

**Oracle ERP Product Hub Cloud  
Integration to Oracle Utilities Work and  
Asset Cloud Service for Stock Item**

Configuration Guide

Release 24A

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Oracle ERP Product Hub Cloud Integration to Oracle Utilities Work and Asset Cloud Service for Stock Item Configuration Guide, Release 24A

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# Preface

Welcome to the Oracle ERP Product Hub Cloud Integration to Oracle Utilities Work and Asset Cloud Service for Stock Item Configuration Guide for release 24A.

The preface includes the following:

- [Audience](#)
- [Documentation and Resources](#)
- [Documentation Accessibility](#)
- [Conventions](#)
- [Acronyms](#)

## Audience

This document is intended for anyone implementing the integration of the following products with Oracle ERP Product Hub Cloud:

- Oracle Utilities Work and Asset Management/Oracle Utilities Work and Asset Cloud Service

## Documentation and Resources

For more information regarding this integration, foundation technology and the edge applications, refer to the following documents.

**Note:** Make sure to remove extra spaces in the links to access the correct pages.

### Product Documentation

Resource	Location
Oracle ERP Product Hub Cloud Integration to Oracle Utilities Work and Asset Cloud Service for Stock Item documentation	<a href="https://docs.oracle.com/en/industries/energy-water/integrations-index.html">https://docs.oracle.com/en/industries/energy-water/integrations-index.html</a>
Oracle Utilities Work and Asset Cloud Service documentation	<a href="https://docs.oracle.com/en/industries/energy-water/work-asset-cloud-service/index.html">https://docs.oracle.com/en/industries/energy-water/work-asset-cloud-service/index.html</a>
Oracle ERP Product Hub Cloud documentation	<a href="https://docs.oracle.com/en/cloud/saas/supply-chain-and-manufacturing/24a/faipr/index.html">https://docs.oracle.com/en/cloud/saas/supply-chain-and-manufacturing/24a/faipr/index.html</a>

### Additional Documentation

Resource	Location
Oracle Support	<p>Visit My Oracle Support at <a href="https://support.oracle.com">https://support.oracle.com</a> regularly to stay informed about updates and patches.</p> <p>Refer to the <i>Certification Matrix for Oracle Utilities Products (Doc ID 1454143.1)</i> on My Oracle Support to determine if support for newer versions of the listed products is included.</p> <p>For more information, refer to the Oracle Utilities Integrations page at <a href="http://my.oracle.com/site/tugbu/productsindustry/productinfo/utilities/integration/index.htm">http://my.oracle.com/site/tugbu/productsindustry/productinfo/utilities/integration/index.htm</a></p>
Oracle Technology Network (OTN) Latest versions of documents	<a href="http://www.oracle.com/technetwork/index.html">http://www.oracle.com/technetwork/index.html</a>
Oracle University for training opportunities	<a href="http://education.oracle.com/">http://education.oracle.com/</a>

# Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

## Access to Oracle Support

Oracle customers have access to electronic support for the hearing impaired. Visit: <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs>

## Conventions

The following text conventions are used in this document:

Convention	Meaning
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

## Acronyms

The following terms are used in this document:

Term	Expanded Form
DVM	Domain Value Map (Lookup)
Oracle ERP	Oracle Enterprise Resource Planning Cloud
OIC	Oracle Integration Cloud
PH	Product Hub
PIM - Product Hub	Product Information Management
SCM	Oracle Supply Chain Management
UCM	Oracle's Universal Content Management
WACS	Oracle Utilities Work and Asset Cloud Service
WAM	Oracle Utilities Work and Asset Management

# Chapter 1

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## Overview

This chapter provides an overview of Oracle ERP Product Hub Cloud integration with Oracle Utilities Work and Asset Cloud Service for Stock Item using Oracle Integration Cloud. It also provides information about software requirements, participating applications and supported business processes in this integration.

The chapter focuses on the following:

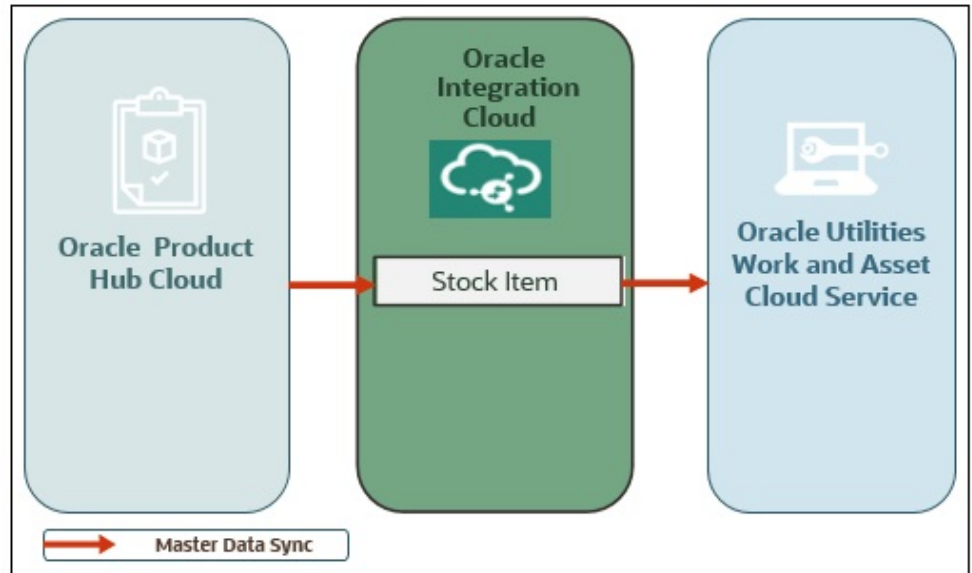
- [Overview of the Integration](#)
- [About Oracle ERP Product Hub Cloud](#)
- [About Oracle Utilities Work and Asset Cloud Service](#)
- [About Oracle Integration Cloud](#)
- [Software Requirements](#)
- [Prerequisites](#)
- [Supported Business Processes](#)



## Overview of the Integration

Oracle Utilities Work and Asset Cloud Service Integration to Oracle ERP Product Hub Cloud synchronizes stock items from Oracle ERP Product Hub Cloud to Oracle Utilities Work and Asset Management for new and updated items.

The following diagram provides a high-level representation of the integration:



## About Oracle ERP Product Hub Cloud

Oracle ERP Product Hub Cloud - Product Information Management (PIM) provides a product master data management system. It is foundational for an end-to-end supply chain and provides a business process framework around the company's master data.

Product Information Management enables customers to centralize all product data across heterogeneous systems to create a single view of blended product master record that can be used across all departments or organizations. From products that are manufactured internally to finished goods that are sourced from suppliers, Product Hub enables customers 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 is shared 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.

## About Oracle Utilities Work and Asset Cloud Service

Oracle Utilities Work and Asset Cloud Service maintains information about assets and various features and functions around managing those assets. The solution provides a means of recording asset acquisition, maintenance, procurement, installation and removal.

Oracle Utilities Work and Asset Cloud Service provides functionality to manage the receipt, installation, maintenance, tracking and removal of assets. The application also manages approval processing, tracks purchasing transactions, manages inventory and resources, and tracks costs, accounting and financial transactions.

## About Oracle Integration Cloud

Oracle Integration Cloud is a unified platform to integrate the applications, automate processes and create applications.

Using Process Builder the business processes can be rapidly designed, automated, and managed in the cloud. Using integrations connect the applications into a continuous business flow. The integrations can be quickly developed and activated between both the applications that live in the cloud; and the applications still live on premises. The lookups help to match application specific codes between the two applications.

Integration Insights and Stream Analytics helps to simplify and extract business metrics and create custom dashboards.

## Software Requirements

The following applications are required for this integration:

- Oracle Utilities Work and Asset Cloud Service
- Oracle Integration Cloud
- Oracle ERP Product Hub Cloud

For the application versions, refer to *Oracle ERP Product Hub Cloud Integration to Oracle Utilities Work and Asset Cloud Service for Stock Item Release Notes* included in this release.

## Prerequisites

All participating applications must be installed, set up, and working properly.

Refer to the *Oracle ERP Product Hub Cloud Configurations for Oracle ERP Product Hub Cloud Integration to Oracle Utilities Work and Asset Cloud Service for Stock Item Setup Guide* included in this release for the required Oracle ERP Product Hub Cloud configurations and setup.

## Supported Business Processes

This integration supports the following key functionalities:

- Stock Item information created and updated in Oracle ERP Product Hub Cloud is synchronized to Oracle Utilities Work and Asset Cloud Service.

The following business processes are supported in this integration:

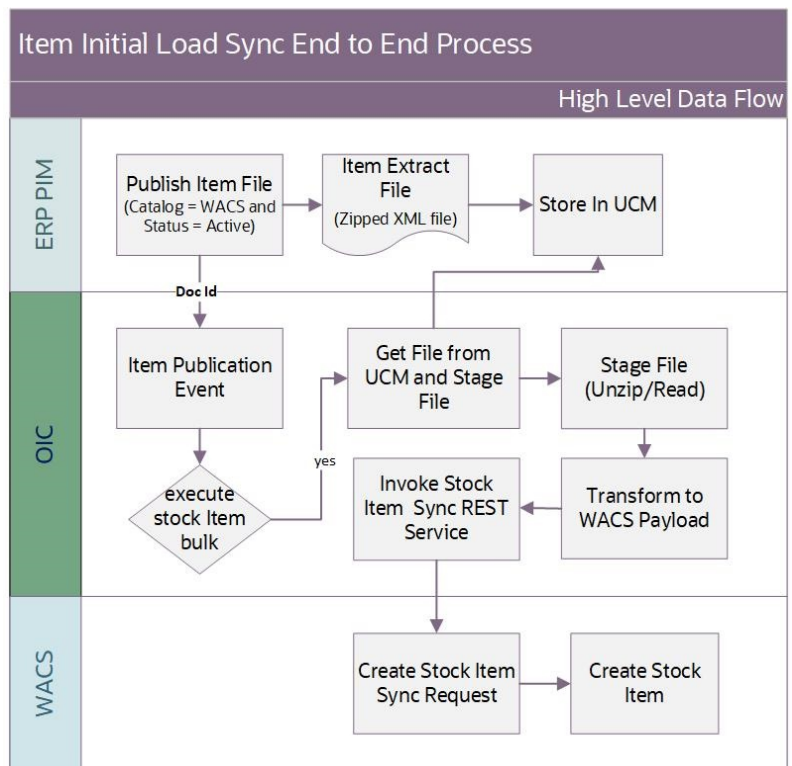
- [Item Bulk or Initial Synchronization Process](#)
- [Item Incremental Synchronization Process](#)

## Item Bulk or Initial Synchronization Process

The Item Initial Synchronization process synchronizes active item information from Oracle ERP Product Hub Cloud to Oracle Utilities Work and Asset Cloud Service.

This process is usually run at the beginning of implementation to sync active items from Oracle ERP Product Hub Cloud to Oracle Utilities Work and Asset Cloud Service for the first time.

The following diagram shows the end-to-end synchronization process:



### Maintenance of Item

Oracle ERP Product Hub Cloud is the central repository of Items. This is the master of stock item information. Items are created and managed by the Oracle ERP Cloud module.

### Bulk Item Data Extract

For initial item sync, Oracle ERP Product Hub Cloud publishes a file containing item information in 'active' status and has an item catalog of Oracle Utilities Work and Asset Cloud Service (WACS) Master Items.

For an item to be sync over to Oracle Utilities Work and Asset Cloud Service, the item's catalog must be defined with WACS Master Items.

**Note:** Filtering is done in Oracle ERP Product Hub Cloud. For more information on publishing and filtering the records to be included in the file, refer to the [Defining Spoke System](#) and [Manage Item Rule Set](#) sections in [Configuring Oracle ERP Product Hub Cloud](#).

### Item Initial Synchronization

When Oracle ERP Product Hub Cloud publishes an Item file in UCM server, it triggers a business event that sends out the document ID of the file created.

Oracle Integration Cloud gets the document ID, retrieve the item extract file from the UCM server, transforms the data and invoke the Stock Item Synchronization REST service to create the stock item information in Oracle Utilities Work and Asset Cloud Service.

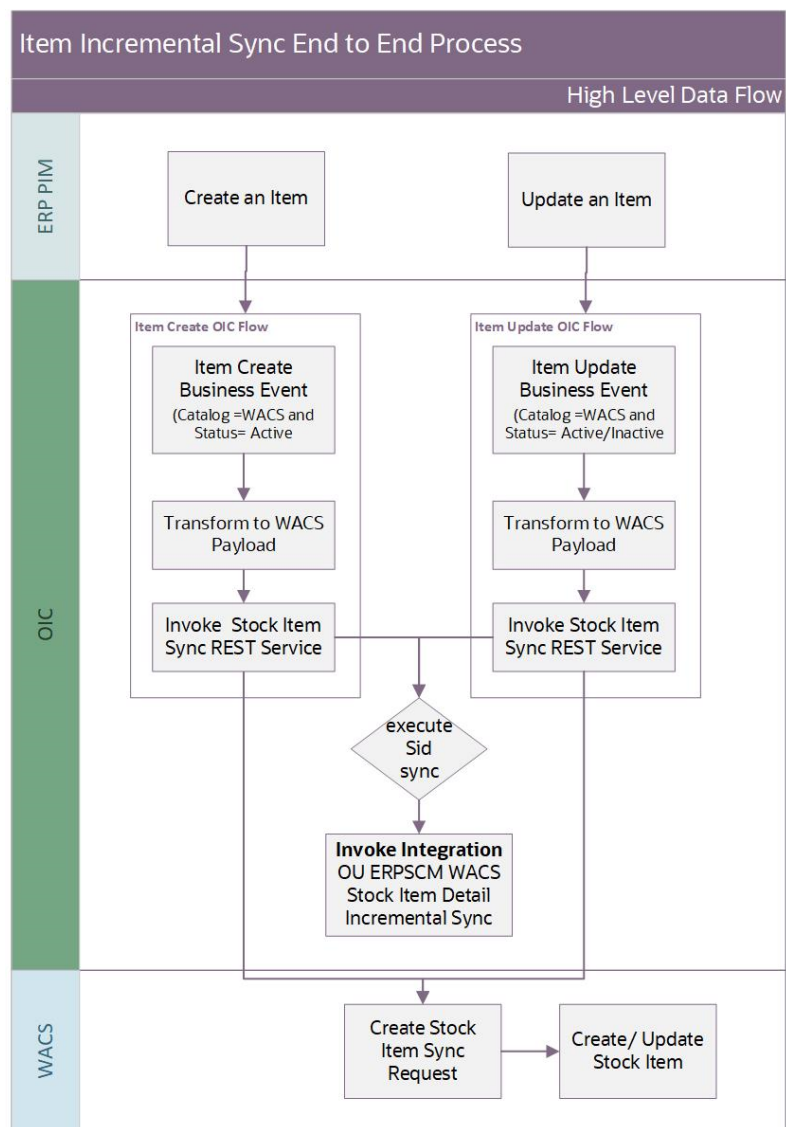
A new lookup property `execute.stockitem.bulk` in the `ERPWACS_ConfigProps` lookup is introduced in this release. The Stock Item bulk flow execution continues only if this property is set to “yes”.

**Note:** Make sure this property is enabled to synchronize the stock items in bulk.

## Item Incremental Synchronization Process

The Item Incremental Synchronization process synchronizes new or modified item information maintained in Oracle ERP Product Hub Cloud to Oracle Utilities Work and Asset Cloud Service.

The following diagram shows the end-to-end synchronization process:



**Maintenance of Item**

Oracle ERP Product Hub Cloud is the central repository of Items. This is the master of stock item information. Items are created, updated and managed in Oracle ERP Product Hub Cloud.

**Incremental Item Update**

When an Item is created or updated in Oracle ERP Product Hub Cloud, this triggers the Item Create or Item Update business event that sends out the item information to the integration.

**Item Incremental Synchronization**

There are two Oracle Integration Cloud flows that handle the item incremental synchronization: one to handle new items created and another to handle items updated.

Oracle Integration Cloud receives the item information from Oracle ERP Product Hub Cloud, transforms the data and invoke the Stock Item Synchronization REST service to create or update the item information in Oracle Utilities Work and Asset Cloud Service.

The integration processes process only those items in 'active' or 'inactive' statuses with an item catalog of Oracle Utilities Work and Asset Cloud Service Master Items.

The OU ERPSCM WACS Stock Item Detail Incremental Sync Integration in the OU WACS ERPSCM Project has a dependency with the Stock Item Incremental Integration. So, a new property "invoke.sid.inc.sync" has been introduced in the ERPWACS\_ConfigProps lookup to invoke the Oracle Supply Chain Management integration. The Oracle Supply Chain Management integration will be invoked if the "invoke.sid.inc.sync" property is set to "yes". Then, the flow continues with the execution of the Stock Item details creation/updation for the same Stock Item was created/updated.

# Chapter 2

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## Solution Architecture

This chapter provides an overview of the application architecture used by the integration, including:

- [Solution Overview](#)
- [Business Flows](#)

# Solution Overview

The technical aspects involved in the integration between Oracle ERP Product Hub Cloud and Oracle Utilities Work and Asset Cloud Service for Stock Item are:

- The integration layer consists of integration processes deployed on Oracle Integration Cloud.
- The integration processes interact with other applications using the following adapters:
  - Oracle ERP Cloud Adapter to subscribe to business events raised by various modules in Oracle ERP Product Hub Cloud. This integration subscribes to the Item Publication, Item Create and Item Update Events.
  - SOAP Adapter to interact with Oracle UCM Generic Web Service to get files in Oracle UCM.
  - Oracle Utilities Adapter interacts with the WACS REST APIs.
- The integration pattern used for the processes is one-way asynchronous. But the initial load and incremental item sync processes use different techniques to process the item information received from Oracle ERP Product Hub Cloud.
- Email notification is optional. Configure the property name email.flag in the ERPWACS\_ConfigProps lookup to 'true' to receive email notification when errors are encountered. By default, this is set to 'true'.
- The recipient(s) of the email notification is configured in the ERPWACS\_Email\_ID lookup.
- The field mapping details for Stock Item Integration are available in the *Oracle ERP Product Hub Cloud Integration to Oracle Utilities Work and Asset Cloud Service for Stock Item Data Mapping Guide* included in this release.

Refer to the [Business Flows](#) section for more information about each integration process.

## Business Flows

The integration scope supports the following business processes:

- [Initial Load Item Synchronization Process \(Oracle ERP Product Hub Cloud Initiated\)](#)
- [Incremental Sync for Item Create Process \(Oracle ERP Product Hub Cloud Initiated\)](#)
- [Incremental Sync for Item Update Process \(Oracle ERP Product Hub Cloud Initiated\)](#)

### Initial Load Item Synchronization Process (Oracle ERP Product Hub Cloud Initiated)

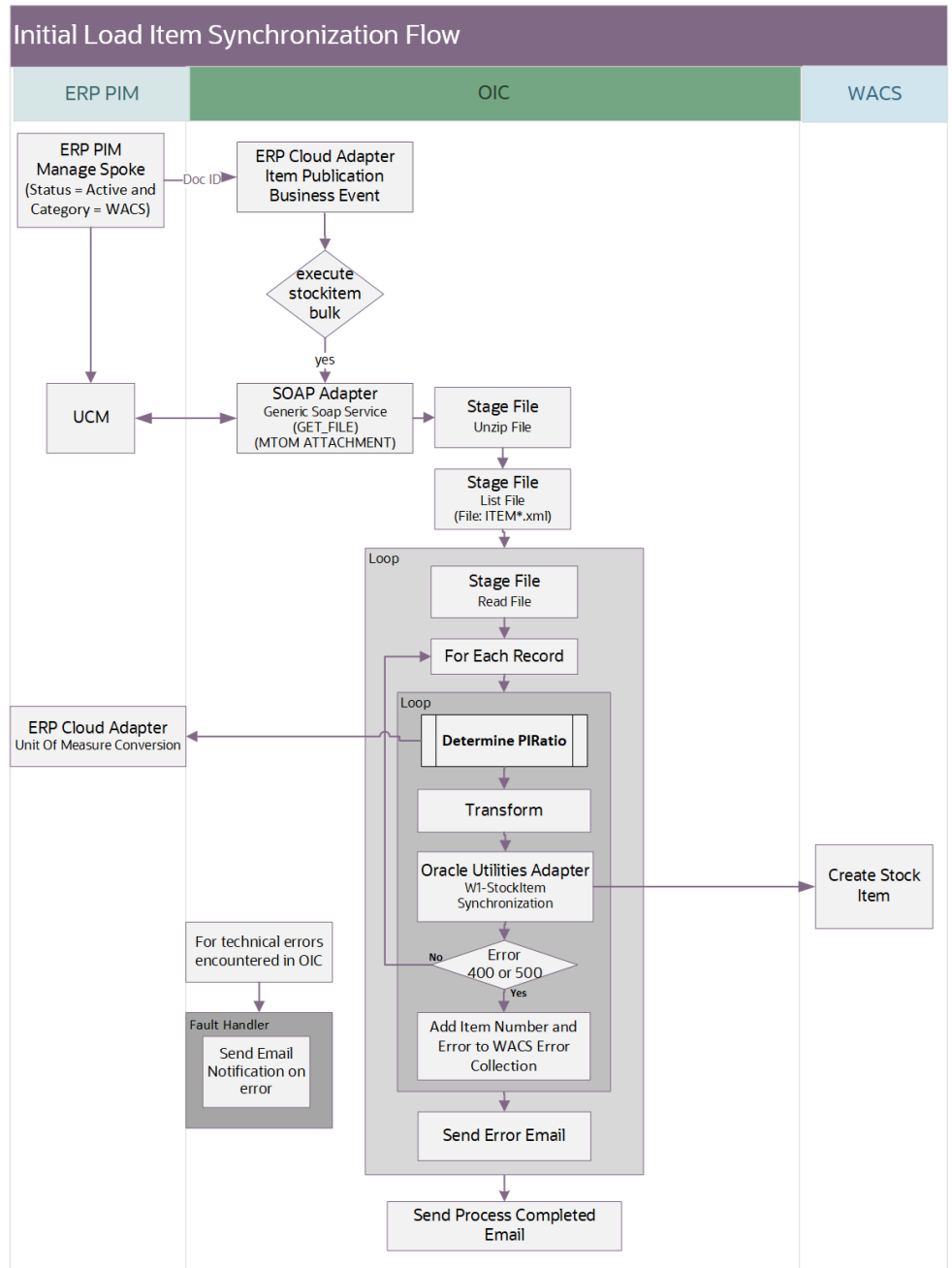
This integration process synchronizes active items from Oracle ERP Product Hub Cloud to Oracle Utilities Work and Asset Cloud Service on initial load. It is usually run when item information are loaded for the first time from Oracle ERP Product Hub Cloud to Oracle Utilities Work and Asset Cloud Service.

Initial load of item information from Oracle ERP Product Hub Cloud to Oracle Utilities Work and Asset Cloud Service uses files.

The file created in Oracle ERP Product Hub Cloud only contains item records based on the following filtering criteria:

- Item Catalog is WACS MASTER ITEMS. The item is used in Oracle Utilities Work and Asset Cloud Service.
- Items are in 'active' status.

The following diagram shows a graphical representation of the Initial Load Item Synchronization integration process.





## Processing Details

This integration process deployed on Oracle Integration Cloud does the following:

1. Subscribe to Item Publication Event. Oracle ERP Product Hub Cloud publishes an event with a payload containing the Doc ID when an item file is published in the ERP's Universal Content Management (UCM) server.

**Note:** The item file created must only contain active items with item catalog 'WACS MASTER ITEMS' that needs to be in sync over to Oracle Utilities Work and Asset Cloud Service.

2. If the “execute.stockitem.bulk” flag in the ERPWACS\_ConfigProps lookup is set to “yes”, then continue with the flow.
3. Else, stop the flow.
4. Invoke UCM Generic SOAP service to get the item file from UCM given the Doc ID provided by the Item Publication Event.
5. Unzip the item zip file obtained from UCM.
6. List all the files in the item zip file. It may contain more than one item file.
7. Read each file from the zip that is prefixed with 'Item'.
8. For each item record in the file, do the following:
  - Determine the item's PI Ratio.
    - PI Ratio conversion is based on the Unit of Purchase and Unit of Issue values of the item.
    - Unit of Purchase will always be provided since this is required in Oracle ERP Product Hub Cloud but Unit of Issue is optional and can be blank.
    - If Unit of Issue is blank, integration will default it to be the same value as Unit of Purchase.
    - Invoke UnitOfMeasureConversions REST API from Oracle ERP Product Hub Cloud to get the UOM Conversion for the Item's PIRatio.
  - Transform the payload from Oracle ERP Product Hub Cloud to Oracle Utilities Work and Management payload.
  - Invoke the Oracle Utilities Work and Asset Cloud Service Stock Item Sync API to pass the item information to Oracle Utilities Work and Asset Cloud Service.
9. Error Handling for this process.
  - If a technical or connection error occurs when Oracle Utilities Work and Asset Cloud Service or UCM is down or is inaccessible due to an authentication error, it stops the process and sends an optional email notification with error details to the users configured in the ERPWACS\_Email\_ID lookup.
 

Retry Option: Rerun from Oracle Integration Cloud
  - If any error occurs in the process when invoking Oracle Utilities Work and Asset Cloud Service Item Sync REST service.
 

Example: While processing an item record, Oracle Utilities Work and Asset Cloud Service returns a fault due to an invalid external system provided. The integration process does not stop but it lists the item in error in an error collection and continue to process the next item record. An optional email notification is sent to the users configured in the ERPWACS\_Email\_ID lookup

of items not created/updated in Oracle Utilities Work and Asset Cloud Service at the end of the process.

**Retry Option:** After manually fixing the issue in Oracle Utilities Work and Asset Management or Oracle ERP Product Hub Cloud or in the integration, re-run by publishing the item file from Oracle ERP Product Hub Cloud.

**Note:** When the Item Sync Request record is successfully created in Oracle Utilities Work and Asset Cloud Service, it means no error is encountered when processing that item record in the integration. Running the Oracle Utilities Work and Asset Cloud Service batch process W1-SIOPE processes the sync request records and create or update the item records or it might encounter a business validation error.

If an error occurs, the Sync Request Record transitions to error and a To Do is created in Oracle Utilities Work and Asset Cloud Service. In most cases this will be a data issue. Manually fix the issue in Oracle Utilities Work and Asset Cloud Service and rerun the Oracle Utilities Work and Asset Cloud Service batch process W1- SIOER to process the sync request records in error. If the fix is in Oracle ERP Product Hub Cloud or in the integration DVM, re-run by publishing the item file from Oracle ERP Product Hub Cloud.

## Technical Details

The following table describes the integration processes and the respective artifacts used in this integration process.

Artifacts	Value
Integration Process Name	Oracle Utilities ERPPIM WACS Item Initial Sync
Integration Project Name	OU WACS ERPPIM
ERP Cloud Adapter	<ul style="list-style-type: none"> <li>Subscription Event: Item Publication Event</li> <li>Connection Name: Oracle Utilities ERP Cloud for WACS-ERPPIM</li> </ul>
UCM Generic SOAP Service (SOAP Adapter)	<ul style="list-style-type: none"> <li>WSDL: <code>https://{UCM_host_name}:{UCM_port}/idcws/GenericSoapPort?WSDL</code> <ul style="list-style-type: none"> <li>To get a file, use: <code>IdcService="GET_FILE"</code></li> </ul> </li> <li>Connection Name: Oracle Utilities SOAP UCM Gen Svc for WACS-ERPPIM</li> </ul>
WACS REST API	<ul style="list-style-type: none"> <li>Web Service Name: W1-StockItemSync <ul style="list-style-type: none"> <li>Computed URL: <code>https://{host}:{port}/{tenant}/{domain}/wac/rest/apis/asset/inventory/stockItemSync</code></li> <li>Method: POST</li> <li>URI: <code>/sync</code></li> </ul> </li> <li>Connection Name: Oracle Utilities REST WACS for WACS-FPRC</li> </ul>

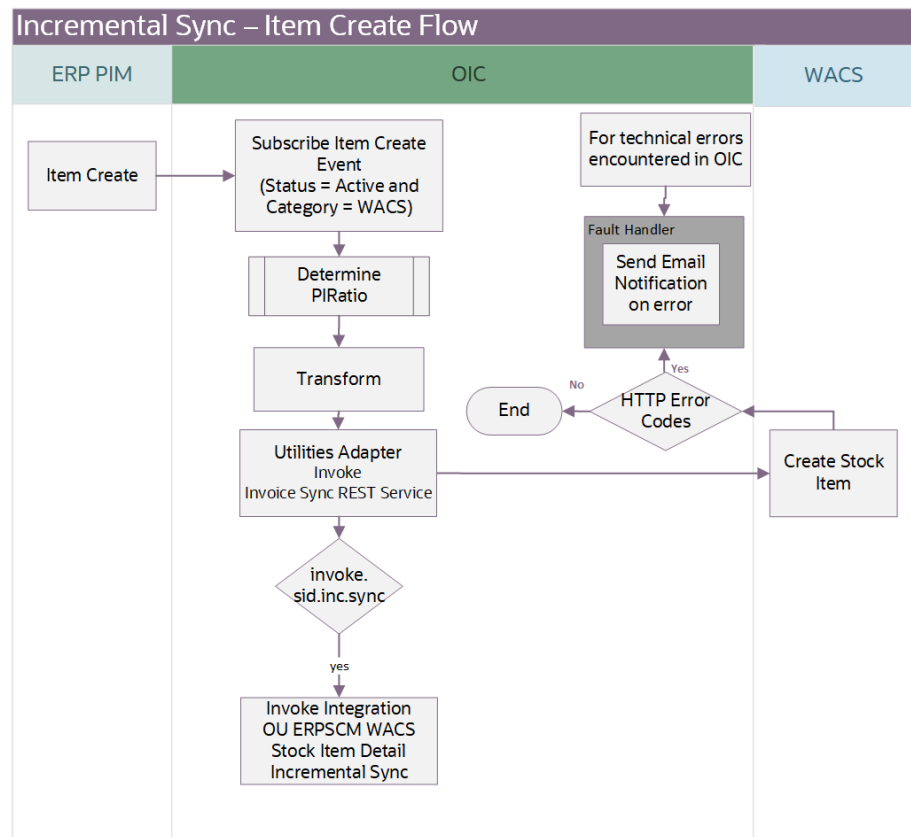
## Incremental Sync for Item Create Process (Oracle ERP Product Hub Cloud Initiated)

This integration process synchronizes new active items created in Oracle ERP Product Hub Cloud to Oracle Utilities Work and Asset Cloud Service.

Only item information based on the following filtering criteria are synchronized:

- Item Catalog is WACS MASTER ITEMS. The item is used in Oracle Utilities Work and Asset Cloud Service.
- Items are in 'active' status.

The following diagram shows a graphical representation of the Incremental Sync for Item Create integration process.



### Processing Details

This integration process deployed on Oracle Integration Cloud does the following:

1. Subscribe to Item Create Event. Oracle ERP Product Hub Cloud publishes an event, along with an item payload when an item is created in the application. The integration process will only accept items in active and has Item Catalog of 'WACS MASTER ITEMS'.

**Note:** The filtering criteria for Item Catalog is hardcoded to the value 'WACS MASTER ITEMS'. This item catalog value must exist in Oracle ERP Product Hub Cloud.

2. Determine the item's PI Ratio:
  - PI Ratio conversion is based on the Unit of Purchase and Unit of Issue values of the item.
  - Unit of Purchase will always be provided since this is required in Oracle ERP Product Hub Cloud but Unit of Issue is optional and can be blank.
  - If Unit of Issue is blank, integration will default it to be the same value as Unit of Purchase.
  - Invoke UnitOfMeasureConversions REST API from Oracle ERP Product Hub Cloud to get the UOM Conversion for the Item's PI Ratio.
3. Transform the Item payload from the Oracle ERP Product Hub Cloud format to Oracle Utilities Work and Asset Cloud Service format.
4. Invoke the Oracle Utilities Work and Asset Cloud Service REST service - Stock Item Sync to pass the item information to Oracle Utilities Work and Asset Cloud Service.
5. If the “ invoke.sid.inc.sync” value in the ERPWACS\_ConfigProps lookup is set to “yes”, then invoke the OU ERPSCM WACS Stock Item Detail Incremental Sync flow.
6. Error Handling for this process. If any error occurs in the integration process, an optional email notification is send out with the error details to the users configured in the ERPWACS\_Email\_ID lookup.

Retry Option: Re-run from Oracle Integration Cloud (OIC)

**Note:** When the Item Sync Request record is successfully created in Oracle Utilities Work and Asset Cloud Service, it means the integration process ended successfully. Running the Oracle Utilities Work and Asset Cloud Service batch process W1-SIOPE will process the sync request records and create or update the item records or it might encounter a business validation error.

If an error occurs, the Sync Request Record transitions to error and a To Do is created in Oracle Utilities Work and Asset Cloud Service. Most of the time, this will be a data issue. Manually fix the issue in Oracle Utilities Work and Asset Cloud Service and rerun the Oracle Utilities Work and Asset Cloud Service batch process W1-SIOER to process the sync request records in error. If the fix is in Oracle ERP Product Hub Cloud or in the integration DVM then the item has to be updated from Oracle ERP Product Hub Cloud to trigger an Item update event.

## Technical Details

The following table describes the integration processes and the respective artifacts used in this integration process.

Artifacts	Value
Integration Process Name	Oracle Utilities ERPPIM WACS Item Create
Integration Project Name	OU WACS ERPPIM

Artifacts	Value
ERP Cloud Adapter	<ul style="list-style-type: none"> <li>Subscription Event: Item Create Event <ul style="list-style-type: none"> <li>Filtering Criteria: ItemStatusValue='Active' and ItemCatalog='WACS MASTER ITEMS'</li> </ul> </li> <li>Connection Name: Oracle Utilities ERP Cloud for WACS-ERPPIM</li> </ul>
WACS REST IWS (Utilities Cloud Adapter)	<ul style="list-style-type: none"> <li>Web Service Name: W1-StockItemSync <ul style="list-style-type: none"> <li>Computed URL: https://{host}:{port}/{tenant}/{domain}/wac/rest/apis/asset/inventory/stockItemSync</li> <li>Method: POST</li> <li>URI: /sync</li> </ul> </li> <li>Connection Name: Oracle Utilities REST WACS for WACS-ERPPIM</li> </ul>

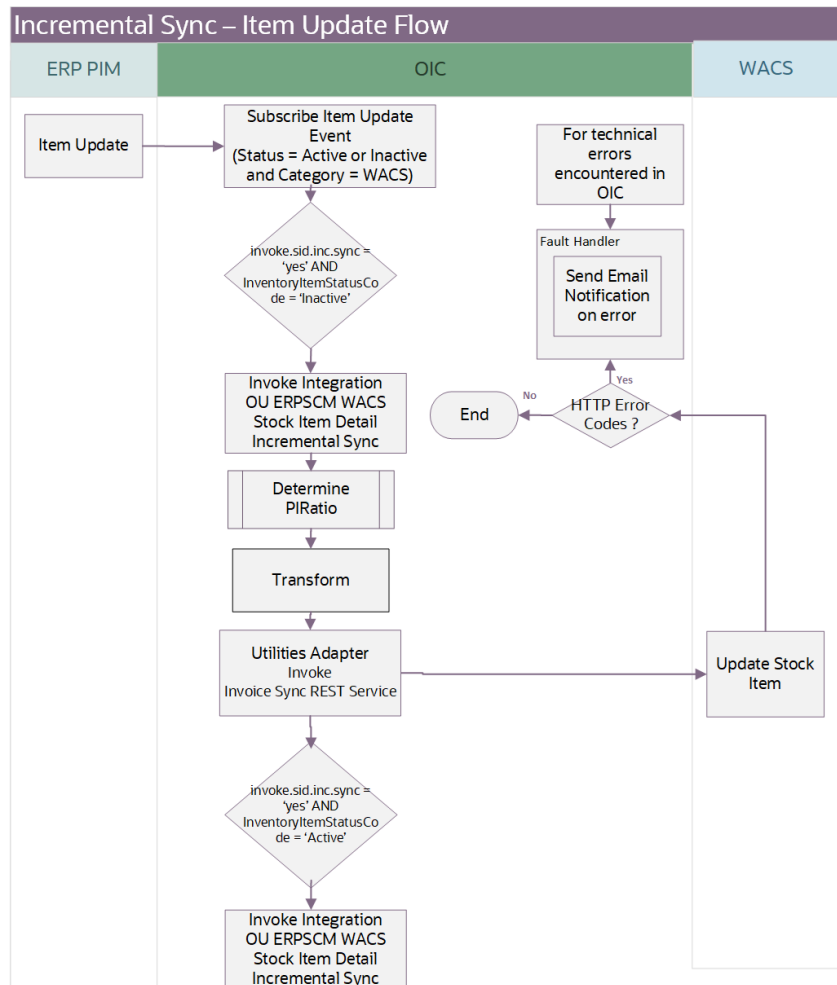
## Incremental Sync for Item Update Process (Oracle ERP Product Hub Cloud Initiated)

This integration process synchronizes items updated in Oracle ERP Product Hub Cloud to Oracle Utilities Work and Asset Cloud Service.

Only item information based on the following filtering criteria are synchronized:

- Item Catalog is WACS MASTER ITEMS. The item is used in Oracle Utilities Work and Asset Cloud Service.
- Items are in 'active' or 'inactive' status.

The following diagram shows a graphical representation of the Incremental Sync for Item Update integration process.



## Processing Details

This integration process deployed on Oracle Integration Cloud does the following:

- Subscribe to Item Update Event. Oracle ERP Product Hub Cloud publishes an event, along with an item payload when an item is updated in the application. The integration process only accepts items in active or inactive status and has Item Catalog of 'WACS MASTER ITEMS'.
 

**Note:** The filtering criteria for Item Catalog is hardcoded to the value of 'WACS MASTER ITEMS'. This item catalog value must exist in Oracle ERP Product Hub Cloud.
- If the “invoke.sid.inc.sync” value in the ERPWACS\_ConfigProps lookup is set to “yes” AND InventoryItemStatusCode = “Inactive”, then invoke the OU ERPSCM WACS Stock Item Detail Incremental Sync flow.
- Determine the item’s PI Ratio:
  - PI Ratio conversion is based on the Unit of Purchase and Unit of Issue values of the item.

- Unit of Purchase will always be provided since this is required in Oracle ERP Product Hub Cloud but Unit of Issue is optional and can be blank.
  - If Unit of Issue is blank, integration will default it to be the same value as Unit of Purchase.
  - Invoke UnitOfMeasureConversions REST API from ERP to get the UOM Conversion for the Item's PIRatio.
4. Transform the Item payload from ERP to Oracle Utilities Work and Asset Cloud Service format.
  5. Invoke the Oracle Utilities Work and Asset Cloud Service REST service - Stock Item Sync to pass the item information to Oracle Utilities Work and Asset Cloud Service.
  6. If the “invoke.sid.inc.sync” value in the ERPWACS\_ConfigProps lookup is set to “yes” AND InventoryItemStatusCode = “Active”, then invoke the OU ERPSCM WACS Stock Item Detail Incremental Sync flow.
  7. Error Handling for this process.

If any error occurs in the integration process, an optional email notification is sent out with the error details to the users configured in the ERPWACS\_Email\_ID lookup.

Retry Option: Re-run from Oracle Integration Cloud.

**Note:** When the Item Sync Request record is successfully created in Oracle Utilities Work and Asset Cloud Service, it means the integration process ended successfully. Running the Oracle Utilities Work and Asset Cloud Service batch process W1-SIOPE processes the sync request records and create/update the item records or it might encounter a business validation error. If an error occurs, the Sync Request Record transitions to error and a To Do is created in Oracle Utilities Work and Asset Cloud Service.

Most of the time, this will be a data issue. Manually fix the issue in Oracle Utilities Work and Asset Cloud Service and re-run the Oracle Utilities Work and Asset Cloud Service batch process W1-SIOER to process the sync request records in error. If the fix is in ERP or in the integration DVM, then the item has to be updated from ERP to trigger an Item update event.

## Technical Details

The following table describes the integration processes and the respective artifacts.

Artifacts	Value
Integration Process Name	Oracle Utilities ERPPIM WACS Item Update
Integration Project Name	OU WACS ERPPIM
ERP Cloud Adapter	<ul style="list-style-type: none"> <li>• Subscription Event: Item Update Event</li> <li>• Filtering Criteria: ItemStatusValue of 'Active' or 'Inactive' and ItemCatalog='WACS MASTER ITEMS'</li> <li>• Connection Name: Oracle Utilities ERP Cloud for WACS-ERPPIM</li> </ul>

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Artifacts	Value
WACS REST IWS (Utilities Cloud Adapter)	<ul style="list-style-type: none"><li data-bbox="894 222 1333 243">• Web Service Name: W1-StockItemSync</li><li data-bbox="894 264 1479 352">• Computed URL: https://{host}:{port}/{tenant}/{domain}/wac/rest/apis/asset/inventory/stockItemSync</li><li data-bbox="894 373 1105 394">• Method: POST</li><li data-bbox="894 415 1057 436">• URI: /sync</li><li data-bbox="894 457 1479 512">• Connection Name: Oracle Utilities REST WACS for WACS-ERPPIM</li></ul>

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# Chapter 3

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## Configuring Oracle Utilities Work and Asset Cloud Service

This chapter elaborates about the configuration of about various data, messages and catalog for the integration used by Oracle Utilities Work and Asset Cloud Service. It includes the following sections:

- [Configuring Admin Data](#)
- [Scheduling the Batch Process](#)
- [Managing Catalog Services](#)

# Configuring Admin Data

This section describes the admin data setup in Oracle Utilities Work and Asset Cloud Service related to the integration. The **Admin** menus can be configured to be grouped alphabetically or by functional groups. The descriptions that follow will include both groupings.

- [External System](#)
- [Inbound Web Service \(IWS\)](#)
- [Master Configuration Setup](#)
- [Business Object](#)
- [Expense Code and Vendor Location Setup](#)

## External System

Create a new or update an existing external system to support the Enterprise Resource Planning Cloud.

To create a new External System:

1. In the **Admin** menu, navigate to **[M or Integration] > External System > Add**.
2. Enter a unique **External System** and its **Description**.
3. Set the **Our Name in Their System** field to *Oracle Utilities Work and Asset Cloud Service*.
4. Associate the outbound message types created to the external system.

For each outbound message type, set the following:

- **Outbound Message Type:** Outbound message type for the respective integration service
- **Processing Method:** Real-time

**Note:** To create a new external system, outbound message type and processing method are required. For this integration, Oracle Utilities Work and Asset Cloud Service does not send any outbound message to the Oracle ERP Product Hub Cloud application. Thus, it does not have any outbound message types to setup. To be able to save the record, just add any outbound message type.

## Inbound Web Service (IWS)

The following REST inbound web service is applicable for this integration:

- W1-StockItemSynchronization

The full URI component for the REST inbound web service is configurable.

The Oracle Utilities Work and Asset Cloud Service documentation provides instructions about the one-time setup. Refer to the [Documentation and Resources](#) section in [Preface](#) for information about documentation resources.

## Master Configuration Setup

This section describes the master configuration details for the integration. The following Master Configurations can be found from the **Admin menu [M or General] > Master Configuration**.

- [Seeder Sync Request Master Configuration](#)
- [Master Data Synchronization Master Configuration](#)

### Seeder Sync Request Master Configuration

The Seeder Sync master configuration identifies the ongoing sync request business object and key reference view for the maintenance object specified in the synchronization request.

**To create a Seeder Sync Request master configuration:**

1. Create a row for the Oracle Enterprise Resource Planning External System and Resource Type Maintenance Object (MO): W1- RESRCTYPE for Stock Item Sync Integration.
2. Define the Ongoing Sync Request Business Object that will process the integration record and the Ongoing Sync Key Reference View and Identifier Type to find existing integration records.

The table below shows a sample reference Business Object, Ongoing Sync Key Reference View and Identifier Type for the Maintenance Object.

Maintenance Object	Business Object	Ongoing Sync Key Reference View	Identifier Type
<b>W1-RESRCTYPE</b> (Resource Type)	<b>W1-OngoingSync Request StockItem</b> (Stock Item Ongoing Sync Request)	<b>W1_ON_STOCK_ITEM_VW</b> (Ongoing Sync Key Stock Item View)	<b>W1EI</b>

### Master Data Synchronization Master Configuration

This Master Configuration is used to update External IDs with IDs used within Oracle Utilities Work and Asset Cloud Service.

To create a Master Data Synchronization master configuration, create a row for the Stock Item (Resource Type) FK Ref and Oracle Enterprise Resource Planning External System that references the Stock Item Ongoing Sync Key Reference View.

The table below shows a sample reference for FK Reference, Ongoing Sync Key Reference View, External System and Identifier Type.

FK Reference	Ongoing Sync Key Reference View	External System	Identifier Type
<b>W1-RETTY</b> (Stock Item)	<b>W1_ON_STOCK_ITEM_VW</b> (Ongoing Sync Key Stock Item View)	ERP External System created in Step 1	<b>W1EI</b>

## Business Object

### Stock Item Ongoing Sync Request Business Object

This section includes the following:

- [Acknowledgment](#)
- [Target Business Object](#)
- [Lifecycle States](#)

#### Acknowledgment

No positive/negative acknowledgment messages need to be returned to the ERP system. Make the following lifecycle algorithms inactive to not send any acknowledgment:

- Synchronized (SYNCHRONIZED) Status - Create Positive Acknowledgment for ERP (W1-CPOSAERP)
- Negative Acknowledgment Sent (NEG-ACK-SENT) Status - Create Negative Acknowledgment (W1-CRENEGACK)

To make the algorithms inactive, add an option within the **Status** with an **Inactive Algorithm Option Type** and the name of the algorithm within the **Value** field.

#### Target Business Object

The Oracle Utilities Work and Asset Cloud Service business object created from the Sync Request is defined on the Data Transformed state's Determine Stock Item Target business object algorithm parameters.

#### Lifecycle States

The following deferred monitors are set on the following lifecycle states. These deferred monitors are executed using the corresponding batch control submission. They can be removed from each lifecycle state for immediate execution of the state algorithms.

- Ongoing Sync Request - Pending (W1-SIOPE)
  - Pending
- Ongoing Sync Request - Error (W1-SIOER). This Deferred Monitor allows to retry the state algorithms after an error is found.
  - Pre-Add Error
  - FK Resolution Error
  - Update Error
  - Additional Processing Error

## Expense Code and Vendor Location Setup

The Stock Item must reference an existing Expense Code and Cost Category. These can be added using the application Admin menus. The Stock Item can also reference one or more Vendor Locations. These Vendor Locations can either be added via the W1-SyncRequestInbound requests or an existing Vendor Location can be updated to include the External ID that will be referenced by the Stock Item sync.

## Scheduling the Batch Process

The batch process is used to run the sync request. It is a generic batch process that is used for different sync processes. It has a couple of parameters that can be used to control which sync request business objects to process.

### Batch Processes for Ongoing and Inbound Integration Sync Requests

Batch Code	Description
W1-SIOPE	<p>The batch process to transition ongoing sync request out of the PENDING state. It is a generic batch process that is used for different sync processes. It has a couple of parameters that can be used to control which sync request business objects to process.</p> <p>To process the inbound sync requests specific to Stock Item, set the <b>Restrict By Business Object</b> parameter to <i>W1-OngoingSyncRequestStockItem</i>.</p>
W1-SIOER	The batch process to transition ongoing sync request out of the ERROR state.

For more information about the sync request process, business objects, maintenance objects, and other components used for this process, refer to the **Data Synchronization** section in the *Oracle Utilities Application Framework User Guide*.

## Managing Catalog Services

The web service catalog is used by Oracle Integration Cloud to communicate with the respective application. It is used to identify the services that should be retrieved by the Oracle Utilities Adapter. It is configured in Catalog URL in the Oracle Integration Cloud connection.

To configure the catalog service in Oracle Utilities Work and Asset Cloud Service:

1. Login to Oracle Utilities Work and Asset Cloud Service.
2. Navigate to the **Web Service Catalog** page either from the **Admin > [W or Integration]** menu or from the **Search** menu.
3. Select **REST Web Service Class**.
4. Add the REST inbound web services mentioned below to the catalog.

Service Type	Service Name	Description
Inbound Web Service	W1-StockItemSync	Stock Item Sync

For more information about configuration, refer to the Oracle Utilities Work and Asset Cloud Service documentation.

# Chapter 4

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## Configuring Oracle ERP Product Hub Cloud

This chapter describes the configuration required to integrate Oracle ERP Product Hub Cloud and Oracle Utilities Work and Asset Cloud Service.

- [Oracle ERP Product Hub Cloud Overview](#)
- [Configuring Oracle ERP Product Hub Cloud](#)

# Oracle ERP Product Hub Cloud Overview

This section focuses on the following:

- [Oracle ERP Product Hub Cloud Portal](#)
- [Oracle ERP Product Hub Cloud Features](#)

## Oracle ERP Product Hub Cloud Portal

Product Information Management (PIM) is a central repository of all Items in Oracle Cloud Fusion. It helps to analyze and make a decision for critical business requirements. It is foundational for an end-to-end supply chain and provides a business process framework around the company's master data.

Product Information Management centralizes product data across heterogeneous systems so that it can create a blended product master record that is clean, standardized, accurate, and current. From products that are manufactured internally to finished goods that are sourced from suppliers, Oracle ERP Product Hub Cloud enables to aggregate, enrich, and share product data for various manufacturing and omnichannel commerce processes.

Use robust business rules and workflows to make sure the data that is shared 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.

## Oracle ERP Product Hub Cloud Features

The features in Oracle ERP Product Hub Cloud are:

- **Managing Imports:** Manage the import of items and related entities using industry-standard open interface tables, allowing to quickly import data into the production schema as well as enabling migration of data from existing applications.
- **Define Items:** Define and manage base reference data and profile options related to items, such as cross-reference types, item relationship types, related value sets, item templates, item types, and item statuses.
- **Define Catalogs**
  - Define and manage catalogs to categorize items in a structured hierarchy.
  - Associate images and attachments to catalogs and categories to help quickly build rich catalog content.
  - Share category and item associations from a source or master catalog with multiple catalogs enabling to reuse existing data and ease administration of catalogs.
- **Define Product:** Create items and apply predefined templates that provide all of the basic information to get started quickly.
- **Manage Product Attachments**
  - Associate unstructured content as attachments to a product.
  - Categorize attachments in various predefined and user-defined categories to organize and provide quick access to important documents for the product.

- **Define Product Structures**
  - Define and manage product structure types to categorize various product structure hierarchies.
  - Create and administer structure names and associated usage rules, allowing further classification and identification of different product hierarchies.
  - Enable lifecycle phase and structure usage rules to ensure correct and accurate structure information is maintained and used.
  - Define component usage rules to ensure only valid components can be used in the product structure.

Product Information Management allows to create personal charts and analytic report tools to understand consumption, data metrics of Item based on organization, and other business-related graphs.

In Product Information Management, the following tasks can be performed:

- Item Organizations
- Items
- Catalogs and Structures
- Item Mass Update
- Advanced Catalogs
- Change Orders
- Product Rules
- Audit Trail
- Product Spoke System
- Item Batches
- Data Pool Integration

For more information about Product Information Management, refer to: <https://docs.oracle.com/en/cloud/saas/supply-chain-management/24a/faipr/overview-of-product-lifecycle-management-and-product-hub.html#s20060807>

## Configuring Oracle ERP Product Hub Cloud

The following configuration is required in Oracle Product Management Cloud to run this integration:

- As a part of a strategic enhancement to improve functionality between Oracle products, integration between different platforms is required to ease implementation.
- Customers using Oracle ERP Product Hub Cloud and planning to implement Oracle Utilities Work and Asset Cloud Service will have readily available integration to manage items in Oracle ERP Product Hub Cloud through this integration.



- Real-time incremental updates to Oracle Utilities Work and Asset Cloud Service from Oracle ERP Product Hub Cloud to make sure the information between these systems is in sync.
- Helps customers to jump-start their implementation using this integration and quick deployment.

This section focuses on the following:

- [Manage Trading Community Source System](#)
- [Defining Spoke System](#)
- [Manage Item Rule Set](#)
- [Defining File Size of the Extract](#)
- [Creating Catalogs/Categories](#)

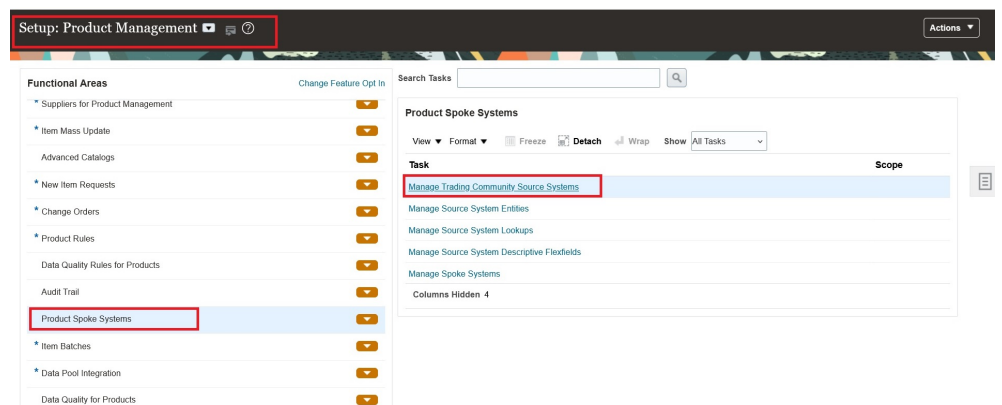
## Manage Trading Community Source System

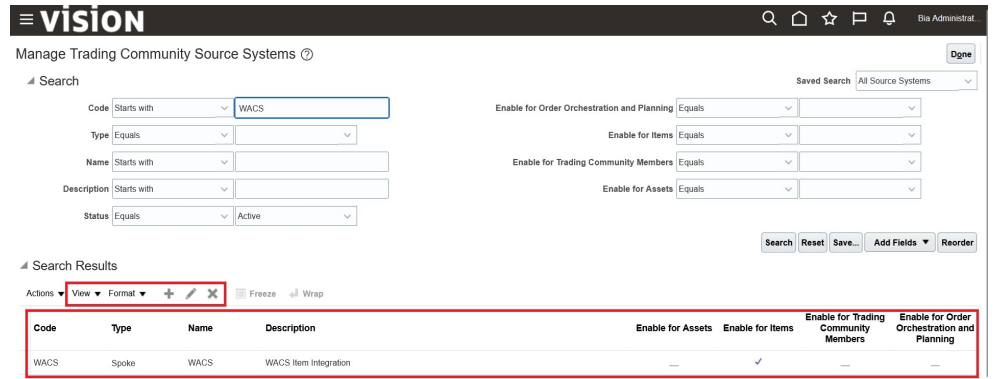
Oracle Product Management Cloud offers functionality to extract Item through publication for integration. Define the target application intended to send extract to.

## Defining Spoke System

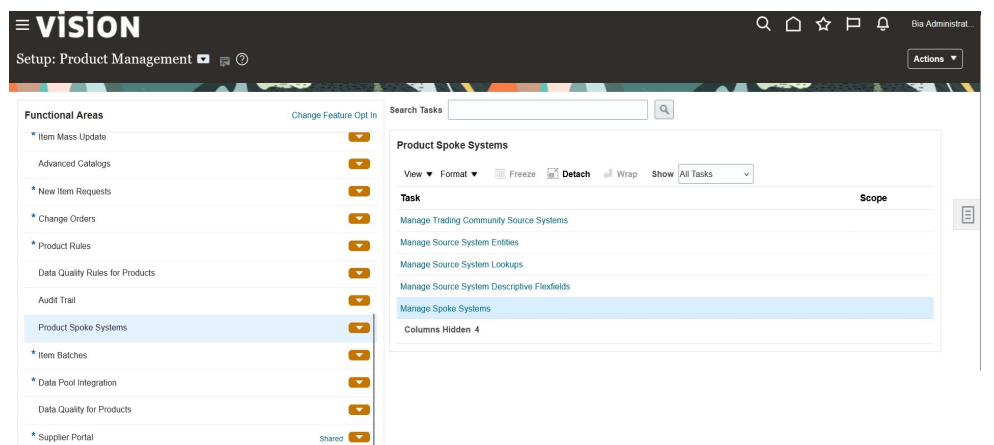
This setup helps to communicate systems outside the cloud. Filters are set up in configuration to extract items based on the business requirement.

1. Login to the system.
2. Navigate to **Others > Set up and Maintenance > Product Management > Product Spoke System**.
3. Open **Manage Trading Community Source Systems**.



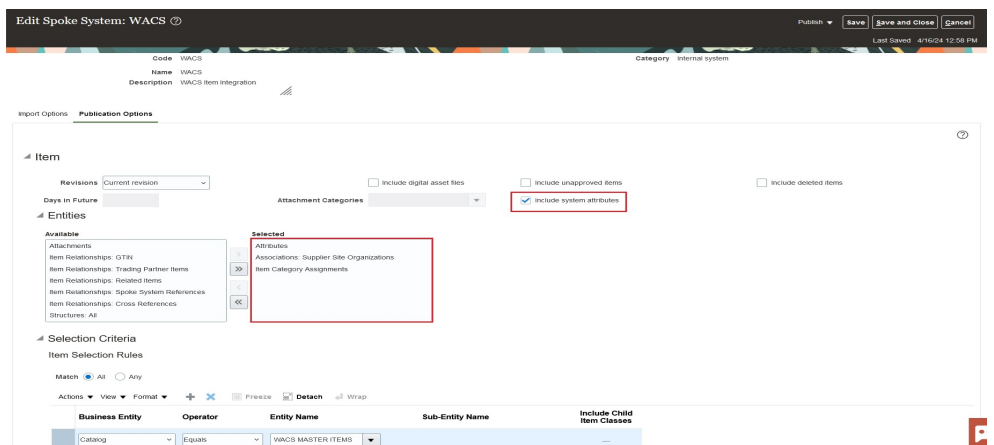


4. After creating **Manage Trading Community Source**, open **Manage Spoke Systems**.



5. Set up the **Publication**. Include the following:

- Attributes
- Association: Supplier Site Organization
- Item Category Assignment
- Enable **Include system attributes**.



- e. Create the **Validation rule**. Use:  
<https://docs.oracle.com/en/cloud/saas/supply-chain-and-manufacturing/24a/faipr/index.html> and  
<https://docs.oracle.com/en/cloud/saas/supply-chain-and-manufacturing/24a/faipr/index.html#s20029202>
  - f. Add the filter for **WACS MASTER ITEM**. Select the other filters by business for the bulk upload.
6. Click **Publish**. The file is automatically sent to Universal Content Server.

For more details, refer to: <https://docs.oracle.com/en/cloud/saas/supply-chain-and-manufacturing/24a/index.html>

## Manage Item Rule Set

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. Example: A rule might be that the minimum speed must be less than maximum speed.

Each attribute is referenced by its business entity and attribute group name followed by the attribute name.

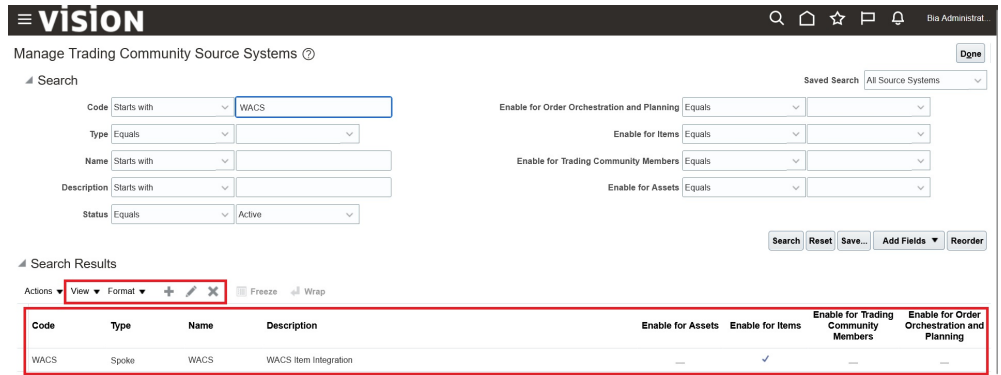
Example: [Item].[Physical Attributes].[Unit Volume]

In this example, [Item] indicates that it is an item attribute; [Physical Attributes] is the display name of the attribute group, and [Unit Volume] is the display name of the attribute.

To manage an item rule set:

1. Navigate to **Setup and Maintenance > Product Hub > Item > Manage Advance Item Profile Option**.
2. Click **Add**.
3. Enter the following details:
  - **Display name:** WACS\_ITEM\_STATUS
  - **Composite:** No
  - **Association Type:** Attribute Group
  - **Association Name:** Main

- **Validation Condition:** [Item].[Main].[Item Status] == “Active”



## Defining File Size of the Extract

Oracle Integration Cloud accepts files that are less than 10MB in size. To make sure that publication size is less than 10MB, limit the number of items in each extract file.

To define the file size of an extract:

1. Navigate to **Setup and Maintenance > Product Hub > Item > Manage Advance Item Profile Option**.
2. Update the profile options:  
`EGI_PUBLICATION_ITEMS_PER_PAYLOAD= 250`

Profile Option Code	Profile Option Name	Purpose
EGI_PUBLICATION_ITEMS_PER_PAYLOAD SET SIZE TO 250	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 MB.
EGI_PUBLICATION_NUMBER_OF_PAYLOADS	Number of Parallel Payloads for Publication	Number of scheduled subprocess that gets 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 100.
EGP_PUBLICATION_SIZE_OF_ZIP_FILE	Size of the Publication Payload File in Megabytes	This profile option controls the overall size of the payload Zip file. The payload Zip file can contain more than one XML file for the item object. This profile option lets you chunk large publication jobs into multiple XML files. This profile option controls the overall size of the payload Zip file.

## Creating Catalogs/Categories

A catalog is a collection of categories used to classify items. Categories can be organized into a hierarchy that represents a taxonomy. Create new categories only in the context of a catalog. Add existing categories to one or more catalogs, either from another catalog or as shared categories from a source catalog. Assignments of items and categories can be controlled in the catalog by controlling the catalog content.

Example: Set the **Catalog Content** field value on the **Edit Catalog** page to *Items* at all levels. It allows items to be assigned to any level within the category hierarchy not only to the leaf levels.

### Catalog

A catalog is a collection of categories that are organized to define a classification of items. The top most level of a catalog is the catalog root. All categories for the first level in the category hierarchy are associated with the catalog root through the catalog category association component.

### Category

A category is a component of a catalog that represents a set of items. Associate a category to a catalog through the catalog category association. Both the shared category and the native category are associated through the catalog category association.

### Catalog Category Association

Catalog category association represents the relationship between a catalog and a category, or a parent category and a child category. Each catalog category association represents one relationship between the catalog and a category or one relationship between a parent category and a child category.

### Item Category Assignment

Item category assignment represents the assignment of the item to a category in a catalog. Each item category assignment represents the relationship between a category and an item.

To create/manage catalogs and/or categories:

1. Login to the system.
2. Navigate to **Product Management > Product Information Management > Manage Catalog**.
3. Click **Add** to add the following catalog and category details.

**Catalog Name:** WACS MASTER ITEM

**Category Name:** WACS

**Description:** WACS Item Transfer

4. Click **Save**.

To add a catalog to multiple categories:

1. Browse all Items from Product Management Information required to sync with Oracle Utilities Work and Asset Cloud Service.
2. After identifying all Items, create **Item Import FBDI** using the template.  
<https://docs.oracle.com/en/cloud/saas/supply-chain-and-manufacturing/24a/oefsc/index.html#item-3116>
3. Download the **Item Categories Import Control** file.  
<https://www.oracle.com/webfolder/technetwork/docs/fbdi-24a/fbdi/controlfiles/EgpItemCategoriesInterface.ctl>
4. Make sure the spreadsheet has the same columns and they are in the same order as in the template. The value in the first column is always the interface table name.
5. After extracting the data into a temporary spreadsheet, cut and paste the data into the relevant sheets provided in the template.
6. For ID columns, 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 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 navigate to **Setup and Maintenance** work area.

## Importing Data

After successfully loading the data, submit the **Item Import** process to import the data into the application tables to create Items and its child entities.

To submit the Item Import process:

1. Navigate to **Manage Item Batches** task in the Product Information Management work area.
2. Make sure that appropriate **Batch Options** are set for the batch.
3. Navigate to the **Scheduled Processes** task.
4. Click **Schedule New Process** and select **Item Import Process**.
5. Enter the value for **Batch ID** and click **Submit**.
6. Monitor the process in the **Search Results** section.
7. If the **Item Import Process** ends in error or warning, review the log file for details.

## Rectifying Errors

To rectify import errors:

1. Click **Manage Item Batches** task in the Product Information Management work area.
2. Search 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. After all rows are corrected, click **Upload** to resubmit the process.
7. Submit the **Item Import** process.
8. Repeat steps 2 to 7 until all rows are imported successfully and the items along with their child entities are created.

# Chapter 5

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## Importing, Configuring, and Testing Integration Connections

This chapter explains in details the process for importing the connections, projects, and files needed for the integration and the configuration of these connections imported through the projects. After a successful import and configuration the chapter lists out steps to help test the connections. It includes the following sections:

- [Importing the Oracle Integration Cloud Project from Oracle Cloud Marketplace](#)
- [Verifying the Project Import](#)
- [Configuring Connections in Oracle Integration Cloud](#)
- [Setting up Certificates for Security](#)



# Importing the Oracle Integration Cloud Project from Oracle Cloud Marketplace

All integration points are shipped as part of single project (.car) file.

To import a pre-built integration from Oracle Cloud Marketplace:

1. Launch the **Oracle Cloud Marketplace** portal.  
[https://cloudmarketplace.oracle.com/marketplace/en\\_US/homePage.jspx](https://cloudmarketplace.oracle.com/marketplace/en_US/homePage.jspx)
2. Click **Applications**.
3. Search for “Oracle Utilities Work and Asset Cloud Service”.
4. Browse through the list of applications and select the pre-built integration project to import.
5. Click **GetApp**.
6. Review and accept “Oracle Standard Terms and Restrictions”.
7. Click **Next**. The **My Oracle Support** portal opens.
8. Download the integration project from My Oracle Support.
9. When prompted, select the server where the pre-built integration file should be uploaded.

The pre-built integration is imported as a project file that is visible on the **Projects** page in Oracle Integration Cloud.

10. On the **Integrations** page, the individual integrations of the imported project file that are designated with a BUILT BY ORACLE message are displayed.

To import a project in Oracle Integration Cloud:

1. Login to Oracle Integration Cloud.
2. Navigate to **Projects**.
3. Click **Add > Import**.
4. Select the .car file downloaded from Oracle Cloud Marketplace.
5. Verify if the project is imported successfully.

## Verifying the Project Import

To verify the project import was successful:

1. Verify if the following integrations are imported successfully.
  - Oracle Utilities ERPPIM WACS Item Initial Sync
  - Oracle Utilities ERPPIM WACS Item Create
  - Oracle Utilities ERPPIM WACS Item Update
2. Verify if the following connections are in place.
  - Oracle Utilities ERP Cloud for WACS-ERPPIM
  - Oracle Utilities REST WACS for WACS-ERPPIM

- Oracle Utilities SOAP UCM Gen Svc for WACS-ERPPIM
3. Make sure that the following lookups are imported successfully.
    - ERPWACS\_AllowSubstituteReceiptsFlag
    - ERPWACS\_AssetCategory
    - ERPWACS\_AssetTrackedFlag
    - ERPWACS\_ConfigProps
    - ERPWACS\_Email\_ID
    - ERPWACS\_HazardousType
    - ERPWACS\_ItemClass
    - ERPWACS\_InventoryAssetFlag
    - ERPWACS\_LotManagedFlag
    - ERPWACS\_PurchaseCommodity
    - ERPWACS\_StockItemStatus
    - ERPWACS\_UOMCode
    - ERPWACS\_VendorPriority

## Configuring Connections in Oracle Integration Cloud

After the projects are imported and verified, the respective connections have to be configured.

This section describes the procedure to set up the following connections:

- [Configuring Oracle Utilities ERP Cloud for WACS-ERPPIM Connection](#)
- [Configuring Oracle Utilities REST WACS for WACS-ERPPIM Connection](#)
- [Configuring Oracle Utilities SOAP UCM Gen Svc for WACS-ERPPIM Connection](#)

### Configuring Oracle Utilities ERP Cloud for WACS-ERPPIM Connection

This connection is used to communicate with Oracle ERP Cloud Applications using the Oracle ERP Cloud adapter.

To configure the Oracle Utilities ERP Cloud for WACS-ERPPIM connection:

1. Specify the Service Catalog and Event Catalog URL or the ERP Cloud Host URL.

Enter the following:

- **ERP Services Catalog WSDL URL:** The ERP Services Catalog WSDL URL follows this format: `https://{ERP Cloud host}/fndAppCoreServices/ServiceCatalogService?wsdl`
- **ERP Event Catalog URL:** The ERP Event Catalog URL follows this format: `https://{ERP Cloud host}/soa- infra`

- **ERP Cloud Host URL:** Example: https://ERP\_domain\_name.fa.DC.oraclecloud.com

**Note:** The Oracle ERP Product Hub Cloud host name can easily be derived from the Oracle ERP Cloud login URL.

2. In the **Security policy** section, select **Username Password Token**.
3. Provide the **Username** and **Password** to connect to Oracle ERP Product Hub Cloud.
4. Click **Test** at the upper-right corner.
5. After the connection is tested successfully, click **Save**.

## Configuring Oracle Utilities REST WACS for WACS-ERPPIM Connection

This connection is used to communicate with Oracle Utilities Work and Asset Cloud Service using the Oracle Utilities adapter.

To configure the Oracle Utilities REST WACS for WACS-ERPPIM connection:

1. Specify the Oracle Utilities Work and Asset Cloud Service REST web catalog to the **catalogURL** section.

The REST Catalog URL follows this format: https://{host}:{port}/{tenant}/{domain}/{appName}/rest/openapi/iws/catalog

2. In the **Security policy** section, select **Basic Authentication**.
3. Provide **Username** and **Password** to connect to Oracle Utilities Work and Asset Cloud Service.
4. From the **Security Policy** drop-down list, select **Basic Authentication**.
5. Click **Test** at the upper-right corner.
6. After the connection is tested successfully, click **Save**.

## Configuring Oracle Utilities SOAP UCM Gen Svc for WACS-ERPPIM Connection

This connection is used to communicate with Oracle Universal Content Management using the SOAP adapter.

To configure the Oracle Utilities SOAP UCM Gen Svc for WACS-ERPPIM connection:

1. Specify the **WSDL URL**.

The Oracle UCM Web Service follows this format: https://{ERP Cloud host}/idcws/GenericSoapPort?WSDL

2. From the **Security Policy** drop-down list, select **Basic Authentication**.
3. Provide **Username** and **Password** to connect to UCM.
4. Click **Test** at the upper-right corner.
5. After the connection is tested successfully, click **Save**.

---

# Setting up Certificates for Security

**Important!** Skip this section if there are valid CA certificates for the integration.

If there no valid certificates for this integration, download the Oracle Utilities Work and Asset Cloud Service certificates and upload them to Oracle Integration Cloud to handshake with Oracle Utilities Work and Asset Cloud Service.

To download the Oracle Utilities Work and Asset Cloud Service certificate:

1. Login to Oracle Utilities Work and Asset Cloud Service.
2. Click the URL on the top-left corner.
3. On the **Security** tab, click **View Certificate**.
4. On the **Details** tab, click **Export**.
5. Save the certificate.

To upload the certificate to Oracle Integration Cloud:

1. Login to Oracle Integration Cloud with Admin credentials.
2. Navigate to **Settings > Certificates**.
3. On the **Certificate** window, click **Upload**.
4. Select **Certificate Type** as **Trust Certificate**.
5. Provide the **Certificate Alias Name**.
6. Select the certificate to upload.
7. Click **Upload**.

# Chapter 6

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## Configuring Lookups, Error Handling, and Email Notifications

This chapter focuses on the lookups configuration, handling business and technical errors and email notifications. It includes the following sections:

- [Configuring Lookups](#)
- [Error Handling](#)
- [Email Notifications](#)

# Configuring Lookups

The following table lists the lookups that are part of this integration.

Lookup Name	Description
ERPWACS_AllowSubstituteReceiptsFlag	<p>Maps Allow Substitute Receipt Flag values between ERP PIM and WACS</p> <p>Get ERP PIM values from Product Information Management &gt; Product Hub &gt; Manage Item &gt; Specification - Item organization - Purchasing (Receiving -Valid Transactions - Allow Substitute receipts)</p> <p>ERP PIM values: true, false WACS values: W1YS, W1NO</p>
ERPWACS_AssetCategory	<p>Maps between ERP PIM Asset Category to WACS Property Unit.</p> <p>Get ERP PIM values from Product Information Management &gt; Product Hub &gt; Manage Item &gt; Specification - Item organization - Purchasing - Purchasing</p> <p>Get WACS values from <b>Admin &gt; [P or Financial] &gt; Property Unit &gt; Search</b></p>
ERPWACS_AssetTrackedFlag	<p>Maps ERP PIM Asset Tracked Flag to WACS Trackable Flag.</p> <p>Get ERP PIM values from Product Information Management &gt; Product Hub &gt; Manage Item &gt; Specification - Item organization - Manufacturing - Costing - Inventory Asset Value</p> <p>ERP PIM values: true, false WACS values: W1YS, W1NO</p>
ERPWACS_ConfigProps	<p>Maps the <b>PropertyName</b> column to the respective <b>Value</b> column. Do not change value in the <b>PropertyName</b> column.</p>
ERPWACS_Email_ID	<p>Maps <b>from</b> and <b>to</b> recipient values to the corresponding Email ID(s). Configure multiple email IDs using a comma to separate them.</p>

Lookup Name	Description
ERPWACS_HazardousFlag	<p>Maps ERP PIM Flag to WACS Hazardous Flag. Hazardous Type must be blank if HazardousFlag is set to W1YS.</p> <p>Get ERP PIM values from Product Information Management &gt; Product Hub &gt; Manage Item &gt; Specification - Item organization - Purchasing - Purchasing</p> <p>ERP PIM values: true, false WACS values: W1YS, W1NO</p>
ERPWACS_HazardousType	<p>Maps ERP PIM Hazardous Code to WACS Hazardous Type</p> <p>Get ERP PIM values from Product Information Management &gt; Product Hub &gt; Manage Item &gt; Specification - Item organization - Purchasing - Purchasing</p> <p>Get WACS values from <b>Admin &gt; L or Database &gt; Lookup &gt; Search</b> &gt; Search for HAZARD_TYPE_FLG</p>
ERPWACS_ItemClass	<p>Maps ERP PIM Item Class to WACS Stock Category</p> <p>Get ERP PIM values from Product Hub &gt; Manage Item Class</p> <p>Get WACS values from <b>Admin &gt; L or Database &gt; Lookup &gt; Search</b> &gt; Search for STOCK_CAT_FLG</p>
ERPWACS_InventoryAssetFlag	<p>Maps ERP PIM Inventory Asset Flag to WACS Capital Spare Flag</p> <p>Get ERP PIM value from Product Information Management &gt; Product Hub &gt; Manage Item &gt; Specification - Item organization - Manufacturing - Costing - Inventory Asset Value</p> <p>ERP PIM values: true, false WACS values: W1YS, W1NO</p>
ERPWACS_LotManagedFlag	<p>Maps ERP PIM Lot Control Flag to WACS Lot Managed Flag</p> <p>Get ERP PIM value from &gt; Product Information Management &gt; Product Hub &gt; Manage Item &gt; Specification - Item organization - Inventory (Control)</p> <p>ERP PIM values: Full lot control, No lot control WACS values: W1YS, W1NO</p>

Lookup Name	Description
ERPWACS_PurchaseCommodity	<p>Maps ERP PIM Purchase Category Name to WACS Purchase Commodity.</p> <p>Get ERP PIM values from Product Information Management &gt; Product Hub &gt; Manage Item &gt; Specification &gt; Categories &gt; Choose Purchasing Category</p> <p>Get WACS values from <b>Admin &gt; P or Inventory &gt; Purchase Commodity &gt; Search</b></p>
ERPWACS_StockItemStatus	<p>Maps Stock Item Status values between ERP PIM and WACS</p> <p>ERP PIM values: Active, Inactive WACS values: Active, Inactive</p>
ERPWACS_UOMCode	<p>Maps UOM Code values between ERP PIM and WACS</p> <p>Get ERP PIM values from Product Information Management &gt; Product Hub &gt; Manage Item &gt; Specification - Item organization - Purchasing</p> <p>Get WACS values from <b>Admin &gt; U or Inventory &gt; Unit Of Measure - Resource &gt; Search</b></p>
ERPWACS_VendorPriority	<p>Maps ERP PIM Supplier Primary Flag to WACS Vendor Priority.</p> <p>Get ERP PIM values from Product Information Management &gt; Product Hub &gt; Manage Item &gt; Specification - ItemSupplierAssociation/PrimaryFlag</p> <p>ERP PIM values: true, false WACS values: W1PR, W1OT</p>

## Editing Lookups

To edit a lookup:

1. Login to Oracle Integration for Cloud.
2. Navigate to **Projects > OU WACS ERPSCM > Lookups**.
3. Select the lookup to edit.
4. Make the necessary changes.
5. Click **Save** and **Close**.



## Configuration Properties

The ERPWACS\_ConfigProps lookup includes properties that can be defaulted in the integration. It also contains a flag to enable email notifications.

Property Name	Sample Value	Description
email.flag	true	Flag to indicate to send out email notifications
maxerrorcount.per. emailnotification	50	An email notification is sent after the maximum number of records in error set here is reached. It will keep sending an email notification for every interval of the maximum error count.  Example: There are 150 records to be processed and this property is set to 50. When the process reached it's 50th error record then an email notification listing the 50 error records is sent. For every 50 error records an email notification is sent.
wacs.externalsystem	GD_INT_ERP	This value is obtained in WACS. This must be a valid expense code in WACS.
wacs.usageexpensecode. default	DK_USG_EXP	This value is obtained in WACS. This must be a valid expense code in WACS.
erp.purchase.itemcategory	Purchasing	This is the Purchase item Category defined in ERP. This is used to get the category name to be mapped to WACS Purchase Commodity field.
erp.assetactivity.useritem typevalue	Asset Activity	This is the Asset activity User Item Type defined in ERP. This is used in the WACS repairable mapping.
execute.stockitem.bulk	yes/no	Flag to continue the execution of the flow Oracle Utilities ERPPIM WACS Item Initial Sync
invoke.sid.inc.sync	yes/no	Flag to invoke the child Integration OU ERPSCM WACS Stock Item Detail Incremental Sync to create/update the Stock Item Details for the created/updated Stock Item.

## Error Handling

This section provides information about the different ways used to handle errors in the integration and also resubmitting the instances after rectifying the errors.

- [Error Handling Ways](#)
- [Resubmitting the Error Instances in Oracle Integration Cloud](#)

## Error Handling Ways

In this integration, the errors are handled in different ways due to the limitation of Oracle Integration Cloud.

- [Asynchronous Flow Error Handling](#)

### Asynchronous Flow Error Handling

#### Technical Fault

This fault occurs when there is a data mismatch or any Xpath related error. When this error occurs, the flow immediately goes to global fault handler and an optional email to the respective user is sent.

#### Remote Fault

This fault occurs when the target system is down. When this error occurs, the flow immediately goes to global fault handler and an optional email is sent to the respective user.

#### Business Fault

This fault occurs when the target system returns a business fault due to invalid data. When an error occurs his error occurs, the flow immediately goes to global fault handler and an optional email is sent to the respective user.

**Note:** For Initial Load Item Bulk Sync Integration Process, the errors are handled differently in the for each item record loop. Any fault encountered while processing an item record inside the loop will not stop the whole process but it will list the item in error in an error collection and continue to process the next item record. An optional email is sent to the respective user when the value of **maxerrorcount.per.emailnotification** defined in **ERPWACS\_ConfigProps** look up is reached or at the end of the process. The frequency of emails being sent out is dependent on the value of **maxerrorcount.per.emailnotification**.

## Resubmitting the Error Instances in Oracle Integration Cloud

In this integration, all processes are asynchronous so the resubmit option is available in Oracle Integration Cloud if the process ends in a fault.

#### To resubmit the error instances in Oracle Integration Cloud:

1. Login to Oracle Integration Cloud.
2. Navigate **Observability > Errors**.
3. Select the integration to resubmit.
4. Click the **Resubmit** icon.

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## Email Notifications

This pre-built integration includes a configurable email notification.

To receive an email notification:

1. Login to Oracle Integration Cloud.
2. Navigate to **Projects > OU WACS ERPSCM > Lookups**.
3. Edit the **ERPWACS\_ConfigProps** lookup.  
Change the **email.flag** property value to 'true'.
4. Edit the **ERPWACS\_Email\_ID** lookup.
  - a. In the **from** field, enter the email ID to receive an email from.
  - b. In the **to** field, enter the email ID to send the email to.

Use a comma to separate the email IDs when multiple email IDs are defined.

**Note:** In the ERPWACS\_Email\_ID lookup, do not edit the values provided under the **Recipient** column.

# Chapter 7

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## Activating the Integration Flows

This section provides an overview of how integration flows are activated and tested. It includes the following sections:

- [Prerequisites](#)
- [Activating Integration Flows](#)

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## Prerequisites

The prerequisites are as follows:

- Oracle ERP Product Hub Cloud users and inventory managers should be able to extract data based on Item Number, Item Catalog, Item Category, Item Status, and Processing Status.
- All lookups or DVMs are set up in Oracle Integration Cloud.
- In this integration, vendor will not be loaded in Oracle Utilities Work and Asset Cloud Service. It is a prerequisite for Oracle Utilities Work and Asset Cloud Service to have vendors updated in the system.

## Activating Integration Flows

To activate the integration flows:

1. Navigate to the integration to activate.
2. Drag the slider for that integration. When prompted to enable tracing, click **Yes** to view the instances.
3. Click **Activate**.

The integration takes time to get activated. The activated integration appears at the top of the integrations list.

# Chapter 8

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## Monitoring and Troubleshooting

This section provides information about monitoring and troubleshooting the integration. It includes the following:

- [Oracle Utilities Work and Asset Cloud Service](#)
- [Oracle Integration Cloud](#)

# Oracle Utilities Work and Asset Cloud Service

For more information about errors and notifications, see the [Oracle Utilities Work and Asset Cloud Service](#) documentation on [Oracle Help Center](#).

## Oracle Integration Cloud

This section focuses on the monitoring Oracle Integration Cloud and troubleshooting any issues that occur during the integration activation.

### Monitoring Integration Flows

Integration flows are monitored using the following:

- Dashboard
- Cloud Logs

To monitor the integration flows from the Oracle Integration Cloud dashboard:

1. Login to Oracle Integration Cloud.
2. On the **Home** page, click **Observability**.
3. Select any of the following as required:
  - **Dashboards:** To monitor the complete dashboard of integration.
  - **Integrations:** To monitor each integration.
  - **Tracking:** To monitor instance and flow trace/activity stream of the integration.
  - **Error:** To monitor the integrations in 'error' state. Re-submit the asynchronous integration flows.

To monitor the integration flows using Oracle Integration Cloud logs:

1. Login to Oracle Integration Cloud.
2. On the **Home** page, click **Observability**.
3. On the navigation pane, click **Dashboards** to view the overall success/failure rate of the integration.
4. Navigate to the **Logs** menu.
5. In the right pane, click the link to show options for downloading the Oracle Integration Cloud logs or diagnostics logs.
6. In case of any issues, attach the diagnostic logs to a service request for help.

### Troubleshooting

If an activation fails, the Integrations page displays an error message.

To troubleshoot the activation error:

1. Click **Download Diagnostic Logs** to download the logs for diagnosing the issue.

2. Some of the sample cases are as follows:
  - For any connectivity errors while activating the integration, make sure the trigger connection is successful. Test the connection and refresh the metadata, and then activate the integration.
  - If the integration (Oracle Utilities Work and Asset Cloud Service initiated flows) is activated for the first time, make sure the Oracle Utilities Work and Asset Cloud Service catalog is configured accurately.