes / No	Yes / No	No
Add Tasks	Yes / No	Yes / No	Yes/No	Yes / No	Yes / No	No
Remove Tasks	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	No
Update Tasks	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	No

Actions in Scheduled Status

Here are the actions in Scheduled status for creator, analyst, requester, other users, and portal user:

Action	Creator	Analyst	Requester	Other Users	Portal User
Add Participants For Current Status	Yes / No	Yes / No	Yes / No	Yes / No	No
Remove Participants for Current Status	Yes / No	Yes / No	Yes / No	Yes / No	No
Manage Change Header Attributes	No	No / All / Standard / Additional Information Standard attributes include Name, Description, Reason code, Priority, Need-by-date, and Requested by. Additional information includes descriptive flexfields.	No	No	No / All / Standard / Additional Information
Manage Change Header Attachments	No	Yes / No	No	No	Yes / No
Cancel Change Orders or Lines	Yes / No	Yes / No	Yes / No	Yes / No	No
Move Change Lines	Yes / No	Yes / No	Yes / No	Yes / No	No
Manage Security	Yes / No	Yes / No	Yes / No	Yes / No	No
Manage Relationships	Yes / No	Yes / No	Yes / No	Yes / No	No
Reschedule Change Orders	Yes/No	Yes/No	Yes / No	Yes/No	No

Action	Creator	Analyst	Requester	Other Users	Portal User
Add Participants for Future Status	Yes/No	Yes/No	Yes/No	Yes/No	No
Remove Participants for Future Status	Yes/No	Yes/No	Yes/No	Yes/No	No
Add Tasks	Yes / No	Yes/No	Yes/No	Yes/No	No
Remove Tasks	Yes / No	Yes / No	Yes / No	Yes / No	No
Update Tasks	Yes / No	Yes / No	Yes / No	Yes / No	No

Actions in Completed Status

Here are the actions in Completed status for an analyst and a portal user. Note that creators and other users aren't allowed to perform any action.

Action	Analyst	Portal User
Add Participants for Current Status	Yes/No	No
Remove Participants for Current Status	Yes/No	No
Manage Change Header Attributes	No / All / Standard / Additional Information Standard attributes include Name, Description, Reason code, Priority, Need-by-date, and Requested by. Additional information includes descriptive flexfields.	No / All / Standard / Additional Information
Manage Change Header Attachments	Yes / No	Yes / No
Move Change Lines	Yes / No	No
Manage Security	Yes / No	No
Manage Relationships	Yes / No	No
Add Tasks	Yes/No	No
Remove Tasks	Yes / No	No
Update Tasks	Yes / No	No

Related Topics

- Where are the change header attributes and change descriptive flexfield attributes displayed?

What Happens to Existing Actions When You Delete a Change Status

If you delete a workflow status from the change type configuration while there are pending change orders for the type, it can result in improper actions.

To prevent this, the application automatically assigns a set of default values for all actions in the Additional Workflow Controls table for the deleted status.

Note:

- Participants include reviewers, optional approvers, and approvers.
- Although this feature enables you to manage accidental deletion of a status, it's not recommended to do so. As a best practice, ensure that the change type doesn't have any pending change orders before you delete a status.

Default Actions for Open Status

Here are the default actions that are automatically applied for participants in the Open status.

Actions	Creator	Analyst	Other Users	Portal User
Promote Manually	Next status	To Any Status	No	No
Add Participants for Current Status	No	Yes	No	No
Remove Participants for Current Status	No	Yes	No	No
Manage Change Header Attributes	Standard/Main	All	No	No
Manage Change Header Attachments	Yes	Yes	Yes	No
Manage Affected Objects	Yes	Yes	Yes	No
Cancel Change Orders or Lines	No	Yes	No	No
Hold or Release	No	Yes	No	No
Move Change Lines	No	Yes	No	No
Add Participants for Future Status	Yes	Yes	Yes	No

Actions	Creator	Analyst	Other Users	Portal User
Remove Participants for Future Status	No	Yes	No	No
Manage Security	Yes	Yes	No	No
Manage Relationships	Yes	Yes	No	No
Add Tasks	Yes	Yes	No	No
Remove Tasks	Yes	Yes	No	No
Update Tasks	Yes	Yes	No	No

Note: In commercialization change orders, the Manage Relationship action and Portal User are unavailable across all statuses.

Default Actions for Interim Approval Status

Here are the default actions that are automatically applied for participants in the Interim Approval status.

Actions	Creator	Analyst	Other Users	Approver	Portal User
Promote Manually	Next status	To Any Status	No	No	No
Add Participants for Current Status	No	Yes	No	No	No
Remove Participants for Current Status	No	Yes	No	No	No
Manage Change Header Attributes	No	All	No	No	No
Manage Change Header Attachments	No	Yes	Yes	No	No
Manage Affected Objects	No	Yes	Yes	No	No
Cancel Change Orders or Lines	No	Yes	No	No	No
Hold or Release	No	Yes	No	No	No
Move Change Lines	No	Yes	No	No	No

Actions	Creator	Analyst	Other Users	Approver	Portal User
Add Participants for Future Status	Yes	Yes	Yes	Yes	No
Remove Participants for Future Status	No	Yes	No	No	No
Manage Security	Yes	Yes	No	No	No
Manage Relationship	Yes	Yes	No	No	No
Add Tasks	No	Yes	No	No	No
Remove Tasks	No	Yes	No	No	No
Update Tasks	No	Yes	No	No	No
Terminate Change Order	No	Yes	No	No	No
Demote Manually	No	To Any Status	No	No	No

Default Actions for Approval Status

Here are the default actions that are automatically applied for participants in the Approval status.

Actions	Creator	Analyst	Other Users	Approver	Portal User
Demote Manually	No	To Any Status	No	No	No
Add Participants for Current Status	No	Yes	No	No	No
Remove Participants for Current Status	No	Yes	No	No	No
Manage Change Header Attributes	No	All	No	No	No
Manage Change Header Attachments	No	Yes	Yes	No	No
Terminate or Restart Approvals	No	Yes	No	No	No

Actions	Creator	Analyst	Other Users	Approver	Portal User
Cancel Change Orders or Lines	No	Yes	No	No	No
Hold or Release	No	Yes	No	No	No
Move Change Lines	No	Yes	No	No	No
Add Participants for Future Status	Yes	Yes	Yes	Yes/No	No
Remove Participants for Future Status	No	Yes	No	Yes/No	No
Manage Security	Yes	Yes	No	No	No
Manage Relationships	Yes	Yes	No	No	No
Add Tasks	No	Yes	No	No	No
Remove Tasks	No	Yes	No	No	No
Update Tasks	No	Yes	No	No	No

Default Actions for Scheduled Status

Here are the default actions that are automatically applied for participants in the Scheduled status.

Actions	Creator	Analyst	Other Users	Portal User
Add Participant for Current Status	No	Yes	No	No
Remove Participants for Current Status	No	Yes	No	No
Manage Change Header Attributes	No	No	No	No
Manage Change Header Attachments	No	No	No	No
Cancel Change Orders or Lines	No	Yes	No	No
Move Change Lines	No	Yes	No	No
Reschedule Change Orders	No	Yes	No	No

Actions	Creator	Analyst	Other Users	Portal User
Add Participants for Future Status	Yes	Yes	Yes	No
Remove Participants for Future Status	No	Yes	No	No
Manage Security	Yes	Yes	No	No
Manage Relationships	Yes	Yes	No	No
Add Tasks	No	No	No	No
Remove Tasks	No	No	No	No
Update Tasks	No	No	No	No

Default Actions for Completed Status

Here are the default actions that are automatically applied for participants in the Completed status.

Actions	Analyst	Portal User
Add Participants for Current Status	Yes	No
Remove Participants for Current Status	Yes	No
Manage Change Header Attributes	No	No
Manage Change Header Attachments	Yes	No
Move Change Lines	Yes	NA
Manage Security	Yes	NA
Manage Relationships	Yes	NA
Add Tasks	No	NA
Remove Tasks	No	NA
Update Tasks	No	NA

Configure Automatic Promotion and Demotion

In a change type, you can configure the automatic promotion and demotion.

The table shows whether you can configure automatic promotion and demotion based on the change order status.

Status	Configure Automatic Promotion?	Configure Automatic Demotion?
Open	Yes	No
Interim Approval	Yes	Yes
Approval	No	Yes
Scheduled	No	No
Completed	No	No

Here's how you configure automatic promotion and demotion:

1. In the Setup and Maintenance work area, go to the following:
    - Offering: Product Management
    - Functional Area: Change Orders
    - Task: Manage Change Order Types
2. Select the change type for which you want to configure the automatic promotion and demotion, and click **Edit**.
3. Click the Workflow tab and select the workflow status (for which you want to configure the automatic promotion and demotion).
4. In Promotion and Demotion policy, select whether you want to allow automatic promotion and demotion.

    > **Note:** If you set the **Response Required From** field to **All**, and you add a role with more than 40 members for interim approval or approval status, automatic promotion is prevented.

5. Click **Save**.

Configure Interim Approval and Approval Status

To configure how interim approvals or approvals work for a change type, select the appropriate status in the Workflow tab.

Select from the options available in the Participant Details section:

- **User defined:** Allows users to add approvers and optional approvers. An approval is required from users and roles configured in the **Response Required From** column, and also depends on the **Activity Type**.
- **Rule based:** Allows users to create rules that define the approval criteria. To create rules, use BPM Worklist.
- **Web service based:** Configure a web service to define rules for approval.

  You can select either Rule based or Web service based.
- **One response per status**: A single approval across the roles and individual approvers is sufficient to promote the change order to the next status.

Here's how the Response Required From field works.:

- If you set **Response Required From** as **All**, notifications are sent only to approvers added directly to the role, not to the inherited users (or approvers) of the role.

  > **Note:** An error message is displayed if the role has more than 40 members and you've set the **Response Required From** to **All**.

- If you set **Response Required From** as **One**, notifications are sent to approvers added directly to the role, as well as inherited users (or approvers) of the role.
- When you select a role for approval in the **Assignee Type** column, the value in the **Response Required From** column is set to one automatically.

How to Choose Between User Defined And Rule Based Approvals

Here's what you need to consider before you choose user defined or rule based approvals.

- Who needs to perform the approvals. The group of approvers required can vary in many ways: by functional department, by item class, by change priority, and so on.
- Whether approvals need to be performed at header level only, or at both header and line level.
  - In header level approvals, approval at the header level approves all the lines in the change order.
- User defined approvers are part of the setup for specific change types. You associate approvers with a change status, at the header level.
- Rule based approvers are derived by rules defined with Approval Management Extensions. These rules can be set up based on parameters like item classes, change attributes, item attributes, and items. Approvals can be set up at the header level.

Related Topics

- Overview of Change Type Setup
- How to Automate Change Order Approval

Configure Context Specific Attributes for Change Types

You can configure context-specific attributes for change types at the header and line levels so that your users can view and edit the attributes on the change. This feature is also available for supplier portal users.

Here are business objects which support this feature:

- Change orders
- Change requests
- Problem reports
- Corrective actions

Configure Context-Specific Attributes at Line Level

1. In the Setup and Maintenance work area, go to the following:

- Offering: Product Management
- Functional Area: Change Orders
- Task: Manage Change Order and New Item Request Line Descriptive Flexfields

2. Select the task in the Change Orders functional area.
3. Click **Actions** > **Edit**, to edit the flexfield named EGO_CHANGE_LINE.
4. Click **Manage Contexts**.
5. On the Manage Contexts page, click **Create**.
6. On the Create Context page:
   - **Context Code** - this value must be same as the internal name of the change type for which you're creating context-specific attributes.
   - Enter the other details and click **Save**.
7. In Context Sensitive Segments, click **Create**.
8. On the Create Segment page, enter the details of the segment. Click **Save and Close**.
9. Return to the Manage Change Order and New Item Request Line Descriptive Flexfields page. Navigate to the Context Sensitive Segments section and review the context sensitive segment you created in a previous step.
10. In Context Segment:
    - **Value Set**: Select ORA_EGO_CHANGE_TYPES_VS.
    - **Default Type**: Select Parameter.

      > **Note:** If you've configured rules to propagate changes across organizations, ensure that you select values in both **Default Type** and **Value Set** fields. This is required for propagation to be completed successfully.

    - **Default Value**: Select Product Context.
    - **Display Type**: Select Hidden.
    - Enter the other details of the segment and click **Save**.
11. Deploy flexfields using the Deploy Item Extensible Flexfields task (in the Setup and Maintenance work area for the Product Management Offering).

Configure Context-Specific Attributes at Header Level

Prerequisite: Note down the internal name of the change type for which you want to create context-specific attributes at the header level.

1. In the Setup and Maintenance work area, go to the following:
   - Offering: Product Management
   - Functional Area: Change Orders
   - Task: Manage Change Order and New Item Request Header Descriptive Flexfields
2. Click **Manage Context**.
3. In the Manage Context window, click **Actions** > **Create**.
4. In the **Display Name** and the **Context Code** fields, enter the internal name of the change type for which you want to create descriptive flexfields at the header level. Note that the API name field gets populated automatically.
5. Click **Save**.
6. To create attributes, in Context Sensitive Segments, click **Create**.

7. In the **Create Segment** page, enter the details of the header level descriptive attribute. Click **Save and Close**.

   You must repeat this step for each attribute.
8. In the Manage Change Order and New Item Request Header Descriptive Flexfields page, click **Deploy Flexfields**.

Considerations for Adding Descriptive Flexfields

Here's the total number of global and context descriptive flexfields that you can create for each context:

Datatype	Character Limit	Number of Global + Context Descriptive
Text	150	50
Text	4000	20
Number	-	20
Extensible Number	-	100
Date	-	35
Time Stamp	-	10

Here's an example:

You can create a total of 50 Text fields. Let's say you've already created the following:

- 10 Global descriptive flexfields
- 10 Context descriptive flexfields

Then you'll have 50 – (10+10), that is, 30 fields that you can still create.

> **Note:** The character limit is 4000 characters for descriptive flexfield attributes corresponding to table columns ATTRIBUTE26 through ATTRIBUTE30 and ATTRIBUTE56 through ATTRIBUTE70.

Import and Export Change Type Configuration

You can import or export the following in a change type: workflow sequences, approval settings, and additional controls. For example, you can transfer the change type setup information from your development environment to your production environment.

Here's what's supported during the import or export:

- Header information: includes the header attributes such as Name, Internal Name, and Description.
- Policy: includes the settings for attributes such as Number Generation Method, Autocomplete on Cancel, Priority, Assignee Role, and Default Assignee.

  If Priority, Assignee Role, or Default Assignee values aren't found in the target system, an error message appears.

- Workflow: includes settings for workflow statuses, workflow sequence, promotion and demotion policy, approval setup, default approvers, and additional workflow controls.

  If a change type already exists in the target system with a different workflow sequence (the application checks for a combination of sequence number and associated internal status name), then the import of the workflow sequence and additional workflow controls are skipped. In this case, you must synchronize the workflow sequence manually and then restart the import to update additional workflow controls.
- Data in the Creators and Propagation tabs.

  Before you import propagation rules, you must ensure that the target environment contains propagation organizations mentioned in propagation rules.
- Entry and exit criteria

  Here's the recommended sequence:

  - Import the change type.
  - Create the entry and exit criteria in the target environment and associate the entry and exit criteria with the change type.
  - Again import the change type.

Here are some additional details:

- If you export the data in the Manage Change Order Types task, it automatically includes the data in the Manage Change Statuses task.
- Comparison of change statuses is done using the new non-translatable StatusInternalName attribute. If the status is created manually, the StatusInternalName attribute is filled automatically on initial status creation using the Status Name value. Blank characters aren't allowed in internal names and are replaced with underscores.
- Comparison of role information is done using the attribute Role Code.
- Comparison of user information is done using the attribute User Name.
- You can only import and export configurable attributes that are listed in the **Attributes** tab for the predefined change types.

Export Change Type Configuration

In the Setup and Maintenance work area, do the following:

1. Select the Product Management offering.
2. Click the arrow icon in the Change Orders Functional Area row.
3. Select **Export** > **Create New**.
4. Click **Submit**.

   When the export is finished, click the **Latest Export** link just in Setup: Product Management.

Import Change Type Configuration

In the Setup and Maintenance work area, do the following:

1. Select the Product Management offering.
2. Click **Actions** > **Import** > **Create New**.
3. Browse for the configuration package you exported earlier.

4. Click **Submit**.

How to Add Additional Attributes to a Change Order Details Report

You can use the existing template for the Change Order Details Report to copy and add additional attributes from the Product Development or Product Information Management work area.

Prerequisites to Edit the Template

- Download Oracle BI Publisher plug-in for Microsoft Office (Accessible to Windows users; not MAC or other users)
- Download the Change Order Listing Report Sample XML file from BI Publisher at **> Catalog/Shared Folders/ Supply Chain Management/Product Management/Items/Change Orders/Change Order Listing Report Data Model/Properties/ Attachment/Sample Data/ChangeOrderListingSampleData.xml**
- Modified templates are refreshed every 24 hours by default after you upload them to the BI catalog. Set up the profile option BIP_CLIENT_REFRESH_TIME to control the refresh interval. For details, see the support note: Doc ID 2697006.1 on My Oracle Support.

To Copy the Template

1. In the Oracle Transactional Business Intelligence Catalog page, navigate to Shared Folders > Supply Chain Management > Product Management > Items > Change Orders to create a Change Order Details Report template.
2. Click **Edit** and download the RTF template to the desired folder.
3. Select **Change Orders**.
4. Select the **Change Order Listing Report** and click the **More** drop-down list.
5. Select the **Customize** option to:
    - Edit the existing default report layout, or
    - Add a new report layout by duplicating the existing default report layout.

Note: You can select any report layout.

To Add Additional Attributes

Once all the prerequisites are in place, you can download the sample .xml file, open the .rtf file and add the data in the template.

- While configuring the template, you can insert data from the existing XML file. For existing attributes, you can drag or insert the attribute.
- If the attribute doesn't exist in the XML file, use the placeholder `<ATTR_GROUP>` and render a condition to bring in the Extended Flexfields (EFFs), Descriptive Flexfields (DFFs), main item attributes, and user-defined attributes. You can render a condition for item redlined attributes and the `<ATTR_GROUP>` appear as sections.

Here's an example.

Let's say you want to configure the Change Order Details report to display redlined item changes in a table format and conditionally display only a few extensible flexfields for items. For example: Chip Specs, PLM_Compliance, and Processor_Details.

1. Open the RTF template file, navigate to the **BI Publisher** tab and click **Conditional Region**.
2. Select **Field** and write a condition or place the condition you want in the **Advanced** section. In this example, the condition is: `<?if:ATTR_GROUP_NAME='Chip Specs' or ATTR_GROUP_NAME='PLM_Compliance' or ATTR_GROUP_NAME='Processor_Details'?>`
3. Place the condition before the attribute group `(ATTR_GROUP_NAME)`
4. Add C (start condition) in the Data field and select the field type as Date/Text.
5. Click the **Advanced** tab in the Conditional Region and paste the condition.
6. Click **OK**. You can see that C (the start condition) and EC (the end condition) appear against the field.
7. Click **OK** and save the RTF file.

Note:

- As a best practice, keep the header attributes untouched and change the rest of the data.
- To include a redlined attribute, insert a conditional format before the attribute name with the statement `<?if:ATTR_NAME!='Change Action'?>`

Attribute Groups You Can Configure in the Change Order Listing Report

You can configure the attributes that are already available in the default report and also change the format of the report. Here's a list of attribute groups that you can configure in the Change Order Detail Report RTF file.

- Change Order Information: You can configure all the Change Header main attributes such as Change Name, Change Number, Description, Type, Priority, and so on. Also includes Global and Context descriptive flexfields and extensible flexfields.
- Change Line Details: Attributes containing details of the change lines.
- Affected Item Attributes: Attributes of the affected items, which include:
  - Item General Information Attributes
  - Operational Item Attributes
  - Item Global and Context Descriptive Flexfields
  - Item Extensible Flexfields

To Upload the Template

After you configure the template for the change order details report, your last step is to upload the configured template.

1. In the Oracle Transactional Business Intelligence Catalog page, navigate to Shared Folders > Supply Chain Management > Product Management > Change Orders.
2. In the drop-down list for the Change Order Listing Report, click **Customize**.
3. Click **Add New Layout**. The options for creating a layout and uploading or generating a layout appear.
4. In the Upload or Generate Layout section, click the **Upload** icon.
5. In the Upload Template File dialog box,
   - For the **Layout Name**, enter a name of your choice.
   - Click **Browse**, go to the RTF file, select it, and click **Open**.
   - In **Type**, select **RTF Template**.

- In **Locale**, select **English**.

6. Click **Upload**.

To verify the configured template for the Change Order Details Report, you can click the **Actions** menu of a change order and generate a report.

Note:

- Once you generate a report, you can download and analyze it in Microsoft Excel, provided you've opted in to the feature Generate Excel-based Change Summary Report with Redline Information. If you don't opt in to the feature you can still see the data, only that it will be an RTF-based report and not an Excel-based one.

Related Topics

- Change Order Details Report

Configure the Limit for Objects in Change Orders and New Item Requests

To restrict users from adding a large number of items in change orders and new item requests, you can configure the limit for:

- The number of change lines or affected objects in change orders, and
- The number of items in new item requests.

To configure the limit for change orders and new item requests:

1. In the Setup and Maintenance work area, access the Manage Administrator Profile Values task.
2. Search for the profile option code EGO_MAX_LINES_PER_CO.
3. In Profile Value, enter the limit.
   Oracle recommends that you provide a value between 1 and 100. The default value is 50.

Related Topics

- Opt In To New Features After Update

Troubleshoot Issues in Change Objects

The predefined roles enable you to view and manage change orders and change requests. If you've modified roles or you're unable to manage changes, here's how you troubleshoot issues:

Assign Access to Changes

Use Security Console to assign privileges required to manage change orders and change requests.

Here are the privileges that are common across change orders and change requests, and the corresponding privilege codes:

Common Privileges for Change Orders and Change Requests	Privilege Codes
Approve Item Change Order	EGO_APPROVE_ITEM_CHANGE_ORDER_PRIV
Generate Item Change Order Report	EGO_GENERATE_ITEM_CHANGE_ORDER_REPORT_PRIV
Manage Item Change Order Provides view and modify access to both change orders and change requests.	EGO_MANAGE_ITEM_CHANGE_ORDER_PRIV
Monitor Item Change Order Summary	EGO_MONITOR_ITEM_CHANGEORDER_SUMMARY_PRIV
Reschedule Item Change Order	EGO_RESCHEDULE_ITEM_CHANGE_ORDER_PRIV
View Item Change Order	EGO_VIEW_ITEM_CHANGE_ORDER_PRIV
Manage Item Change Order Status	EGO_MANAGE_ITEM_CHANGE_ORDER_STATUS_PRIV
Manage Item Change Order Type	EGO_MANAGE_ITEM_CHANGE_ORDER_TYPE_PRIV
Monitor Product Development	ACA_MONITOR_PRODUCT_DEVELOPMENT_PRIV
Monitor Product Management Workflow Objects Provide granular view or manage access for change orders and change requests. Also applicable for supplier portal users.	ACA_MONITOR_PRODUCT_MANAGEMENT_WORFLOW_OBJECTS_PRIV
Manage Application Descriptive Flexfield	FND_APP_MANAGE_DESCRIPTIVE_FLEXFIELD_PRIV
Manage Application Flexfield Value Set	FND_APP_MANAGE_FLEXFIELD_VALUE_SET_PRIV
Manage Change Orders in Supplier Portal	ACA_MANAGE_CHANGE_ORDERS_SUPPLIER_PORTAL
View Change Order in Supplier Portal	ACA_VIEW_CHANGE_ORDER_SUPPLIER_PORTAL

Here are the privileges that are specific to change requests and the corresponding privilege codes:

Privileges for Change Requests	Privilege Codes
Manage Change Requests	ACA_MANAGE_CHANGE_REQUESTS
View Change Request	ACA_VIEW_CHANGE_REQUESTS

Assign Separate Access to Change Orders and Change Requests

If your business requires you to provide separate access for change orders and change requests, you can do so by assigning privileges using Security Console. For instance, you can configure users to **view and edit change requests** but **only view change orders**. You can use the Monitor Product Management Workflow Objects privilege along with the object-specific View or Manage privilege. Here's how:

View access for change orders:

- Monitor Product Management Workflow Objects (ACA_MONITOR_PRODUCT_MANAGEMENT_WORFLOW_OBJECTS_PRIV)
- View Change Orders (ACA_VIEW_CHANGE_ORDERS_PRIV)

Modify access for change orders:

- Monitor Product Management Workflow Objects (ACA_MONITOR_PRODUCT_MANAGEMENT_WORFLOW_OBJECTS_PRIV)
- Manage Change Orders (ACA_MANAGE _CHANGE_ORDERS_PRIV)

View access for change requests:

- Monitor Product Management Workflow Objects (ACA_MONITOR_PRODUCT_MANAGEMENT_WORFLOW_OBJECTS_PRIV)
- View Change Requests (ACA_VIEW_CHANGE_REQUESTS)

Modify access for change requests:

- Monitor Product Management Workflow Objects (ACA_MONITOR_PRODUCT_MANAGEMENT_WORFLOW_OBJECTS_PRIV)
- Manage Change Requests (ACA_MANAGE_CHANGE_REQUESTS)

Add or Remove Reviewers in Workflows

Workflow participants can add and remove reviewers for change statuses based on their permissions in the change type setup. To define who can add or remove participants for a particular status, configure permissions for the following actions in the Additional Workflow Controls table in change type setup:

- Add Participants for Future Status
- Remove Participants for Future Status

If your users are **unable to add or remove reviewers** to a change type in the workflow, here's what you need to do:

- Ensure that your users have one of the following privileges so that they **can add and remove participants**:
  - Manage Change Orders (ACA_MANAGE_CHANGE_ORDERS_PRIV)
  - Manage Item Change Order (EGO_MANAGE_ITEM_CHANGE_ORDER_PRIV)
- Ensure that your users have the following privileges so that **they can be added as reviewers**:

Object Type and Reviewer Privileges

Object Type	Reviewer Privileges
Change Orders	Monitor Product Management Workflow Objects (ACA_MONITOR_PRODUCT_MANAGEMENT_WORFLOW_OBJECTS_PRIV) and one of the following: • View Change Orders (ACA_VIEW_CHANGE_ORDERS_PRIV) • Manage Change Orders (ACA_MANAGE_CHANGE_ORDERS_PRIV) Or Manage Item Change Order (EGO_MANAGE_ITEM_CHANGE_ORDER_PRIV)
Change Requests	Monitor Product Management Workflow Objects (ACA_MONITOR_PRODUCT_MANAGEMENT_WORFLOW_OBJECTS_PRIV) and one of the following: • View Change Request (ACA_VIEW_CHANGE_REQUESTS_PRIV) • Manage Change Request (ACA_MANAGE_CHANGE_REQUESTS_PRIV) Or Manage Item Change Order (EGO_MANAGE_ITEM_CHANGE_ORDER_PRIV)
Problem Reports	Monitor Product Management Workflow Objects (ACA_MONITOR_PRODUCT_MANAGEMENT_WORFLOW_OBJECTS_PRIV) and one of the following: • View Problem Report (ACA_VIEW_PROBLEM_REPORTS_PRIV) • Manage Problem Report (ACA_MANAGE_PROBLEM_REPORT_PRIV)
Corrective and Preventive Actions	Monitor Product Management Workflow Objects (ACA_MONITOR_PRODUCT_MANAGEMENT_WORFLOW_OBJECTS_PRIV) and one of the following: • View Corrective Action (ACA_VIEW_CORRECTIVE_ACTIONS_PRIV) • Manage Corrective Action (ACA_MANAGE_CORRECTIVE_ACTION_PRIV)

If You're Unable to Add Users on Change Security Tab

Create a data security policy with a database resource named Application Object (or FND_OBJECTS). Here's how:

1. Sign in to Security Console.
2. Search for the role that you're troubleshooting. Click **Actions** > **Edit Role**.
3. On the edit role page, click Data Security Policies.

4. Click **Create Data Security Policy**.

   In the Create Data security Policy dialog box, enter the following:

   - Database Resource: Search for and add the resource named EGO_ENGINEERING_CHANGES_B.
   - Data Set: Choose **Select by instance set**.
   - Condition Name: Select **Access the item change for table EGO_ENGINEERING_TABLE for the item changes they have access to**.
   - Click **OK** and click **Next**.

5. Save your changes.

If You're Unable to Search for Change Orders

Create a data security policy with a database resource named Item Change Order for Table (or EGO_ENGINEERING_CHANGES_B). Here's how:

1. Sign in to Security Console.
2. Search for the role that you're troubleshooting. Click **Actions** > **Edit Role**.
3. On the edit role page, click Data Security Policies.
4. Click **Create Data Security Policy**.

   In the Create Data Security Policy dialog box, enter the following:

   - Database Resource: Search for and add the resource named FND_OBJECTS.
   - Data Set: Chose **Select by instance set**.
   - Condition Name: Select **Access the application objects for table FND_OBJECTS for the change orders they have access to**.
   - Paramter1: Enter EGO_ENGINEERING_CHANGES_B.
   - Actions: Select all the actions.
   - Click **OK** and click **Next**.

5. Save your changes.

Related Topics

- Actions You Can Control
- Duty Role Components

Debug Failed Processes

You can gather error information to help support teams debug the cause of scheduling and activation failures or stuck changes. Here's some useful information:

View Debugging Information

- You can access important debugging information in the Enterprise Scheduler Service (ESS) log and database tables (EGO_CHANGE_ERRORS and EGO_VERSIONS_BATCH_THREADS).

- Debugging information is centralized in a single error table (EGO_CHANGE_ERRORS). The error details column (ERROR_DETAIL) captures the entire stack trace.

  A message is triggered when a change order is automatically canceled due to threads that didn't start. The CLOB field in the EGO_CHANGES_ERRORS table logs details of change lines that were automatically canceled for this reason.
- The service server name and the execution ID are available in the threads table (EGO_VERSIONS_BATCH_THREADS) and the error table (EGO_CHANGE_ERRORS) as columns to help in debugging when changes get stuck in the scheduled status.

Configure Time Interval Between Enterprise Service Scheduler Jobs

- In case of Enterprise Scheduler Service errors, the application attempts to reprocess the stuck and unprocessed change lines.

  You can configure the time interval between Enterprise Service Scheduler jobs.

  In the Enterprise Manager, click **ESSAPP** > **Configuration** > **Application Properties**.
- **FirstRetryInterval**: Number of minutes after the Enterprise Scheduler job ends with an error, you want the first attempt to reprocess change lines.
- **FollowOnRetryBaseInterval**: Number of minutes after the first attempt to reprocess change lines, you want the second attempt to reprocess change lines. The application initiates 5 such attempts based on this interval until lines are reprocessed.

  For example, let's say a change had 10 lines and lines 3 to 10 failed to complete. You've set **FirstRetryInterval** as 15 and **FollowOnRetryBaseInterval** as 30. In this case, the job will reprocess lines 4 to 10 instead of canceling them. The first attempt is made 15 minutes after the lines failed. The second attempt is made 30 minutes after the first attempt failed.

- To avoid errors during activation, a preprocess syncs effectivity dates in the following tables:

  EGO_VERSIONS_B

  EGP_ITEM_REVISIONS_B

  EGP_SYSTEM_ITEMS_B

  EGO_ITEM_EFF_B

  EGO_ITEM_EFF_TL

  EGP_ITEM_RELATIONSHIPS_B

  EGP_COMPONENTS_B

  EGO_ITEM_REVISION_EFF_B

  EGO_ITEM_REVISION_EFF_TL

  EGO_ITEM_SUPPLIER_EFF_B

  EGO_ITEM_SUPPLIER_EFF_B

  EGO_ITEM_SUPPLIER_EFF_TL

  EGO_ITEM_ASSOCIATIONS

  The error details are accessible even after scheduling logs are purged

Note: To debug change order validation errors directly in implementation logs, you must enable the profile option named **Enable Change Debugging (ORA_EGO_CHANGE_DEBUG_MODE)** by using the Manage Administrator Profile Values task.

View Process IDs When Scheduled Process Fails

When a rule fails validation, both the error tables and logs show an appropriate error message providing more details.

A process ID appears in the Enterprise Scheduler Service log and change affected objects tab, when a scheduling process fails.

You can use the process ID to query errors and debug the failed process from the EGO_CHANGES_ERRORS table.

Here's a sample query:

Select * from fusion.ego_change_errors where request_id=[*process ID*];

Here's how you debug failed processes:

1. Navigate to the change order's Affected Objects tab.
2. Locate the **Activation Process ID** and **Subprocess ID** columns and copy the process ID that failed.

   Scroll to the column, if required.

   Depending on the profile option Enable Change Debugging, here's how you query debugging information.

3. If the profile option Enable Change Debugging is **enabled:**

   Use the process ID to query the EGO_CHANGES_ERRORS table for debugging information.
4. If the profile option Enable Change Debugging is **disabled:**

   For failed scheduled process, use the Scheduling Process ID to query the EGO_CHANGES_ERRORS table for debugging information.

   For failed activation process:
   - Use the View Scheduled Processes page, to search by Activation Process ID.
   - In the hierarchy view, you can find the ID of the subprocess that resulted in an error. To view the error details, click **View Log**.
   - Using the subprocess ID, query the EGO_CHANGES_ERRORS table for debugging information.

     > **Note:** You can create a BI data model with similar queries to view data in the EGO_CHANGES_ERRORS table.

Validations Skipped During Scheduled Status

The following validations are skipped during scheduled status to improve change resiliency and performance:

- **Needs Approval:** The Needs Approval validation (where **Severity** level is set to **Needs Approval** in Manage Item Rule Sets task) is skipped during the scheduled status. This prevents problems resulting from updates made to attribute name, API name, or prompt of an extensible flexfield attribute while the change order was in progress.
- **Extensible Flexfield Value Sets**: The validations on extensible flexfield attribute value sets to check whether the values are deactivated or end dated in a change order are skipped during the scheduled status.
- **Extensible Flexfield Attributes**: The validations to check the compulsory extensible flexfield attributes during the scheduled status are skipped. This prevents problems resulting from addition of compulsory flexfield attributes to the change order.

FAQs for Change Orders

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.

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 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.

How can I create an attachment category for a change type?

To create an attachment category for a change type, go to the following:

Setup and Maintenance > Product Management and search for Manage Attachment Categories from the Tasks panel.You then click Manage Attachment Categories and in the page that opens, click Actions > Create.

When creating the category, you must search for a module corresponding to your change type. For example, you can enter "changes" to view all change management modules.

Note: The module key named AcaChanges corresponds to the Product Development work area.

Can I set up a default reason for a change order?

Yes. You can set up a default reason for a change type. The reason is inherited by change orders created from the change type. Use the Reason field in the Manage Change Order Types task.

To access the task, in the Setup and Maintenance work area go to the following:

- Offering: Product Management
- Functional Area: Change Orders
- Task: Manage Change Order Types

Note:

- You can change the default reason in the **Reason Code** field on the change order.
- When you use the **Save As** action to create a new change order (from an existing one), the value of **Reason Code** field is copied from the existing change order and not from the default value defined in the change type.

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

Why am I not receiving change order and new item request approval notifications?

If you've configured approval rules using BPM Worklist, ensure that an attribute group used in the rule isn't assigned to the root item class.

If the attribute group is already assigned to the root item class, you can modify the approval rule or associate the attribute group to a child item class:

Modify the approval rule:

In BPM Worklist, modify the approval rule in the following format:

```
<ItemClass>.< AttributeGroup>.<AttributeName>
```

For example, if the attribute group is Buying_Area and attribute is char1, here's the modified approval rule:

```
JItemRootIccPrivate.itemEFFTLBUYING5FAREAPrivateVO.char1
```

Validate the modified rule.

Associate the attribute group to a child item class:

Using the Manage Item Classes task, dissociate the attribute group from the root item class and associate the attribute group to a child class. Before you dissociate the group, review the impact of this action on existing rules.

Redeploy the extensible flexfields and click **Start Synchronization** (in BPM Worklist).

What role will users require to view the change order details report?

Users will require the following role to view the change order details report:

EGO_GENERATE_ITEM_CHANGE_ORDER_REPORT_**PRIV_OBI**

Can I create assignment rules on changes using flexfields?

Yes. You can create assignment rules for change number assignment using extensible flexfields.

Related Topics

- Rules and Rule Sets

How can I prevent unsaved changes from disappearing when I switch between tabs?

Use Page Composer to configure field settings so that edits are automatically saved.

To do this, edit the task flow using Page Composer. In a sandbox that includes the Page Composer tool, open the page where the field appears. Click **Tools** > **Page Composer** to enable the Page Composer view, and then click the Structure tab. Select the field component, open its properties panel and select the Auto Submit checkbox.

8 Access Control Lists

Overview of Access Control Lists

Use access control lists to assign criteria-based access to specific objects such as manufacturers. With access control lists, you can:

- Define and control who has access to your data.
- Add granular access conditions for different workers.
- Easily identify exactly what privileges are assigned to each user.
- Build your list of workers dynamically based on specified conditions.

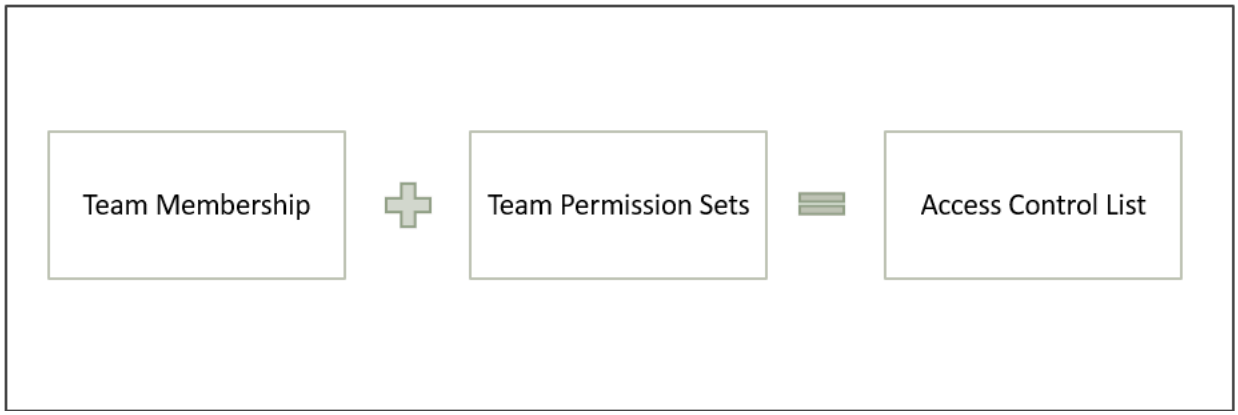
Note:

- To use this feature, you must enable the profile option Redwood Manufacturer Pages Enabled (EGP_MANUFACTURER_REDWOOD_ENABLED). Also, you must opt in to the feature Redwood: Secure Manufacturers Using Access Control Lists.
- You can use access control lists only for manufacturers in the new interface.

Access can be controlled through teams:

- **Team**: A team comprises a set of team members, membership conditions, and one or more permission sets.
- **Members and Membership Conditions**: Members can be added to the team individually, or derived from a filtered list of workers who match certain membership conditions. For example, workers belonging to the same business unit, location, department, and so on.
- **Permission Sets**: Each permission set contains individual permissions. Each permission identifies the object for which permission is given, the conditions that must be met, the type of access to be granted, and the attribute groups the team can access.

The high level diagram shows how the team membership and the team permission sets collectively form an access control list.

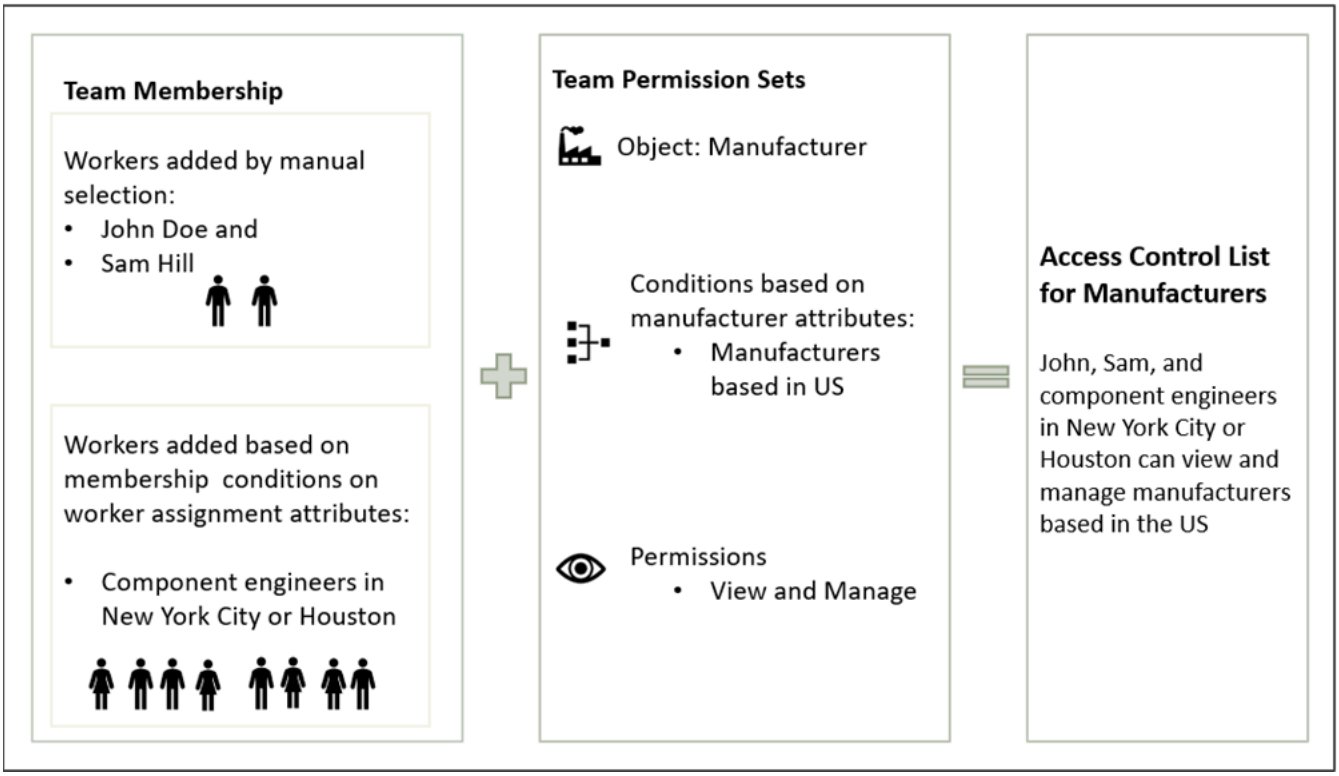


Configuration Summary

Here's a summary of the configuration tasks for access control lists:

1. Create team members who should have access to a particular object.
2. Create permission sets with data access conditions.
3. Create teams, add membership conditions or members, and apply permission sets.

The diagram shows how the team membership and the team permission sets are derived, and how they collectively form an access control list.



How Access Control Lists Work with Functional Privileges on Manufacturers

Manufacturers can be secured using the access control lists and the functional privileges assigned through Security Console. Your worker's ability to access manufacturers depends on both the permissions assigned in access control lists and the functional privileges.

> **Note:** Permissions assigned though access control lists will only be effective if the manufacturer has been assigned the appropriate functional privileges.

Example

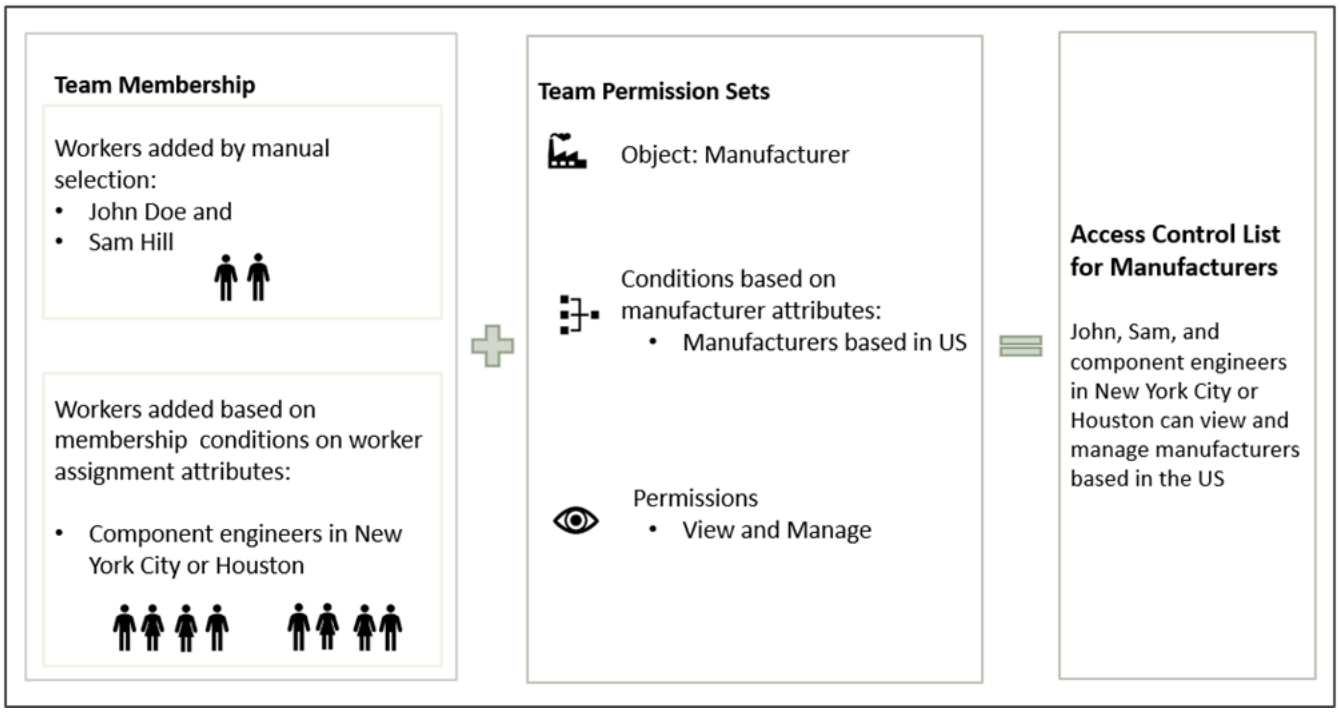
The table presents an example of the access granted to the manufacturers based on functional privileges and permissions in access control lists.

Functional Privileges in Security Console	Permissions in Access Control Lists	What Users Can Do on Manufacturers
Create Manufacturer View Manufacturer Manage Manufacturer	Create View Manage	Create View Edit
Create Manufacturer View Manufacturer Manage Manufacturer	View	View
Create Manufacturer View Manufacturer Manage Manufacturer	None	Can't perform any actions

Example for Manufacturer Access Control

Let's say you want to give access to manufacturer data based on the different types of workers in your organization. In this example, we're giving component engineers based out of New York City or Houston View permission on all manufacturers and restricting Manage permission to some US manufacturers only.

The diagram shows how the access control list is derived for manufactures in the US.



Who Should Have Access

Before you create an access control list, decide which users or user groups should have access to a particular object, and in what conditions.

First, ensure that users who should be part of your teams are set up in the application and associated with the appropriate worker type. Then create filtered lists of these users so that you can add them to teams based on certain membership conditions.

Create and Manage Users

To create users, from the Setup and Maintenance work area, click **Product Management** → **Users and Security** → **Manage Users**. For more information, see *Create Users*.

For information on worker types see *Worker Types*.

Create Filtered Lists

1. On the home page click **My Client Groups** > **Show More**. In **Data Exchange**, click **Filtered Lists**.
2. On the Filtered Lists page, click **Add**.
3. Enter the details for the new list:
    a. Name: name for the membership condition. For example, a condition named BostonDesign to extract team members working out of Boston and managing product design.
    b. Details: description for the membership condition.
    c. Object: select **Worker Assignment Extract**.
    d. Subscriber: select **Product Life Cycle Management**.
    e. Status: set the status as **Active**.
4. In Conditions, click **Add** to create a condition:
    a. Select a member attribute. For example, Location, or Department.
    b. Select an operator (Is one of, Is not one of).
    c. Select values for the attribute. Note that:
        - A membership condition can be built on these attributes: Location Code, Location Name, Department Name, Department Title, Legal Employer Name, Assignment User Status, Assignment Status type, System Person Type, User Person Type, Assignment Category, Position Code, Position Code, Position Name, and Worker Type.
        - You can select multiple conditions separated with an 'And' or 'OR' operator. For example, filter members whose location is either 'New York City' OR 'Houston'.
        - The conditions that you create will be available for selection when you create teams.
    d. Click **Create**.

    The filtered list you create will be available for selection when you create a team and choose membership rules. Refer to the step related to the membership tab in the topic on creating a team.

Related Topics

- Teams

Object Conditions

You can create conditions to define restrictions on a specific object based on one or more of its attributes, using logical operators to combine the conditions as needed.

The conditions that you create will be available for selection when you create permission sets and on the Search Conditions page. For example, a condition to filter manufacturers located in the United States with an Active status.

Create a Condition

1. On the Tasks panel tab, click **Configure Teams**.
2. Select **Conditions** from the **Product Management Search** drop-down list.
3. Click **Create Condition** and select the object for which you want to create the condition and enter the object details.
    a. Name: A unique name for the condition.
    b. Description: A short description of the condition.
    c. Active: By default, this is set to **Yes**.
    d. Attribute: Select the attribute on which you want the rule to be set up. The attribute list consists of the main attributes for the object and the extensible flexfield attributes.
    e. Operator: Select an operator such as equals, is, or not equal to.
    f. Value: Provide the attribute value.
4. Click **Save**.

    You can also set up nested rules with a combination of 'AND' and 'OR' to meet your business requirement.

Extensible Flexfield Attributes in Conditions

Here's what you must know about using extensible flexfield attributes in conditions:

- If you have added new extensible flexfields, you must deploy these for the security to be defined based on those attributes.
- If you make any updates to the conditions containing extensible flexfield attributes, you must rebuild the index for the object to apply the updates to the access control list.

Permission Sets

A permission set contains individual permissions.

Each permission identifies the object for which permission is given, the conditions that must be met, the type of access to be granted on the object, and the attribute groups the team can access.

For example, the administrator wants to give component engineers based out of New York City or Houston permission to view all manufacturers and restrict manage permission to some US manufacturers. Additionally, provide access to the attribute group named Dimension.

Before you configure the attribute groups for the team, you must run the Upgrade Product Management Data scheduled process to grant access to the attribute groups.

Here are some details on permission sets:

- The permission sets that you create appear for selection on the Permission Sets tab when you create a team.
- A permission set can be assigned to multiple teams.
- You can control access to attribute groups when using the View and Manage permissions.
- You can't control access to attribute groups when using the Create permission.
- If you make any updates to the permission sets with conditions containing extensible flexfield attributes, you must rebuild the index for the object to apply the updates made to the access control list.
- When the State attribute (on a manufacturer) is modified or added in a condition used in a permission set, you must rebuild the index for manufacturer objects to apply the updates.
- To view a listing of the permission sets that have already been created, see the Search Permission Sets page. On the search page,
  - You can search for specific permission sets and sort the list of permission sets by the columns.
  - Click the permission set name to see details of the permission set.

Create a Permission Set

1. On the Tasks panel tab, click **Configure Teams**.
2. Select **Permission Sets** from the **Product Management Search** drop-down list.
3. Click **Create** on the Search Permission Sets page and enter the details for the permission set:
   a. Name: Unique name of the permission set.
   b. Description: Short description on the permission set.
   c. Object: Select the object for which you want to create the permission. For example, Manufacturer.
   d. Condition: Select a condition from the list of available conditions or you can also click **Create Condition** to create a new condition.

      The condition helps narrow down the object by applying filters on object attributes.
   e. Permission: Permissions are listed according to the selected object. Select a permission based on the actions you want the team to perform on the object. For the manufacturer object, the available permissions include **Create**, **View**, and **Manage**.

      Create: Allows user to create the manufacturer.

      View: Allows the user to see the manufacturer attributes in read-only format.

      Manage: Allows the user to view and edit a manufacturer.

      Access To: Select the attribute groups the team can access.

      Note that this is disabled when you select the Create privilege, which means users can access all attribute groups when creating a manufacturer.
4. Click **Save**.

Teams

You can create a team to manage access to certain objects. This involves adding members based on the membership conditions defined for your filtered list or adding individual members directly.

Additionally, you'll add permission sets that identify the object for which permission is given, the conditions that must be met, and the type of access to be granted.

Prerequisite for creating teams:

- Create access conditions
- Create permission sets

Create a Team

Here's how you create and configure a new team:

1. On the Tasks panel tab, click **Configure Teams**.
2. Select **Teams** from the **Product Management Search** drop-down list.
3. In the Search Teams page, click **Create**.
4. In the New Team page, provide these details:
    a. Name: Unique name for the team.
    b. Description: A short description of the team.
    c. Status: Set the status of the team to **Active**.
5. In the Membership tab:
    a. Add members based on the membership conditions defined for your filtered list.
    b. Optionally, add individual members directly.
6. In the Permission Sets tab, add the permissions you created in the Permission Set page.
7. Click **Save and Close**.

Team Status

You can set the team status as Active or Inactive.

An active status indicates a fully operational team that honors the membership conditions and permissions assigned to the team.

An inactive status indicates a team that isn't currently operational, so the membership conditions and permission sets aren't honored. For example, consider a team configured to provide component engineers based out of New York City or Houston permission to view all manufacturers and restrict manage permission to some US manufacturers. If the team is set as inactive, then the conditions for the view and manage permissions aren't honored.

Guidelines for Managing Teams

- All the permissions granted to the team are granted to all the members of the team. If you add a user to multiple teams, that user can access all the objects that each of those teams has access to.
- If a new user is created and meets the membership condition defined for a team, then that member automatically gets assigned the team's privileges for data access. Similarly, if a user leaves the organization, then that user won't meet the membership condition, and will no longer have access. If a user moves from one

division to another, then the team access will be computed automatically based on the conditions defined for membership rules.

- A member or membership condition can be included in multiple teams. A permission set can also be assigned to multiple teams.
- The team is inactive by default. After permissions are applied, members can access the data only if the team status is set to active.

Update Access Controls

You can run the following scheduled processes to update the access control lists:

- Refresh the Access Control List for Teams:
  - Run this when you want to reset the access control list for teams completely.
- Update the Members List Based on Membership Criteria: Run this the first time you associate membership conditions to the team. You can specify the frequency at which the member list should be refreshed, based on how often member data is likely to change. You can run this job when members are moving divisions, joining the organization or leaving the organization and you want to refresh the data before the scheduled refresh
  - For this job to work you must enable Atom Feeds.

Related Topics

- Update the Members List Based on Membership Criteria
- Refresh the Access Control List for the Teams
- Atom Feeds
- Upgrade Product Management Data

FAQs for Access Control Lists

What's an access control list?

It's a list that provides criteria-based access to specific objects.

The list is derived by configuring a team that includes a set of members, membership conditions, and one or more permission sets.

Members can be added to the team individually, or derived from a filtered list of workers who match certain membership conditions.

Each permission set contains individual permissions. Each permission identifies the object for which permission is given, the conditions that must be met, the type of access to be granted, and the attribute groups the team can access.

Related Topics

- Overview of Access Control Lists

Which objects can I secure using access control lists?

You can secure manufacturers using access control lists.

How can I update the members in my team dynamically?

Run the following scheduled processes to update the members dynamically:

- Refresh the Access Control List for the Teams.
- Update the Members List Based on Membership Criteria.

Related Topics

- Update the Members List Based on Membership Criteria
- Refresh the Access Control List for the Teams

Why is my user unable to access a manufacturer?

The user might be unable to access a manufacturer due to one of these reasons.

- The user failed to meet the membership criteria for your team. For example, the membership condition is based on the location and the user's location has changed.
- The user was added manually to the team and has been removed from the team.
- The permission for the user has changed from Manage to View.

How can I restrict access to a manufacturer?

You can restrict access to a manufacturer using access control list. This involves creating a team that includes workers added either manually or dynamically based on membership conditions and creating permission set.

Related Topics

- Overview of Access Control Lists
- Teams

9 Product Rules

Overview of Product Rules

Before you can use product rules in Oracle Product Hub, you must complete this task in the Setup and Maintenance work area.

Task	Description
Manage Item Rule Sets	Use this task to create validation, assignment or composite rule sets. In the Setup and Maintenance work area, go to the following: • Offering: Product Management • Functional Area: Product Rules • Task: Manage Item Rule Sets

Rules and Rule Sets

Rules define integrity constraints on the attributes of items and structures. You can define integrity constraints on operational as well as on user-defined attributes.

Integrity constraints can implement business rules and are created through use of the rules framework. For example, a rule might be that the minimum speed must be less than maximum speed.

Rule sets gather multiple rules together and are associated with a source of attributes, such as attribute groups, item classes, change types, or structure types. The specific source (such as an attribute group name) is defined as part of the rule set. Rule sets also list valid business entities, such as items, item suppliers, or item revisions. The association of a rule set with a specific source of attributes enables the rule expressions entered in rules in the rule set to be validated by checking for allowable entities.

Each attribute is referenced by its business entity and attribute group name followed by the attribute name. For example, `[Item].[Physical Attributes].[Unit Volume]`. In this example, `[Item]` indicates that it's an item attribute; `[Physical Attributes]` is the display name of the attribute group, and `[Unit Volume]` is the display name of the attribute.

Keep in mind that:

- If the rule set is associated with an attribute group, then only the attributes in that group can be used in its rules.
- If the rule set is associated with an item class, then only the attribute groups valid for that item class can be used in its rules.

You can set the status of a rule set draft. You can keep a rule set in draft status until the drafting of its rules is complete. If a rule set is in draft status, the rule set isn't triggered as regular transactions are completed. During this time, you can run rule impact analysis to simulate and study the impact of the rule sets on a selected set of existing items, enabling

you to make necessary changes. While performing the simulation, the draft rule sets along with other active rule sets are applied on the selected set of items, and the impact is captured by an asynchronous scheduled process.

The rule sets associated with new item requests and change order types are used to generate identifying numbers for new item requests and change orders.

The types of rule sets and rules are as follows:

- Assignment
- Validation
- Blending
- Composite

Assignment

An assignment rule set determines the value of an item attribute based on the specified condition.

Here's an example of an assignment expressed in ordinary English: Lead Percent is Total Lead Mass divided by Unit Weight.

After you create a rule, you validate and save it. Then, if necessary, enter subsequent rules. Rules are executed in the order of their sequence in the rule set. Therefore, if an attribute's expression depends on a previously calculated value, you must ensure that the previous value appears ahead of the attribute, in the rule, and is therefore computed first. Generally, rule sets for assignments should be executed before rule sets for validations, so that you can write validation conditions against assignment results that you're confident are valid.

Note:

- You can include change header attributes and extensible flexfields in assignment rules to assign values to change header attributes and flexfields.
- The following attributes aren't supported in number assignment rules created on changes: Approval Date, Assigned To, Change ID, Created By, Creation Date, Need by Date, Reason, and Requested by.
- Multirow extensible flexfields aren't supported in number generation rules on changes.
- Groovy scripts aren't supported for creating validations and assignment rules on changes using extensible flexfields. So it's recommended to use item rules.

Validation

A validation rule set validates conditions based on attribute values defined for items. Validation rule sets are typically used to model predefined business rules on items.

Validation rules restrict items that can be added as related items to an item, and restrict the relationship types that can be allowed for items. This restriction could be based on item or item revision-level attributes which could be operational attributes or extensible flexfields.

Test the validations by going to the Item Update page and editing the appropriate attribute groups. Updated values are validated against the rules, and error messages appear on the screen.

The severity of a validation rule determines what action is taken if the validation fails. The severity levels, and their resulting actions, are as follows:

Severity	Description
Warning	The business entity can still be saved. An explanatory message, which you define, is displayed to the end user. The user must acknowledge the warning message to save the item.
Needs Approval	The attribute data requires that a change order be created for the business entity.
Reject	The business entity can't be saved until the attribute validation passes.

The following behavior for validation rules occurs during a runtime end user session:

- Rules are only run for attributes that have changed, except in the following circumstances.
    - The item's item class has been changed
    - The rule is a valid-component-type rule
    - The rule uses Context attributes, such as `Context.ExecutionDateTime`
    - The rule uses one of the following functions:
        - `exists()`
        - `loopSum()`
        - `conditionalLoopSum()`
        - `assignedToCatalog()`
        - `assignedToOrg()`
- If a validation with a severity of Reject fails, then the entire business entity containing the attribute is rejected.
- If a validation with a severity of Needs Approval fails, then a change order must be submitted and approved.
    - All related attributes also require a change order. In this context, related attributes are those that are used in any validation that uses an attribute that requires a change order. In other words, if any attribute requires a change order, then all the updated attributes in that validation rule (those specified in the **IF Expression** and **Validation Condition** fields of the rule) must also be part of the same change order.
    - If the attributes computed in assignment rules are used in subsequent rules, then they can form a chain of dependencies. In order to ensure that the data remains consistent, the change order requirement is propagated along this dependency chain.
    - The change order requirement propagates only along updated attributes. If an attribute isn't updated, then it should not affect other attributes.

Blending

When there are multiple spoke systems providing item data, blending rules are applied during import, to control which item attribute values are imported into production from the multiple spoke systems, based on the blending priority for each spoke system that you define in the blending rules.

Composite

Composite rule sets can contain both assignment and validation rule sets. Composite rule sets can be used to aggregate rule sets that operate on different attribute groups and item classes.

You create a composite rule set on the Manage Rule Sets page. To define a composite rule set of mixed type, ensure it contains both assignment and validation rule sets. Set the type to **Mixed**, enabling the creation of a rule set that contains both assignment and validation rule sets. Then add assignment and validation rule sets to the composite rule set.

Note: You can include assignment, validation, and composite rule sets in the entry and exit criteria for a change type.

Related Topics

- Define Rule Sets and Item Rules
- Item Rule Syntax
- Define Blending Rule Sets and Rules
- Generate Numbers and Descriptions with Rules

Define Rule Sets and Item Rules

You can define item rules to enforce integrity constraints on the attributes of items and structures.

To define item rules, you must :

1. Define rule sets to contain the rules.

   Rule sets can be used for assignments, validations, or blending.
2. Define rules in the rule sets.

   The procedure for defining rules differs among assignment, validation, or blending rule sets.
3. Enable the rule sets for execution.

The details for these procedures follow.

Define Rule Sets

The table following these steps provides details about the fields for defining rule sets.

1. In the Product Information Management work area, select the Manage Item Rule Sets task.
2. Select **Create** from the Manage Rule Sets task bar.
3. In the Create Rule Set dialog box, enter a name and optional description.
4. Select a value for **Composite**.
5. Select a value for **Type**, to determine the type of the rule set.
6. In the **Association Type** field, select the type of association to use for determining valid attribute expressions.
7. In the **Association Name** field, select a name to qualify the association type.
8. Select **Draft**, so that the rule set won't be triggered until you're satisfied with its behavior.
9. Click **Save and Continue**.

10. Create one or more rules within the rule set. Unless you selected Yes for Composite, you can only create rules of the Type that you chose.

    Continue to the procedure for creating assignment or validation rules.

Rule Set Field	Purpose
Display Name	Visible name for the rule set. You can modify this name later.
Internal name	Generated automatically when you leave the Display Name field. May contain only letters, digits, underscores, and periods. Can't be changed after the rule set is created.
Description	Optional description of the rule set.
Composite	Values are **Yes** or **No**. Composite rule sets contain other rule sets, either assignment type, validation type, or both. You can also use composite rule sets to aggregate rule sets that operate on different attribute groups and item classes. You don't select associations for a composite rule set. The associations belong to the rule sets contained in the composite set. If you select Yes, then you can select the rule set type as **Mixed**, so that the composite set can contain a mixture of assignment and validation rule sets. Blending rule sets can't be composite.
Type	The type of the rule set, which determines the type of rules that can be created in the set. You can't change the type of a rule set after creating it. The available types are: • Assignments • Validations • Blending • Mixed
Association Type	Associates the rule set with a set of attributes. When combined with an association name, the association type determines the set of attributes that are considered valid in the rule expressions that you enter. The available association types are: • **Attribute group**: Only the attributes in the specified attribute group can be used in expressions in the rule set. • **Item class**: Only the attributes in the attribute groups that are valid for the specified item class can be used in expressions in the rule set. • **Change order type** or **New item request**: Only the header attributes (including descriptive flexfields) of the change order or new item request can be used. If **Type** is **Blending**, then change order type and new item request aren't available.

Rule Set Field	Purpose
Association Name	The name of the specific associated type that's the source of valid attributes for rule expressions. For example, if you selected an association type of **Attribute group**, then search for and select the name of an attribute group.
Draft	Select to put this rule set into Draft status. Draft status prevents the rule from being triggered during item transactions, and allows rule impact analysis on the rule set.

Note: You can't define a rule independently of a rule set. The rule set provides essential contextual data for the rule.

Define Item Assignment Rules

Define assignment rules to set the values of item attributes based on conditions that you specify.

1. Create or open a rule set of type **Assignments**.
2. In the **Rules** tab of the Edit Rule Set page for the rule set, select **Create** from the Actions menu.
3. In the Create Rule dialog box, enter an integer in the **Sequence** field.
4. Provide a name and description for the rule.
5. Select a **Return Type**.
6. If you selected **Return Type** as Generic, **Target Business Entity** is enabled and required.
    a. Select a value for **Target Business Entity**. Target Attribute Group is then enabled and required
    b. Select a value for **Target Attribute Group**. Target Attribute is then enabled and required.
    c. Specify a value for **Target Attribute**.
7. The following table provides details about the fields defining the header level of the rule. You can modify these values after the rule has been created.

Rule Field	Purpose
Sequence	An integer. This sequence number determines the order in which the rule will be triggered when the rule set is triggered.
Name	Name for the rule. You can modify this name later.
Description	Optional description of the rule.
Return Type	The result of the assignment defined by the rule. The available return types are: - **Catalog category**: Assigns an item to a catalog category. - **Generic**: Assigns a value to an attribute. - **Item description**: Assigns a description to an item. - **Item number**: Assigns an item number to an item. - **Organization**: Assigns an item to an organization.

Rule Field	Purpose
Target Business Entity	If Return Type is Generic, a business entity must be specified, to provide an attribute association for validating expressions. The entities are: o Item o Revision o Supplier A rule can assign values to revision attributes or supplier attributes based on conditions on item attributes, but the reverse isn't true. That is, a rule can't include revision attributes or supplier attributes in a condition for a rule whose target attribute is an item attribute.
Target Attribute Group	The attribute group for the target business entity. Only enabled if Return Type is Generic.
Target Attribute	The attribute for the target attribute group. Only enabled if Return Type is Generic.

8. Click **OK** to accept the header fields.
9. In the Details section, enter rule expressions in the **Expression** fields described in the following table.

   To ensure that valid attribute group and name expressions are used in rules, you can right-click in one of the expression fields and select **Insert Attribute**, then use the Insert Attribute dialog to populate attribute expressions into the rule fields.

Rule Field	Purpose
Primary If Expression	Optional. An attribute expression that must evaluate to true or false, which determines whether the assignment is to be performed. You can enter `true` or `false` as a valid expression. This field can be empty if an expression isn't required.
THEN Expression	Required. Composed of: o **Secondary If Expression**: A condition that further determines whether the assignment is to be performed. This field can be empty if an expression isn't required. o **Return Value**: The value resulting from the assignment. Agrees with the return type that you specified. You can manage additional rows of the THEN Expression with the edit controls on the task bar. The rows are evaluated in the sequence of the expression rows. The execution is halted when the first THEN expression evaluates to True.
User Message	Optional. Displayed to the end user when the rule successfully assigns a value to the target attribute. You can select **Hide user message** to retain the definition of the message while suppressing it from runtime display.

Rule Field	Purpose

It's not necessary to check whether attribute values are null (which includes division by zero). Null values normally cause the assignment to be ignored, unless you explicitly want to test for a null value with the `isnull()` function. This feature facilitates incremental processing of an item, where the item might not be completely filled in until the end of a process.

10. Click **Validate** to validate the expressions in the rule. A message informs you whether there is an error, or confirms that the rule definition is valid.
11. Define more rules in the rule set, as needed. You can modify the execution order of the rules by editing their sequence numbers.
12. Click **Save** to save the rule set.
13. Add the rule set to the master rule set, to enable its operation during item transactions.

Define Item Validation Rules

Define validation rules to validate the values of item attributes based on conditions that you specify.

1. Create or open a rule set of type **Validations**.
2. In the **Rules** tab of the Edit Rule Set page for the rule set, select **Create** from the Actions menu.
3. In the Create Rule dialog box, enter an integer in the **Sequence** field.
4. Provide a name and description for the rule.
5. Select a level of **Severity** for the action produced by the rule if the validation fails. Severity only applies to validation rules.

   Select **Valid Component Rules** only if your rule is validating component types, using the `component_type()` function.
6. The following table provides details about the fields defining the header level of the rule. You can modify these values after the rule has been created.

Rule Field	Purpose
Sequence	An integer. This sequence number determines the order in which the rule will be triggered when the rule set is triggered.
Name	Name for the rule. You can modify this name later.
Description	Optional description of the rule.
Severity	The severity of the action that's produced if the validation fails. - **Warning**: The explanation message is displayed to the user, but the business entity can still be saved - **Needs Approval**: The data requires that a change order be created. - **Reject**: The business entity can't be saved until the validation passes. You can increase the severity of this validation result by selecting **Stop further processing when rejected**.

7. Click **OK** to accept the header fields.
8. In the Details section, enter rule expressions in the **Expression** fields described in the following table.

   To ensure that valid attribute group and name expressions are used in rules, you can right-click in one of the expression fields and select **Insert Attribute**, then use the Insert Attribute dialog to populate attribute expressions into the rule fields.

Rule Field	Purpose
If Expression	Optional. An attribute expression that must evaluate to true or false, which determines whether the validation is to be performed. The expression must evaluate to true for the validation to occur. You can enter `true` or `false` as a valid expression. This field can be empty if an expression isn't required.
Validation Condition	Required. This condition is evaluated when the result of the If Expression is `true`. When the validation condition evaluates to `false`, then the validation fails, and the action for the selected severity is executed. The User Message is also displayed, for failures.
User Message	Optional. Displayed to the end user only when the **Validation Condition** evaluates to `false`.

   It's not necessary to check whether attribute values are null (which includes division by zero). Null values normally cause the validation to be ignored, unless you explicitly want to test for a null value with the `isnull()` function. This feature facilitates incremental processing of an item, where the item might not be completely filled in until the end of a process.
9. Click **Validate** to validate the expressions in the rule. A message informs you whether there is an error, or confirms that the rule definition is valid.
10. Define more rules in the rule set, as needed. You can modify the execution order of the rules by editing their sequence numbers.
11. Click **Save** to save the rule set.
12. Add the rule set to the master rule set, to enable its operation during item transactions.

Enable Rule Sets and Rules

Before a rule can run, you must enable the rule set that contains it. To enable a rule set, you must assign it to the master rule set, either directly, or by adding it to a rule set that's included in the master rule set.

The master rule set (named MASTER_RULE_SET) is a predefined rule set that contains other rule sets, which can in turn include other rule sets. In each composite rule set, a sequence number controls the order in which its included rule sets are to be executed at runtime.

1. On the Manage Rule Sets page, search for MASTER_RULE_SET and edit it.
2. On the Edit Rule Set page for MASTER_RULE_SET, on the Included Rule Sets tab, select **Add** from the Actions menu.
3. In the Select and Add: Rule Sets dialog box, search for your rule set by name, or by one of the other fields that define a rule set.
4. Select your rule set from the search results, and click **OK**.

5. Your rule set appears in the list of rule sets included in the master rule set, with the next available sequence number, which determines the order of execution of the included rule set. You can select **Edit Sequence** from the Actions menu to modify the sequence.
6. Click **Save** to save the master rule set.
7. On the Edit Rule Set page for your own rule set, the Rule Sets Where Included tab shows that your rule set is included in the master rule set.

Optimize Rule Performance

You can optimize the performance of your rules by running a scheduled process.

After you define rules in a rule set, each rule is compiled when it's first triggered at runtime, and its definition is then cached in a database. You can run the scheduled process **Optimize Rules** to force the compilation and caching of all of the rules in all of your rule sets. The cached rule definitions persist in the database across restarts of the application server.

To run the scheduled process **Optimize Rules**, you use can either of these methods:

- While working with rule sets on the Manage Rule Sets page, you can select **Optimize Rules** from the Actions menu. This action runs the scheduled process. Take note of the process ID, then go to the Scheduled Processes work area to check on the process.
- In the Scheduled Processes work area, you can directly schedule the **Optimize Rules** process.
- This process doesn't have any process parameters.

  The log file for the process contains informational messages about any rules that didn't compile successfully.

You might need to run the Optimize Rules scheduled process again if:

- You have imported new rules from another installation using the setup data export and import processes in the Setup and Maintenance work area. When you import rules data this way, the rule definitions aren't recompiled. These imported rules will still run successfully on the target installation but they won't be recompiled until the first time they're triggered at runtime after the server has been restarted. You can run the Optimize Rules scheduled process to force the recompilation and caching of all the imported rules.
- A resolution to a known issue requires rule text to be regenerated. The Optimize Rules scheduled process performs the required regeneration.

Related Topics

- Rules and Rule Sets
- Define Blending Rule Sets and Rules
- Item Rule Syntax
- Item Rule Data Types
- Analyze Rule Impact

Example of Creating an Item Rule Set and Rules

In this example, you create rule sets and rules to implement integrity constraints for a computer motherboard.

The following table summarizes the attribute value assignments required for this scenario.

Attribute	Constraint
Lead Percent	Is Total Lead Mass divided by Unit Weight
Sellable Date (date when item can be sold)	Is 10 days after the Availability Date

The following table summarizes the attribute value validations required for this scenario.

Attribute	Constraint
Minimum CPU Speed (in MHz)	Must be less than Maximum CPU Speed
Purchasable	If set to Yes, then a value for List Price must be set
Unit Height	Can't change by more than 3% without requiring approval

Task Summary

To implement the above constraints, complete the following tasks:

1. Create an assignment rule set.
2. Create assignment rules.
3. Create a validation rule set.
4. Create validation rules.
5. Create a composite rule set.
6. Add the composite rule set to the master rule set.

Create an Assignment Rule Set

In general, rule sets that perform assignments should be executed before validations, so that validation rules can ensure that the results of the assignments are valid.

1. In the Product Information Management work area, select the Manage Item Rule Sets task.
2. Select **Create** from the Manage Rule Sets task bar.
3. In the Create Rule Set dialog box, enter a name and optional description.

   The internal name won't be changeable after the rule set is created.
4. For **Composite**, select **No**.
5. For **Type**, select **Assignments**.
6. For **Association Type**, select **Item Class**.
7. For **Association Name**, select **Chemicals**.
8. Click **Save and Continue**.

   The Edit Rule Set page shows a rule set with the specified attribute context, but no rules yet. All the attribute groups in the selected item class are available for us in item rules.

Create Assignment Rules

The assignment to be made by the first rule is:

- Lead Percent is Total Lead Mass divided by Unit Weight

1. In the **Rules** tab of the Edit Rule Set page, select **Create** from the Actions menu.
2. In the Create Rule dialog box, enter or select the values shown in the following table.

Field	Value
Sequence	10
Name	Lead Percent
Description	Lead Percent is Total Lead Mass divided by Unit Weight
Return Type	Generic
Target Business Entity	Item
Target Attribute Group	Hazard (for an example user-defined attribute group (EFF))
Target Attribute	Lead Percent (for an example user-defined attribute group (EFF))

3. Click **OK** to accept the header fields.
4. In the Details section, enter rule expressions in the expression fields described in the following table.

   To ensure that valid attribute group and name expressions are used in rules, you can right-click in one of the expression fields and select **Insert Attribute**, then use the Insert Attribute dialog to populate attribute expressions into the rule fields.

Field	Value
Primary If Expression	(You can leave this field empty. The value `true` is inserted when this field is null.)
THEN Expression	(Consists of the Secondary If Expression and Return Value shown in the following rows)
Secondary If Expression	(You can leave this field empty. The value `true` is inserted when this field is null.)
Return Value	`round(([Item].[Hazard].[Lead Mass] / [Item].[Physical Attributes].[Unit Weight]) * 100, 2)`

Field	Value

User Message	`Percent is Mass ($[Item].[Hazard].[Lead Mass]$) divided by Weight ($[Item].[Physical Attributes].[Unit Weight]$).`
	Enclosing an attribute expression with dollar sign symbols (`$`) renders the current value of the attribute in the displayed user message. For the example shown here, the message is:
	`Percent is Mass (100) divided by Weight (gms).`

5. Click **Validate** to validate the expressions in the rule.
6. Click **Save** to save the rule set.

   Saving the rule set enters the first assignment rule into set. Since rules are executed in the sequence you specify, you can ensure that values needed by attributes in later expressions are calculated in earlier expressions.

   The assignment to be made by the second rule is:

   - Sellable Date Is 10 days after the Availability Date

   This assignment is equivalent to the code in the following example, which shows how you can use conditional processing in an item rule:

```
if ([Item].[Main].[Sellable Flag] == "Yes")
 if ([Item].[Item basic].[Item Class] == "Perishables")
 then [Item].[Marketing].[Sellable Date] = [Item].[Planning].[Availability Date] + 3
 else if ([Item].[Item basic].[Item Class]== "Consumables")
 then [Item].[Marketing].[Sellable Date] = [Item].[Planning].[Availability Date] + 6
 else [Item].[Marketing].[Sellable Date] = [Item].[Planning].[Availability Date] + 10
```

   The following steps show how to express that code block in an item rule definition.
7. In the **Rules** tab of the Edit Rule Set page, select **Create** from the Actions menu.
8. In the Create Rule dialog box, enter or select the values shown in the following table.

Field	Value
Sequence	20
Name	Sellable Date Calculation
Description	Calculate Sellable date based on the Availability Date.
Return Type	Generic
Target Business Entity	Item
Target Attribute Group	Marketing

Field	Value
Target Attribute	Sellable Date

9. Click **OK** to accept the header fields.
10. In the Details section, enter rule expressions in the expression fields described in the following table. You will have to add an additional two rows of **Then Expression** by selecting the last row in the table and clicking **Add Row**.

Field	Value
Primary If Expression	`[Item].[Main].[Sellable Flag] == "Yes"`
(first) THEN Expression	(Consists of the Secondary If Expression and Return Value shown in the following rows)
Secondary If Expression	`[Item].[Item basic].[Item Class] == "Perishables")`
Return Value	`[Item].[Planning].[Availability Date] + 3`
(second) THEN Expression	
Secondary If Expression	`[Item].[Item basic].[Item Class]== "Consumables"`
Return Value	`[Item].[Planning].[Availability Date] + 6`
(third) THEN Expression	
Secondary If Expression	(This field remains empty.)
Return Value	`[Item].[Planning].[Availability Date] + 10`
User Message	(This field remains empty.)

Leaving the last **Secondary If Expression** blank means it defaults to `true` and is always selected. No **User Message** was entered, so nothing is shown to the user.

11. Click **Validate** to validate the expressions in the rule. Click **Save** to save the rule set.

The assignment rule set is now complete.

Create a Validation Rule Set

Validation rule sets are created in much the same way as assignment rule sets, except that the **Type** is set to **Validation**.

1. On the Manage Rule Sets task page, select **Create** from the task bar.
2. In the Create Rule Set dialog box, enter a name and optional description.
3. For **Composite**, select **No**.
4. For **Type**, select **Validations**.
5. For **Association Type**, select **Item Class**.
6. For **Association Name**, select **Computers** or **Laptops**.
7. Click **Save and Continue**.

Create Validation Rules

The validation to be made by the first rule is:

- Minimum CPU Speed (in MHz) Must be less than Maximum CPU Speed

1. In the **Rules** tab of the Edit Rule Set page, select **Create** from the Actions menu.
2. In the Create Rule dialog box, enter or select the values shown in the following table.

Field	Value
Sequence	10
Name	Maximum Minimum CPU Check
Description	Check that Minimum CPU Clock Speed is less than Maximum CPU Clock Speed.
Severity	Reject

3. Click **OK** to accept the header fields.
4. In the Details section, enter rule expressions in the expression fields described in the following table.

Field	Value
IF Expression	(This field remains empty.)
Validation Condition	`[Item].[Motherboard Spec].[Min CPU Speed] <= [Item].[Motherboard Spec].[Max CPU Speed]`
User Message	Minimum CPU Speed has to be less than or equal to Maximum CPU Speed.

5. Click **Validate** to validate the expressions in the rule. Click **Save** to save the rule set.
   The validation to be made by the second rule is:

- If Purchasable is set to Yes, then a value for List Price must be set

This validation demonstrates how the value of one field must be value based on the value of another field.

6. In the **Rules** tab of the Edit Rule Set page, select **Create** from the Actions menu. In the Create Rule dialog box, enter or select the values shown in the following table.

Field	Value
Sequence	20
Name	Require List Price
Description	List Price must be set if Purchasable is set to Yes
Severity	Reject

7. Click **OK** to accept the header fields. In the Details section, enter rule expressions in the expression fields described in the following table. The `!` in the function expression `!isnull()` negates the logical result of the expression.

Field	Value
IF Expression	`[Item].[Purchasing].[Purchasable] == "Yes"`
Validation Condition	`(!isnull([Item].[Purchasing].[List Price]))`
User Message	If Purchasable is set to Yes then List Price can't be null.

8. Click **Validate** to validate the expressions in the rule. Click **Save** to save the rule set.

The validation to be made by the third rule is:

- Unit Height can't change by more than 3% without requiring approval.

This validation demonstrates how to check the new attribute value against the value that's currently in production. If this validation fails, then the user will be required to create a change order for this change.

9. In the **Rules** tab of the Edit Rule Set page, select **Create** from the Actions menu. In the Create Rule dialog box, enter or select the values shown in the following table.

Field	Value
Sequence	30

Field	Value
Name	Height Change
Description	Unit Height can't change by more than 3%.
Severity	Needs Approval

10. Click **OK** to accept the header fields. In the Details section, enter rule expressions in the expression fields described in the following table.

Field	Value
IF Expression	(This field remains empty.)
Validation Condition	`abs(percent([Item].[Physical Attributes].[Height])) > 3.0`
User Message	A unit height change of 3% requires a change order.

The `percent()` function returns the percentage change of the new value to the value in production. This change can be positive or negative, hence the `abs()` function converts it to an absolute change.

11. Click **Validate** to validate the expressions in the rule. Click **Save** to save the rule set.

The validation rule set is now complete. Click on the **Usage** tab to review all the attributes used in this rule set. Click **Save and Close** to return to the Manage Rule Sets page.

Create a Composite Rule Set

Now create a composite rule set that includes both of the rule sets that you just created. This is the rule set that you will assign to the Item entity in the final step to activate the rules we have created.

1. On the Manage Rule Sets task page, select **Create** from the task bar.
2. In the Create Rule Set dialog box, enter a name and optional description.
3. For **Composite**, select **Yes**.
4. For **Type**, select **Mixed**.

   In more complex scenarios, you might have multiple layers of composite rule sets, some of which you only want to contain validations or assignments rules. But eventually you will want to include both kinds of rules.
5. Click **Save and Continue**.
6. On the Included Rule Sets tab of the Edit Rule Set page for the new composite rule set, select **Add** from the **Actions** menu.
7. In the Select and Add: Rule Sets dialog box, search for and select the assignment rule set that you created, then click the **Apply** button.
8. Repeat the search and selection step to add the new validation rule set to the composite rule set.
9. The rule sets will be executed in the order that they're listed in the Included Rule Sets list, so it's important to put validations after assignments if you want to validate some of the assignment results that you calculated.

10. Click **Save and Close**.

Add the Composite Rule Set To the Master Rule Set

The rules you created aren't active until you add them to the Master Rule Set, as described in the following steps. Also, note that the **Draft** check box should be deselected for a rule set to be executed at runtime. Draft rule sets aren't run during regular transactions.

1. On the Manage Rule Sets page, search for MASTER_RULE_SET and edit it.
2. On the Edit Rule Set page for MASTER_RULE_SET, on the Included Rule Sets tab, select **Add** from the Actions menu.
3. In the Select and Add: Rule Sets dialog box, search for your composite rule set by name, or by one of the other fields that define a rule set.
4. Select your rule set from the search results, and click **OK**.
5. Your rule set appears in the list of rule sets included in the master rule set, with the next available sequence number, which determines the order of execution of the included rule set. You can select **Edit Sequence** from the Actions menu to modify the sequence.
6. Click **Save** to save the master rule set.

   You are now ready to test the validations. When you make the relevant item updates, the updated values should be validated by the rules that are triggered, and the error messages should appear.

   You can also examine some of the other tabs on the Edit Rule Set page. In the validation and assignment rule sets the Rule Sets Where Included tab should now show the composite rule set that you added them to. In the composite rule set, the Attributes section on the Usages tab should show the item assignments for the rule sets.

Completeness Score

The Completeness Score indicates the percentage of completeness for an item and it's based on the values that are returned for specific attributes.

You can create a product rule to set the completeness score on an item in the Product Information Management work area. This works well when you're enriching the item information based on different statuses or lifecycle phases.

For example: You can set a rule that specific attributes of the item must meet certain set criteria prior to moving to the Production status. The user can't manually enter this attribute. The value of this attribute is derived from an **Assignment Rule**. This rule may be written based on the values provided across attributes spread across different attribute groups.

For example: You can change the item status to active if the completeness score is more than 80%. This ensures that the item has the necessary information that downstream products can use.

Related Topics

- Rules and Rule Sets
- Define Rule Sets and Item Rules
- Item Rule Syntax
- Set Product Rules to Update the Completeness Score

Item Rule Data Types

Attributes in item rules belong to one of a set of data types.

In item rule expressions, all values are of one of the data types listed in the following table.

Data Type	Description
String	All strings and text characters
Number	All decimals and integers
Date	Dates only, without times
Time	Times only, without dates
DateTime	Combination of Date and Time

Null or Empty Values

Any attribute referenced in an item rule can have an empty or null value. To test for empty or null values you must use the function `isnull`.

Strings

Strings are delimited by double or single quotation marks (" or ').To escape a character's normal value (for example, in a regular expression), prefix it with the backslash (\).

Numbers

Depending on the setting of the regional preference for number format, the decimal point in decimal numbers can be represented by either a period character (.) or by a comma (,). If the comma is used as a decimal point, then arguments to functions must be delimited by semicolons (;).

Dates and Times

Dates and times are represented by the types Date, DateTime, and Time.

Dates will be entered in the format that you specify in the setting of the regional preference for date format . Date constants will automatically be reformatted if a you log in with a difference preference.

The following expression using a Date value is valid:

```
[Item].[Logistics].[StartDate] > "2005-Feb-23"
```

When writing an expression containing terms representing dates and times, enclose them in double quotation marks. They're internally converted to String values before they're compared. The following expression compares an attribute value to a textual date term.

Days can be added to a Date using Numbers. For example, the following expression computes the sell date as 30 days after the availability date:

```
[Item].[Logistics].[SellDate] > [Logistics].[AvailableDate] + 30
```

You can't perform date calculations involving Custom Calendars.

Related Topics

- Item Rule Syntax
- Item Rule Utility Functions
- Item Rule Multirow Attribute Group Functions
- Item Rule Logical Functions and Operators
- Item Rule String Functions

Item Rule Syntax

Item Rules are used in defining and validating integrity constraints on item attributes, and in assigning values to attributes.

Basic Rule Formation

Item rules consist of expressions, operators, and functions. Most expressions reference the value of an item attribute.

Rules can encapsulate a single integrity constraint. The following example checks that a given attribute is less than another:

```
[Item].[Physical Attributes].[Unit Weight] <= [Item].[Logistics].[Shipping Weight]
```

In other words, the net weight of an item always has to be less than or equal to the shipping weight.

Rules can define assignment formulas. The following example is used in assigning a value for a "Daily Waste Percent" attribute:

```
[Item].[Logistics].[Total Waste Percent] / [Item].[Inventory].[Shelf Life Days]
```

In the preceding example, the daily waste percent is the total waste percent divided by the shelf life in days.

Attribute Expressions

You access the value of an attribute by appending its name to its entity and attribute group, separated by a delimiter. The delimiter is the period character (.). You can use the display name of an attribute naming element, which can include space characters, but must be enclosed in single brackets.

Following is the syntax of an attribute expression:

```
[<Entity Name>].[<Attribute Group Name>].[<Attribute Name>]
```

When referencing descriptive flexfields, use the segment code, as in the following example:

```
[ChangeHeader].Flexfield[Product__Line]
```

UOM Expressions

If an extensible flexfield attribute definition includes a unit of measure (UOM), you can access the unit by appending `UOM` to the attribute expression. The syntax is:

```
[Item].[<EFF Attribute Group Name>].[<Attribute>].UOM
```

For example:

```
[Item].[Semiconductor Details].[Capacitance Numeric].UOM
```

For seeded item attributes, you can access the UOM using the syntax:

```
[Item].[<Attribute Group Name>].[<Attribute> Unit of Measure]
```

For example, the following expression may return `kg` if the attribute's UOM is kilograms:

```
[Item].[Physical Attributes].[Weight Unit of Measure]
```

All comparisons between amounts are automatically adjusted to account for different UOMs. Accessing the UOM of an attribute explicitly should not be necessary for comparison purposes.

Null Values

Rules that reference attributes that have no value (also called a null value) are ignored. Expressions that evaluate to NULL are ignored.

That means that you never need to code Validations like:

```
if (not isnull(Item.PhysicalAttributes.Weight)) then Item.PhysicalAttributes.Weight <= 10
```

The "if" part is redundant, since if Weight was NULL the validation would be ignored. If you do want to check that an attribute has a non-null value, use the `isnull` function, which can be used to check that an attribute has a value entered.

Boolean Expressions

Boolean expressions are those that return TRUE, FALSE or null. Boolean expressions can be used in **If Expression** and **Validation Condition** fields of the Edit Rule Set page. Use logical and comparison operators and functions in Boolean expressions.

Related Topics

- Item Rule Data Types
- Item Rule Utility Functions
- Item Rule Multirow Attribute Group Functions
- Item Rule Logical Functions and Operators
- Item Rule Numeric Functions and Operators

Item Rule Multirow Attribute Group Functions

To reference a value in a particular row of a multirow attribute group, use one of the following functions.

To make a rule set specific to an item class, assign it to that item class during rule set creation. That rule set will then be active for each entity that has that item class as a parent or as an ancestor. You can't access any other attributes associated with an item class.

> **Tip:** If you reference multiple multirow attribute groups in a rule, then, during execution, the rule loops though each combination of rows of all the groups. Example: a rule with the following If Expression that references the multirow attribute groups MR_AG1 and MR_AG2, where MR_AG1 has `m` number of rows and MR_AG2 has `n` number of rows:
>
> ```
> !changed ([Item].[MR_AG1])
> OR
> !changed ([Item].[MR_AG2])
> ```
>
> This rule is executed `m*n` times. You can reduce the number of executions to `m+n` by splitting the rule into two rules, to separate the references to the multirow attribute groups.

loopSum

Syntax:

```
loopSum([Entity name].[multirow Attribute Group Name].[Attribute Name])
```

The loopSum function takes one numeric sub-expression as an argument. It runs the sub-expression for each multirow row attribute group and compute the sum of the results.

Example

In this example, the sum of the values in all the rows of Percentage attribute can't be a value other than 100.

```
Severity: Reject
If Expression: (loopSum([Item].[Composition].[Percentage])) != 100
```

conditionalLoopSum

Syntax:

```
conditionalLoopSum(boolean_expression, [Entity name].[multirow AttributeGroupName].[Attribute Name])
```

The conditionalLoopSum function takes two sub-expression arguments. The first argument must be a boolean expression and the second argument will be a numeric sub-expression. The function runs the boolean sub-expression for each multirow row and, if the boolean evaluates to true, computes the numeric sub-expression for that row. The function returns the sum of the computed numeric expressions.

Example

In this example, assume a multirow attribute group named `Forecast` with the following rows.

Customer	Location	Required Quantity
ABC	Seattle	20
XYZ	Seattle	30
ABC	Boston	25

The following example will sum up the values of Required Quantity for which the corresponding Location is Seattle:

```
conditionalLoopSum([Item].[Forecast].[Location] == "Seattle", [Item].[Forecast].[Required Qty])
```

isMrRowDeleted

You can validate whether a row was deleted from a multirow extensible flexfield (EFF) attribute group using the isMrRowDeleted function in validation or assignment rules. For example, you can enforce change order approval when a row is deleted using the isMrRowDeleted function in a validation rule. You can use this function for multirow attribute group of items, item revisions, or supplier EFFs.

Syntax:

```
isMrRowDeleted(<Mutli_Row_EFF_Attribute_Group_Name>)
```

It returns true if a row was deleted for the multirow EFF group. Otherwise, it returns false.

Here's an example shows a validation rule expression using the isMrRowDeleted function.

```
isMRRowDeleted([Item].[Material Composition]) OR changed([Item].[Material Composition].[Percentage])
```

You can use the isMrRowDeleted function along with the changed function to validate modifications or delete operations on a multirow attribute.

Related Topics

- Item Rule Syntax
- Item Rule Data Types
- Item Rule Utility Functions
- Item Rule Logical Functions and Operators
- Item Rule Numeric Functions and Operators

Item Rule Numeric Functions and Operators

Use numeric functions and operators to calculate values of numeric expressions.

Numeric Operators

The numeric operators available in item rules are listed below.

- + (addition)
- - (subtraction)
- * (multiplication)
- / (division)
- sum (aggregation)

Numeric Functions

The numeric functions available in item rules are listed below.

abs

Syntax:

```
abs (expression)
```

Returns the absolute value of `expression`.

Example:

In this example, the percentage weight change has to be less than 10.

```
abs(percent([Item].[Physical Attributes].[Unit Weight])) <= 10
```

ConvertToUOM

Syntax:

```
ConvertToUOM(expression, "target UOM")
```

Returns an amount in the specified `target UOM`. This conversion ensures that comparisons or calculations are performed using the appropriate UOM.

Example:

In this example, the unit weight of an item has to be less than or equal to 10 kg.

```
ConvertToUOM([Item].[Physical Attributes].[Unit Weight], "kg") <= 10
```

max

Syntax:

```
max(expression1, expression2, ...)
```

Returns the maximum value of a series of values. Can also be used for arrays or in query expressions.

Example:

In this example, the result would be `2006-11-30`.

```
max("2006-10-12", "2006-11-30")
```

min

Syntax:

```
min(expression1, expression2, ...)
```

Returns the minimum value of a series of values. Can also be used for arrays or in query expressions.

Example:

In this example, the result would be `2006-10-12`.

```
min("2006-10-12", "2006-11-30")
```

round

Syntax:

```
round(expression, decimal_places)
```

Rounds a number to the specified number of decimal places. `round` rounds to the nearest value.

Example:

In this example, the returned value is 1.58.

```
round(1.5758, 2)
```

rounddown

Syntax:

```
rounddown(expression, decimal_places)
```

Rounds a number to the specified number of decimal places. `rounddown` rounds toward zero.

Example:

In this example, the returned value is 1.57.

```
rounddown(1.5758, 2)
```

roundup

Syntax:

```
roundup(expression, decimal_places)
```

Rounds a number to the specified number of decimal places. `roundup` rounds away from zero.

Example:

In this example, the returned value is 1.58.

```
roundup(1.5758, 2)
```

Related Topics

- Item Rule Syntax
- Item Rule Data Types
- Item Rule Logical Functions and Operators
- Item Rule String Functions
- Item Rule Production Value Functions

Item Rule Production Value Functions

Use item rule production value functions and operators to compare the new value of an attribute to the value that is currently in production. This can be especially useful in tolerance rules.

changed

Syntax:

```
changed(attribute)

changed(attributeGroup)
```

Returns TRUE if the current value of `attribute` or `attributeGroup` differs from the current production value. Returns FALSE otherwise. Works with null values. If only `attributeGroup` is specified, then returns TRUE if any attribute in that attribute group has changed.

delta

Syntax:

```
delta(attribute)
```

Returns the difference between new and current production values of `attribute`. Comparisons of String values are case-insensitive. In comparisons of Boolean values, TRUE is considered greater than FALSE.

The following table illustrates the return value of this function when comparing new and current production values of various combinations of Numeric, Date, and DateTime attribute types.

Value comparison	Returned result for Numeric values	Returned result for Date or DateTime values
new < current production	new minus current production	new minus current production
new > current production	new minus current production	new minus current production
new == current production	0	0
current production does not exist	null	null

Value comparison	Returned result for Numeric values	Returned result for Date or DateTime values
both new and current production are null	0	0
either new or current production are null, but not both	null	null

percent

Syntax:

```
percent(attribute)
```

Returns the difference between new and current production values, expressed as a percentage, according to the following formula:

```
(delta(attribute) / current_production_value ) * 100
```

Where `attribute` is the argument passed to `percent()`, and `current_production_value` is the current production value of the attribute. Can only be used with Numeric attributes.

previous

Syntax:

```
previous(attribute)
```

Returns the previous production value of `attribute`.

Related Topics

- Item Rule Syntax
- Item Rule Data Types
- Item Rule Logical Functions and Operators
- Item Rule Utility Functions
- Item Rule Numeric Functions and Operators

Item Rule String Functions

All string functions are case-sensitive. To perform a case-insensitive comparison use the == comparison operator.

String Comparison Functions

compare

Syntax:

```
compare(string1, string2)
```

Returns 0 when `string1` is exactly equal to `string2`. Returns -1 if `string1` is lexicographically less than `string2`. Returns +1 if `string1` is lexicographically greater than `string2`

contains

Syntax:

```
contains(look_for_string, look_in_string)
```

Returns TRUE when `look_for_string` is found in `look_in_string`. Returns FALSE otherwise.

Example:

The following example returns TRUE if the item description is "computer accessory product".

```
If Expression: contains("accessory", [item].[main].[description])
```

endsWith

Syntax:

```
endsWith(look_for_string, look_in_string)
```

Returns TRUE when `look_in_string` ends with `look_for_string`. Returns FALSE otherwise.

match

Syntax:

```
match(regexp_pattern, look_in_string)
```

Returns TRUE when `regexp_pattern` matches `look_in_string`. Returns FALSE otherwise..

This function uses regular expression pattern matching in its search. For reference on regular expressions, see the Javadoc reference for java.util.regex.Pattern (http://docs.oracle.com/javase/7/docs/api/java/util/regex/Pattern.html).

Example:

The following example returns TRUE if the description includes "electronic" or "electric".

```
match("ele*c", [item].[main].[description])
```

startsWith

Syntax:

```
startsWith(look_for_string, look_in_string)
```

Returns TRUE when `look_in_string` starts with `look_for_string`. Returns FALSE otherwise.

Example:

The following example returns TRUE if the item description is "Notebook".

```
startsWith("Note", [item].[main].[description])
```

Other String Functions

+ (plus sign)

Syntax:

```
expression1 + expression2
```

Concatenates two expressions and returns the resulting string. Note that this also returns a valid string if the expressions are of other data types.

indexOf

Syntax:

```
(look_for_string, look_in_string)
```

Returns position of `look_for_string` in `look_in_string`. String position starts at 0. Returns -1 if `look_for_string` isn't found. The search is case-sensitive. Returns null if either expression is null.

length

Syntax:

```
length(expression)
```

Returns the length of the string `expression`. Returns null if `expression` is null.

lowercase

Syntax:

```
lowercase(expression)
```

Returns the lowercase equivalent of the string `expression`. Returns null if `expression` is null.

replace

Syntax:

```
replace(look_for_string, replacement_string, look_in_string)
```

This method returns `look_in_string` after replacing each substring in `look_in_string` that matches `look_for_string` with the `replacement_string`.

Example:

The following example returns a string in which all instances of `Red` in the value of an item's description have been replaced with `Blue`, without altering the value of Item.Main.[Item Description] itself:

```
replace("Red", "Blue", Item.Main.[Item Description])
```

You can also use regular expressions for identifying the substring to be replaced.

The following example returns the string in which all the digits with have been replaced with `n` in an item's Long Description attribute value:

```
replace("\\d", "n", [Item].[Main].[Long Description])
```

If the value of Long Description is `Sentinel 15V 6A 90W AC Power Adapter`, then the example returns `Sentinel nnV nA nnW AC Power Adapter`

substring

Syntax:

```
substring(string, start)

substring(string, start, end)
```

Returns a substring of the string `string` starting at `start` and ending before `end`. If `end` is omitted, then returns remainder of `string`. String position starts at 0. If `start` is less than 0 then start at the beginning of the string. If `start`is greater than length of `string` then return up to the end of the string. Returns null if any of the arguments is null.

Example:

You can use rules to validate that the Packaging Indicator digit for a GTIN is appropriate for the Pack Type of the item. GTINs can be assigned at multiple levels of a packaging hierarchy. Consider a scenario in which your GTIN numbering rule declares that, if the pack type of the Item is "EA", then the fourth digit of the GTIN should be 8. You can use the following rule expressions in a validation rule to perform this kind of validation.

```
If Expression: [Item].[Main].[Pack Type] == "EA"
Validation Condition: subString([GTIN].[GTIN Main].[GTIN], 4, 4) == "8"
```

trim

Syntax:

```
trim(expression)
```

Removes all leading and trailing (but not middle) white space characters from a `expression`. Returns null if `expression` is null.

uppercase

Syntax:

```
uppercase(expression)
```

Returns the uppercase equivalent of the string `expression`. Returns null if `expression` is null.

Related Topics

- Item Rule Syntax
- Item Rule Data Types
- Item Rule Logical Functions and Operators
- Item Rule Numeric Functions and Operators
- Item Rule Production Value Functions

Item Rule Logical Functions and Operators

Use item rule logical functions and operators to test the validity of expressions.

Logical Operators

The logical operators available in item rules are listed below.

- `and` (logical AND)
- `or` (logical OR)
- `not` (logical NOT)

and

Syntax:

```
expression1 and expression2
```

You can also use the notation `&&` in place of the `and` operator.

The logical `and` operator implements the following truth table for `expression1` and `expression2`.

expression1	expression2	expression1 and expression2
F	F	F
F	T	F
T	F	F
T	T	T
F	null	F
null	*[see note]	null

* The processor stops after it finds the first FALSE. Hence there is an asymmetry between `F and null` and `null and F`.

or

Syntax:

```
expression1 or expression2
```

You can also use the notation `||` in place of the `or` operator.

The logical `or` operator implements the following truth table for `expression1` and `expression2`.

expression1	expression2	expression1 or expression2
F	F	F
F	T	T
T	F	T
T	T	T
T	Null	T
null	*[see note]	null

* The processor stops after it finds the first TRUE. Hence there's an asymmetry between `T and null` and `null and T`.

not

Syntax:

```
not expression1
```

The logical `not` operator implements the following truth table for `expression1` and `not expression1`.

expression1	not expression1
F	T
T	F
null	null

Logical Functions

The logical functions available in item rules are listed below.

assignedToOrg

Syntax:

```
assignedtoOrg("org_code")
```

In a validation expression, returns TRUE if the item is assigned to the specified organization.

Example:

In the following example, when the item class of the item is Extra Data Servers, the organization can't be S2.

```
Severity: Reject
If Expression: [Item].[Item Basic].[Item Class] == "Extra Data Servers"
Validation Expression: !assignedtoOrg("S2")
```

assignedtoCatalog

Syntax:

```
assignedToCatalog(Catalog[CatalogCode].Category[CategoryCode])
```

In a validation expression, returns TRUE if the item is assigned to the specified catalog and category.

Example:

In the following example, if an item is assigned to the catalog Ladies Wear and the category Summer, it can't be assigned to catalog Kids and category Summer.

```
Severity: Reject
If Expression:
assignedtoCatalog(Catalog[LadiesWear].Category[Summer])
Validation Expression:
!assignedtoCatalog(Catalog[Kids].Category[Summer])
```

component_type

Syntax:

```
component_type("typename1", "typename2", ...)
```

In a validation expression that checks the component types for a structure, returns TRUE if the components associated with the structure are valid. The argument is a list of valid user item types for the components.

When creating a rule that checks the component types for a structure, you must select the **Valid Component Rules** check box in the Create Rules dialog box.

Unlike other validation rules, rules that validate components don't have a Severity.

Example:

In the following example, when the structure is Primary, only `type1` and `type2` can be used as components of the structure.

```
If Expression: [Structure].[Structure Attributes].[Structure Name] == "Primary"
Validation Condition: component_type("type1","type2")
```

exists

Syntax:

```
exists(Boolean_expression)
```

Loops through the rows of the entities used in `Boolean_expression` and returns TRUE if the expression is satisfied for any of the rows.

You can use `exists()` on the following entities:

- relationships (related item relationships and cross-references)
- structures
- multirow attribute groups

Example expressions:

The following expression loops through all the structures on an item and returns TRUE if the any structure has the name "ManufacturingBOM".

```
exists([Structure].[Structure Attributes].[Structure Name] == "ManufacturingBOM")
```

The following expression validates whether a particular relationship exists for an item:

```
exists([Relateditem.[RelateditemMain[.[Type] == "Up-sell")
```

The following expression verifies whether a row exists in a multirow attribute group:

```
exists(isNull([Item].[Ingredients].[Ingredient Name]) == false)
```

Example rules:

The following rule verifies that if the item attribute `Pack Type` is specified, then the GTIN attribute `GTIN` can't be null

```
If Expression:
isNull([Item].[Main].[PACK TYPE]) == false
Validation Condition:
exists(isNull([GTIN].[GTIN Main].[GTIN])) == false
```

The following rule verifies that if the value of the attribute `TM` is `US`, then the GTIN relationship must be with a Customer named USFDA.

```
If Expression:
[Item].[Group1].[TM] == "US"
Validation Condition:
[GTIN].[GTIN Main].[Party Type] == "Customer" AND
[GTIN].[GTIN Main].[Party Name] == "USFDA"
```

from_item_class

Syntax

```
from_item_class ("item class name")
```

Invoked when the item class of an item is being changed. In a validation expression, returns TRUE if the name of the original item class matches `"item class name"`, which must be enclosed in quotation marks.

Example:

The following example returns TRUE if the original item class is `TCParent`:

```
FROM_ITEM_CLASS("TCParent")
```

Combined example:

The following example prevents changing the item class of an item from Pneumatic_Pumps to Hydraulic_Pumps.

```
Severity: Reject
If Expression:
FROM_ITEM_CLASS("Pneumatic_Pumps") && TO_ITEM_CLASS("Hydraulic_Pumps")
```

to_item_class

Syntax

```
to_item_class("item class name")
```

Invoked when the item class of an item is being changed. In a validation expression, returns TRUE if the name of the new item class matches `"item class name"`, which must be enclosed in quotation marks.

Example:

The following example returns TRUE if the new item class is `TCCHLDVR`

```
TO_ITEM_CLASS("TCCHLDVR")
```

Descriptive Flexfields

Descriptive flexfields don't belong to any attribute group, and are accessed using the `FlexField` segment code.

```
[<Entity Name>].Flexfield[<Flexfield segment code>]
```

Example:

```
[ChangeHeader].Flexfield[Product__Line]
```

Comparison Operators

The comparison operators available in item rules are listed below.

- == (equals)
- != (not equals)
- < (less than)
- <= (less than or equal)
- > (greater than)
- >= (greater than)

Comparison operators compare two Boolean expressions and return TRUE or FALSE, depending on the result of the comparison. If one or both expressions are null, then the comparison returns null.To check for null values, use the comparison function `isnull`.

String comparison is case-insensitive. For case-sensitive comparison use the string function `compare`.

Syntax:

```
expression1 == expression2 (equals
expression1 != expression2
expression1 < expression2
expression1 <= expression2
expression1 > expression2comp
expression1 >= expression2
```

isnull

Syntax:

```
isnull(expression)
```

Returns TRUE if its argument is null, returns FALSE otherwise. This function lets you explicitly test whether a value is null. Unlike other functions, it's not ignored if the value of the argument is null.

The logical function `isnull()` implements the following truth table for `expression`.

expression	isnull(expression)
null	T
not null	F

nvl

Syntax:

```
nvl(expression,replacement-expression)
```

If `expression` is null or an empty string, returns `replacement-expression`.

Example:

The following example returns an empty string if the attribute `Attr1` is null.

```
nvl([Item].[AttrGrp1].[Attr1], "")
```

In a scenario such as generating an item description based on a large number of extensible flexfield attributes, it can be inconvenient to use the `isnull()` function when you want rules to keep executing even if one or more of the used attributes is null, because `isnull()` returns a Boolean value, which must be handled individually for each attribute. The following example concatenates a series of attribute values into a long description, and uses `nvl()` to insert an empty string into the description where any of the referenced attributes is null:

```
"Pipe Non-Metallic" +
":OUTSIDE DIAMETER:" + nvl([Item].[Pipe:Non-Metallic].[Outside Diameter],"") +
":NOMINAL SIZE:" + nvl([Item].[Pipe:Non-Metallic].[Nominal Size],"") +
":COLOR:" + nvl([Item].[Pipe:Non-Metallic].[Color],"")
```

Related Topics

- Item Rule Syntax
- Item Rule Data Types
- Item Rule Numeric Functions and Operators
- Item Rule String Functions
- Item Rule Production Value Functions

Item Rule Expressions with Business Entities

Item rules refer to attributes through references that include the business entity that includes the attribute.

Supported Business Entities

When you reference an attribute in rule expressions, specify the business entity as the first term in the expression, as shown in the following examples:

Syntax:

```
[entity name].[attribute group name].[attribute]
```

Example:

```
[Item].[Main].[Item Status]
```

The business entities supported for use in item rules are listed in the following table:

Entity	For assignment rules	For validation rules
Cross Reference	No	Yes
GTIN	No	Yes
Item	Yes	Yes
Related Item	No	Yes
Revision	Yes	Yes
Structure	No	Yes
Style Item	No	Yes
Supplier	Yes	Yes

Cross-Entity References

You can reference attributes from certain other entities while creating rules for an attribute belonging to an entity.

For instance, you can create a validation constraint for a supplier-level attribute that references an item-level attribute, as summarized in the following example:

Field	Value
Severity	Reject
IF Expression	`[Supplier].[Promotion Attributes].[Discount] >= 20%`
Validation Condition	`[Item].[Price Attributes].[MSRP] > 10$`

The following example summarizes another validation rule that references attributes from different entities, namely the item and cross-reference relationship entities:

Field	Value
Severity	Warning

IF Expression	`[Item].[Item_Basic].[ITEM_CLASS]== "Electronics"`
	`AND`
	`[CrossReference].[CrossReferenceMain].[Type]== "Old_Part_Number"`

Validation Condition	`!isnull([CrossReference].[CrossReferenceMain].[Value])`

Using GTIN Entities

You can reference GTIN (Global Trade Identification Number) attributes to enforce your own business validations with regard to GTIN association.

Based on the specified criteria involving attributes or organizations, GTIN validation rules can check whether a GTIN is associated to an item, or check whether there was any change in the associated GTIN.

GTIN rules can also validate the digits of an item's GTIN. You can use a rule to validate that the Packaging Indicator digit for a GTIN is appropriate for the Pack Type of the item. GTINs can be assigned at multiple levels of a packaging hierarchy. Consider a scenario in which your GTIN numbering rule declares that, if the pack type of the Item is "Case", then the fourth digit of the GTIN should be 8. The following example summarizes a validation rule that references attributes for Item and GTIN entities.

Field	Value
Severity	Warning
IF Expression	`[Item].[Main].[Pack Type] == "Case"`
Validation Condition	`subString([GTIN].[GTIN Main].[GTIN],4,4)=="8"`

Using Style Item Entities

You can use the Style Item entity to access the attributes of the corresponding style item of SKU items.

If a rule contains a Style Item entity then the rule will only be run if:

- The user modified a style item.
- The user created or modified a SKU item.
- The user created or modified an entity (such as a revision, or supplier association) on a SKU item and the rule also uses that entity.

The following example summarizes an assignment rule that references attributes from the Style Item entity:

Field	Value
Return type	Item Description
Primary If Expression	`true`
Secondary If Expression	`true`
Return Value	`[StyleItem].[Main].[Item Description] + ", " + [Item].[Top Variants].[Color] + ", " + [Item].[Top Variants].[Top Size]`

Related Topics

- Rules and Rule Sets
- Define Rule Sets and Item Rules
- Item Rule Syntax
- Item Rule Logical Functions and Operators
- Item Rule String Functions

Item Rule Utility Functions

Use these functions in building more complex expressions.

Date Operators

The + (plus) and - (minus) operators add or subtract the specified number of days from a date. A single number is interpreted as a number of days. You can also use dates in the format specified by the standard ISO 8601.

Syntax:

```
expression1 + expression2

expression1 - expression2
```

Example:

The following example expresses a time 3 days after the Item Lead Time

```
[Item].[Logistics].[LeadTime] + 3
```

auto_sequence

Syntax:

```
auto_sequence("Sequence Name", starting_num, increment_by)
```

Searches for `Sequence Name` in the database tables. The sequence name isn't case-sensitive. If the sequence exists, then the function returns the next value from the sequence. If the sequence doesn't exist, then the function creates

a sequence with the specified name and returns `starting_num`. Further numbers in the sequence are incremented by `increment_by`. This function can be used in defining the return value of assignment and validation rules.

Example: The following expression used as the return value of a rule whose target attribute is `[General attributes].[EDC Number]` produces a sequence of numbers beginning at 1000 and increasing by 5 for each new item:

```
auto_sequence("EDC Number", 1000, 5)
```

between

Syntax:

```
between(value, minimum, maximum)
```

Returns TRUE if `value` falls between `minimum` and `maximum`. Returns FALSE otherwise. All arguments are of type Number, Date, or DateTime.

decode

Syntax:

```
decode(expression, search1, result1, [search2, result2, ...], [default])
```

Compares `expression` to the specified series of `search` arguments, one at a time, and returns the corresponding `result` when the first match is found. If no match is found, returns `default`. If `default` is omitted, returns null. Requires specification of at least `expression`, `search1`, and `result1`. You can specify an unlimited number of pairs of `search` and `result` arguments. The `default` argument is optional.

Example:

The following example returns RED COLOR if the item's body color is RED, BLUE COLOR if it's BLUE, and causes a rejection if none of those colors is matched.

```
Severity: Reject
If Expression: decode([Item].[BODY ATTR].[COLOR], "RED", "RED COLOR", "BLUE", "BLUE COLOR", "NONE") ==
 "NONE"
```

in

Syntax:

```
in(expression, value1, value2,...)
```

Returns TRUE if `expression` is found in `value1`, `value2`, or other following value arguments. Returns FALSE otherwise. Requires specifying at least `expression` and `value1`. You can specify an unlimited number of `value` arguments.

Example:

The following example returns TRUE if "RED" is contained in the value of either of the specified attributes for colors.

```
If Expression: in("RED",[Item].[BODY ATTR].[COLOR], [Item].[COVER ATTR].[COLOR])
```

Note: The functions `in()` and `not_in()` accept arguments of either String or Number. All arguments must be of the same type. The type of the first argument determines the type assigned to the subsequent arguments.

not_in

Syntax:

```
not_in(expression, value1, value2,...)
```

Returns TRUE if `expression` isn't found in `value1`, `value2`, or other following value arguments. Returns FALSE otherwise. Requires specifying at least `expression` and `value1`. You can specify an unlimited number of `value` arguments.

Example:

The following example returns TRUE if "RED" isn't contained in the value of either of the specified attributes for colors.

```
If Expression: not_in("RED",[Item].[BODY ATTR].[COLOR], [Item].[COVER ATTR].[COLOR])
```

to_number

Syntax:

```
to_number(string)
```

Returns `string` as a value of type Number.

Example:

The following example returns the count of an item as a string.

```
to_number([Item].[PHYSICAL PROP].[COUNT])
```

Related Topics

- Item Rule Syntax
- Item Rule Data Types
- Item Rule String Functions
- Item Rule Logical Functions and Operators

Item Rule Object Functions

You can use these functions to access or update data stored in custom objects created in the Oracle Fusion Customer Relationship Management Application Composer.

getCustomObjectValue

Syntax:

```
getCustomObjectValue(
custObjName,
custObjReturnAttrName,
custObjQueryAttrName1, Value1,...
custObjQueryAttrNameN, ValueN )
```

Fetches a value from attributes of a custom object `custObjName` that's defined using Application Composer. The value is fetched from the field named `custObjReturnAttrName` of the custom object. The custom object instance to fetch the value from is identified by matching `Value1` in the field named `custObjQueryAttrName1`, using the `==` operator. `Value1` can

be a literal value, or can refer to an attribute, such as `[ITEM].[AG1].[A1]`. You can specify additional matching criteria by providing matches for `custObjQueryAttrNameN` against `ValueN`, and so on.

updateCustomObjectValues

Syntax:

```
updateCustomObjectValues(
custom_object_name,
field_query_map,
field_update_map,
return_attr_value)
```

Updates one or more values of `custom_object_name`, a custom object that's defined using Application Composer.

- The custom object row containing the values to update is identified by `field_query_map`, which is a map of name/value pairs using the `ToMap` function, where `ToMap("Seq", 235)` specifies a row of the column Seq with the value 235.
- In the identified row, the columns to update are identified by `field_update_map`, where `ToMap("Active","NO")` updates the value of the column Active with the value NO. The `field_update_map` can contain multiple name/value pairs to update multiple columns in the same row.
- The `return_attr_value` names the column of the queried row whose value is returned by the function.
- This function returns TRUE if custom object rows were found and updated, and FALSE if no custom object row matching the query attributes was found.

Example custom object: **MachineCode**

This example custom object is used in the following function examples.

Seq	Code	Active	Hour_Rate
1	A20	YES	200
2	M10	YES	500
3	X40	YES	30

Example: Update a single custom object field

The following example queries the **MachineCode** custom object row whose **Seq** field is 2, updates its **Active** field to `NO`, and returns TRUE if the row was updated:

```
updateCustomObjectValues("MachineCode", ToMap("Seq", 2), ToMap("Active", "NO"))
```

Example: Update multiple custom object fields

The following example performs the same query and update as the preceding example, but additionally updates the **Hour Rate** field to `10`:

```
updateCustomObjectValues("MachineCode", ToMap("Seq", 2), ToMap("Active", "NO", "Hour Rate", 10))
```

Example: Update a custom object field and return a value

Assume that an item has the attribute [ITEM].[MACHINE_DETAILS].[SL_NUMBER]. Create a rule with the following expression in the Return Value field of the rule:

```
updateCustomObjectValue("MachineCode",ToMap("Seq", [ITEM].[MACHINE_DETAILS].[SL_NUMBER]), ToMap("Active",
 "NO"),Hour_Rate))
```

That expression:

- Queries the Seq column of the MachineCode custom object to find the row that matches the value of the item's SL_NUMBER attribute
- In that row, updates the value of the Active column to NO.
- From that row, returns the value of the Hour_Rate column (to the Return Value field of the item rule).

InvokeGlobalFunction

Syntax:

```
InvokeGlobalFunction(global_function_name,
global_function_param1,
global_function_param2, ...,
global_function_paramN)
```

Calls a global function `global_function_name` that's defined using Application Composer. You pass zero or more parameters to the global function as `global_function_param1` through `global_function_paramN`. Returns a value that can be used for assignment or validation. You can write a Groovy script inside the global function that invokes a web service to access internal or external data or to perform a calculation on your data.

For more information about defining global functions, see these Oracle Fusion Cloud Applications guides:

- Configuring Applications Using Application Composer
- Groovy Scripting Reference

Example:

The following example calls a global function `my_global_concat_func()` that takes three string parameters, and returns the concatenation of those strings:

```
InvokeGlobalFunction("my_global_concat_func", "Hello",", ","world!")
```

Output:

```
Hello, world!
```

This table indicates how data types can be used between item rules and global functions:

Type	Passed as parameters	Returned as values
String	Yes	Yes
Long (Integer)	Yes	Yes
Double (floating point)	Yes	Yes
Date	Yes	Yes

Type	Passed as parameters	Returned as values
Boolean	Yes	Yes
Object	No	No
List	No	No
Map	No	No
void	N/A	No

Related Topics

- Item Rule Syntax
- Item Rule Data Types
- Item Rule Utility Functions
- Global Functions

Item Rule Service and REST Functions

You can use these functions to access web services and REST APIs.

InvokeRestGet

Syntax:

```
InvokeRestGet(
rest_service_name,
map_of_query_parameters,
return_value_expression,
http_header_map)
```

This function is for use with a REST service.

Calls the REST service registered as `rest_service_name`, passing `map_of_query_parameters` to the GET action and returning the value. The returned value can be used for both assignment and validation.

Use `InvokeRestGet()` when the REST service is registered in Application Composer without any tokens in its URL.

Arguments:

- `rest_service_name` - The name used when registering the REST service in Application Composer.

- `map_of_query_parameters` - A map containing the name/value pairs to be passed to the GET operation. You must use the `ToMap()` function to construct the pairs for this argument. For example, to pass a service parameter such as `https://api.vision.com/products?id=CN97774`, specify `ToMap("id","CN97774")`.
- `return_value_expression` - The path to the field from the REST response that should be returned as the value of the `InvokeRestGet` function. Spaces and semicolons aren't allowed in this value.
- `http_header_map` - (optional) A map containing name/value pairs of HTTP headers that should be used for the request.

Example (without HTTP headers):

The following example passes the query parameter `q=ItemNumber=Vision_root_01` to the GET action of the web service `item_rest`, and returns the value to the ItemDescription attribute of the first item:

```
InvokeRestGet("item_rest", ToMap("q", "ItemNumber=Vision_root_01"), "items[0].ItemDescription")
```

Example (with HTTP headers):

The following example performs the same service call, but specifies the language code `KO`:

```
InvokeRestGet("item_rest", ToMap("q", "ItemNumber=Vision_root_01"), "items[0].ItemDescription",
 ToMap("Accept-Language", "KO"))
```

Note that the `q` parameter supported by Oracle REST services requires specific escaping and formatting for certain characters and words. More information about this can be found in the topic on GET method endpoints in the Oracle Cloud Accessing Business Objects Using REST APIs guide. This requirement needs to be kept in mind when creating the value of the q parameter when calling `InvokeRestGet()`. You can use the `Replace()` function to perform character escaping such as replacing `"` in an attribute value with `\"`.

ToMap

> **Note:** This function is not supported for use on its own. It's used within the scope of functions such as `InvokeRestGet()` and `updateCustomObjectValues()`.

Syntax:

```
ToMap(key_1, value_1, key_2, value_2, ..., key_n, value_n)
```

Within the scope of another function, creates a series of name/value pairs that can be passed as an argument to a function. Each pair is comprised of a key and a value.

Example:

For this set of name/value pairs:

```
ObjectName=Item
Principal=Person
Name=wilson.smith
OrganizationCode=V1
ItemClass=Root Item Class
```

The following example creates a map of the pairs that can be passed as a single argument:

```
ToMap("ObjectName", "Item", "Principal", "Person", "Name", "wilson.smith", "OrganizationCode", "V1",
 "ItemClass", "Root Item Class")
```

InvokeRestGetWithTokens

Syntax:

```
InvokeRestGetWithTokens(
rest_service_name,
token_value1, token_value2, ... , token_value_n,
return_value_expression)
```

This function is for use with a REST service.

Calls the REST service registered as `rest_service_name`, passing `token_value1` and all the other values that should be passed in to the tokens in the REST service URL to the GET action, and returning the value into the field identified by `return_value_expression`.

Use `InvokeRestGetWithTokens()` when the REST service is registered in Application Composer with tokens in its URL.

Arguments:

- `rest_service_name` - The name used when registering the REST service in Application Composer.
- `token_value1, ... , token_value_n` - The values that should be passed in to the tokens in the REST service URL. The token values must be passed in in the same order that they occur in the URL
- `return_value_expression` - The path to the field from the REST response that should be returned as the value of the `InvokeRestGet` function. Spaces and semicolons aren't allowed in this value.

Example:

The following example passes the values `wilson.smith`, `Root Item Class`, and `V1`, to the tokens of the web service `data_security_rest_params`, and returns the value to the GrantId attribute of the first item:

```
InvokeRestGetWithTokens("data_security_rest_params", "wilson.smith", "Root Item Class", "V1",
 "items[0].GrantId")
```

InvokeWebService

Syntax:

```
InvokeWebService("service_name", "function_name", input_argument1, input_argument2,...)
```

This function is for use with a SOAP service.

The names of a SOAP web service and its custom function are passed as quoted strings which can't include space characters. Item rules support only simple type parameters and not complex type parameters being passed to this function.

Returns a value produced by a custom function called through a web service. The web service function must return a single value, since this function doesn't accept more than one value.

Example:

```
InvokeWebService("ValidateSLN_Digit", "execute", [Item].[Tag AG].[SL No])
```

When a rule expression using `InvokeWebService()` is executed at runtime, `InvokeWebService()` calls the web service `service_name`, and passes the input payloads such as `input_argument1` to the function `function_name`. The value returned from `function_name` is returned to the rule expression by `InvokeWebService()`.

Before calling the function `function_name` in a rule expression, you must register the web service `service_name`, along with the credentials used to call the service.

Custom Function Calls in Web Services

You can use custom functions in rule expressions by first writing functions and creating a public web service that includes the custom functions, then using `InvokeWebService()` to call the custom functions.

Related Topics

- Item Rule Syntax
- Item Rule Data Types
- Item Rule Utility Functions

GTIN Assignment Rule

You can automatically generate GTINs and create GTIN relationships using the assignment item rule.

When creating an assignment rule, you must select GTIN as the return type. You can leverage the existing capabilities of item rules such as call a web service, auto sequence function, fetch values from custom objects or item attributes, and so on, to generate the GTIN. Then, the assignment rule automatically creates the GTIN relationships.

Create and Assign GTIN Rule

To generate GTIN and create GTIN relationships automatically, use the assignGTIN function in the **Return Value** field.

The syntax is:

```
assignGTIN (<GTIN String/Expression>, <UOM Code>, <Party Type>, <Registry ID>)
```

You can use a rule function that generates a GTIN as the first argument. Pass the UOM code as the second argument that will be used as the GTIN UOM. Party type and registry ID are optional arguments (either both must be specified or both must be blank). You can pass party type and registry ID to create party GTIN relationships. This GTIN expression can be a concatenation of multiple values. You can create multiple GTIN assignment rules to create more than one GTIN relationship.

If the attribute is updated, the rule won't delete a relationship, or won't update an existing relationship. It attempts to create a new relationship. If a new relationship with the given values is allowed, the creation transaction will be successful.

If there is a relationship existing with the given values, a new GTIN relationship can't be created.

If an attribute is changed to null or a row is deleted in the multirow attribute, the rule fails. A message is displayed indicating that there is already a GTIN relationship with the same specification. Hence, a new GTIN relationship can't be created.

Examples:

- Use constants: `assignGTIN ("00002584109872", "EA", "Manufacturer", "CD1234")`
  - First argument must be a 14-digit string.
  - Second argument must accept both UOM code and lookup meaning.
  - Third argument (party type) must be a customer, manufacturer, or supplier.
  - Fourth argument must be the registry ID of a customer, manufacturer, or supplier.
- Pass item attributes: main, basic, or extended flexfields and/or expressions:

```
assignGTIN([Item].[Item Basic].[Item], [Item].[Main].[Primary Unit of Measure])

assignGTIN([Item].[AG1].[A1] + [Item].[AG1].[A2] , [Item].[AG1].[U_Code], [Item].[AG1].[P_TYPE], [Item].[AG1].[R_ID])

assignGTIN(InvokeWebservice("GTIN_Prefix", "Fetch", [Item].[Item Basic].(Item Class]) + auto_sequence ("Prod_Seq", 100000, 1) + gtinCheckDigit ( [Item].[GTIN_Details].[UPC]) , [Item].[Main].[Primary Unit of Measure])
```

- Create additional GTIN relationship for the same item:

```
assignGTIN("20002584109872", "5Pack")
```

You can generate and assign multiple GTINs to an item using a single rule. For example, assign internal GTIN, party GTINs, and additional pack GTINs to an item using a single rule. Use the existing rule functions to generate GTINs and then use these functions inside the assignGTIN function. You can add multiple assignGTIN functions in the return value field of a GTIN rule.

Here's an example that shows an expression that can be added to the return value field of GTIN assignment rule.

```
assignGTIN(getCustomObjectValue["GTIN_Prefix","Prefix","Level"+[ITEM].[Info].[L1],[Item].[Codes].[UPC],"Ea"),assignGTIN(invokeWebservice("GTIN_Core","Fetch") "Ea","Supplier","CO1234")
```

You can use the getItemGTIN function in rules to get a GTIN from existing item GTIN relationships. Here are a few examples:

- Get the GTIN for which the GTIN UOM is same as the Primary UOM of the item:

```
getItemGTIN([GTIN].[GTIN Main].[UOM] == [Item].[Main].[Primary Unit of Measure])
```

- Get the context item's GTIN for which GTIN UOM and Primary UOM match and the Party Name is XYZ Ltd.:

```
getItemGTIN( [GTIN].[GTIN Main].[UOM] == [Item].[Main].[Primary Unit of Measure] AND [GTIN].[GTIN Main].[Party Name] == "XYZ Ltd" )
```

- Get the context item's GTIN whose GTIN UOM is 5Pack:

```
getItemGTIN( [GTIN].[GTIN Main].[UOM] == "5Pack")
```

You can use this expression in a GTIN assignment rule to create additional GTIN relationships. Also, you can:

- Derive key parts from the GTIN obtained from existing relationships using the getItemGTIN function and then you can use these parts for generating additional GTINs.
- Use this GTIN for validation purposes.

The following example invokes an API, sends context item"s Pack-GTIN and another value "10Pack". Based on these two input parameters, the external API can compute a GTIN and return the GTIN number; Rule creates a GTIN relationship with the returned GTIN number and with GTIN UOM "10Pack".

```
assignGTIN(InvokeWebservice("GTIN_Compute", getItemGTIN( [GTIN].[GTIN Main].[UOM] == [Item].[Main].[Primary Unit of Measure]),"10Pack" ), "10Pack")
```

Calculate Check Digit for GTINs

You can calculate the check digit for GTIN 8, GTIN 12, GTIN 13, or GTIN 14 using the `gtinCheckdigit( )` item rule function.

The syntax of the function is:

```
gtinCheckdigit( ).
```

You can pass a 7, 11, 12, or 13-digit number to calculate the check digit for GTIN 8, GTIN 12, GTIN 13, or GTIN 14 respectively. The function will perform a mod 10 check digit calculation and return the check digit.

You can also pass an expression in the GTIN check digit function. This expression must return a 7, 11, 12, or 13-digit number.

Using rules, you can pass check digit and append the check digit with the other digits. For example:

```
assignGTIN([Item].[AG1].[Indicator_Digit] + [Item].[AG1].[Company_Prefix] + [Item].[AG1].[Item_Ref] + gtinCheckdigit ([Item].[AG1].[Indicator_Digit] + [Item].[AG1].[Company_Prefix] + [Item].[AG1].[Item_Ref]) , "Each")
```

Alternatively, you can create rules:

Rule 1: `Attribute G-13 = [Item].[AG1].[Indicator_Digit] + [Item].[AG1].[Company_Prefix] + [Item].[AG1].[Item_Ref]`

Rule 2: `assignGTIN([Item].[AG1].[G-13] + gtinCheckdigit([Item].[AG1].[G-13]) , "Ea")`

The preceding examples also demonstrate how you can use the check digit function in GTIN assignment rules.

Attributes Supported for Item Rules

All user-defined attributes (extensible flexfields) can be accessed using the syntax [entity name].[attribute group name].[attribute name]. For example: [Item].[Physical Attributes].[Unit Weight]. In addition, rules support access to the predefined attributes listed here, using predefined attribute groups to access the attributes.

Rule Set Context Attributes

This is a special set of attributes that refers to the context of a rule's execution. Expressions using these attributes are formed with the prefix `Context` in place of an attribute group name.

Attribute	Description
BatchID	Set to Batch ID if running Import.
BatchName	Set to Batch Name if running Import.

Attribute	Description
ExecutionDate	Date for which rules are invoked.
ExecutionDateTime	Date and Time for which rules are invoked.
RuleSetVersion	Currently always set to `1.0`.
User	The user whose action triggered the rule.

Examples:

```
Context.ExecutionDate >= '7/6/2007'

Context.User == 'USER1'
```

Change Order Attributes

These attributes represent fields in the header of a change order. They can be used in the expressions of validation rules to validate change orders.

Attribute	Description	Example
Approval Date	The approval date of the change order.	`[ChangeHeader].[Change Header Main].[Approval Date]=='12/01/19 03:00 PM'`
Assigned To	The user the change order is assigned to.	`[ChangeHeader].[Change Header Main].[Assigned To]=='USER_2468'`

Change ID	Identifier for the change order.	`isNull([ChangeHeader].[Change Header Main].[Change ID])`
		
		`[ChangeHeader].[Change Header Main].[Change ID]=='12345678'`

Change Name	The editable name of the change order entered when the change order is created.	`[ChangeHeader].[Change Header Main].[Assigned To]=='CO for 2021 plan: updated '`
Change Number	The fixed identifier of the change order entered when the change order is created.	`[ChangeHeader].[Change Header Main].[Change Number]=='CO for 2021 plan'`
Created by	The user who created the change order.	`[ChangeHeader].[Change Header Main].[Created by] == 'USER_12345'`
Creation Date	The date the change order was created.	`[ChangeHeader].[Change Header Main].[Creation Date]=='12/26/12 03:13 PM'`

Attribute	Description	Example
Description	The editable description of the change order entered when the change order is created.	`[ChangeHeader].[Change Header Main].[Description]=='Preliminary evaluation.'`
Need-by Date	Need-by Date assigned for the change order.	`[ChangeHeader].[Change Header Main].[Need-by Date]=='12/26/12 03:13 PM'`
Organization	Organization code assigned when the change order was created.	`[ChangeHeader].[Change Header Main].[Organization]=='M1'`
Priority	The priority assigned to the change order.	`[ChangeHeader].[Change Header Main].[Priority]=='High'`
Reason	The reason code assigned to the change order.	`[ChangeHeader].[Change Header Main].[Reason]=='Cost'`
Requested By	The user who requested the change order.	`[ChangeHeader].[Change Header Main].[Requested By]=='USER_789'`

Item Primary Attributes

Attribute group name: Main

For the attributes in this group, see the information about item specifications and attributes in the Using Product Master Data Management guide. This group includes the following attributes:

- Approval Status
- Conversions
- Defaulting Control
- Formatted Description
- Item Description
- Item Status
- Lifecycle Phase
- Long Description
- Negative Deviation Factor
- Pack Type
- Positive Deviation Factor
- Pricing
- Primary Unit of Measure
- Secondary Unit of Measure
- Style Item
- Tracking Unit of Measure

- User Item Type

Example:

```
[Item].[Main].[Primary Unit of Measure] == 'Dozen'
```

Item Basic Attributes

Attribute group name: Item Basic

For the attributes in this group, see the information about item specifications and attributes in the Using Product Master Data Management guide. This group includes the following attributes:

- Item
- Item Class
- Organization Code
- Style Item
- Approval Status

Example:

```
[Item].[Item Basic].[Approval Status]=='Approved'
```

Structure Attributes

Attribute group name: Structure Attributes

Structure attributes are accessed only in the context of the business entity Item, using the `StructureAttributes` attribute group name.

For the attributes in this group, see the information about item specifications and attributes in the Using Product Master Data Management guide. This group includes the following attributes:

- Structure Name
- Organization Code
- Common Item Name
- Common Organization Code
- Common Structure Name

Example:

```
[Structure].[Structure Attributes].[Structure Name]=="Primary"
```

Item Supplier Association Attributes

Attribute group name: Intersection Primary

In the context of the Supplier business entity, you can access item supplier attributes, intersection attributes (Primary indicator and association Status) and other supplier and supplier address related attributes.

The following example checks whether the item supplier association status is Active.

```
[Supplier].[Intersection Primary].[Status] == 1
```

Supplier Attributes

Attribute group name: Supplier

This group includes the following attributes:

- Supplier Name
- Supplier Number
- D-U-N-S
- Taxpayer ID
- Tax Registration Number

Example:

```
[Supplier].[Item Supplier Site Organization].[Supplier Name]=='Acme'
```

Item Relationship Attribute Groups: Cross Reference Attributes

Attribute Group Name: Cross Reference Main

This group includes the following attributes:

- Type
- Description
- Value
- ApplicableOrganization

Example:

```
[CrossReference].[Cross Reference Main].[Type]=='Old Item Number'
```

Item Relationship Attribute Groups: Related Item Attributes

Attribute Group Name: Related Item Main

This group includes the following attributes:

- Type
- Description
- Start Date
- End Date
- Reciprocal
- Planning Enabled

Example:

```
[RelatedItem].[Related Item Main].[Type]=='Cross-Sell'
```

WHO Column Attributes

Use these attributes to write rules to govern the updates performed by a specific user, or during a specified time period.

Attribute	Description
CREATED_BY	The user who created the data
LAST_UPDATE_DATE	The last date that the data was updated This attribute supports these operators: `==` , `<` , `>` , `<=` , `>=`
LAST_UPDATED_BY	The user who last updated the data.

At runtime, the rule validates the user and date reflected in these attributes.

You can use these attributes in assignment and validation rules for the business entities Item, Revision, and Supplier. For primary data, these attributes are available in the **Insert Attribute** dialog under the WHO attribute group for the available business entities. For the WHO attributes of item primary attributes (Basic and Main groups), and operational attribute data, use the syntax `[Item].[WHO]`. For the WHO attributes of item revision and supplier primary attributes, use `[Revision].[WHO]` and `[Supplier].[WHO]` respectively.

Example:

```
[Item].[WHO].[LAST_UPDATED_BY] == 'PRODUCTUSER1'
```

For extensible flexfield attribute groups, the WHO attributes are available under their respective attribute groups and flexfield contexts.

Examples for extensible flexfield attribute groups named Marketing, Color Characteristics, and TAX attributes:

```
[Item].[Marketing].[LAST_UPDATED_BY]

[Revision].[Color Characteristics].[LAST_UPDATED_BY]

[Supplier].[TAX attributes].[LAST_UPDATED_BY]
```

In assignment rules, these attributes:

- Are available only for the business entities Item, Revision, and Supplier
- Are available only for rules of return type **Generic**.
- Are not available as target attributes.

In validation rules, these attributes:

- Are available only for the business entities Item, Revision, and Supplier

In both assignment and validation rules, you can use the attribute `Context.User` to refer to the user whose action triggered the rule, whether through the user interface, during import, or through a service. Example:

```
context.user == 'ProductEngineer'
```

Rule Expressions Containing Predefined Attributes

You can use the following SQL query to get a complete list of Rule expressions of pre-seeded attributes supported in rules. For example:

```
[Item].[Asset Management].[Activity Cause]
[GTIN].[GTIN Main].[Description]
[Change Header].[Change Header Main].[Approval Date]
[Revision].[Item Revision].[Revision Code]
```

```
[Supplier].[Item Supplier Site Organization].[Registry ID]
```

You can use this to copy the required expressions into the respective fields of the rules user interface while creating rules.

```
SELECT
 *
FROM
 (
 SELECT
 '['
 || prim_groups.ent_disp_name
 || '].['
 || prim_groups.ATTR_GROUP_DISP_NAME
 || '].['
 || prim_attrs.attr_disp_name
 || ']' AS expression
 FROM
 (
 SELECT
 'PRIMARY' AS attr_group_type,
 ents.display_name AS ent_disp_name,
 primAttrs.ATTR_GROUP_NAME AS ATTR_GROUP_NAME,
 primAttrs.ATTR_GROUP_DISP_NAME AS ATTR_GROUP_DISP_NAME
 FROM
 EGP_ITEM_ATTRIBUTES_VL primAttrs,
 EGO_RL_PRIM_ATT_DLS levels,
 EGO_RL_ENTITIES_VL ents
 WHERE
 primAttrs.CONTROL_LEVEL IS NULL
 AND primAttrs.ATTR_GROUP_NAME != 'MPNAttributes'
 AND primAttrs.INTERFACE_TABLE_NAME IS NULL
 AND levels.attr_group_name = primAttrs.ATTR_GROUP_NAME
 AND ents.data_level_name = levels.data_level
 GROUP BY
 ents.display_name,
 primAttrs.ATTR_GROUP_NAME,
 primAttrs.ATTR_GROUP_DISP_NAME
 ) prim_groups,
 (
 SELECT
 attr.ATTR_NAME,
 attr.ATTR_DISP_NAME,
 attr.ATTR_GROUP_NAME
 FROM
 EGP_ITEM_ATTRIBUTES_VL attr
 WHERE
 attr.CONTROL_LEVEL IS NULL
 AND attr.ATTR_GROUP_NAME != 'MPNAttributes'
 ) prim_attrs
 WHERE
 prim_attrs.attr_group_name = prim_groups.attr_group_name
 UNION
 SELECT
 '['
 || op_groups.ent_disp_name
 || '].['
 || op_groups.ATTR_GROUP_DISP_NAME
 || '].['
 || op_attrs.attr_disp_name
 || ']' AS expression
 FROM
 (
 SELECT
 'EGO_MASTER_ITEMS' AS attr_group_type,
 ents.display_name AS ent_disp_name,
```

```
 ia.ATTR_GROUP_NAME AS ATTR_GROUP_NAME,
 ia.ATTR_GROUP_DISP_NAME AS ATTR_GROUP_DISP_NAME
 FROM
 EGP_ITEM_ATTRIBUTES_VL ia,
 EGO_RL_ENTITIES_VL ents
 WHERE
 ( ia.CONTROL_LEVEL = 'M'
 OR ia.CONTROL_LEVEL = 'C' )
 AND ents.data_level_name = 'EGO_ITEM_DL'
 GROUP BY
 ents.display_name,
 ia.ATTR_GROUP_NAME,
 ia.ATTR_GROUP_DISP_NAME
 ) op_groups,
 (
 SELECT
 attr.ATTR_NAME,
 attr.ATTR_DISP_NAME,
 attr.attr_group_name
 FROM
 EGP_ITEM_ATTRIBUTES_VL attr
 WHERE
 ( attr.CONTROL_LEVEL = 'M'
 OR attr.CONTROL_LEVEL = 'C' )
 ) op_attrs
 WHERE
 op_attrs.attr_group_name = op_groups.attr_group_name
 )
ORDER BY
 expression
```

Rule Expressions Containing EFF Attributes

You can use the following SQL query to get a list of rule expressions of EFF attributes for usage in rules.

```
SELECT
 *
FROM
 (
 SELECT
 '['
 || eff_groups.ent_disp_name
 || '].['
 || eff_groups.ATTR_GROUP_DISP_NAME
 || '].['
 || eff_attrs.attr_disp_name
 || ']' AS expression
 FROM
 (
 SELECT
 ents.DISPLAY_NAME AS ent_disp_name,
 ag.CONTEXT_CODE AS ATTR_GROUP_NAME,
 ag.NAME AS ATTR_GROUP_DISP_NAME
 FROM
 FND_DF_CONTEXTS_VL ag,
 FND_EF_CONTEXT_USAGES contextUsages,
 EGO_RL_ENTITIES_VL ents
 WHERE
 ag.APPLICATION_ID = 10010
 AND ents.DATA_LEVEL_NAME = contextUsages.FLEXFIELD_USAGE_CODE
 AND ag.DESCRIPTIVE_FLEXFIELD_CODE = 'EGO_ITEM_EFF'
 AND ag.ENABLED_FLAG = 'Y'
 AND ag.LAST_UPDATE_DATE < (
 SELECT
```

```
DEPLOYMENT_DATE
FROM
FND_DF_FLEXFIELDS_VL
WHERE
DESCRIPTIVE_FLEXFIELD_CODE = 'EGO_ITEM_EFF'
)
AND contextUsages.APPLICATION_ID = 10010
AND contextUsages.DESCRIPTIVE_FLEXFIELD_CODE = 'EGO_ITEM_EFF'
AND contextUsages.CONTEXT_CODE = ag.CONTEXT_CODE
) eff_groups,
(
SELECT
NAME AS ATTR_DISP_NAME,
CONTEXT_CODE AS ATTR_GROUP_NAME
FROM
FND_DF_SEGMENTS_VL
WHERE
APPLICATION_ID = 10010
AND DESCRIPTIVE_FLEXFIELD_CODE = 'EGO_ITEM_EFF'
AND ENABLED_FLAG = 'Y'
AND LAST_UPDATE_DATE < (
SELECT
DEPLOYMENT_DATE
FROM
FND_DF_FLEXFIELDS_VL
WHERE
DESCRIPTIVE_FLEXFIELD_CODE = 'EGO_ITEM_EFF'
)
UNION
SELECT
attr.ATTR_DISP_NAME,
'ORA_EFF_WHO' AS ATTR_GROUP_CODE
FROM
EGP_ITEM_ATTRIBUTES_VL attr,
EGO_RL_PRIM_ATTS PrimAttrs
WHERE
attr.CONTROL_LEVEL IS NULL
AND PrimAttrs.ATTR_GROUP_NAME = attr.ATTR_GROUP_NAME
AND PrimAttrs.ATTR_NAME = attr.ATTR_NAME
AND attr.ATTR_GROUP_NAME = 'ORA_EFF_WHO'
) eff_attrs
WHERE
eff_attrs.attr_group_name = eff_groups.attr_group_name
OR eff_attrs.attr_group_name = 'ORA_EFF_WHO'
)
ORDER BY
expression
```

Related Topics

- Item Specifications and Attributes
- Oracle Fusion Cloud SCM: Using Product Master Data Management

Analyze Rule Impact

You can use rule impact analysis to assess the effect of item rules on a given set of existing items.

Purpose of Impact Analysis

When you add new item rules, or modify existing rules, it's important to know the impact the rules have on production item data.

By running a scheduled process for rule impact analysis, you can perform a what-if analysis of the effect that draft rule sets would have on existing items. After the process runs, you examine the results of the analysis. If the results are acceptable, you can add the impacted items to a batch, and import the batch to update the items. For convenience, you can select items by defined criteria (rather than individually), schedule the analysis process (rather than running it manually), and automatically run data updates after analysis (rather than submitting them separately).

Defining an Impact Analysis: Procedure

Impact analysis is based on the ability to designate item rule sets as being in Draft status, and on defining the scope of a particular analysis by selecting a set of items on which to analyze results.

To define an impact analysis:

1. In the Product Information Management work area, select the Manage Item Rule Sets task.
2. Create a new rule set, select the **Draft** check box and save the rule set. This is the rule whose impact you want to analyze before putting it into production. You can also edit an existing rule set to put it in draft status.
3. Repeat this step for other rule sets to analyze.

   > **Note:** Draft rule sets don't operate on production data during ordinary transactions.

4. To enable the running of your draft rule sets, add them to the master rule set, which is named MASTER_RULE_SET. In the master rule set, specify the sequence number that determines the order of execution of the included rule sets.
5. In the Product Information Management work area, select the Analyze Item Rule Set Impact task.
6. The Analyze Item Rule Set Impact page contains a list of all of the rule impact analyses. For each analysis, key information is displayed:
   - The name of the analysis, as a link. Click the link to access the analysis details.
   - **Status**: whether the analysis has been Completed, or Not Started.
   - If Completed, the date the analysis was submitted.
   - A graphic link showing the number of items impacted, or not, by the rule sets in the analysis. Click the link to access the analysis details.
   - **Autoupdate**: Whether rules that aren't in draft status will automatically update items after the analysis runs.
   - **Import Status**: Whether the import of the impacted items has been Completed, or Not Started.
   - The user who created the analysis.
   - A menu for submitting or scheduling the analysis.
7. You can search the list by analysis name in the search field. You can click **Show Filters** to access other filters, including analysis Status, and Autoupdate setting.
8. Click **Create** to create a new analysis.
9. On the Scope tab of the new analysis, enter a name and optional description.
10. Leave **Autoupdate** set to **No** yet. You can't change it back to No once you have run the analysis.

11. Select **Select and Add** from the Actions menu, to select the items to be in the scope of the analysis. If you select an item class, then the search fields are adjusted to include fields from associated attribute groups.
    - To specify a scope of manually chosen items, select the items in the search results list and click **Add Items**. The items are added to the table of criteria in the scope of the analysis.
    - To specify a dynamic scope, add a saved search to the criteria table. In the Search and Select dialog box, select any existing saved search, or create a new saved search, and set it as default saved search. Then click **Add Saved Search**. When you later run the analysis, the saved search is executed. All the items that meet the search criteria at that point in time are considered as the scope of the impact analysis, and the analysis is run on this set of items.
12. When you have completed the scope criteria for the analysis, click **Save**.
13. Click **Submit** to run the Analyze Item Rule Set Impact process immediately. You can alternatively click **Schedule** to open the Schedule dialog and specify a schedule for when the analysis process runs.

    When the analysis process runs, the draft rules included in the master rule set are force-applied to the items in the scope of the analysis, along with all the production (non-draft) rules included in the master rule set.

Reviewing Impact Analysis Results

When an analysis process completes successfully, you can open the analysis and review the results, on the Results subtab, which contains the affected items and any changes that would be made by the rules.

On the landing page of the Product Information Management work area, you can review impacts at a high level, using the **Rules Impact Analysis** infolet:

- By default, the infolet displays graphics linked to items impacted by runs of analysis processes during the **Time Interval** displayed at the top of the landing page. In the infolet, you can click the menu link for **Items Impacted** to select **Items Not Impacted**.
- A bar chart indicates the number of items impacted, or not impacted, for each impact analysis. The names of the analyses are keyed to the bars. Hovering your mouse over a bar displays the name of the analysis and the number of items.
- Clicking on a bar opens the Results tab of the Edit Impact Analysis page for the linked analysis.

On the Edit Impact Analysis page, you can review the details of the selected analysis, and filter the list of items in its scope in different ways, to better understand the impact.

- The Results tab displays the results of the analysis for all of the items specified in the scope of the analysis on the Scope tab. You can filter the list of items.
- Selecting one of the following infotiles enables you to work with the different categories of impacts:
    - **Impact**: Displays the number of items that are impacted or not impacted by the draft rules in the analysis.

      Infotile filters: Impacted Items, Nonimpacted Items

      Item results filters: Assignment Type (for associated assignment rules), Severity (for validation rules), Rule Name (for an analysis that contains multiple rules)

      Item results actions: Export to Excel
    - **Rule Type**: Displays the number of items associated with either assignment rules or validation rules.

      Infotile filters: Assignment, Validation

      Item results filters: Assignment Type, Rule Name

Item results actions: Export to Excel

- **Actionable**: Displays the number of items that require action. Items can be either ready to add to a batch for import, or need corrections before being imported. If items need corrections, you can edit the items in a spreadsheet or use other means to make the corrections, then reload them for import.

  Infotile filters: Ready, Need Corrections

  Item results filters: Assignment Type, Severity, Rule Name

  Item results actions: Export to Excel, Add Items to Batch, Edit Items in Spreadsheet

- You can filter the list by the **Assignment Type** (for associated assignment rules), **Severity** (for validation rules), and **Rule Name** (for an analysis that contains multiple rules).
- For each item in the item results list, you can display a variety of fields, including:
  - Attribute values before and after being changed by assignment rules
  - New organizations and catalogs or categories assigned by rules
  - User messages caused by validation rule sets
  - The name of the rule that impacted the item

Scenarios for Post-Analysis Update

After you review the results of an impact analysis, you can rectify errors caused by rules, if any, by editing the items in a spreadsheet or using other means to make the corrections, then reload the items for import.

Consider an example scenario in which you have modified an assignment type item rule to reflect a pending change in a local sales tax. The rule will be applied to any new items that are created, but many items already exist that were created under the previous tax. You need to analyze the impact of applying the new tax assignment to those items.

To resolve the effects of the rule analysis:

1. Click the **Actionable** infotile. You will be determining the action to take before the impacted items are ready for import back into production.
2. Take the rule sets that produced the impact out of draft status. You can click the name of a rule set in the item results list to access the Edit Rule Set page. Deselect the **Draft** check box to take the rule set out of draft status.
3. The actions you can take are determined by the category of actionable items that you choose: **Ready** or **Need Corrections**. Use one of the following scenarios.
   - **Ready**: These items are likely to be imported with no errors produced by the impact of the rules in the analysis set. Suggested actions include:
     - You can add these items to a new or existing batch so that they can be imported into production.

       Action: Select **Add Items to Batch** from the Actions menu. If you select **New Batch**, make selections in the **Process Details** dialog. The resulting rules update impact type of batch is predefined as an import to the Product Information Management Data Hub spoke system, which means that it updates only items that already exist. You can also add items to an existing rules update impact batch that was previously created by this option, . You can examine the results of the batch import on the Manage Item Batches page of the Product Information Management work area. You can examine the record of the import process in the Scheduled Processes work area, using the process ID displayed when you submitted the batch.
     - Optionally, you can add the items to a spreadsheet, to further prepare them for import.

Action: Select **Edit Items in Spreadsheet** from the Actions menu.

- **Need Corrections**: These items are likely to have errors when imported that are produced by the impact of the rules in the analysis set. For example, import errors would be caused by the triggering of rules with Reject severity.

  Rules that cause errors typically require an you to make a decision on how to correct the data. For example, if there is a rule which says Minimum Temp should be greater than Maximum Temp, the item data could be corrected by correcting either the Minimum Temp or the Maximum Temp attribute values.

  Suggested actions include:

  - You can add the items impacted by a rule to a spreadsheet, to edit them to be suitable for import when impacted by a rule.

    Action: Select **Edit Items in Spreadsheet** from the Actions menu. In the **Edit Items in Spreadsheet: Select Rule** dialog box, select the rule set and rule that impacted the items that need correction, then click **Download**. The spreadsheet opens on your local computer, containing the selected items. After you edit the item data, you can import it.
  - If you determine that corrections are needed because the impacting rule isn't acting as expected, then you can edit the rule instead of the item data. In a row for a selected item, click the **Edit Rule** control to edit the rule that produced the impact shown on that item. To see which other items are also impacted by the same rule, use the Rule Name filter on the results list, which filters the list to the items affected by the same rule.

    After you make the needed corrections to the item data or to the rules, you can select and add these items to a new or existing batch so that they can be imported into production.

    Action: Select **Add Items to Batch** from the Actions menu.

Related Topics

- Rules and Rule Sets
- Item Batch Options

How You Use Custom Object Data in Rules

You can use rules to access or update data stored in a custom object created in the Oracle Fusion Customer Relationship Management Application Composer.

Example Use Case

Consider the following example use case for custom objects.

Assume that your company uses a catalog for export-controlled items. You need to assign your inventory items to the catalog based on complex rules that take into account both item attributes and non-item attributes, such as trade agreements. You maintain the item attributes as operational attributes and extensible flexfields in the Product Information Management work area. You maintain the trade agreement attributes in custom business objects designed using Application Composer.

Item rules can refer to both the item attributes and the non-item attributes, to determine if an item should be assigned to the export-controlled items catalog.

In Application Composer, you have defined a custom object called Selling Restrictions, containing a matrix of selling restrictions by target market. You want to refer to that data to determine whether or not an item can be sold, based on its target market. Assume that the example custom object Selling Restrictions contains the data in the following table.

Target Market	Restriction
EU	No
North America	Yes
APAC	Yes
Middle East	No

Your item rules can use complex business rules to determine attributes for assignment or validation purposes. You can shift some of the data-induced complexity for business rules, such as deriving the restriction for a target market, or deriving the color family name for a given color shade, to custom business objects and then refer to those values in your business rules. This practice of decoupling business rules from the underlying data protects your business rules from changes in data sets, such as color shades being added or dropped, and simplifies maintenance of your business rules.

Another use of custom objects with item rules is to use data available in legacy systems that may not have built-in web services. Relevant data from such systems can be extracted and maintained in custom objects and then be referred to in your item rules. This practice greatly enhances the scope of data used in your business rules.

Access Custom Object Data

To access the attributes maintained in custom objects, use the item rule function `getCustomObjectValue()`.

The syntax for this function is:

```
getCustomObjectValue(
custObjName,
custObjReturnAttrName,
custObjQueryAttrName1, Value1,...
custObjQueryAttrNameN, ValueN )
```

Referring to the preceding use case, the following example queries the Selling Restrictions custom object for the row of the Target Market column whose value is obtained from the attribute expression `[ITEM].[Market Attributes].[Target Market]` (for instance, North America), then fetches and returns the value of the row's Restriction column (for instance, Yes).

```
getCustomObjectValue(
"Selling Restrictions",
"Restriction",
"Target Market", [ITEM].[Market Attributes].[Target Market])
```

Update Custom Object Data

To update the attributes maintained in custom objects, use the item rule function `updateCustomObjectValues()`.

The syntax for this function is:

```
Boolean updateCustomObjectValues(
custom_object_name,
field_query_map,
field_update_map)
```

Referring to the preceding use case, the following example queries the Selling Restrictions custom object for the row of the Target Market column whose value is obtained from the attribute expression `[ITEM].[Market Attributes].[Target Market]` (for instance, North America), then updates the row's Restriction value to `No`, and returns TRUE if the row was updated.

```
updateCustomObjectValues(
"Selling Restrictions",
ToMap("Target Market", [ITEM].[Market Attributes].[Target Market]),
ToMap("Restriction", "No") )
```

Related Topics

- Item Rule Utility Functions

How You Route Item Changes Through Change Types Using Rules

You can use validation rules to select change types, which enables you to design a dynamic workflow routing that's based on criteria defined in a validation rule.

Define Change Types

The intention is to match specific types of change orders to specific modifications to items that require creation of change orders. Begin by defining the change types that you want to match with item changes.

In the Setup and Maintenance work area, use the Manage Change Order Types task:

- Offering: Product Management
- Functional Area: Change Orders
- Task: Manage Change Order Types

Define Validation Rules

Define validation rules that implement the criteria for matching item changes with change types.

1. Define a rule set for validation rules.

   The rule set can have an Association Type of **Attribute group** or **Item class**.
2. Define rules in that validation rule set, to define the criteria for matching an item change with a change type.
3. When creating a rule in the rule set, in the Create Rule dialog box, select the **Severity** as **Needs Approval**.
4. The **Change Order Type** field and the **Enforce Change Order Type** check box appear. The check box is selected by default.

   These options are only available if the Severity of the rule is **Needs Approval**.

5. Search for and select the change type that you defined.
6. Define the **If Expression** and **Validation Condition** for the rule, with criteria that identify the item change to be matched to the change type that you associated with the rule.

   Example:

Field	Value
Change Order type	Form-Fit-Function Change Order
Severity	Needs Approval
Validation Condition	`!changed([Item].[Physical Attributes])`
User Message	Any Physical attributes changes should go through a change order of change type 'Form-Fit-Function Change Order'

7. Save the rule set, and add it to the master rule set.

Effect on Item Creation

When a user modifies an item that's identified by the validation expression of your rule, the rule controls which change type is applied.

When a user selects **Save** > **Save to Change Order**, the Save to Change Order dialog box reflects the effects of your rule:

- If **Create change order** is selected, then the **Type** field displays the change type that was determined by your rule. The type can't be changed, if the **Enforce Change Order Type** check box was selected in the rule.
- If **Add to existing change Order** is selected, then the **Type** field displays only the change orders belonging to the change type that was determined by your rule.
- If the user's modifications to the item trigger more than one rule's criteria, the rule with the lowest sequence number in the rule set is applied.

Effect on Import

In import batches, the change type is governed by the setting of the **Change Order** option in the Edit Item Batch Options dialog box. If you have selected **One per Item** then the change type applied by your rule is used. If no type is set, then the default change type specified for the item class is used.

Effect on Impact Analysis

To see the change order columns in the impact results table:

1. Select the **Analyze Item Rule Set Impact** task in the Product Information Management work area.
2. Click the name of an analysis to open it.
3. In the results table for the analysis, select **View** > **Columns**, then select **Change Order Type** and **Enforce the change order type**.

Related Topics

- Understand Change Types
- Define Rule Sets and Item Rules
- Analyze Rule Impact
- Item Batch Change Order Options

How You Integrate With REST Services Using Rules

You can use rules to call GET operations on REST services registered in the Oracle Fusion Customer Relationship Management Application Composer.

Calling REST GET from Item Rules

You can use either of these functions to call the GET operation of a REST service, depending on your how you need to access data through the service, and how the REST service handles queries for data.

Function	Use Function To:
`InvokeRestGet( rest_service_name, map_of_query_parameters, return_value_expression, http_header_map)`	Pass in any combination of names and values to the GET's q query parameter. Use when the REST service is registered in Application Composer without any tokens in its URL.
`InvokeRestGetWithTokens( rest_service_name, token_value1, ... , token_value_n, return_value_expression)`	Pass in values for tokens representing attributes. Use when the REST service is registered in Applications Composer with tokens in its URL. Note that you can't pass in arbitrary query parameters if the URL contains tokens.

For details about these functions, see the topic on item rule utility functions.

Keep these points in mind:

- To call a REST service from a rule, you must first register the service Application Composer, as described in the following section.
- To pass a map of name/value query parameter pairs to `InvokeRestGet()`, use the internal function `ToMap()`.
- To pass tokens to `InvokeRestGetWithTokens()` that require escaping of certain characters and words, or to pass the `q` parameter when calling `InvokeRestGet()` that requires specific escaping and formatting you can use the internal `Replace()` function to perform character escaping such as replacing `"` in an attribute value with `\"`.

Register the REST Service

Before you call a REST service from a rule, you must register the service in Application Composer.

The details for registering a REST service are provided in the Configuring Applications Using Application Composer guide. Here's a summary of the steps:

1. You must be in a sandbox in order to register the web service in Apps Composer. Do the following to create and enter a sandbox.
    a. Sign in with the application implementation consultant privileges.
    b. Select **Sandboxes** from the Configuration section of the Navigation menu.
    c. Click **Create Sandbox**. On the create Sandbox page, select **Application Composer** in the All Tools list. Click **Create and Enter** to enter the sandbox.
2. Inside the sandbox, select **Application Composer** from the Tools menu.
3. Click on the **Web Services** link, either in the Overview page or in the Common Setup list in the left pane.
4. Click the **Create Web Service Reference** button on the toolbar, select **REST** in the Select Connection Type dialog box, then click **OK**.
5. On the Create REST Web Service Connection page, enter your choice of name for the new REST service, keeping in mind that you will use this name to call the REST service from item rules.
6. On the Create REST Web Service Connection page, enter the URL for the REST service in the **URL** field. For example, you could use this URL to register the Product Management data security REST service:

    ```
    https://vision.com/fscmRestApi/resources/latest/productManagementDataSecurities
    ```

7. You can specify tokens in the web service URL by using the form `##TOKEN_NAME##`. Values for these tokens can then be passed in when calling the REST service. For example, you could use this URL to register the PIM data security REST service:

    ```
    https://vision.com/fscmRestApi/resources/latest/productManagementDataSecurities?
    q=ObjectName=Item;Principal=Person;Name=##USER_NAME##;ItemClass=##ITEM_CLASS##;OrganizationCode=##ORG_CODE##
    ```

    When this service is called from item rules, the rule must pass in values for all the tokens. In this example, URL contains the tokens USER_NAME, ITEM_CLASS, and ORG_CODE, which allows the rule to query data grants for a given user name, item class, and organization.

    > **Note:**
    > - If the REST URL doesn't contain tokens, then item rules will be able to call the GET operation and pass in any combination of names and values to the GET's `q` query parameter.
    > - If the REST URL does contain tokens, then item rules will only be able to pass in values for those tokens when calling the GET operation. It won't be possible to pass in arbitrary query parameters if the URL contains tokens.

8. On the Create REST Web Service Connection page, you can select an Authentication Scheme that should be used to call the REST service. For Product Management REST services, this scheme can generally be either **Call with basic authentication** or **Propagate user identity using SAML**.
    - If you select **Call with basic authentication**, then you will set a user name and password that will always be used to call the REST service. For example, you could set the user name and password `JSmith` and `xxyyzz99` are always used to call the REST service. In that case, even if you log in to the Product Information Management work area as an application implementation consultant and create an item,

then the user name and password `JSmith` and `xxyyzz99` will be used to call the REST service from item rules.

When selecting **Call with basic authentication** you need to select the credentials that will be used to call the web service. You can select one of the existing entries in the **Credential Key** field. If the correct credential don't exist in the field you can click **Create Credential Key** to create a new key with the desired user name and password.

- If y u select **Propagate user identity using SAML**, then, when a user tries to create or edit an item in the Product Information Management work area, that same user's credentials will be used when trying to call the REST service from item rules. For example, if you're logged in as an application implementation consultant when creating an item, then the REST service invocation from item rules will fail if the application implementation consultant doesn't have privileges to call the REST service.

9. On the Create REST Web Service Connection page, in the **Select and configure Methods against the Resource** section, will set the operations that will be used on this REST service. You must check the **GET** check box here since that operation will be called from item rules. Only the following settings are supported when calling the GET operation from item rules.

Setting	Value
Method Name	GET
Format	JSON
Request Payload	Schema URL
Response Payload:	Code Sample To provide a code sample, enter a sample response copied from output of the REST service's GET operation.

10. Click **Save and Close** to save the REST service.
11. Once the REST service has been registered in Application Composer the sandbox must be published for the REST service to be accessible to item rules. To publish the sandbox, select **Publish** from the sandbox menu, then click the **Publish** button.

Related Topics

- Item Rule Utility Functions

Diagnostic Test for Rules

Sometimes a few item rules that you've created may potentially cause performance issues when triggered. To generate a report of these rules, run a diagnostic test.

You can identify the rules that may be the possible reason for sub-optimal performance and optimize the rule definition. You can also proactively run the diagnostic test and identify opportunities to improve the rule definition.

The report covers the test for the following rules:

- Rules that call web services
- Rules that include custom objects
- Rules that are always run
- Rules that reference multirow attribute groups
- Rules that invoke global functions
- Rules that assign items to organizations

Related Topics

- Run Diagnostic Tests

Examples of Assignment and Validation on Items

Example of Assigning Organizations Using Item Rules

You can define assignment rules that automatically assign items to one or more organizations when a condition is satisfied. The condition can be based on attribute values, another organization assignment, or a catalog assignment.

> **Note:** When the number of organizations is very high, use import or mass updates to assign items to organizations. You may experience slowness or error if you use rules to assign very high number of organizations.

Scenario

The following table summarizes an example of an item rule that:

- Is defined in an assignment rule set.
- Tests whether an item has a product type of `In-house`. If the result of the test is true, then assign the item to the organizations `M2` and `M3`.
- Tests whether an item has a product type of `Bought-outside`. If the result of the test is true, then assign the item to the organization `T1`.

Note that this rule has more than one THEN expression. You add THEN expressions by using the **Add Row** action. The expressions are evaluated in the sequence of the rows, and the execution is halted when the first THEN expression evaluates to True. You can add additional rows of Then Expressions by clicking **Add Row**.

Field	Value
Name	Organization assignment
Description	Auto assignment of item to organization based on given attributes.

Field	Value
Return type	Organization
Primary If Expression	true
Secondary If Expression	`[Item].[Logistics].[Product_type] == 'In-house'`
Return Value	`'M2','M3'` Organization codes must be entered in quotation marks, either single, or double.
Secondary If Expression	`[Item].[Logistics].[Product_type] == 'Bought-outside'`
Return Value	`'T1'`
User Message	The item was assigned to an organization, based on the product type.

Related Topics

- Rules and Rule Sets
- Define Rule Sets and Item Rules
- Item Rule Syntax

Example of Validating Organizations Using Item Rules

You can define validation rules that automatically validate the assignment of items to one or more organizations when a condition is satisfied. The condition can be based on attribute values, another organization assignment, or a catalog assignment.

Scenario

The following table summarizes an example of an item rule that:

- Is defined in a validation rule set that's associated with an item class or with an attribute group.
- Following the assumption that items of the item class Extra Data Servers must not be assigned to the Seattle Distribution Center (code S2), validates that an item isn't assigned to S2 if its item class is Extra Data Servers. This validation is performed by the following steps:
    - Test whether the item class of an item is `Extra Data Servers`.
    - If the result of the test is true, then test whether the item isn't assigned to the organization `s2`, by using the function `assignedtoOrg(orgCode)`, which returns `true` if the item is assigned to the organization specified by `orgCode`.

Field	Value
Name	Organization validation
Description	Validate assignment of Extra Data Servers
Severity	Reject
IF Expression	`[Item].[Item Basic].[Item Class] == 'Extra Data Servers'`
Validation Condition	`!assignedtoOrg('S2')`
User Message	Extra Data servers can't be assigned to the Seattle Distribution Center.

Related Topics

- Rules and Rule Sets
- Define Rule Sets and Item Rules
- Item Rule Syntax

Example of Defining Change Policies with Validation Rules

You can define validation rules that automatically enforce change policies by testing for prohibited changes and setting the severity of the validation.

Scenario

The following tables summarize an example of an item rule set and two item rules that enforce a pair of change policies on item structures.

Rule Set Field	Value
Business Entity	Item
Rule Set Name	Structure Validation Policy
Rule Set Type	Validation
Association Type	Item Class
Association Name	Root Item Class

The first rule:

- Tests whether the structure name for the item is `Manufacturing`.
- If the test for the structure name evaluates to true, performs the validation specified by the Validation Condition, which is the expression `false`.
- If the Validation Condition evaluates to false, then the validation fails, and the action for the Severity is performed, which is **Needs Approval**
- Consequently, if a change is being attempted to the Manufacturing structure of the item, then the rule forces you to create a change order and get it approved.

Rule Field	Value
Name	Structure Policy Rule 1
Description	Ensures that changes to the Manufacturing structure of the item require approval of a change order.
Valid Component Rules check box	Check box must be deselected.
Severity	Needs Approval
IF Expression	`[Structure].[Structure Attributes].[Structure Name] == "Manufacturing"`
Validation Condition	`false`
User Message	Changes to this structure require the creation and approval of a change order.

The second rule:

- Tests whether the structure name for the item is `Engineering` and the Life Cycle Phase is `Design`.
- If the test for the structure name evaluates to true, performs the validation specified by the Validation Condition, which is the expression `false`.
- If the Validation Condition evaluates to false, then the validation fails, and the action for the Severity is performed, which is **Reject**
- Consequently, if a change is being attempted to the Engineering structure of the item while the Life Cycle Phase is Design, then the rule rejects the change and prevents it from occurring.

Rule Field	Value
Name	Structure Policy Rule 2
Description	Ensures that changes to the Engineering structure can't be made if the life cycle phase is Design.
Valid Component Rules check box	Check box must be deselected.

Rule Field	Value
Severity	Reject
IF Expression	`[Item].[Main].[Life Cycle Phase]=="Design"`
Validation Condition	`false`
User Message	Changes to this structure can't be made during the Design life cycle phase.

Related Topics

- Rules and Rule Sets
- Define Rule Sets and Item Rules
- Item Rule Syntax

Example of Changing Item Supplier Site Organization Associations Using Validation Rules

You can define validation rules that automatically govern the creation and updating of item supplier site organization associations and the updating of association attributes, both Primary attributes and extensible flexfields.

Scenario

The following tables summarize an example of an item rule set and rules that govern an item supplier site organization association.

Rule Set Field	Value
Business Entity	Item
Rule Set Name	Supplier Association Rule Set
Rule Set Type	Validation
Association Type	Item Class
Association Name	Electronics

The rule:

- Is applied when an item belongs to the item class Electronics.

- Because the IF expression is `true`, performs the validation specified by the Validation Condition.
- The Validation Condition tests whether name of the item supplier site is `Acme`.
- If the Validation Condition evaluates to true, then the validation succeeds, and the action for the Severity is performed, which is **Needs Approval**
- Consequently, if the user tries to add an item supplier site association for the supplier Acme to an item belonging to the item class Electronic, then the rule forces you to create a change order and get it approved.

Rule Field	Value
Name	Supplier Association Rule
Description	Ensures that a change order is required to add an item supplier site association for the supplier Acme.
Valid Component Rules check box	Check box must be deselected.
Severity	Needs Approval
IF Expression	`true`
Validation Condition	`[Supplier].[Item Supplier Site Organization].[Supplier Name] == "Acme"`
User Message	Adding the supplier Acme for Electronics items requires the creation and approval of a change order.

Related Topics

- Rules and Rule Sets
- Define Rule Sets and Item Rules
- Item Rule Syntax

Example of Validating Component Types Using Rules

You can define validation rules that automatically check whether the components associated with the structure are valid. You can specify the list of valid user item types for components in the rule.

Scenario

The following table summarizes an example of an item rule set and item rule that:

- Tests whether the structure associated with the item is of type Primary.
- Validates that only components of item types `type1` and `type2` can be added to a structure of type Primary.

Rule Set Field	Value
Business Entity	Item
Rule Set Name	Validate Component Types
Rule Set Type	Validation
Association Type	Item Class
Association Name	Root Item Class

Rule Field	Value
Name	Validate Component Types for Primary Structure
Description	Ensures that only components of item type TYPE1 or TYPE2 can be added to a Primary structure.
Valid Component Rules check box	Check box must be selected. Unlike other validation rules, rules that validate components don't have a Severity, because the item is being validated for only one aspect, and a degree of severity would be redundant.
IF Expression	`[Structure].[Structure Attributes].[Structure Name] == "Primary"`
Validation Condition	`component_type("type1","type2")`
User Message	Component type not supported for addition to this structure.

Related Topics

- Rules and Rule Sets
- Define Rule Sets and Item Rules
- Item Rule Syntax
- Item Rule Logical Functions and Operators

Example of Validating Item Class Changes with Rules

You can define validation rules that automatically check whether the item class of an item has been changed.

Scenario

End users are able to change the item class for an item. You can use a validation rule to restrict whether such a change is to, or from, a specific item class. Use the Severity value of the rule to warn about the change, reject the change, or require that the change needs an approved change order.

The following tables summarize an example of an item rule set and item rule that:

- Tests whether the associated item is being changed to the item class TCCHLDVR, and also changed to the item class TCParent.
- If the test for item class changes evaluates to true, perform the validation specified by the Validation Condition, which is the expression false.
- If the Validation Condition evaluates to false, then the validation fails, and the action for the Severity is performed, which is **Reject**
- Consequently, if the item class is being changed to TCCHLDVR and also changed from TCParent, then the change is rejected by the rule.

Rule Set Field	Value
Business Entity	Item
Rule Set Name	Validate Item Class
Rule Set Type	Validation
Association Type	Item Class
Association Name	TCParent

Rule Field	Value
Name	Validate Source and Target IC
Description	Ensures that items cant' change item class from TCParent to TCCHLDVR.
Severity	Reject
IF Expression	`to_item_class("TCCHLDVR") AND from_item_class("TCParent")`
Validation Condition	`false`
User Message	An item class cant' be changed from TCParent to TCCHLDVR.

Related Topics

- Rules and Rule Sets
- Define Rule Sets and Item Rules
- Item Rule Syntax

Assignment and Validation on Changes

Overview of Assignment and Validation on Changes

You can configure assignment and validation rules based on change header attributes including extensible flexfields.

A rule added to the master rule set is executed on creating or updating the change order, while a rule associated with the entry and exit criteria (on a change type) is executed when the change enters or exits from a change status.

Here are some recommendations for using rules on changes:

- You must use validation rules to configure the entry and exit criteria for a change status. Avoid adding validation rules to the master rule set.
- You must add assignment rules to the master rule set so that the rules are triggered when you create or update a change order.
- You must assess whether the rule set needs to be triggered on saving the change order, or as part of entry and exit criteria.

Configure Entry and Exit Criteria for Change Objects

Entry and exit criteria are the rules that validate the progression of a change object through its workflow. These criteria serve as checkpoints when the change object enters and exits a workflow status. The criteria appear in the Workflow tab of a change type.

Here are some examples of entry and exit criteria:

- A rule set that enforces need-by date value to be required for high priority change orders.
- Ensure that the department code is be entered during a specific status.

How You Configure Entry and Exit Criteria

1. Create a change type.

2. Define the entry and exit criteria using the following tasks:
    - **Manage Change Order Entry and Exit Rule Sets** - You can configure the Descriptive flexfields and Change Header attributes as required fields when the change order enters or exits a workflow state.
    - **Manage Item Rule Sets**

    Here's how you decide which task to use:

    - To create the criteria for change orders in Product Development, use Manage Change Order Entry and Exit Rule Sets. Optionally, you can use Manage Item Rule Sets to add validations in the criteria.
    - To create the criteria for change orders in Product Information Management, use Manage Item Rule Sets.

      You can define the criteria in a validation rule set. You must set the **Association Type** to **Change order type**.

      > **Note:** If you create the criteria using Manage Item Rule Sets, don't add it to the master rule set.

3. Associate the criteria with the change type.

    In each change type, assign the entry and exit criteria to a workflow status.

Define Entry and Exit Criteria Using Item Rule Sets

You can create one or more rule sets that include rules to validate the entry and exit criteria. Criteria can be based on attributes or descriptive flexfields.

Let's say that in the entry criteria for a change type you want to enforce Department Code as a required attribute. You can create a rule to display a relevant message in the absence of a department code.

Here's how you create the rule for a change type:

1. In the Setup and Maintenance work area, go to the following:
    - Offering: Product Management
    - Functional Area: Product Rules
    - Task: Manage Item Rule Sets
2. Click **Create** to create a rule set.
3. In the Create Rule Set dialog, do the following:
    a. Composite: Select **No**.
    b. Type: Select **Validations**.
    c. Association Type: Select **Change order type**.
    d. Association Name: Select the change type which will use the exit criteria that you're about to define.
    e. Click **Save and Continue**.
4. In the Edit Rule Set page, click **Create** to create a rule for the rule set.
5. In the Create Rule dialog, do the following.
    a. Sequence: Enter the sequence number in which you want to execute this rule. This is required in case you have multiple rules.

       Severity is automatically set to Reject.
    b. Click **OK**.
6. On the Edit Rule Set page, create the rule:

a. **If Expression**: Right-click and select **Insert Descriptive Flexfield Segment** to insert a flexfield that only applies to a specific change type.

   Business Entity: Select **Change Header**.

   Descriptive Flexfield: Select the flexfield against which you want to create a rule. To enforce department code as required, select the department code flexfield.

   Click **Insert**. The following expression is inserted:

   ```
   [ChangeHeader].Flexfield[Department Code]
   ```

b. Insert `IsNull` at the beginning of the expression, to create the following expression:

   ```
   IsNull([ChangeHeader].Flexfield[Department Code])
   ```

c. **Validation Condition**: Enter false.
d. **User Message**: Enter a message that you want to display in the absence of the department code. For example,

   ```
   You must enter the department code to proceed with the workflow.
   ```

7. Validate the rule's syntax, by clicking the **Validate** button.
8. Click **Save and Close**.

Associate the Entry and Exit Criteria with Change Type

For a change type, you can assign the criteria that govern when a change order can exit a workflow status or enter into the next status.

Before that, you must complete the following:

- Create a change type based on predefined change types.
- Define the entry and exit criteria.

The table shows availability of entry and exit criteria based on the change order status:

Status Type	Configure Entry Criteria?	Configure Exit Criteria?
Open	No	Yes
Interim approval	Yes	Yes
Approval	Yes	No

Here's how you associate the entry and exit criteria with the change type:

1. In the Setup and Maintenance work area, go to the following:
    - Offering: Product Management
    - Functional Area: Change Orders
    - Task: Manage Change Order Types
2. Select the change type for which you want to associate the entry and exit criteria and click **Edit**.
3. Click the Workflow tab and select the workflow status for which you want to setup the entry and exit criteria.
4. Select the entry and exit criteria.
5. Click **Save**.

Related Topics

- Item Rule Syntax
- Rules and Rule Sets
- Understand Change Types

Example of Configuring Entry and Exit Criteria Using Validation Rules

You can configure the entry and exit criteria for a change status using validation rules.

Scenario

You want to configure the entry criteria for interim approval based on the selection in the product team field (which is an extensible flexfield). The change order must progress to the interim approval status only if the user selects a value in the product team list. Note that this criteria can also be configured as an exit criteria for a status.

Here's a table that summarizes the values you must enter in Create Rule Set dialog box.

Field	Value
Composite	No
Type	Validations
Association type	Change type
Association Name	Select the change type with which you want to associate the rule set.

Here's a table that summarizes the values you must enter in the Create Rule dialog box and the Edit Rule Set page.

Field	Value
Severity	Reject
IF Expression	`isNull([ChangeHeader].[ProductTeam].[ProductTeamName])`

Field	Value
Validation Condition	false
User Message	You must assign a product team for the change order to progress to the next status.

Note: To ensure that valid attributes expressions are used in rules, you can right-click in one of the expression fields and select Insert Attribute, then use the Insert Attribute dialog to populate attribute.

You must associate the exit criteria to the change type using the Manage Change Order Types task. In the Setup and Maintenance work area navigate to the following:

- Offering: Product Management
- Functional Area: Change Orders
- Task: Manage Change Order Types

For the interim approval status, select the exit criteria you created and save your changes. For more information, see the related topics.

Related Topics

- Configure Entry and Exit Criteria for Change Objects

Example of Generating Change Numbers Automatically

You can define assignment rules that generate change numbers automatically based on attributes such as extensible flexfields.

Scenario

You want the change number for a specific change type to be concatenated in the following format:

- <name of the product team captured using an extensible flexfield> <3 digit numbers starting from 101 that are incremented automatically for each new change >

You have created an extensible flexfield to capture the name of the product team that requested the change.

The change number will be autogenerated once you enter the name of the team and save your changes. You can also create a message to convey how the change number is generated.

Here's a table that summarizes the values you must enter in the Create Rule Set dialog box.

Field	Value
Composite	No
Type	Assignments
Association type	Change type

Field	Value
Association Name	The change type with which you want to associate the rule set.

Here's a table that summarizes the values and expressions you must enter in the Create Rule dialog box and the Edit Rule Set page.

Field	Value
Return type	Change order number
Primary If Expression	true
THEN/Secondary If Expression	true
Return Value	`[ChangeHeader][Product Info.][Product Team] + auto_sequence("Number", 100, 1)`
User Message	The change number is `[[ChangeHeader][Product Info.][Product Team] + auto_sequence("Number", 100, 1)]`

Note: To ensure that valid attributes expressions are used in rules, you can right-click in one of the expression fields and select **Insert Attribute**, then use the Insert Attribute dialog box to populate attribute.

Example of Associating an Assignment Rule With a Change Type

You can define assignment rules to update the description field on a change.

Scenario

You want the description field to be updated automatically when the change moves to the approval status after reviewers in the interim approval status have approved the change.

Here's a table that summarizes the values you must enter in Create Rule Set dialog box.

Field	Value
Composite	No
Type	Assignments
Association type	Change type
Association Name	The change type with which you want to associate the rule set.

Here's a table that summarizes the values you must enter in the Create Rule dialog box.

Field	Value
Return Type	Generic

Field	Value
Target Business Entity	Change Header
Target Attribute Group	Change Order Main
Target Attribute	Description

Here's a table that summarizes the values and expressions you must enter in the Edit Rule Set page.

Field	Value
Primary If Expression	[ChangeHeader].[Change Header Main].[Status]=='Approval'
THEN/Secondary If Expression	true
Return Value	The design change has been approved by reviewers in the interim approval status.
User Message	Description has been updated as per the change status.

Note: To ensure that valid attributes expressions are used in rules, you can right-click in one of the expression fields and select Insert Attribute, then use the Insert Attribute dialog box to populate attribute.

Blending Rules

Overview of Blending Rules

To control which item attribute value is imported into production from multiple suppliers of the item, you can define blending rules.

These rules are applied during import, and determines the supplier's attribute value to that must be imported, based on the blending priority that you define in the blending rules.

To use blending rules:

- Understand how blending rules affect import
- Examine an example of how blending rules affect import
- Define blending rule sets and rules, and enable the blending rule sets

Related Topics

- How Blending Rules Affect Import
- Example of Blending Rules
- Define Blending Rule Sets and Rules

How Blending Rules Affect Import

When you import the same item from multiple spoke systems, specific attributes of the item might have different values, depending on the spoke system.

To control which attribute value is imported into production, you can define blending rules, which are applied during import, and which determine which spoke system's attribute value to import, based on the blending priority that you define in the blending rules.

During the import process, blending rules use the spoke system item relationships on a production item to identify the spoke system product records to be blended with imported data. Blending rules are applied at the item level, in a specified order of preference among the spoke systems. When the import is uploaded to production, blended values overwrite the item attribute values in production.

Blending rules aren't applied to product data for new items, since there is no existing data to be blended with new data. The spoke system item relationship used by blending rules to relate a spoke system item to a production item isn't created until an item is imported into production.

Blending rules are applied in the following business events:

- When an existing spoke system provides updates to product data that was imported earlier.
- When a new spoke system provides data for an existing item.

Blending rules operate during import if:

- Existing spoke system cross-references are found in the production database.
- New spoke system cross-references are established as a result of matching with a production item containing spoke system cross-references with other spoke systems.

You can choose to apply blending rules to attributes in the following ways:

- All attributes in one or more attribute groups. (This is the most common case.)
- All attributes associated with one or more item classes.
- One or more attributes from a single attribute group.

For blending to work, you can upload data to the staging area using these means:

- Product Hub Portal
- Product Uploads REST Service (using import maps)

  This REST service lets you insert and edit the product data in the staging area.
- Data uploaded by other means (such as FBDI, ADFdi, Item Batch Maintenance Service) won't be available for blending because this data is uploaded directly to an item batch.

You can create blending rules for these spoke systems, to be applied when data is being imported from the staging area into Product Hub:

- Supplier
- Data Pool
- Internal

After blending is completed, the blended item record overwrites production data for the item.

General Principles of Blending

General principles guiding the application of blending rules include:

- Blending rules run only if any of the spoke systems mentioned in the blending rule has provided data into the supplier stage. If the higher priority spoke system hasn't provided any data, then whatever is provided by the lower priority or other spoke systems (spoke systems not mentioned in the blending rules) will be imported.
- If a blending rule is written on an attribute then that rule will run only if that attribute is part of import. The attribute can be part of import because values are provided for that attribute in import.
- If a blending rule is written on an attribute group then that rule will fire only if any of the attributes of that attribute group are part of import. The attributes can be part of import because values are provided for those attributes.
- If a blending rule is written on an item class then that rule will run only if items of that item class or its child item classes are being imported.
- No updates will occur to the items staged in the Staging area of Product Hub Interface. Product Hub stores its data in the Staging area of Product Hub Interface. Blending happens only within the import batch. Blended data is then imported to production.
- If more than one rule exists on the same attribute, then the first rule in the master blending rule set will be run.
- Products in statuses Rejected or Draft don't get into the batch, so they don't have cross-references, and so they aren't considered for blending.
- Blending rules defined for an item class which is at a higher level of the item class hierarchy will be inherited to child item classes.

Blending and Synchronization

By selecting or deselecting the Ignore Null check box when you create individual blending rules, you can choose whether to enable the synchronization of null attribute values from the staging area, to the batch interface area, and then to the production area.

- By default, the Ignore Null check box in a blending rule is selected. If you leave it selected, then null values are ignored during import. Blending is performed, but synchronization of null attribute values isn't. This scenario is called blending-only.
- If you deselect the Ignore Null check box in a blending rule, then null values being imported replace the corresponding values that exist for the attribute in production. This scenario is called blending-plus-synchronization.
- The Ignore Null check box can be deselected only if the blending rule is written at attribute group level.
- If an attribute group is a multi-row extensible flexfield, then synchronization causes the missing rows in the uploaded product data to be removed from the flexfield in production.
- If an attribute group is used in a single-row extensible flexfield, then the attributes with null values in the uploaded product data are also replaced with nulls in the flexfield in production.
- Blending-plus-synchronization is only supported for item-level extensible flexfields (single-row, multi-row, and translatable extensible flexfields) for items of all organizations being imported from Data Pool, Supplier and Internal spoke systems.
- Blending-plus-synchronization is supported for items of master organizations and child organizations.

While data is being imported from item batch to production, synchronization of attribute data is performed, as part of blending rules. The attribute synchronization logic is:

- Synchronization only occurs if the Ignore Null check box in a blending rule is deselected.
- Synchronization occurs at two locations:
    - First, while uploading the data to the staging area
    - Second, while importing the data into Product Hub through the item import process
- If synchronization is enabled for an attribute group (the Ignore Null check box is deselected) then:
    - While inserting data into the staging area, values that are missing in the incoming feed delete the corresponding existing values in the staging area.
    - While importing data into production, attribute values that exist in production but not in the batch are deleted from production.
- If an attribute group named in a blending rule is a multi-row extensible flexfield, and Ignore Null is deselected, then, while inserting the data into the staging area, values of the attributes of this attribute group will be deleted in the staging area for which the values are missing in the data file being uploaded. This attribute synchronization in the staging area is only supported through the PROCESS operation of the Product Uploads REST Service. Then, while importing the data from an item batch to Product Hub, the data in the batch is compared with the production data. For all extensible flexfield rows in production that aren't in the data being imported, these rows are deleted in production after import. New rows being imported that don't exist in production will be added to production after import, and rows having updates will be updated in production after import. Note that for updating multi-row extensible flexfield attributes, unique row identifiers should be provided in the incoming feed.
- If an attribute group named in a blending rule is a single-row extensible flexfield, and Ignore Null is deselected, then all the attributes of that attribute group that have no values in the batch are given null values in production after import.
- Attribute groups for which Ignore Null is deselected in a blending rule are considered as being owned by the higher priority spoke system. This is termed attribute group ownership. Here's an example of attribute group ownership:
    - In a blending rule, spoke system item relationship SpokeA has priority 1 (higher), and SpokeB has priority 2 (lower). The blending rule is associated with attribute group AG_One.
    - Import case A (attribute group ownership not in effect): For SpokeA, Ignore Null is selected, so attribute synchronization isn't in effect.
        - In the staging area, SpokeA doesn't provide data for some attributes of attribute group AG_One. The data in the staging area is then imported into Product Hub.
        - SpokeB then provides the data for the same item in Staging for which SpokeA had provided the data but SpokeB provides data for all the attributes of attribute group AG_One. While importing

this data from SpokeB, only those attribute values are imported which weren't provided by SpokeA because the Ignore Null check box was selected for SpokeA in the blending rule.
    - If SpokeA had provided values for all of the attributes of attribute group AG_One, then data of SpokeB for attribute group AG_One wouldn't have been imported.
- Import case B (attribute group ownership in effect): For SpokeA, Ignore Null is deselected, so attribute synchronization is in effect. Because it has higher priority in the blending rule, and because Ignore Null is deselected, SpokeA is considered the owner of attribute group AG_One.
    - In the staging area, SpokeA doesn't provide data for some attributes of attribute group AG_One. The data in the staging area is then imported into Product Hub. (This is the same as import case A.)
    - Data from SpokeB for attribute group AG_One isn't imported to production, because SpokeB isn't the owner of attribute group AG_One. The null values provided by SpokeA for some of the attributes are retained in production and aren't overwritten by the values from SpokeB.
    - Without attribute group ownership being in effect, the attribute values from SpokeB for which SpokeA had not provided the values would be imported.

Restrictions and Validations

Restrictions and validations on blending rules include:

- Synchronization of attribute values isn't performed for seeded operational item attributes.
- Blending rules apply only for the item entity, not for the item revision or supplier entities.
- Blending rules may be set up on any attributes of an item.
- Blending rule sets can't be composite rule sets.
- Blending rules defined at the higher levels of an item class hierarchy are inherited by child item classes.
- Spoke systems categorized as internal systems, data pool, or supplier are available as source systems for use in blending rules. The predefined Product Information Management Data Hub spoke system isn't available as a source system for use in blending rules.
- Data uploaded by means other than those identified here (such as Product Hub Portal and Product Uploads REST Service) isn't available for blending because this data is uploaded directly to an item batch. Examples of other means are: FBDI, ADFdi, and Item Batch Maintenance Service.
- Rule set impact analysis isn't available for blending rule sets.

Related Topics

- Define Blending Rule Sets and Rules
- Supplier Product Uploads
- Importing Item Data Using Import Maps
- Item Batches

Define Blending Rule Sets and Rules

Blending rules must be created as part of a blending rule set, and the blending rule set must be associated with the entity containing the attribute whose value you want to control through blending rules.

Defining Blending Rule Sets and Rules: Procedure

To define a rule set and rules for a blending rule:

1. In the Product Information Management work area, select the Manage Item Rule Sets task.
2. Select **Create** from the Manage Rule Sets task bar.
3. In the **Create Rule Set** dialog box, make the following required selections:
    - Set **Composite** to **No**.
    - Set **Type** to **Blending**.
4. When you set the Type to Blending, the available rule association types are restricted to attribute groups or item classes. In the **Association Type** field, select either **Attribute Group** or **Item Class**.
5. For an association type, you can select multiple attribute groups or item classes to associate with the rule set. In the **Associations** field, click the edit control.
6. In the **Select Associations** dialog box, click **Add**, to add an association with the rule set.

    In the **Association Name** list, search for and select the name of the entity that contains the attribute whose value you want to control with blending rules.
    - For an attribute group association, this entity is the attribute group containing the attribute.
    - For an item class association, this entity is the item class associated with the attribute group containing the attribute.
7. If you select **Draft**, then the rule set won't be triggered at all during import.
8. Click **Save and Continue**.
9. In the **Rules** tab of the Edit Rule Set page for the new rule set, select **Create** from the Actions menu.
10. In the **Create Rule** dialog box, enter an integer in the **Sequence** field. The sequence number determines the order in which the rule will be triggered when the rule set is triggered.
11. Using the **Attribute** list, select the attribute whose values you want to blend during import.

    If you selected multiple associations, then the rule applies to all attributes in the attribute group or item class, and you can't select an individual attribute. Accordingly the **Attribute Group** and **Attribute** lists are restricted to the value **All**.

> **Note:** The following rule fields aren't used by blending rules:
> - Return Type
> - Target Business Entity
> - Target Attribute Group
> - Target Attribute

12. In the Details region for the rule, select **Create** from the Actions menu. Create a blending priority for the rule's associated attribute by selecting a value from the **Spoke System** list and entering a number in the **Priority** field.

    Lower priority numbers produce a higher blending priority. A spoke system with priority number 10 has a higher blending priority than a spoke system with priority number 20.

    If the blending rule is associated with an attribute group, you can deselect the **Ignore Null** check box to enable synchronization of attributes. By default, the check box is selected. Accordingly, attributes aren't synchronized unless you choose to do so.
13. Repeat the previous step for each spoke system that supplies attribute values that you want to blend.
14. Define more rules in the rule set, as needed.
15. Click **Save** to save the rule set.
16. Add the rule set to the master blending rule set, to enable its operation during import.

Enabling Blending Rule Sets: Procedure

To enable the triggering of a blending rule, you must add its rule set to the master blending rule set, which is named BLENDING_MASTER_RULE_SET. This composite rule set is predefined. You can't create any other composite blending rule sets. Only rule sets with a Type of Blending can be added to this master set. When a blending rule set is added to the master blending rule set, its blending rules are triggered when you import items into Product Hub.

To add a rule set to the master blending rule set:

1. In the Product Information Management work area, select the Manage Item Rule Sets task.
2. On the Manage Rule Sets page, search for and select the rule set named BLENDING_MASTER_RULE_SET.
3. Select **Add** from the Actions menu.
4. In the Select and Add: Rule Sets window, use the desired criteria to search for the rule sets that you want to add to the master.

    > **Tip:** You can find all blending rule sets by specifying **Blending** in the **Type** field. You can search for your blending rule sets by specifying the association type or association name that you used in your rule sets.
5. Select the rules sets you want to add, then click **OK** to add them to the master blending rule set.
6. The rules sets you added are place at end of the sequence of blending rule sets in the master blending rule set, and are run in that sequence. If there are multiple blending rules defined for an attribute, only the first rule is run.
7. To change the place of a blending rule set in the sequence, select it and select **Edit Sequence** from the Actions menu. In the **Edit Sequence** dialog box, enter the desired sequence number in the **Sequence** field and click **OK**. You must first edit the sequence of other rule sets to ensure that the desired sequence number isn't already in use.

Related Topics

- How Blending Rules Affect Import
- Example of Blending Rules
- Supplier Product Uploads
- Importing Item Data Using Import Maps
- Item Batches

Example of Blending Rules

The following example demonstrates the effect of blending rules.

Scenario

For this example, assume that you have defined the blending rules shown in the following list.

- Blending_Rule_1
    - Item Class: Televisions
    - Attribute Group: Specs
    - Attribute: Frame Description
    - Priority -- Spoke System:
        - 1-- Vendor1 Spoke
        - 2-- Vendor2 Spoke
- Blending_Rule_2
    - Item Class: Televisions
    - Attribute Group: Specs
    - Attribute: Resolution
    - Priority -- Spoke System:
        - 1 -- Vendor2 Spoke
        - 2 -- Vendor1 Spoke
- Blending_Rule_3
    - Item Class: Televisions
    - Attribute Group: Specs
    - Attribute: Weight
    - Priority -- Spoke System:
        - 1 -- Vendor3 Spoke
        - 2 -- Vendor4 Spoke

At the beginning of the import process, Vendor1 loads data in Product Hub Portal for the attributes **Frame Description** and **Resolution**, as shown in the following list.

- Vendor1
    - Spoke Item:
        - Vendor1 TV Item
    - Attribute: Frame Description
        - Value: Plastic body with back hinge
    - Attribute: Resolution
        - Value: 1930x1024

You import the loaded data. Since Vendor2 hasn't loaded any data in Product Hub Portal, the values loaded by Vendor1 are imported for both of the attributes, Frame Description and Resolution. Consequently, the attribute values in production data are as follows.

- Production data in Product Hub:
    - Production item in Product Hub:
        - TV_1
    - Spoke Item cross-reference
        - Vendor1 TV Item
    - Attribute: Frame Description
        - Value: **Plastic body with back hinge** (initial value, from Vendor1)
    - Attribute: Resolution
        - Value: **1930x1024** (initial value, from Vendor1)

At a later time, Vendor2 loads data in Product Hub Portal for the attributes Frame Description and Resolution, as shown in the following list.

- Vendor2
    - Spoke Item:
        - Vendor2 Television
    - Attribute: Frame Description
        - Value: Plastic with hinge
    - Attribute: Resolution
        - Value: 2930x1034

Then you try to import the data loaded by Vendor2. You determine that there is a match with the existing production item TV_1, so you create a new spoke system cross-reference with TV_1. Since Blending_Rule_1 gives blending priority for the attribute Frame Description to Vendor1, Vendor1's value for that attribute remains as previously imported into

production. Since Blending_Rule_2 gives blending priority for the attribute Resolution to Vendor2, Vendor2's value for that attribute is imported into production. The resulting data is imported into production, as shown in the following list.

- Production data in Product Hub:
    - Production item in Product Hub:
        - TV_1
    - Spoke Item cross-references
        - Vendor1 TV Item
        - Vendor2 Television
    - Attribute: Frame Description (Vendor1 has blending priority)
        - Value: **Plastic body with back hinge** (from Vendor1, unchanged)
    - Attribute: Resolution (Vendor2 has blending priority)
        - Value: **2930x1034** (from Vendor2)

At a later time, both Vendor1 and Vendor2 update their data in Product Hub Portal, including changed values for Frame Description and the addition of the new attributes Height and Weight, as shown in the following lists.

- Vendor1
    - Spoke Item:
        - Vendor1 TV Item
    - Attribute: Frame Description
        - Value: **Plastic body of PVC make with metallic back hinge** (updated)
    - Attribute: Resolution
        - Value: 1930x1024
    - Attribute: **Height** (new)
        - Value: **2 Feet** (new)
- Vendor2
    - Spoke Item:
        - Vendor2 Television
    - Attribute: Frame Description
        - Value: **PVC body with hinge** (updated)
    - Attribute: Resolution
        - Value: 2930x1034
    - Attribute: **Weight** (new)
        - Value: **5 kg** (new)

Then you import the updated data from Vendor2 (but not from Vendor1). The resulting data is imported into production, as shown in the following list.

- Production data in Product Hub:
  - Production item in Product Hub:
    - TV_1
  - Spoke Item cross-references:
    - Vendor1 TV Item
    - Vendor2 Television
  - Attribute: Frame Description (Vendor1 has blending priority)
    - Value: **Plastic body with back hinge** (original import, from Vendor1)
  - Attribute: Resolution (Vendor2 has blending priority)
    - Value: 2930x1034 (unchanged, from Vendor2)
  - Attribute: **Weight** (new, from Vendor2)
    - Value: **5 kg** (new, from Vendor2)

Note the following about the import into production data:

- Since Blending_Rule_1 gives blending priority for the attribute Frame Description to Vendor1, Vendor1's value for that attribute is used instead of Vendor2's updated value, which isn't imported.
- Because Vendor1's updated data wasn't imported, Vendor1's value for the attribute Frame Description remains as originally imported into production.
- The new attribute Weight is imported from Vendor2. Even though Blending_Rule_3 is defined on that attribute, the rule isn't triggered because neither Vendor3 or Vendor4 uploaded data in Product Hub Portal, and no spoke system cross-references for these vendors exist or are created by matching during import.

Related Topics

- How Blending Rules Affect Import
- Define Blending Rule Sets and Rules
- Supplier Product Uploads
- Importing Item Data Using Import Maps
- Item Batches

FAQs for Product Rules

Why didn't my rule work?

If a rule that you defined doesn't seem to work as you intend, consider some of these reasons:

- The rule set containing the rule isn't enabled. To enable a rule set, you must assign it to the master rule set.

- The rule set containing the rule is in Draft status. Draft status prevents the rule from being triggered during item transactions. It's common to put a rule set in Draft status when starting to define it. To take the rule out of draft status, deselect the **Draft** check box on the Edit Rule Set page.
- You defined a rule expression or condition incorrectly. Review the requirements for the If and Then expressions of assignment rules, and for the If expression and Validation Condition of validation rules.

Related Topics

- Rules and Rule Sets
- Define Rule Sets and Item Rules

What's a user message and when is it displayed?

The optional user message for a rule is displayed to the end user when:

- An assignment rule successfully assigns a value to the target attribute.

  You can suppress the display by selecting **Hide user message** in the rule definition.
- A validation rule's validation condition evaluates to false.

Related Topics

- Rules and Rule Sets
- Define Rule Sets and Item Rules

How can I export and import item rule sets from one environment to another environment?

Here's how you can export and import item rule sets:

1. Create a new implementation project using the **Manage Implementation Projects** task from the **Tasks** panel tab in the Setup and Maintenance work area.
2. Add the **Manage Item Rule Sets** task to the project.
3. Create a new configuration package using the **Manage Configuration Packages** task from the **Tasks** panel tab in the Setup and Maintenance work area.
4. Export the implementation project.
5. Review the configuration package and the **EGO_RULE_SET_DEFINITION.xml** file that's exported to ensure all the rule data is export using this method.
6. Upload and then import the implementation project using the configuration package in the target environment.

7. Monitor the import process until it completes using the displayed status link. After the import process is completed successfully, the rule sets are migrated to the target environment.

   Important notes:
   - When using a CSV or XML file to export or import product data rules from one system to another, don't change any data in the CSV or XML file. The rule won't work correctly in the target system after the import if the data is changed.
   - Before migration, as a pre-requisite, you must have the attribute groups and the associated attributes setup with the same names in the target system. Only then the rule data is migrated correctly.

     While migrating the rule data, make sure that there is no change in the metadata of the attribute groups referenced in the rule set between the source system and the target system. For example, consider an attribute is referenced in a rule expression and one of the attributes of the attribute group is deleted in the target system. Though the attribute referenced in the rule is not changed, the migration process is likely to result in an error. To avoid this, delete the same attribute in the source system, navigate to the Manage Item Rule Sets page, click the **Optimize Rules** action, and then migrate the rule data.

Related Topics
- Manage Setup Using Implementation Projects
- Export Setup Data Using Implementation Project
- Import Setup Data Using Implementation Project

10 Product Spoke Systems

Setup Task for Product Spoke Systems

Before you can use Product Spoke Systems in Oracle Product Hub, you must complete the following task in the Setup and Maintenance work area.

Task	Description
Define Source Systems for Product Management	Spoke systems enable users to identify the source of the data they are imported into or published from the Oracle Fusion Cloud application. The terms spoke system and source system are used interchangeably.

Product Spoke Systems

Spoke systems (also called source systems) enable users to identify the source of data imported into or published from the Oracle Fusion Cloud application.

Spoke System Setup

To setup the spoke system:

1. In the Setup and Maintenance work area, navigate to the following:
    - Offering: Product Management
    - Functional Area: Product Spoke Systems
    - Task: Manage Trading Community Source Systems
2. From the **Actions** menu, click **Create**.

    The Create Source System page appears.
3. Enter the following information:
    - Code: Code number for the spoke system.
    - Name: Name of the spoke system.
    - Type: Spoke
    - Description: Brief description about the spoke system.
4. Select the following options:
    - Enable for Items
    - Enable for Trading Community Members

    You can enable it for other entity types also depending on your business requirements.

5. Click **Save and Close**.
   The spoke system is created.

After setting up the spoke system, you must define additional information. To do this, in the Setup and Maintenance work area, go to the **Manage Spoke Systems** task in the **Product Management** offering.

A spoke system is identified by a unique code and name. The types of entities that are supported are:

- Items
- Trading Community Members
- Order Orchestration and Planning
- Assets

The spoke system used by Product Hub must have the Items entity enabled.

> **Note:** In the Product Information Management work area, Product Hub is represented as a spoke system with the name **Product Information Management Data Hub**.

Import Options

If the spoke system is used to import items into Product Hub, you can define options such as a schedule, a default organization, and whether to process per item or per bundle.

You can also define additional options such if the application should check data quality on upload, pack update options, new item request options, item structure name and update options, and change order options. For information about the displayed options, see:

- *Item Batch Import and Scheduling Options*
- Enable Data Quality Matching section in *Available Options to Check Data Quality for Item Batches*
- *Item Batch Pack Options*
- *Item Batch New Item Request Options*
- *Item Batch Structure Options*
- *Item Batch Change Order Options*

Publish Options

If the spoke system is used to publish items from Product Hub, in addition to general publication options, you can define item class, trading partner item and catalog publication criteria.

Item Publication Criteria:

- **Revisions**: controls what revisions will be published for the items; choices are: Current Revision or Current and Future Revisions.
- **Days in the Future**: number of days in future that will be used to determine what future revisions will be published.
- **Item Entities**: select the child entities of the items that will be published for the items, by default only the item attributes will be published. The entities that are published:
  - Attributes

- Attachment URL
- Supplier Site Associations
- Item Category Assignments
- Item Relationships
- Structures
- Packs
- Item Revisions

Item Select Rules: one or more rules that are based on business entities that include:

- **Item Class Business Entity Rule**: equal/does not equal to an Item Class with option to select to include the child item classes for the item class in the rule
- **Catalog Business Entity Rule**: equal/does not equal to an Item Class with option to select to include the child item classes for the item class in the rule
- **Organization Business Entity Rule**: equal/does not equal to an Organization
- **Organization Hierarchy Business Entity Rule**: equal/does not equal Organization hierarchy and sub-organization within the hierarchy

Item Validation Rules: a validation rule set that will be used to determine which items are published. The rule set may contain one or more rules and is defined using the Manage Item Rule Sets task.

- Example: A validation that rule that would publish only the items with an active status: `If Expression: INVENTORY_ITEM_STATUS_CODE == 'Active'`
- Item Validation Rules are evaluated prior to publishing.

Related Topics

- Define Publication Options for a Spoke System
- Rules and Rule Sets
- Available Options to Check Data Quality for Item Batches

11 Advanced Catalogs

Setup Task to Manage Catalog Mappings

Before you can map catalogs in Oracle Product Hub, you must complete this task in the Setup and Maintenance work area:

Task	Description
Manage Catalog Mappings	The Manage Catalog Mappings task is used to create a mapping between one catalog and another catalog or between a catalog and the root item class. These catalog mappings contain category mappings between the categories of one catalog to the categories of another catalog or between categories of a catalog and item classes in the root item class.

Catalog Mappings

The Manage Catalog Mappings task is used to create a mapping between one catalog and another catalog or between a catalog and the root item class.

These catalog mappings contain category mappings between the categories of one catalog to the categories of another catalog or between categories of a catalog and item classes in the root item class.

While creating a catalog mapping, users select a source catalog and a target catalog. The combination of the source catalog and target catalog should be unique, meaning, users cannot create two mappings with the same source and target catalogs. Once the source and target catalogs are mapped and the mapping is created, users can create mappings between the categories of the source catalog and the categories of the target catalog within this catalog mapping. For the category mappings, only one mapping can be created for a particular source category, meaning, users cannot create two mappings with the same source category. However, different source categories can be mapped to the same target category.

Item Class to Category Mapping

You can use GPC (global product classification) or any other category classification to model a catalog category hierarchy in Product Hub. The catalog representing this hierarchy can then be used for creating the mapping between the catalog categories and item classes. This mapping can then be used to derive the correct item class, if the category is specified. The item class can then be used to import data into Product Hub and to display proper attributes in Product Hub Portal.

The flow follows:

1. Product data stewards create a catalog hierarchy depicting the desired classification using the Create Catalog task in the Product Information Management work area.

2. Next, update the item profile option, Default Catalog for Item Import, in the Setup and Maintenance work area to set the newly defined catalog as the catalog that should be used while importing data that has Catalog specified instead of item class for the mapping.
3. A mapping between this catalog and the item class hierarchy is then made using the Manage Catalog Mappings task in the Setup and Maintenance work area. The catalog to item class mapping must specify the source catalog as the newly created catalog and the target catalog as an item class hierarchy. The category mappings created within this catalog to item class mapping must specify the source category as one of the categories from the new catalog and the target category as the item class.
4. In Product Hub Portal, while uploading or creating products, supplier users select a category for the products. The Create and Edit Product pages in Product Hub Portal display the Category field instead of the Item Class field. The drop-down list will list all the categories of the source catalog irrespective of which catalog categories are mapped in the catalog to item class mapping setup. The application will derive the correct item class from the selected category by referring to the category mappings created in step 3.
5. The Create and Edit Product pages use the derived item class to display the appropriate product attributes to the suppliers. The attributes are derived from the values selected on the Product Hub Portal tab in the Create Item Class task in the Setup and Maintenance work area.

12 Product Management Search

Overview of Product Management Search

Product Management uses the Oracle Search Cloud and the OpenSearch infrastructure to support the new user experience for search.

Oracle Search provides a powerful, fast, secure, and efficient search engine that allows you to search data quickly and accurately.

Prerequisites

Before using the product search, you must make sure the index and views are configured. You must build the index at startup. All indexes are managed through the **Configure Index** task and all views are managed through the **Configure View** task.

To view or configure the index or views, you must have the required privileges. For more information about privileges, see Oracle Fusion Cloud SCM: Security Reference for Product Management guide, available at *docs.oracle.com*.

- *Configure Index*
- *Configure Views*

After configuring the indexes and views, you can start using the search. For information about how to use search, see *Use Product Management Search (New User Experience)*.

Configure Index

On the Index Management page, you see the objects that are enabled for index configuration.

The Configure Index page for each object shows you the list of attributes and attribute groups. Each index has a predefined set of attributes. You can use these attributes for a quick start with search. You can add or remove attributes and then rebuild the index to include more attributes. Once the rebuilding is complete, you can use these attributes for a quick start with search.

You must set up the search index for an object. The initial index ingest process is a long running process and the time is based on the number of objects that you've and the number of attributes per object that you've configured.

The attributes in the index:

- Determines the attributes used in search:
  - Attributes will be used to search using keyword, where a string of characters are entered for search.
  - Attributes will be used as filters to limit the search results. For example, the lifecycle attribute can be a filter in the search configuration. When the filter is selected, the user selects either use the suggested value or select another value, such as Released. The query would be limited to items with lifecycle=Released.
- Determines the attributes displayed in the search results.

Note: You must run the index the first time, and each time you add a new attribute to use the newly added attribute in your search.

Related Topics

- Available Indexes
- Default Index Attributes
- Plan the Search Index
- Display Data Presence Indicator in Search Results
- View Index Rebuild Status
- Configure Attributes for an Index

Available Indexes

The following indexes are available by default:

- Item
- Manufacturer
- Proposals
- Structure
- Workflow
- Workflow Approvals
- Workflow History

Item Index

- Item attributes include main, operational, and extensible attributes such as extensible flexfields and global descriptive flexfields.
- Additional support for item child object including item category assignments, item relationships, trading partner items, and AMLs.
- Supports data-level security for items, trading partner items, and item category assignments.
- Support autocomplete search, provides a list of suggested words based on the text that's typed in the search box, for item number and item description attributes.
- All translated data for all installed languages are ingested in the index automatically.
- All item and inventory organizations are ingested in the index automatically.
- The data security of the item will be honored.

Manufacturer Index

- Manufacturer attributes available for index include header, extensible flex fields and location fields.
- Manufacturer Part Number and attachments are indexed as data presence indicators.

- Support autocomplete search, which provides a list of suggested words based on the text that's typed in the search box. This is automatically provided for manufacturer and manufacturer description attributes.

Proposal Index

- Proposal attributes available for index include header and application composer attributes.
- Attachments and relationships are indexed as data presence indicators.
- Support autocomplete search, which provides a list of suggested words based on the text that's typed in the search box. This is automatically provided for proposal name and proposal description attributes.

Structure Index

- Structure attributes that can be added to the index include item attributes and component attributes. Item attributes include operational and extensible flexfield attributes. Component attributes include descriptive flexfield, reference designator and substitute component attributes.
- Extensible flexfields aren't revision specific.
- The index is run behind the scenes for new changes that are added after the index was last rebuilt.
- You must rebuild the index and re-create the views to include any added attributes.
- To enable navigation to the subassembly, you must add Item Structure in the Rev Level Indicator attribute group.

Workflow Index

- An index can be created on the data presence indicators available for Tasks, Attachments, and Relationships.
- The index is run behind the scenes for new changes that are added after the index was last rebuilt.
- Blank values are displayed for secured extensible flexfields because ingesting secured extensible flexfield attributes into elastic search isn't viable.

  Workaround: Users must add FUSION_APPS_SCM_ADF_APPID (if it doesn't exist) to the change type extensible flexfield security tab whenever they add a user to it.
- Change Name, Change Number, and Workflow Type are the default indexed attributes. You can't remove them from the index.

Workflow Approvals Index

- Workflow Approvals attributes available for indexing include header attributes, descriptive flexfields, extensible flexfields, and approval attributes.
- Name, Number, Workflow Type, Participants, and Approver Action are the default indexed attributes. You can't remove them from the index.
- You can add or remove attributes and then rebuild the index to include additional attributes, such as header, descriptive flexfields, extensible flexfields and approval attributes. After the rebuilding is complete, you can add the attributes to a search view.

Workflow History Index

- Workflow History search can be done across change types to find all affected object redlines and change header, workflow status, and entity updates.
- You must run the index the first time, and each time you add a new attribute, to use the newly added attribute in your search.
- The index is run behind the scenes for new changes that are added after the index was last rebuilt.

  Note: You need to re-build the index after a quarterly update.

- Name, Number, and Workflow Type are the default indexed attributes. You can't remove them from the index.

Related Topics

- Default Index Attributes

Default Index Attributes

Here's a list of default attributes for each index.

Index Name	Default Attributes
Item Index	• Item Number • Item Description • Item Class • Primary Unit of Measure • Organization **Note:** All organizations and all installed languages are automatically ingested.
Manufacturer Index	• Manufacturer • Manufacturer Description
Proposals Index	• Proposal Name • Proposal Description
Structure Index	• Item • Item Sequence
Workflow Index	• Change Name • Change Number • Workflow Type
Workflow Approvals	• Name

Index Name	Default Attributes
	• Number • Workflow Type • Participants • Approver Action
Workflow History	• Name • Number • Workflow Type

Related Topics

- Available Indexes

Plan the Search Index

It's recommended to do some initial planning before configuring the search index.

Here's a list that you can use to plan the search index:

- Gather information about the following:
  - Number of items, docs, or both
  - Number of item classes
  - Number of extensible flexfield attribute groups
  - Number of extensible flexfield attributes
  - Number of organizations
  - Number of secured extensible flexfield attribute groups
  - Is Root Item Class public?
  - Do you run Product Development and Product Hub, or only one?
- Review how the users perform a search. You can use the Saved Searches that have been created. The Saved Searches will identify attributes that you use in search and attributes you display in the results table as columns.
- Review the attributes that are used to define your objects. For example, in Items, the attributes are defined as extensible flexfields assigned to item classes.
- You may define many attributes for an object. But not all attributes will be used for search or to display the results.
- Review how the user searches of specific objects. For example:
  - Search by part number (entering AS14888)
  - Search by class (entering Capacitor)
  - Search by characteristic (entering surface mount)
  - Search by a string within a description (entering phone)

Once you plan your index, you can configure the index for the object by selecting the attributes that'll be supported in the index and in your searches.

Related Topics

- Configure Attributes for an Index

Configure Attributes for an Index

To configure the attributes for the index:

1. In the **Product Information Management** or **Product Development** work area, go to the **Task** panel tab and click **Configure Index** from **Product Management Experience**.

   The Index Management page is displayed. Each object that supports an index is displayed as a card on this page.
2. Click the card associated with the object for which you want to setup the index.

   The Configure Index page displays the attributes that are in the index for the object. Each index has a default set of attributes that can be used to setup the index. See <Default Index Attributes for details.

   The default attributes will always be a part of the index and you can't remove them. You can add and remove additional attributes based on the search processes.
3. To add or remove attributes from the index:
   - To add an attribute, from the **Add Attribute** drop-down list, select the attribute that you want to add. The selected attribute is added to the table.

     > **Note:** You can also type the attribute name, attribute group name, or the object name in the **Add Attribute** drop-down list to filter the list of attributes.

   - To remove attributes, select the checkbox for the attributes you want to remove and click **Delete**. The selected attributes will no longer be seen in the table.
4. Click **Update**.

   The data is saved. The page will refresh and show the last updated date stamp indicating the save was successful.
5. Click **Rebuild**.

   A dialog box appears with two options for rebuild:
   - **Now**: The rebuild process is started immediately.
   - **Future**: Schedule the rebuild process in the future. Because rebuild process can be a lengthy process depending on the data, it's recommended to schedule the process to run during non-work hours.
6. Click **Rebuild**.

   The rebuild process starts. A schedule process ID will be provided which can be monitored in the **Tools** > **Scheduled Processes** application.

   The first time you trigger the index rebuild process, all the instances of the object data and the selected attributes for the object are ingested to build the index. After the process of rebuilding the index is complete, you can add the attributes to a search view.

   Only one rebuild program can be running at time. If the index is in the building state and you select the **Now** or **Future** options, the user interface will display an error message indicating that either another rebuild process is running or the changes that are made to the indexed attribute will be added to the schedule process.

Related Topics

- Display Data Presence Indicator in Search Results
- View Index Rebuild Status

Display Data Presence Indicator in Search Results

To display the data presence indicators for child entities in the search results table, you must first populate the data and then add the data presence indicator attributes to the index.

Before adding presence indicator attributes to the object index, you must run a job that'll populate the data in the presence indicator table so that the index ingest program can add the presence indicator data to the index.

The presence indicators are represented as attributes in the index.

Run Upgrade Product Management Data Job

For Item

To run a job to populate data in the presence indicator table:

1. Go to the **Scheduled Processes** work area.
2. Click **Schedule New Process**.
3. Search and select the **Upgrade Product Management Data** job.
4. In the Process Details dialog box, specify the following:
    - **Upgrade Process**: Execution
    - **Functional Area**: Item Child Entity Presence Indicator
    - **Feature**: Start the process for each of these entries in the Features list, one at a time. Wait until one job is completed before you start the next.
        - Item has Pending Changes Indicators
        - Item has Quality Indicators
        - Item has AML Indicators
        - Item has Revision level Attachment Indicators
        - Item has Structure Indicators
5. Click **Submit** to submit the job.
6. Monitor the job for completion.
7. Repeat running the job for each of the preceding presence indicators.

    After each job is run successfully, add this data into the index so that it can be used for searches.

For Workflow Approvals

1. Go to the **Scheduled Processes** work area.
2. Click **Schedule New Process**.
3. Search and select the **Upgrade Product Management Data** job to run on-demand change upgrade and presence indicator scripts.
4. In the Process Details dialog box, specify the following:
    - **Upgrade Process**: Execution
    - **Functional Area**: Changes

- **Feature**: Update all data presence indicators

5. Rebuild the index from index management.

Add Data Presence Indicator Attributes to Index

To add the data presence indicator attributes to the index:

1. In the **Product Information Management** or **Product Development** work area, go to the **Tasks** panel tab and click **Configure Index**.

   The Index Management page is displayed.
2. Click the card associated with the object for which you want to add the data presence indicators to the index.

   The Configure Index page displays the attributes that are in the index for the object.
3. To add the data presence indicator attributes, from the **Add Attribute** drop-down list, search and select the data presence indicator attributes and add them to the table.
4. Click **Update**. The data is saved. The page will refresh and show the last updated date stamp indicating the save was successful.
5. Click **Rebuild**. A dialog box appears with two options for rebuild:
   - **Now**: The rebuild process starts immediately.
   - **Future**: Schedule the rebuild process in the future. Because the rebuild process can be a lengthy process depending on the data, its recommended to schedule the process to run during non-work hours.
6. Click **Rebuild**.

   The rebuild process starts. A schedule process ID will be provided, which can be monitored in the **Tools** > **Scheduled Processes** work area.

Related Topics

- View Index Rebuild Status
- Configure Attributes for an Index

View Index Rebuild Status

You can view the status of the index rebuild process on the Index Management page.

The status is displayed as a badge within the card that represents the object.

The following status is displayed:

- **New**: Initially displayed when the index isn't built yet.
- **Edited**: Attributes have been added or removed from the index and the changes are saved, but the Rebuild process hasn't been run.
- **Building**: Displayed when the rebuild process is in-progress.
- **Ready**: Displayed when the rebuild process is complete and can be used for searching.
- **Fail**: Displayed when the rebuild process isn't successful.

Troubleshooting Index

Index Status Shows Fail Status

- Report the failure through a Service Request
- Capture the job logs from both the parent and child scheduled jobs on the Scheduled Processes page. The job logs contain information about the rebuild progress and any issues.
- Oracle Support will review the logs and determine the next steps to resolve the issue.

Configure Views

Views are used to configure the attributes that will be displayed in the Product Management Search page.

You can select the required view. For example, review an existing design to determine cost factors. An administrator can create a view that contains the costing attributes. The user then can select the view in the Product Management Search page and the costing attributes would be displayed.

When the view is used in a Product Management Search, it also contains additional information that's used to configure the search.

Views are created based on the primary objects available on the Configure Views page. Each object is a card displaying information about the object. For example, on the Structure page, the views are created for the structure object. All views for the object are displayed when the object card is selected.

Views for Product Management search controls both the attributes that are visible in the search, and the search configuration. The functions of views used for search are:

- Attribute configuration:
  - Attributes that'll be displayed when the search is first launched, and attributes that can be added to the search results.
  - Sequence of the attribute displayed in the search results.
- Search configuration:
  - Attributes that can be used in keyword search.
  - Attributes that'll be used to filter the search and the type of filter displayed on the Product Management Search page. For example, if the attribute uses a list of values defined by a value set, the filter type selected will display a list of values from which you can select the value.

Related Topics

- Access Predefined Views
- Understand a View Used on the Search Page
- Manage Views
- Plan Your View

Access Predefined Views

To access the predefined views:

1. In the **Product Information Management** or **Product Development** work area, go to the **Tasks** panel tab and click **Configure Views**.

   The View Management page is displayed. Each object that supports a view is displayed as a card on this page.
2. Click the card associated with the object for which you want to view the predefined view.

   The Views page displays all the views for the object.

Available Predefined Views

The following table provides the available predefined views for the objects.

Object Name	Predefined Views
Item	Product Hub Search Product Development Search
Manufacturer	Manufacturer Search
Proposal	Product Innovation Management Search
Structure	Product Hub Structure Product Development Structure
Workflow	Product Development Workflow Search Product Hub Workflow Search Quality Management Workflow Search
Workflow Approvals	Product Development Approval Search Product Hub Approval Search Quality Management Approval Search
Workflow History	Product Development Workflow History Search Product Hub Workflow History Search Quality Management Workflow History Search

Object Name	Predefined Views

Related Topics

- Understand a View Used on the Search Page

Configure a Structure View for the New Interface

Use **Configure Views** to configure the search you want to see in the new user interface.

In the Tasks panel drawer, click Configure Views. The View Management page appears displaying each object that supports a view as a card. For example: Select the Structure card and the page displays a list of existing views for a Structure. You can modify an existing view or create a new view. In the search view, you can add or remove attributes that are indexed. The Structure Grid page displays the default view for all users.

For each view you can control:

- Attributes - item operational attributes, item extensible flexfields, component level attributes, and component descriptive flexfields.
- Reference designators and substitute components - use them in existing views or to create new views.
- Display columns - if you enable the display column, you can add the attribute as a column for display.

Points to Remember

- If you haven't configured a view, there's a default view available showing Item and Item Sequence attributes. Depending on the work area from which you navigated to the structure, the default view is either Product Development Structure or Product Hub Structure.
- By default, item and item sequences are added to each search view. You can't remove them while creating a new search view or changing an existing one.
- While in the Level BOM context, you can switch to a different configured view. Your view selection persists when you switch back to First Level context.

Here are the component entities that show the values corresponding to the component's current revision:

- Item operational attributes
- Item extensible flexfields
- Component level attributes
- Component descriptive flexfields
- Reference designators
- Substitute components

Understand a View Used on the Search Page

The view used for Product Management Search combines the view attributes and the search configuration into the single page to simplify the maintenance. Administrators must make a default search view to display the search results based on the configuration and that applies to all users.

- Each object has predefined views that contains primary attributes for the object. You can't edit or delete the predefined views.
- Views used for searches also contain the search configuration and the attribute configurations.
- Each view has a **View Name**, **Description**, and **View Code**. The View Code is autogenerated.
- The **Application** and **Task Flow** values decide the page or the search, where the view is used. Each **Application** and **Task flow** combination has a default view that's used when the Product management Search page is first launched.
- You can duplicate the predefined view to create more views based on your requirement or you can create views.
- When you create a view, only the primary objects will automatically be added to the view:

Object Name	Task/Application Flow Attributes
Item	Item Number Item Description
Manufacturer	Manufacturer Manufacturer Description
Proposal	Name Description
Structure	Item Item Sequence
Workflow	Name Number Workflow Type
Workflow Approvals	Name Number Workflow Type Participants Response

Object Name	Task/Application Flow Attributes
Workflow History	Name Number Workflow Type

- If a view is set as **Default**, it'll launch the Product Management Search page in the default view from the application or task flow. You can only set one view as the default for an application or task flow.
- Search configuration part of the views for searches have different filter types that can be used based on the data type of the attributes. Sometimes, there may be multiple options.
- Attributes in a View:
  - All attributes in a view for a search must be in the index.
  - If an attribute is in a view, you can't remove the attribute from the index unless it's removed from the view first.
  - Views support all attributes that are used in the application or task flow, but controls the attributes that'll be displayed initially, and the attributes that can be added in the application.
  - Each view has two or more attributes. For example, the predefined view has four attributes for Product Development Search and five attributes for Product Hub Search. The Product Development view uses the master organization setup in the Product Development application, so it doesn't appear in the view.
  - Attributes are organized in groups for an object and each child object. They're shown in the **Attribute Group** column.
  - Each attribute in the view has a **Display Order**. It's automatically added when the attribute is added to the view and is editable. For example, in a table, the order of the columns will be determined by the display order from left to right.
  - Initial display of the attributes in a view is determined by the **Display Columns** switch. When the switch is set to **On**, the attribute will initially be displayed. If the attribute display column switch is **Off**, the attribute can be added to the user interface by the user. Some display column switches are defaulted and shown in a disabled state to indicate the value is predefined. For example, Item and Item Description are default to On and are predefined and you can't change the value.
- Attributes can be enabled to use a filter using the **Filter Chip** switch. When an attribute has a filter chip enabled, the system provides choices for the **Filter Chip Type**. Sometimes, a single choice is automatically selected.
- Filter chips can be enabled only for date and text attributes.

  Note: You can't enable filter chips for long text attributes.

- Only a single type of filter chip is available for characters that have lookups with a list of values. Keyword search is much better to use for entering a set of characters. The filter displays the list of values for the lookup. The user can select one or more values.
- Attributes that are data type date can be displayed in both single date selection and date range selection. In either case the user will use the date picker to select the date in a calendar.
- Each of the attribute data types have multiple ways to display the data associated with the attribute. Attributes that are number data type can be displayed as single number that the user enters, or a user entered range.
- Keyword search is much better to use for entering a set of characters for the search.
- Each attribute can be enabled to be used in Keyword search where the user can type in characters and search the index using all attribute enabled for keyword search. The **Keyword Search** switch value is used to determine if the attribute is used in keyword searching. Some best practices:

- Keyword search is primarily used for attributes that are type character.
- A few attributes in the predefined views are enabled by default for keyword search.

Plan Your View

Planning a view is an important step in configuring the Product Management Search page. Views define the attributes used in the Product Management Search pages.

Here are the steps you can follow to plan your view:

1. Determine the required attributes based on your primary use case. What are the primary searchable attributes and the attributes used to display search results?
2. Decide the view that must be displayed by default for all users. For example, if you search for items using item number or content within the item description, start with the predefined default view for your application and then add additional attributes that will allow you to identify the items. Set this view to default and it'll always be launched when the Product Management Search page is launched.
3. Define additional views based on the use cases. You can change the view on the Product Management Search page. Views are useful in cases where a specific search is required, the view allows the search to be guided for the use case.

Related Topics

- Manage Views

Manage Views

You can create, edit, duplicate, and delete views.

Views for Product Development and Product Hub are predefined, and you can't edit or delete these views. They have the same attributes that are predefined initially in the index. The best way to start is by duplicating one of these views.

You can do the following:

- *Create a View*
- *Edit a View*
- *Duplicate a View*
- *Delete a View*

Create a View

You can create a view starting with a small set of attributes for the object. For example, in the create process for the item object, the Item number and Item Description attributes are automatically added to the Create View page.

To create a view:

1. Launch the **Configure Views** task from the **Tasks** panel tab in the **Product Information Management** or **Product Development** work area.

   The View Management page is displayed.
2. Click the object card for which you need the view. For example, click the **Items** card.

   The Views page is displayed.
3. Click **Create**.
4. Specify the following:
   - **View**: Enter a name for the view.
   - **Description**: Provide a brief description about the view.
   - **Code**: This is automatically generated.
   - **Application**: Select the application where this view can be used.
   - **Task Flow**: Select the task flow corresponding to the application.
   - **Default**: This check box is selected by default indicating the view will be used when you launch the search from the **Product Information Management** work area.

5. Add additional attributes to the view if required.

   Note: You can add the attributes to the view only if the attributes are in the index.

   To add additional attributes to the view:

   a. From the **Attributes** drop-down list, select the attribute you want to add.

      You can enter characters corresponding to the attribute name, attribute group, or an object. The suggested results are displayed based on the characters that are entered. For example, these are common searches:

      - Enter one or more characters for the attribute name. For example, enter Li to find Life Cycle Phase.
      - Enter one or more characters for the attribute group name. For example, enter Manufacturer items to find attributes that are part of this group.
      - Enter one or more characters for the object name. For example, enter Item Category to find the attributes for the item category assignment group.

      The selected attribute along with the additional column values are displayed.

   b. You can also add the data presence indicator attributes if required.

   c. Specify the following for the attribute for views used in search pages:
      - **Display Columns**: Move the slider if you want the attribute to be displayed as a column in the search results on the Product Management Search page.
      - **Column Width**: Double-click and enter a value (in pixel) greater than 1 to specify the column width.
      - **Keyword Search**: Move the slider if you want the attribute to be enabled for keyword search on the Product Management Search page.

        Note: This isn't applicable for data presence indicator attributes.

      - **Filter Chip**: Move the slider if you want the attribute to be displayed as filter chip beneath the **Search** box on the Product Management Search page.
      - **Filter Chip Type**: Select the type of filter chip.

   d. For views used in other pages:
      - **Display Columns**: Move the slider if you want the attribute to be displayed as a column in the search results on the Product Management Search page.
      - **Column Width**: Double-click and enter a value (in pixel) greater than 1 to specify the column width.
      - **Keyword Search**: Move the slider if you want the attribute to be enabled for keyword search on the Product Management Search page.

        Note: This isn't applicable for data presence indicator attributes.

   e. Click the check mark icon in the **Action** column to add the row to the table. The row will be added as the first row in the table.

6. Click **Preview Layout** to preview the view layout and make changes if required.
7. Click **Save**.

   The view is saved. The search configuration is created, and the view is registered with the object's index.

Edit a View

You can only edit views that aren't predefined.

To edit a view:

1. Launch the **Configure Views** task from the **Tasks** panel tab in the **Product Information Management** or **Product Development work** area.

   The View Management page is displayed.
2. Click the object card for which you want to edit a view.

   The Views page displays a list of existing views.
3. In the **Name** column, click the hyperlink name to edit the view.
4. After updating the required information, click **Save**.

   See *Create a View* for information about the information that you can edit.

Duplicate a View

You can create new views based on an existing view.

To duplicate a view:

1. Launch the **Configure Views** task from the **Tasks** panel tab in the **Product Information Management** or **Product Development** work area.

   The View Management page is displayed.
2. Click the object card for which you need the view. For example, click the **Items** card.

   The Views page is displayed.
3. Select the row corresponding to the predefined view, Product Hub Search, by clicking in the row and click **Duplicate**.
4. Update the **Views** and **Description** fields. The **Code** is automatically generated. The **Default** check box is selected by default indicating the view will be used when you launch the search from **Product Information Management** work area.
5. Add additional attributes to the view if required.

   > **Note:** You can add the attributes to the view only if the attributes are in the index.

   To add additional attributes to the view:
   a. From the **Attributes** drop-down list, select the attribute you want to add.

      You can enter characters corresponding to the attribute name, attribute group, or an object. The suggested results are displayed based on the characters that are entered. For example, these are common searches:

      - Enter one or more characters for the attribute name. For example, enter Li to find Life Cycle Phase.
      - Enter one or more characters for the attribute group name. For example, enter Manufacturer items to find attributes that are part of this group.
      - Enter one or more characters for the object name. For example, enter Item Category to find the attributes for the item category assignment group.

      The selected attribute along with the additional column values are displayed.
   b. You can also add the data presence indicator attributes if required.
   c. Specify the following for the attribute for views used in search pages:
      - **Display Columns**: Move the slider if you want the attribute to be displayed as a column in the search results on the Product Management Search page.
      - **Column Width**: Double-click and enter a value (in pixel) greater than 1 to specify the column width.
      - **Keyword Search**: Move the slider if you want the attribute to be enabled for keyword search on the Product Management Search page.

        > **Note:** This isn't applicable for data presence indicator attributes.

- **Filter Chip**: Move the slider if you want the attribute to be displayed as filter chip beneath the **Search** box on the Product Management Search page.
- **Filter Chip Type**: Select the type of filter chip.

Note: Filter Chip and **Filter Chip Type** is applicable only for views on Search pages.

d. Click the check mark icon in the **Action** column to add the row to the table. The row will be added as the first row in the table.

6. Click **Save**.
   The view is saved. The search configuration is created, and the view is registered with the object's index.

Delete a View

You can delete views that aren't predefined and the view marked as default.

To delete a view:

1. Launch the **Configure Views** task from the **Tasks** panel tab in the **Product Information Management** or **Product Development** work area.
   The View Management page is displayed.
2. Click the object card for which you want to delete a view.
   The Views page is displayed.
3. Click the row to select the view that you want to delete, and then click **Delete**.
   A warning message is displayed.
4. Click **Delete**.
   The view is deleted and no longer appears on the Views page.

Use Product Management Search

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

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, and proposal 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 Information Management work area or Product Development work area, on the **Tasks** panel tab, click **Search Product Management**. 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.

Filter Chips

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

> **Note:** You can't enable filter chips for long text attributes.

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

> **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.

The filter chip might allow you to select another value, or in some cases you can select one or more values. For example, if you want to search for items for manufacturers Aero Tech and Tech Space, you can select both and the search results are filtered.

The last chip beneath the **Search** text box is the **Filters** action. Clicking this displays the **Filters** drawer, where you can select values for the filter chip. 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 filter chips 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 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', '0402', '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 filter chips to search for content within the Description.

All keyword searches use starts with in the searches.

Use Operators to Perform Keyword Search

You can use the following operators within the search criteria to perform a keyword search.

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.
-	Negates the term.

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.

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 filter chips 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 filter chip to select one of the item classes. Next the Design Engineer enters the following query in the search box:

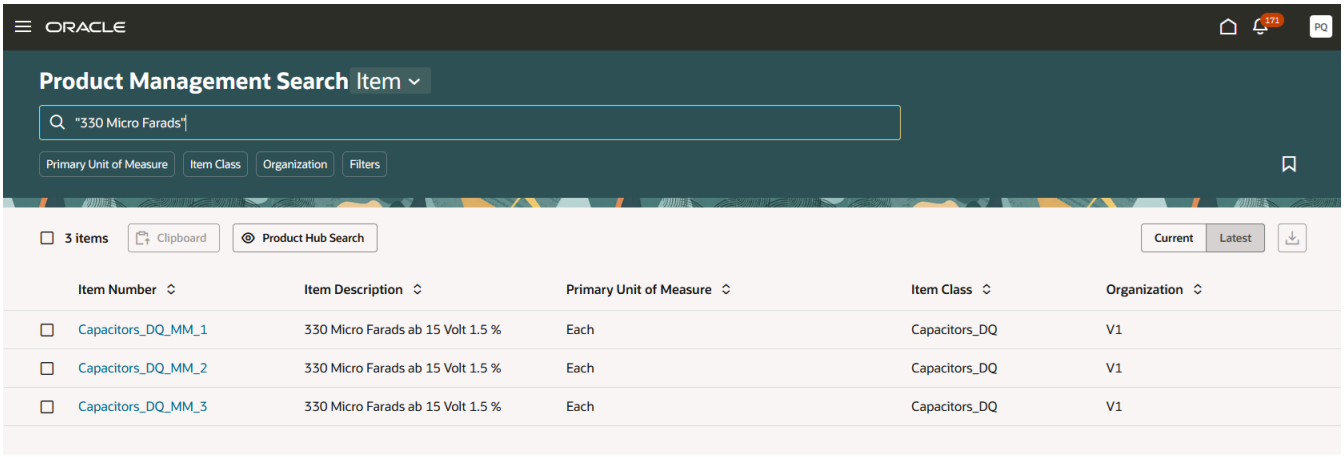
Cap + "Micro Farads" + "15 Volt"

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 filter chips. 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 filter chips together to form a query.

Expert users can use additional operators to form complex queries.

Note: To use the search using query feature, contact Oracle support.

Special Characters in Search Query

You can extend the search using the following special characters in the Search box:

- **List of Items**: You can search for multiple numbers for an object by entering them with spaces. For example, if you're searching for three items AS1, AS16903, or AS16901, enter the complete item number separated by spaces. Each of these items are displayed in the search results. You will also find additional items that start with these strings.
- **Item Numbers with Hyphen or Underscore**: To search item numbers that contain hyphens such as 06-CMM-SL, enter "06-CMM" with double quotes in the Search box. You can also find ITEM_GSE_123 by entering "ITEM_GSE". Additional items are displayed in the search results that start with these strings in the item number separated by hyphen and/or underscore.
- **Separators**: Special characters such as comma, colon, space, slash, back slash, hyphen, pipe, number sign, underscore, or dash are used in attribute values that have multiple terms. For example, a description such as 'DUCT,COVER,2.0"X 6FT,PANDUIT,WHITE' contains multiple separators. The ingest process uses the separators to break the value into searchable tokens.

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 and 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 smoothly 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*
- *Search Query Example*

View Data Presence Indicators

The presence indicator indicates that the objects in the row on the search page have extra 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:

- Has Level Attachments
- Has Pending Changes
- Has Item Structure
- Has AML
- Has Quality Issues
- Has PD Relationships
- Has Substitute Components
- Has Reference Designators

Note:

- Data presence indicators are accessible for structures and AMLs on both child and reference organization items, as well as for 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.

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 Item Structure** 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.

Related Topics

- Display Data Presence Indicator in Search Results

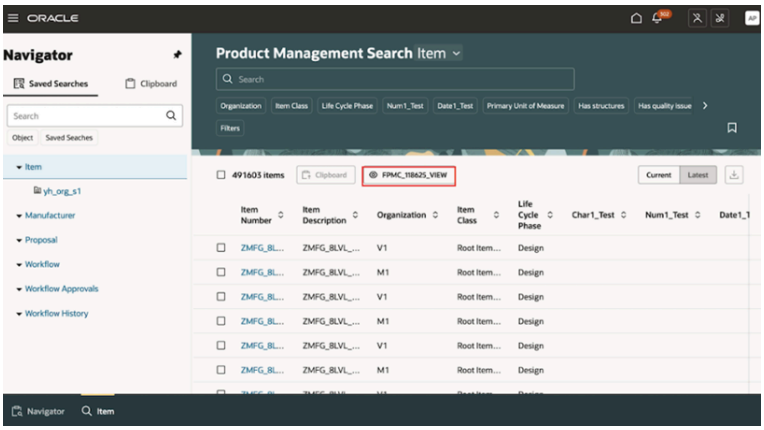
Using Views in Product Management Search

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

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 their own 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 it. When the user logs in again, they will can access the personal views they've created. You can also identify important or irrelevant columns and choose the order in which you want to view these columns for a specific task.

In the Product Information Management work area or the Product Development work area, when you click **Search Products** on the **Tasks** panel tab, the Product Management Search page is displayed 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 it was created from.

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 the Configure View page, the administrator can create system views that the business users can then use to create their own 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.
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 **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. 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 **Edit** icon next to the view name. The Columns drawer appears. You can show or hide columns by selecting or clearing the check boxes and change the order of the columns using the = icon. After you've completed the changes, click **Save**.

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. 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.
- **Hyperlink on the name**: Click this hyperlink 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 that the results data displays. You can select one of the following:
  - **Current**: Current effective revision, where the revision is before the current date.
  - **Latest**: Latest revision, where effective date of the future revision is greater than the currently effective revision.
- **Export**: Select up to 10,000 rows in the search results and export them to an Excel sheet.
- **Columns**: Click this icon to open the Columns dialog box. In **Hide**, select the check box for the column that you to display in search results table. It moves to the **Show** section. If you don't want to show the column, deselect the check box and it moves to the **Hide** section. You can hover on = and drag and drop the column to set the order in which the columns must be displayed.
- **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 onwards, 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.
- **Saved Searches**: A search including the search text entered, the applied filter chips, and their values can be saved and later used to run the search. The following are the saved search types:
  - System Searches: Saved searches available to all users.
  - Personal Searches: Saved searches for personal usage by one user.
  - Personal shared Searches: Saved search URL that can be sent by a person to other users.
- **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** filter chip beneath the **Search** text box and select the value **Each**. Click anywhere on the page.

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

Access Key Product Management Information and Tasks Using Product Management Landing Page

Using the Product Management Landing page, you can view a summary of issues that need your attention by reviewing the Key Performance Indicators (KPIs) and the corresponding visualizations that provide details for the KPIs. For example, if you've pinned 5 items in the Clipboard that need your attention and you launch the system the next day, you can see the pinned items in the KPI and the details in the visualizations show 5 items. By default, the predefined KPIs are displayed. You can add additional KPIs. Also, you can monitor KPIs related to your work, and navigate to the relevant pages.

To view the Product Management Landing page:

1. In the Product Information Management work area or the Product Development work area, click **Search Product Management** on the **Tasks** panel tab.

   The Product Management Search page is displayed.
2. Click the **Product Management** tab at the bottom.

   The Product Management Landing page displays the following panels by default:
   - Pinned Items: Shows the count of items that are pinned on the Navigator Clipboard. This panel is displayed by default.
   - Table displays the visualizations related to the pinned items. In this table, you can:
     - Perform a search related to the pinned items.
     - Use filter chips to filter the items based on Item Class and/or Description.
     - Export the displayed search results to an Excel file.
     - View saved searches and create personalized search.
   - Actions panel: Provides navigation links to all the tasks that you use based on your role. Your top tasks can be pinned and will display on the landing page. All other tasks can be accessed using the **View All Actions** link. Clicking this link opens the **Actions** drawer where you can search for actions, pin actions, and click to navigate to the pages.

Edit Page Layout and Add Additional KPIs to Landing Page

You can edit the layout of the Product Management Landing page. You can also add additional KPIs and visualizations. This lets you personalize the landing page based on your requirement. OTBI report data can be mapped to visualizations provided in the graphical library.

To edit the page layout and add additional KPIs:

1. On the Product Management page, click **Edit Page Layout**.
   The Product Management page displays in edit mode.
2. Hover on a panel to display a four-arrow icon

.You can move and reposition a panel by clicking and dragging this icon.
3. To add additional KPIs and visualizations, use the Library drawer that's displayed by default. The Library lists all available KPIs and visualizations. Use the **KPI** and **Visualization** filter chips to filter the list. You can drag-and-drop the required KPI to the dashboard grid area. A new panel is added for the selected KPI. In case you close the Library drawer, click **Library** to open it.
4. To remove a panel, hover on the panel and click the **Remove** icon.
   You can't remove the Pinned Items KPI and the Actions panels. When you edit the page layout, the changes are saved automatically.
5. Click **Exit Edit Mode**.
   The Product Management Landing page displays the updated page layout and the panels.

Related Topics

- Use Product Management Search

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 to and from your clipboard.

You can also navigate to a specific tab of an item from the clipboard. Access the Product Lifecycle Management Navigator from the classic UI by selecting **Product Management Experience** > **Search Products**. You can pin the Navigator so that it persists in the left-hand panel. To dismiss the Navigator you unpin and click in the right-hand panel; 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
- Run saved searches in the panel on the right-hand side
- Use the search to search for saved searches by name
- Use the filters to limit searching by:
  - Object
  - Saved Searches (currently only personal Saved Searches are supported).

Note: Only personal saved searches are available for selection in the Product Lifecycle Management Navigator Saved Searches tab.

Access Clipboard

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

- Add items you wish to use elsewhere in the classic UI. You can select the item, click the copy icon, and navigate to the classic UI and paste these selected items onto the structure or change affected objects tabs.
- Pin clipboard items so that they appear at the top (beginning) of the clipboard for quicker access.
- Click the ellipses (...) button to select which item tab to load in the right-hand panel.
- Use the filters to limit searching clipboard items by:
  - Pinned or not pinned items
  - Object

Note:

- Only items can be added to the clipboard.
- Pinned items are displayed at the top (beginning) of the clipboard and have their checkboxes selected, followed by items most recently copied to the clipboard.

Related Topics

- Search Region

13 Profile Options and Profile Values

Item Profile Options

Profile options manage configuration data centrally and influence the behavior of applications. The profile options have a default value, which you can use for initial installations.

Review these profile options and determine if you want to change the default values.

Profile Options	Description
EGP_DISPLAY_IMAGES	Specifies if images are displayed in the search results table in the Manage Items page.
EGP_UPDATEABLE_ITEM	By default, you can't change the item number after you have created the item. However, if you set this option to Yes, you can update items even after they're created.
EGP_ITEM_IMPORT_ITEMS_PER_THREAD	When you import items, the application creates multiple threads of operation to process the imported items. This profile option controls how many items the application can process per thread. It's a technical option used to optimize the item import performance. The default value is 20. Contact Oracle Support to determine the optimal value before you make a change.
EGP_ITEM_IMPORT_NUMBER_OF_THREADS	Determines the number of parallel threads of execution used when the item import process is run. The default value is 12. You can use these criteria to configure the profile option: • Number of service servers configured on your instance: You can get this information by contacting Oracle Support. • Other active processes: Other application processes that may be concurrently running on this server and utilizing the same service servers. If the item import is the only process running on the instance, you can configure the number of threads up to 16 times the number of service servers. If there are other processes likely to be running concurrently, reduce the number of threads proportionally. This profile option works in conjunction with the EGP_ITEM_IMPORT_ITEMS_PER_THREAD profile option.
ORA_EGP_TPI_UPDATEABLE	Set this profile option to Yes to allow editing of the trading partner item number. This number refers to customer item number, manufacturer part number, competitor item number, or supplier item number.
EGP_CONVERSION_MODE	Set this profile option as **No** to restrict the import of items revisions with a past date and if the item is assigned to any existing change orders in Scheduled or Completed status. Setting this as No prevents change orders from getting stuck after the import.

Access the Profile Options

In the **Setup and Maintenance** work area, use this navigation to access and manage the item profile options:

- Offering: Product Management

- Functional Area: Items
- Task: Manage Item Profile Option

Advanced Item Profile Options

Profile options manage configuration data centrally and influence the behavior of applications. You can access the advanced profile options only if you have licensed Oracle Product Hub and have the privileges of a product data steward.

The profile options have a default value, which you can use for initial installations. Review these profile options and determine if you want to change the default values.

Profile Options	Description
EGO_ASSIGN_PACK_ORG	Assigns all child items in the pack to the same organization as the parent pack item.
EGO_ASSIGN_PACK_SUP_SITE_ORG	Assigns all child items in the pack to the same supplier-site- organization combination as the parent pack item.
EGO_DEFAULT_STYLE_CATALOG	Enables the assignment of the related SKU items to the same catalog as the style item.
EGO_DEFAULT_STYLE_ITEM_ORG	Enables the assignment of the related SKU items to the same organization as the style item. The automatic assignment of all SKUs happens when the associated style item is assigned to a child organization. However, when a SKU is assigned to a child organization, the style item is also assigned to the child organization but, all of the other SKUs are not automatically assigned to the child organizations.
EGO_DEFAULT_STYLE_PEOPLE	Enables the assignment of people to the related SKU items as the style item.
EGO_DEFAULT_STYLE_SUP_SITE_ORG	Enables the assignment of the related SKU items to the same supplier-site-organization combination as the style item.
EGP_ITEM_IMPORT_DEFAULT_CATG	Specifies the catalog that you want to use for deriving the item class of the imported items.
EGI_PUBLICATION_ITEMS_PER_PAYLOAD	Determines the number of items that you want to publish per payload in the publication concurrent program. It's recommended that you set the profile value as 100.
EGI_PUBLICATION_NUMBER_OF_PAYLOADS	Determines the number of parallel payloads that you want to publish in the publication concurrent program. It's recommended that you set the profile value as twice the number of service servers.
EGI_ALLOW_ITEM_CREATE_DQ_MATCH_FOUND	Determines whether the application can create an item when it finds a matching item during the data quality check. The default value is **Yes**.

Profile Options	Description
EGI_PUBLICATION_NUMBER_OF_ PAYLOADS	Determines the number of parallel payloads that you want to publish in the publication concurrent program. It's recommended that you set the profile value as twice the number of service servers.
EGO_VER_LINE_ACTIVATE_COUNT_PER_ THREAD	Specifies the number of versions or change order lines that become effective in a single thread. It's recommended that you set the profile value as one so that failure in processing an item line in background jobs doesn't affect processing the other item line.
EGO_VER_LINE_ACTIVATE_MAX_ PARALLEL_THREADS	Specifies the number of child scheduled processes that run in parallel for multiple threads of versions or change lines. It's recommended that you set the profile value as two.
ORA_EGI_SPOKE_SYSTEM_REDWOOD_ PAGES_ENABLED	Enables the new user experience pages to manage spoke systems.
ORA_EGP_DELETE_GROUPS_REDWOOD_ PAGES_ENABLED	Enables the new user experience pages for Manage Delete Groups.
ORA_EGP_PAGE_LAUNCH_CTRL	Controls if the new user experience Structure page will be launched in new browser tab or launch in same browser tab as the Product Management Search page.

Access Advanced Item Profile Options

In the Setup and Maintenance work area, use this navigation to access and manage the advanced item profile options:

- Offering: Product Management
- Functional Area: Items
- Task: Manage Advanced Item Profile Options

Set Profile Values

Each profile option contains specific values that determine how it affects the application. You can add or modify the values for each profile option.

To configure profile values, use the Manage Administrator Profile Values task in the Setup and Maintenance work area and use the search criteria such as profile display name.

You can select or enter the value for one or more of the available levels (site, product, and user) so that each setting takes effect at the intended level.

Application Logging

You can use the profile values for the enabled profile options to control error logging in the application. Here's the profile display name for application logging.

Profile Display Name	Description
Enable Change Debugging	Enables detailed error logging for changes to expedite debugging.

Change Orders

Here are the profile display names for change orders.

Profile Display Name	Description
Minimum Time Between Effective Dates of Change Orders for an Item	Enables you to define the minimum time gap in minutes between two parallel changes for an item. Before update 20D, a fixed time gap of 30 minutes restricted parallel processes to prevent locks. Depending on the complexity of changes to implement and the overall performance of your application, you can set the appropriate value for the profile option. Additionally, the application considers only item changes for master organizations as a parallel process, not that of child organizations. In rare cases where the application still runs into a lock scenario, the change order isn't automatically demoted but remains in its current state, and you can try to promote it manually later.
Size of the publication payload file in megabytes	Enables you to define the maximum size of the Zip files that are generated when you download item attachments or change order attachments. If the exported data is larger than what can be contained in a single Zip file, the process creates multiple Zip files. The maximum limit is 500 MB. After downloading the set of Zip files, make sure that all the Zip files are extracted into the same root folder, and that the directory structure is created completely with all files available in their respective folders.
Wait Time for Enabling Workflow Termination	The **Terminate Workflow** button can be enabled when the change order is stuck on clicking **Approve**, or due to server issues. It's enabled after the number of minutes specified in profile value is lapsed. The minimum profile value is 30 minutes.

Flexfields

Here are the profile display names for extended flexfields.

Profile Display Name	Description
Default Display Mode for Item Extensible Flexfield Attributes	Enables you to define the display of extended flexfield attribute groups when you open the item page in Product Development. You can choose whether the attribute groups should be shown expanded or collapsed by default. If you keep attribute groups collapsed by default, the page loads faster. You can configure the display with the following values: • Expand All: Expand all attribute groups. • Expand All Groups with Required Attributes: Expand multi-row attribute groups and single row attribute groups that have at least one required attribute. • Expand Single-Row Groups with Required Attributes: Expand only single row attribute groups that have at least one required attribute.

Profile Display Name	Description
	• Collapse All: Collapse all attribute groups.

Search Delay for Autosuggest Search

You can use the profile values for the enabled profile options to adjust the search delay for autosuggest search.

Here's the profile display name to adjust the search delay for autosuggest search.

Profile Display Name	Description
Item Search Type Delay	If this option is enabled, then you can adjust the search delay (in seconds) for autosuggest search. The valid profile values are 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, where the value 1 is the standard time to start searching and is the default profile value. To increase the search delay, increase the value. The profile can be enabled and updated only at the site level.

Item Batch Options in Smart Spreadsheets

You can use the profile values for the enabled profile options to control the item batch options in the smart spreadsheets.

Here's the profile display name for the item batch options in the smart spreadsheets.

Profile Display Name	Description
Item Batch Options in Smart Spreadsheets Enabled	If this option is enabled, then you can set the change order and new item request options in the smart spreadsheet before uploading the item data from the smart spreadsheet to the item batch. You can set the profile option at the site level or user level. If the user-level value is set for the profile option, then the user-level value has higher precedence over the site-level value. This profile option is set to **No** by default.

Multiple Item Relationships to Same GTIN

You can use the profile values for the enabled profile options to create item relationships by associating the same GTIN with more than one item.

Here's the profile display name to allow multiple item relationships to same GTIN.

Profile Display Name	Description
Allow Multiple Item Relationships to Same GTIN	If this option is enabled, then you can create item relationships by associating the same GTIN with more than one item when the GTIN UOM and the item's primary UOM are the same. You can set the profile option at the site level or user level. If the user-level value is set for the profile option, then the user-level value has higher precedence over the site-level value.

Profile Display Name	Description
	You must exercise caution before setting the profile value to **No** from **Yes**. You must check if any GTIN is associated with more than one item and take the necessary action.

User Display Format

You can configure how users appear on the interface by choosing a user display format. Here's the profile display name:

Profile Display Name	Description
User Display Preference	Specifies how users are displayed on the user interface. You can select your preferred display format. The options are: • User Name - Example: Jane.Doe • Email - Example: jdoe@abc.com • Name - Example: Jane Doe **Note:** The **Name** format is derived from the Display Name setting configured using the **Manage Person Name Formats** task in the Setup and Maintenance work area.

The default format for user display is applied on all pages and tabs, except the Attachments tab. The Attachments tab always displays users in the User Name format. If you haven't configured Email, First Name, and Last Name, then the User Name is displayed.

Display Format for Manufacturers

You can select the display format of the manufacturer pages.

Profile Display Name	Description
Redwood Manufacturer Pages Enabled	Enables the new manufacturer pages. Set the profile value as Yes to enable launching of new pages from manufacturer-related task links in the Tasks panel, and to enable display of extensible flexfields for manufacturers. **Note:** This new page is also available through the AML tab of the item or the change order.

Item Revision Attachments in the Product Information Management Work Area

You can manage the item revision attachments on engineered items that are in post design lifecycle phase using the following profile option that controls whether the attachments can be created, edited, and deleted for these items.

Profile Code	Profile Display Name	Description
ORA_ITEM_REV_ATTACH_EDIT_PIM	Allow Edit Item Revision Level Attachments in Product Information Management Work Area	Value determines whether the item revision attachment changes are allowed in the Product Information Management work area, FBDI import, import maps, and Items Version 2 REST resources. The profile values are: • **Yes**: Allows you to create, edit, and delete attachments for the item. • **No**: Doesn't allow you to create, edit, and delete attachments for the item. **Note:** Item revision attachment changes can't be routed through commercial change order or engineering change order.

Structures

You can configure users to view common structures depending on the organization context.

Profile Code	Profile Display Name	Description
ORA_EGP_STR_ORG_CNTXT_PRIV_CHK	Use Organization Context to Validate Access to Common Structures	Allow users to view common structures only if they have privileges to view structures for the organization in context. For example, if a user accesses the structure on a child organization item, then the application validates if the user has privileges to view the structure in that organization.

Substitute Component Search and Substitute Component Display in OTBI Report

You can configure whether the item where used report in the UI must include substitute component details by default, and the display of substitute component attributes in OTBI report.

Profile Display Name	Description
Include Substitutes in Item Where Used Data	Specify whether the option to search for substitute components in the item where used report is enabled by default. Enabling this also enables the display of substitute component attributes in the OTBI report.

Profile Display Name	Description
	Note that the where used report is supported only for **first level of the structure** in the UI and **all levels** in the OTBI report.

Data Presence Indicators

You to control the generation of data presence indicators on the child and reference organization AMLs (Approved Manufacturers List).

Profile Display Name	Description
EGP_SKIP_DPI_PROPAGATION	Setting the profile option value to **Y** will prevent the application from generating data presence indicators on the child and reference organization AMLs, which can help troubleshoot performance issues.

Enable Automatic Update of the Last Contract Price

Here's the profile display name to enable automatic update of the last contract price.

Profile Display Name	Description
Update Last Contract Price from Oracle Fusion Cloud Procurement	Enables automatic update of the Last Contract Price attribute value with the most recent price at which an item was purchased from Oracle Procurement Cloud. You can enable and update this profile option only at the site level.

14 Item Mass Update Configuration

Setup Task for Item Mass Update Configuration

Before you can use item mass updates in Oracle Product Hub, you must complete this task in the Setup and Maintenance work area.

Task	Description
Manage Item Import Formats Configuration	Used to define import formats to be used when performing item mass updates.

15 Imports

Overview of Importing Items

You can import items and item-related information from external sources to interface tables, and then move this data into the production tables. You can import the data using FBDI or import maps.

All the data present in the import will be processed based on the batch options. The way the data is present in the import file won't determine the sequence of how the import is processed. Style and SKU items are processed together. The item import data can be classified into two entities:

- Core Entity: Includes items, item revisions, item extensible flexfields, item revision extensible flexfields, and item supplier extensible flexfields.
- Peripheral Entity: Includes item revisions, category assignments, item child org assignments, relationships, item structures, and item packs.

The core entities and peripheral entities are imported separately with the core entity processed first followed by the peripheral entities. Failures in the core entity import automatically results in errors and peripheral entities aren't processed. If the core entity is successfully imported and if there's any failure when importing the peripheral entities, then it'll only result in errors for the peripheral entities. A batch import will be considered successful if the core entity import is successful.

Profiles for Importing Items

When importing items using FBDI or import map, the following profiles play a very important role in terms of how the data is processed:

- EGP_ITEM_IMPORT_ITEMS_PER_THREAD: Determines the number of items that are grouped and processed together
- EGP_ITEM_IMPORT_NUMBER_OF_THREADS: Determines the number of threads that are launched for import processing

Settings That Affect Item Data Conversion

To support data conversion and initial load to Product Hub, the profile option: Item Data Conversion Mode Enabled must be set to enabled.

When you perform data conversion from your legacy applications into Product Hub, you must set the profile option value to **Yes**. The default value is **No**. Setting the profile value to **Yes** will have the following effects:

- The Import process ignores all security checks. Data Privilege and Functional privileges are not considered.
- All items will be created as approved items irrespective of whether the item class is enabled for new item request or you select to Add All Items to a new item request in batch.
- All updates will be directly posted to production by not creating change orders, even if you select the Add All Items to change order option in the batch.
- All validation rules of type Needs Approval will be ignored. This means that items are updated in the production tables.

If the profile option values are incorrect, it can adversely affect performance. You should evaluate carefully before setting these options.

Related Topics

- Import Data Using FBDI
- Import Data Using Import Maps

Import Data Using FBDI

You can import data from external sources to interface tables and then to production tables using FBDI.

To import objects, you use a spreadsheet template to enter the data you want to import, and then run the appropriate import process from the **Scheduled Processes** page. FBDI uses spreadsheet templates in which you organize your object data for import. After this, you run macros in the template to generate the Comma-Separated Values (CSV) files used during the import process and combine the CSV files into a zip archive so that these can be imported together.

The high-level steps are:

1. *Organize Your Data in the FBDI Spreadsheet Import Template*
2. *Generate the CSV File*
3. *Upload the CSV File to Oracle WebCenter Content*
4. *Load Data from Oracle WebCenter Content to Interface Tables*
5. *Import Data from Item Management Interface Tables to Item Management Production Tables*

Related Topics

- Oracle Fusion Cloud SCM: File-Based Data Import (FBDI) for SCM

Import Data from Item Management Interface Tables to Item Management Production Tables

At this point in the import process, the data is loaded into the Item Management interface tables and is ready to be moved into the Item Management production tables.

You can use the Item Import scheduled process to move this data to the production tables. This process performs all the validations necessary to ensure that the data is correct prior to moving the data into the production tables. After successful completion of this process, the data will be available in the user interface.

To move the data from the interface tables to production tables:

1. From the Navigator link, go to **Tools** and click **Scheduled Processes**.
2. Click **Scheduled New Process**.
3. In the Schedule New Process dialog box, select the following:
    - **Type**: Job
    - **Name**: Item Import
4. Click **OK**.
5. In the Process Details dialog box, enter item import for the import process.
6. Specify the following information in the Process Details dialog:

- **Batch ID**: Enter a unique identifier of the batch used to import the items. It should be the same as the batch ID in the FBDI excel file.
- **Process All Organizations**: Select *Yes* to import items from all organizations. Select *No* to not import items from all organizations.
- **Process only**: Indicate which transaction-type records need to be processed for an item batch. Values are Create, Sync, or Update.
- **Delete Processed Rows**: Indicates if the rows in the interface tables must be deleted after the processing of an item batch. Values are Yes or No.

7. Click **Submit** to start the process.

   A configuration dialog box is displayed with the process ID. Make a note of the ID.
8. Multiple processes are created for all the steps in importing the item. Various child process such as Preprocessing, Data Quality Matching, Gather Stats, Definition-Reference Org Processing, Item Import and Post Item Import are involved.
9. View the log file for any errors (if applicable), by selecting the row in the Search Results table and clicking **View Log**.

   Successfully imported items and related child entities can be queried, modified, and validated.

Related Topics

- Overview of Import Items
- Import Data Using FBDI
- Monitor Item Imports

Organize Your Data in the FBDI Spreadsheet Import Template

To organize the data in the FBDI import template:

1. Download the FBDI template for the object you want to import.
   a. Open the File-Based Data Import for SCM guide on Oracle Help Center.
   b. Within the Contents panel in the guide, scroll to the object you need to import and click the name (Example: Item). You can also use the search bar to search within the book. For example, search for Item Import to navigate directly to the appropriate page.
   c. In the topic for the object, click the **XLSM file** link to download the template (for example, ItemImportTemplate.xlsm).
2. After downloading the appropriate template, open it and confirm that macros are enabled.
3. Fill in all the required data and any optional data as desired on any or all worksheets.

   The first tab in the file contains the instructions for using the template and generating the CSV ZIP file. The other tabs, also called Control Files, correspond to each of the item interface tables.

Tips for entering data into the template:

- The first row in each sheet contains column headers that represent the interface table columns. The columns are in the order that the control file expects them to be in the data file.
- Don't change the order of the columns in the Excel sheets. Changing the order of the columns will cause the load process to fail.

- You can hide columns that you don't intend to use, but you can't delete columns. Deleting columns will cause the load process to fail.
- You must enter data that conforms to what the control file can accept and process for the associated database column:
  - Date fields must be entered in YYYY/MM/DD format.
  - Amount columns must not contain a thousand separator and must use a period (.) as the decimal separator.
  - Columns that must be whole numbers have data validation to allow only whole numbers to be entered.
- Refer to the bubble text on each column header for information on the data and data type the column requires.
- The predefined source system code PIMDH (for Product Information Management Data Hub) is used when you want to import items that don't originate from an external source system, such as a supplier.
- The provided item class is called Root Item Class, this item class will be used for imports.
- Items are always created in a master organization. Organizations are created during initial setup of the environment using the Setup and Maintenance task.
- Provide a numeric Batch ID. Non-Product Hub customers don't have access to create batches, so any ID is sufficient.
- The system identifies the items that must be updated based on the **Transaction Type** column. If **Transaction Type** is set to **Sync**, during import if the item exists in the database, then the item is updated. If the item doesn't exist in the database, then it's created. The other key columns for updating the item are:
  - Item Number
  - Organization Code
  - Batch ID
  - Batch Number
- To delete values of attributes, including individual values of multirow attributes, set the **Transaction Type** to **Delete** for the values you want to delete.

Interface Tables and Related Control Files

The set of interface tables include the main EGP_SYSTEM_ITEMS_INTERFACE table, in which you can insert item data. You can also insert 13 other interface tables including, data of the item's child entities such as revisions, categories, and extensible flexfields.

You can use the control files to load data from a .csv file into interface tables using the Load Interface File for Import scheduled process.

The following table lists the interface table and the related control files and objects.

Control File	Interface Table	Object
EgpSystemItemsInterface.ctl	EGP_SYSTEM_ITEMS_INTERFACE	Items Assign Items to Child Orgs
EgpItemRevisionsInterface.ctl	EGP_ITEM_REVISIONS_INTERFACE	Item Revisions

Control File	Interface Table	Object
EgpItemCategoriesInterface.ctl	EGP_ITEM_CATEGORIES_INTERFACE	Item Categories
EgoItemAssociationsIntf.ctl	EGO_ITEM_ASSOCIATIONS_INTF	Item Supplier Associations
EgpItemRelationshipsIntf.ctl	EGP_ITEM_RELATIONSHIPS_INTF	Item Relationships
EgoItemIntfEffb.ctl	EGO_ITEM_INTF_EFF_B	Item level flexfields
EgoItemIntfEfftl.ctl	EGO_ITEM_INTF_EFF_TL	Item level flexfields
EgoItemRevisionIntfEffb.ctl	EGO_ITEM_REVISION_INTF_EFF_B	Item Revision flexfields
EgoItemRevisionIntfEfftl.ctl	EGO_ITEM_REVISION_INTF_EFF_TL	Item Revision flexfields
EgoItemSupplierIntfEffb.ctl	EGO_ITEM_SUPPLIER_INTF_EFF_B	Item Supplier flexfields
EgoItemSupplierIntfEfftl.ctl	EGO_ITEM_SUPPLIER_INTF_EFF_TL	Item Supplier flexfields
EgoStyleVariantAttrvsIntf.ctl	EGO_STYLE_VARIANT_ATTR_VS_INTF	Style Variant Attribute
EgpTradingPartnerItemsIntf.ctl	EGP_TRADING_PARTNER_ITEMS_INTF	Trading Partner Items
EgoItemAttachments.ctl	EGP_ITEM_ATTACHMENTS_INTF	Item Attachments

As the details of the mapping between the data of a source system and Product Hub might vary significantly based on the source system, the scope of these recommendations is limited to a best practices approach.

- Build an export file in the same format as the Product Hub interface described in the template. You will need to create staging tables and a spreadsheet that mirrors the tabs contained in this template. Then, a mapping needs to be decided as to which data of the source system goes into which Product Hub interface columns and tables. Based on the mapping, you should extract the relevant data from the source system. You can use SQL, ODI, or a similar tool to extract data into your staging tables.
- Your spreadsheet must have the same columns, and the columns must be in the same order, as in the template. The value in the first column is always the interface table name.
- Once you have extracted the data into your temporary spreadsheet, cut and paste the data into the relevant sheets provided in the template.
- For ID columns, you will need to develop a mapping between existing values and Oracle Fusion values. Use the implementation pages in the Setup and Maintenance work area to extract the identifier. For columns where

you will need to use the Setup and Maintenance work area to get the Oracle Fusion values, the comments in the column header of the spreadsheet mentions the task name which you should navigate to in the Setup and Maintenance work area.

- For key flexfields, you will also need to develop a way to map the values in the source system that correspond to the unique combinations in Product Hub. For key flexfield columns in the spreadsheet that require internal IDs, use the related Oracle Fusion implementation pages to export the internal IDs and the segment values to map to the source system values. The Items interface table has six columns that get their values from key flexfields:
  - Process Supply Locator
  - Process Yield Locator
  - WIP Supply Locator
  - Sales Account
  - Expense Account
  - Asset Category

Related Topics

- Generate the CSV File
- Oracle Fusion Cloud SCM: File-Based Data Import (FBDI) for SCM

Generate the CSV File

After you complete entering data in the item import template file, generate a .CSV file that will be used for importing the data.

In the FBDI import template file, on the **Instructions and CSV Generation** tab, click **Generate .CSV File** to generate the file. Save the file to your local drive.

The macros in the spreadsheet will generate the CSV files and combine them into a zip file for each tab completed in the item import template file.

Related Topics

- Upload the CSV File to Oracle WebCenter Content

Upload the CSV File to Oracle WebCenter Content

After you've created the CSV file, upload the CSV file to the designated location within the Oracle WebCenter Content system.

The Oracle WebCenter Content system is an enterprise content management system that manages web content, documents, imaging management, and digital assets for Oracle Fusion applications.

> **Note:** You must have the correct functional privileges to support the upload of the CSV zip file to the Oracle WebCenter Content system and have access to the WebCenter Content account scm/item/import for items and scm/changeOrder/import for change orders.

To upload the data to the Oracle WebCenter Content system:

1. From the Navigator link, go to **Tools** and click **File Import and Export**.

   The Overview page is displayed.
2. From the **Actions** menu, click **Upload**.

   The Upload File dialog box is displayed.
3. Click **Browse** and select the CSV file to be imported.
4. From the **Account** drop-down list:
   - For **Items**: Select scm/item/import
   - For **Change Orders**: Select scm/changeOrder/import
5. Click **Save and Close**.
6. To make sure the file is uploaded, perform a search based on account. The uploaded file will be listed in the search results.

   Next, you can load the data from Oracle WebCenter Content to the interface tables.

Related Topics
- Generate the CSV File
- Load Data from Oracle WebCenter Content to Interface Tables

Load Data from Oracle WebCenter Content to Interface Tables

Once the CSV file is uploaded to Oracle WebCenter Content, you use the Load Interface File for Import scheduled process to move the data from the Oracle WebCenter Content folder to the interface tables.

To move the data to the interface tables:

1. In Oracle Fusion Cloud, go to **Navigator** > **Tools** > **Scheduled Processes**.
2. Click **Schedule New Process**.
3. In the Schedule New Process dialog box, select the following:
   - **Type**: Job
   - **Name**: Load Interface File for Import
4. Click **OK**.
5. In the Process Details dialog box, specify the following:
   - **Import Process**: Select **Item Import**. This determines which interface tables will be populated from the file upload.
   - **Data File**: Name of the CSV ZIP file you uploaded to Oracle WebCenter Content.
6. Click **Submit** to start the process.
7. Monitor the status of the scheduled process by entering the process ID in the Search region on the Scheduled Processes page.

Related Topics
- Import Data from Item Management Interface Tables to Item Management Production Tables
- Monitor Item Imports

Monitor Item Imports

The Monitor Item Imports task is used to monitor the Item Import process.

Navigate to the Monitor Item Imports task in the Setup and Maintenance work area, to search for specific schedule processes and monitor their status in the search results table.

Alternatively, you can monitor the status of the scheduled process by entering the process ID in the Search region on the Scheduled Processes page.

Import Formats

When you have fewer attributes to be imported, you can create a spreadsheet with only these attributes and import them into the application.

Setup Tasks for Item Import Batch Configuration

Before you can create item import batches in Oracle Product Hub, you must complete this task in the Setup and Maintenance work area:

Task	Description
Manage Item Import Formats Configuration	Used to define import formats to be used during the item import batch process.

Item Import Formats Configuration

An import format identifies those main and user-defined attributes in an item class whose values are imported into the application using a spreadsheet.

Consequently, when you import item data from a spreadsheet, the items are all imported into the specific item class for which the item format was defined. You can edit an import format after it is created.

While all the mandatory attributes will be automatically added to the import format, you can also specify the other attributes to be included as part of the import format. All the attributes defined in an import format are added to the spreadsheet when it's generated while adding the items to an item batch.

You can also optionally inherit import formats defined for the parent item classes when creating a new import format. This inherits all the attributes of the parent item class import format to the import format being defined. This helps in maintaining the various import formats across the item class hierarchy.

Import Data Using Import Maps

Suppliers send product and catalog data to retailers and manufacturers in their native format, usually as spreadsheets or xml file format. They typically use standard industry formats, such as BMECat, eClass, or others.

Retailers need to onboard or upload the data provided by suppliers into Product Hub. To import this data, they can use import maps.

The following privileges are required to upload data using the import map template:

- Manage Item Batch (EGI_MANAGE_ITEM_BATCH)
- Generate Access Token (EGI_GENERATE_ACCESS_TOKEN_PRIV)
- Manage Item Import Map (EGI_MANAGE_ITEM_IMPORT_MAP_PRIV_OBI)

To import the data using import maps:

1. In the Product Information Management work area, navigate to the **Manage Item Batches** task.
2. Search and select a batch or create a batch.
3. Make sure that the appropriate batch options are set for the batch. To do this, from **Actions**, select **Edit Item Batch Options**.
4. From **Actions**, select **Add Items to Batch**.
5. In the Upload from File dialog box, review the batch number, batch name, and source system information.
6. Select or create an import map.
7. Review the map and submit, which loads the data file into the interface tables, and closes the dialog box. The Manage Item Batches page is displayed.
8. Click **Submit**. The data will be imported and the items along with their child entities will be created.

Correct Errors

To correct import errors:

1. Click **Manage Item Batches** task in the Product Information Management work area.
2. Search for the batch for which the Item Import process was run.
3. Click the batch name to navigate to batch details.
4. Review the errors for each item.
5. Select the item rows that are in error and click **Manage in Spreadsheet** to export Item data to spreadsheet.
6. Once all the rows are corrected, resubmit the process by clicking Upload and then submit the Item Import process.
7. Repeat the submit and error correction steps in this section until all rows are imported successfully and the items along with their child entities are created.

Related Topics

- How You Import Item Data Using Import Maps
- Overview of Item Batches
- Item Batches

Import Catalogs with FBDI

You can use file-based import to import quantities of catalog and category data into your production tables.

To import catalog and category data into Product Hub tables:

1. For general guidance on this procedure, refer to the Oracle Fusion Cloud SCM: File-Based Data Import (FBDI) for SCM guide on the Oracle Help Center.
2. See that guide's topic about loading data into tables, and follow the generalized procedure for loading data into interface tables, as modified by these instructions.
3. For the file-based data import template to use, see that guide's reference section on the Catalog process, and download the XLSM template workbook named **EgpCatalogImportTemplate.xlsm**.
4. On each worksheet tab in the XLSM template workbook, prepare the data for each interface table. Refer to the text above each column header for instructions on preparing the data in that column, and for a description of the data and data type that the column requires. Catalogs are defined by a combination of CATALOG_NAME and CATALOG_CODE values, so provide values for both columns. The table following these steps maps each tab to the corresponding interface control file and interface table. A value for START_DATE is required when creating a new catalog.

   For proper processing of the imports, you must assign an ID number in the **Batch_ID** column, on each of the worksheet tabs, using a number that's not already in use for an item batch created on the Manage Item Batches page. Enter the same batch ID number on each of the worksheet tabs, which contain different types of catalog data.

   When finished, generate the CSV file for your input sheet, and put it into compressed (**.zip**) file format.
5. For the step using the File Import and Export tool, which imports the **.zip** file containing the CSV file to the Oracle WebCenter Content system repository, use the account **scm/item/import**, as specified on the reference page for Catalog.
6. When scheduling and submitting the **Load Interface File for Import** process, specify these parameters:
   - For **Import Process**, select **Schedule Catalog Import Job**, which will load the catalog data into the production tables when you later schedule this process.
   - For **Data File**, select the uploaded **.zip** file containing the CSV file that you created from the XLSM template workbook.
7. Wait for the **Load Interface File for Import** process to complete, then schedule and submit the **Schedule Catalog Import Job** process, specifying these parameters:
   - In the **Batch ID** field, enter the same batch ID number that you assigned in the worksheets of the XLSM template workbook.
   - Leave the **Reprocess Error** field empty.
   - Leave the **Purge** field empty.
8. When the Schedule Catalog Import Job process finishes, examine the log files for status and errors during the import.

The following table lists the types of catalog and category data that you can import, and maps each type to the worksheet tab that you use to enter the data, and the corresponding interface control file and interface table used by the import.

Worksheet Tab	Control File	Interface Table	Object
Catalogs	EgpCategorySetsInterface.ctl	EGP_CATEGORY_SETS_INT	Catalog header information and descriptive flexfields for the catalog.
Catalogs Translation	EgpCategorySetsTlInterface.ctl	EGP_CATEGORY_SETS_TL_INT	Translated content for the catalog.
Categories	EgpCategoriesInterface.ctl	EGP_CATEGORIES_INT	Categories in the catalog, the category hierarchy information, and descriptive flexfields for the categories.
Category Translations	EgpCategoriesTlInterface.ctl	EGP_CATEGORIES_TL_INT	Translated content for the categories in the catalog.
Attachments	EgpCatalogCatAttachInterface.ctl	EGP_CATALOG_CAT_ATTACH_INT	Attachments for the catalogs and categories.

Related Topics

- Oracle Fusion Cloud SCM: File-Based Data Import (FBDI) for SCM

Import Regional Information

To import region specific information for items:

1. In the Item Import FBDI template file:
    - GLOBAL_ATTRIBUTE_CATEGORY column - Provide the region information.
    - GLOBAL_ATTRIBUTE1 and GLOBAL_ATTRIBUTE2 columns - Provide the values of attributes dependent on the regional information attribute.

    For example:
    - To import items for China:
        - GLOBAL_ATTRIBUTE_CATEGORY: JA_CN_ITEM_INFO
        - GLOBAL_ATTRIBUTE1 - Item Model
        - GLOBAL_ATTRIBUTE2 - Tax Denomination
    - To import items for Poland:
        - GLOBAL_ATTRIBUTE_CATEGORY - JExPLSystemItems
        - GLOBAL_ATTRIBUTE1 - Statistical Code

    The GLOBAL_ATTRIBUTE_CATEGORY values are predefined and stored in the JG_EGP_SYSTEM_ITEMS flexfield code.
2. Do the import.

Related Topics

- Overview of Import Items

Migrate PLM Objects Using FBDI

Migrate PLM Objects

This topic presents detailed information on how to migrate items, changes, manufacturers, and manufacturer parts from an Agile PLM (A9) application to Oracle Product Development using File-Based Data Import (FBDI).

To import objects, you use a spreadsheet template to enter the data you want to import, and then run the appropriate import process from the Scheduled Processes page. For more information about importing objects using FBDI, see *Import Data Using FBDI*.

General implementation steps are described here along with guidance for successful data migration.

What Data You Can Migrate

The following tables provides details of the attributes you can migrate for each object type and which tool you can use for the migration.

Items

Data	Can Be Migrated?	Migration Tool
Item Header (General Information, Page Two, Page Three)	Yes	• FBDI
BOM/Structure	Yes	• FBDI
AML	Yes	• FBDI
Revisions	Yes	• FBDI
Attachments	Yes	• FBDI
Relationships	Yes	• Web Services • FBDI
History	Yes	• Export as PDF and attach to item. • FBDI

Changes

Data	Can Be Migrated?	Migration Tool
Change Header (Gen Info, Page Two, Page Three)	Yes	• FBDI
Affected Objects	Yes	• FBDI
Redlines	Yes	• Export as PDF and attach to item or change • FBDI **Note:** You can choose the type of import process.
Attachments	Yes	• FBDI
Relationships	Yes	• Web services • FBDI
Approval and History	Yes	• FBDI • Export history to a PDF file and attach it to the change. In ChangeOrderImportTemplate, use the tab EGO_CHANGE_HISTORY_INT for migrating the change history. Any validation will not be run during the import of the change history data.
Workflow steps	No	• Assign final status using FBDI; other steps and workflow history aren't migrated.

Manufacturer Parts

Data	Can Be Migrated?	Migration tool
Manufacturer Part Header (Gen Info, Page Two, Page Three)	Yes	FBDI
Attachments	Yes (only the latest revision)	FBDI
Relationships	No	Not supported
History	No	Not Supported

Manufacturers

Data	Can Be Migrated?	Migration Tool
Manufacturer (Gen Info)	Yes	FBDI
Page Two, Page Three	No	Not Supported
Attachments	No	Not Supported
Relationships	No	Not Supported

Data	Can Be Migrated?	Migration Tool
History	No	Not Supported

Migration Prerequisites

Before you import Agile PLM data into the Product Development work area, you must complete the steps described here.

Prerequisites for each object type are listed here with links to more information.

Prerequisite Step	Required For	More Information
Create and deploy the extensible flexfields you require in Product Development to receive data from Page Two (P2), Page Three (P3), or other additional fields from Agile PLM.	Importing items and attributes	*Create Extensible Flexfields or User-Defined Attributes*
Import or create manufacturers in Product Development.	Importing manufacturer parts	*Create a Manufacturer*
Upload attachment files to Oracle WebCenter in one or more ZIP files.	Associating attachments with specific objects in the FBDI template.	*Manage Item Attachments by Import*

Import Manufacturers

Manufacturers (Trading Partners) can either be added manually or imported. This topic describes how to import manufacturers into the Product Development work area.

> **Note:** If you need to migrate only a small number of manufacturers, you can just create them manually through the Product Development interface pages.

The manufacturer object belongs to Oracle Customer Relationship Management Cloud (CRM), so the import process is different.

To import manufacturers:

1. Navigate to **Tools** > **Import Management**.
2. In Import Management, search for the **Organization** template on the Import Objects tab and click the **Download** icon.
3. Extract the downloaded CSV file and open the template.
4. Fill in the template columns with values mapped as shown in the table:

Spreadsheet Column Title	Manufacturer Attribute
PartyNumber	Registry ID
OrganizationName	Manufacturer

Spreadsheet Column Title	Manufacturer Attribute
Comments	Manufacturer Description
PartyUsageCode	MANUFACTURER
Country	Country (two-digit code: USA > US)
Addresss1	Address Line1
Address 2	Address Line 2
City	City
State	State
Postal Code	Postal Code
Raw Phone Number	Primary Phone Number

5. After you enter manufacturer data into the template, go back to the Import Queue tab in Import Management and click **Create Import Activity**.
6. Enter a name and description, set the Object to Organization, and add the CSV file you just filled out.
7. Click Next and apply **Automatic Mapping**.
8. Click **Next** and then click **Submit**. After the import completes, your manufacturers will be available in the Product Development work area.

Migration Sequence

Here's the order in which you must perform the migration tasks.

1. Export Agile PLM data.
2. Import items, revisions, manufacturer parts, AML, and attachments. This is also a prerequisite for importing change orders.
3. Import structures, reference designators, and substitute components.
4. Import change orders.

Export Agile PLM Data

To start the migration process, in your Agile PLM system, search for the items you intend to migrate, and select the item rows in the search results.

1. Click **More** > **Export Objects**.
2. Select **Excel** as the Format, and then click **Next**.
3. Select or create the filter you want to use and click **Next**.
4. Enter header information and then click **Export**. Use the data from the exported Agile PLM file in the appropriate FBDI templates.

Import Agile PLM Data

The following sections describe how you can import Agile PLM data.

Here's a tabular list of which import process and import template you must use for each object type:

Object Type	Import Template	Import Process Name
Items, Item Revisions, Trading Partner Items (Manufacturer Parts)	ItemImportTemplate.xlsm	Item Import
Item Structure	ItemStructureImportTemplate.xlsm	Item Import
Change Orders	ChangeOrderImportTemplate.xlsm	Import Change Orders

When you fill in the FBDI import template for an object type, you must ensure that all required fields are filled in as described here. Attributes for each object type must be mapped correctly to prevent import errors.

Import Items with Revisions

Use the EGP_SYSTEM_ITEMS_INTERFACE sheet tab in ItemImportTemplate.xlsm to organize item data for import.

Use the EGP_SYSTEM_ITEMS_INTERFACE sheet tab in ItemImportTemplate.xlsm to organize item data for import. Required fields include:

- Transaction Type
- Batch ID
- Item Number (If the item class is configured to provide the number, leave this blank.)
- Organization Code
- Description
- Engineered Item Flag (if assigning to Product Development)

Note: When importing item numbers, go to the specific item class in Setup and Maintenance, and change the Item Number Generation Method to User Defined. If it's set to Rule Generated or Sequence Generated, then the system will override the item numbers from your spreadsheet during import. Return the Item Number Generation Method back to the previous setting after completing your import. Make sure the numbers you import don't conflict with existing numbers or numbers that will be generated in the future.

Use the EGP_ITEM_REVISIONS_INTERFACE sheet tab in ItemImportTemplate.xlsm to organize item revision data for import. Required fields include:

- Transaction Type
- Batch ID
- Item Number
- Organization Code
- Revision
- Effectivity Date

You can create new items with revisions during the same import, or you can create revisions for existing items during an import. However, you can only create backdated revisions while creating a new item through import. After the item is created, you can no longer create backdated revisions.

Date attributes are important. Entering wrong dates may result in data going into wrong revisions, leading to corrupted data. Ensure that the dates are in YYYY/MM/DD format.

When importing items with revisions, enter the item information on the EGP_SYSTEM_ITEMS_INTERFACE tab. Add all backdated revisions on the EGP_ITEM_REVISIONS_INTERFACE tab, where you can enter the Revision with the corresponding Effectivity Date, ECN Initiation Date, and Implementation Date. The Effectivity Date and Implementation Date are the same, but the ECN Initiation Date is set for 10 days earlier.

In Agile PLM, the initial revision is Preliminary and through the first change order, the revision can be set to ‘A’ or any name entered by the user. In Product Development, the initial revision is set to ‘A’ (not Preliminary) but can be modified by the user. We suggest the use of ‘PRE’ or ‘0’ or ‘00’ to denote ‘Preliminary’ in Product Development. This revision must be present in the data load as you can't backdate revisions after an item is created. Since this revision must have a date for the data load, and there's no equivalent data in Agile PLM, use a back date such as 1901/01/01.

It’s recommended that you don’t bring in all revisions of an item and bring in only the last revision. If importing change orders, bring in only one change order without revision control pertaining to this last revision. The first revision (which is equivalent to Preliminary in Agile PLM) must be present during data load, and since there's no equivalent data in Agile PLM, use a back date such as 1901/01/01.

When importing Page Two and Page Three attribute values into Item Extensible Flexfields (EFFs), use the EGO_ITEM_INTF_EFF_B tab, NOT the EGO_ITEM_REVISION_INTF_EFF_B tab. Imported EFF values aren't revision-specific and thus will be the same for each revision you create during import.

Import Manufacturer Parts

After creating or importing manufacturers, you can import manufacturer parts (MPN). Use the EGP_TRADING_PARTNER_ITEMS_INTF tab to enter MPN data.

The following table defines the key data columns for MPNs:

Column Type	Data Description
Trading Partner Item Number	Manufacturer Part Number
Trading Partner Number	Manufacturer Registry ID; obtained from Product Development
Trading Partner Type	MANUFACTURER
Start Date	The date when this part was added to Product Development; must be earlier than the AML Effectivity Date
End Date	The date when this part is no longer active or usable

Example MPN Data:

Trading Partner Item Number	Trading Partner Number (Registry ID)	Trading Partner Type	Start Date	End Date
FC123	1000009	MANUFACTURER	2010/01/01 12:00:00 AM	
L123	1000015	MANUFACTURER	2016/01/01 12:00:00 AM	
S123	1000023	MANUFACTURER	2012/01/01 12:00:00 AM	

Import AML

Use the EGP_ITEM_RELATIONSHIPS_INTF tab to organize AML data for import. Even if you enter the revision, it's important to enter the correct Start Date Active and End Date Active for data to appear correctly in Product Development.

We recommend that you migrate the AML pertaining to the latest revision only. If you attempt to import the AML from several revisions, you will need to import multiple batches as the AML of two different revisions can't be imported in a single batch.

Example AML Data:

Item Number	Trading Partner Item Number	Trading Partner Number	Revision	Start Date	End Date
Laptop 123	FC123	1000009	Pre	1901/05/01 12:00:00 AM	2016/01/01 12:00:00 AM
Laptop 123	L123	1000015	A	2016/01/01 12:00:00 AM	NA
Laptop 123	S123	1000023	B	2017/01/01 12:00:00 AM	NA

- In the case of Manufacturing Change Order (change order without revision control in Product Development) on revision A, create AMLs where the Start Date Active is between 2016/01/01 and 2017/01/01.
- For the Start Date Active, enter the same date as the Revision Effectivity Date.
- For the End Date Active, enter the Effectivity Date of the revision that removed the part.
- For Trading Partner Number, enter the Registry ID of the manufacturer.

Delete AML through Import

- You can delete an AML through import using the Delete transaction type in the change order context.
- You can also add the item to a change order using the import batch option and specify an end date for the AML.

The deletion of AML is recorded in the redline summary.

Import Attachments

You can import attachments for items, manufacturer parts, and change orders.

Migration of manufacturer attachments isn't supported either through import or REST web services.

Once your attachment files are available in Oracle WebCenter, you can associate them to objects using the FBDI template.

1. In the item import template file (ItemImportTemplate.xlsm) use the EGP_ITEM_ATTACHMENTS_INTF tab to organize the data that maps the files in Oracle WebCenter to each item and revision.
2. In addition to Transaction Type, Batch ID, Item Number, and Organization Code, also include the following information:

Column Type	Description or Example
Revision	Enter the revision where the file will be attached
Entity Type	For revision-based attachments, select ITEM_REVISION
Batch Doc Name	The name of the zip file that contains the attachment files
Attachment Category	Example: Miscellaneous
File Type Name	File, URL, or Text (select File to attach files)
File URL Text	The name of the file inside the zip file. Example: IC_spec.doc
Title	The title you want displayed on the attachments page. Typically, the same as the file name. Example: IC_spec.doc

To import attachments for Manufacturer Parts (MPNs), additionally enter the following data in the EGP_ITEM_ATTACHMENTS_INTF sheet.

Column	Description or Example
Trading Partner Item Number	The manufacturer part number
Trading Partner Number	The Registry ID of the manufacturer
Entity Type	MANUFACTURER_PART_NUMBER

Related Topics

- Watch Video: How to Import Attachments Using FBDI

Import Item Structures

In these procedures, you're an administrator importing item structures.

Before importing a structure, you must create or import all items (including components), and they with their respective revisions, must be available in the Product Development application. Once all the structure items are available in the application, use ItemStructureImportTemplate.xlsm to organize the structure data for import.

The tabs (pages or sheets) in the spreadsheet are as follows:

- Instructions and CSV Generation - use for reference
- EGP_STRUCTURES_INTERFACE
- EGP_COMPONENTS_INTERFACE
- EGP_SUB_COMPS_INTERFACE

- EGP_REF_DESGS_INTERFACE

On the functional sheets, the key column heads are:

- Transaction Type
- Batch ID
- Batch Number
- Structure Name
- Organization Code
- Item Name
- Component Item Name

Summary of the Structure Import Process

Here's an overview of the process:

1. Download the Item Structure Import template file from the following guide: Oracle Fusion Cloud SCM File-Based Data Import (FBDI) for SCM.
2. Enter data in tabs within the Item Structure Import template file.
3. Upload the .zip file to your Oracle Fusion Cloud SCM application.
4. Generate a CSV (.zip) file.
5. Move the data into Item Management interface tables.
6. Import items, then import item structures to Item Management product tables.

Set Up the Spreadsheet

You must plan and decide exactly which items shall become structures and the quantities of each item that shall be required on any specific structure.

1. Open the Item Structure Import spreadsheet template.
2. Use the EGP_STRUCTURES_INTERFACE tab to choose which items will be included in the structure and enter information about each parent item.
    - Choose the Relationships that each item has with any other item in the structure, parent-to-child, or child-to-parent.
    - List the respective parent items in the Structure Item Name column.
3. Use the EGP_COMPONENTS_INTERFACE tab, to enter component information, where each component is listed in the Component Item Name column and its corresponding parent is listed in the Structure Item Name column.

Use the Start Date and End Date columns to define the revision to which a component is assigned, based on the revision's Effectivity date.

- List the child items in the Component Item Name column.

> **Note:** The same component can't be added multiple times with overlapping effective dates. If you must have multiple records of the same component and structure combination, use different non-overlapping dates, as shown here:
>
> - Line 1 for component 1: Start Date = D1, Effective Date = D2, End Date = D3
> - Line 2 for the same component 1: Start Date = D1, Effective Date = D4 (which must be greater than D3), End Date = D5 (greater than or equal to D4)

4. Use the Sequence column, to define the order in which the items will be listed in the structure.

   If this column is blank or includes a duplicate value, the sequence in the new structure is automatically calculated by the application. The new sequence number is calculated by retrieving the highest existing sequence number and adding the predefined increment to this value.

Import Additional Item Structure Data

To include reference designators, use the EGP_REF_DESGS_INTERFACE tab on ItemStructureImportTemplate.xlsm, and provide an effectivity date that matches the component effectivity date.

To add substitute components, use the EGP_SUB_COMPS_INTERFACE tab. When importing either reference designators or substitute components, include the parent components during the same import; this is required because the application expects a 'component' entry in the interface tables.

Import Changes

As part of data migration, you can use the File-Based Data Import (FBDI) to import change orders.

You can import item revisions without change orders, so the importing of change orders is optional.

> **Note:** Make sure to import change orders only after you've imported the item revisions.

Use the Item Import Template to import item revisions, and the Change Order Import Template to import change orders.

> **Note:** Change orders that are still open in Agile PLM won't be imported. Change orders must be completed (Released) in Agile PLM before they can be imported to the Product Development work area.

The following item data must be imported to the Product Development work area before you import change order data:

- Items and attributes that includes Agile PLM item, Page Two, and Page Three data.

  > **Note:** You must configure appropriate flexfields to receive the Agile PLM attribute data before import.

- Item Revisions

  > **Note:** For importing the redlines, the past item revisions needs to be imported using the change order template.

- Manufacturer Parts
- Item AML
- Item Attachments
- Item Structures

Before You Begin

Here's what you need to know before you begin to import changes:

Task	Suggestions
Import Change Order Without Revision Control as the First Change Order	Import a change order without revision control as the first change order for an item. Be sure that there are no changes to the item structure or attachments.
Day-to-day Import Tasks	Use the item batch import feature for day-to-day import tasks. In the Item Import data file, don't specify any new revision for affected items.
Import Redlines from Oracle Agile PLM (or a Legacy Application)	You can use the tab EGO_CHANGE_HISTORY_INT in the Change Order Import Template for migrating change history. No validations are run during the import of the change history data. You can also extract redlines to a PDF or a document and add it to the import spreadsheet as an attachment. You can use the Change Order Import Template to migrate changes along with affected object redlines.
Sequence of Import	You must first import the latest revisions, followed by the older ones.

Steps to Import Change Orders

Firstly, organize the change header data and then organize the change line data.

1. Download the latest `ChangeOrderImportTemplate.xlsm` spreadsheet.
   - Download the Oracle Fusion Cloud SCM: File-Based Data Import (FBDI) for SCM Guide.
   - In Change Orders, click `ChangeOrderImportTemplate.xlsm`.

   > **Note:**
   > - ChangeOrderImportTemplate.xlsm supports import of trading partner reference attributes like Customer, Supplier, Manufacturer, and Source.
   > - ChangeOrderImportTemplate.xlsm supports import of completed problem reports and corrective actions.

2. Follow the instructions provided in the spreadsheet to enter details of the change orders you'd like to import.
3. Generate a CSV (.zip) file.

4. Schedule the import process to copy the data from the .zip file to the interface table.
    - In the Scheduled Processes page, click Schedule New Process.
    - Search for Load Interface File for Import in the Schedule New Process dialog and click OK.
5. Upload the spreadsheet from the Process Details dialog.
    - In the Import Process list, select Import Change Orders.
    - In the Data File list, select the .zip file you generated in a previous step. Note that the search is case-sensitive.
        - Enter the corresponding batch ID, and other details as shown in the table and submit the process. Make sure that the Initiation Date, Implementation Date, and Schedule Date (on the EGO_CHANGE_LINES_INT tab) are the same as the item revision Effectivity Date (found on the Item Import Template revisions tab). For the change header import, use the EGO_CHANGES_INT sheet.

Column	Description or Example
Batch ID	The unique identifier for the import batch
Change Type	Example: Engineering Change Order
Organization Code	Apply the appropriate organization
Change Number	The unique number for the change order. (Make sure the change type is set to User Defined for the number generation.)
Change Name	The name of the change order
Description	The description of the change order
Status Name	The status to assign to this change order
Initiation Date	The date the change order was created
Implementation Date	The date the change order was implemented
Priority	Example: LOW
Reason	Example: COST
Requester	The user to be assigned as the requester
Assigned To	The user who will maintain the change order
Need By Date	The date by which it should be completed

Organize the change lines (affected objects) data using the EGO_CHANGE_LINES_INT sheet. In addition to Transaction Type and Organization Code, include the following information on the sheet:

Column	Description or Example
Change Number	The change number to which this change line applies

Column	Description or Example
Sequence	The order sequence of the change lines in a specific change order
Item Number	Identifies the affected item
Item Revision	Specifies the old revision
Schedule Date	The date when the change line creates the revision; must be the same as the revision effectivity date
New Item Revision	Specifies the new revision

Note:

- ChangeOrderImportTemplate.xlsm doesn't include **SYNC** as a Transaction Type. After opening the template, select the Data ribbon and click **Data Validation**. In the Source property, you can see **CREATE** and **UPDATE** separated by a comma. Add a comma after **UPDATE** and then add **SYNC**. Click **OK**.
- Before you begin your import process, review the best practices for item import performance.
- After you've migrated change orders, you can edit the migrated data only through FBDI. You can't edit migrated changes through the user interface or through web services.

Import Change Orders for Previous Item Revisions

You can import change orders for previous revisions of an item, even if later revisions exist in the Product Development work area.

For example:

- You imported item revisions A, B, and C, using FBDI, but didn't import the change order.
- You then created a new change order on this item from the Product Development work area, creating a new revision D.
- You can migrate the change orders for the previous revisions A to B, and B to C, although revisions C to D (or more) have already been created in the Product Development work area.
- If you've changed the status name in the change order, you can include that name in the spreadsheet.

  Also, see the Import Problem Reports and Corrective Actions topic in the Using Quality Management guide.

Import Changes With Redlines

You can use the FBDI import process and templates to migrate the legacy redline data on completed change orders to Oracle Fusion Cloud, with revision-specific data.

The change order FBDI import process and templates can import the following entities:

- Item standard attributes
- Item extensible flexfields
- AML (Approved Manufacturers List)
- Structure entities
- Item attachments

In addition to EGO_CHANGES_INT, and EGO_CHANGE_LINES_INT sheet, the Change Order Import template includes worksheets that aid in importing change orders with redlines.

Here's the list of the worksheets and the data that can be imported through each sheet:

Worksheet	What You Can Import
EGP_SYSTEM_ITEMS_INTERFACE	Redlines on item attribute data.
EGP_ITEM_REVISIONS_INTERFACE	Items with revisions.
EGO_ITEM_INTF_EFF_B	Changes on extensible flexfield attributes of the item.
EGO_ITEM_INTF_EFF_TL	Changes on translatable extensible flexfield attributes of the item.
EGP_ITEM_ATTACHMENTS_INTF	Item attachments and redlines on the attachments.
EGP_ITEM_RELATIONSHIPS_INTF	Item AMLs and AML redlines.
EGP_STRUCTURES_INTERFACE	Structure headers, like primary structure, alternate structure, and so on.
EGP_COMPONENTS_INTERFACE	Structure components and component redlines.
EGP_REF_DESGS_INTERFACE	Reference designators on the components and the redlines for addition and deletion of reference designators.

Key Columns to Capture Redlines

Change Order Number - change number through which the item changes are being imported.

Redline Record Type - type of redline record for an item. You can select one of the following values depending on the action performed on the change and the sheet you use:

- History – initial (or previous) revision.
- Change –redline (or modification) made to the item.
- Add – Addition of components, substitutes, and item entities such as AML, attachments, and extensible flexfields.
- Delete – Deletion of components, substitutes, and item entities such as AML, attachments, and extensible flexfields.
- Production – Data related to the new revision generated through the change order.

Here are the Redline Record Type supported for the interface tables.

Interface Table	Supported Redline Record Type
EGP_SYSTEM_ITEMS_INTERFACE	• History – can be used to record the item attributes of the previous revision of the item that's undergoing a change. • Change – can be used to record the updates on the item that will be marked as redlines.
EGO_ITEM_INTF_EFF_B	• History • Change

Interface Table	Supported Redline Record Type
	• Add • Delete **Note:** When you import item extensible flexfields, if you've item extensible flexfields carried forward to the newer item revision, you must create a history record for the item extensible flexfields in all revisions, even if the item extensible flexfields have no updates.
EGO_ITEM_INTF_EFF_TL	• History • Change • Add • Delete
EGP_ITEM_ATTACHMENTS_INTF	• History • Change • Add • Delete **Note:** When you've multiple versions of the same attachment associated with different item revisions, you must specify the Document ID of the attachment in the **DM_DOCUMENT_ID** column. This is required to associate the correct revisions of the attachment to the item revision. When you import item attachments, if you've item attachment carried forward to the newer item revision, you must create a history record for the attachment in all revisions, even if the item attachments have no updates.
EGP_ITEM_RELATIONSHIPS_INTF	• History • Change • Add • Delete **Note:** If you've an AML carried forward to the newer item revision in the AML import, you must have the Redline Record Type value as HISTORY for that AML in all revisions, even if the AML has no updates.
EGP_COMPONENTS_INTERFACE	• History: Used to capture the item revision structure details for the preliminary revision only. It isn't required for subsequent revision imports. • Production: Used to capture the updated details of the item structure after the change has been implemented. Unlike item and its entities import where the History record is taken as an input, the structure entity import will consider the PRODUCTION record and mark the redlines. • Add • Delete

Interface Table	Supported Redline Record Type
	• Change • Replace: Used to replace a component by including the component being replaced in Component Item Name column and component which is replacing the existing one in the Replace By column. Attribute values on the Replace action row should reflect the production data of the component in the Replaced By column.
EGP_REF_DESGS_INTERFACE	• History • Add • Delete

There are two ways in which you can import the legacy redline data on the completed change orders to the Oracle Fusion Cloud:

- Import the latest revision first and then import the older revision using the change order import process with redlines in the same phase of Go Live.
- Import the latest revision as part of phase 1 Go Live and then import older revisions using the change order import process with redlines in phase 2.

Import in Phase One of Go Live

Prerequisites:

1. Upload all the attachment files to the Oracle Universal Content Management or the vault.
2. Store the document ID from the response and use it in the change order import template.
3. Load all the manufacturers.

In this process, the items, attachments, and components are imported into the application.

Steps:

1. Use the template ItemImportTemplate.xlsm to import the latest released revisions (current revision) of the item, including standard attributes, extensible flexfields, AMLs, and attachments.
2. Use the template ItemStructureImportTemplate.xlsm to import the structure entities of the latest revision on the item.
3. Use the template ChangeOrderImportTemplate.xlsm and the change import process to import the redlines on the completed change order, which will also populates the revision-specific data on the items, attachments, and structures.

Note: The component item revision that you want to add to the structure must be imported with the change order used to import structure changes or must be imported before the change order if it's part of a different change order.

Import Phase by Phase for Go Live

In phase one, import the latest revision of all top-level items and their components along with their attachments.

Prerequisites:

1. Upload all the attachment files to the Oracle Universal Content Management or the vault.
2. Store the document ID from the response and use it in the change order import template.
3. Load all manufacturers.

Steps:

1. Use the template ItemImportTemplate.xlsm to import the latest revision of the item, including standard attributes, extensible flexfields, approved manufacturers list and attachments.
2. Use the template ItemStructureImportTemplate.xlsm to import the structure entities of the latest revision on the item.

In phase two, import all historical revisions in the application as per the date specified.

Prerequisites:

1. Upload all the attachment files to the Oracle Universal Content Management or the vault.
2. Store the document ID from the response and use it in the change order import template.
3. Load all manufacturers.

Steps:

1. Import the latest released revision of the related component items from the past item revisions, substitute component items, and manufacturer part numbers, if you haven't imported them already with the latest revision data.
2. Use the template ChangeOrderImportTemplate.xlsm and the change import process to import the redlines on the completed change order that will also populate the revision-specific data on items, AMLs, attachments, and structures.

Note: The component item revision that you want to add to the structure must be imported with the change order used to import structure changes or must be imported before the change order if it's part of a different change order.

Considerations:

- When you migrate item and structure redlines of historical item revisions, you must first migrate the oldest effective change order and continue the migration in a sequence based on the next oldest effective date. The import can be done using a single item batch or split across multiple batches based on the size of each batch.
- Import all the items entities such as manufacturer part numbers, attachments, and its related structure entities such as components and substitute component first, before starting the change migration process.
- When you import attachments for item revisions, ensure that the sheet EGP_ITEM_REVISIONS_INTERFACE (in the template ChangeOrderImportTemplateSample.xlsm) includes all the details of the revisions and is included in a single item batch.

- When you import item revisions using the EGP_ITEM_REVISIONS_INTERFACE sheet, you must specify both the Effectivity Date and the End Effectivity Date for each revision. These dates are required for migrating past revision data.

  Effectivity Date is the start date when the item revision becomes effective.

  End Effectivity Date is the date when the item revision is no longer effective.

  Ensure that these effectivity dates don't overlap with the effectivity date range of another revision.

  Note:
  - The date entered in the End Effectivity Date column must be greater than the one entered in the Effectivity Date column.
  - You must enter a start date for the revision that's after the latest version start date of the previous revision.
  - The date entered in the End Effectivity Date column for the revision must be greater than the latest version start date of the previous revision.
  - The date entered in the End Effectivity Date column must match the Effectivity Start Date of the next revision.

Related Topics
- Best Practices for Item Import Performance

Automate Data Import and Publication

You can automate part of the processes of importing and of publishing data by using scheduled processes in conjunction with SOAP web services.

Data Import

You can programmatically import item data using a web service.

This table introduces the pieces of the automated item data import solution, and the role that each piece plays.

Role	Piece
Data to be imported	Files uploaded to the Oracle WebCenter Content repository, with a manifest file that specifies the import files.
Scheduled process to import item data from a source system	Schedule Product Upload Job

Role	Piece
SOAP web service to submit the scheduled process programmatically	`ErpIntegrationService.submitESSJobRequest` For information, see the SOAP Web Services for Oracle Financials Cloud guide
SOAP web service to fetch the current status of the scheduled process.	`ItemBatchMaintenanceService.getRequestStatus` For information, see the Oracle Fusion Cloud SCM: SOAP Web Services for SCM guide.

SOAP service data objects to provide information on the status and attributes of the import service request	`Request Status`
	`Product Upload Request Status`
	For information about SOAP service data objects, see the Oracle Fusion Cloud SCM: SOAP Web Services for SCM guide.

Security privileges required to call web services	Import Item privilege For more information on privileges, see the Oracle Fusion Cloud SCM: Security Reference for Product Management guide.

1. Place one or more source data files under Contribution Folders in the Oracle WebCenter Content repository.
2. Under Contribution Folders, provide a manifest file, in CSV format. The manifest guides the upload process to the source data files. The manifest file must contain the following columns:
    - Template: The name of the import map that's to be used for uploading the data from the data source file.
    - File Path: The relative path in Oracle WebCenter Content to each data source file to be uploaded.
    - Attachments File Path: The relative path in Oracle WebCenter Content to each optional compressed file containing the files that are to be attached to items.

    Each row of the manifest file specifies a data file. Here is a sample manifest file:

    ```
    Template,File Path,Attachments File Path
    Product Map,/Contribution Folders/products.csv,/Contribution Folders/attachments.zip
    Structures Map,/Contribution Folders/structures.csv,
    ```

3. Using the web service `ErpIntegrationService.submitESSJobRequest`, schedule the scheduled process Schedule Product Upload Job, to import the source data files specified in the manifest, from Oracle WebCenter Content to the interface tables for Product Hub. You are responsible for providing infrastructure to call this web service.

    The request payload elements for this service call are:

Element	Value
jobPackageName	`/oracle/apps/ess/scm/productHub/itemImport/`
jobDefinitionName	`ExtProductUploadSchedulingJobDef`
paramList	A list of strings:

Element	Value
	○ `ManifestFileName(/Contribution Folders/ProductManifest.csv)`, where `ProductManifest.csv` is an example file name. ○ The spoke system code for the import source system.

The response payload from the service call is the request ID for the scheduled process. (On the Overview page in the Scheduled Processes work area, this ID is called Process ID.) Record this ID to use in the request payload for the web service `ItemBatchMaintenanceService.getRequestStatus`, to monitor the progress of the import.

4. When the scheduled process runs, it reads the manifest file and uploads data from the specified CSV, XML, or Attachments files to the Product Hub interface tables.
5. The process creates a new item batch for each row of the manifest file, and uploads the data from the CSV, XML, or Attachments files to the interface tables, according to each item batch, using the import map specified for that row.
6. The process runs the process Item Import to move the data from the interface tables to the production tables.

Monitoring an Import

You can use a web service to programmatically monitor an import of item data.

1. Set up polling for the web service `ItemBatchMaintenanceService.getRequestStatus`.
2. The request payload for `getRequestStatus` must contain the request ID returned when you called the web service `ErpIntegrationService.submitESSJobRequest`. Pass this ID as the value for the element BINDREQUESTID.
3. The response payload for `getRequestStatus` is the service data object `Request Status`, which contains the service data object `Product Upload Request Status`. These objects are described in the Oracle Fusion Cloud SCM: SOAP Web Services for SCM guide. They contain many attributes that describe the status of the process. You can set up your solution to read those attributes and provide their information to your users.

You can also monitor processes manually, on the Overview page in the Scheduled Processes work area.

Data Publication

You can programmatically publish item data using a web service.

This table introduces the pieces of the automated item data publication solution, and the role that each piece plays.

Role	Piece
Data to be published	Files published from the Product Hub production tables to files in the Oracle WebCenter Content.
Scheduled process to publish item data to a source system	Product Hub Publication Job For more information about this scheduled process, see the topic about defining the schedule and parameters for the Product Hub Publication Job scheduled process in the Oracle Fusion Cloud SCM: Using Product Master Data Management guide.
SOAP web service to submit the scheduled process programmatically	`ErpIntegrationService.submitESSJobRequest` For information about `ErpIntegrationService`, see the Oracle Fusion Cloud SCM: SOAP Web Services for SCM guide.

Role	Piece
SOAP web service to fetch the current status of the scheduled process	**`ItemBatchMaintenanceService.getRequestStatus`** For information about **`ItemBatchMaintenanceService`**, see the Oracle Fusion Cloud SCM: SOAP Web Services for SCM guide.
SOAP service data objects to provide information on the status and attributes of the publication service request	**`Request Status`** **`Product Upload Request Status`** For information about SOAP service data objects, see the Oracle Fusion Cloud SCM: SOAP Web Services for SCM guide.
Security privileges required to call web services	Publish Items privilege For more information on privileges, see the Oracle Fusion Cloud SCM: Security Reference for Product Management guide.

1. Determine which source system you want to publish data to.
2. Using the web service **`ErpIntegrationService.submitESSJobRequest`**, schedule the scheduled process Product Hub Publication Job, to publish the source data to a file in Oracle WebCenter Content. You are responsible for providing infrastructure to call this web service.

   The request payload elements for this service call are:

Element	Value
jobPackageName	**`/oracle/apps/ess/scm/productModel/items/`**
jobDefinitionName	**`PimPublicationJobDef`**
paramList	A list of strings corresponding to the parameters described in the topic about the Product Hub Publication scheduled process in the Using Product Master Data Management guide. The required parameters are Spoke System and Folder Location.

   The response payload from the service call is the request ID from the scheduled process. Record this ID to use in identifying the published data.
3. The Product Hub Publication Job process publishes the data from the production tables to a file in Oracle WebCenter Content.
4. Run the web service **`ItemBatchMaintenanceService.getRequestStatus`**, passing the request ID from the scheduled process in the request payload.

   The file is identified by the **`PublicationDocumentId`** and **`PublicationFileName`** attributes of the **`Publication Request Status`** object returned in the response payload by **`ItemBatchMaintenanceService.getRequestStatus`**. These attributes identify the published document in Oracle WebCenter Content.
5. Use the repository tools to download the published file.

Monitoring a Publication

You can use a web service to programmatically monitor a publication of item data.

The procedure for monitoring a publication is the same as for monitoring an import, except for this difference when you call the web service `ItemBatchMaintenanceService.getRequestStatus`:

- As with import, the response payload for `getRequestStatus` is the service data object `Request Status`.
- But, for publication, `Request Status` contains the service data object `Publication Request Status` (instead of `Product Upload Request Status`).
- The attributes of the `Publication Request Status` object provide:
  - The `Request Id` of the scheduled publication process
  - The `PublicationDocumentId` and `PublicationFileName` of the published document in Oracle WebCenter Content.

Related Topics

- Publish Item Objects
- SOAP Web Services for Oracle Financials Cloud
- Oracle Fusion Cloud SCM: SOAP Web Services for SCM guide
- Importing Item Data Using Import Maps

FAQs for Defining Imports

How can I import different revisions of an item structure

You must first import the item and its revisions, and then import the item structure.

To import the item and its revisions, use the item import template. Here are the key fields:

In the EGP_SYSTEM_ITEMS_INTERFACE sheet

- Batch_id
- Item_number
- Organization Code
- Description
- Item Class Name
- Primary Unit of Measure
- Lifecycle Phase
- Engineered Item Flag: Set this to Y for an engineering item.

In the EGP_ITEM_REVISIONS_INTERFACE sheet: Enter details for each item revision in a separate row.

- Batch_id
- Item_number

- Revision: The revision number. Create a separate row for each revision.
- Effectivity_date: The effectivity date for each revision of the item. Enter this in YYYY/MM/DD format.

To import the item structure, use the item structure import template file. Here are the key fields:

In the EGP_STRUCTURES_INTERFACE sheet:

- Batch ID
- Structure Name : the structure type.
- Item Name: the parent item.

> **Note:** Enter the details of each structure is a separate row.

In the EGP_COMPONENTS_INTERFACE sheet:

- Component Item Name: The component item number.
- Structure Item Name: The parent item number.
- Item Sequence
- Start Date: The component effectivity date for each revision. This must be same as the effectivity date you enter for each item revision in the item import template.

Related Topics

- Overview of Import Items
- Import Item Structures

What kind of item relationships can I create with FBDI?

Item relationships such as Item Cross Reference, Related Item, Trading Partner Items (Competitor, Customer, Manufacturer Part Number), and GTIN Cross Reference can be created. The value entered in the Item Relationship Type column determines the type of relationship that can be created.

How do I create Trading Partner Items with FBDI?

The EGP_TRADING_PARTNER_ITEMS_INTF worksheet must be populated with the following details:

Column	Value
Trading partner Item Number	Trading partner item number
Trading partner Item Description	Trading partner item description
Trading Partner Type	Type of trading partner item (MANUFACTURER, COMPETITOR, or CUSTOMER)
Trading Partner Number	Trading partner number

Column	Value
Item Relationship Type	CUSTOMER_ITEM_XREF
Item Number	Product Hub item number
Trading Partner Item Number	Manufacturer, competitor, or customer item number
Description	Manufacturer, competitor, or customer item number

Note: All other mandatory columns must populated.

How do I import a GTIN cross reference with FBDI?

The EGP_ITEM_RELATIONSHIPS_INTF worksheet must be populated with the following details:

Column	Value
Item Relationship Type	GTIN
Sub Type	Party type (Customer, Manufacturer, or Supplier)
Cross Reference	Enter the GTIN number
EPC GTIN Serial	Enter the electronic product code GTIN serial number
UOM	GTIN UOM

Note: All other mandatory columns must be populated.

How do I import a Customer Item relationship item with FBDI?

The EGP_ITEM_RELATIONSHIPS_INTF worksheet must be populated with the following details:

Column	Value
Item Relationship Type	CUSTOMER_ITEM_XREF
Item Number	Enter the Product Hub item number.
Trading Partner Item Number	Customer item number
Description	Customer item description

Note: All other mandatory columns must populated.

How do I import a MPN relationship item with FBDI?

The EGP_ITEM_RELATIONSHIPS_INTF worksheet must be populated with the following details:

Column	Value
Item Relationship Type	MFG_PART_NUM
Item Number	Enter the Product Hub item number.
Trading Partner Item Number	MPN number
Description	MPN description

Note: All other mandatory columns must be populated.

How do I import a competitor item relationship with FBDI?

The EGP_ITEM_RELATIONSHIPS_INTF worksheet must be populated with the following details:

Column	Value
Item Relationship Type	COMPETITOR_ITEM_XREF
Item Number	Enter the Product Hub item number.

Column	Value
Trading Partner Item Number	Competitor item number
Description	Competitor item description

Note: All other mandatory columns must be populated.

How do I import a related item with FBDI?

The EGP_ITEM_RELATIONSHIPS_INTF worksheet must be populated with the following details:

Column	Value
Item Relationship Type	ITEM_XREF
Description	Enter a relationship description.
Related Item Number	Item number
Sub Type	Related item type. The values for this can be searched from the lookup EGP_RELATIONSHIP_TYPE.
Start Date	Enter the start date.
End Date	Enter the end date.
Reciprocal	Enter Y or N.
Planning Enabled	Enter Y or N.

Note: All other mandatory columns must populated.

How do I import Spoke System Item relationship to an item with FBDI?

To import Spoke System Item relationship to an item with FBDI:

1. Go to the **Manage Item Batches** task.
2. Create a new item batch using the same spoke system that you want to associate to the item.
3. Populate the EGP_SYSTEM_ITEMS_INTERFACE worksheet with the following details:

Column	Value
Transaction Type	SYNC
Batch ID	Generated from step 1
Item Number	Product Hub item number
Organization Code	Master organization code
Source System Code	Spoke system name
Source System Reference	Spoke system item
Source System Reference Description	Spoke system item description

4. Generate a CSV file from the worksheet. The CSV file is created in a zip file.
5. Upload the CSV file using the **Load Interface File for Import ESS** job.
6. Run the **Item Import ESS** job.
7. After the ESS job is completed, the spoke system name is displayed under **Relationships** > **Spoke System Items** for an item.

When importing items via FBDI, how does the system identify the items that must be updated? What are the key columns?

The system identifies the items that must be updated based on the Transaction Type column. If Transaction Type is set to Sync, during import if the item exists in the database, then the item is updated. If the item doesn't exist in the database, then it is created. The other key columns for updating the item are:

- Item Number
- Organization Code
- Batch ID
- Batch Number

16 Guided Task Flows

Overview of Guided Task Flows

Administrators can create and manage guided task flows for mass change processes by selecting task flows from a library. Users can then run the guided task flow and perform the mass change process.

An administrator can create distinct guided task flows by copying and editing the predefined tasks to create their own task. Any number of personalized guided task flows can be created to support a user's distinct update requirements and use cases. When you're configuring the task flow, you're establishing the guidelines for runtime.

Guided task flows provides three action tasks that support mass change processes:

- Configure Guided Tasks
- Perform Guided Tasks
- View Guided Tasks

Related Topics

- Configure Guided Task Flows
- Enable Guided Task Flows

Enable Guided Task Flows

To enable guided task flow:

1. Make sure that an employee record is associated with the user. For more information, see *Options for Creating HCM Application Users* section in the Oracle Fusion Cloud HCM: Securing HCM guide, available on the *Oracle Help Center*. Also, see the Oracle Fusion Cloud HCM: *Open Contextual Journeys When Using Redwood Pages* What's New available on the *Oracle Help Center*.
2. Set the profile options. Use the **Manage Administrator Profile Values** task in the Setup and Maintenance work area to review and configure the profile options provides in the following table.

Profile Option Code	Profile Display Name	Profile Option Description	Profile Level	Profile Value
ORA_FND_SEARCH_EXT_ ENABLED	Enable/Disable Search Ext Framework	Check if Search Extension is enabled.	Site	Yes
HRC_ELASTIC_SEARCH_ ENABLED	HRC: Enable Elastic Search	Enable Elastic Search-based search engine for HCM objects search.	Site	Y

Profile Option Code	Profile Display Name	Profile Option Description	Profile Level	Profile Value
PER_SEARCH_LOGIN_EVENT_PUB	PER: User Login Event Publication for Search	Method of publication of user login events for HCM objects search purpose.	Site	ATOM
ORA_PER_CHK_ORACLE_SEARCH_INDEX_ENABLED	Oracle Search Index for Journeys Enabled	Enable Oracle Search index for Journeys. This needs to be set before doing the initial ingest or any incremental ingestion. If this isn't enabled, no elastic ingestion will happen.	Site	Y
ORA_PER_JOURNEYS_ENABLED	Journeys UI Enabled	If you set this site-level option to Y you can use Journeys to manage all journey categories be it predefined or user-defined from a single place. When you enable Journeys, the Onboarding and Checklists Tasks apps aren't available.	Site	Y
ORA_PER_CHK_ORACLE_SEARCH_UI_ENABLED	Oracle Search for Journeys Enabled	Enable Oracle Search for Journeys for My Journeys, Team Journeys, and Organization Journeys UIs. Enabling this profile option will display Team Journeys and Organization Journeys tab instead of existing Assigned Journeys tab.	Site	Y
ORA_PER_CHK_ORACLE_SEARCH_DIRECT_INGEST_ENABLED	Direct Uptake of Data for Oracle Search in Journeys Enabled	Enable direct uptake of data for Oracle Search in Journeys. This profile option enables direct ingestion during UI operations instead of the default near real time ingestion. This only affects incremental ingestion during any updates happening in the UI. The ingestion bypasses the queue and is directly done on the index which guarantees the elastic-based journeys UI to show latest data immediately.	Site	Y

3. Run the scheduled process **ESS job to create index definition and perform initial ingest to OSCS** with the **Index Name to Reingest** parameter set to the appropriate index for the feature. Run this process for the following indexes:
    - fa-hcm-workerjourney
    - fa-hcm-workerjourneytask
    - fa-hcm-acl

    You must rerun this process after P2T.

After running the scheduled process for the indexes, the administrator must create and configure the guide task flow that allows users to perform mass changes.

Related Topics

- Configure Guided Task Flows

Configure Guided Task Flows

You can create and configure a guided task flow that providing global constraints, that guide the users to select the correct data for the tasks within the flow. For example, you can provide a master organization value that's used in searches within the flow or select processing options such as submit changes to change orders. In addition, you can configure each task within the flow to control labels presented to the user and further task level constraints.

After configuring the guided task, the Administrator activates the flow to make the flow available for all users.

You can configure a guided task flow using **Configure Guided Tasks** under **Product Management Experience** on the **Tasks** panel tab. When creating a guided task flow, you must provide the following information:

- Basic details such as category, name, code, description and so on.
- Add a background image
- Configure criteria
- Add tasks
- Enable data security and add security operations

You can configure guided task flow for the following:

- *Mass Update Item Attributes*
- *Mass Component Replacement*

Additional Features When Configuring Guided Tasks

Here are additional features that you can use on the Configure Guided Tasks page:

- **View Tasks for a Guided Task Flow**:

  To view the list of tasks for a guided task flow, on the Configure Guided Tasks page, click **Tasks** in the **Actions** column for a guided task flow for which you want to view the tasks. A drawer appears that lists the tasks associated with the guided task flow.

- **Export Guided Task**:

  To export a guided task, on the Configure Guided Tasks page, for the guided task that you want to export, click in the **Actions** column and select **Export**. The guided task is exported to an XML file and downloaded to your system automatically.

- **Delete Guided Task**:

  To delete a guided task flow, on the Configure Guided Tasks page, for the guided task that you want to delete, click in the **Actions** column and select **Delete**. A message appears asking for confirmation. Click **Delete**. The guided task is deleted.

- **Sort Guided Tasks**:

  To sort guided tasks, on the Configure Guided Tasks page, click Sort By and select any of the following options:
  - Name A-Z
  - Name Z-A
  - Last Updated – Latest to Oldest
  - Last Updated – Oldest to Latest

- **Show/Hide Columns**:

  To set the columns, on the Configure Guided Tasks page, click the **Columns** icon. In the Columns window, use the icon to drag-and-drop the column names between the **Show** and **Hide** sections. You can also click the checkbox to show or hide columns. You can show/hide the following columns:
  - Name
  - Status
  - Category
  - Last Updated
  - Last Updated By
  - Date From
  - Country

Configure Guided Task Flow to Mass Update Item Attributes

You can use guided tasks to perform a mass change of item attributes using the predefined process from the guided task library. The item attribute change tasks guide a user through the steps to change attributes for a large set of items.

This flow allows the user to select a set of items and change attributes within the items using a spreadsheet.

To configure a guide task to update mass item attribute changes:

1. In the Product Development or Product Information Management work area, click the **Tasks** panel tab and then click **Configure Guided Tasks** under **Product Management Experience**.

   The Configure Guided Tasks page is displayed.

2. Click **Create**.

   The New Guided Task drawer appears on the right side.
3. Provide the following information:
   - **Category**: Category of the guided task flow. Select **Update Item Attributes**.
   - **Name**: Name of the guided task flow
   - **Code**: Code is autogenerated from the **Name** field.
   - **Archive after how many months?**: Allows guided task flows that hasn't started to be archived. The default value is 12 months.
4. Click **Create Draft**.

   The task flow details page is displayed, where you can provide the following information:
   - Basic details
   - Add a background image
   - Configure criteria
   - Add tasks
5. After specifying the preceding information, click **Activate** to activate the guided task flow. Only if the guided task flow is activated, users can run the task flow.

Basic Details

Click the **Edit Basic Details** icon and you can provide the following information.

Attribute	Description
Add a journey title	Administrators can change the journeys title from the default.
Add a journey subtitle	Administrators can change the journeys sub title from the default.
Description	Enter a description for the guided tasks.
Display Name Format on Template Card	Specified format controls the card title in Perform
Purge after how many months?	This is standard for guided task flows and allows the removing the guided task flows that are activated but not started by users.

You can also change the **Name**, **Code**, **Description**, and **Archive after how many months?** attributes.

Click **Save** after entering the required information.

Add a background image

Click **Add**, upload a background image, and click **Save**. The recommended image size is 2 MB.

Configure Criteria

To add attributes, select the attribute and the value, and then click the **Submit** icon in the **Action** column. The attribute is added as a row. To delete an attribute, select all or the required attributes and click **Delete**.

Add Tasks

To add a task for a guided task flow:

1. In the **Tasks** section, click **Add**.
   The New Task drawer appears on the right side.
2. Specify the following information.

Attribute Name	Description
Task Name	Name of the task
Task Description	Description about the task.
Status	Indicate whether the task in Active or Inactive
Sequence	Select the order of the task.
Code	Code is autogenerated from the **Task Name** field.
Make this task mandatory	Always set as **No**.
Add instructions for this task	Provide details about the task.
Task Type	Select one of the following options: o Document o External URL o Manual Task o Video
Task URL	If the task type is external, then the user enters a URL in the box. When the guided task flow is run and task is launched and the task displays the content for the URL.
Open URL on the same page	Opens the task URL in the same page instead of a opening in a new browser tab.
When does the task expire?	Indicates the date when the task expires. Use the default value that's displayed.
After how many days?	Indicates how long the task will be available to the user who will run the guided task.

3. Click **Save**.
   The task is added to the Tasks section. Repeat the step to add more tasks.

Configure Guided Task Flow for Mass Component Replacement

You can configure the steps for performing a mass replacement of a component on multiple item structures. Here's how:

1. Select **Configure Guided Tasks** in the **Product Management Experience** panel tab.
2. On the Configure Guided Tasks page, click **Create**.

3. On the New Guided Task page, select **Component Replacement** in the **Category** list. Enter the task details and click **Create Draft**.
4. Configure Criteria: Select and organization and change type.

   You can select one Organization and one Change Type to configure your criteria so that when you run your guided task, the component search will be confined within the selected organization for that guided task and the replacement change can be routed through the selected base change type.

   > **Note:** The search will return many results when you don't select an organization or a change type.

5. Task: Click **Add** and add task details on the New Task page. Each task can have required fields which must be entered. Click **Save**.
6. Click **Activate**.

17 Audit History

Setup Tasks for Audit History in Product Management

Before you can use audit policies in Oracle Product Hub, you must complete this task in the Setup and Maintenance work area.

Task	Description
Manage Audit Policies	The Manage Audit Policy task lists Product Hub business objects and their attributes available for audit. You can re-calibrate your audit policy to suit changing business needs.

Audit Trail

Use audit trail to identify Product Hub business objects that you want to track for data changes and object definition changes.

You can review the change history online. You can also export it into spreadsheet and review the change history offline. In order to audit changes, you must define an audit policy.

The Manage Audit Policy task lists all the Product Hub business objects and their attributes that are available for audit. You can access this task from the following in the Setup and Maintenance work area:

- Offering: Product Management
- Functional Area: Audit Trail
- Task: Manage Audit Policies

You can define your audit policy by selecting the objects and the attributes. For auditing descriptive flexfields, select the business object and click **Create**. Then, select the **Flexfields (Additional Attributes)** check box from the Audited Attributes column. You can now select all the additional attributes for audit purposes.

When you change the Product Hub business objects listed in the audit policy, the application logs who (user ID) changed what (add, or update, or delete) and when (date and time). The changes are recorded only for the objects and attributes that are members of the audit policy.

These data changes are tracked and logged for:

- Data inserts
- Data updates
- Data deletions

Additionally, the user activities on attachments such as Attachment Check-In, Attachment Checkout, Attachment Cancel Checkout, and Attachment Download are tracked and logged for the following list of attachment business objects if the attachments type is Text, File, or Repository File/Folder:

- Item Attachments
- Item Revision Attachments
- Change Object Attachments
- Structure Attachments
- Catalog Attachments
- Category Attachments

Audit Trail Versus New Item Request and Changes Orders

Audit trail is not the same functionality as the New Item Request or Change Order functionality. New item requests and change orders are approval-oriented changes. Audit trail automatically logs data change events that were triggered by any functionality, including new item requests and change orders.

Search Parameter and Result

This table lists the search parameters that are used in the audit and the outcome of their selection in the detailed report.

Search Parameter	Result of Selection
Business Object Type	Narrows the search results to that specific business object within the selected product.
Include Child Objects	Displays entire child objects that were listed in the business object when the audit was set up. **Note:** This displays the objects at the immediate parent-child level only. To view the children at subsequent levels, select the child object as the business object type and search again.
Show Attribute Details	• Displays the name of each attribute you have created, updated, or deleted, and the corresponding old and replaced values. • Enables the attribute list so that you can select a specific attribute and view its change record. • Enables the Show Extended Object Identifier Columns check box to display.
Show additional object identifier columns	Displays the instances (contexts) in which the business object was used. The context values identify the objects and the transactions in which they were used. Each context is unique and assigns a unique description to the business object. For example, if an item is made purchasable in a child organization, then the child organization is listed as the context.

Access Audit Reports

To access the audit reports and view the tracked changes, click **Navigator** > **Audit Reports**.

For example, watch the following video that shows the audit information about attachment activities for an item.

Watch video

Enable Auditing for Configured Objects

You can configure specific objects and attributes using audit policies, which can then be audited for configuration changes.

Once you enable the objects for audit, navigate to Audit Reports, and view changes such as when the object or its configured attributes were created, updated, or deleted.

1. Navigate to the **Setup and Maintenance > Product Management > Audit Trail** functional area.
2. Click the **Manage Audit Policies** task.
3. Click **Configure Business Object Attributes** to set objects which will be a part of the audit.
4. From the Product list, select **Product Hub** for configured objects.

Objects You Can Enable for Audit in Oracle Product Hub

Product Management offering has made available several business objects (includes Oracle Product Hub and Oracle Product Development) for you to enable auditing. In the Manage Audit Policies page, the available business objects are grouped under six top-level parent nodes:

- Items
- Trading Partner Items
- Catalogs
- Item Class
- Rule Sets
- Changes

Each of these parent nodes have multiple child nodes in a convenient hierarchy of parent-child format. Prior to enabling a specific child object for auditing, you must enable all the higher nodes in its hierarchy.

Business Objects in Items Node

The following table provides the business objects for Items parent node.

Node Name	Node Description	Parent Node
Items	Includes a collection of business objects that maintain item data	
Item	Item operational attributes	Items
Item Revision	Includes a collection of business objects that maintain item revision data	Item

Node Name	Node Description	Parent Node
Item Revision Extensible Flexfield	Item revision level extensible flexfield attributes	Item Revision
Item Revision Attachments	Item revision level attachment attributes	Item Revision
Item Category Association	Item category association attributes	Item
Item Attachments	Item level attachment attributes	Item
Item People	Item security attributes	Item
Item Extensible Flexfields Security	Item extensible flexfield security attributes	Item
Item Structure	Item structure attributes	Item
Item Structure Component	Item structure component attributes	Item Structure
Item Structure Reference Designator	Item structure reference designator attributes	Item Structure Component
Item Substitute Component	Item substitute component attributes	Item Structure Component
Structure Attachments	Item structure attachment attributes	Item Structure
Item Supplier Association	Includes a collection of business objects that maintain item supplier level data	Item
Item Supplier Extensible Flexfield	Item supplier level extensible flexfield attributes	Item Supplier Association
Item Extensible Flexfield	Item level extensible flexfield attributes	Item
Pack	Includes a collection of business objects that maintain pack data	Item
Pack Component	Pack component attributes	Pack
Item Relationship Descriptive Flexfield	Item relationship descriptive flexfield attributes	Item
Competitor Item Relationship	Competitor item relationship attributes	Item
Customer Item Relationship	Customer item relationship attributes	Item
GTIN Item Relationship	GTIN item relationship attributes	Item
Cross-reference Item Relationship	Cross-reference item relationship attributes	Item
Manufacturer Item Relationship	Manufacturer item relationship attributes	Item
Related Item Relationship	Related item relationship attributes	Item
Spoke System Item Relationship	Spoke system item relationship attributes	Item
Supplier Item Relationship	Supplier item relationship attributes	Item
Item Organization Association	Item organization association attributes	Item

Business Objects in Trading Partner Items Node

The following table provides the business objects for Trading Partner Items parent node.

Node Name	Node Description	Parent Node
Trading Partner Items	Include a collection of business objects that maintain trading partner item attributes. Customer, Competitor, Supplier, and Manufacturer are the types of trading partner items.	
Trading Partner Item Descriptive Flexfield	Trading partner (Customer, Competitor, Supplier, and Manufacturer) descriptive flexfield attributes	Trading Partner Items
Competitor Items	Competitor items attributes	Trading Partner Items
Competitor Item Attachments	Competitor item attachments attributes	Competitor Items
Customer Items	Customer items attributes	Trading Partner Items
Customer Item Attachments	Customer item attachments attributes	Customer Items
Manufacturer Items	Manufacturer items attributes	Trading Partner Items
Manufacturer Item Attachments	Manufacturer item attachments attributes	Manufacturer Items
Supplier Items	Supplier items attributes	Trading Partner Items
Supplier Item Attachments	Supplier item attachments attributes	Supplier Items
Linked Supplier Item Relationship	Linked supplier item relationship attributes	Manufacturer Item Relationship
Linked MPN Relationships	Linked MPN relationship attributes	Supplier Item Relationship

Business Objects in Catalogs Node

The following table provides the business objects for the Catalogs parent node.

Node Name	Node Description	Parent Node
Catalogs	This node includes a collection of business objects that maintain catalog/category data.	
Catalog	Catalog header level attributes and descriptive flexfields	Catalogs
Category	Category header level attributes and descriptive flexfields	Catalog
Category Attachment	Category header level attachment attributes	Category
Category People	Category security attributes	Category
Catalog Attachment	Catalog header level attachment attributes	Catalog
Catalog People	Catalog security attributes	Catalog

Note: To view trading partner reference attributes in audit reports for change orders, problem reports, and corrective actions, enable the attributes Customer, Supplier, Source, and Manufacturer for audit.

Business Objects in Item Class Node

The following table provides the business objects for the Item Class parent node.

Node Name	Node Description	Parent Node
Item Class	Include a collection of business objects that maintain item class setup data	
Item Class	Item class attributes	Item Class
Attachment Categories	Attachment categories attributes	Item Class
Item Number Generation Method	Item number generation method attributes	Item Class
Item Description Generation Method	Item description generation method attributes	Item Class
Configured Item Number Generation Method	Configured item number generation method attributes	Item Class
Item Class People	Item class people attributes	Item Class
Item Class People Extensible Flexfields Security	Item class people extensible flexfields security attributes	Item Class
Data Quality	Data quality attributes	Item Class
Item Overview	Item overview attributes	Item Class
Pages	Pages attributes	Item Class
Attribute Groups	Includes a collection of attribute group objects	Item Class
Descriptive Flexfield Context	Attribute group header attributes	Attribute Groups
Descriptive Flexfield Segment	Attribute group segment attributes	Descriptive Flexfield Context
Value Set	Value set attributes	Descriptive Flexfield Segment
Extensible Flexfield Context Usage	Extensible flexfield context usage attributes	Descriptive Flexfield Context
Extensible Flexfield Secondary Context Usage	Extensible flexfield secondary context usage attributes	Descriptive Flexfield Context
Transactional Attribute		Item Class
Transactional Attribute Details		Transactional Attribute
Lifecycle Phases	Lifecycle phases attributes	Item Class
Import Formats	Import formats header attributes	Item Class
Import Format Details	Import format details attributes	Import Formats

Node Name	Node Description	Parent Node
New Item Request Workflow Steps	New item request workflow steps attributes	Item Class
New Item Request Workflow People	New item request workflow people attributes	New Item Request Workflow Steps
New Item Request Workflow Associations	New item request workflow associations attributes	New Item Request Workflow People
New Item Request Workflow Association Attributes	New item request workflow associations attributes	New Item Request Workflow Associations
Item Templates	Item templates attributes	Item Class
Item Extensible Flexfield	Item extensible flexfield attributes	Item Templates
Item Revision Extensible Flexfield	Item revision extensible flexfield attributes	Item Templates
Functional Item Pages	Functional item pages attributes	Item Class

Business Objects in Rule Sets Node

The following table provides the business objects for the Rule Sets parent node.

Node Name	Node Description	Parent Node
Rule Sets	Include a collection of business objects that maintain item rules data	
Rule Set	Rule set attributes	Rule Sets
Rules	Rules attributes	Rule Set
All Included Rule Sets	All included rule sets attributes	Rule Set

Business Objects in Changes Node

The following table provides the business objects for the Changes parent node.

Node Name	Node Description	Parent Node
Changes	Includes a collection of business objects that maintain change order data. **Note:** To view trading partner reference attributes in audit reports for change orders, problem reports, and corrective actions, enable the attributes Customer, Supplier, Source, and Manufacturer for audit.	
Change Object	Change object header level attributes	Changes
Change Object Attachments	Change object attachment attributes	Change Object

Node Name	Node Description	Parent Node
Affected Objects	Affected object attributes	Change Object
Change Object Tasks	Change object task attributes	Change Object
Source Change Object	Source change object attributes	Change Object
Destination Change Object	Destination change object attributes	Change Object
Source Change Object Rule	Source and Destination object type and status attributes	Change Object
Destination Change Object Rule	Destination and Source object type and status attributes	Change Object
Change Object Extensible Flexfields	Extensible flexfield attributes for change orders	Change Object

Related Topics

- Manage Audit Policies

18 Product Lifecycle Management

Define Product Innovation

Class Management in Oracle Innovation Management

Class Management is the definition of classes, class hierarchies, and class codes to establish reusable business objects. Here we learn about class management for ideas, requirements specifications, and concepts in Innovation Management.

The tasks addressed here are:

- Manage Product Idea Classes
- Manage Product Requirement Classes
- Manage Product Concept Classes
- Manage Product Concept Component Classes

Class

Use classes and subclasses to define business object types.

When you create a class, the class name that you provide is stored and used as an object type, at the time of business object creation.

Select a class to edit the class name and description. The **Object Creation Allowed Indicator** in the **Edit Class** page controls the possibility of creating business objects of the current class value. Select the indicator to ensure that the class name is available to use as a type when creating a business object.

Class Code

A Class Code is a constant and unique value associated with each class across Innovation Management and associated PLM systems.

You can define a class code only once, when creating a class, as it's used during integration with external systems, and is required to remain a consistent internal code.

> **Note:** You can't edit the class code after class creation. However, you can delete the existing class, if it isn't already used to create an object, and create a class with the required class code.

Class Hierarchy

Class Hierarchy enables you to group and search for classes, based on class values or business objects types.

Select a class in the **Manage Class** page to view the class hierarchy in the **Edit Class** page.

Related Topics

- Innovation Management Functional Areas

Innovation Management Lookups

Oracle Innovation Management provides lookups that you can use to define values in requirements, and concept modules during implementation.

This topic addresses the following tasks:

- Manage Product Requirements and Ideation Lookups
- Manage Product Concept Lookups

Use standard lookups in Innovation Management to define values such as type, status, priority, scope, compliance, resource pool, metrics, lifecycle phases, and rank.

Application statuses are also standard lookups. You can execute the following tasks as lookup tasks:

- Manage Product Idea Status
- Manage Product Requirement Status
- Manage Product Concept Status
- Manage Proposal Status

The following table details the standard lookups available in Innovation Management.

Lookup types with configuration level **System** don't allow you to add or delete lookup codes. However, you can edit the **Meaning** and **Description** fields of the existing lookup codes.

Application	Module	Lookup Type	Lookup Code Meaning	Configuration Level
Product Requirements and Ideation Management	Ideas	Status	Pending, Accepted, Rejected, Implemented, In Progress, Review	User
Product Requirements and Ideation Management	Requirements	Associated Product	Common Services, Product Concept Design, Product Requirements and Ideation Management	User
Product Requirements and Ideation Management	Requirements	Requirement Fulfillment	Yes, No	User
Product Requirements and Ideation Management	Requirements	Requirement Priority	Must Have, Nice to Have, Should Have	User
Product Requirements and Ideation Management	Requirements	Requirement Scope	Yes, No	System
Product Requirements and Ideation Management	Requirements	Requirement Status	Pending, Submitted, Released	System
Product Requirements and Ideation Management	Requirements	Comment Status	Open, Closed	System

Application	Module	Lookup Type	Lookup Code Meaning	Configuration Level
Product Concept Design	Concepts	Proposal Business Unit	Business Unit	User
Product Concept Design	Concepts	Concept Product Type	New Product, Technology Evaluation, Product Redesign	User
Product Concept Design	Concepts	Component Product Type	Documentation, Electrical, Mechanical, Software, Tooling	User
Product Concept Design	Concepts	Concept Status	Draft, Submitted Approved, Converted	System
Product Concept Design	Concepts	Cost Category	Development, Production	System
Product Concept Design	Concepts	Cost Status	Actual, Projected	System
Product Concept Design	Concepts	Proposal Cost Types	Fixed, Labor, Material, Variable	System
Product Concept Design	Concepts	Funding Request For	Concept, Feasibility, Product, Prototyping	User
Product Concept Design	Concepts	Market Strategy	Differentiation, Neutralization, Optimization, Others	System
Product Concept Design	Concepts	Primary Justification	Enter New Markets, Enter New Regions, Exit Market, Expand Market Share	User
Product Portfolios	Proposals	Portfolio Status	List of Portfolios	User

Define Product Development

How Product Development Components are Configured

This topic describes the hierarchy of tasks required to set up Product Development.

Item Organizations and Items

The Product Development offering includes two mandatory task bundles: **Item Organizations** and **Items**.

Change Orders

If your installation requires routing change orders for items, manufacturer items, and assemblies, ensure that you configure change orders. The **change type** must be created for your Product Development installation to have change orders available.

Product Development Configuration

The Product Development configuration tasks provide additional refinement to your Product Development installation. This task bundle doesn't originate from the Product Information Management work area.

Related Topics

- Item Classes
- Roadmap for Setting up Product Development
- Overview of Change Orders
- Change Order Approval Process
- Item Revisions

Product Development Lookups

Use the Manage Product Development Lookups task in Setup and Maintenance to configure standard lookups (including category, status, and lifecycle phase) for Oracle Product Development.

> **Note:** Lookup types with System configuration level don't allow you to add or delete lookup codes. However, you can edit the Meaning and Description fields of their existing lookup codes.

This table lists and describes lookup types in Product Development work area.

Application	Module	Meaning (Lookup)	Meaning (Codes)	Configuration Level
Product Development	Items	Approved Manufacturer List Status	Preferred, Alternate, Obsolete	User
Product Development	Items	Manufacturer Part Status	Active, Inactive, Pending	User
Product Development	Items	Manufacturer Status	Active, Inactive, Pending	User
Product Development	Change Order	Change Priorities	High, Low, Medium	User

Application	Module	Meaning (Lookup)	Meaning (Codes)	Configuration Level
				Note: To add lookups in change order, run the Manage Change Priorities task in the Product Management offering (available in the Setup and Maintenance work area).
Product Development	Change Order	Change Reasons	Quality, Safety, Cost	User **Note:** To add lookups in change reasons, run the Manage Change Reasons task in the Product Management offering (available in the Setup and Maintenance work area).
Common References	Common	Class Family Name	Design, Concept, Concept Component, Idea, Requirement	User
Common References	Common	Class Policy	Abstract Only, Concrete Only, Leaf Class, Standard	User
Common References	Common	Reviewer Role	Approver, Observer	User

Related Topics

- Overview of Lookups
- How can I edit lookups?
- Example of a Standard Lookup

Configure Item, Document, and Change Management in Product Development

To access the Product Development configuration screen, on the Tasks side tab click Manage Configurations (in Settings). Ensure that you have a role with the Setup Product Innovation privilege.

Settings Tab

Use the Settings tab to:

- Select the organization that all items in the Product Development work area must belong to.
- Enable document management and set the root class for documents.
- Select the organization used for calculating item cost.

Items Tab

Use the **Grade** section to configure Item Grading rules.

The Item Grading rules allow you to configure whether the BOM score in Product Development should be based on a letter or number grade. The predefined rules that you select are considered in the Item Grade score calculations.

Use the **Life Cycle Phase** section to configure item lifecycle phases as Released, Unreleased, or Obsolete. Depending on this configuration, the My Favorite Items information tile (on Product Development overview page) displays the number of released, unreleased, and obsolete items.

Note:

- To avoid configuration errors, start with defining an item template that's used to create Product Development items. This template must include the default values for attributes like Lifecycle Phase, Item Status, Primary Unit of Measure, and so on. To do this, run the Manage Item Classes task in the Setup and Maintenance work area. Select the Product Management offering and Items functional area.
- If you're using Product Development and Innovation Management together, you must also link the same default item template in the Product Development connector configuration. To do this, run the Manage Target System task in the in the Setup and Maintenance work area. Select the Product Management offering.

Use the **Manufacturer Part Status Definitions** section to classify manufacturer parts statuses and map to known system statuses such as Approved or Unapproved.

Use the **Item Attributes Display Settings** section to configure operational attributes that you want displayed as part of item's general information.

Change Orders Tab

Use the **Change Orders** tab to configure the **Cycle Time Threshold in Days** for **Change Types**.

For each Change Type, define a time limit by which the change order (for that change type) must be approved. The values that you configure here are used to display unreleased changes that are within the time limit, and those past the deadline.

To create Change Types, run the Manage Change Order Types task in the Setup and Maintenance work area.

Related Topics

- How Product Development Components are Configured

Configure Supplier Portal Users

Here's what you need to do for Supplier Portal users:

Configure the Default Assignee for Change Requests from Suppliers

You must configure a default assignee for change requests submitted by the supplier portal users. In case you don't configure the assignee, the change request is assigned to the supplier user (who creates it). This prevents you from being notified about the request and results in delayed approvals.

Here's how you configure the default assignee:

1. In the Setup and Maintenance work area, select the following:

   Offering: Product Management

   Functional Area: Change Orders

   Task: Manage Change Order Types
2. Select the change type configured for the supplier and click **Edit**.
3. In the **Assignee Role** drop-down list, select a role in which your assignee is included.
4. In the **Default Assignee** drop-down list, select the person who should be the default assignee for all changes requested by supplier.

   > **Note:** You can configure a role and a user in that role as the default assignee, or an assignee only without selecting the role.

5. Click **Save**.

Secure Access to Objects on Supplier Portal

You can secure access to objects on the supplier portal by adding users or roles who have access to the objects. Here's how:

1. To secure access for items and changes, navigate to the Product Development work area.
   a. Open the object for which you want to secure access on the supplier portal.
   b. For items, click the Team tab.

      Add the supplier portal user or the role.
   c. For change orders and change requests, click the Security tab.

      Add the supplier portal user or the role.
2. To secure access for problem reports and corrective actions, navigate to the Quality Management work area.
   a. Open the problem report or corrective action for which you want to secure access on the supplier portal.
   b. In the Security tab, add the supplier portal user or the role.

Assign Access to Reports Created on Supplier Portal

To enable supplier portal users generate item structure and change order reports, assign the following roles:

- BI Consumer
- Generate Item Change Order Report

> **Note:** Oracle recommends that security administrators don't assign these predefined roles directly to users. Instead, make a copy of a predefined role, remove the privileges that your users don't need, and assign users the role that contains only the privileges they need.

Assign Separate Access to Change Orders and Change Requests

If your business requires you to provide separate access for change orders and change requests on the supplier portal, you can do so by assigning privileges using Security Console. For instance, you can configure supplier users to view and edit change requests but only view change orders. You can use the Monitor Product Management Workflow Objects privilege along with the object-specific View or Manage privilege.

You can provide view access for change orders by using the following:

- Monitor Product Management Workflow Objects (ACA_MONITOR_PRODUCT_MANAGEMENT_WORFLOW_OBJECTS_PRIV)
- View Change Order in Supplier Portal (ACA_VIEW_CHANGE_ORDER_SUPPLIER_PORTAL)

You can provide modify access for change requests by using the following:

- Monitor Product Management Workflow Objects (ACA_MONITOR_PRODUCT_MANAGEMENT_WORFLOW_OBJECTS_PRIV)
- Manage Change Requests in Supplier Portal (ACA_MANAGE_CHANGE_REQUESTS_SUPPLIER_PORTAL)

Assign Separate Access to Problem Reports and Corrective Actions

You can use the Monitor Product Management Workflow Objects privilege along with the object-specific View or Manage privilege.

> **Note:**
> - To avoid any configuration errors, ensure that the supplier user registration process has been completed successfully. Supplier user setup is handled in Oracle Fusion Cloud Procurement.
> - You can also create a copy of the predefined role and assign the required privilege.

Related Topics

- Supplier Registration Process
- How Supplier User Provisioning Works
- User and Role Synchronization: Explained
- Options to Configure Supplier Registration

Troubleshoot Access to Objects on Supplier Portal

Here's how you can fix access issues for suppliers if they're unable to view or manage objects on the supplier portal.

Check Privileges Assigned to the Role

The roles provide supplier users with privileges to manage the following objects on supplier portal: change orders, change requests, problem reports, and corrective actions. If roles are modified or if users are unable to view or manage objects, make sure that the privileges are assigned to the role.

> **Note:** Oracle recommends that security administrators don't assign these predefined roles directly to users. Instead, make a copy of a predefined role, remove the privileges that your users don't need, and assign users the role that contains only the privileges they need.

Privileges for change orders and change requests:

- Manage Change Orders in Supplier Portal (ACA_MANAGE_CHANGE_ORDERS_SUPPLIER_PORTAL)
- View Change Order in Supplier Portal (ACA_VIEW_CHANGE_ORDER_SUPPLIER_PORTAL)
- Manage Change Requests in Supplier Portal (ACA_MANAGE_CHANGE_REQUESTS_SUPPLIER_PORTAL)
- View Change Request in Supplier Portal (ACA_VIEW_CHANGE_REQUEST_SUPPLIER_PORTAL)

Along with each of the view and manage privileges, provide the following: Monitor Product Management Workflow Objects (ACA_MONITOR_PRODUCT_MANAGEMENT_WORFLOW_OBJECTS_PRIV).

Privileges for problem reports and corrective actions:

- Manage Problem Report in Supplier Portal (ACA_MANAGE_PROBLEM_REPORTS_SUPPLIER_PORTAL)
- View Problem Report in Supplier Portal (ACA_VIEW_PROBLEM_REPORT_SUPPLIER_PORTAL)
- Manage Corrective Action in Supplier Portal (ACA_MANAGE_CORRECTVE_ACTION_SUPPLIER_PORTAL)
- View Corrective Action in Supplier Portal (ACA_VIEW_CORRECTIVE_ACTION_SUPPLIER_PORTAL)

Along with each of the view and manage privileges, provide the following: Monitor Product Management Workflow Objects (ACA_MONITOR_PRODUCT_MANAGEMENT_WORFLOW_OBJECTS_PRIV).

Check Additional Controls Assigned to Change Type

Check and adjust permissions in Portal Users column within the Additional Workflow Controls table in change type setup for the object. Settings in this table control what actions workflow participants can perform at each status in the workflow. For more information on actions available for supplier users, see the related topics.

Depending on the change order status, you can configure the following actions for supplier users:

- Manage Change Header Attachments
- Manage Change Header Attributes

Check Security Tab on Object

If supplier portal users are unable to access an object, make sure that the user or role is added on the Security tab of the object. Note that if the Security tab doesn't contain any user or role, objects can be accessed by all users. For more information, see the related topics.

Related Topics

- Control Actions by Participants
- Configure Supplier Portal Users
- Secure Access to Changes
- Secure Access to Quality Issues and Actions

Configure OTBI Reports for Items and Change Orders

You can configure contextual reports for objects and enable users to launch these reports from the object page.

For example, you can configure an item report or a change order report and access these reports using the **Actions > View Reports** action on the item or change order.

For the reports to work properly, map the report settings in Oracle Transactional Business Intelligence (OTBI) to the report settings in the **Setup and Maintenance** work area. Here are the steps to configure report dashboards and assign to open them from an item or change order.

In **Oracle Transactional Business Intelligence**:

- Create the report and select report filters.
- Create dashboard prompts for the report.
- Create a dashboard for the report.

In the **Setup and Maintenance** work area:

- Configure the report path and parameters.
- Map the parameters to the folder and column settings in OTBI.
- Validate your configuration.

Let's review these steps in detail.

Create a Report that you can add to a Dashboard

1. Navigate to **Reports and Analytics > Browse Catalog**.
2. In OTBI, go to **New > Analysis**. Select the subject area for the report - In this example, let's use Product Management - Item Revisions Real Time subject area.
3. Expand the subject area folder and double-click the report parameters you want to include. In this example, let's select Item and Revision Details: Item Number and Revision.
4. Create filters for each parameter. Click the Filter icon and choose the 'Is prompted' operator for each parameter.
5. Copy the folder and field information from each prompt. Select a prompt and click the pencil icon. Click the Function icon to open the formula and copy the values in Column Formula.
    - "Item and Revisions"."Revision"
    - "Item and Revision Details"."Item Number"

6. Save your report in Shared Folders > Custom and note the location. Example: ItemsDynamicReport

Create Dashboard Prompts for the Report

1. Go to **New** > **Dashboard Prompt**. Select the same subject area you chose earlier.
2. Click the plus icon and select Column Prompt. Add each prompt for each of the parameters you chose earlier (Item and Revisions Details: Item Number, Revision) using the default “Prompt for Column” data.
3. For each prompt, set the Operator to “Prompt User”.
4. Save to the same location as the report. Example: ItemsDashboardPrompt

Create the Dashboard

- Go to **New > Dashboard**. Enter a name for your dashboard and browse to the location you want to save it. Scroll the search list and click **Browse Catalog** to find the location.
- In the Catalog panel, navigate to the folder where you saved the report and the prompt.
- Drag the report and the prompt to the panel so that they’re added to the dashboard, and then click Save
- Now, copy the dashboard location for the next step. Go to Catalog, find your dashboard, click More > Properties. Copy the file location and append the dashboard name at the end of the file path. Example: /shared/Custom/Supply Chain Management/ItemsDashboard.

Configure the Report Path and Parameters for Items and Change Orders

1. Navigate to Setup and Maintenance work area.
2. Search for and open the task **Configure Reports for Product Management**. Here you can set the report path and parameters for the report you want to launch from the item in Product Development.
3. First, create a new report path. Click the plus icon to add a new row and enter the following for the Report Path Settings.
    a. Application: Product Development
    b. Business Object: Select Item or Change Order depending on the object for which you're configuring the report.
    c. Context: For example - Select Main for the item and Affected Objects for the change order.
    d. Report Name: Enter the name users should see when they click View Reports from the Actions menu. Example: ItemDashboardReport.
    e. Description (optional): Viewed by administrators only.
4. Report Path: Enter the dashboard location you copied earlier. Example: /shared/Custom/Supply Chain Management/ItemsDashboard
5. The report is set as Active by default. If you want suppliers to access the report, select the External field.

Map the Parameters to the Folder and Column Settings in Oracle Transactional Business Intelligence.

1. Add the report parameters that map to the prompts you created earlier in OTBI.
2. With the report row selected, click the plus icon to add a new row for each parameter.
3. Enter the following for each parameter:
    a. Parameter Scope: Context Based
    b. Parameter Code: Select the name for the prompt. Example: Name for Item Number.
    c. Parameter Operator: Enter appropriate operators. Example: Is equal to / is in for Creation Date
    d. Folder Name: Enter the folder name you copied from the filter prompt in OTBI. Item and Revision Details (from the prompt "Item and Revision Details"."Item Number")
    e. Column Name: Enter the column name you copied from the filter prompt in OTBI. Example: Creation Date (from the prompt "Item and Revision Details"."Item Number").
4. Do this for each parameter and save your settings.
5. Click **Save and Close**.
6. Click **Done**.

Validate Your Configuration for Items and Change Orders

1. Open an item or change order (depending on the type of object in your report) in **Product Development**.
2. From the Actions menu, click **View Reports**. Click the Publish button to make sure all the data is current. You can see your newly configured report in the list of configured reports. Select your report and click Launch Report to run it. Validate that the parameters you set display as prompts.

> **Note:** You can quickly search for specific reports from the list of configured reports. Choose to view all the reports or specific context report options such as Structures, Where Used, AML, and more.

Related Topics

- Watch Video: Configure OTBI Reports for Items and Change Orders

Export and Import Configured OTBI Reports

You can export configured OTBI reports from one environment to another. If you have the appropriate privileges, you can export the configuration package as a .zip file and import it to your production environment.

Here's how you can do this:

1. Navigate to **Setup and Maintenance > Tasks > Manage Implementation Projects.**
2. Click the plus icon to create an implementation project.
    a. Enter a name in the field and click **Save and Open Project**.
    b. In the Implementation Project page, click the plus icon to create a task.
    c. In the Select and Add dialog, select **Tasks** from the Search list.
    d. Search for and select **Configure Reports for Product Management Objects**.
    e. Click Done. This captures all of the OTBI configuration data.
    f. Click Done on the Implementation Project page.
3. Navigate to **Tasks > Manage Configuration Packages.** Here you can create, and export the configuration package.
4. Click the + icon to create a configuration package.
    a. From the list, select the project that you created earlier.
    b. Select **Setup task list and setup data** as the Export option.
    c. Click Next.
    d. In the page that appears, select the configured package row that appears for export.
    e. Select one of the following processing options: **As soon as possible** or **Use a schedule.**
    f. A warning message informs you that the export process is about to begin and that the configuration package definition will be locked for future modifications. Click **Yes** to continue.

    This starts the export process.

    In the Manage Configuration Packages page, the Search Results table displays the status of the package as **Locked**. The Export and Import Processes table displays the type as **Export Setup Data** and status as **Not Started**.

    You can click on the status to check the progress.
    g. Click **Refresh**. When the process completes the status changes to **Completed successfully**.
    h. Click Done.

i. Click **Download**, select **Download Configuration Package,** and save the package to a local drive. Verify that the exported data is correct.
j. Click Done and sign out.

5. To import the package, sign in to the production environment with the same user credentials you used for the export. Import requires the same privileges as export.

a. Navigate to **Setup and Maintenance > Tasks > Manage Configuration Package** to begin the process of importing the package.
b. In the Manage Configuration Packages page, click the **Upload** button on the Search Results table.
c. In the Upload Configuration Package page, click **Browse** to search for the exported package and click Open.
d. Click **Get Details** to get the details of the package and click Submit.
e. To begin importing the package, click **Import Setup Data**.
f. In the Import Setup Data page, click **Submit**.

In the Manage Configuration Packages page, on the Export and Import Processes table you can see the type as **Import Setup Data** and the status as **Not Started**.

g. Click **Refresh** . When the process completes, the status changes to **Completes successfully**.
h. Click Done.

Configure Integrations for Product Development

Integrate Product Development with Innovation Management

To integrate Oracle Product Development with Oracle Innovation Management, start by duplicating the ORA_PD connector template. Configure the newly created connector using the Edit option from the Actions menu.

Alternatively, select the newly created connector and click the **Edit** icon.

How You Enable Item Class Mapping in Product Development Connector

The Product Development (PD) connector supports flexible mapping of Innovation Management (IM) concept and component classes to Product Development item classes. In concept structures, you can also map specific user-defined attributes to item attributes in item structures.

The support of flexible mapping includes these integration scenarios:

- Convert concept component to item;
- Copy item to concept component; and,
- Display item data in concept structure.

Run the following administrative tasks.

1. Navigate to the Product Development work area (logged in as an administrator). Open the side panel and, in Settings, click **Manage Configurations**. From the **Settings** tab, set up the **Default Organization**: this will be

the item organization when you convert concept components to items in Product Development. Be sure to select the Default Organization.

2. Define an item class for each different type of component. In Innovation Management, open **Setup and Maintenance**. Navigate to **Manage Target System**. Create a new Product Development connector by duplicating it from the Oracle Template **ORA_PD**
3. Go to **Manage Mapping to External System** and click the **Add +** button to add a subentity - a subclass of the Item class. Select the new item class and add class-specific extensible flex-fields (EFFs).

> **Note:** Add EFF attributes on the same hierarchy level of the item class on which the EFF is defined. Also, remember that only one connector can be active at a time.

4. In Innovation Management, go to Manage Mapping where you enable class-specific mapping for the mapping sets Create Item (CDMCreateItem), Copy Item (CDMCopyItem) and Link Item (CDMLinkItem). Select the Mapping Set to which you want to add the class mapping. Then select the entity Item and add the subclass you created.
5. Select the additional item class and add the Innovation Management (IM) attribute to Item EFF mapping (in the Attribute section). You've created a user-defined attribute for a concept structure in Innovation Management (IM), created an EFF in an item structure in Product Development, and now the data can go from the concept structure to the item structure. Repeat these steps for every type and class combination to be mapped.

> **Note:** As a parent class must be added to the mapping before its child classes can be mapped, you may add dummy mappings for intermediate classes if they don't correspond to a concept component type. In this case, the user can type in any value for Innovation Management (IM) **Entity Name** column.

Integrate Product Development with Project Management

Manage Oracle Product Development projects by associating items and change orders to a project task. Define rules to determine the completion of such tasks based on work item statuses.

Implement Oracle Product Development and Project Management for Integration

Implement the tasks listed in the following table, at minimum, in the **Product Development** and **Product Hub** functional areas in the Product Management offering.

Functional Area	Tasks Enabled for Implementation
Items Organizations	Manage Item Organizations
Items	Manage Item Classes` Manage Item Statuses Manage Item Types
Change Orders	Manage Change Order Types
Product Development	Manage Product Development Lookups

After completing the integration, perform the following steps to enable the display of **Work Items** column in the project plan:

1. Navigate to the Setup and Maintenance work area.
2. Select the Product Management offering and click **Change Feature Opt In.**
3. From the **View** menu, select **Columns** > **Implementation Status**.
4. In the Product Development functional area, set the implementation status to **Implemented**.

Oracle Product Development Business Objects in Project Tasks

You can manage Product Development projects only if you're a project enterprise resource, such as project manager or team member of projects, in the project plan.

Project managers with the appropriate privileges can perform the following actions:

- Open and manage project work items in Product Development.
- Navigate to the Project Management work area from the Relationships tab in items and change orders, and view summary information of the related object on hover.
- Define rules to specify statuses that determine when work items can be considered complete. When a work item reaches the appropriate status, the task is updated to complete.

19 Workflow and Approval Management

Overview of Workflow and Approval Management

The BPM Worklist enables you to configure change orders, and new item requests through a set of workflows. Here's a summary of the configuration tasks:

- Sign in with the BPM Workflow Supply Chain Administrator (BPMWorkflowSCMAdmin) role.
- To access the BPM Worklist, run the Manage Task Configurations for Supply Chain Management task in the Product Management offering.
- Update the workflow tasks by including details of deadlines and escalation policy.
- Select the notification type and provide additional details to configure the notification.
- Create approval groups that include a predefined set of users configured to act on the notification.
- Create approval rules that include conditions for approval.

Type of Approval

When configuring the workflow, you select the type of approval: user defined, rules-based, or web service based.

User defined approval lets you add users or user groups as approvers, without specifying any conditions.

Rules-based approval lets you create complex rules for managing the workflow. You use the BPM Worklist to create complex approval rules based on item operational attributes, item extensible flexfields, change attributes, and change extensible flexfields. For example:

```
If NewItemLine.Item.itemtype == "Finished Goods" And NewItemLine.Item.CurrentPhaseCode == "Design" THEN Approval Group = "SCM_Managers"
```

Web service based approval lets you define the list of change order approvers through a web service call.

Example of a Change Order Workflow

Consider that manufacturing changes require review and approval before pricing changes are determined. You can create a change order workflow with multiple open and interim approval statuses and a final approval. Use the first set of open and interim approval workflows to review and approve the manufacturing changes. Use the second set to review and approve the pricing changes. You can then route the workflow for final approval.

Related Topics

- Set Up the Workflow
- Actions for Reviewers and Approvers
- Configure Interim Approval and Approval Status

Best Practices for Managing the Workflow

Here are the best practices for a change order or new item request workflow.

In the change type

- Create workflow steps that are aligned according to your business processes.
- Review whether a workflow already exists before you define the entry and exit criteria.
- Use the **Assigned to** field to set a default assignee. The default assignee receives a notification when the change order is created.
- Don't assign the same user as required approver and optional approver.

In the change order

- To detect any errors, use the audit feature during the early stages of the workflow.

In the new item request

- Don't enable the root item class for a new item request. Instead, enable it only for that child class which requires the new item request.
- Don't assign the same user as required approver and optional approver.

In the BPM Worklist

- Don’t delete any predefined rule sets available in BPM Worklist.
- When you create an approval group, don't include any space in the group name.
- Use only the header stage.
- Enable notifications based on task status.
- In the Assignee tab, don't change any settings.
- In the Deadlines tab, don't enable Expiration Settings.
- Set vacation rules: You can create a vacation rule so that when you're unavailable, approvals that are assigned to you automatically get reassigned to someone else and the workflow can progress in your absence.

  When you create a vacation rule, it's triggered only for new objects and not for pending ones.

Note:

- If you set a vacation rule and if you have multiple approvers, the value of **Response Required From** must be set to **All**.
- Multiple reassignments through vacation rules aren’t supported for the same approval task.

Set Up the Workflow

Here is how you set up the new item request workflow. From the Setup and Maintenance work area, run the following tasks in the Product Management offering:

1. Use the **Manage New Item Request Type Details** task. Depending on the status type, you can do the following:

- Enable or disable the request comment notification.
- Setup automatic promotion or automatic demotion between statuses.
- Select the entry and exit criteria for a status.

2. Use the **Manage Item Rule Set** task to create an entry or exit criteria for a new item request.
3. Use the **Manage Item Classes** task to enable the new item request for an item class. In item management, include the definition workflow details such as steps, assignees, business or associated entities, and definition values.
4. Use the **Manage Approval Group** task to create an approval group responsible for the new item request approval.
5. Use the **Manage Task Configurations for Supply Chain Management** task. Select the participant header stage and create a business rule.

Here is how you set up the change order workflow. From the Setup and Maintenance work area, run the following tasks in the Product Management offering:

1. Use the **Manage Change Order Type** task. Depending on the status type, you can do the following:
   - Enable or disable the request comment notification.
   - Setup automatic promotion or automatic demotion between statuses.
   - Select the entry and exit criteria for a status.
2. Use the **Manage Item Rule Set** task to create validation rules for the change order.
3. Use the **Manage Approval Group** task to create an approval group responsible for the change order approval.
4. Use the **Manage Task Configurations for Supply Chain Management** task. Select the participant header stage and create a business rule.

Configure Approval Tasks Using BPM Worklist

As an administrator, you can review and modify the approval tasks defined by a workflow designer.

To configure approval tasks in change orders and new item requests:

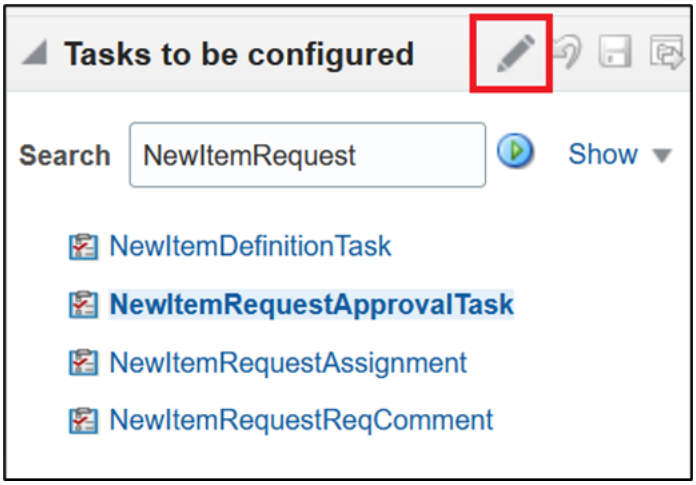
1. In the Setup and Maintenance work area go to the following:
   - Offering: Product Management
   - Functional Area: Change Orders
   - Task: Manage Task Configurations for Supply Chain Management
2. Search for the approval task and select the task.

   For example, to modify the approval tasks for a change order, search for ChangeOrder and select **ChangeOrderApprovalTask**.

   To modify the approval tasks for a new item request, search for NewItemRequest and select **NewItemRequestApprovalTask**.

3. Click the **Edit task** icon in the side panel.

   Here's a screenshot of the **Edit task** icon for the new item request approval task



Here are the configuration options that appear on the side tabs of the Configuration page:

- General: Define basic information such as title, description, and priority. Selecting Hide task creator prevents the display of task creator's name in the approval notification.
- Assignees: Create an approval rule. In Change Order Header Rule Based Approver, click the diamond icon and select **Go to rule**. For example, to control the approval of all change orders created by a user, you can route them to a particular approval group.
- Data: Review the message elements that compose the structure of the task payload. Don't edit this information.
- Deadlines: Specify the duration and expiration details.
    - Due Date: Indicates the date when the approval task is due for action. It's an indicator to remind the approver to respond by a certain time. The approver can also respond after the due date.
    - Exclude Saturday and Sunday: Excludes Saturday and Sunday while computing the due date, expiration date, and escalation date.
    - Expiration Settings: Specify the expiration policy at either task or assignee level, or skip it entirely. Includes the following:
        - Escalate: For example, if you use the escalation hierarchy configured in the user directory, the task can first be escalated to the user's manager. If the user's manager doesn't take appropriate action within the specified duration, then the task is further escalated till it reaches the maximum escalation level or the highest approver. An escalated task remains in the user's inbox even after the task has expired. However the user isn't allowed to take any action on that task.
- Notifications: Notifications alert you that something requires your attention or action. You can configure what type of notification should be triggered for each workflow task, and who should receive these notifications.
- Access: Configure the signature (or password) policy for the task.

  When the change order reaches the Approval status, users are prompted to enter their sign-in credentials.

- Configuration: Configure whether users must enter comments when they approve or reject a task.
    - Required: Comments become required for the user.
    - Optional: Comments become optional for the user.
    - Not Allowed: Comments aren't allowed for the user.
    - Mandate Comments before updating these outcomes: Enforces reviewers to provide comments before approving or rejecting a task; can be useful for auditing.
    - Notify these participants when error occurs: Allows certain administrators to receive notifications (in case of errors). If the task is approved by an assignee and the approval notification is again sent to the assignee, then a second approval is optional.

Related Topics

- Configure the Signature Policy for Change Order Approval
- Create an Approval Rule

Task Assignment and Routing

The BPM Worklist supports declarative assignment and routing of tasks to a single user or group. Additionally, pattern-based support is available for scenarios that require detailed task assignment and routing.

Stage

A stage is a way of organizing the approval process for blocks of participant types. In the Product Development and Product Hub work areas, there is only on stage and it's in a parallel mode. In the parallel mode, the task gets assigned and notifications are sent to all participants at the same time. Within each stage, you can have one or more blocks of participant types. It's recommended not to modify the default settings in stage.

Participant

A participant is a user or set of users in the assignment and routing policy definition.

Participant Type

A participant type corresponds to a user or group. The workflow supports declarative patterns for common routing scenarios such as management chain, and group vote. The following participant types are available:

- **Single approver**: The participant maps to a user or group.

  For example, a vacation request is assigned to a manager. The manager must act on the request three days before the vacation starts. If the manager formally approves or rejects the request, the employee is notified about the decision. If the manager doesn't act on the request, the request is treated as rejected and actions are similar to a formal rejection.
- **Parallel**: The participant indicates that a set of people must work in parallel. This pattern is commonly used for voting.

  For example, multiple users in a hiring scenario must vote to hire or reject an applicant. You specify the voting percentage that is needed for the outcome to take effect, such as a majority vote or unanimous vote.

Approval Groups and Header Stages

An approval group consists of a static and predefined set of users configured to act on a task. Approval tasks are routed to an approval group in parallel mode.

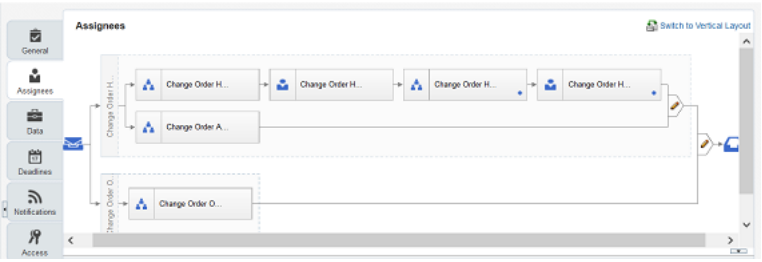
For example, you can create an approval group called Line Managers comprised of users from the finance department who need to participate in approving a task. You can create new approval groups or modify existing approval groups using the BPM Worklist. The approval group can then be selected in the list builder.

It's recommended to set **Allow empty groups** to **False**. If you set the Allow empty groups attribute to True and the approval group doesn't contain any member, this might result in stuck change orders.

Supported Header Stages

The BPM Worklist supports the change order and new item request header stages. Note that the line stage approval configuration has been deprecated.

Here's an image that shows the stages and participants within the change order approval task.



Here are the predefined approval tasks, stages, and participants in change orders:

- Change Order Optional Approval Stage
    - Change Order Optional Approvers
- Change Order Header Approval Stage
    - Change Order Header Rule Based Parallel Approvers
    - Change Order Header Rule Based Single Approver
    - Change Order Header User Defined Parallel Approvers
    - Change Order Header User Defined Single Approver

Here are the predefined approval tasks, stages, and participants in new item requests:

- New Item Request Optional Approval Stage
    - New Item Request Optional Approvers
- New Item Request Header Approval Stage
    - New Item Request Header Rule Based Parallel Approvers
    - New Item Request Header Rule Based Single Approver
    - New Item Request Header User Defined Parallel Approvers
    - New Item Request Header User Defined Single Approver

Change Order Approval Required Rules

Rules can require approval through a change order when certain changes are made to an item.

Change order approval rules are defined and managed through BPM Worklist.

Approval required rules are triggered when you make these changes to an item and will add the changes to a new or existing change order.

Approval required rules are supported for the following areas:

- Items
- Item revisions
- Item supplier

Changes to item attributes and structures fall in item and item revisions.

Changes to item revision attributes and item supplier associations fall in item supplier.

If an approval required rule is triggered on any item changes that fall into one of the areas, then all changes authored for that item that fall in that area will be added to a change order.

For example, a rule is defined that requires approval if a primary structure is created for any item.

During a single session directly editing an item, a user changes the value of an item level attribute and then creates a primary structure for that item.

On saving the data, the approval required rule will be triggered because of the new primary structure and the user is prompted to either create a new change order or add to an existing one.

When the new change order is created or an existing change order is updated, then the change to the value of the item attribute will also get added to the change order along with the primary structure change for required approval.

Example of Approval Required Rules and Approval Groups

The approvals can be from individual users or from multiple users in a predefined user group. Because individual rules can be made for specific item revisions, attributes, or structures one rule can require approvals from one user group

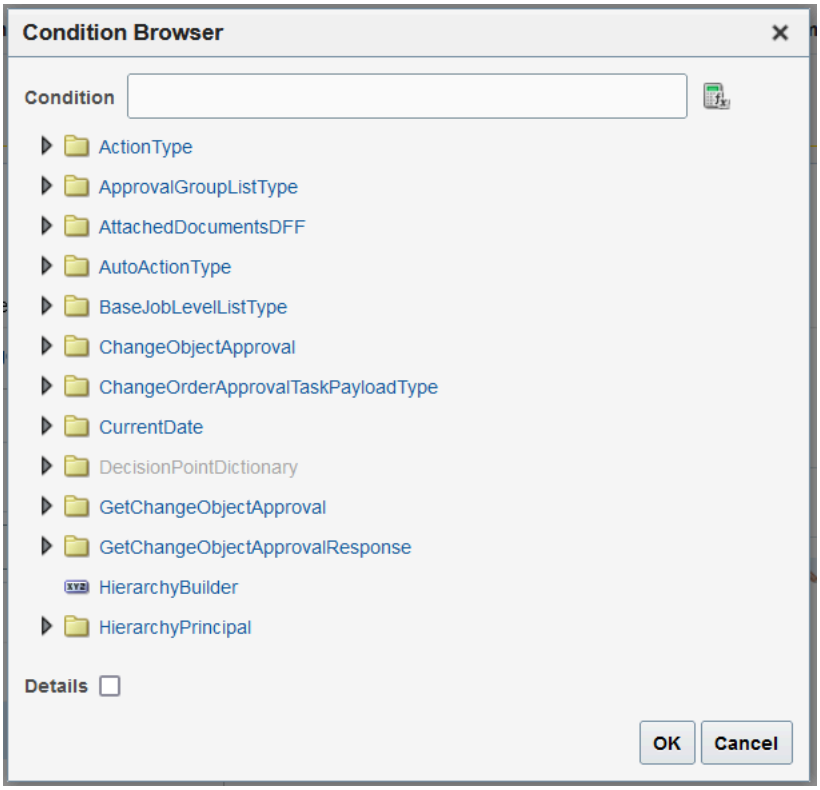
when an attribute is changed, while changes made to a different attribute will require approvals from a different user group.

For example, the new primary structure rule that requires approvals from members of the *TestApprovalGroup* user group.

Another rule is defined that requires approval if the scheduled date when changes will be implemented for an item is later than the date *01/01/2012*, then approvals are required from the *COApprovalSAG* approval group

This means that if the user creates a primary structure for that item, and specifies a scheduled date for the item that's later than 01/01/2012, approval responses are required from both the *COApprovalSAG* and *TestApprovalGroup* approval groups.

> **Note:** When creating the rule, you can click the magnifying glass icon to perform an advanced search using the condition browser.



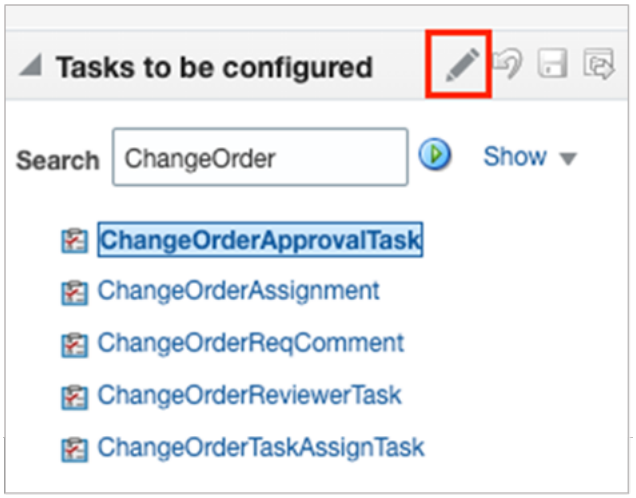
Configure the Signature Policy for Change Order Approval

You can configure a signature policy to authenticate users during the change order approval. This ensures that approvers are prompted to enter their login user name and password before they approve the change order. The credentials are also used to audit the approval process.

Here's how you configure the policy:

1. In the Setup and Maintenance work area go to the following:
    - Offering: Product Management
    - Functional Area: Change Orders
    - Task: Manage Task Configurations for Supply Chain Management
2. On the Tasks to be configured pane, search for ChangeOrder and select **ChangeOrderApprovalTask**.
3. Click the **Edit task** icon.

    Here's a screenshot of the **Edit task** icon for the change order approval task.



4. Click **Access**.
5. Signature Policy: Select the policy to authenticate users during change order approval.
    - No Signature Required: Users aren't prompted to enter login credentials during approval, and can approve multiple change orders from BPM Worklist.
    - Password Required: Users are prompted to enter their login user name and password. But users are restricted from approving multiple change orders.
    - Digital Certificate Required: Users are prompted to use a digital certificate (or e-signature). But users are restricted from approving multiple change orders.

    > **Note:** If the change order is already in Approval status when the signature policy is enabled, the user doesn't receive the authentication prompt. If the change order is in Open status and the password policy is enabled, the user receives the authentication prompt when the change order is in Approval status.

6. Click **Save** and click **Commit task**.

Examples of Entry and Exit Criteria

Rules-based entry and exit criteria can be used to add an additional layer of validation to the change order or new item request. The criteria can be selected for different workflow statuses in the change order or new item request.

The entry criteria is available for the following statuses: definition, interim approval, and approval.

The exit criteria is available for the following statuses: open, definition, and interim approval.

You can create validation rules using the **Manage Item Rule Set** task; set the association type to change order or new item request. Prior to creating the entry and exit criteria, create a change type and set it to rules-based approval.

The following attributes are supported when creating the criteria:

Change Header Main

- Priority
- Reason
- Need-by Date
- Requested By
- Description
- Descriptive Flexfield

Change Line

The change line entity doesn't support line attributes. You can however create the criteria using descriptive flexfield values from change line, for which you need to specify the entity. Example:

```
[ChangeHeader].Flexfield[CHHD_Glob_Seg_Char_1]
```

Example of the exit criteria for open status: Consider that the priority code of the change order is high. Then the need-by date can be set as mandatory for the change order to be promoted to the next status in the workflow.

```
If Expression
[ChangeHeader].[ChangeHeaderMain].[PriorityCode] == "HIGH"
Validation Condition
isNull([ChangeHeader].[Change Header Main].[Need-by Date]) == false
```

Example of the entry criteria for approval status: If the value in the Reason field is Cost, then priority of the change order is set to High.

```
If Expression
[ChangeHeader].[ChangeHeaderMain].[ReasonCode] == "COST"
Validation Condition
[ChangeHeader].[ChangeHeaderMain].[PriorityCode] == "HIGH"
```

Related Topics

- Configure Entry and Exit Criteria for New Item Requests
- Configure Entry and Exit Criteria for Change Objects

Approval Rules

Overview of Approval Rules

You can create approval rules for change orders and new item requests using the Oracle Business Process Management Suite (BPM) and Approvals Management Extensions of the Oracle Service-Oriented Architecture (SOA) suite. BPM provides the interface to administer the approval rules.

You must be assigned with the role BPM Workflow Supply Chain Administrator (BPMWorkflowSCMAdmin) to access and configure approval rules in the BPM Worklist.

Here's what you can do:

- Configure the approval rule set and rules.
- Configure the approval group.

To create rules, you must provide values for these rule components:

- Condition: Criteria that change orders and new item requests must satisfy.
- Response type: Required.

  A response from the approver is required or the notification is informational.
- List builder: Creates a list of approvers for a specific notification.

Configure Approval Rules

Rule set and rules control how a workflow task is routed based on specific conditions. For example, a rule can say that change orders with high priority can be routed to a specific approval group.

A workflow task in BPM Worklist has a rule set, and a rule set can have one or more rules. If the rule set has multiple rules, all the rules are evaluated at the same time. The rule has two parts: an If section that has the conditions, and a Then section that has the actions to take when the conditions are met.

Prerequisites:

- Ensure that extensible flexfields are deployed and synchronized in BPM Worklist.
- For the change type, ensure that the approval is set to rules-based.

  To do this, run the Manage Change Order Types task in the Product Management Offering. Edit the change type to set the approval to rules-based.

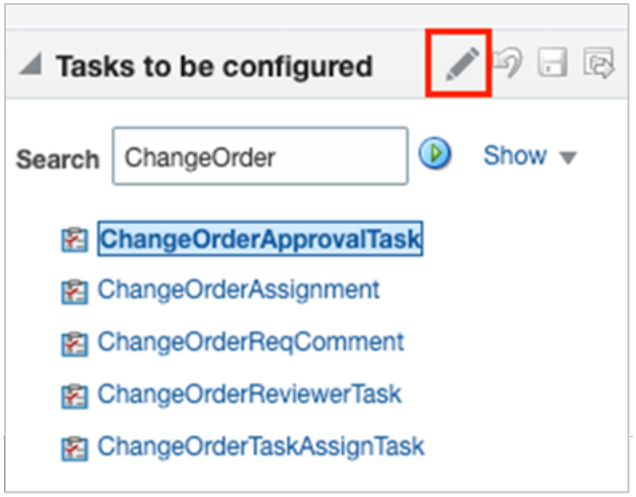
Note:

- Don't delete any predefined rule sets.
- If you plan to configure rules for changes and new item requests, it's recommended that you limit the number of item classes to 300.

Here's how you can configure the rules in a predefined header rule set:

1. In the Setup and Maintenance work area, go to the **Manage Task Configurations for Supply Chain Management** task.
2. In BPM Worklist, on the Task Configuration tab, search for the workflow task in the **Tasks to be configured** pane. Depending on the object you want to configure, search for ChangeOrder or NewItemRequest. Select ChangeOrderApprovalTask or NewItemRequestApprovalTask.
3. Select the task from the search results and click the **Edit task** icon in the toolbar.

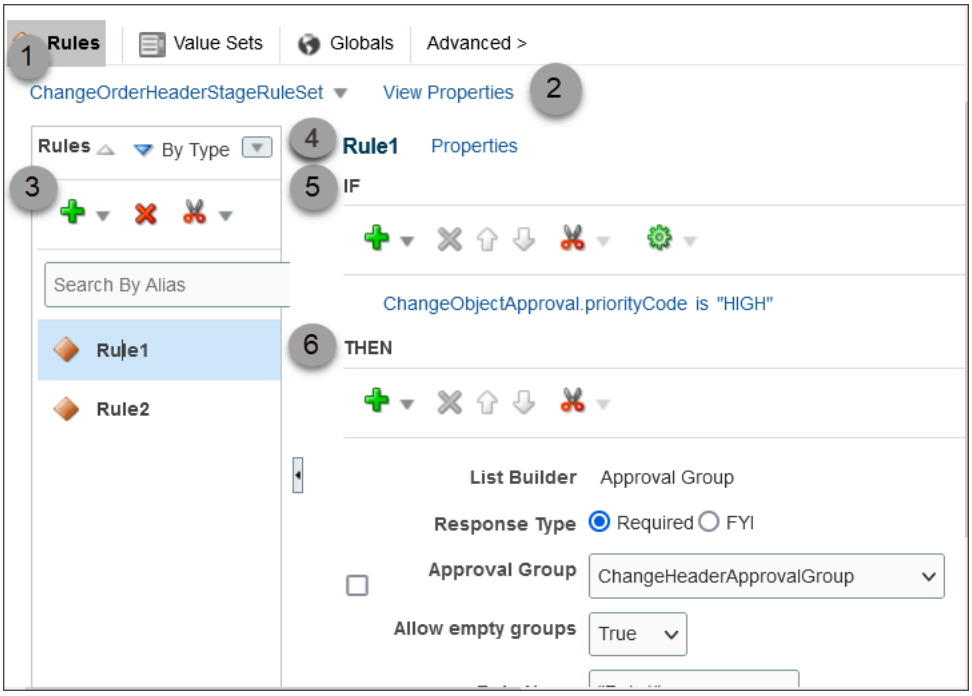
   Here's a screenshot of the **Edit task** icon for the change order approval task.



> **Note:** You may see a message saying that flexfields have been modified. Click the **Start Synchronization** button to get the latest set of flexfields that you can use for the rules in this task.

4. Click the Assignees subtab.
5. Click the **Go to rule** icon (that's the blue diamond icon) on the participant box you want to work on, and select **Go to rule**.
6. To configure the rule, select the rule displayed in the Rules pane for ChangeOrgerHeaderStageRuleSet.
7. Click the **View Properties** link that's beside the rule set name to see the **Effective Date** setting and the **Active** checkbox. The rule set needs to be effective and active to apply when people create workflow tasks. It's a good idea to leave the effective date set to **Always**.

Here's a screenshot to help you understand what you see in the Rules subtab on the Assignees tab:

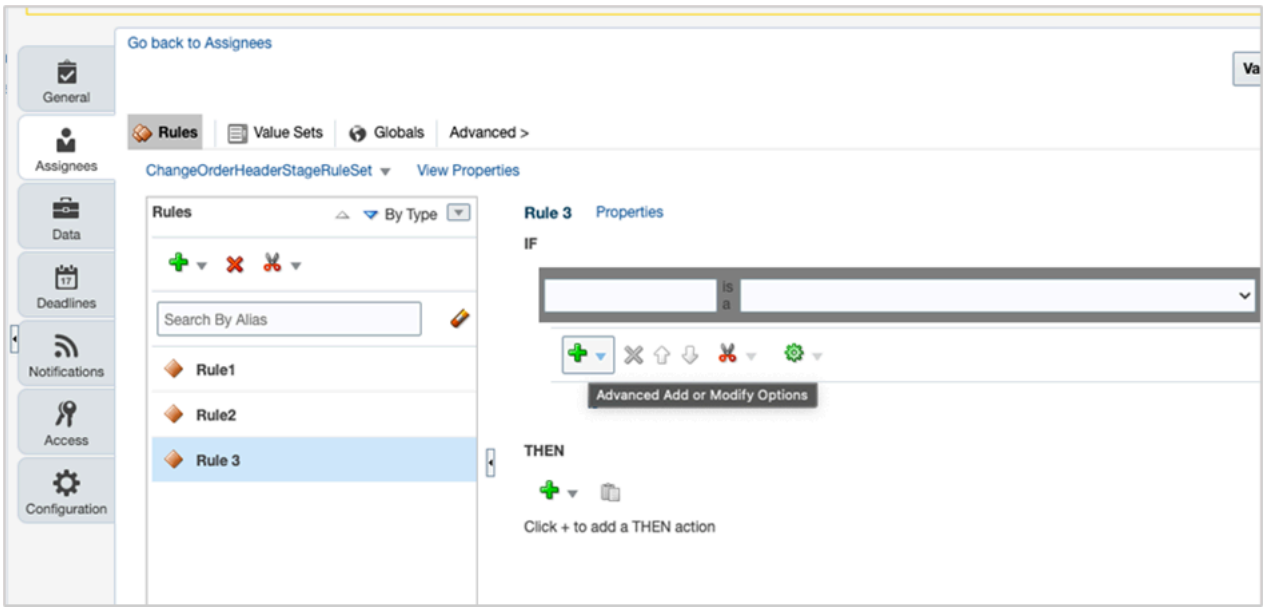


Callout Number	What It Is
1	The rule set drop-down list. Note that only ChangeOrderHeaderStageRuleSet is supported for change orders.
2	The View Properties link that allows you to configure the effective date. It's a good idea to leave the effective date set to **Always**.
3	The Rules pane that lists the rules within the ChangeOrderHeaderStageRuleSet and includes a toolbar for adding or deleting rules.
4	The name of the rule. Can be modified by clicking the **Properties** link that's next to the rule.
5	The If section of the rule, where the conditions are defined and there's a toolbar for working on those conditions.
6	The Then section of the rule, which defines what happens when the conditions are met. There's also a toolbar specific to this section.

Configure the If Section in Rules

In the If section of the rule, define conditions for the rule. Each line in this section is called a test.

1. For existing conditions, select the rule that you want to edit. To add a new rule, click the **Advanced Add or Modify Options** icon and select **simple test**.



2. Click the **Left Value** icon to select an attribute in the Condition Browser dialog box. Click **OK**.
3. Select an operator. For example: **is**.
4. Click the **Right Value** icon to select something from the Condition Browser dialog box, or enter a value in the corresponding field. Click **OK**.

5. If you're not working on the last line, you can click the **and** or **or** link at the end of the line to toggle between the two.

> **CAUTION:** If the attribute you're evaluating in the condition is optional, users might not have entered a value for that attribute in the UI. For your rule to work properly, it's highly recommended that you first have a line in the condition that checks if the attribute isn't blank. So that means you select the attribute, select **isn't** as the operator, and enter **null**. Then add another line with the condition that you're evaluating the attribute for, and make sure you have an and between the two lines.

Configure the Then Section in Rules

In the Then section of the rule, define what happens when the conditions in the If section are met.

Here's how you configure the change assignee as auto approver using the Supervisory list builder.

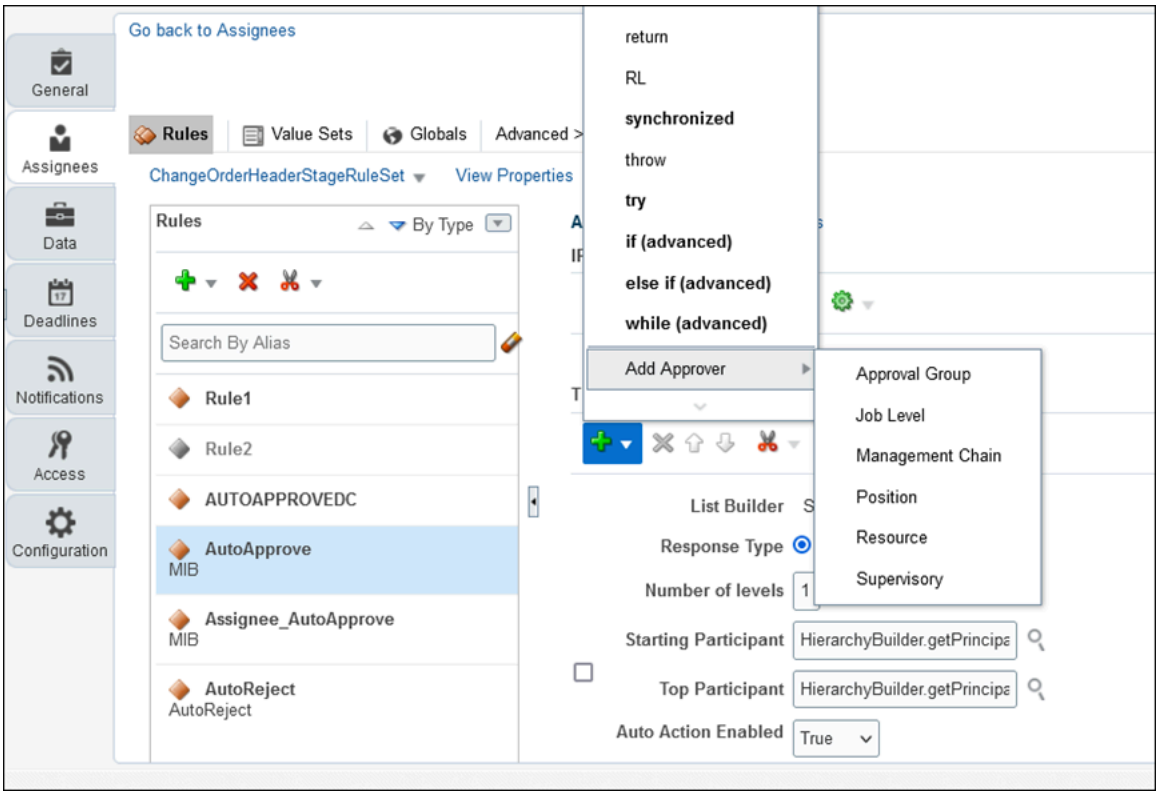
1. Click **Insert Action(plus) icon** > **Add Approver** > **Supervisory**:

   The table shows the values you must enter in the Then statement when you want the change assignee as auto approver of the task.

Field	Value
List Builder	Supervisory
Response Type	Required
Number of levels	1
Starting Participant	The user who's considered as auto approver. To configure the change assignee as auto approver, enter: HierarchyBuilder.getPrincipal(Task.payload.COAssignee,-1,"","")
Top Participant	The last participant in the approval. Approval does not go beyond this participant in a hierarchy. Enter: HierarchyBuilder.getPrincipal("workflowsystem",-1, "","")
Auto Action Enabled	True
Auto Action	"APPROVE"

Field	Value
Rule Name	"AutoApprove"

Here's an image that shows how you add an approver.



Test and Apply Your Rule Set

1. Click the **Validate** button in the Assignees tab to see if there's anything wrong with the rules that needs to be fixed. Results appear in the Business Rule Validation – Log subtab after the Rules subtab.
2. In the **Tasks to be configured** toolbar, click the **Commit task** icon when you're ready to roll out your changes.

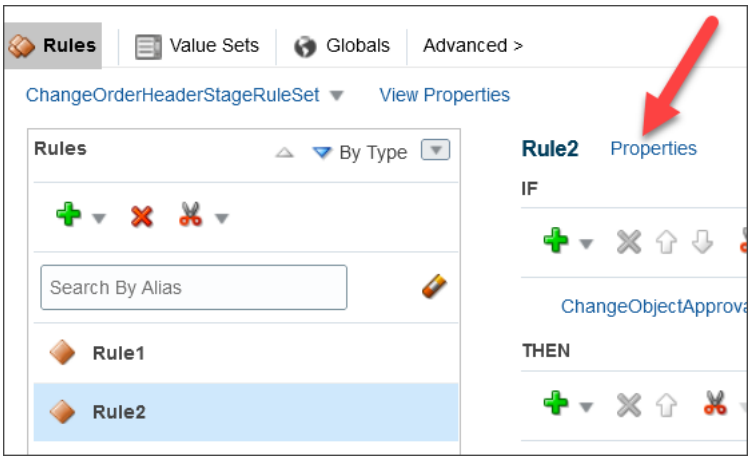
Create Rules in Advanced Mode

You can configure rules in advanced mode to optimize how rules perform when they are applied. Use advanced mode when the rule conditions involve business objects that have hierarchical attributes and collections. A collection is a grouping of transactional data.

For example, the advanced rule can have a condition to search for a specific attribute in an attribute group.

Here's how you generally go about creating a new rule in advanced mode:

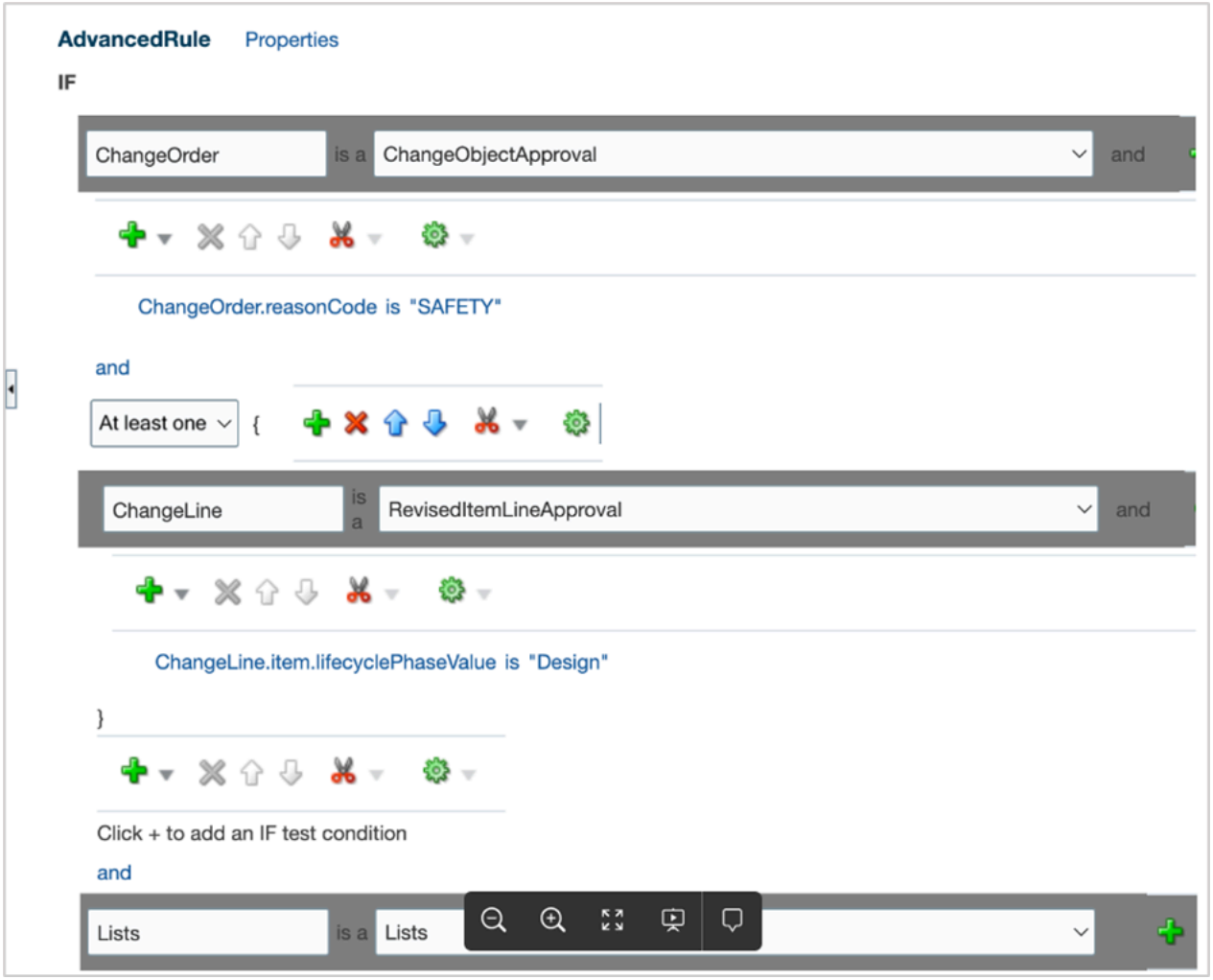
1. Click the **Properties** link after the rule name. Here's a screen that show the Properties link.



2. In the dialog box that appears, select **Advanced Mode** and click **OK**.
3. Click the **Insert Pattern** link in the If section to get a pattern with the is operator. A pattern is a way to organize sets of lines, or tests, in the If section.
    - In the field before the operator, enter any term you want that represents the business object. This term is a variable that's used later in the rule.
    - After the operator, select the attribute for the business object, for example Change Order.
4. Click the **Advanced Add or Modify Options** icon in the toolbar after the pattern, and select **simple test**.
5. Define a condition that the rule would match on for the business object. Select an attribute in the folder named after the variable you entered earlier.
6. Add more conditions if required.
7. In the toolbar for the business object pattern, click the **Add Pattern** icon.
    - In the field before the operator, enter **Lists**.
    - After the operator, select **Lists**.

    This pattern is needed because the rule involves collections.
8. In the toolbar for the collection pattern, click the Surround selected tests with parenthesis icon, and select Surround. The surround option puts the pattern you just added and other conditions you define later within parentheses, to group them all together. Conditions within parentheses are evaluated in their entirety, in this case, against the collection.
9. In the drop-down list before the collection pattern, select how you want the rule to match against the collection.
    - Each: There's a match every time something in the collection meets the conditions. Notifications are sent for each match.
    - At least one: As soon as the first match is found in the collection, a notification is sent and the rest of the collection isn't evaluated.
    - None: The entire collection is evaluated, and a notification is sent when nothing matches.
    - Aggregate: Use this option if you need operations like sum or average on attributes in the collection.
10. In the toolbar after the collection pattern, click the **Advanced Add** or **Modify Options** icon, and select simple test.
11. Define a condition that the rule would match on within the collection, selecting attributes in the folder named after the variable.
12. Add more conditions if required.
13. Configure the Then section.

Here's an example of the If section for a rule in the advanced mode. The rule will search for change orders in which the reason code is SAFETY and the affected item's lifecycle phase is Design.



List Builders

The list builder is a method used for routing a workflow task. For example, routing the approval to an approval group.

When the conditions in a rule are met, the task is assigned based on the action in the Then section of the rule. To define an action, you select a list builder and then provide settings for that list builder to determine whom to assign the task.

Here are the list builders available for the Product Management offering:

- Approval Group
- Resource
- Supervisory

Approval Group

An approval group is a specific set of users that can act on a task. Tasks are routed to a parallel approval group in which someone in the approval group can claim the task and act on it. When the task is claimed, no one else in the group can act on it. But if the person who claimed the task releases it, then someone else from the group can claim it.

Note: Approval groups in serial aren't supported.

After you select Approval Group as the list builder, you select the approval group to assign the task to when the rule's conditions are met.

It's recommended to set **Allow empty groups** to **False**. If you set the Allow empty groups attribute to True and the approval group doesn't contain any member, this might result in stuck change orders.

Resource

You can assign the task to a specific user. (Even though LDAP group is also a possibility, it's recommended that you don't use them.) Select the assignee in the Users field, and leave the other fields for participants with null. Note that the application role isn't supported.

Supervisory

You can use the supervisory list builder only for automatically approving or rejecting tasks in change orders and new item requests.

Create an Approval Rule

Approval rules in change orders and new item requests can be based on items, attributes, or attribute groups. You can create rules to route each attribute group to a different approver or approval group.

You can create approval rules based on these attribute types:

- Change standard attributes.
- Change header extensible flexfields.
- Affected item extensible flexfield attributes.
- Affected item standard attributes (including Product Line).

Note that you can't create approval rules based on these attribute types:

- Change header descriptive flexfields and change header context descriptive flexfields.
- Change line standard attributes, change line descriptive flexfields, and change line context descriptive flexfields.

In this example, you create a change order approval group and an approval rule.

Rules are based on:

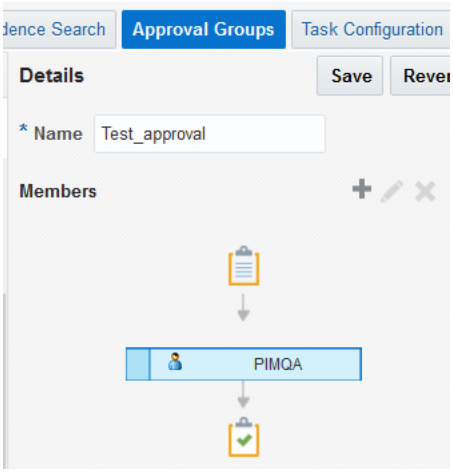
- The new item data including the unchanged data from production or source version and
- The modified data.

Prerequisites:

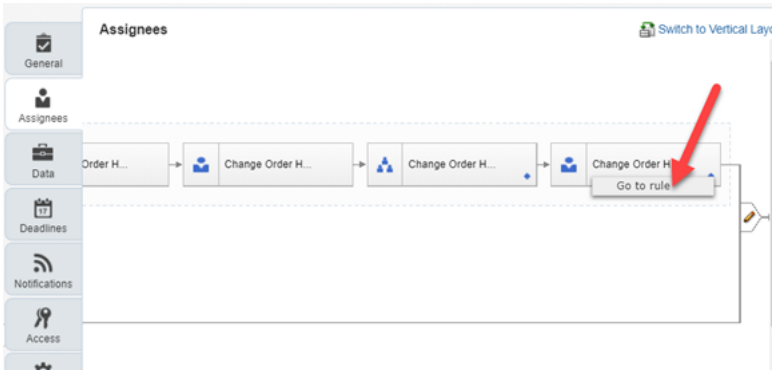
- Ensure that extensible flexfields are deployed and synchronized in BPM.
- For the change type, ensure that the approval is set to rules-based.

  To do this, run the Manage Change Order Types task in the Product Management Offering. Edit the change type to set the approval to rules-based.

The figure shows an approval group and its members.



The figure shows one of the steps in creating an approval rule.



Create a Change Order Approval Group

1. From the Setup and Maintenance work area, run the **Manage Approval Group** task in the Product Management offering.
2. Click **Create Approval Group**.
3. Enter a name for the group and click **Save**. For example, create a PricingApproval group to route all pricing changes to this group. Note that you must avoid using a space in the group name.
4. Click **Add Member**.
5. In the **Add to Group** dialog, select either a user or an existing approval group and click **OK**.
6. Save the approval group.

Create a Change Order Approval Rule and Include the Approver

1. From the Setup and Maintenance work area, run the **Manage Task Configurations for Supply Chain Management** task in the Product Management offering.

2. In the BPM Worklist page, search for ChangeOrderApprovalTask and select that task. Note that ChangeOrderApprovalTask can also be used to create an approval rule for change request.
3. Click **Assignees**. The Change Order workflow appears.

   > **Note:** Don't delete any predefined rule sets available in BPM Worklist.

4. Click the **Pencil** icon next to the **Save** icon.
5. In **Change Order Header Rule Based Approver**, click the diamond icon and select **Go to rule**.
6. In Rulesets, click the **Plus (Add Rule)** icon.
7. Enter a name for the rule and click **Expand** to add the rule.
8. Select the condition when the rule is required to be executed, and the outcome of the rule.

   For example, to control the approval of all change orders created by a user, you can route them to a particular approval group.

   If you create a rule based on the change order priority, the name and case of the priority must match with the name and case of the lookup code in the Manage Change Priorities task.

   If you create a rule based on the item class, ensure that you use the internal name mentioned in the item class.
9. Click **Save**.
10. To activate the rule, click **Commit task**.

Rule Syntax with Examples

Here's what you need to keep in mind while writing approval rules:

If you're associating an attribute group to a root item class, use this syntax:

```
[<Root Item Class Name>].[<Attribute Group Name>].[<Attribute Name>]
```

The root item class name is usually `JItemRootIccPrivate` and it may be suffixed by a number 2 or 3, for example.

`JItemRootIccPrivate`, `JItemRootIccPrivate2`, or `JItemRootIccPrivate3`.

So let's say you have a Buying Area attribute group in the root item class and Buying Value is the attribute, then the syntax would be:

```
JItemRootIccPrivate3.itemEFFTLBUYING5FAREAPrivateVO.buyingValue
```

If you're associating an attribute group to a non-root item class, and the item class and attribute group both have an internal name (API name) defined, use this syntax:

```
[<Attribute Group Name API>].[<Internal Attribute Name>]
```

Example: If country is Canada and MSRP is greater than 10 CAD, then Approval Group is Marketing and Pricing Team. The rule is written like this:

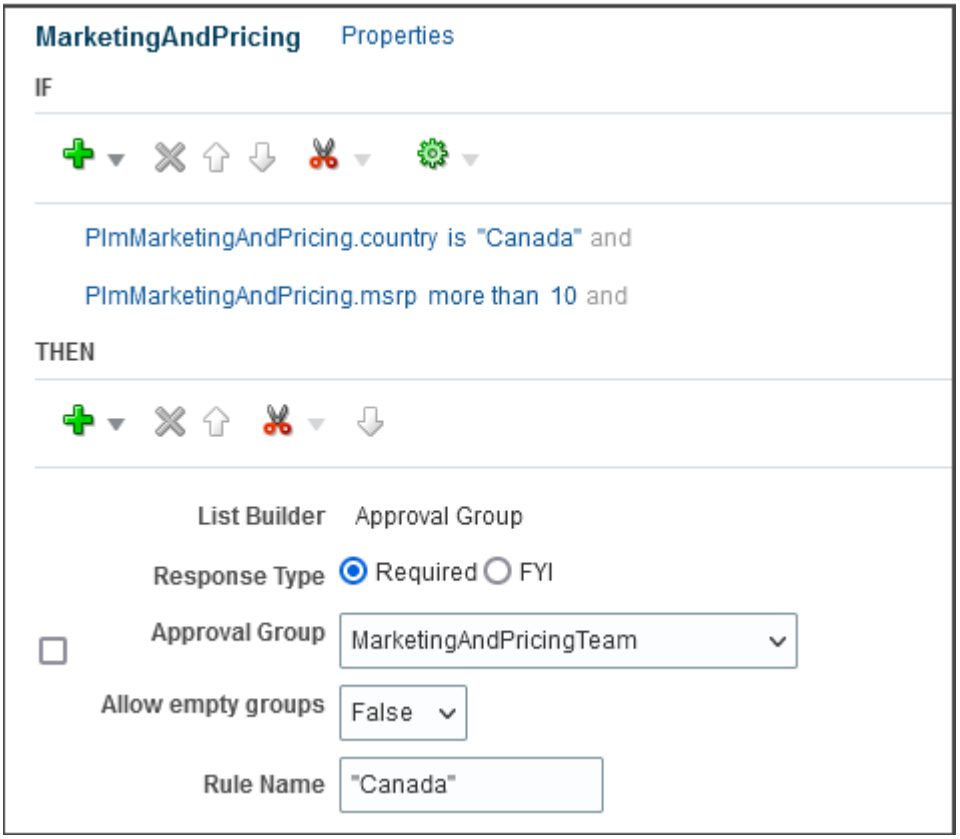
PlmMarketingAndPricing.country is "Canada" ***and***

PlmMarketingAndPricing.msrp more than 10

THEN

Approval Group: *MarketingAndPricingTeam*

Here's an image that shows the rule added in BPM Worklist.



If there's no API name defined for the item class, add the item class name before the attribute group name. The item class name is an automatically generated name, starting with `JItem`. The attribute group name starts with `itemEFF`.

```
[<Item Class Name>].[<Attribute Group Name>].[<Attribute Name>]
```

If there's no API name defined for the attribute group, you can edit the attribute group name and add the API name.

Best Practices

- When you create an item class or an attribute group, make sure you specify the API name.
- Avoid creating item classes with names such as Item, ItemCategory, ItemRevision, ItemSupplier, RevisedItemLineApproval, ChangeObjectApproval, Evidence, and Certificate. Or creating similar names for the item class and flexfield attribute groups. Distinct names help ensure that rules run without error.

Assign Approver Based on Change Header Attribute

Let's say you want to manage the approval of engineering change orders in which reason for change is either Quality or Safety. You want to route the approval to the AsiaDesignTeam approval group. Here's the rule syntax:

1. In the If statement click the **Advanced Add or Modified Options (plus)** icon and select **simple test**. Enter
   `ChangeObjectApproval.attributeCategory is "ORA_ENG_CO"`
2. Click **Add** > **Nested test**. Enter
   `ChangeObjectApproval.reasonCode is "QUALITY"`

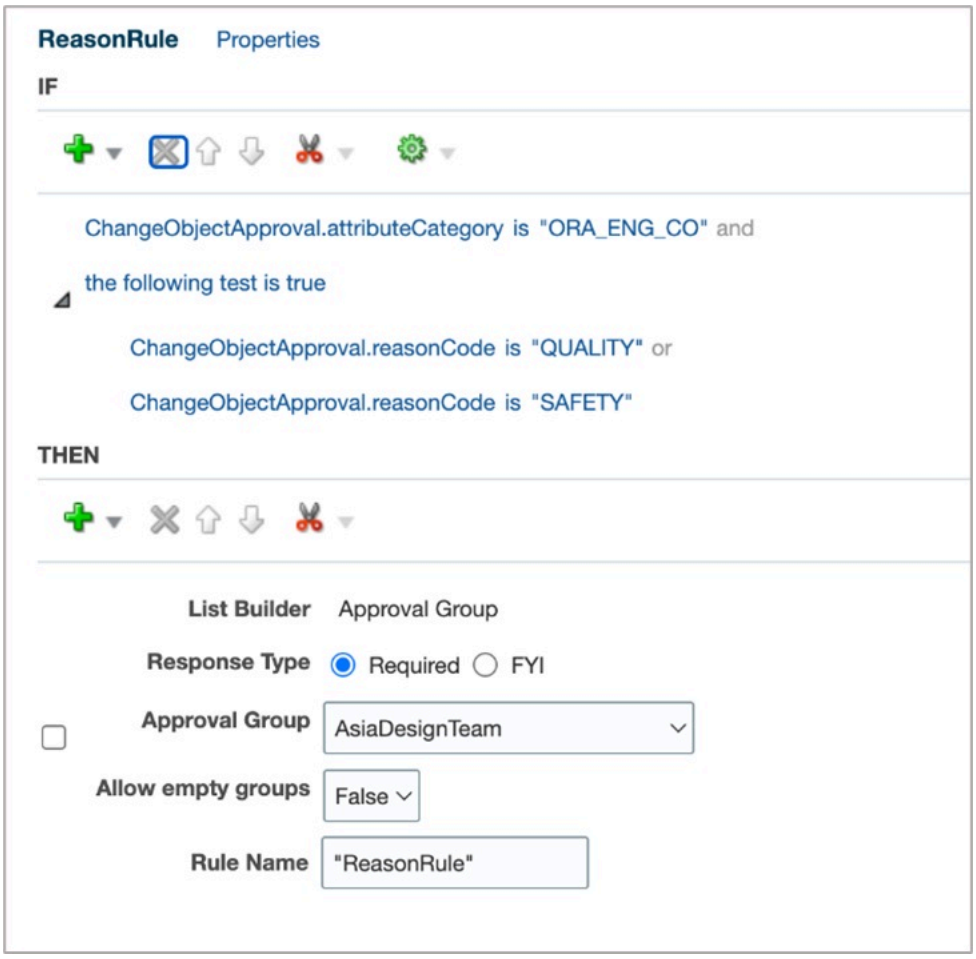
Or

```
ChangeObjectApproval.reasonCode is "SAFETY"
```

3. In the Then statement, enter the approval group as:

```
AsiaDesignTeam
```

Here's an image that shows the approval rule added in BPM Worklist.



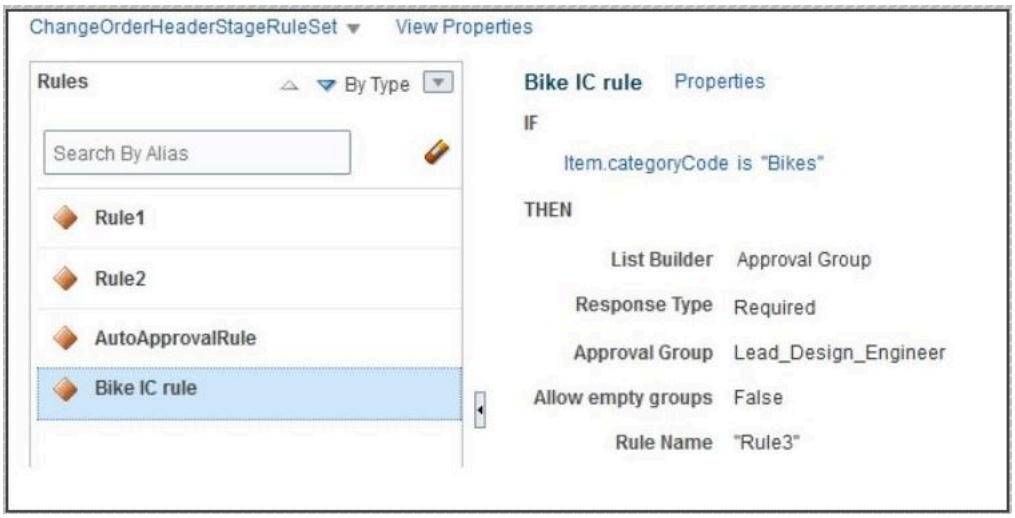
Assign Approver Based on Item Class

Let's say you want to manage the approval of items which belong to the item class named bikes. Here's the rule syntax:

1. In the If statement click the **Advanced Add or Modified Options (plus)** icon and select **simple test**. Enter `Item.categoryCode is "<bikes>"`

2. In the Then statement, enter the approval group as:
   `Lead_Design_Engineer`

   Here's an image that shows the approval rule added in BPM Worklist.



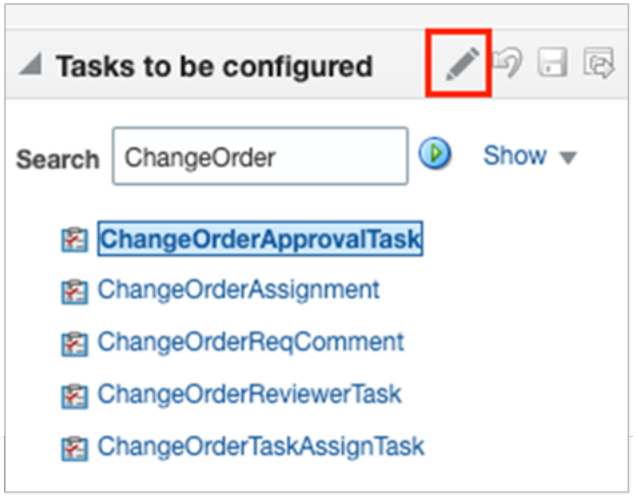
How to Automate Change Order Approval

Here's how you create a rule to automate the approval of change orders.

1. In the Setup and Maintenance work area, go to the following:
   - Offering: Product Management
   - Functional Area: Change Orders
   - Task: Manage Task Configurations for Supply Chain Management
2. In the **Search** field enter ChangeOrder and click **Search task types**.
3. Select **ChangeOrderApprovalTask** from the search results.

4. Click the **Edit task (or Pencil)** icon.

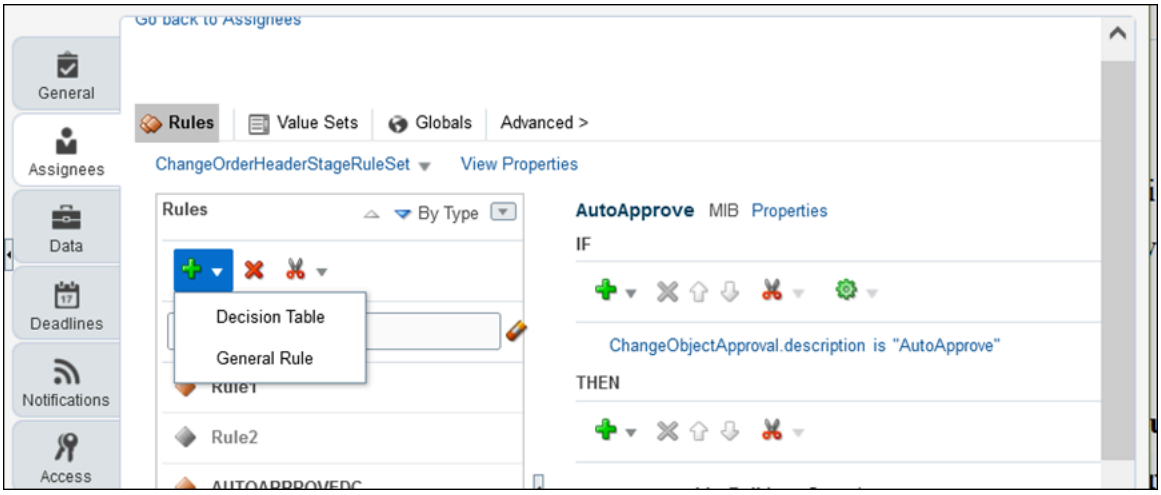
   Here's a screenshot of the **Edit task** icon.



5. Click **Assignees** and select **Change Order Header Rule Based Single Approver**.
6. Click the diamond icon and select **Go to rule**.

7. Here's how you create a new rule based on the description of the change order.
   a. In the Rules window, click the **Advanced Add or Modify Options (plus)** icon and select **General Rule**.

      Here's an image that shows how you create an approval rule.



   b. In the IF statement, specify the criteria to automatically approve the change order.

      Click the **Advanced Add or Modified Options (plus)** icon and select **simple test**.

      Let's say that you want to automatically approve the change order if the description is AutoApprove. Enter:

      ChangeObjectApproval.description is "AutoApprove".

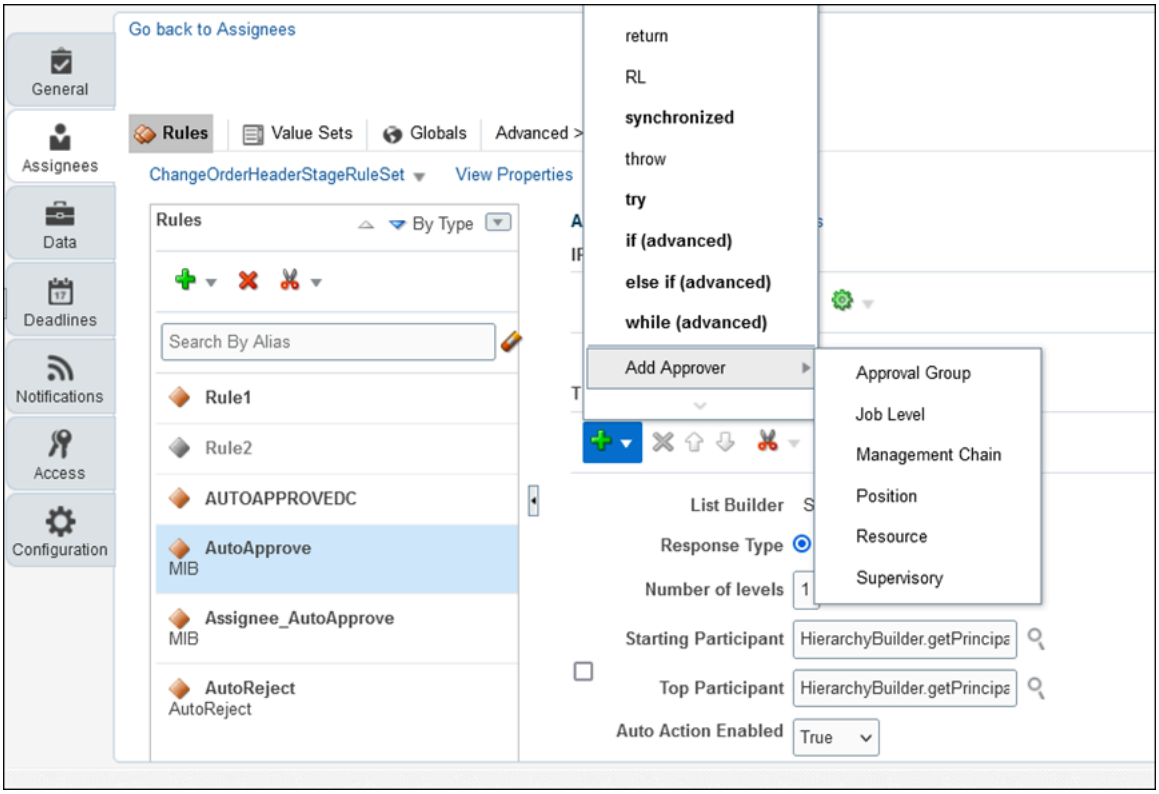
   c. In the Then statement, click **Insert Action(plus) icon** > **Add Approver** > **Supervisory**:

      The table shows the values you must enter in the Then statement:

Field	Value
List Builder	Supervisory
Response Type	Required
Number of levels	1
Starting Participant	The user who is considered as auto approver. To configure the change assignee as auto approver, enter: HierarchyBuilder.getPrincipal(Task.payload.COAssignee,-1,"","")
Top Participant	The last participant in the approval. Approval does not go beyond this participant in a hierarchy. Enter: HierarchyBuilder.getPrincipal("workflowsystem",-1, "","")

Field	Value
Auto Action Enabled	True
Auto Action	"APPROVE"
Rule Name	"AutoApprove"

Here's an image that shows how you add an approver.



Note: Absence of an approver can result in stuck workflows. So be sure to create rules for various scenarios.

8. To validate the rule you created, click **Validate**.
9. After successful validation, click **Commit task**.

Configure New Item Request Workflow

In this example, you're an administrator configuring the new item request workflow. The approval criteria is based on the attributes (or extensible flexfields) configured for the item class, and the criteria is configured using BPM worklist.

You can also use this topic as a reference to troubleshoot configuration errors. You must go through each subtopic to ensure that the configuration is complete and also review the privileges assigned to your role.

Prerequisite

As a prerequisite for this example:

- Create an item class named Radios in the root item class.

  To create an item class, use the **Manage Item Classes** task in the Product Management offering.
- For the new item request type, ensure that you set the number generation method to **Sequence Generated** and you fill in the required fields.

  To configure the number generation method, use the **Manage New Item Request Type Details** task in the Product Management offering.
- Create an approval group by using BPM Worklist.

Configuration Summary

1. Create an attribute group that includes attributes (or extensible flexfields) and associate it with the item class.
2. Configure the item class: Enable the item class for new item request, configure the definition workflow for the new item request, and assign an attribute group to the item class.
3. Create a rule set that includes the validation criteria and associate it with the attribute group.
4. Configure an approval criteria based on attributes by using BPM worklist.

How You Create an Attribute Group

Here's how you create an attribute group named Region, add an attribute named Country, and add a country in the list of countries.

1. In the Setup and Maintenance work area, select the following:

   Offering: Product Management

   Functional Area: Items

   In the **Show** list, select **All Tasks**.

   Task: Manage Item Attribute Groups and Attributes
2. Here's how you create a single row attribute group named **Region**:
   a. On the Manage Attribute Groups page, click **Create**.
   b. Enter the display name of the attribute group as **Region**.
   c. Behavior: Select **Single Row** so that users can only set it once.
   d. Click **Save**.
3. In Context Usages, you must set up at least one context:
   a. Click **Create**.
   b. Name: Select **Item** and click **Save**.
4. Attributes: Here's how you create an attribute named **Country** to include a list of countries.
   a. Click **Create**. Enter the following values:

      Name: Country

      Internal Name: Country

Data Type: Character

Display As: List of values

b. Click **Create Value Set**. Here are the properties:

Value Set code: Countries List

Module: Product Development

Validation Type: Independent

Value Data Type: Character

Value Subtype: Text

Maximum Length: 30

c. Click **Save**.
d. To add specific countries in the list, click **Manage Values**.
e. In the Manage Values dialog box, click **Create**.

Enter **India**.

Repeat this step to add other countries to the list.

Click **Save and Close**.

Configure the Item Class

Here's how you configure the item class named Radios.

1. In the Setup and Maintenance work area, select the following:

   Offering: Product Management

   Functional Area: Items

   Task: Manage Item Classes
2. Search for the item class named Radios and click **Edit**.
3. To enable the item class for new item request:

   a. In the Edit Item Class page, click **Item Management**.
   b. Select **Enable New Item Request** and click **Save**.

4. To configure the definition workflow for the new item request, expand Definition Workflow Details and click **Add Row**:

   Here are the details of the workflow:

   Sequence number: 10

   Assignee Type: Person

   Response Required From: One

   Business Entity: Item Operational Attributes

   Associated Entity: Main
5. To assign an attribute group to the item class, click Pages and Attributes Groups.
   a. In the Attribute Groups subtab, click **Select and Add**.

      Search for the attribute group named Region that you created in a previous step and add that attribute group.
   b. Click **OK** and click **Save**.
6. To assign the attribute group to a specific page, in Pages and Attributes Groups, click the **Pages** subtab.
   a. In this example, select **Product Development** to add an attribute group to the Product Development page. Note that you must select the page based on your business requirement.
   b. In Attribute Groups, click **Select and Add**.
   c. Search for and add the attribute group named Region that you created in a previous step.
   d. Click **OK**, and click **Save and Close**.
7. You must deploy the attribute group assigned to the item class. Here's how:
   a. In the Setup and Maintenance work area, go to the following:

      Offering: Product Management

      Functional Area: Items

      In the **Show** list, select **All Tasks**.

      Task: Deploy Item Extensible Flexfields
   b. In the Deploy Item Extensible flexfields page, search for "item" and select **Item Extended Attributes**.
   c. Click **Deploy Flexfield**.
8. You must ensure that attributes appear as part of the item class in Product Development work area. Here's how:
   a. Navigate to the Product Development work area
   b. Create an item in the Radios item class.

      The attribute group named Region and the attribute named Country must appear in the General Information page of the item.

Configure the Approval Workflow Using BPM Worklist

Here's how you create a rule using BPM Worklist to manage the approval workflow in a new item request.

1. In the Setup and Maintenance work area, go to the following:
    - Offering: Product Management
    - Functional Area: New Item Requests
    - Task: Manage Task Configurations for Supply Chain Management

    If you receive a message prompting you to start synchronization, click **Start Synchronization** and wait for the synchronization to complete.
2. Select NewItemRequestApprovalTask.
3. To make changes to the approval task, click **Edit task**.
4. Click the Assignees tab. The New Item Request workflow appears.

    > **Note:** Don't delete any predefined rule sets available in BPM Worklist.

5. In New Item Request Header Rule Based Single Approver, click the diamond icon (within the workflow diagram) and click **Go to rule**.
6. To create a new rule, click **Add Rule (plus icon)**.
7. Enter a rule name. For example, India.

    Expand the rule and enter its details.
8. Here's how you set up the IF condition based on an item class and an attribute you created in previous steps.
    - Enter Radios followed by a dot.

      The attributes and properties configured for the Radios item class appear in a list. Select the attribute based on which you want to create the rule.

      Or

      You can also use the condition browser so that you get a better view of attributes that you can use. Here's how:
    - Click the **Search** icon. Enter Radios (the name of the item class) in the Condition Browser dialog box.

      Attributes appear in a node created by the application. It's recommended to expand each node to find and select the attribute you want to use.

      In this example, Radios, Radios2 and Radios3 are the nodes. The attribute named Country appears in Radios2.
    - To create a rule based on country, select **Radios2** > **Region** > **Country** and click **OK**.
    - The expression `Radios2.region.country` is inserted in the IF condition.
    - Let's say you want to route the approval of items manufactured in India to a group.

      In the expression builder, select **"is"** as the operator and enter India.
9. Here's how you set up the THEN condition:
    a. Click **Add** >**Add Approver** > **Approval Group**.

       Response Type: Required

Approval Group: Select an approval group for the new item request

Allow empty group: False

b. Click **Validate** and click the **Save** icon.
c. To activate the rule, click the **Commit task** icon.

Rule Syntax with Examples

Here's what you need to keep in mind while writing approval rules:

If you're associating an attribute group to a root item class, use this syntax:

```
[<Root Item Class Name>].[<Attribute Group Name>].[<Attribute Name>]
```

The root item class name is usually `JItemRootIccPrivate` and it may be suffixed by a number 2 or 3, for example.

`JItemRootIccPrivate`, `JItemRootIccPrivate2`, or `JItemRootIccPrivate3`.

So let's say you have a Buying Area attribute group in the root item class and Buying Value is the attribute, then the syntax would be:

```
JItemRootIccPrivate3.itemEFFTLBUYING5FAREAPrivateVO.buyingValue
```

If you're associating an attribute group to a non-root item class, and the item class and attribute group both have an internal name (API name) defined, use this syntax:

```
[<Attribute Group Name API>].[<Internal Attribute Name>]
```

Example: If country is Canada and MSRP is greater than 10 CAD, then Approval Group is Marketing and Pricing Team. The rule is written like this:

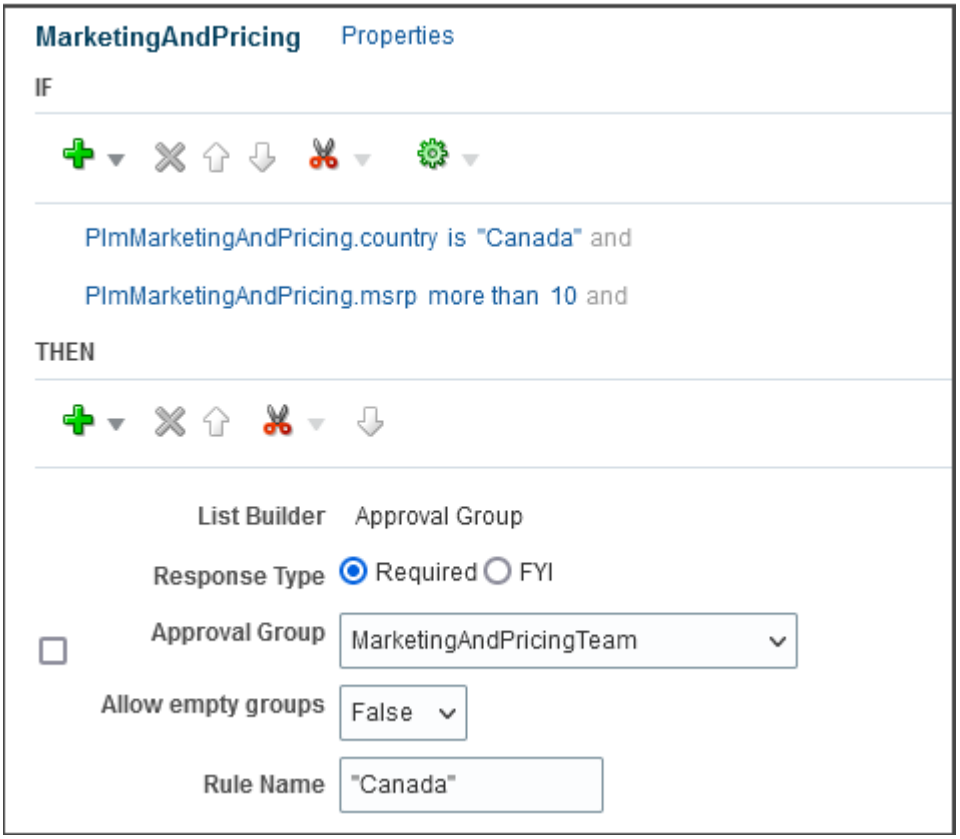
PlmMarketingAndPricing.country is "Canada" ***and***

PlmMarketingAndPricing.msrp more than 10

THEN

Approval Group: *MarketingAndPricingTeam*

Here's an image that shows the rule added in BPM Worklist.



If there's no API name defined for the item class, add the item class name before the attribute group name. The item class name is an automatically generated name, starting with `JItem`. The attribute group name starts with `itemEFF`.

```
[<Item Class Name>].[<Attribute Group Name>].[<Attribute Name>]
```

If there's no API name defined for the attribute group, you can edit the attribute group name and add the API name.

Best Practices

- When you create an item class or an attribute group, make sure you specify the API name.
- Avoid creating item classes with names such as Item, ItemCategory, ItemRevision, ItemSupplier, RevisedItemLineApproval, ChangeObjectApproval, Evidence, and Certificate. Or creating similar names for the item class and flexfield attribute groups. Distinct names help ensure that rules run without error.

Related Topics

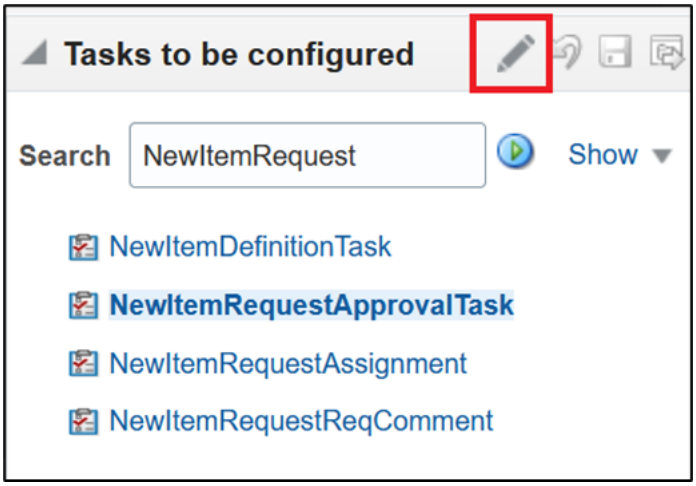
- Troubleshoot Access to New Item Requests

How to Automate New Item Request Approval

Here's how you create a rule to automate the approval of new item requests.

1. In the Setup and Maintenance work area, go to the following:
    - Offering: Product Management
    - Functional Area: New Item Requests
    - Task: Manage Task Configurations for Supply Chain Management
2. Search for NewItemRequest and select **NewItemRequestApprovalTask**. Click the **Edit task (or pencil)**

    Here's a screenshot of the **Edit Task** icon for the new item request approval.



3. Click **Assignees** and select **New Item Request Header Rule Based Single Approver**.
4. Click the diamond icon and select **Go to rule**.

5. Here's how you create a new rule to automatically approve the new item request.

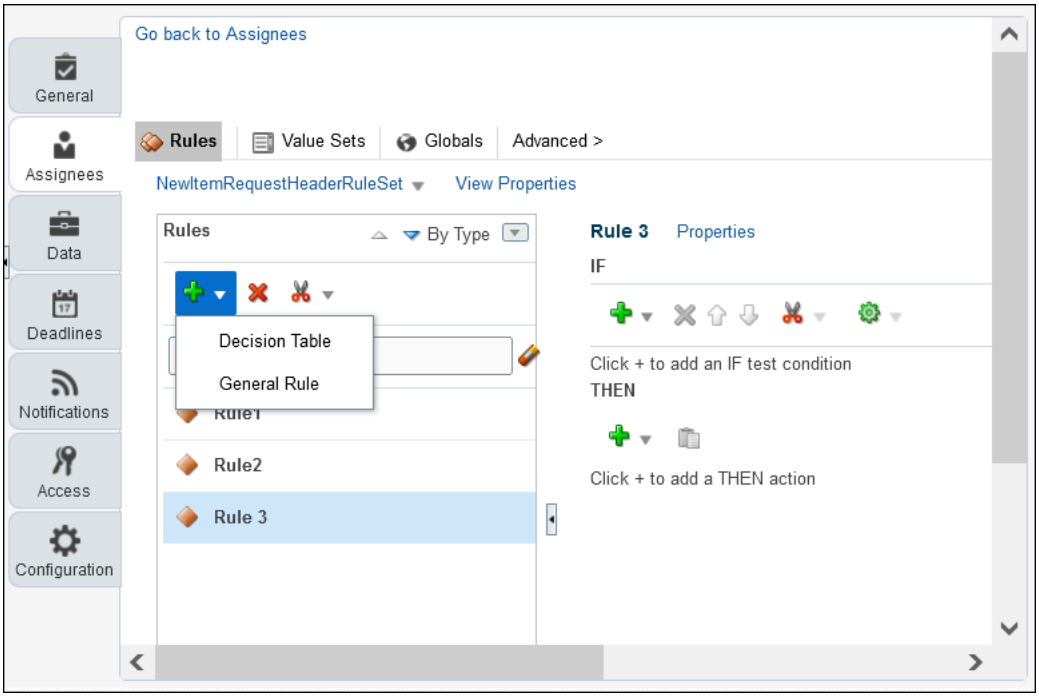
    a. In the Rules window, click the **Advanced Add or Modify Options (plus)** icon and select **General Rule**.
    b. In the IF statement, specify the approval criteria.

    Let's say that you want to automatically approve the new item request if the numeric extensible flexfield is named JI, and Cost is less than 50.

    Click the **Advanced Add or Modified Options (plus)** icon and select **simple test**.

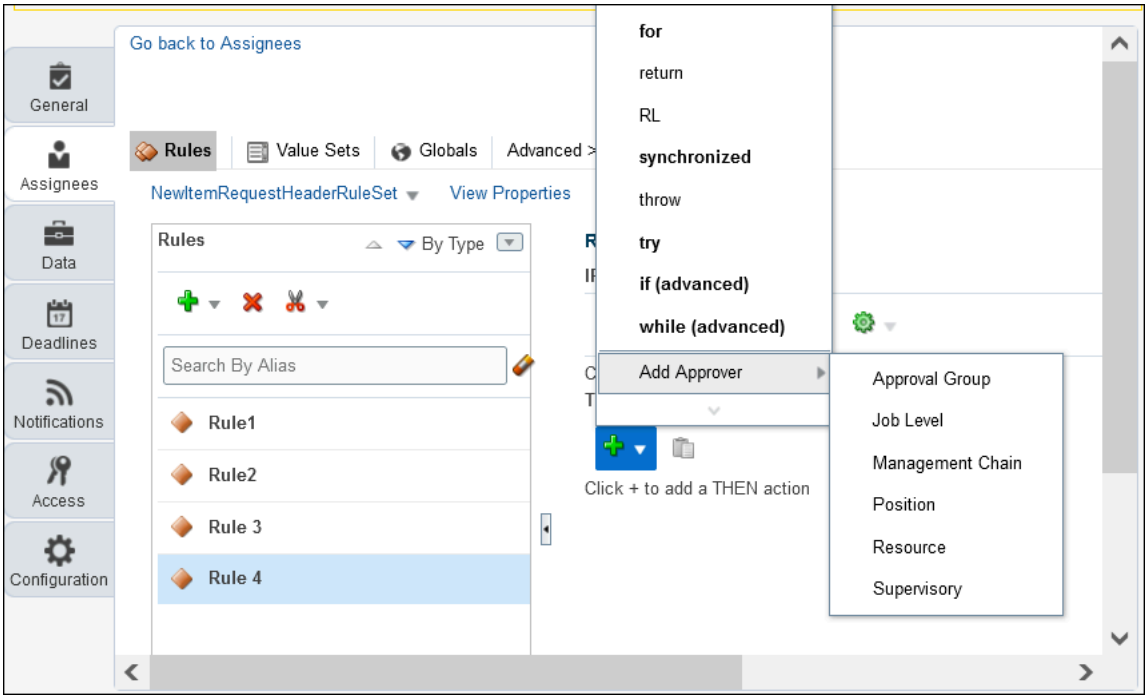
    Enter JIAttribGroup.jICost less than 50.

    Here's an image that shows how you create the approval rule.



    c. In the Then statement, click the **Insert Action(plus)** icon, select **Add Approver** > **Supervisory**:

    Here's an image that shows how you add an approver.

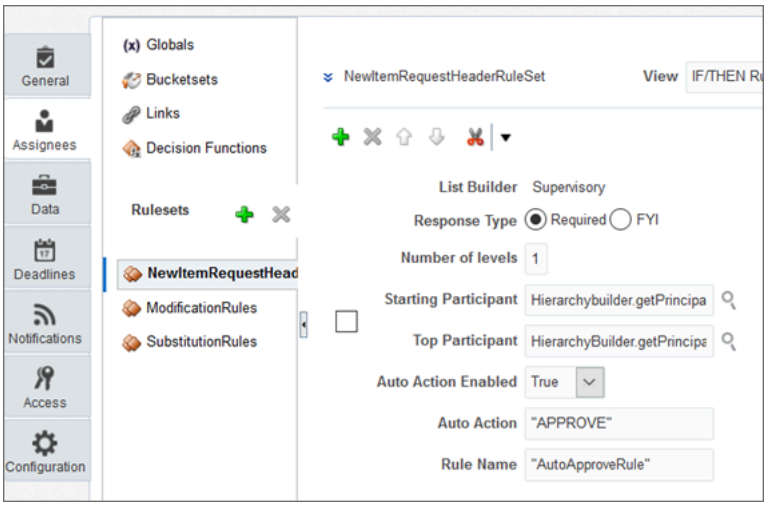


The table shows the values you must enter in the Then statement:

Field	Value
Response Type	Required
Number of Levels	1
Starting Participant	Represents the user who will be considered as auto approver. To configure the new item request creator as auto approver, enter `HierarchyBuilder.getPrincipal(Task.ownerUser,-1,"","")`
Top Participant	The last participant in the list. The approval list does not go beyond this person in a hierarchy. Enter: `HierarchyBuilder.getPrincipal("workflowsystem",-1,"","")`
Auto Action Enabled	True
Auto action	Approve

Field	Value
Rule Name	For example, enter "AutoApproveRule"

Here's an image that shows how you configure the approval outcome.



Note: Absence of an approver can result in stuck workflows. So be sure to create rules for various scenarios.

6. To validate the rule you created, click **Validate**.
7. After successful validation, click **Commit task**.

Actions for Reviewers and Approvers

Users added as approvers for a change status can perform several actions, while users added as reviewers are simply informed about the change through FYI notifications.

As a reviewer, you can review notifications from:

- Bell icon
- BPM Worklist
- Email

As an approver, you can perform the following actions:

- Approve
- **Reject**: You can reject the task to prevent further approval.
- **Request More Information**: If the task assignee wants more clarification from the requester, the task can again be sent to the requester. Users can also specify who requested the information. The task isn't rejected and once the required information is provided, the approval flow begins again.
- **Reassign**: You can assign the task to another user for approval. The new user's hierarchy is used for approval. For example, if a user thinks that the task is relevant to another department, he can reassign it.

- **Delegate**: You can delegate the task to another user. After approval by the delegate, the initial user's hierarchy is used for approval. The delegate can still act on the task after task expiry.
- **Withdraw**: If you're the task initiator, you can withdraw the task after the approval has been initiated.
- **Escalate**: You can escalate the task from the current assignee to the supervisor.
- **Claim**: A task that's assigned to a role or multiple users must first be claimed. Claim is available for group or multi-user assignments. After you claim the task, all applicable actions are listed. Claim is available only if auto claim is disabled and the response required from is set to **One**.
- **Dismiss**: Used for a task that requires the person (acting on the task) to acknowledge the receipt. This is similar to an FYI notification, which doesn't involve any action.
- **Resume**: A task that was halted by a Suspend action can be worked on again.
- **Release Claim**: Release a claimed task so that it can be claimed by other assignees.
- **Suspend**: The expiration date remains suspended until the task is resumed. After suspension, options to update a task are disabled.

> **Note:**
>
> - The Suspend and Resume tasks are only available for users with the BPMWorkflowSuspend privilege.
> - **Dismiss** is the only action supported for FYI notifications.

Related Topics

- Create an Approval Rule

Overview of BPM Workflow Notifications

As the business object progresses through the workflow, several notifications are sent out. Notifications inform participants about the occurrence of different events and enable them take actions.

Individual notifications are sent for each row in the definition workflow steps.

If an assignee is present for multiple associations across items for a single step, then:

- The assignee receives notification for each task.
- Each task can be delegated as required.
- After the step sequence is completed, notification for the next step is sent.

If the business object fails in a scheduled state, a consolidated notification is sent for all the failed lines.

The following notifications are sent: a detailed notification, and a task entry worklist table. The detailed notification displays the basic header attributes and assigned items. In an approval notification, an approver can enter comments and add attachments. The task entry notification is a one line entry in the worklist table of the item work area; you can't open it in a separate window.

Configure Workflow Notifications

The approval notification informs the respective approver to review the business transaction and take action. Notifications can be sent through email, or application bell notification.

Here are the notification modes:

- All: Both email and bell notifications
- None: Neither email nor bell notifications
- Email: Only email and no bell notifications
- In-app: Only bell notifications.

Notifications indicate that a user or group is assigned with a task, or the task status has changed. Notifications are sent to different types of participants for different actions.

Managing email notifications includes the following:

- Enable the notification: Click the plus icon to add new notification entry, choose the task status, and notification recipient.
- Disable the notification: Select the appropriate action and click delete to disable the notification.

Users can also allow actions on notifications and enable attachments to be sent with notifications. Allowing actions enables recipients to approve or reject an object. If an attachment is present, users can send the attachment through email for review.

Notification Header

Users can add the company logo or company name in the notification header. The default value of notification headers is null.

Any new notification added by the user includes the following header value:

```
"concat(string('Task '), /task:task/task:title, string(' requires your attention.')"
```

It's recommended to change the header value to null.

To change the company logo, include your company URL and provide a proper alternative text.

```
For example, img src="http://b-i.forbesimg.com/joshbersin/files/2013/07/company-logo3.jpg" width="230"
height="69" alt='Company Logo'
```

Bell Notification Sync-up

The Synchronize Bell Notifications ESS job is used to sync the Bell Notification dialog box with online BPM notifications. All the completed notifications are removed from Bell Notifications.

The FND_MANAGE_SCHEDULED_JOB_DEFINITION_PRIV privilege, is required to schedule or execute the Synchronize Bell Notifications ESS job.

Managing Bell Notifications

Enable/Disable Bell Notification: Uses the settings configured for email notifications. If the email notification is disabled for specific action, the user doesn't receive bell or email notification.

Enable Reminder: Send task reminders based on the time when the task was assigned to a user or the time of task expiration. The number of reminders and the interval between the reminders can also be configured.

More Options: Here are the additional options (on the Notifications tab of the BPM Worklist) to configure email notification.

- Make notification secure (exclude details): Prevents any business transaction details from appearing in email notifications.
- Do not send multiple notifications for the same task.
- Hide End User Web URL in notifications: Removes the link that provides access to the task in Workspace Application instead of the underlying transaction.
- Make notification actionable: Controls the following links in notification email: Approve, Reject, and Request More Information.
- Send task attachments with email notifications: Allows supporting documents to be attached to email notification.

Note: For details of all notifications in Product Management, see View Product Management Notifications on the Oracle Help Center.

Related Topics

- View Product Management Notifications

Comments in Notifications

Approval and rejection comments that you enter during the change workflow are visible to participants. But, not all participants can see the comments in notifications.

This table shows who can see approval and rejection comments in bell and email approval notifications.

Participants	Bell Notification Comments	Email Notification Comments
Creator	Yes	Yes
Approvers who provided approval	Yes	No
Approvers yet to provide approval	Yes	No
Change analyst	No	No

This table shows who can see requester comments in bell and email approval notifications.

Participants	Bell Notification Comments	Email Notification Comments
Creator	Yes	Yes

Participants	Bell Notification Comments	Email Notification Comments
Approvers who provided approval	Yes	Yes
Approvers yet to provide approval	Yes	Yes
Change analyst	No	No

Here are some points you must remember about comments in notifications:

- The creator is the only user who receives all comments whether by email or through the bell notification.
- Creators and approvers can see each other's comments in the bell notification, as this keeps getting updated dynamically when any user adds comments.
- Approvers don't see the comments in the email as the emails get triggered when the object moves into approval. Remember that the email notifications don't get updated dynamically, unlike the bell notifications.
- Requester comments are those which are given by any user when moving the change order from Open to Approval
- Once the final approval or rejection is done by the approver, only the comment given while approving or rejecting the change order is retained in the Tasks and the History tab. At any point of time, only the latest comment is retained.
- The change analyst doesn't see any comment either through the bell notifications or through emails.
- 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.

Configurable Email Notifications

Overview of Configurable Email Notifications in SCM

As part of workflow tasks and based on the notification mode in BPM Worklist, the application automatically sends notifications to your users.

For example, when someone submits a new item request for approval, the approver receives an email notification with approval request. In the new item request workflow, you can use Oracle Analytics Publisher to configure the content, layout, and style of the notifications.

The table shows the Supply Chain Management product that uses configurable email notifications, along with their associated features, and workflow task names.

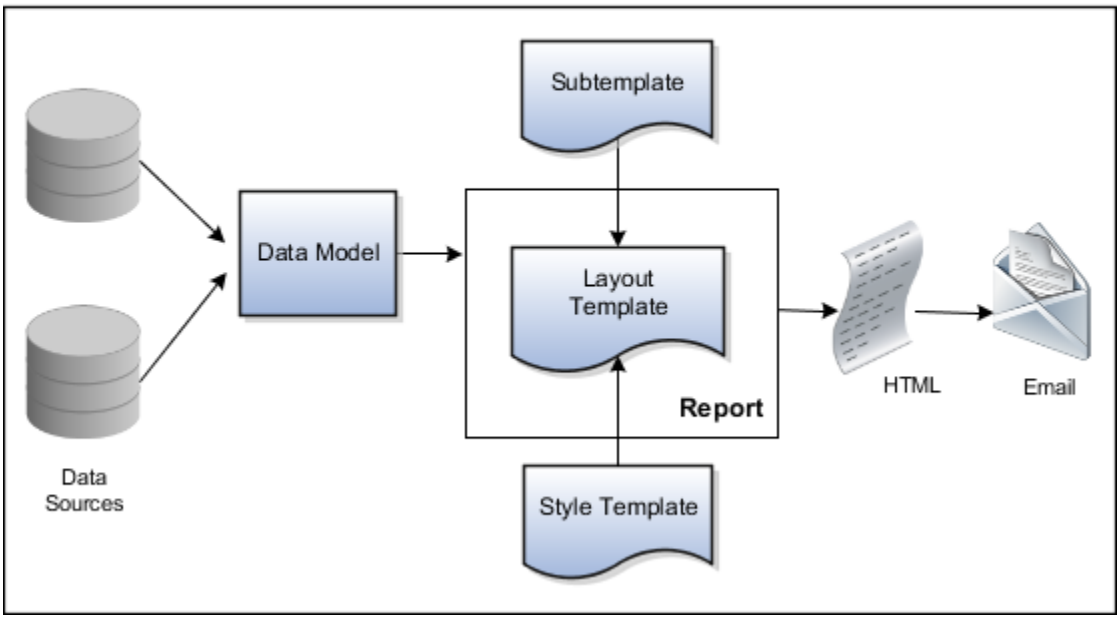
Product	Feature Name	Report or Notification Name	Workflow Task Name
Product Hub	New Item Request	New Item Request Approval	NewItemRequestApprovalTask

Note: When you receive a workflow email notification, you can alternatively find the same notification by opening the Worklist: Notifications and Approvals work area or bell notification.

Process Overview

The process to generate email notifications is the same as generating other types of report output. The process involves various types of objects in the business intelligence catalog, including data models, subtemplates, style templates, and reports.

This figure shows how these objects work together to generate the output used for email notifications.



- **Data Sources:** Store the attributes and attribute values for business objects and transactions in the application (example of data sources being transaction tables)
- **Data Model:** Determines which attributes from data sources are available to be included in the email and how that data is retrieved
- **Subtemplate:** Provides common components, for example a branding logo and buttons, that can be reused in multiple reports
- **Style Template:** Provides styles such as the type of lines and fonts to use in tables, or the font type, size, and color to use for headings
- **Report:** Contains a **layout template** that determines:
  - Which attributes appear in the email, from the data model used for the report
  - What the email looks like, leveraging components from the subtemplate and styles from the style template used for the report
- **HTML:** Is the output generated from the report
- **Email:** Is sent to users as part of a business flow, with the HTML output embedded in the email body

Each workflow task with configurable email notifications has a corresponding predefined report in the BI catalog.

Email Modifications

After you enable configurable email notifications, the predefined reports and related objects in the BI catalog work by default. The report-based notifications provide the same information as the standard notifications, but in a format optimized for mobile devices. If you need to modify the emails, you can edit copies of the predefined reports, data models, and subtemplate (but not the style template).

Security

To configure reports and data models for email notifications, you must have the Application Developer and the BI Administrator job role.

> **Note:** Oracle recommends that security administrators don't assign these predefined roles directly to users. Instead, make a copy of a predefined role, remove the privileges that your users don't need, and assign users the role that contains only the privileges they need.

Setup

You must download and install the Template Builder for Word add-in.

For configurable email notifications, make sure that the email domain setup is correct in Oracle Analytics Publisher so that the emails get sent.

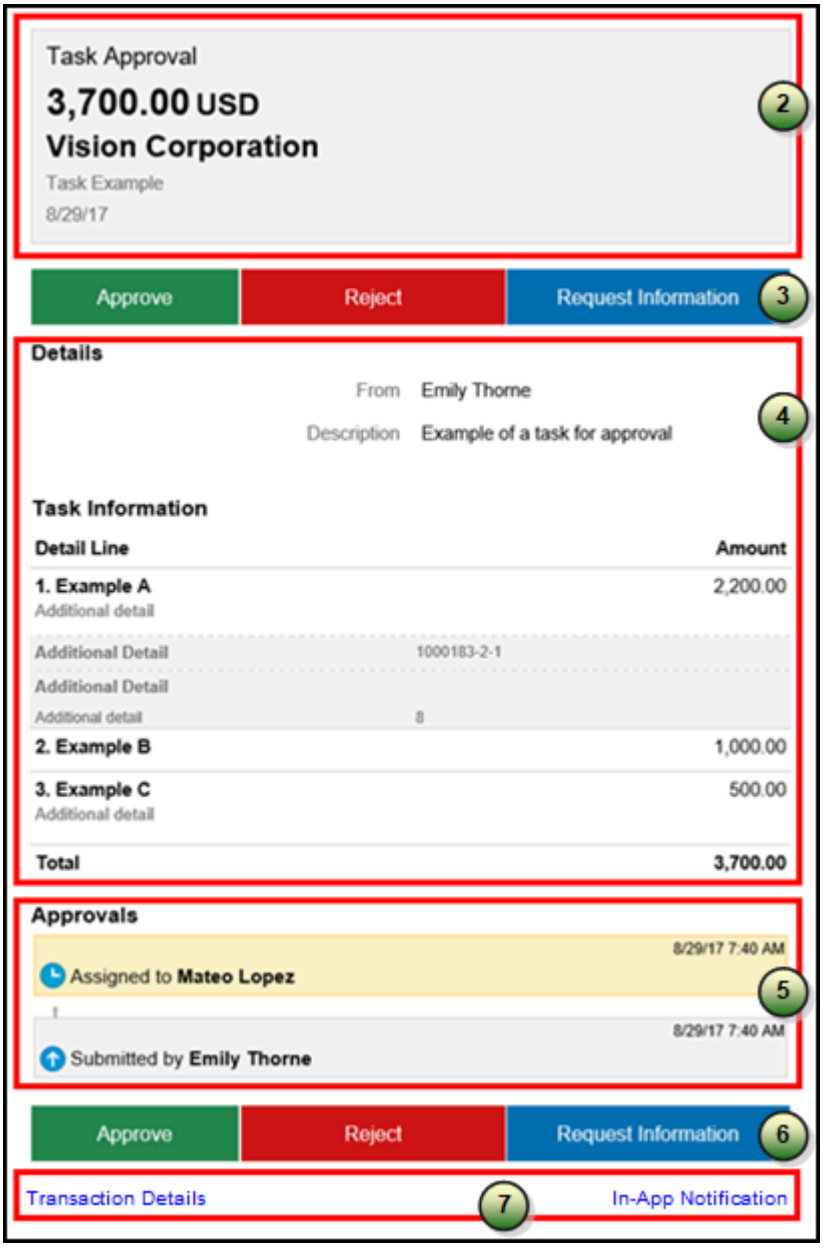
Best Practices for Content and Layout in Workflow Notifications

Here are some recommendations, tips, and reminders regarding the content and format of your configurable workflow notifications. Keep these in mind while you work on layout templates.

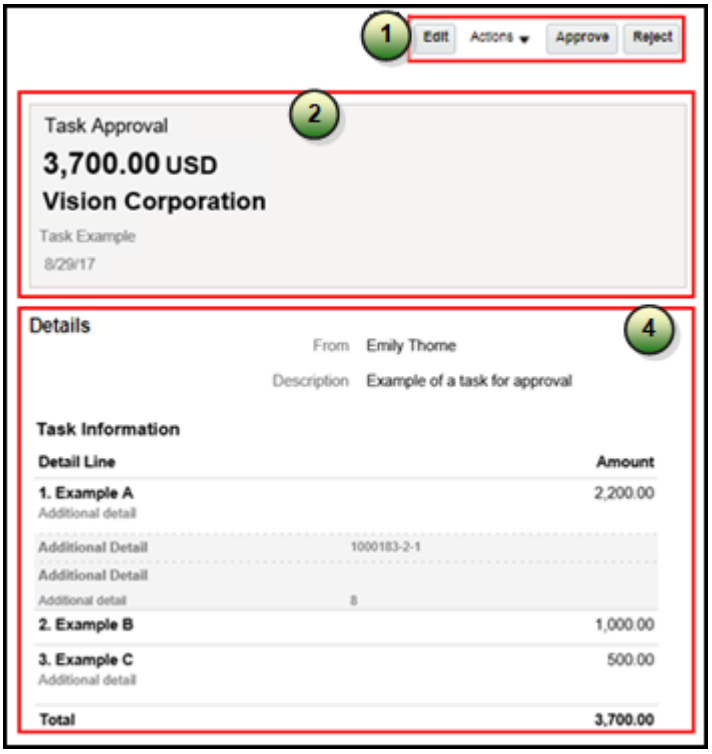
Follow the General Structure

In general, the workflow notifications contain a set of components that are displayed in a certain order. When you modify notifications, try to keep to this general structure and don't remove essential elements such as the action buttons.

The callouts in this figure identify the email notification components listed in the following table.



The callouts in this figure identify the in-app notification components listed in the following table. In addition to describing each component, the table also indicates if the component appears in the email notification, in-app notification, or both.



Callout	Component	Notification Type
1	Buttons with the primary actions to take on the task, such as **Approve** and **Reject**. These buttons aren't part of the configurable, report-based notification content.	In-app
2	Notification header listing key attributes of the workflow task and the associated transaction.	Both
3	Buttons for the primary actions to take on the task, such as **Approve** and **Reject**.	Email
4	Notification body that usually includes transaction and line level details, displayed in tables or sets of attributes with corresponding values. The data model for the report restricts the total number of rows displayed in some of the tables. If the limit is exceeded, the table footer provides a link to the transaction details page, where users can view all the rows. To change this limit, you can edit a copy of the data model.	Both
5	Approval history, including any attachments that users in the history uploaded for the task. You can't edit the approval history component, which usually appears in the body of only email notifications. For in-app notifications, you can	Email (or both, in rare cases)

Callout	Component	Notification Type
	usually view the history by clicking the **Actions** button and selecting **History**.	
6	Buttons for the primary actions again.	Email
7	A link to the corresponding transaction page, and another link to the in-app notification.	Email

Keep Mobile in Mind

Because users can view the workflow notifications on mobile devices, always consider mobile first and keep the notifications as simple as possible. For example:

- Don't put too much content horizontally, such as too many columns in tables.
- Keep all text, including attributes and column headings, as short as possible.
- Center align lists of attributes and their values, if they appear outside tables.

Note: For workflow tasks with configurable notifications, make sure that the **Hide End User Web URL in notifications** check box is selected in BPM Worklist. If not, a default first line will appear in the emails, in addition to what comes from the report layout template. It's best to hide this additional content because it might cause emails to not render well, especially when viewed from mobile devices.

Make sure to test your email notifications on mobile devices. As part of your testing, confirm that the default line about accessing the task in the Workspace Application isn't showing up.

Related Topics

- More Setup for Workflow Email Notifications
- Create RTF Templates Using the Template Builder for Word

Configure Email Notification Template

You can configure an email notification template using the Oracle Analytics Publisher Desktop Add-in for Microsoft Word for the following objects: change orders, change requests, problem reports, corrective actions, new item requests, proposals, and requirements.

You can view the object-specific labels for change requests, problem reports and corrective actions in the Change Order Approval Worklist and Email Notification Report template available in the Oracle Analytics Publisher. You can then set the configured template as the default template for all future approval notifications.

You can also configure approval notifications to add descriptive flexfields in the **Additional Information** section and view the impacted products for the engineering change orders, nonrevision control change orders, problem reports, and corrective actions. Configure notifications templates to view the attributes in the following notifications:

- Change Order Approval Worklist and Email Notification Report
- Change Order Reviewer Notification Report.

To view the configured descriptive flexfields in the additional information section, set **isAdditionalInformationEnabled** to true in the template.

Change request and commercial change order approval notifications won't display Impacted Products section.

Note:

- Before modifying the template, it's recommended that you familiarize yourself with Oracle Analytics Publisher. Also review the My Oracle Support (MOS) topic, Configurable Email Notifications: Implementation Considerations (Doc ID 2215570.1).
- Any user assigned with any of these predefined job roles can configure the notification template:
    - BI Author Role (BIAuthor)
    - BI Publisher Data Model Developer (BIPDataModelDeveloper)

  Oracle recommends that security administrators don't assign these predefined roles directly to users. Instead, make a copy of a predefined role, remove the privileges that your users don't need, and assign users the role that contains only the privileges they need.
- Ensure that your users are assigned the privilege

  Generate Item Change Order Report (EGO_GENERATE_ITEM_CHANGE_ORDER_REPORT_PRIV).

  This role provides access to the following:

    - New Item Request Approval Email Notification Report
    - Change Order Approval Worklist and Email Notification Report
    - Change Order Reviewer Notification Report
- Edit a copy of predefined layout templates, rather than creating reports or layout templates from scratch.
- To edit the template, it's recommended that you use the add-in for Microsoft Word.
- Modified templates are refreshed every 24 hours by default after you upload them to the BI catalog. To reflect changes sooner, you can change the profile value setting as described in **Set Report Template Refresh Interval**.

Create Profile Options to Control the Refresh Interval

1. In the Setup and Maintenance work area, go to the **Manage Profile Options** task.
2. On the Manage Profile Options page, click the **New** icon.
3. On the Create Profile Option page, enter the profile option code BIP_CLIENT_REFRESH_TIME.
4. Enter a display name that you can easily remember to help you find the profile option later.
5. From the Application list, select **Oracle Middleware Extensions for Applications**.
6. From the Module list, select **Application Core**.
7. Specify a start date.
8. Click **Save and Close**.
9. On the Manage Profile Options page, make sure that you select your new profile option in the Search Results: Profile Options subsection.
10. In the <Profile Option>: Profile Option Levels subsection, select the **Enabled** and **Updatable** check boxes for the **Site** level.
11. Click **Save and Close**.

Set Report Template Refresh Interval

In the Setup and Maintenance work area, go to the **Manage Administrator Profile Values** task.

1. Search for the BIP_CLIENT_REFRESH_TIME profile option and select it.
2. Click the **Create** icon.
3. In the row that appears, select **Site** as the Profile Level. Then, enter a time interval of your choice (for example, 15) as the profile value.
4. Click **Save and Close**.

Install Oracle Analytics Publisher Desktop Add-In for Microsoft Word

1. Download Oracle Analytics Publisher Desktop from the following location: *https://www.oracle.com/middleware/technologies/analytics-publisher/downloads.html*
2. Install the latest version of the software for your operating system.
3. After you install the latest version, the add-in appears as the **Publisher** ribbon tab when you open Microsoft Word.

Download the Sample.xml File

1. Navigate to Reports and Analytics (Navigator > Tools > Reports and Analytics) and click **Browse Catalog**.
2. Navigate to the data model folder for the business object using the path listed in the Table 1 - Folder Path for Data Models.
3. Select the data model that you want and click **Edit**.
4. In the Data Model pane, click **Properties**.
5. In the Attachment section of the page that appears, click the file name, **sample.xml**, in the Sample Data field. The file downloads automatically.

Create and Publish a New Template

Download and Modify a Copy of the Original Template.

1. Click **Catalog**.
    a. To download and modify the template, navigate to the template using the path listed in Table 2 - Folder Path for Templates.
    b. Click **Edit**.
    c. Click **Edit** on the new page. Save a copy of the report (.rtf).

d. Open the (.rtf) report in Microsoft Word.
e. Click **Publisher > Sample XML** to begin uploading the sample.xml file.
f. After the upload is complete, all the Oracle Analytics Publisher options are enabled to configure the template. When you click the **Field** icon, you see change order-related fields from the data model, including trading partner reference attributes such as Customer, Supplier, Manufacturer, and Source. You drag and drop or move the required fields to modify the template. You can configure conditional rendering of these attributes and attribute values. For details, see the support note: Doc ID 2920067.1 on My Oracle Support.
g. Save the template.

Upload the New Template.

1. Change to Oracle Analytics Publisher by replacing everything after the domain name in your URL with /xmlpserver
2. Click **Catalog**.
3. Ensure that the folder structure and files in Shared Folders/Custom/Supply Chain Management are the same as the ones in Shared Folders/Supply Chain Management, including the folder you need. If not, copy or create the folders you need into the Custom/Supply Chain Management folder.
4. To upload the template, navigate to `Shared Folders/Custom/Supply Chain Management` and find the relevant report.
5. Click **Edit**.
6. Click **Add New Layout** and click **Upload**. The Upload Template File dialog appears.
   a. Enter a name for the template and select the template you modified.
   b. Type: Select RTF
   c. Locale: Select English
   d. Click **Upload**.

Set the New Template as the Default

1. While still viewing the layouts, click **View a List**.
2. Select the Default Layout check box corresponding to the modified report.
3. Click the **Save** icon.

The following table lists folder paths for data models.

Folder Path for Data Models

Business Object	Data Model	Data Model Folder Path
Change Order	Change Order Approval and Email Notification Data Model	Catalog > Shared Folders > Supply Chain Management > Product Management > Items > Change Orders > Data Models
New Item Request	New Item Request Worklist and Email Notification Data Model	Catalog > Shared Folders > Supply Chain Management > Product Management > Items > New Item Requests > Data Models
Proposal	Proposal Report Data Model	Catalog > Shared Folders > Supply Chain Management > Innovation Management > Concepts > Data Models
Requirement	Requirement Report Data Model	Catalog > Shared Folders > Supply Chain Management > Innovation Management > Concepts > Data Models

The following table lists folder paths for configured templates.

Folder Path for Configured Templates

Template Name	Folder Path
Change Order Approval Worklist and Email Notification Report	`Shared Folders/Custom/Supply Chain Management/Product Management/Items/Change Orders`
New Item Request Worklist and Email Notification Report	`Shared Folders/Custom/Supply Chain Management/Product Management/Items/New Item Requests`
Default Proposal Report	`Shared Folders/Custom/Supply Chain Management/Product Management/Innovation Management/Concepts`
Default Requirement Report	`Shared Folders/Custom/Supply Chain Management/Product Management/Innovation Management/Concepts`

Related Topics

- Modify the Notification Template for Change Orders

Add a Branding Logo and Change Other Shared Components in Workflow Notifications

A predefined subtemplate has common components for all workflow notifications based on predefined report layouts. You can edit these shared components so that the same changes apply to your notifications.

Here are some of the shared components in the subtemplate:

- Branding logo, if you add one to the subtemplate, which would appear as the first component in the email body. The logo appears in email notifications only.
- Action buttons in email notifications.
- Links at the end of the email notification, one to the corresponding transaction page, and another to the in-app notification.

For example, you can add a branding logo in the designated place in the subtemplate, or change the text on the buttons and links.

Note:

- When you make a copy of a predefined layout template to edit, the copy automatically inherits the same predefined subtemplate.
- Other than this central subtemplate for all notifications, you might also find predefined subtemplates specific to a product family. We talk about the central one here, but you would generally follow the same steps for other subtemplates.
- You must edit a copy of the subtemplate in the Custom folder of the BI catalog. Don't directly update the predefined subtemplate, including renaming it.
- When you work on your copy of the subtemplate, add your own content or edit what's already there, but don't remove anything.
- The exact steps can vary depending on your version of Microsoft Word.

Modify Shared Components in the Subtemplate

Here's how you edit a copy of the predefined subtemplate that has the shared components:

1. Click **Navigator** > **Tools** > **Reports and Analytics**.
2. Click the **Browse Catalog** icon.
3. In the catalog (the Folders pane), expand **Shared Folders** > **Common Content** > **Templates**.
4. For **Workflow Notification Subtemplate**, click **More** and select **Customize**.

   If you're not using the Customize option, even though it's recommended:
   a. Click **Copy** in the toolbar with Workflow Notification Subtemplate selected.
   b. In the catalog, expand **Shared Folders** > **Custom** > **Common Content** > **Templates**. Create a Templates folder in this location if it doesn't exist.
   c. Click **Paste** in the toolbar.
5. In the catalog, with the Templates folder open under the Custom folder, click **More** for the subtemplate and select **Rename** to give it a new name.
6. Click the **Edit** link for the renamed subtemplate.
7. In the Templates section, click the link in the Locale column.
8. Save the subtemplate .rtf file to your computer.
9. Open the .rtf file with Microsoft Word.
   - To add a logo, insert your own image in the subtemplate.
   - To change button or link text, edit the text accordingly. Make the same edits wherever that button or link text appears in the subtemplate.

     CAUTION: To make sure that your layout templates reflect these changes without more rework, don't edit any other text in the subtemplate .rtf file.

10. Update Word options so that existing links remain intact in the subtemplate.
    a. Click **File** > **Options** > **Advanced**.
    b. In the Word Options dialog box, click **Web Options** in the General section.
    c. In the Web Options dialog box, open the Files tab.
    d. Deselect the **Update links on save** check box.
11. Save your changes in Word.

Upload the Modified Subtemplate

Now you upload your subtemplate to the BI catalog:

1. In the catalog, expand **Shared Folders** > **Custom** > **Common Content** > **Templates**.
2. Click **Edit** for your subtemplate.
3. In the Templates section, click the **Upload** icon.
4. Select your modified .rtf subtemplate and a locale, and click **OK** to replace the original subtemplate.

Point Layout Templates to Your Subtemplate

Update all the report layout templates that you want to apply your subtemplate to:

1. In Microsoft Word, open the .rtf file for the layout template, as you would to make any other changes to the notification.
2. At the beginning of the document, change the subtemplate reference. For example, change `<?import:xdoxsl:///Common Content/Templates/Workflow Notification Subtemplate.xsb?>` to `<?import:xdoxsl:///Custom/Common Content/Templates/My Workflow Notification Subtemplate.xsb?>`.
3. Save your work.
4. Test things out to make sure you see your subtemplate changes in the notification output.

Related Topics

- What is a subtemplate?
- Customize Pixel-Perfect Reports

Use Quick Parts for Workflow Notifications

Use the Quick Parts feature in Microsoft Word to insert reusable pieces of formatted content. When you edit copies of predefined report layout templates for workflow notifications in Word, you can add predefined Quick Parts content to your .rtf file.

Quick Parts are helpful when you do more advanced work on layout templates. For example, from the Quick Parts gallery, you can select and add a table in a format that's consistent with predefined tables already on your notifications. The predefined Quick Parts content is available in a style template .dotx file on My Oracle Support.

Note: The exact steps can vary depending on your version of Microsoft Word.

Prerequisites

To get the predefined Quick Parts content into your Quick Parts gallery:

1. Open Quick Parts for Configurable Workflow Notifications (2215570.1) on My Oracle Support at https://support.oracle.com.
2. Download the .dotx file and save it to your Microsoft Word template folder, for example **C:\Users\<user name>\AppData\Roaming\Microsoft\Templates**. You need to save the .dotx file where the Normal.dotm Microsoft Word template is stored.

Also, to preview your layout template changes before uploading the .rtf file back to the BI catalog:

- Generate sample report data from the data model for the report that you're editing.
- Download a local copy of the subtemplate that applies to the layout template.

Adding Quick Parts Content to Workflow Notifications

To insert content from the Quick Parts gallery into a layout template:

1. In the BI catalog, find the predefined report with the layout template that you want to modify.
2. For the report, click **More** and select **Customize**.

   If you're not using the Customize option:

   a. Copy the predefined report and paste it in an appropriate subfolder within the Custom folder.
   b. Click the **Edit** link for the copied report.
3. Click **Edit** for the layout template to insert Quick Parts content into, and save the .rtf file to your computer with a new file name.
4. Open the .rtf file with Microsoft Word.
5. Put your cursor where you want to insert new content.
6. From the Insert tab on the ribbon, click **Quick Parts** within the Text group, and select the component to insert.
7. Edit the inserted component as needed and add any other components.
8. Save your changes in Word.

Previewing the Layout Template Changes

To preview your edits before uploading your layout template to the BI catalog:

1. On the ribbon, open the Analytics Publisher tab and click **Sample XML** within the Load Data group to import sample data from the data model. Skip this step if you already loaded sample data.
2. At the beginning of the document, replace the path with the location of the downloaded subtemplate file on your computer. For example, change `<?import:xdoxsl:///Common Content/Templates/Workflow Notification Subtemplate.xsb?>` to `<?import:file:///C:/Template_Directory/FinFunWorkflowNotificationSub.rtf?>`.
3. From the Analytics Publisher tab on the ribbon, click **HTML** in the Preview group.
4. If the preview reflects your changes as expected, then change the path back to the original location.
5. Save your changes in Word.

Uploading the Modified Layout Template

To upload your layout template to the BI catalog after previewing the changes:

1. Back in the catalog, click **Edit** for the report within the Custom folder, if that page isn't still open.
2. Click the **View a list** link.
3. Click the **Create** icon on the table toolbar.

4. In the Upload or Generate Layout section, click **Upload**.
5. Upload your edited .rtf file with a unique layout name.
6. Back on the page for editing the report, click Delete for the layout template that you downloaded earlier.
7. Click the **Save Report** icon.

Related Topics

- Quick Parts for Configurable Workflow Notifications
- Understand Style Templates
- Test Data Models and Generate Sample Data
- Customize Pixel-Perfect Reports

Preview Changes and Upload Layout Templates for Workflow Notifications

Before uploading .rtf files for report layout templates to the BI catalog, preview the output with your changes in Microsoft Word. You can avoid uploading a broken report that displays an error in the notifications sent to users.

Note: The exact steps can vary depending on your version of Microsoft Word.

Before You Start

- Generate sample report data from the data model used for the report, and save the .xml file to your computer.
- Download a local copy of the subtemplate that applies to your own report layout template:
  a. In the BI catalog, expand **Shared Folders** > **Custom** > **Common Content** > **Templates** if you're using a modified subtemplate, or **Shared Folders** > **Common Content** > **Templates** for the predefined subtemplate.
  b. Click **Edit** for Workflow Notification Subtemplate.
  c. In the Templates section, click the link in the Locale column.
  d. Save the subtemplate .rtf file to your computer.

Preview Output

To generate sample output from a local layout template:

1. Open your .rtf report layout template in Microsoft Word and make your edits.
2. On the ribbon, open the Analytics Publisher tab and click **Sample XML** within the Load Data group.
3. Select the .xml file you downloaded to import sample data from the data model.
4. At the beginning of your .rtf document, replace the path with the location of the downloaded subtemplate file on your computer. For example, change `<?import:xdoxsl:///Common Content/Templates/Workflow Notification Subtemplate.xsb?>` to `<?import:file:///C:/Template_Directory/FinFunWorkflowNotificationSub.rtf?>`.
5. From the Analytics Publisher tab on the ribbon, click **HTML** in the Preview group.
6. If the preview reflects your changes as expected, then change the path back to the original location.
7. From the Analytics Publisher tab on the ribbon, click **Validate Template** in the Tools group.
8. Also in the Tools group, click **Check Accessibility**.
9. Save your changes in Word.

Upload the Modified Layout Template

Here's how you upload your layout template to the BI catalog after previewing the changes:

1. Back in the catalog, click **Edit** for the report within the Custom folder, if that page isn't still open.
2. Click the **View a list** link.
3. Click the **Create** icon on the table toolbar.
4. In the Upload or Generate Layout section, click **Upload**.
5. Upload your edited .rtf file with a unique layout name.
6. Back on the page for editing the report, go back to the list view.
7. Select the **Default Layout** check box for your layout template. If you ever want to go back to the predefined layout, you can select it as default later.
8. Click the **Save Report** icon.

Related Topics

- Best Practices for Content and Layout in Workflow Notifications
- Test Data Models and Generate Sample Data

FAQs for Workflow and Approval Management

What's the difference between Save and Commit?

Use the Save icon to temporarily save your changes. Note that this doesn't activate any recent changes you made to the workflow.

Use the **Commit** icon to activate your recent changes.

What happens if I start synchronization?

Synchronization affects extensible flexfield metadata of all users in the environment. It synchronizes all extensible flexfield metadata available from 1 month, 10 days and 3 hours.

Why am I prompted to start synchronization even after I have synchronized the data?

Another user might have modified EFFs, or the session might have timed out before the synchronization is complete.

How long does the flexfield synchronization process take?

Depending on the environment set up and flexfield configuration, synchronization might require between 5 to 45 minutes.

Why did the workflow stop responding?

In change orders and new item requests, the workflow can stop responding due to one of the following reasons:

- Approval rule has an empty approval group.
- Approval rule not being associated with an approval group.
- An invalid approver. The user or role selected as an approver doesn't exist in the application.
- One or more lines don't match any rules in the approval task.
- Extensible flexfields not being generated.
- Inactive rules.
- Rules unavailable for the header stage.
- A new item request definition step assigned to a role and the role not being assigned to any user.
- An error in SOA workflow. Use Enterprise Manager to view workflow errors.
- Use of an incorrect case to specify the value of a parameter such as priority code.

Related Topics

- Why is my approval rule not working in a new item request?
- Configure the Definition Workflow for a New Item Request

Why is my approval rule not working in a new item request?

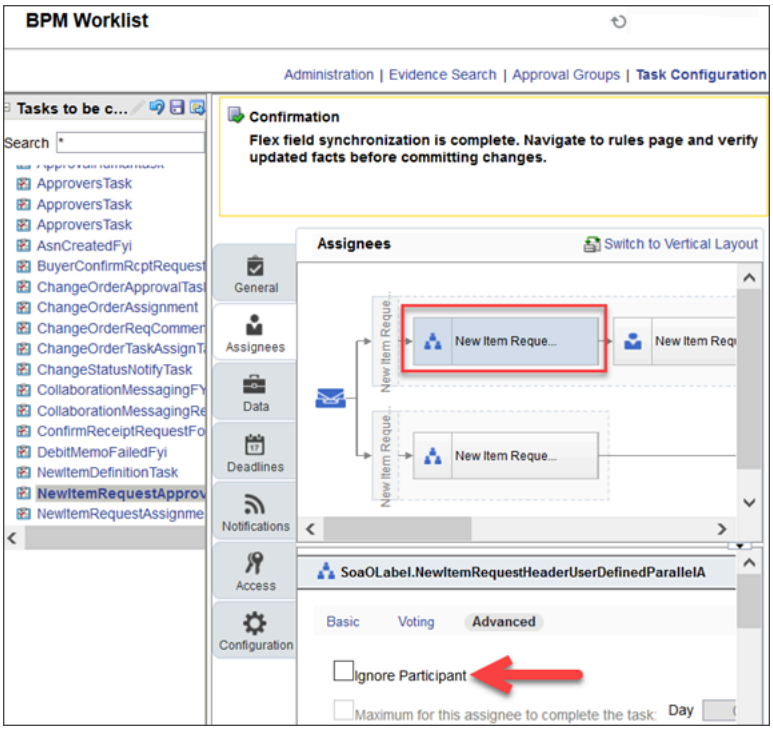
An approval rule may not work due to one of the following reasons:

- You haven't set the assignment method in the new item request type as **Rules Based**.

  Open the **Manage New Item Request Type Details** task and change the **Assignment Method** in the approval workflow.

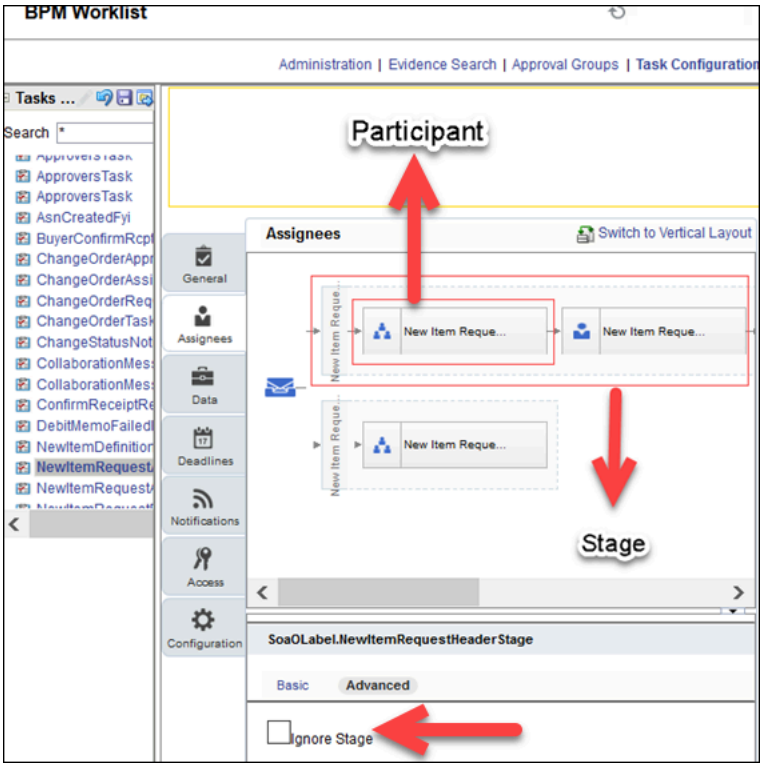
- You selected the **Ignore Participant** option for the rule. To include the participant:
  - Navigate to the BPM Worklist.
  - In the Assignees tab, select the participant. Click the Advanced tab.
  - Deselect **Ignore Participant**.

    Here's the screen that shows how you include the participant:



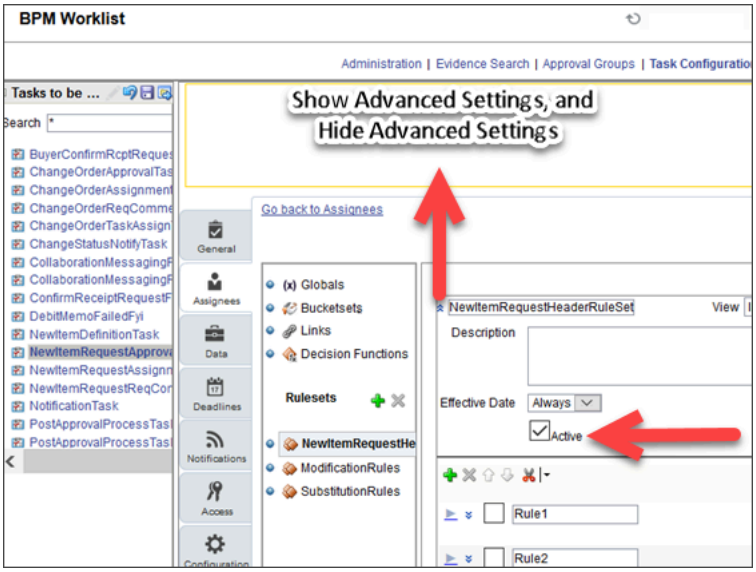
- You selected the **Ignore Stage** option. To include the stage:
    - Navigate to the BPM Worklist.
    - In the Assignees tab, select the participant and then select the stage. In the UI, stage is the region that encloses the participant.
    - Click the Advanced tab.
    - Deselect **Ignore Stage**.

      Here's the screen that shows how you include the stage:



- The `NewItemRequestHeaderRuleSet` isn't active. To activate the rule set:
    - Navigate to the BPM Worklist.
    - Select the participant. Click the diamond icon and then select **Go to rule**.
    - Click **Show Advanced Settings** (or the double down arrow icon) that appears next to the rule set.
    - Select **Active**.

      Here's the screen that shows how you activate the rule set:



Related Topics

- Why did the workflow stop responding?

Why is the advanced mode required while defining rules in the header stage?

Because the NewItemLineApproval object is available only through the ChangeObjectApproval object.

Can I create dynamic approval groups for a line and for on-premise customers?

Dynamic approval groups cannot be created for a line or for on-premise customers.

Why did the change order get stuck in the workflow in spite of having optional approvers?

A rejection from an optional approver and absence of a mandatory approver can cause the change order to get stuck in the workflow. It is important to define mandatory approvers.

What's the difference between reassign and delegate?

A user can reassign the task to another user for approval. The new user's hierarchy is used for approval. For example, if a user receives an approval request relevant to another team, he can reassign it to a user in another team.

A user can delegate the task to another user. After approval by the delegate, the initial user's hierarchy is used for approval. The delegate can still act on the task after task has expired.

Can I specify rules at different levels when using dynamic approval groups for change orders?

For on-premise customers, rules can be specified at both header and line levels.

How can I use BPM Worklist to configure the new item request or change order for autoapproval?

When creating the approval rule, set Auto Action Enabled to True, and Auto Action to Approve.

Related Topics

- Create an Approval Rule

Can I automatically skip a status in a change order depending on a rule?

You can’t create a rule to skip the open, interim approval, or approval status in a change order.

But you can skip any open or interim approval status by manually promoting the change order to the status you want. You can't skip approval status in engineering change orders and change orders without revision control.

Related Topics

Can I restrict the visibility of an attribute group for roles and users added as approvers?

Yes, you can restrict the visibility of an attribute group for roles and users added as approvers. When you create an attribute group, you need to define the context usage, which applies to an item, the item revision, and the item supplier.

The attribute group maybe a user-defined attribute group. Only approvers who are members of the approval group will view or edit the user-defined attributes when the change is routed for approval.

To know how to restrict visibility of user-defined attributes, see *Configure Extensible Flexfield Data Security*.